



مدينة الشارقة للرعاية الصحية
Sharjah Healthcare City
ثقافة الرعاية . Culture of care

SHCC Guidelines

For Briefing, Design and Approval of Healthcare Facilities

Part B – Health Facility Briefing and Design

Including Functional Planning Units

Version 1, 2014

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1.0 Introduction

1.1 Structure of these Guidelines

Health Facility Design and the factors which influence the outcome are elaborated in Part B of the SHCC Guidelines. Health Facility Design requires knowledge, skill and experience. These Guidelines alone may not be sufficient to ensure good design however, using these Guidelines, a reasonably skilled designer should be able to focus on the required functionality quickly and deliver a product, which meets the minimum SHCC requirements.

The administrative requirements for health facility applications have been covered in Part A of the SHCC Guidelines; this part focuses on the Architectural and Health Planning aspects.

This may include aspects of health service provision and facility design which are not part of the SHCC approval but are required as part of the process of delivering a competent health facility.

Part C addresses issues related to Access, Mobility and Occupational Safety and Health (OSH).

Part D details the Infection Control requirements of health facilities.

Part E focuses on the Engineering aspects.

All parts must be taken into consideration in the design of healthcare facilities.

1.2 Levels of Recommendation

1.2.1 *Mandatory Requirements*

All the paragraphs defined in these Guidelines are mandatory by default. In situations where the text has the potential for misunderstanding, the note 'Mandatory' may be used to clarify any aspect that is absolutely required without re-interpretation. Even if the word 'Mandatory' does not appear in the text, it does not indicate that the paragraph is optional.

This principle also applies to Schedules of Accommodation, Room Data Sheets and Room Layout Sheets; items listed are required and only optional if indicated.

1.2.2 *Recommended Requirements*

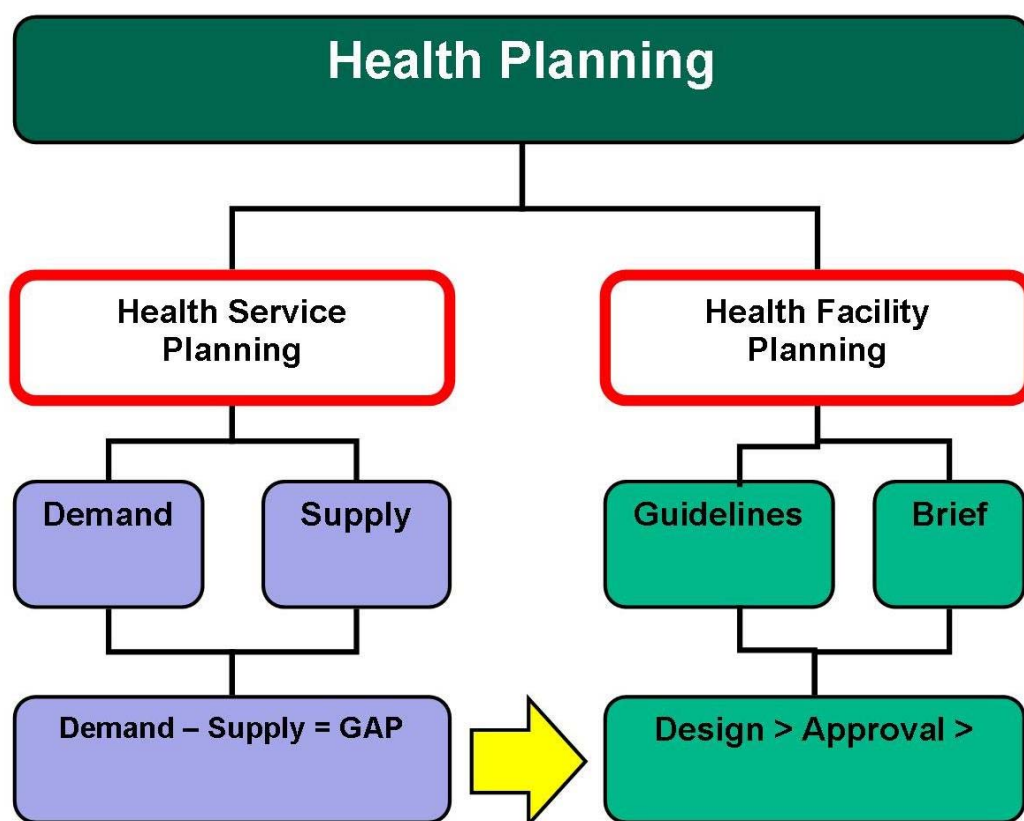
The term 'Recommended' implies that the designer should adapt the standard as a mandatory guideline and the higher level of standards are recommended. The intention is to guide designers who are voluntarily upgrading the facility to a higher standard and require further guidance.

1.2.3 *Optional Requirements*

The text, Schedules of Accommodation and Room Data Sheets will indicate 'Optional' for all items that are not mandatory requirements.

1.3 Health Planning

Health service provision is determined by the discipline known as Health Planning. There are two branches to this discipline – Health Service Planning and Health Facility Planning.



1.3.1 Health Service Planning

Health Service Planning focuses on the research, analysis and calculation of demand and supply of the healthcare services for a given population in the catchment area. Every competent proposal for a health facility starts with a Service Plan.

Demand

There are various statistical tools, benchmarks and localized information to determine the raw healthcare demand used by the health service planner. This may be represented by Occasions of Service (OOS), Average Length of Stay (ALS) and Presentations Per Annum (PPA). The Service Planner will consider inflows of patients from other catchment areas as well as outflows to other catchment areas. The calculations will include the level of self-sufficiency desired or anticipated.

The healthcare demand is calculated for a period of time into the future, known as the Time Horizon of the Study. This may be 10–20 years into the future. The starting point will be known as the Base Point, or Base Year. The characteristics of the population in terms of age, gender, socio-economic status and predisposition to various diseases have the greatest influence on the demand of each population catchment.

A Service Planner finally converts raw demand into facility units known as Key Planning Units (KPU). KPUs may vary greatly depending on the nature of the facility. They include:

- Hospital Bed classification
- Operating Room numbers
- Birthing Room numbers
- Emergency Treatment Cubicles
- Consultation Rooms
- Various diagnostic modes.

These KPUs are later used by Health Facility Planners to prepare a full brief for the proposed facilities.

Supply

The information about the supply of healthcare services refers to the existing available facilities and the service they provide to the primary catchment area. This may or may not meet the needs of that population in the catchment area now or in the future.

Service Gap

The difference between the Demand and Supply is the Service Gap which needs to be met by the provision of health facilities. The process of determining this gap and proposing solutions for meeting it is described as:

- Needs Analysis,
- Feasibility Study; or
- Business Case.

A proposal for a facility therefore should not commence with a block of land and design. Health facilities are too important to be treated purely as a real-estate development. A competent Service Plan resulting in a Needs Analysis, Feasibility Study or Business Case must be at the core of any proposal. At this time, SHCC does not require the submission of these documents.

1.3.2 Health Facility Planning

Guidelines

Health Facility Planning discipline involves designing the facility based on the requirements in the catchment area; the design shall be conceptualized based on the Service Gap. The outcomes of this discipline are design and specifications for the construction of new facilities or refurbishment and expansion of existing ones. It is essential that any hospital design is based on a set of guidelines accepted and endorsed by health professionals, the design community and more importantly, the local governing bodies. Design guidelines are different from operational standards that are enforced and obligatory; instead meant to steer professionals like architects, interior designers, facility planners and project managers towards an acceptable outcome in terms of a successful Health Facility Design.

Brief

The Design Brief is defined as a comprehensive written document for a design project (i. e. a hospital) developed by the client representing business needs for the design and the designer. The document is focused on desired results and not necessarily aesthetics or logistics. The Design Brief should contain a Problem Statement (if relevant), client goals, desired results and solution analysis, if required. The Design Brief is based on a combination of the Service Gap and Guidelines/Standards for the design. More importantly, the Brief acts as a quality check and establishes a minimum level of expectation. The actual design may have to undergo a series of approvals from various local regulatory authorities before being formally 'Approved' as an acceptable design.

2.0 Role Delineation Guide

The health service requirements can be classified under broad categories such as Emergency Medicine, Inpatient Department, General Surgery, Intensive Care etc. Each of these may be designed for a particular level or standard of service. These are known as Role Delineation Levels (RDL) and numbered from one to six (including in-between numbers such as 4–5), with level one representing uncomplicated health facilities, ascending to level 6 representing complex specialist services and hospitals.

2.1 Role Delineation Level (RDL)

The RDL defines an Intensive Care Service provided by a major metropolitan hospital which also incorporates Teaching and Research at RDL 6. The same service provided at a small General hospital without Teaching and Research facilities is defined as RDL 4. At higher RDLs the service provision will require access to higher levels of skill and additional complementary services. For example, Surgery at RDL 5 will also require Intensive Care services plus many more supporting services.

The relationships and inter-dependence between all the services at each RDL results in a large matrix with services one side and six RDLs on the other side.

The operators of health facilities and/or the designers need to decide which services they wish to provide as well as the RDL for those services. Only then the facility requirements can be determined and verified. For example, the number, type and size of rooms for an Intensive Care Unit (ICU) service at RDL 6 will be different to those for RDL 4.

SHCC Guidelines provide a Role Delineation Guide which sets out the most common health services for each RDL; under each category the requirements and dependencies are stated. The Role Delineation Guide is enclosed at the end of this section.

A blank version of the Role Delineation Guide is available in an electronic spreadsheet format to allow the proposed services and RDLs to be listed. This is known as the Role Delineation Matrix. This RDL Matrix can be used by the Health Facility Planning team to prepare the Facility Brief and is also used by SHCC to assess applications for health facilities (refer to Part A of the SHCC Health Facility Guidelines).

2.2 Role Delineation Guide

The SHCC Role Delineation Guide is described in Part B, Version 1, Appendix A of this document.

3.0 Standard Components

The Functional Planning Unit (FPU) Schedule by RDL includes listings of Standard Room Types required. In order to assist designers to better understand the requirements of each room type, the SHCC Guidelines include a comprehensive set of Standard Components which are represented by two sets of documents, outlined below.

3.1 Room Data Sheets (RDS)

Each room type includes a description based on different categories:

- Room Primary Information – includes Briefed Area, Occupancy, Room Description and relationships and special room requirements
- Building Fabric and Finishes – identifies the fabrics and finishes 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
- Fixtures and Equipment – includes all the serviced equipment typically located in the room along with the services required such as power, data, hydraulics
- 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 relevant types.

The Room Data Sheets (RDS) represent the detailed briefing requirements of each room type. Some RDS provide options for certain elements such as materials. If an external document refers to these RDS without qualifying the choice of options, then the default options will prevail. In case of any discrepancy between various documents, the RDS will take precedence.

If materials and elements are referred by the generic type e.g. vinyl, the requirements shall be satisfied by other materials and elements which have very similar properties e.g. impervious sheet flooring.

Refer to Standard Components in Part B for the full set of Room Data Sheets.

3.2 Room Layout Sheets (RLS)

These are individual sheets incorporating typical design of rooms at 1:50 scale with abbreviations, dimensions etc. Each Room Layout Sheet includes a Plan as well as four or more elevations showing the installation height of elements.

Note: Room Layout Sheets are indicative plan layouts and elevations illustrating an example of minimum acceptable design standards. The Room Layout Sheets shown 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
- Additional 2m² added for each additional door above the minimum required area
- Heights and dimensions where shown
- Any Clean/Dirty separations shown or implied
- Accessibility to and around various objects as shown or implied.

Room Layout Sheets must indicate relative location and empirical dimensions of:

- Hand-rails and Grab-rails
- Call points, power, light switches, data and gas outlets
- Bed screens
- Sanitary fixtures.

Refer to Standard Components in Part B for the full set of Room Layout Sheets.

4.0 Planning

4.1 Site Development

The location and development of the site shall be in accordance with the requirements of the Urban Planning Council and the local Municipality. Summarized below are the main criteria to be considered when developing a site accommodating a health facility.

4.1.1 *Environmental Impact*

The aesthetics and form of a health facility shall be sympathetic with its immediate environment, either built or natural; e.g. domestic scale and treatments where built in a residential area; the building should enhance the streetscape.

Note: This is not a mandatory requirement but is highly recommended.

Consideration should also be given to the setting of a health facility to ensure that it is accepted as an asset by the community and not thought of as an imposition and/or inconvenience on the neighborhood.

4.1.2 *Landscaping*

A suitable landscaping scheme shall be provided to ensure that the outdoor spaces are pleasant areas in which patients, visitors and staff may relax. The scheme should also ensure that the buildings blend into the surrounding environment, built or natural.

Water conservation should be a consideration when designing layouts and selecting plants. The use of mains water for reticulation is restricted; therefore the local authority on water supply should be consulted for current regulations.

4.1.3 *Site Grading*

The balance of a health facility site not covered by buildings should be graded to facilitate safe movement of the public and staff. Where this is not possible, access should be restricted.

4.1.4 *Public Utilities*

Impact on existing local service networks may be substantial. In establishing a health facility on any site, the requirements of authorities regulating water, electricity, gas, telephones, sewerage and any other responsible statutory or local authority must be complied with.

4.1.5 *Structural Requirements*

If the site is low lying, on the side of a hill, or partly consists of rock, then structural engineering advice should be sought at an early stage to minimize future drainage or settlement problems.

4.2 Master Plan Development

4.2.1 *Planning Relationships and the Use of Planning Models*

The planning of health facilities requires general knowledge of the appropriate relationships between the various components. Certain components (also referred to as Functional Planning Units or FPU) need to be adjacent or close to other components. Most FPUs must be accessible independently without travelling through other components. In short, the planning of a health facility requires a certain logic which is derived from the way the facility functions.

Good Planning Relationships:

- Increase the efficiency of operation
- Promote good practice and safe health care delivery
- Minimize recurrent costs
- Improve privacy, dignity and comfort
- Minimize travel distances
- Support a variety of good operational policy models
- Allow for growth and change over time.

Inappropriate Planning Relationships:

- Result in duplication and inefficiency
- May result in unsafe practices
- Increase running costs
- May result in reduced privacy, dignity and comfort
- Increase travel distance or force unnecessary travel
- Result in lack of flexibility to respond to future growth and change
- May limit the range of operational possibilities.

Planning Models

The planning of a complex health facility is based on applying commonly recognized 'good relationships' as well as taking into consideration site constraints and conformity with various codes and guidelines. In theory, it is possible to go back to the basics every time. In practice however, designers soon discover that this is an inefficient way of arriving at appropriate planning solutions. Just as in other buildings types e.g. hotels and shopping centers, health facilities have over time evolved around a number of workable Planning Models. These can be seen as templates, modules, prototypes or patterns for the design of new facilities.

These Guidelines include a number of flow diagrams, also referred to as Functional Relationship Diagrams (FRD) which represent Planning Models for various Functional Planning Units. The flow diagrams are referred to in the appropriate sections of these Guidelines and cover internal planning and relationships within the FPU. Designers may use these diagrams to set out the various components and then manipulate them into the appropriate shapes to suit the site constraints.

Designers are encouraged to see the overall design as a model; a good health facility plan usually can be reduced to a basic flow diagram. If the diagram has clarity, is simple and logical, as demonstrated in the FPU in these Guidelines, it probably has good potential for development. A skilled designer will use these planning models to assemble the requirements of a health facility on the site without compromising functionality.

If, on the other hand, the model is too hard to reduce to a simple, clear and logical flow diagram, it should be critically examined; it is not sufficient to satisfy immediate or one-to-one relationships. Similarly, it may not be sufficient to satisfy only a limited, unusual or temporary operational policy, it is more important to incorporate planning relationships that can satisfy multiple operational policies due to their inherent simplicity and logic.

4.2.2 Master Planning

In the health care industry, the term 'Master Plan' has different meanings in different contexts. The most common use of the term Master Plan refers to words, diagrams and drawings describing the 'global arrangement of activities' in a health facility with particular emphasis on land use, indicating growth and change over time.

Under this definition, a Master Plan is a fundamental planning tool used to identify options for current needs as well as projected future needs. Its purpose is to guide decision making for clients and designers.

Health facility owners and designers are encouraged to prepare a Master Plan before any detailed design is undertaken. A Master Plan can be prepared in conjunction with detailed briefing, so that valuable feedback can be obtained regarding real world opportunities and constraints. Ideally, a successful Master Plan will avoid incorrect long-term strategic decisions, minimize abortive work, prevent future bottlenecks and minimize expectations that cannot be met in the given circumstances.

A Master Plan diagram is typically a simplified plan showing the following:

- The overall site or section of the site relating to the development
- Departmental boundaries for each level related to the development
- Major entry and exit points to the site and the relevant departments
- Vertical transportation, including stairs and lifts
- Main inter-departmental corridors (arterial corridors)
- Location of critical activity zones within departments but without full detail
- Likely future site development
- Areas (if any) set aside for future growth and change
- Arrows and notes indicating major paths of travel for vehicles, pedestrians, goods and beds
- Services Master Plan showing the engineering impact, plant locations, availability of services and future demand.

Master Plan diagrams and drawings should be prepared for several options (typically three) to an equal level of resolution and presentation so that each option reaches its maximum potential, only then is a decision maker in a position to compare options on equal terms. The above diagrams and drawings are typically accompanied by a report covering the following headings as a minimum:

- Project description
- Outline brief
- Opportunities and constraints
- Options considered
- Evaluation criteria
- Evaluation of the options including cost impact (if any)
- Recommended option
- Executive summary and recommendation.

The exact deliverables for a Master Plan can be adapted to the nature of the project. The most typical additional deliverables are listed below; clients may refer to them by name and by reference to these Guidelines.

- Stacking Plans – This is typically used for locating departments in major multi-story developments where the shell is already well-defined
- Master Concept Plan – This is generally used as a further development of the preferred Master Plan option so that the design implications can be further tested and priced
- Staging Plan – A Staging Plan shows a complete Master Plan defined for each stage of the development rather than simply a zone allocation for future works
- Strategic Plan – A Strategic Plan refers to higher level 'what if' studies, providing a range of development scenarios. These may include the use of alternate sites, private-public collocation, purchase versus lease, alternative operational policies etc.

4.2.3 *Planning Policies*

Planning policies refer to a collection of non-mandatory guidelines that may be adopted by health facility designers or owners. These policies generally promote good planning, efficiency and flexibility.

The planning policies below are included in these Guidelines so that in the process of briefing, designers or clients can simply refer to them by name or require compliance from others.

Loose Fit

Loose Fit is the opposite of Tight Fit. This policy refers to a type of plan which is not so tightly configured around only one operational policy that it is incapable of adapting to another.

In healthcare, operational policies change frequently. The average cycle seems to be around five years. It may be a result of management change, government policy change, turnover of key staff or change in the marketplace. On the other hand, major health facilities are typically designed for 30 years but tend to last more than 50 years. This immediately presents a conflict, for example, if a major hospital is designed very tightly around the operational policies of the day or the opinion of a few individuals (who may leave at any time) then a significant investment may be at risk of early obsolescence.

The Loose Fit Planning Policy refers to planning models which can not only adequately respond to today's operational policies but have the inherent flexibility to adapt to a range of alternative, proven and forward-looking policies.

At macro level, many of the commonly adopted health facility planning models, including those enclosed within these Guidelines, have proven flexible in accommodating multiple operational policies.

At micro level, designers should consider simple, well-proportioned, regular-shaped rooms with good access to simple circulation networks that are uncomplicated by a desire to create interest. Interior features should not be achieved by creating unnecessary complexity.

Change by Management

This concept refers to plans which allow for changes in operating mode as a function of management rather than physical building changes. For example, two Inpatient Units can be designed back-to-back so that a range of rooms can be shared. The shared section may be capable of isolation from one or the other Inpatient Unit by a set of doors. This type of sharing is commonly referred to as Swing Beds. It represents a change to the size of one Inpatient Unit without any need to expand the unit or make any physical changes.

The same concept can be applied to a range of planning models to achieve greater flexibility for management. Further information on other planning policies is included in this section.

Overflow Design

Some functions can be designed to serve as overflow for other areas that are subject to fluctuating demand. For example, a waiting area for an Emergency Unit may be designed so that it can overflow into the hospital's main entrance waiting area. Alternatively, an Emergency Unit Procedure Room or a Birthing Room may be designed specifically to provide an Emergency Operating Room for Caesarean Sections in case the standard allocated operating room is not available.

Any area that includes bed bays, such as an Emergency Unit, may be designed to absorb the available open space and provide room for additional beds in case of natural disasters.

Progressive Shutdown

Even large facilities may be subject to fluctuating demand. It is desirable to implement a Progressive Shutdown policy to close off certain sections when they are not in use, allowing for savings in energy, maintenance and staff costs.

It also concentrates the staff around patients and improves communication and security. In designing for Progressive Shutdown, designers must ensure:

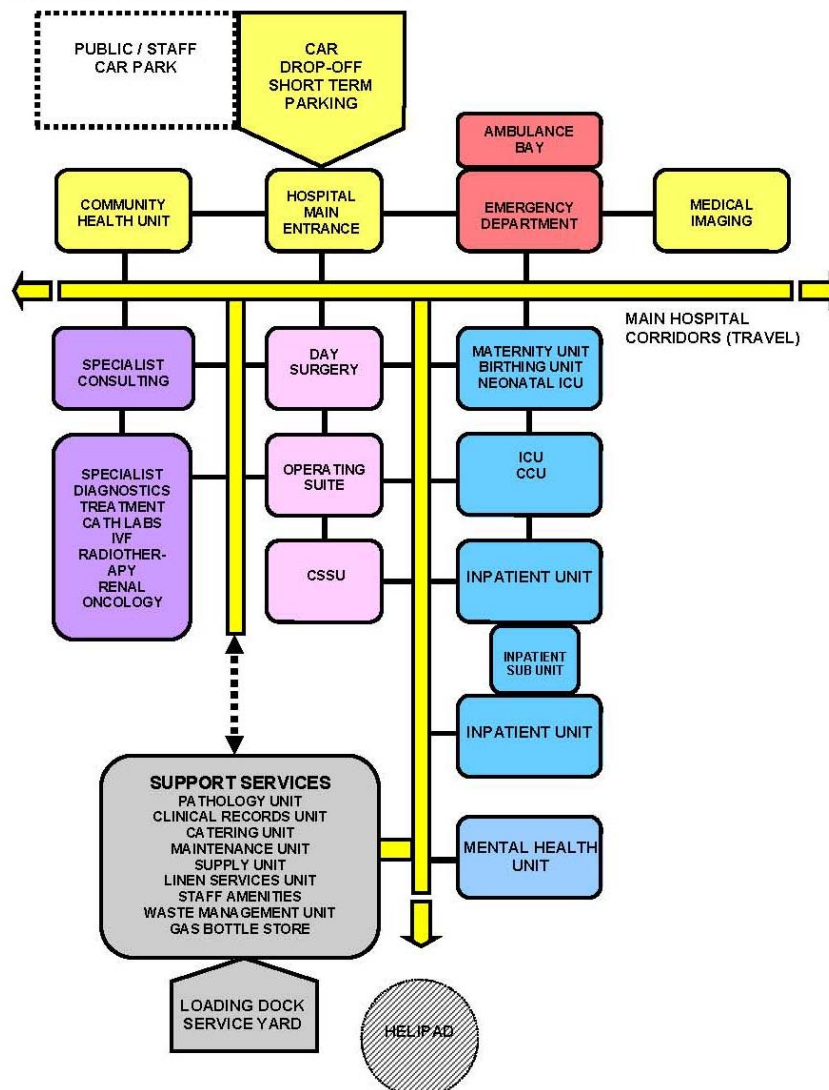
- None of the requirements of these Guidelines are compromised in the remaining open sections
- The open sections comply with other statutory requirements, such as fire egress
- The open patient care sections maintain the level of observation required by these Guidelines
- In the closed sections, lights and air-conditioning can be shut off independently from other areas
- The closed sections are not required as a thoroughfare for access to other functions
- Nurse Call and other communication systems can adapt to the shut-down mode appropriately
- The shut-down strategy allows access to items requiring routine maintenance.

Open-Ended Planning

A health facility designed within a 'finite' shape, where various departments and functions are located with correct internal relationships may look and function very well at first, however any expansion will be difficult. Some expansion requirements can be accommodated in new external buildings with covered links but over time the site will become complicated with random buildings and long walkways.

The opposite of this scenario is to use 'Open Ended Planning' – planning models and architectural shapes that have the capability to grow, change and develop additional wings (horizontally or vertically) in a controlled way. As an example, a typical health facility flow diagram which promotes Open Ended Planning is represented below.

NOTE: ALL FACILITIES MAY NOT BE PRESENT IN EVERY HOSPITAL



Below are some of the concepts involved in Open Ended Planning Policies:

- Major corridors should be located so that they can be extended outside the building
- As far as possible, FPU should have one side exposed to the outside to permit possible expansion
- If a critical FPU must be internal, it should be adjacent to other areas that can be relocated, such as large stores or administration areas
- External shapes should not be finite
- External shapes should be capable of expansion
- Finite shapes may be reserved for one-off feature elements such as a Main Entrance Foyer
- Roof design should consider expansion in a variety of directions
- Avoid FPUs that are totally land-locked between major corridors
- Stairs should not be designed to block the end of major corridors
- The overall facility flow diagram should be capable of linear or radial expansion whilst keeping all the desirable relationships intact
- Fixed internal services such as plant rooms, risers, service cupboards should be placed along major corridors rather than in the center of FPUs.

Open Ended Planning Policies can be applied to entire facilities as well as individual FPUs.

Modular Design

This is the concept of designing a facility by combining perfectly designed standard components. For example, a designer may create a range of Patient Bedrooms, a range of Utility Rooms and other common rooms that are based on a regular grid such as 600mm. These rooms can then be combined to create larger planning units such as an Inpatient Unit.

The Inpatient Unit can then be used as a module and repeated a number of times, as required.

This approach, in the hands of a skilled designer, has many benefits as modules can be designed only once to perfection and repeated throughout the facility. No redesign is necessary to adjust to different planning configurations, instead the plan is assembled to adapt to the modules with errors in both design and construction minimized.

The opposite to this approach is to start from a different architectural shape for each FPU, divide it into various shapes for the rooms, then design the interior of each room independently. This approach, in the hands of a skilled designer, can also result in satisfactory solutions but at a higher risk of errors and at a greater cost. For example, in a typical health facility, one might find 10 Dirty Utility Rooms which are entirely different.

Modular Design should not necessarily be seen as a limitation to the designer's creativity, but a tool to achieve better results. Designers are encouraged to consult with clients and user groups to agree on perfect modules, then adopt them across all FPUs.

Universal Design

This concept is similar to Modular Design. Universal Design refers to Modules (or standard components) designed to perform multiple functions by management choice.

For example, a typical single Patient Bedroom can be designed to suit a variety of disciplines including Medical/Surgical/Maternity and Orthopedics. Such a room can be standardized across all compatible Inpatient Units, permitting a change of use between departments if the need arises. Universal Design must take into account the requirements of all compatible uses and allow for all of them. The opposite of this policy is to 'specialize' the design of each component to the point of inflexibility.

Other examples of Universal Design are as follows:

- Universal Operating Rooms which suit a range of operations
- Bed cubicles in Day Surgery which suit both Pre-operative and Post-operative functions
- Offices which are standardized into only a limited number of types for example 9m² and 12m²
- Toilets may all be designed for disabled access or as unisex.

The main point of Universal Design is to resist unnecessary variation in similar components, where the change in functionality can be accommodated in one standard design.

Single Handing

It is common practice to design identical and adjoining planning modules in mirror image, as this is believed to be more economical. This is most common in the assembly of Patient Bedrooms with Ensuites.

The concept of Single Handing is the exact opposite. Single Handing refers to situations where mirror image (Handing) may not be necessary.

In areas requiring a high level of staff training, such as in operating suites, it may be more appropriate to 'hand' all key rooms in an identical manner. This makes the task of staff training easier and may also reduce the possibility of mistakes.

In a hypothetical example, a staff member entering any operating room, regardless of its location and approach from the corridor will find the service panel on the left, X-Ray viewer on the right and door to the Sterile Stock Room in the front.

In another example, at micro level, medical gases may always be located to the left side of the patient's bed-head, regardless of the direction of approach.

Note: Single Handling is a matter of individual choice and may not suit all conditions.

Natural Disaster

All health facilities should be capable of continued operation during and after a natural disaster, except in instances where a facility sustains primary impact. This means that special design consideration is needed to protect essential services such as emergency power generation, heating and/or cooling systems, water supply etc. Typical problems such as disruption to public utilities including water or sewer mains and energy supplies may affect the operation of onsite services.

Appropriate construction detailing and structural provision shall be made to protect occupants and to ensure continuity of essential services in areas where there is a history of earthquakes, cyclones, flooding, bushfires or other natural disasters.

Consideration shall be given to possible flood effects when selecting and developing a site. Where possible, facilities shall NOT be located on designated flood plains. Where this is unavoidable, take extra care when selecting structural and construction methodology and incorporate protective measures against flooding into the design.

Facilities shall be designed and constructed to withstand the minimum earthquake design loads on structures.

In cyclonic areas, special attention shall be given not only to protection against the effects of the direct force of wind (structural detailing, special cladding fixings, cyclonic glazing etc.) but also against such things as wind-generated projectiles (trees, cladding, fencing etc.) and localized flooding.

In all cases, effective long-range communications systems which do not rely on ground lines to function, are essential.

Consultation with Emergency Services is recommended to ensure arrangements are in place for emergency long-range communications assistance in the event of emergency situations or a major disaster.

4.3 Local Design Regulations

Typical design criteria for health facilities in the United Arab Emirates include the following:

- Access to Recovery areas for relatives
- Separation of male and female recovery areas
- Separation of male and female waiting areas
- Larger family waiting areas
- The provision of prayer rooms
- Independent male and female Inpatient Unit accommodation.

Prayer Rooms

The typical health facility should respect the local customs of the population. Prayer Rooms in evenly spread locations throughout the facility are required. There should be separate Prayer Rooms for males and females. The following considerations should be given to Prayer Rooms:

The location of the Prayer Room should be in an accessible area but away from noise, distraction and heavy clinical traffic

Orientation of the Prayer Room is important; appropriate location of entrance into the Prayer Room is essential

An Airlock to the Prayer Room is desirable; this may accommodate hand basin for ablution, shoe racks, bag lockers and coat hooks, as deemed necessary

Appropriate finishes on the floor and walls is desirable

Windows are desirable.

4.4 Land Area Measurement Methodology and Definitions

Building Footprint

Building Footprint represents the Ground Floor Area (which is the Gross Floor Area of the Ground Floor level).

For External Services allow the following areas:

- External Services (cables, pipes, water tanks, etc.) = 15% of Ground Floor Area
- Footpath/s = 10% of Ground Floor Area
- Landscaping = 15% of Ground Floor Area
- Total allowances for external area (except parking) = 40% (open space excluding car park).

Land Area

Land Area required for a health facility represents:

Ground Floor Area (GFA of the Ground level) + Total Allowance for External Services (40%) + Car Parking Allowance (35m² per car, if on ground level).

4.5 Floor Area Measurement Methodology, Definitions and Diagrams

Within these Guidelines, room areas, departmental boundaries, Travel and Engineering are defined and calculated according to the following standards.

4.5.1 How to Measure Floor Areas

To measure drawings, the following measurement technique will apply.

Rooms

Room areas are measured as follows:

- To the inside face of outside walls
- To the center of walls to adjoining rooms
- To the full thickness of corridor walls facing rooms
- To the center of departmental boundary walls (except where boundary wall adjoins a corridor).

Areas not included are:

- Circulation % (represented by departmental corridors)
- Service risers, service cupboards and Plant Rooms
- Fire hose reels, fire stairs, lift shafts.

Departments

The gross FPU (Departmental) area is the sum of the room areas within the FPU plus circulation – internal corridors, measured as follows:

- FPU areas are measured to the face of corridor walls
- To the inside face of outside walls.

Areas not included are:

- Service risers, service cupboards and Plant Rooms
- Fire hose reels, fire stairs, lift shafts.

Travel

Travel includes:

- Corridors between Departments (FPUs), measured as follows:
 - To the face of corridor walls
 - To the inside face of outside walls
- Stairs including fire stairs
- Internal fire stairs and ramps.

Areas not included are:

- Service risers and cupboards
- Fire hose reels, lift shafts
- Plant Rooms.

Engineering

Engineering includes:

- Plant Rooms, fire hose reels and service cupboards, measured as follows:
 - To the center of adjoining walls
 - To the inside face of outside walls
 - To the full thickness of riser walls.

Areas not included are lift shafts (the void area).

4.5.2 *Impact of Wall Thickness*

The minimum room sizes in these Guidelines assume wall thicknesses of 100mm. For wall thicknesses of more than 120mm, the minimum area of the room (as measured in accordance with these Guidelines) shall be increased to compensate for the greater wall thickness. Refer to Area Measurement Diagrams attached below for a visual representation of these area measurements.

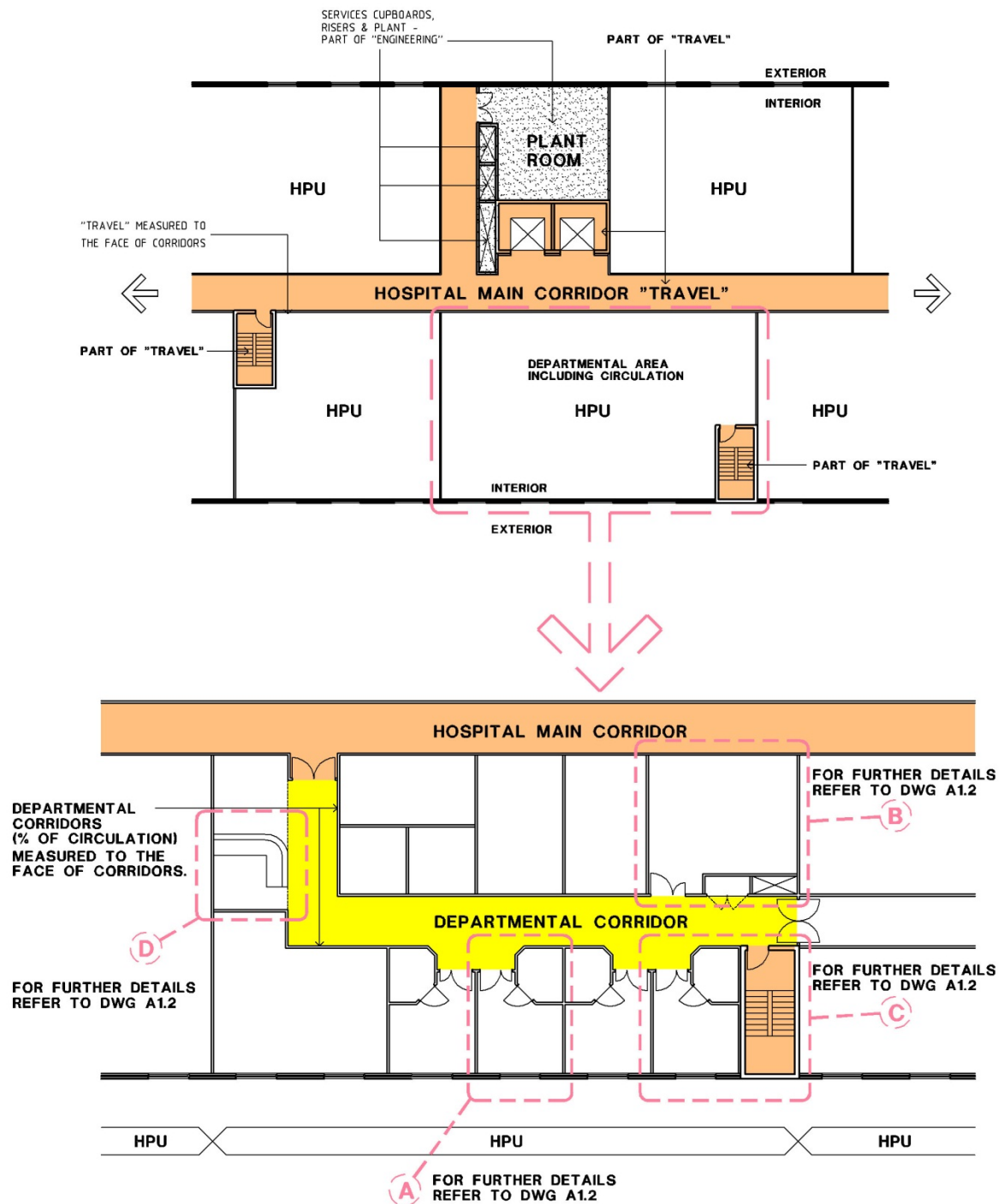
4.5.3 *Gross Floor Area*

Gross Floor Area (GFA) represents the sum of the Departmental areas on the floor, measured as described in Departments above plus Travel (measured as described in Travel above) plus Engineering areas (measured as described in Engineering above).

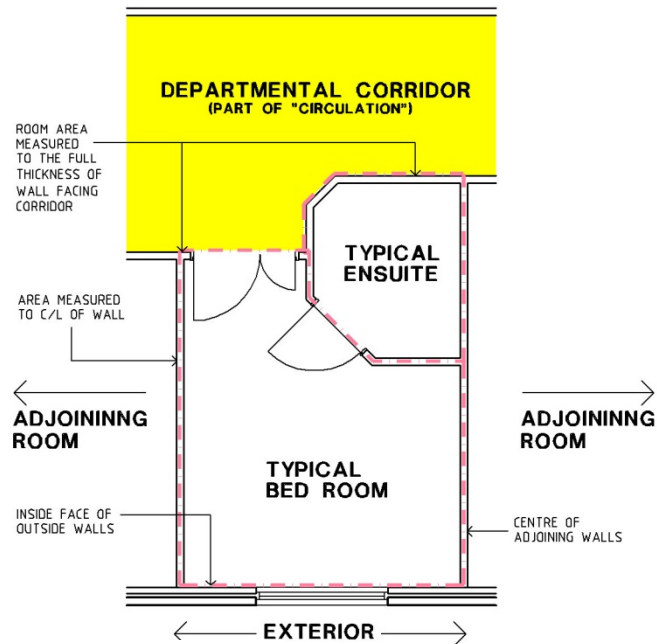
4.5.4 *Area Measurement Diagrams*

The above measurement descriptions are represented below diagrammatically.

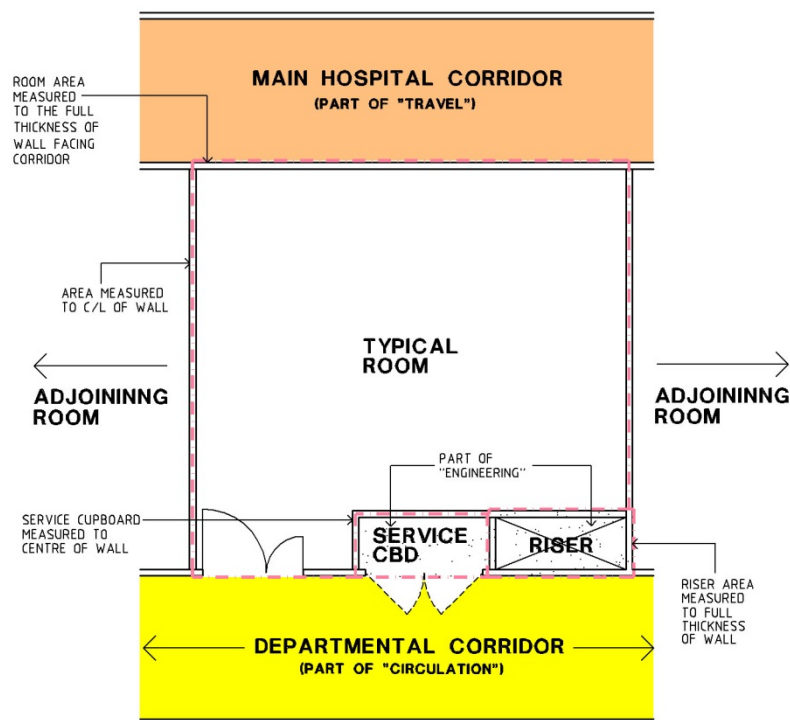
Measurement of Departments, Travel



Measurement of Rooms, Corridors, Travel

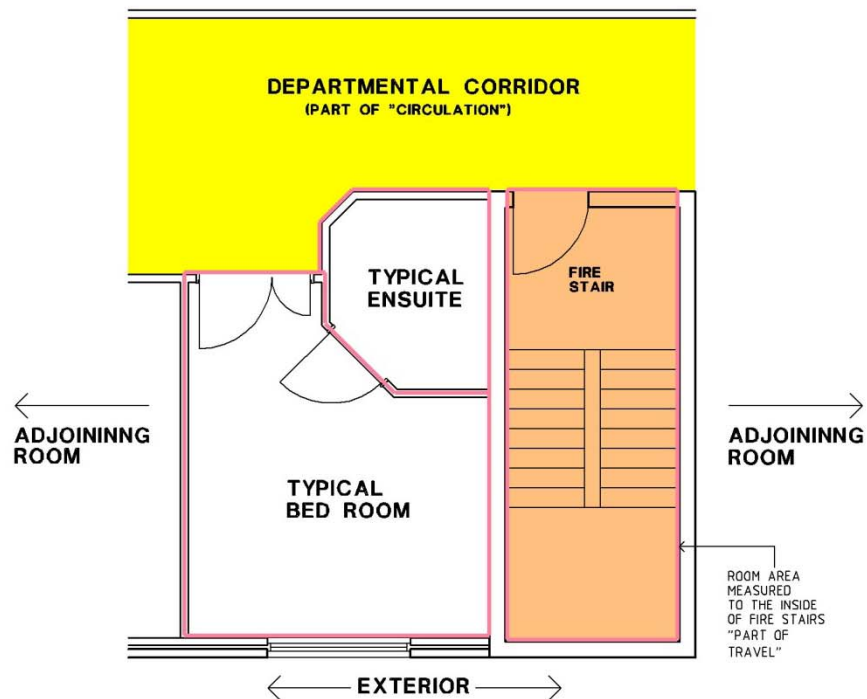


A – Typical Bed Room and Ensuite

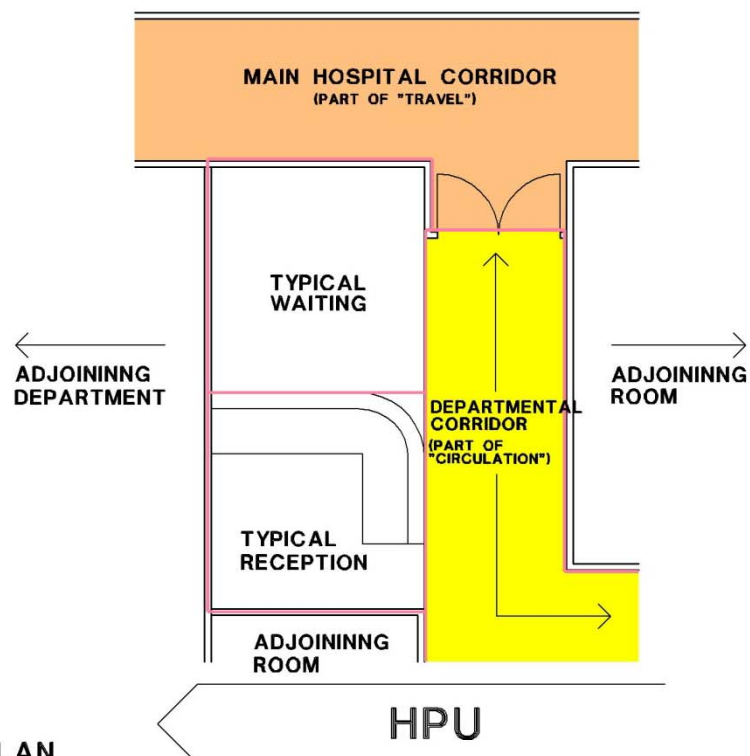


B – Typical Room adjoining Departmental Corridor and Travel Corridor

Measurement of Rooms, Corridors, Travel



C – Typical Bed Room adjoining Stairwell



D. PART PLAN

D – Typical Reception adjoining Departmental Corridor

4.6 Parking and Vehicular Access

4.6.1 Introduction

In a new health facility development, planned parking and vehicular access is essential and should be provided based on health facility functions, available staff, community needs and space available.

The parking should provide an adequate number of spaces for vehicles including cars, commercial vehicles, emergency vehicles and two-wheelers such as motorcycles, scooters and bicycles. Access to and from parking areas should meet applicable disability standards and other relevant local safety standards.

4.6.2 General Design Guidelines

Physical Location

Various circumstances may dictate the location of the parking such as:

- Location of the Emergency Department
- Location of the Main Waiting area
- Proximity to staff, patients and other users
- Practicality of consolidated parking versus spread-out parking
- Transport policy objectives determined by the local Road Transportation Authority
- Any other specific services offered at the health facility.

Physical Characteristics

The physical characteristics of a car park must meet the needs of different types of vehicles in use or expected to be in use.

For private and emergency vehicles, the car park or drop-off areas should adhere to local building authority guidelines. For emergency areas, designated ambulance drop-off and parking is essential for the safety and well-being of patients and staff. Clear access ways and designated parking spots shall be demarcated to avoid misuse.

For commercial and service vehicles such as delivery and waste management trucks, loading docks should be designed that are compatible with the type of vehicles to be used or expected to be used in the future. Traffic controls may need to be provided to segregate vehicles according to their use. For example, loading/unloading areas for a 'Clean' delivery truck and a waste management truck. Similarly, access points and access ways through the site need to be designed so that patient access does not interfere with emergency and service vehicle access.

Disabled Access Parking

All access to and from the car park will need to adhere to applicable disability guidelines. Parking spaces for use by people with disabilities should be in accordance with such guidelines. A parking space for a person with a disability should consist of an unobstructed area with a firm and level surface and a fall not exceeding the minimum requirements of the local disability code. Space width and overlap allowances also need to be designed in accordance with such codes.

A continuous, accessible path of travel should be provided between each parking space to an accessible entrance/lift. Parking spaces should be identified by a sign incorporating the international symbol of access for people with disabilities.

Community Safety

Car parking and vehicular access ways should provide a safe environment for users. Clear sightlines should be provided throughout the car parking areas to enhance safety and prevent confusion. Car parks should be directly linked to accessible pedestrian pathways leading directly to the main building or reception areas. Adequate lighting is essential after-hours for patients and staff to access their vehicles. Communication and security systems may be installed in large car parks depending on the location, function and layout. Adequate traffic controls may be required to safely navigate pedestrian and vehicular traffic through the parking area; this could be achieved through signage or other electronic controls.

Access ways and parking spots for emergency vehicles should kept clear of any public interference for the wellbeing of both patients and the general public. Loading and unloading areas should follow minimum applicable standards for Occupational Safety and Health (OSH). This shall include adequate lighting, clear access ways and designated parking spots. Communications and security systems may be installed to monitor areas that have low frequency of visitors or vehicular access.

Landscaping and Signage

Car parks should generally be attractive and pleasant spaces that are aesthetically designed for public and private use. To avoid unattractive expanses of paving, vegetation may be used to soften the visual impact; landscaping should generally respect the terrain of the land.

Trees may be utilized to provide greenery as well as shade during summer months. Plants should be selected that have vigorous growth, longevity, minimal maintenance and ample shade. Care should be taken that sub-soil drainage is provided for all trees and adequate drainage is provided for surface water run-off from paved areas.

Wayfinding and signage are important elements that safely guide patients and staff to and from the health facility. Signage should prominently highlight pedestrian/disabled access ways. Clear directions to the nearest stairwell or lift should be posted at prominent locations or at proper intervals.

Proper signage also helps visitors to identify a particular location so that they are able to access their vehicles in an easy and timely manner. Care should be taken that exit and direction signs are clearly visible to avoid incidents and security systems may be installed to discourage miscreants.

Maintenance

The design of car parks and vehicular access ways should aim to achieve minimum maintenance. Elements such as signs, landscape, barriers etc. should be designed to ensure minimal maintenance and discourage vandalism. For example, sealed pavement may be used instead of gravel that requires constant maintenance.

4.6.3 Healthcare Facility and Community Land Use Policies

Travel associated with community and health facility land use covers a range of purposes including the journey to work, personal business and recreation. Modes of travel vary depending on the prevalent functions associated with the health facility. For example, the local authority may require a drop-off/pick-up area for public transportation. Some communities encourage sustainable lifestyles and may require bicycle parking or direct pedestrian access from main arterial roads. Ready access to public transport is often particularly important because of the absence of viable alternatives for the community.

The design of the health facility should ensure that due consideration is given to policies laid by the applicable authority with regard to community land use and the amenities required for such land use. The safety of all users at all times is essential and care should be taken that no safety hazards are created by the provision of access and parking facilities for a development.

4.6.4 Car Parking Calculations

Designers of health facilities should refer to local guidelines for calculating the number of parking spaces required for the facility.

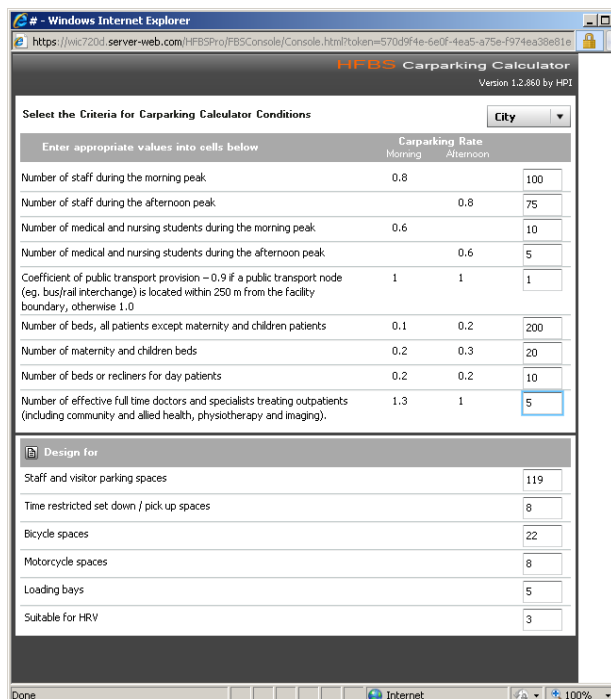
Parking Rates

The following car parking rates apply to health facilities (these rates represent the minimum requirements by SHCC; other applicable authority's requirements should be followed if they exceed these rates).

Land Use Description	Parking Rate	Unit
Hospital	1.49	Per Bed
Clinic and Medical Center	4.0	Per 100m ² GFA (Gross Floor Area)
Day Procedure Center	4.0	Per 100m ² GFA
Diagnostic Center	4.0	Per 100m ² GFA
Rehabilitation Center	4.0	Per 100m ² GFA
Pharmaceutical Facility	2.15	Per 100m ² GFA
General Retail Areas	2.15	Per 100m ² GFA
Office Areas	2.6	Per 100m ² GFA
Mobile Unit	4.0	Per 100m ² GFA
Mosque	6.26	Per 100m ² GFA
Library	2.1	Per 100m ² GFA

Health Facility Briefing System (HFBS) Car Parking Calculator

The Health Facility Briefing System (HFBS) provides a tool that designers can use to rapidly and accurately estimate the number of parking spaces required for cars, trucks and other vehicles. The tool is based on algorithms devised by transportation experts. Based on a set of nine questions related to the number of staff and beds, the tool is able to accurately predict the estimated car parking load for the health facility. HFBS can be accessed on the website: www.healthdesign.com.au



Select the Criteria for Carparking Calculator Conditions		
Enter appropriate values into cells below	Carparking Rate	
	Morning	Afternoon
Number of staff during the morning peak	0.8	100
Number of staff during the afternoon peak	0.8	75
Number of medical and nursing students during the morning peak	0.6	10
Number of medical and nursing students during the afternoon peak	0.6	5
Coefficient of public transport provision – 0.9 if a public transport node (eg. bus/rail interchange) is located within 250 m from the facility boundary, otherwise 1.0	1	1
Number of beds, all patients except maternity and children patients	0.1	0.2
Number of maternity and children beds	0.2	0.3
Number of beds or recliners for day patients	0.2	0.2
Number of effective full time doctors and specialists treating outpatients (including community and allied health, physiotherapy and imaging).	1.3	1

Design for	
Staff and visitor parking spaces	119
Time restricted set down / pick up spaces	8
Bicycle spaces	22
Motorcycle spaces	8
Loading bays	5
Suitable for HRV	3

Above: Car Parking Calculator – Health Facility Briefing System (HFBS)

4.6.5 Car Parking Design

Parking bays may be organized in a variety of arrangements including 30°, 45°, 60° and 90° with single or two-way aisles. The preferred parking angle is 90° which allows for the flexibility of two-way aisles.

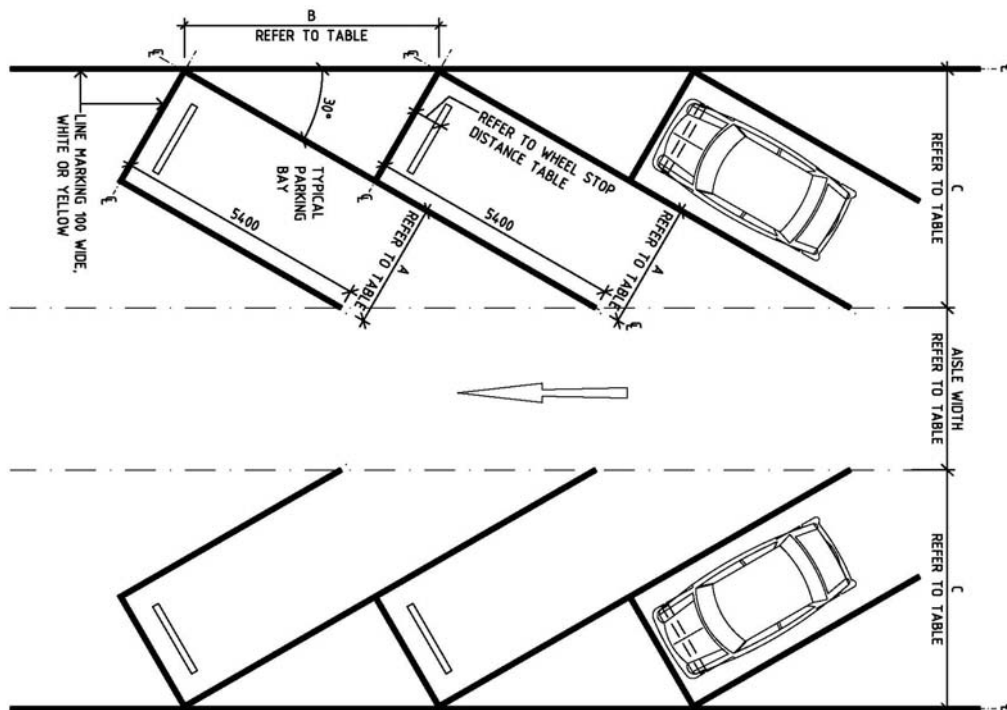
Allow an area of 35m² for a typical car parking space; this allowance includes the aisle space required.

Car Park Bay Dimensions

Provide the following minimum car parking bay dimensions:

Bays at 30°:

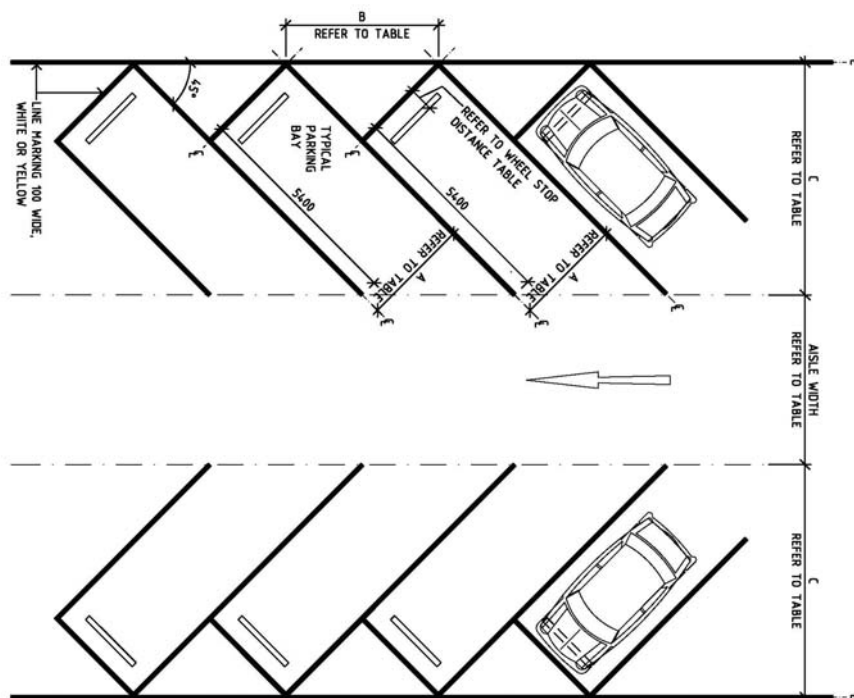
Classification	Dimension A mm Bay Width	Dimension B mm Bay Width	Dimension C mm Bay Length to wall or high kerb with no overhang	Dimension C mm Bay Length to low kerb which allows 600mm overhang	Dimension C mm Bay Length with wheel stops*	Aisle Width mm
Employee and Commuter parking; staff only (all day)	2100	4200	4400	4100	4500	3100
Hospital and Medical Centers (mix of patient and staff parking)	2500	5000	4400	4100	4900	2900



Above: Typical Car Parking Bays at 30°

Bays at 45°:

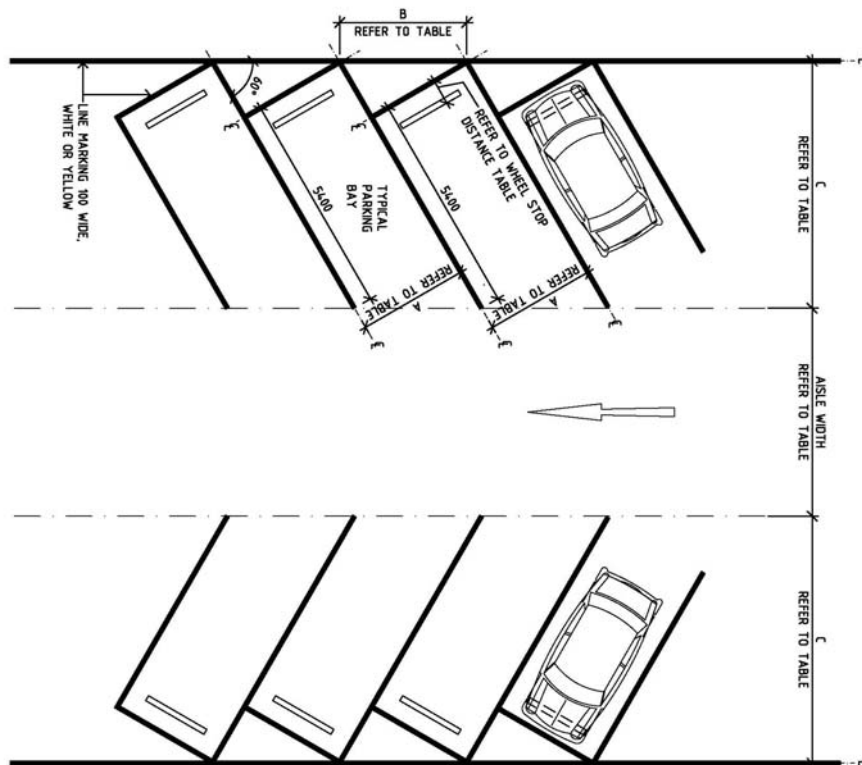
Classification	Dimension A Mm Bay Width	Dimension B Mm Bay Width	Dimension C Mm Bay Length to wall or high kerb with no overhang	Dimension C Mm Bay Length to low kerb which allows 600mm overhang	Dimension C Mm Bay Length with wheel stops*	Aisle Width mm
Employee and Commuter parking; staff only (all day)	2400	3400	5200	4800	5500	3900
Hospital and Medical Centers (mix of patient and staff parking)	2600	3700	5200	4800	5700	3500



Above: Typical Car Parking Bays at 45°

Bays at 60°:

Classification	Dimension A mm Bay Width	Dimension B mm Bay Width	Dimension C mm Bay Length to wall or high kerb with no overhang	Dimension C mm Bay Length to low kerb which allows 600mm overhang	Dimension C mm Bay Length with wheel stops*	Aisle Width mm
Employee and Commuter parking; staff only (all day)	2400	2750	5700	5100	5900	4900
Hospital and Medical Centers (mix of patient and staff parking)	2600	3000	5700	5100	6000	4300



Above: Typical Car Parking Bays at 60°

Parallel Parking Bays

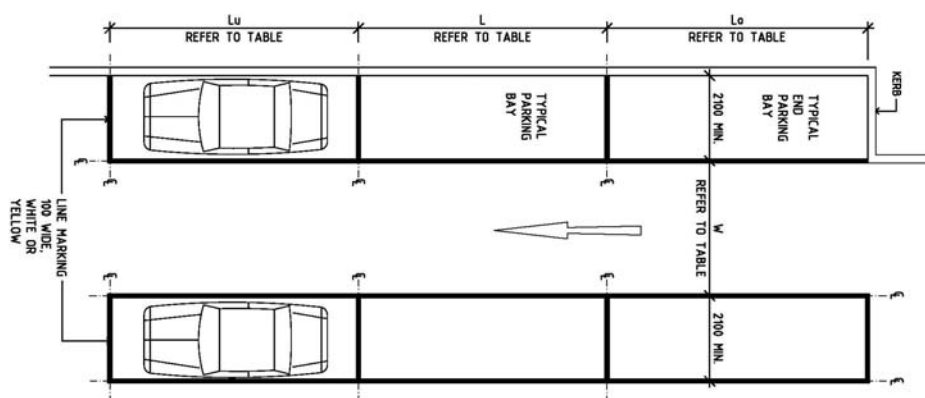
Provide the following minimum dimensions for parallel parking with a one-way aisle:

Aisle Width	Space Length	Space Length	Space Length
One way W	L	Obstructed end spaces L_o	Unobstructed end spaces L_u
3000	6300	6600	5400
3300	6100	6400	5400
3600	5900	6200	5400

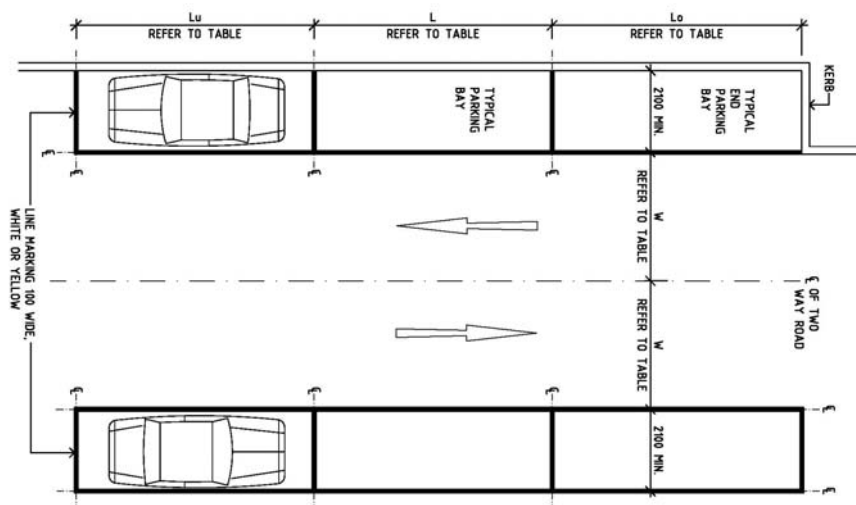
Parallel spaces shall be located at least 300mm clear of obstructions higher than 150mm such as walls, fences and columns. If the opposite side of the aisle is bounded by obstructions higher than 150mm, then the aisle width (W) should be increased by at least 300mm.

If a single space is obstructed at both ends the dimensions of the space shall be increased by 300mm.

For parallel parking on both sides with a two-way aisle, the aisle width identified for one-way traffic (W) above shall be doubled.



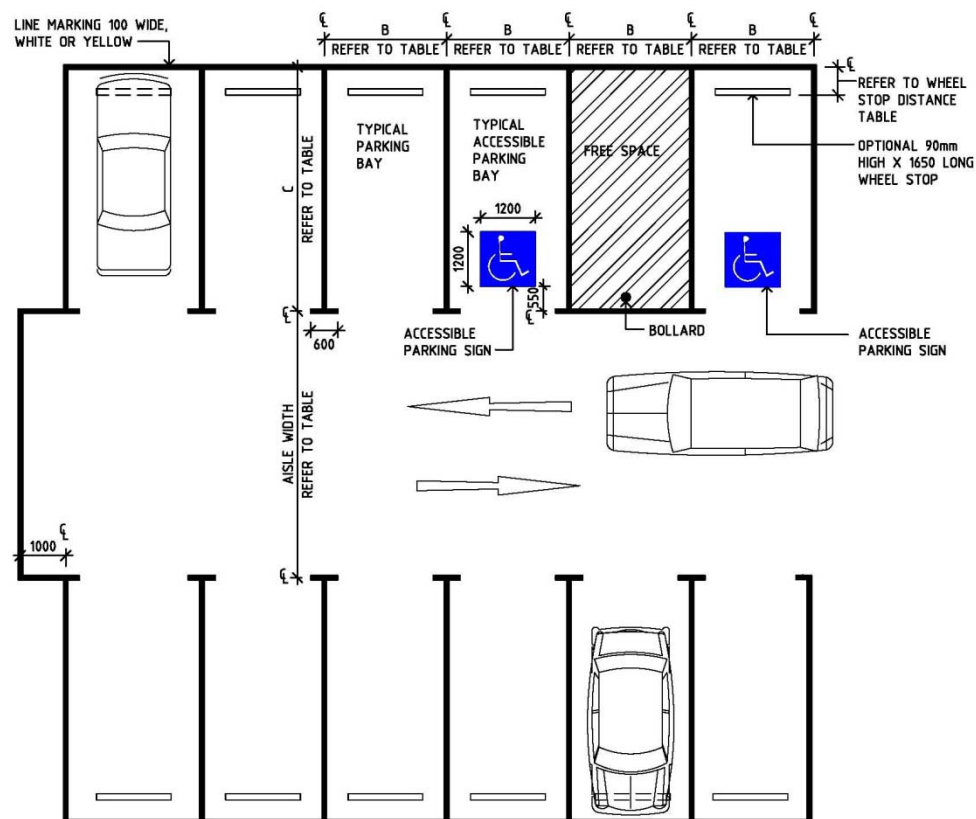
Above: Parallel Parking on Both Sides of a One-Way Aisle



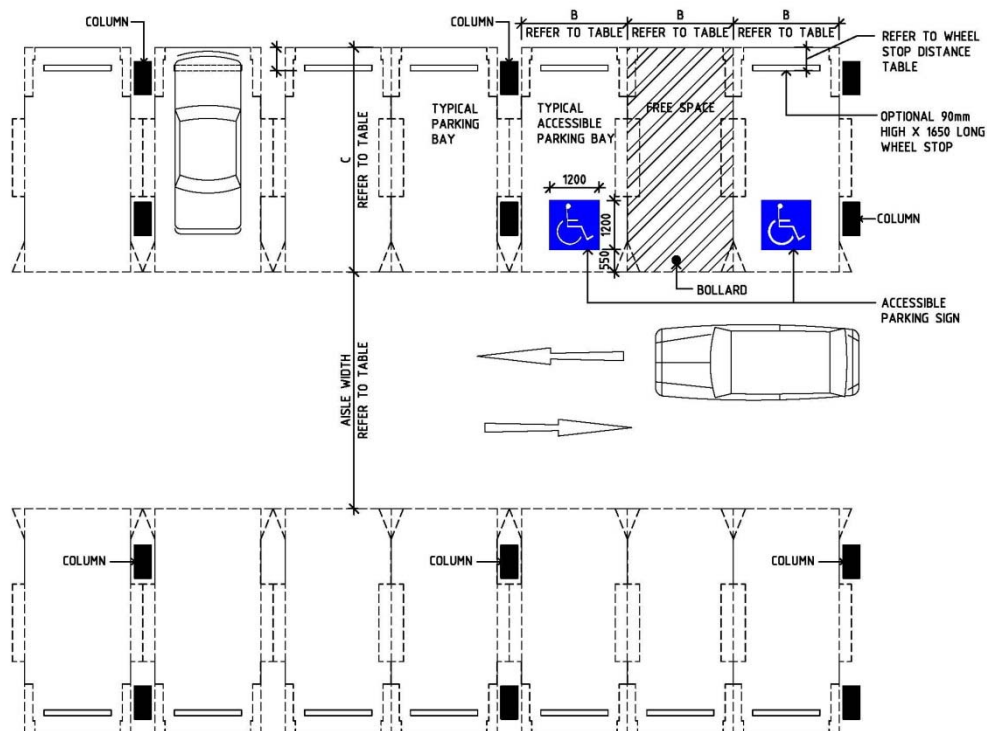
Above: Parallel Parking on Both Sides of a Two-Way Aisle

Bays at 90°:

Classification	Dimension A mm Bay Width	Dimension B mm Bay Width	Dimension C mm Bay Length to wall or high kerb with no overhang	Dimension C mm Bay Length to low kerb which allows 600mm overhang	Dimension C mm Bay Length with wheel stops*	Aisle Width mm
Employee and Commuter parking; staff only (all day)	2400	2400	5400	4800	5400	6200
Hospital and Medical Centers (mix of patient and staff parking)	2600	2600	5400	4800	5400	5800



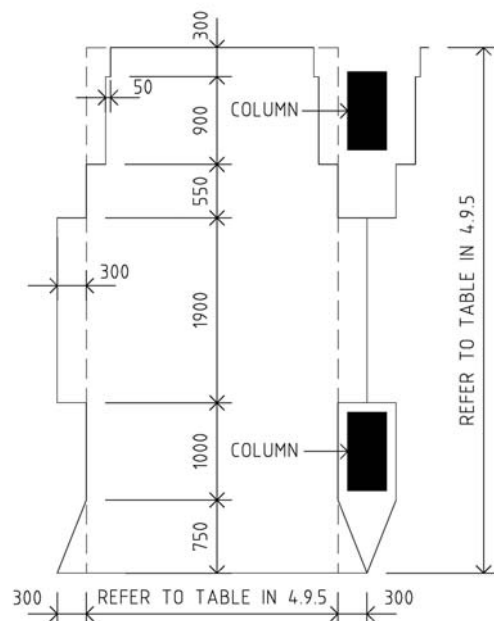
Above: Typical External Use Parking Bays at 90°



Above: Typical Internal Use Parking Bays at 900 Showing Clearances for Obstructions

Design Envelope For Internal Parking Bay

Use the template below to ensure adequate clearance around columns, walls and obstructions. This template must fit into any internal parking bay without obstruction for columns, walls and bollards.



Above: Template for Clearances within Parking Bay

Parking Aisles

Aisles for 90° bays need to allow for two-way traffic. Aisles for 30°, 45° or 60° angled bays shall be one-way traffic. Parallel parking bay aisles may be either one-way or two-way traffic. The width of aisles for angled parking bays will vary according to the width of the parking bays; wider bays require less aisle width.

Where there are blind aisles, the aisle shall extend one meter beyond the last parking bay. If the last parking bay is bounded by a wall or a fence, it should be widened by 300mm.

Wheel Stops

Wheel stops may be provided if necessary to limit the travel of a vehicle. Wheel stops should not be used in situations where they are in the path of pedestrians moving to and from parked vehicles or where pedestrians cross a car park. If required, wheel stops are installed at right angles to the direction of parking or where the ends of angled parking form a sawtooth pattern.

If wheel stops are required, install to the front of the car parking space according to the following dimensions.

Parking Direction	Wheel stop Distance to Front of Parking Space			
	Parking to Kerb ≤ 150mm high		Parking to Kerb > 150mm high or wall	
	90mm high wheel stop	100mm high wheel stop	90mm high wheel stop	100mm high wheel stop
Front in parking	630mm	620mm	830mm	820mm
Rear in parking	910mm	900mm	1110mm	1100mm

Accessible Parking Bays

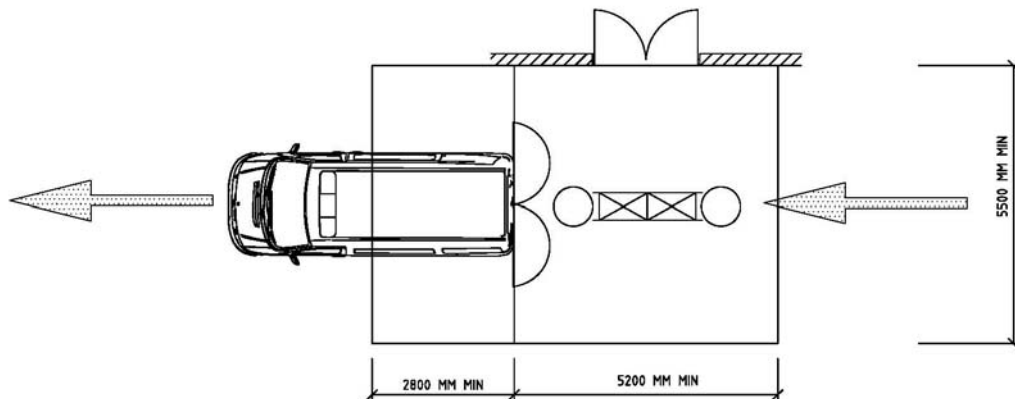
Accessible parking bays shall have the following minimum dimensions with a clearance height of 2500mm from the entry/exit to the bay.

Description	Width mm	Length mm
Angled Bays (45–90°)	2600	5400
Parallel Bays	3200	7800

A shared area should be provided to the side of the accessible parking bay for loading and unloading; two accessible bays may be located either side of a single shared space.

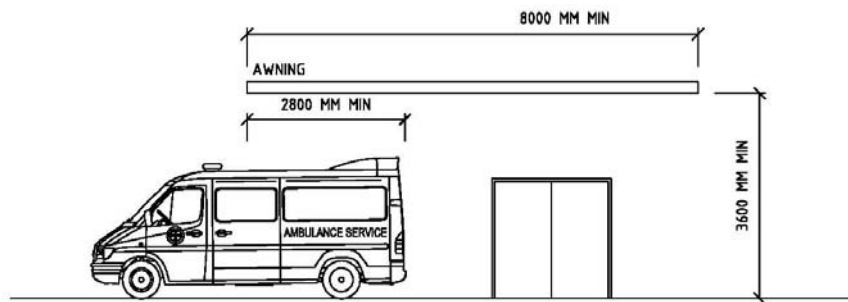
Ambulance Bays

Provide the following minimum drive-through area for ambulances:



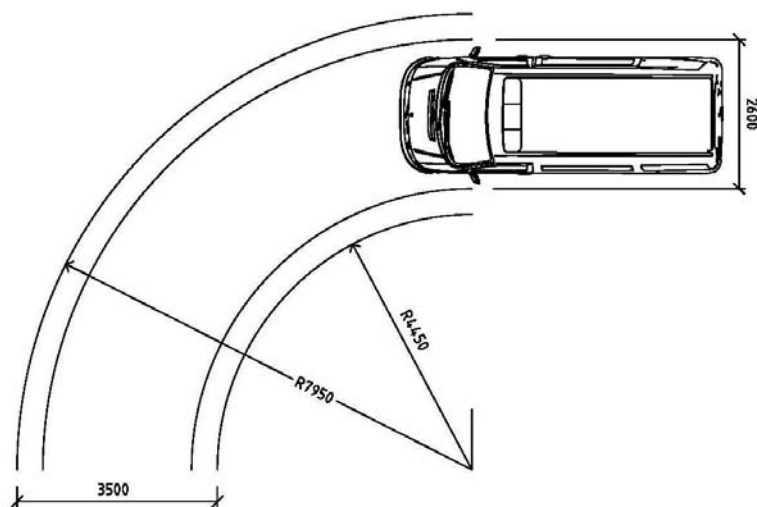
Minimum width is 5200mm; minimum depth is 5500mm.

The ambulance bay requires a covered space with a minimum length of 8000mm and height of 3600mm:



Ambulance Turning Circle

Ambulances will require the following minimum radius for turning:



For additional information on ambulance unit and requirements refer to the Emergency Unit FPU, Functional Areas section of these Guidelines.

5.0 Acceptable Standards and Guidelines

The design requirements of each FPU as well as various room types are also described in a number of international guidelines acceptable to SHCC. These are described in Part A.

For additional reference, three other international guidelines may be considered:

- The Facility Guidelines Institute, American Institute of Architects (AIA). '*Guidelines for Design and Construction of Health Care Facilities*'. Retrieved from website: www.fgiguideines.org
- Australasian Health Infrastructure Alliance. '*Australasian Health Facility Guidelines*'. Retrieved from website: www.healthfacilityguidelines.com.au
- NHS Estates Department of Health, UK. *Health Building Notes*.

Where one guideline is deemed to be inadequate in the coverage of certain facility types, another guideline may be consulted.

Functional Planning Units

6.0 Administration Unit

6.1 Introduction

6.1.1 *Description of the Unit*

The Administration Unit provides for the direction and management of the facility. This will involve administrative tasks, interviews and meetings by a range of executives, medical, nursing and support personnel.

The level and range of facilities provided for general office and executive administration functions will vary greatly depending on the size of the proposed facility, the range of services prescribed in the Operational Policy Statement and the management arrangements that will apply.

Provisions for the following administrative services shall be considered:

- Accounting and Finance
- CEO, General Manager and other administrative support staff
- Facility Management
- Human Resources and Payroll
- Education and Development staff
- Medical and Clinical Executives and support staff
- Nursing Executives and support staff.

6.2 Planning

6.2.1 *Operating Models*

The Administration Unit will generally operate during business hours. Meetings and functions being held after-hours will require access to be provided for both staff and visitors.

Depending on the size of the facility, the Administration Unit may be provided as a single unit for small facilities, or as separate functional units grouped according to services (medical, nursing, education etc.) in multiple locations for larger facilities.

6.2.2 *Planning Models*

Provision of daylight shall be maximized throughout the Unit, especially for those who spend most of their working hours in a single confined space. Offices should be provided with external windows where possible.

6.2.3 *Functional Areas*

Facilities shall be provided to accommodate the following administrative functions, according to the Operational Policies:

- General and/or individual office accommodation for appropriate clerical, administrative, medical and nursing personnel; where possible, open-plan workstations shall be considered
- Storage of office equipment, stationery and supplies
- Meetings and conferences as required
- Staff and support areas including Staff Rooms and toilets.

Administrative and Clerical staff shall have access to toilets and dining facilities, which may be shared with other hospital staff.

Functional Zones

For larger facilities where a single unit is not sufficient to accommodate all functions, the following services may be provided as smaller individual units:

- Executive Offices (may include Meeting/Boardroom, Pantry, Waiting and Reception area)
- Nursing Administration and Patient Services Unit
- Clinical Administration and Medical Services Unit
- Accounts and Finance Unit
- Human Resources and Payroll Unit (Occupational Safety and Health staff may be included; Medical and Nursing personnel may be accommodated in separate units)
- Information Technology and Communications, offices and training rooms
- Facilities Management Unit
- Education and Development Unit.

6.2.4 *Functional Relationships*

External

Administration facilities should be provided, where possible, in reasonable proximity to the main entrance of the facility but not necessarily on the ground floor.

Internal

If several discrete units are provided, it is recommended to locate the Executive suite and the Finance Unit adjacent to each other.

6.3 Design

6.3.1 *Environmental Considerations*

Natural Light

Maximize provision of natural light to areas where staff workstations/offices are located.

Privacy

Privacy must be considered where confidential conversations are likely to take place. Acoustic privacy will be required in offices, meeting and interview rooms.

Acoustics

Acoustic performance shall be high within the Unit, particularly conference and meeting rooms. Reverberation times and sound levels shall be designed to meet the function of each space.

6.3.2 *Space Standards and Components*

Ergonomics

Refer to Part C of these Guidelines.

6.3.3 *Safety and Security*

The Administration Unit requires the following security considerations:

- Doors to all offices shall be lockable
- Rooms located on the perimeter of the Unit shall be locked at any time when they are not occupied by staff
- Rooms used for storing equipment and files must be lockable
- Provision of after-hours access and security for staff.

6.3.4 *Finishes*

Refer to Part C of these Guidelines.

6.3.5 *Fixtures and Fittings*

Refer to Part C of these Guidelines and Standard Components for information on fixtures and fittings.

6.3.6 *Building Service Requirements*

Provide IT/Communication facilities including telephone lines, data connections, teleconferencing and videoconferencing as required within the Unit.

Refer also to Part E of these Guidelines.

6.4 Components of the Unit

6.4.1 *General*

The Administration Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components in compliance with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

6.4.2 *Non-Standard Components*

Executive Offices

Description and Function

The Executive Offices will be provided for facility or service directors and will be a large room to allow for small meetings within the office.

Location and Relationships

The Executive Offices may be provided as a zone within the Administration Unit with a Reception and secretarial offices in close proximity.

Considerations

Refer to Standard Components Office – CEO for the basic requirements. In addition, the Executive Offices may include the following:

- Executive style furniture and fittings including joinery
- Entertainment facilities including television, DVD
- Beverage bay including refrigerator within the room or immediately adjacent
- Closet or wardrobe for items of clothing, briefcase, small items of luggage
- Comfortable seating that may include sofa lounges.

6.5 Schedule of Accommodation

Typical Administration Unit suitable for a tertiary level hospital

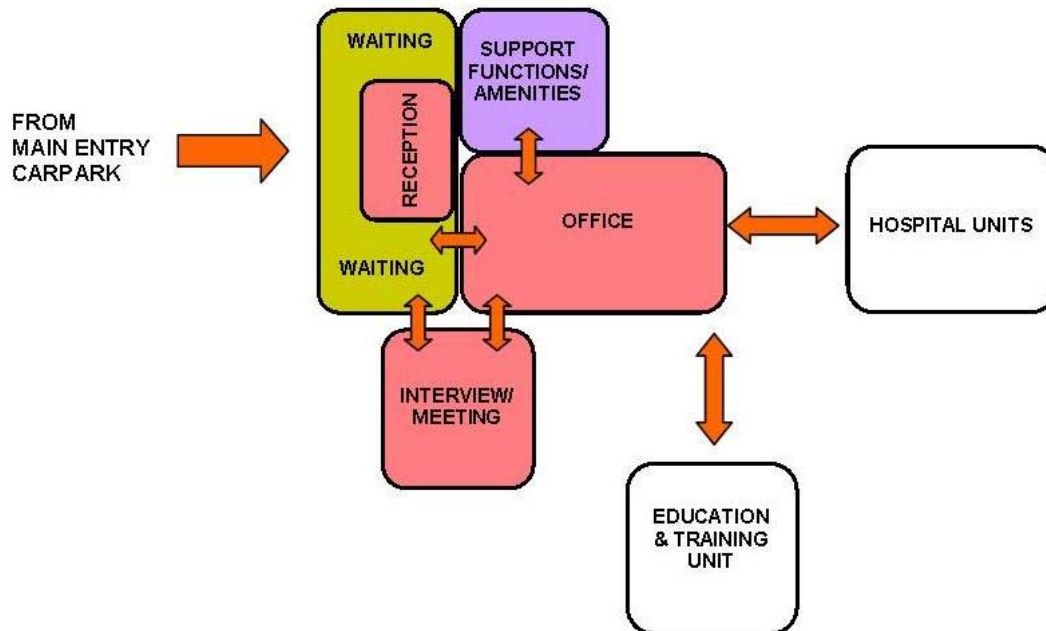
ROOM/SPACE	Standard Component	RDL 3 Qty x m²			RDL 4 Qty x m²			RDL 5/6 Qty x m²			Remarks
Entry/Reception											
Reception/Clerical	RECL-10-SJ							1	x	10	One staff
Waiting – Male/Female	WAIT-10-SJ							2	x	10	Separate areas for Male and Female; 1.2m² per person
Waiting – Family	WAIT-20-SJ							1	x	25	As required
Toilet – Public, Male/Female	WCPU-3-SJ							2	x	3	If not available nearby
Executive Offices/General Administration											
Office – Executive	OFF-CEO-SJ Sim							1	x	18	
Office – CEO	OFF-CEO-SJ							2	x	15	CEO, COO or Deputy
Office – Directors (Divisional)	OFF-S9-SJ Sim							5	x	12	Nursing, Medical, Finance, HR, Support Operations
Office – Deputy Directors/Manager	OFF-S9-SJ Sim							5	x	12	Nursing, Medical, Finance, HR, Support Operations
Office – Workstation (Secretarial)	OFF-WS-SJ							6	x	5	CEO, Nursing, Medical, Finance, HR, Support Operations
Office – PABX/Operator	OFF-S9-SJ							1	x	9	
Nursing Administration											
Office – Supervisors (Nursing)	OFF-S9-SJ							4	x	9	Quantity to suit staff numbers
Office – Workstation (Nursing)	OFF-WS-SJ							4	x	5	QM, Education etc.; Quantity to suit staff numbers
Accounts/Finance											
Office – Managers (Finance)	OFF-S9-SJ							2	x	9	Finance and Accounts
Office – Workstation	OFF-WS-SJ							8	x	5	Accounts support; According to staffing numbers
Human Resources											
Office – Managers (HR)	OFF-S9-SJ							2	x	9	Quantity to suit staff numbers
Office – 2-Person Shared	OFF-2P-SJ							2	x	12	HR administrative staff; Quantity to suit staff numbers
Office – Workstation	OFF-WS-SJ							3	x	5	HR Clerical support; Quantity to suit staffing numbers
Interview Room								2	x	9	For Interviews with 2–3 persons
IT/Communications											
Office – Managers (IT/Communications)	OFF-S9-SJ							2	x	9	Quantity to suit staff numbers
Office – 4-Person Shared	OFF-4P-SJ							1	x	20	IT support/Technical staff
Server Room	COMM-SJ Sim							1	x	30	
Computer Training Room	COTR-SJ							1	x	24	
Support Areas											
Mail Room								1	x	20	Sorting and mail boxes
Meeting/Interview Room	MEET-9-SJ							2	x	9	For Interviews with 2–3 persons
Meeting Room – Medium/Large	MEET-L-15-SJ (Sim)							2	x	20	For meetings with 8–10 persons
Pantry	PTRY-SJ							1	x	8	Optional for functions; Close to meeting rooms
Store – Files	STFS-10-SJ							3	x	10	Personnel Files, Accounts files, Minutes, Documents
Store – Photocopy/Stationery	STPS-8-SJ							1	x	8	

ROOM/SPACE	Standard Component	RDL 3 Qty x m²			RDL 4 Qty x m²			RDL 5/6 Qty x m²			Remarks
Staff Areas											
Staff Room	SRM-15-SJ Sim							1	x	30	Optional, Includes Beverage bay
Toilet – Staff (Male/Female)	WCST-SJ							2	x	3	
Net Department Total								672			
Circulation %								25			
Grand Total								840.0			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

6.6 Functional Relationship Diagram



6.7 Further Reading

- Australasian Health Facility Guidelines (Aus.). 'Australasian Health Facility Guidelines', 2010. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 120 Administration Unit Revision 4' 2012. Retrieved from website: www.healthfacilitydesign.com.au 2014
- Standards Australia (Aus.). 'Handbook: Ergonomics – The Human Factor, A Practical Approach to Work Systems Design, SAA HB5'. Retrieved from website: www.standards.org.au 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

7.0 Admissions Unit

7.1 Introduction

7.1.1 Description

The purpose of the Admissions Unit is the admission of patients, interview of patients as required and completion of the necessary documentation.

The Admissions Unit will perform the following functions:

- Patient pre-registration prior to admission
- Patient admissions
- Patient discharge planning
- Handling of patient transfers from other facilities
- Demand management
- Management of medical records for admission purposes
- Collection of financial information for the Finance section.

These optional services may be considered:

- Making appointments for patient admission
- Cashier (alternatively, a centralized Cashier for the entire facility may be located near the Admission Unit)
- Allocation of beds (or there may be a dedicated Bed Manager located elsewhere).

Other clinical functions required during the assessment phase which may be located in a separate Pre-admission Clinic include:

- Collection of patient information (e.g. clinical condition and medical history)
- Processing of all relevant paperwork relating to admissions
- Providing referrals for diagnostic consultations (e.g. X-Ray, blood test, ECG)
- Providing referrals to anesthetist, allied health professionals where necessary
- Providing education to patients regarding the anticipated clinical pathway.

The range of facilities provided for Admissions will vary depending on the size of the proposed facility and the range of services prescribed in the Operational Policy. Admissions functions may also be accommodated in the Main Reception area.

7.2 Planning

7.2.1 Operational Models

There are two types of admission to a healthcare facility:

- Planned patients who have made pre-bookings at the facility
- Unplanned patients who usually require immediate care at the Emergency Unit.

Planned admissions can be either multi-day inpatients or day-only patients. Unplanned admissions (after-hours emergency care) are commonly handled by the Emergency Unit directly.

Currently, the provision of a Pre-admissions Clinic is becoming common in many healthcare facilities. This can streamline the admission process for all pre-booked admissions where clinical pre-assessment is required. This shall be designed as an outpatient service.

7.2.2 Planning Models

The Admission Unit may be a stand-alone Unit or co-located with the Main Reception area near the Hospital entrance.

Where Pre-admission Clinics are provided, they shall be located in the Unit where the procedure will occur. An alternate option is to collocate this unit with other outpatient services.

There shall always be close access to public amenities and waiting areas.

Admissions Unit

The size of the Admissions Unit can vary greatly depending on its location, the size of the facility, and operational policies. It is possible to combine counters, offices, cubicles and workstations in an open-plan environment to interact with clients. However, privacy (acoustic and visual) is the major concern to be considered when designing the Unit.

The front counter area (reception area) shall have an area behind to organize and complete paperwork. This area will require easy access to printer, fax (if applicable), photocopier, record storage and stationery storage. Workstations and offices for staff shall be located in close proximity but separated from the front counter. Private and enclosed interview rooms shall be provided to conduct confidential interviews with clients. Space within interview rooms shall be adequate to accommodate patients with different levels of mobility.

Pre-Admission Clinic

Pre-admission Clinics, where provided, will vary in size and configuration. They can range from a small clinic with a few consulting and interview rooms to a much larger clinic to perform examinations of patients by clinical staff. In all occasions, they shall have access to other diagnostic testing units. Access to Allied Health service will be required in bigger facilities. A reception area for initial patient consultation and separate waiting areas (for male and female) must be provided.

7.2.3 *Functional Areas*

Functional areas in Admissions Units may include:

Public Areas

- Patient waiting areas (separate for male and female)
- Public Amenities (may be located in adjoining areas)
- Admissions Areas
- Admissions counter
- Cashier (may be located elsewhere)
- Interview rooms and cubicles for patient admissions and interviews; interview areas shall allow for private discussions
- Staff and support areas (offices and amenities).

Functional areas in Pre-admissions Clinics may include:

Entry Areas

- Patient waiting areas (separate for male and female)
- Public Amenities (may be located in adjoining areas); may be shared with adjacent areas if convenient
- Pre-Admissions Clinic
- Reception
- Interview Rooms for private patient interviews;
- Consult rooms for patient assessment and examination; these rooms will be used by Anesthetists, Nurse Specialists and Allied Health professionals. Quantity is dependent on the size of the clinic. If ECGs are to be performed in the Consult rooms, space will be required for storage of equipment
- Treatment Room
- Change cubicle, for Treatment Room, depending on the pre-admission assessments undertaken
- Staff and support areas including Utilities, Store Rooms, Offices and amenities.

Patient Waiting Areas

Separate waiting areas for males and females shall be provided and sized accordingly to the expected number of patients on a daily basis. There shall be sufficient space for wheelchairs, prams, trolleys etc. A separate waiting for families including a play space for children may also be appropriate. Facilities to display reading materials, information pamphlets, and entertainment system (TV, speakers for music) shall be provided.

Patient Interview Cubicle Rooms

Configuration and design of Interview Rooms shall provide a high level of visibility from outside without compromising privacy. The rooms will require acoustic privacy, for confidential discussion between staff and patients.

Cashier

A Cashier may be incorporated within the Admission Unit if required by the operational policy. If provided, the following factors shall be considered carefully during planning stage:

- Accessibility during normal business hours and after-hours
- Safety provisions for Staff
- Secured storage where money is handled.

7.2.4 *Functional Relationships*

External

The Admissions Unit shall ideally be located adjacent to the Main Reception area with close access to public amenities and waiting areas.

The Pre-admissions Clinic, where provided, may be located in the Ambulatory Care Unit or other units where procedures will be performed such as Day Surgery Unit, Perioperative Unit etc. Pre-admissions will require readily available access to Diagnostic Units including Pathology, Medical Imaging and Pharmacy.

Internal

Decentralized admission areas and pre-admission areas shall be configured to be clear and prominent for easy wayfinding by patients and visitors.

If the Cashier is to be located with an Admissions Unit, access to security is recommended.

The Pre-admission clinic reception area must be designed in an efficient way to permit easy circulation to and from consultation areas for patients. Staff areas shall be sized accordingly and provide sufficient level of both visual and acoustic privacy.

7.3 Design

7.3.1 *General*

Admissions Unit and Pre-admission Clinic shall be located with easy access to a vehicle drop-off zone. The Admissions Unit and Pre-admission Clinic shall be designed to accommodate all types of patients including elderly, wheelchair-bound, patients using mobility aids, and children.

7.3.2 *Environmental Considerations*

Natural Light

Natural light is recommended in the Admissions Unit but not essential. Presence of natural light can promote a pleasant environment for patients, visitors and staff.

Privacy

Careful consideration of privacy and patient comfort is required to reduce discomfort and stress for patients.

Provision of private interview rooms to conduct confidential discussions between patients and staff shall be considered. Location of the Unit within the Facility and workstations within the Unit shall be placed away from public corridors and thoroughfares to ensure privacy.

Acoustics

In area where confidential patient information is shared, acoustic privacy must be maximized. If Admissions Unit is collocated at the Main Reception, the interior design of these areas shall include measures to control ambient noise.

In the Admissions area, provision of an augmented hearing loop for patients and visitors with hearing impairment may be considered.

7.3.3 *Space Standards and Components*

The Admissions Unit shall be appropriately sized to give a sense of space and avoid congestion. This is especially important in the waiting areas.

Ergonomics

Design and dimensions of counters and workstations shall ensure privacy and security for patients, visitors and staff. Counter heights should be made identical for both patients/visitors and staff to enhance communication and minimize aggressive behavior.

Seating in waiting areas shall be provided at a range of heights to cater for the different mobility levels of patients.

Refer also to Part C of these Guidelines.

7.3.4 *Safety and Security*

A sympathetic, pleasant, and friendly environment can be created with the appropriate type of security measures included in a facility. A risk assessment relating to security aspects shall be carried out in consultation with staff during the design stage. The following factors shall be taken into consideration:

- Demographic population
- Capacity, location and type of the facility
- Availability of security staff
- Responsive timing of the security unit
- Expected impact of incidents and their severity.

The following security issues shall be addressed when designing the Admission Unit:

- Counters shall be designed in such a way to enable unobstructed vision to waiting areas
- Duress alarm and access to egress points must be provided at reception counters
- Waiting areas shall have no visibility to the staff and/or cashier area behind the counter
- Controlled after-hours access to prevent unauthorized entry and theft
- Provision of CCTV to monitor movement and behavior within the Unit
- Provide training to staff on procedures to follow during an armed hold-up.

If a Cashier is provided within the Admissions Unit, the following shall also be considered:

- Security glazing shall be provided at the Cashier's counter; an after-hours chute may be required
- A fire proof safe shall be located within the Cashier area and sufficient in size to hold adequate cash; it shall be concealed visually from patients, visitors and others.

If the Admissions Unit is located on the perimeter of the building, all external doors must be locked (preferably electronically) after-hours and alarms installed which are linked to the Security Unit.

For the Pre-admission Clinic, the following security issues shall be integrated in the design:

- Duress alarms and emergency egress point shall be provided as required
- Design shall permit entry and exit points from the Unit to have controlled access
- Secured control for after-hours access
- Restricted access from the waiting area to the rest of the Unit for patients and visitors
- Design shall maximize observation of waiting area for staff.

7.3.5 *Finishes*

Selection of materials in the Unit shall ensure durability particularly for heavy pedestrian utilization.

Refer also to Part C of these Guidelines.

7.3.6 *Fixtures and Fittings*

If the Cashier is located within the Admissions Unit, then an appropriate barrier shall be provided to the Cashier's counter.

Depth of counters is recommended to be between 900mm to 1200mm and not exceeding 1400mm. The counter height shall be suitable for standing interactions at 850mm (+/- 20mm); high stools may be provided for staff. If a seated position is required, there shall be a section to be reduced to 720mm, with standard height chairs for staff and patients.

Refer also to Part C of these Guidelines.

7.3.7 *Building Service Requirements*

The following IT/Communications systems shall be provided within an Admission Unit or Pre-Admission Clinic:

- Voice and data points for telephones and computers/internet
- Data provision for electronic medical records and patient management systems as required (optional)
- Duress alarm system (in reception area, patient treatment areas, interview rooms etc.)
- Access to a PACS system (if applicable in the Pre-admission Clinic only).

Emergency call facility for staff and patient shall be installed in all clinical areas such as patient toilets and bathrooms.

Refer also to Part C of these Guidelines.

7.3.8 *Infection Control*

Precautions shall be taken while handling body fluids of patients during the pre-admission process as their infection status may be unknown. Personal Protective Equipment (PPE), sharps containers and clinical waste spill kits must be provided. Training in first-aid and injury management procedures must be provided to staff for body substance exposure and sharps injuries.

Hand washing facilities for staff must be readily available. Disposable paper towels must always be provided at hand washing facilities.

Refer also to Part D for further information.

In terms of Waste Management, common clinical waste management shall be provided within the Pre-admission Clinic. Provision of sharps containers shall be in compliance to the Hospital's Infection Control Policy.

7.4 Components of the Unit

7.4.1 *General*

The Admission Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

7.4.2 *Non-Standard Components*

Interview Cubicle

Description and Function

An Interview Cubicle may be provided for private and confidential discussion with patients, as an open space, visually separated from adjacent spaces.

Location and Relationships

Interview cubicles may be provided as part of the Reception counter or in a separate area easily accessible to patients and staff.

Considerations

Privacy is a major consideration particularly acoustic privacy; partitions between cubicles should reduce sound transmission to adjacent spaces.

Access will be required for patients in wheelchairs.

7.5 Schedule of Accommodation

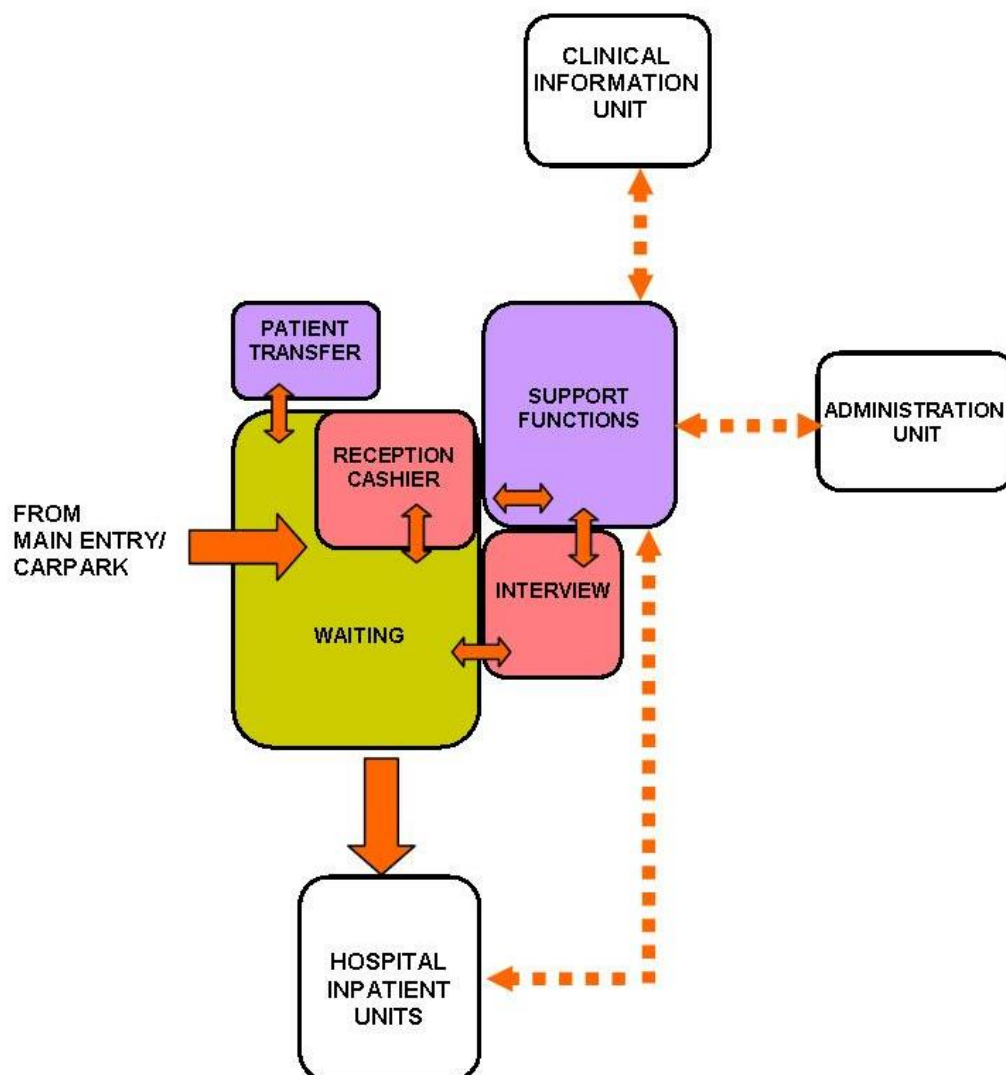
Typical Admissions Unit suitable for a tertiary level hospital

ROOM/SPACE	Standard Component							RDL 5/6 Qty x m ²	Remarks
Public Areas									
Waiting – Male/Female	WAIT-10-SJ							2 x 10	
Waiting – Family	WAIT-30-SJ Similar							1 x 50	
Toilet – Accessible	WCAC-SJ							2 x 6	Optional, May be located nearby
Toilet – Public (M/F)	WCPU-3-SJ							2 x 3	Optional, May be located nearby
Parenting Room	PAR-SJ							1 x 6	Optional, May be located nearby
Admissions									
Admissions Counter	RECL-15-SJ Sim							1 x 20	Space for four staff
Cashier	CASH-SJ							1 x 9	Optional
Cubicle – Interview								2 x 6	For private discussions
Interview Room – Family	INTF-SJ							2 x 12	Optional, May provide cubicles
Staff and Support Areas									
Office – Supervisor								1 x 12	
Office – Billing	OFF-S9-SJ							1 x 9	
Office – Cashier	OFF-S9-SJ							1 x 10	Optional; With area for cash safe
Office – Workstations	OFF-WS-SJ							1 x 30	Clerical staff; Number as per service needs
Bay – Wheelchair Park	BWC-SJ							1 x 4	Locate in Entrance Area
Store – Files	STFS-10-SJ							1 x 10	
Store – Photocopy/Stationery	STPS-8-SJ							1 x 8	
Property Bay – Staff	PROP-3-SJ							1 x 3	
Toilet – Staff	WCST-SJ							1 x 3	May be shared with adjacent unit
Total Net Department								248	
Circulation %								20	
Total								297.6	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

7.6 Functional Relationship Diagram



7.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 430 Front Of House Unit Revision 4' 2010. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/aushfg_b_430front_of_house_4_591-614.pdf 2014
- Department of Health (DH) (UK). 'Health Briefing Note 51 Accommodation at the Main Entrance of a District General Hospital' 1991. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2051.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

8.0 Ambulatory Care (Outpatients) Unit

8.1 Introduction

8.1.1 Description

Ambulatory Care refers to health care services for outpatients provided on a same-day basis.

The following services may be accommodated in the Ambulatory Care Unit:

- Outpatients clinics; multi-disciplinary and specialist consultation and treatment clinics for medical and surgical sub-specialties
- Day-only Surgery
- Day-only Medical services (e.g. Oncology and Hematology, Renal Dialysis)
- Dental
- General Practitioner Clinics
- Maternal and Child Health services
- Medical Imaging Services (e.g. Ultrasound, CT)
- Mental Health services
- Ophthalmology, including Eye Care Center
- Pathology collection
- Pharmacy
- Radiotherapy
- Rehabilitation Therapy/Allied Health services.

It is possible to provide the above health care services in independent Community Health Centers collocated or away from the main hospital. The Ambulatory Care Unit will often include other retail/commercial services and other government/non-government agencies.

8.2 Planning

8.2.1 Operational Models

Operational policies for each health care facility may affect the planning of an Ambulatory Care Unit. These may include:

- The normal operating hours of the facility
- Medical Records Management
- The selection of Ambulatory Care services provided within the facility
- Sharing support facilities between various FPU's.

8.2.2 Planning Models

There are various options for locating an Ambulatory Care Unit including:

- A stand-alone facility in a community location
- A unit integrated within a commercial development (e.g. shopping malls)
- A unit as part of a larger hospital facility.
-
- The configuration of an Ambulatory Care Unit is dependent on the following factors:
- The location of the Unit (e.g. stand-alone or integrated within a larger facility)
- The population which the unit will serve
- The types of service mix
- The level of staffing required for the Unit.

8.2.3 *Functional Areas*

Core Unit

The Ambulatory Care Unit may consist of a large number of sub-units. It may range in structure from a small stand-alone unit to a large multi-disciplinary facility.

The Core Unit described in this Guideline would be appropriate for a small multi-disciplinary unit or the primary core of a larger unit as required by adding other peripheral units to suit the service plan of the subject facility.

Unit Functional Zones

The Core Unit consists of the three following key functional areas:

- Reception/Admission area
- Patient areas including waiting and treatment
- Staff areas.

Additional units may also be added to form part of the following FPU:

- Dental Unit
- Interventional Cardiology
- Medical Imaging Services (e.g. general radiology, ultrasound and CT)
- Occupational Health
- Ophthalmology
- Operating Unit
- Pathology collection and urgent testing service
- Pharmacy
- Renal Dialysis Unit.

8.2.4 *Functional Relationships*

External

The Ambulatory Care Unit may have working relationships with many other Units depending on the location of the Unit – either a free-standing facility or part of a larger facility.

The proximity of the following areas shall be considered when designing:

- Car Park/Drop-off Zone
- Day Procedures/Surgery
- Emergency
- Main Entry
- Medical Imaging
- Outpatients
- Pharmacy
- Pathology
- Transit Lounge.

Considering the above, the Ambulatory Care Unit is commonly located on the ground level within a multi-story hospital.

Internal

The internal planning of the Ambulatory Care Unit shall be planned by considering the functional areas mentioned above.

Some of the critical relationships to be considered are as below:

- Flexibility in accommodating various types of use throughout different hours in the day
- Sections of the Unit can be secured when not in use
- Reception and Admission Area – this area must allow patients to move conveniently to and from the treatment areas and accommodate high volume of patients, support staff, care-takers and mobility aids
- Patient Treatment and Waiting Area – must promote efficiency from the staff perspective and a pleasant environment for all patient types from regular patients with chronic conditions to those who may only visit a few times
- Staff Area – staff must be able to move easily to and from the Treatment Area and the Reception/Admission Area; a quiet area with privacy for staff where they can work without interruptions from patients and their accompanying relatives is recommended.

It is crucial for the three functional areas to work effectively together to allow for an efficient, safe and pleasant environment in a smaller unit, or to create the core of a larger, more complex unit.

8.3 Design

8.3.1 General

Design needs to accommodate all types of patients using the Unit, many of whom may be acutely ill. Provision shall be made for wheelchairs, mobility aids, families with children and prams within the Unit.

8.3.2 Environmental Considerations

Natural Light

Where possible, the use of natural light shall be maximized within the Unit. Sufficient level of natural lighting can provide a sense of well-being for both staff and patients and is more likely to lead to better service outcomes.

Provision of a pleasant outlook and access to natural light can reduce discomfort and stress for patients.

Privacy

Staff observation of patients and patient privacy must be well-balanced within the Unit.

The following features shall be integrated to the design of the Unit:

- Doors and windows to be located appropriately to guarantee patient privacy and not compromise staff security or confidentiality of patient discussions and patient records.

Acoustics

The following functions require careful consideration of acoustic privacy:

- Noisy areas like Public Waiting shall be located further away from the treatment spaces and staff areas
- Interview areas with clients where confidential information will be discussed
- Discussion areas for staff where confidential patient information will be shared
- Consultation/treatment areas where disturbing noise is likely to happen shall be located in acoustically treated rooms.

8.3.3 Space Standards and Components

Accessibility – External

Patients who visit an Ambulatory Care Unit are usually acutely ill requiring treatments. Thus, there shall be a weatherproof vehicle drop-off zone with easy access for less-mobile patients and wheelchair bound patients.

Ergonomics

Various functions will be performed at each treatment space. Thus, care shall be taken to provide optimal ergonomic functionality by considering all the possible configurations at each treatment space.

Refer also to Part C of these Guidelines.

8.3.4 *Safety and Security*

Equipment, furniture, fittings and the facility itself shall be designed and constructed to prevent injuries to all users where possible.

A high standard of safety and security can be achieved by careful configuration of spaces and zones:

- Control access/egress to and from the Unit
- Optimize visual observation for staff
- Similar functions shall be collocated for easy staff management.

Access to public areas shall be considered with care so that the safety and security of staff areas within the Unit is not compromised.

Refer also to Part C of these Guidelines.

8.3.5 *Finishes*

Floor and ceiling finishes shall be selected to suit the function of the space and promote a pleasant environment for patients, visitors and staff.

The following factors shall be considered:

- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning
- Infection control
- Movement of equipment.

Refer also to Part C and Part D of these Guidelines.

8.3.6 *Fixtures and Fittings*

Refer to Part C of these Guidelines and Standard Components of individual rooms for information related to fixtures and fittings.

8.3.7 *Building Service Requirements*

It is vital to provide reliable and effective IT/Communications service for efficient operation of the Unit. The following items relating to IT/Communications shall be addressed in the design of the Unit:

- Bar coding for supplies, X-Rays and records
- Data entry (e.g. scripts and investigative requests)
- Email
- Hand-held computers
- PACS
- Paging systems
- Paperless patient records
- Patient Administration System (PAS).

Nurse Call and Emergency Call facilities shall be provided in all patient areas (e.g. bed spaces, toilets and bathrooms) and clinical areas in order for patients and staff to request for urgent assistance. The individual call buttons shall alert to a central module situated at or adjacent to the Staff Station, Staff Room and Meeting Rooms within the Unit. The alert to staff members shall be done in a discreet manner at all times.

Provision of a Duress Alarm System is required for the safety of staff members who may at times face threats imposed by clients/visitors. Call buttons will be required at all reception/staff station areas and consultation/treatment areas where a staff may have to spend time with a client alone.

Refer also Part C of these Guidelines for further information.

Infection Control

Infectious patients and immune-suppressed patients may be sharing the same treatment space at the different times of the same day. Standard precautions must be taken for all patients.

Hand washing facilities for staff within the Unit must be readily available. Where a hand wash basin is provided, there shall also be liquid soap and disposable paper towels provided.

For further details refer to Part D of these Guidelines.

8.4 Components of the Unit

8.4.1 General

The Ambulatory Care Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

8.4.2 Non-Standard Components

Entry Canopy

Description and Function

If a direct and separate entry is provided to the Unit at street level, an Entry Canopy shall be provided. The canopy shall be sized appropriately to permit full protection of vehicles including cars, ambulances, taxis, and mini-vans from weather.

Location and Relationships

The Entry Canopy shall be located next to the Lobby/Airlock, if one is provided.

Considerations

Apart from weather protection, the heights and the design of structural support of the canopy shall permit easy maneuvering of all vehicles entering this area.

8.5 Schedule of Accommodation

Typical Outpatient Unit module with 8 Consult Rooms for Multidisciplinary use

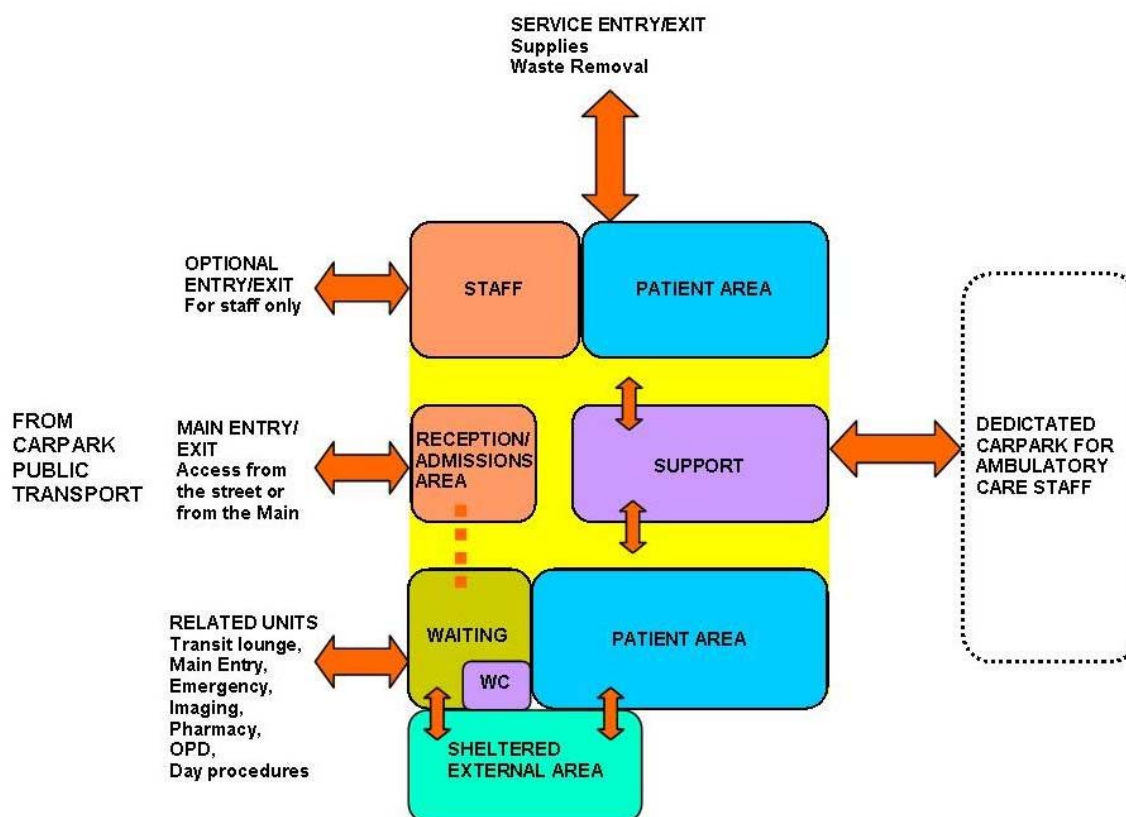
Repeat Modules as required.

ROOM/SPACE	Standard Component								RDL 5/6 Qty x m²	Remarks
Entry/Reception										
Reception	RECL-15-SJ								1 x 15.0	
Waiting – Male/Female	WAIT-10-SJ								2 x 15.0	
Waiting – Family	WAIT-20-SJ								1 x 20.0	
Office – Single Person	OFF-S9-SJ								1 x 9.0	Nurse Manager
Store – Files	STFS-10-SJ								1 x 10.0	
Consult/Treatment Area										
Consult Room	CONS-SJ								8 x 12.0	
Treatment Room	TRMT-SJ								1 x 14.0	
Toilet – Accessible, Patient	WCAC-SJ								1 x 6.0	
Support Areas										
Bay – Linen	BLIN-SJ								1 x 2.0	
Clean Utility	CLUR-12-SJ								1 x 12.0	
Clean-Up Room	CLUP-7-SJ								1 x 7.0	
Dirty Utility – Sub	DTUR-S-SJ								1 x 2.0	
Store – General	STGN-12-SJ Similar								1 x 15.0	
Staff Areas										
Staff Room	SRM-15-SJ								1 x 15.0	
Toilet – Staff	WCST-SJ								1 x 3.0	
Net Department Total									256.0	
Circulation %									32	
Grand Total									337.9	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

8.6 Functional Relationship Diagram



8.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
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- The Chartis Group (US). 'Ambulatory Care of the Future; Optimizing Health, Service and Cost by Transforming the Care Delivery Model' 2011. Retrieved from website: http://www.chartis.com/files/pdfs/Ambulatory_Care_of_the_Future.pdf 2014
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9.0 Cardiac Investigation Unit

9.1 Introduction

9.1.1 Description

The Cardiac Investigation Unit provides diagnostic procedures, interventional treatments and consultation for patients with cardiac conditions. The Unit consists of three major components:

- Cardiac Catheter Suite
- Cardiac Diagnostic Unit
- Outpatient Clinics.

This Functional Planning Unit will address the following components of a cardiac investigation service primarily for secondary and tertiary healthcare facilities:

- Cardiac Catheter Laboratories (CCL) – diagnostic and interventional
- Electrophysiology (EP) laboratory
- Echocardiography – Trans-Thoracic (TTE), Trans-Oesophageal (TOE) and stress echocardiography
- Exercise stress testing
- Electrocardiography (ECG)
- Holter monitoring
- Ambulatory blood pressure monitoring
- Pacemaker and defibrillator implantation and follow-up
- Outpatient clinics.

9.2 Planning

9.2.1 Operational Models

The following are Models of Care of individual areas within a Cardiac Investigation Unit:

Cardiac Catheter Laboratories – Model Of Care

Depending on the role and function of the service, catheter laboratories may be:

- A component of an interventional imaging suite in a Medical Imaging Unit
- A dedicated component of a Cardiac Precinct
- A component of an interventional floor incorporating operating theatres, cardiac investigations with access to a 23-hour or short-stay ward.

The number of laboratories will be determined by the service plan, but laboratories should operate at near-optimum capacity to justify the expense of operation, maintain the skills and teamwork of the operators and staff and provide maximum patient and operator safety.

Cardiac Diagnostic Center – Model Of Care

Cardiac diagnostic services may be provided:

- As part of a fully integrated Cardiac Investigation Unit
- As part of a Clinical Measurement Unit that may also include facilities for diagnostic neurology and respiratory function testing including spirometry
- As part of an outpatient clinic (depending on the range of tests to be provided).

Cardiac Outpatients Clinics – Model Of Care

Cardiac clinics may be conducted via:

- A general Outpatient Unit
- Consulting rooms in a Clinical Measurement Unit (usually shared with other disciplines)
- Dedicated consulting rooms in a Cardiac Precinct.

Provision of dedicated cardiac clinics should be based on throughput and service planning and in all

instances, as a minimum, access will be required to ECG testing.

9.2.2 *Planning Models*

Location

The most appropriate location for the unit will depend on the services to be provided and models of care as previously described. Consideration should be given to outpatient volumes with regard to vertical access to clinics if the Cardiac Precinct is not on a ground floor.

Configuration

Layout should ensure that the unit does not act as general public thoroughfare to other units that could adversely impact on issues relating to security, privacy and stock control.

The less complex and more frequently used diagnostic and clinic rooms should be located close to the unit entry, reception and waiting with the catheterization suite more discreetly located.

Ideally there should be separate staff and patient paths and a discrete access for inpatients.

9.2.3 *Functional Areas*

The Cardiac Investigation Unit will consist of the following functional zones that may or may not be collocated depending on operational policies, service delineation and relationships to other services:

- Reception and waiting
- Catheterization laboratories
- Diagnostic facilities
- Outpatient clinics.

Depending on the model of care, every opportunity should be taken to share facilities such as:

- Public waiting areas and amenities
- Reception
- Support areas
- Staff amenities.

Reception/Waiting

The Reception/Waiting area may be a shared area for all aspects of the Cardiac Investigation Unit. It should provide easy access to both the diagnostic and catheterization laboratories, and provide access to public and disabled amenities.

A separate reception/waiting area may be required for the Catheterization Suite.

Cardiac Catheter Laboratories

The number and type of laboratories will depend on the service plan, capability (secondary, tertiary) and anticipated caseload.

The Cardiac Catheterization Unit requires the following minimum functional areas:

Patient Care Area:

- Reception (may be shared)
- Patient/visitor waiting (may be shared)
- Patient bed bays (holding, recovery, depending on operational policies)
- Patient amenities
- Staff Station
- Clean and Dirty Utilities
- Storage.

Treatment Area:

- Catheter laboratories (diagnostic, interventional)
- Electrophysiology (EP) Laboratory
- Computer equipment rooms (generators etc.)
- Control rooms. (Note that shared control rooms are not recommended. Refer to Section on Acoustics)
- Scrub bays
- Staff change rooms
- Sterile stock storage and set-up area
- Equipment storage.

Support Area:

- Viewing and reporting room
- PACS room for digital storage if local system.

Staff Area:

- Offices
- Teaching and research facilities
- Amenities including staff rooms.

Cardiac Catheter Laboratory

The Cardiac Catheter Laboratory is to comply with Standard Components Catheter Laboratory. Rooms may be resized according to equipment to be installed.

Electrophysiology (EP) Laboratory

The Electrophysiology Laboratory is a room for undertaking electrophysiology studies and radiofrequency ablation if indicated. The room needs to be located away from external electrical interference i. e. plant rooms or other equipment requiring high voltage, and properly shielded, an electro-magnetic shielding cage may be necessary. The room will require direct access to Patient Holding bays.

Note that patients may become unstable during a procedure and therefore more support equipment is required. Allow for circulation space for four staff plus equipment in room.

The Control Room should be located at head or foot of bed not at the side for optimum patient visibility.

Equipment required may include:

- Two defibrillators
- Anesthetic pendant at head of table
- Anesthetic machine
- Resuscitation trolley
- Set-up and stock trolleys
- Three-dimensional mapping equipment
- Echocardiography (TOE) machine.

Provide services pendants or power points collocated with the patient table to reduce trip hazards from electrical cables across the room. Increasingly equipment is becoming cordless e.g. foot pedals, echo machines.

Benches will be required for preparation of emergency drugs. The room will include storage space, draws and shelves for consumable equipment required during procedures.

Cardiac Diagnostic Facilities

Cardiac diagnostic facilities usually comprise:

Patient Care Area:

- Reception/Waiting(may be shared)
- Change cubicles
- Toilets
- Shower (for hygiene post-exercise testing)
- Testing rooms for the various procedures (ECG, Holter/ambulatory monitoring, pacemaker clinic, echocardiography)
- Patient holding bays for TOE patient recovery.
- Staff/Support Area:
- Technician/scientist workrooms
- Clinical support areas – staff station, utilities, storage.

ECG Testing

A room or bay for undertaking resting electrocardiograms is required. This may be provided as a single room/cubicle or may be designed as two patient bays. If two bays are designed, curtain tracks and screens will be provided for patients' privacy. Patients may change in the room/bay or in an adjacent change cubicle.

The ECG Testing Room/Bay will require ready access from the waiting area and outpatient area as ECGs may be performed as a routine element of a cardiac clinic

The Rooms/Bays will require Body Protected power in accordance with local authority requirements.

Furniture, Fittings and Equipment within the testing area will include:

- Examination couch/table
- ECG machine
- Small desk and technician chair or stool
- Patient chair
- Hand basin which may be shared if two bays are provided
- Clothes hooks
- Storage for leads and consumable stock used in the procedure.

Holter/Ambulatory Monitoring Application Room

A room for attaching Holter monitors or blood pressure cuffs for ambulatory monitoring of patients may be required. Note that a multi-disciplinary Consult room may be suitable for this purpose. Patients may change in the room or in an adjacent change cubicle. The room should be located with ready access to the Waiting Area

The Room will require Body Protected power in accordance with local authority requirements.

Furniture, Fittings and Equipment within the room will include:

- Examination couch/table
- Holter monitoring equipment (ECG leads and monitors) and blood pressure equipment
- Small desk and technician chair or stool
- Patient chair
- Hand basin.
- Clothes hooks
- Storage for leads, equipment parts and consumable stock.

Cardiology Outpatients Clinic

Facilities for cardiology outpatient clinics will be provided as multi-function consult rooms sufficient for throughput as outlined in the service plan.

If consulting rooms are part of a general outpatient area, ready access to ECG facilities is desirable and rooms may be scheduled for use by other disciplines.

Staff Offices and Amenities

Offices/workstations will be required for senior staff permanently attached to the various zones of the unit.

Offices/workstations for medical staff and some nursing staff (manager/specialists/registrars/educators) may be located as part of an integrated Cardiac Precinct or as part of a general office complex.

The offices/workstations may be required for administrative as well as clinical functions to facilitate educational/research activities.

Staff will need access to the following:

- Toilets
- Shower
- Staff room with beverage facilities
- Meeting rooms.

Teaching and Research

The extent of teaching and research undertaken within the Cardiac Investigation Unit will need to be assessed so that appropriate office and teaching facilities are provided.

Clinical research needs should be assessed for provision of offices, facilities for drug storage and monitoring, records storage, dedicated consulting and diagnostic rooms if patients attend the Unit.

9.2.4 *Functional Relationships*

External

Direct access from the Emergency Unit to the Catheter Laboratory is essential for rapid transfer of emergency patients.

It is desirable that the Cardiac Investigation Unit has ready access to:

- Chest Pain Assessment Unit
- Medical Imaging particularly for chest X-Rays and CT scanning
- Nuclear Medicine (particularly for stress testing)
- PET Unit (tertiary facilities)
- Operating Unit
- Short stay unit/23-hour beds
- Pathology Services (via pneumatic tube)
- Biomedical Engineering
- Community Health Services (Hospital in the home etc.).

Internal

The Electrophysiology (EP) Laboratory should not be located close to any high voltage electronic equipment such as a sub-station or lift plant room as interruption by auxiliary radiofrequency will distort the assessment of the patient.

Pacemaker and ICD (Implantable Cardioverter Defibrillator) clinics should not be located in an area where high radiofrequency interference may affect new devices using wireless technology; expert advice should be obtained.

If Stress Echocardiography is undertaken, there should be ready access for patients and staff between the Echo Room and Stress Testing Room – assuming the Echo Room does not have a dedicated treadmill.

Linkages to cardiac surgery occur at several levels including clinical decision making about patients requiring cardiac surgery, joint research projects and joint management of patients in the post-operative phase including rehabilitation. The Units need to be well linked and preferably collocated.

9.3 Design

9.3.1 Patient Treatment Areas

Patients must be situated so that healthcare providers have direct or indirect visualization, such as by video monitoring, at all times. This approach permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of vision between the patient and the Staff Station.

Weight-bearing surfaces that support the monitoring and imaging equipment should be sturdy enough to withstand high levels of strain over time. It should be assumed that monitoring equipment will increase in volume over time. Therefore, space and electrical facilities should be designed accordingly.

9.3.2 Environmental Considerations

Acoustics

Acoustic privacy will be required in consulting and testing rooms and in any rooms where confidential information is discussed.

Minimization of sound transfer between clinical spaces will reduce staff error from miscommunication and disruptions and increase patient safety particularly in Control Rooms.

Note that shared Control Rooms to cardiac laboratories are not recommended as acoustic difficulties may occur when several staff occupy the same space with the consequent potential for instructions to be misinterpreted.

Natural Light

Natural light and views should be available from the Unit for the benefit of staff and patients. Windows are an important aspect of sensory orientation, and as many rooms as possible should have windows to reinforce day/night orientation. If windows cannot be provided in each room, an alternate option is to allow a remote view of an outside window or skylight.

Privacy

To ensure patient privacy, change rooms should be located so that the patient does not cross public areas to access testing rooms and are not open to view when doors are opened.

Interior Décor

A calming, non-threatening environment is desirable using colors that do not mask skin colors. Consideration could be given to ceiling art and murals.

9.3.3 *Space Standards and Components*

Where an open plan arrangement is provided in patient holding and treatment bay areas, bed spaces shall be arranged so that there is a clearance of at least 1200mm from the side of the bed to the nearest fixed obstruction or wall. At the head of the bed, at least 900mm clearance shall be allowed between the bed and any fixed obstruction or wall.

Ceilings in the catheter laboratories should be three meters high and capable of supporting the weight of ceiling--mounted imaging equipment. This may include the gantry for catheter equipment, theatre light, room lighting, air-conditioning, medical gas booms etc. Special attention is required in co-ordination of all ceiling fixed services.

Door Openings

All entry points, doors or openings, shall be a minimum of 1200mm wide, unobstructed. Larger openings may be required for special equipment, as determined by the Operational Policy.

9.3.4 *Finishes*

In all areas where patient observation is critical, colors shall be chosen that do not alter the observer's perception of skin color.

Refer to Part C of these Guidelines and Standard Components for more information on wall protection, floor finishes and ceiling finishes.

9.3.5 *Fixtures and Fittings*

Clocks

An analogue clock with a second sweep hand shall be provided and conveniently located for easy reference from all bed positions and the Staff Station.

Window Treatments

Window treatments should be durable and easy to clean. Consideration may be given to use double-glazing with integral blinds, tinted glass, reflective glass, exterior overhangs or louvers to control the level of lighting.

9.3.6 *Infection Control*

Handbasins

Scrub basins shall be provided for each Procedure and Treatment room (refer to Standard Components Room Layout and Room Data Sheets). Clinical hand-washing facilities shall be provided convenient to the Staff Station and patient areas. The ratio of provision shall be one clinical hand-washing facility for every four patient bays in open-plan areas.

Refer to Part D of these Guidelines for additional information.

9.3.7 *Building Service Requirements*

Mechanical Services

The unit shall have appropriate air-conditioning that allows control of temperature, humidity and air change. Cardiac Catheterization Suites will require specialized air-conditioning and filtration requirements, refer to Standard Components Catheter Laboratory Room Data Sheets and Room Layout Sheets.

Refer to Part E of these Guidelines for the specific requirements for Mechanical and Electrical provision.

Communications

Cardiac Investigation Units will require a wide range of systems to ensure efficient and effective patient information and image management. These will include but are not limited to:

- Voice/data cabling and outlets for phones, fax and computers
- Video and teleconferencing capability (LAN/WAN)
- Picture archiving communications systems (PACS) and storage for digital archives
- Increased provisions for wireless technology; (stress testing is often wireless)
- Data cabling to support remote reporting
- Audio visual, web network access to view angiograms
- CCTV surveillance if indicated
- Patient, staff and emergency call systems
- Communications rooms and server requirements.

Nurse and Emergency Call facilities shall be provided in all Procedure/Treatment Rooms and patient areas (e.g. Catheter Laboratories, Echo Rooms, ECG rooms and toilets) in order for patients and staff to request for urgent assistance.

Close collaboration with the IT Unit and consultants early in the design phase is recommended.

Lighting

Dimmable lighting should be provided in Control/Reporting Rooms, Procedure Rooms, Cardiac Catheterization Laboratories, Ultrasound/Echo and Holter Reading Rooms to improve reporting environment and screen visibility.

Medical Gases

The Unit will require:

- Oxygen and suction in all patient investigation rooms
- Provision of medical air to patient recovery bays and interventional rooms is optional
- Full anesthetic capability including nitrous oxide and scavenging within the Catheter Laboratories.

Refer to Part E of these Guidelines and to the Standard Components, RDS and RLS.

Radiation Shielding and Safety

The Catheter Laboratories require radiation shielding.

Plans and specifications will require assessment for radiation protection by a certified physicist or other qualified expert as required by the Radiation and Nuclear Safety Agency. The radiation protection assessment will specify the type, location and amount of radiation protection required according to the final equipment selections and layout. Radiation protection requirements shall be incorporated into the final specifications and building plans.

9.4 Components of the Unit

The Cardiac Investigation Unit will consist of Standard Components to comply with details described in these Guidelines. Refer to Standard Components, Room Data Sheets and Room Layout Sheets.

9.5 Schedule of Accommodation

Non Interventional Cardiac Investigations

Quantities and sizes of some spaces will need to be determined in response to the service needs of each unit on a case-by-case basis.

ROOM/ SPACE	Standard Component							Level5/6 Qty x m ²	Remarks
Main Entry/ Reception									
Reception/ Clerical	RECL-10-SJ							1 x 10	
Waiting	WAIT-20-SJ							2 x 20	For patients and visitors, separate female waiting
Toilet - Patient	WCPT-3-SJ							2 x 4	
Toilet - Accessible	WCAC-SJ							1 x 6	
Store - Files	STFS-10-SJ							1 x 8	
Store - Photocopy/ Stationery	STPS-8-SJ							1 x 8	Collocate with Ward Clerk
Patient Bay – Holding	PBTR-H-10-SJ							1 x 10	Bed or trolley for waiting patient
Bay – Mobile Equipment	BMEW-4-SJ							1 x 4	Mobile ECG machines (optional)
Consult Room	CONS-SJ							1 x 14	Adjust depending on service demand and requirements
Patient Areas: Treatment									
Consult Room	CONS-SJ							4 x 14	Consult only without examination
Interview Room	INTF-SJ							1 x 12	For patient education
ECG/ Stress Testing Room								2 x 20	2 patients; Inclusion of resuscitation trolley essential
Echocardiography/ TOE/ Stress Echo Room	ECHO-SJ							1 x 30	
Echocardiography	ECHO-SJ							2 x 15	
Holter Monitoring								2 x 15	Adjust number of rooms to suit throughput and services requirement
Holter Analysis Room								2 x 12	
Tilt Table Room								1 x 16	Optional
Change Cubicle - Patient	CHPT-SJ							2 x 2	Inside Echo/ Stress Testing Rooms
Shower/ Toilet - Patient	ENS-ST-SJ Similar							1 x 5	
Toilet - Patient	WCPT-SJ							2 x 4	
Support Areas									
Bay - Linen	BLIN-SJ							1 x 2	
Bay - Mobile Equipment	BMEQ-4-SJ							1 x 4	ECG Machines
Bay - Resuscitation Trolley	BRES-SJ							1.5 x 1.5	
Clean-Up Room	CLUP-7-SJ							1 x 7	
Store - Equipment	STEQ-20-SJ							1 x 20	
Waiting - Sub	WAIT-10-SJ Similar							4 x 5	Near diagnostic rooms
Staff Areas									
Office – Single Person	OFF-S9-SJ							1 x 9	Unit Manager
Office - 2 Person Shared	OFF-2P-SJ							1 x 12	General administration, as required
Meeting Room - Small	MEET-9-SJ							1 x 9	Interviews, small meetings
Office - Workstations	OFF-WS-SJ							4 x 5.5	Qty will depend on staff numbers
Staff Room	SRM-15-SJ Similar							1 x 20	Unit-specific space, with beverage bay
Property Bay - Staff	PROP-3-SJ							2 x 3	
Toilet - Staff	WCST-SJ							2 x 3	
Net Department Total								502.3	
Circulation %								35	
Grand Total								678.0	

Interventional Cardiac Investigations (Cardiac Catheter Suite)

Note: If the Cardiac Catheter Suite is collocated with Non-Invasive Cardiac Investigations Unit, Entry/ Reception, Support Areas & Staff Areas may be shared between the two Units.

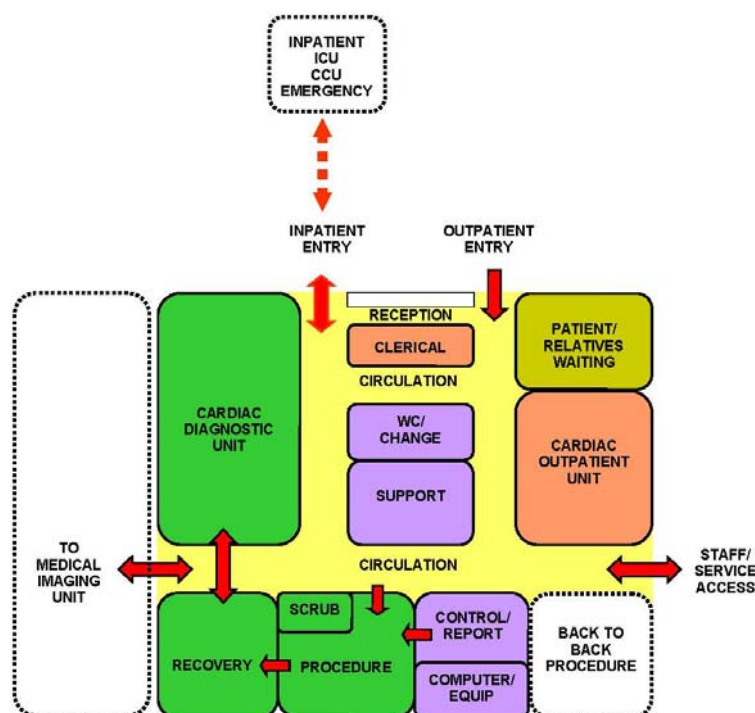
ROOM/ SPACE	Standard Component							Level 5/6 Qty x m ²	Remarks
Entry/ Reception									
Reception/ Clerical	RECL-15-SJ							1 x 15	
Office – 2 person shared	OFF-2P-SJ							1 x 12	Optional for admin staff
Waiting	WAIT-10-SJ Similar							2 x 15	Separate female waiting
Store - Files	STFS-10-SJ							1 x 10	Depends on operational policies
Store - Photocopy/ Stationery	STPS-8-SJ							1 x 8	Collocate with Clerk
Consult Room	CONS-SJ							4 x 14	Consult only without examination
Meeting Room - Small	MEET-9-SJ							1 x 9	Interview function, small meetings
Patient Areas: Treatment									
Staff Station/ Clean Utility	SSCU-SJ Similar							1 x 15	
Patient Bay - Holding/ Recovery	PBTR-H-10-SJ							12 x 9	3 bays per Procedure room
Catheter Laboratory Procedure Room	CLAB-SJ							4 x 45	
Catheter Lab Control/ Reporting Room	CLCRT-SJ							4 x 10	May be shared between Procedure rooms
EP Laboratory								1 x 60	According to service plan
Control Room – EP Lab								1 x 15	According to service plan
Computer Equipment Room	COEQ-SJ							4 x 8	1 per Procedure room
Scrub Up / Gowning	SCRB-6-SJ							4 x 6	1 per Procedure room
Bay – Lead Aprons								2 x 1	Shared between Procedure rooms
Toilet - Patient	WCPT-SJ							2 x 4	
Change Cubicle - Patient	CHPT-SJ							2 x 2	
Support Areas									
Bay - Beverage, Open plan	BBEV-OP-SJ							1 x 4	
Bay - Handwashing, Type B	BHWS-B-SJ							3 x 3	1 per 4 bays
Bay – Pathology	BPATH-SJ							1 x 1	Blood gases, point of care testing
Bay - Linen	BLIN-SJ							1 x 2	
Bay – Blanket Warmer	BBW-SJ							1 x 1	
Bay - Resuscitation Trolley	BRES-SJ							1 x 1.5	
Clean Utility	CLUR-12-SJ							1 x 12	
Cleaner's Room	CLRM-5-SJ							1 x 5	
Dirty Utility - Sub	DTUR-S-SJ							1 x 8	
Disposal Room	DISP-8-SJ							1 x 8	
Ensuite - Standard	ENS-ST-SJ							1 x 5	
Preparation/ Set-up Room	PREP-S-SJ							1 x 12	
Store - General	STGN-12-SJ							1 x 12	
Store - Equipment	STEQ-16-SJ							1 x 16	
Store - Sterile Stock	STSS-12-SJ							4 x 48	Provide 12m2 per procedure room
Store -Films/ Files	STFS-10-SJ Similar							1 x 5	According to operational policies
X-Ray Viewing and Reporting	XRRR-SJ							1 x 12	
Staff Areas									
Office - Unit Manager	OFF-S9-SJ							2 x 9	Unit Manager , Chief Radiographer
Office – 2 person shared	OFF-2P-SJ							1 x 12	For Cardiac Technicians
Staff Room	SRM-15-SJ							1 x 15	May share with an adjacent unit if appropriate
Change - Staff (Male/Female)	CHST-12-SJ							2 x 12	Toilet, Shower, Lockers

ROOM/ SPACE	Standard Component			Level 5/6 Qty x m ²	Remarks
Net Department Total				1002.5	
Circulation %				40	
Grand Total				1403.5	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

9.6 Functional Relationship Diagram



9.7 Further Reading

- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning, Rev 5', 2012. Retrieved from website: www.healthfacilitydesign.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 170 Cardiac Investigation Unit Rev 1' 2013. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20_%20000170%20Cardiac%20Investigation%20Unit.pdf 2014
- Department of Health (UK). 'Health Building Note 28; Facilities for Cardiac Services 2nd edition' 2006. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2028%202006ed.pdf> 2014
- The European Society of Cardiology (UK). 'The Future of Cardiovascular Imaging and Non-Invasive Diagnosis' 2006. Retrieved from: <http://eurheartj.oxfordjournals.org/content/27/14/1750.full> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

10.0 Catering Unit

10.1 Introduction

10.1.1 Description

The Catering System shall provide food service for staff, inpatients, outpatients, and ambulatory patients as appropriate. The patient food service will include catering for the special dietary needs of patients, food service to VIP rooms and provision of nourishment and snacks between scheduled meal services. Provision of food services for visitors and staff may include cafeterias, kiosks, or vending machine dispensing areas, particularly for after-hours access.

Food service facilities and equipment shall comply with these Guidelines and other appropriate codes for food services.

10.2 Planning

10.2.1 Planning Models

Onsite Preparation

The Catering Unit may be designed to accommodate a Cook-Chill or a Cook-Serve food preparation system.

Cook-Chill refers to the process where food (fresh or frozen) is prepared, cooked and then chilled for up to five days. Food may be chilled in bulk or cold plated and then chilled. Plated, chilled food may then be re-thermalized and served. Alternatively, bulk chilled food may be reconstituted and then plated and served.

Variations on Cook-Chill preparation include:

- Extended Shelf Life Cook-Chill, where food is processed according to the Cook-Chill method and stored chilled at a controlled temperature for up to 28 days
- Cook-Freeze, where food is prepared, portioned or left in bulk form and frozen for up to 12 months; following thawing, food is processed the same way as conventional Cook-Chill.

Cook-Serve refers to the process where food, fresh or frozen is prepared, cooked, plated and served immediately. Variations of the Cook-Serve process include:

- Hot plating, delivery and serving
- Delivery of hot bulk food, then plating and serving
- Preparation of patient meals in the Inpatient Unit Pantries with direct delivery to patients.

Food preparation systems require space and equipment for receipt, storage, preparing, cooking and baking. Convenience food service systems such as frozen prepared meals, bulk packaged entrees, individual packaged portions, or systems using contractual commissioned services, require space and equipment for refrigeration, holding, thawing, portioning, cooking and/or baking.

Offsite Preparation

If food is prepared off site or in a remote location on the hospital campus, then the following will apply:

- Briefed requirements under this section (Catering) may be reduced as appropriate
- Provide protection for food delivered to ensure it maintains freshness, retains temperature and avoids contamination.

If delivery is from outside sources, provide protection against the weather. Provisions must be made for thorough cleaning and sanitizing of equipment to avoid mixing soiled and clean items. If food is brought in from a remote part of the hospital site, all connections must be under cover and reasonably weather protected.

10.2.2 Functional Areas

The Catering Unit may include the following Functional Areas:

- Food preparation areas
- Cooking facilities
- Reheating facilities and/or re-thermalization facilities if cook-chill food is processed
- Plating areas
- Dishwashing and pot washing areas
- Refrigerators, cool rooms and freezers of adequate size to store perishable foodstuffs
- Storage areas for dry goods
- Parking and cleaning areas for food distribution trolleys
- Staff Dining Room
- Access to staff amenities.

Note: Preparation of food referred to above does not necessarily involve cooking on site. Food may be prepared off site, then reheated and served on site.

Food Distribution

A cart distribution system shall be provided with spaces for storage, loading, distribution, receiving, and sanitizing of the food service carts.

The cart traffic and the cleaning and sanitizing process shall be designed to eliminate any danger of cross-circulation between outgoing food carts and incoming, soiled carts. Cart traffic shall not be through food processing areas.

The distribution service must ensure food is delivered to the patient hot or cold as required. Cook-Chill food systems require insulated carts for food re-thermalization; the carts will have separate heating and chilled food compartments. Patient meals may be re-thermalized in the Catering Unit or in the Inpatient Unit Pantries, depending on operational policy. Inpatient Unit Pantries or Catering area holding re-thermalization trolleys will require special power provisions for meals trolleys and parking space.

Cook-Serve meals will require an enclosed tray trolley delivery system with insulated plate covers to keep hot food hot during delivery. Consideration should be given to parking of trolleys in Inpatient Units when not in use, awaiting collection of used meal trays.

Garbage Disposal

Provision shall be made for regular wet and dry garbage storage, removal and disposal in accordance with Waste Management Guidelines. All garbage and in particular wet garbage, shall be stored in sealed bins. Provision shall be made for the storage and cleaning of bins.

In large hospitals or catering facilities, the following are highly recommended:

- Refrigerated wet waste storage
- Special equipment to reduce the water content of wet waste.

Staff Amenities

Staff toilets and locker spaces shall be provided for the exclusive use of the catering staff. These shall not open directly into the food preparation areas, but must be in close proximity to them.

Storage

Food storage components shall be grouped for convenient access from receiving and to the food preparation areas. All food shall be stored clear of the floor. The lowest shelf shall be not less than 300mm above the floor or shall be closed in and sealed tight for ease of cleaning.

Storage space for at least a four-day supply of food shall be provided. Separate space will be required for refrigerated (cold and frozen) storage, dry foods storage and crockery, utensils and cutlery storage.

Catering facilities in remote areas may require proportionally more food storage facilities than needed for the four days recommended depending on the frequency and reliability of deliveries.

Supplies Reveal

An area shall be provided for the receiving and control of incoming food supplies such as a loading dock. This area shall be separated from the general loading dock areas used for access to garbage areas and body holding rooms.

The receiving area shall contain the following:

- A control station
- A breakout for loading, un-crating, and weighing supplies.
- These areas may be shared with clean dock areas.

10.2.3 Functional Relationships

External

The Catering Unit has a strong functional relationship with

- Loading dock for deliveries
- Waste disposal area
- All Inpatient Units
- Staff Dining areas (these may be centrally located or dispersed throughout the complex).

Internal

Within the Catering Unit the food preparation areas and food cooking areas are central to the operation of the Unit and have a strong functional link to all support areas required including dry stores, cold storage, freezer storage, plating, dishwashing and pot washing.

10.3 Design

10.3.1 General

Design of the Catering Unit should allow for a unidirectional work flow from receipt of produce and supplies to storage, food preparation, cooking, plating and food delivery to Inpatient Units and server areas. This flow should not conflict with the return of used food carts and equipment to a receiving area, then to dishwashing and storage areas.

10.3.2 Environmental Considerations

Natural Light

Wherever possible, the use of natural light is to be maximized for the benefit of staff working in the Unit.

Acoustics

Dining areas tend to be noisy and will require acoustic treatment, particularly to walls adjoining other departments.

Provide acoustic treatment to dishwashing areas.

Refer to Standard Components, Room Data Sheets for general acoustic requirements of individual rooms.

Ergonomics

The Catering Unit should be designed with consideration to ergonomics to ensure an optimal working environment. Aspects for consideration will include height of benches and height of equipment in constant use such as food processing, cooking equipment and storage areas including cool rooms, particularly storage for bulky and heavy supplies.

Refer to Part C of these Guidelines for further information

10.3.3 *Safety and Security*

To prevent accidents, all internal kitchen doors shall have clear glazing to the top half. All electrical equipment should have emergency shut off switches to prevent overheating.

10.3.4 *Finishes*

All tables, benches and other surfaces on which food is prepared or handled shall be covered in a smooth impervious material.

Floor finishes must be a non-slip surface with no crevices and easily cleaned.

Refer also to Part C of these Guidelines.

10.3.5 *Fixtures and Fittings*

Refrigerators, freezers, ovens and other equipment that is thermostatically controlled will require temperature monitoring to maintain desired temperatures and alarms when temperature is not reached or exceeded. Alarms should be automatically recorded.

Movable equipment including food service delivery trolleys will require heavy-duty locking castors.

10.3.6 *Infection Control*

Staff hand washing basins shall be provided in all clean up, preparation, cooking, serving areas of the Unit. Basins should be hands-free operation with paper towel and soap dispensers. Mirrors should not be installed over basins.

Refer also to Part D of these Guidelines.

10.3.7 *Building Service Requirements*

Under-counter conduits, piping, and drains shall be arranged to not interfere with cleaning of the equipment or of the floor below the counter.

Insect Control

In new hospitals where the kitchen may not open directly to the outside, an air lock shall be provided between the kitchen and external areas. A section of hospital corridor may be used as an air lock. In existing kitchens being refurbished, any door leading directly from the kitchen to the outside shall be fitted with a fly screen door with a self-closer.

Hydraulics

Provide hot water to sinks used for food preparation and dishwashing, ware washing and pot washing within the Catering area. Provide hot water to all automatic dishwashing and utensil washing machines as specified by the manufacturer.

10.4 Components of the Unit

10.4.1 General

The Catering Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

10.4.2 Non-Standard Components

Trolley Return/Shipping

Description and Function

The Trolley Return area will hold used meal delivery trolleys, returned from Inpatient Units. Trolleys will then be taken into the Trolley Stripping area where they will be dismantled, dishes, trays and waste removed and the trolley cleaned in the Trolley/Cart Washing Area.

Location and Relationships

The Trolley Return/Stripping area will be located adjacent to the dishwashing and the Trolley/Cart Washing area, with direct access from the Entry Airlock.

Considerations

Provide wall and corner protection for trolley impact zones. A hand washing basin should be located in close proximity.

Dishwashing

Description and Function

The Catering Unit will provide separate stainless steel sinks and drainers or equipment for washing of dishes, utensils and cutlery. The area shall also provide space for receiving, scraping, rinsing, sorting and stacking of soiled tableware.

Location and Relationships

Dedicated crockery, utensil and cutlery washing (ware washing) facilities shall be located as far as practical from the food preparation and serving area. It is recommended that where practical, a ware washing space be located in a separate room or alcove.

Considerations

Ware washing facilities shall be designed to prevent contamination of clean wares with soiled wares through cross-traffic. The clean wares shall be transferred for storage or use in the Dining Area without having to pass through food preparation areas.

The Dishwashing area requires the following finishes:

- Walls and ceilings that are smooth, impervious and easily cleanable
- Floors that are impervious and non-slip.

Commercial type washing equipment is recommended.

Food Preparation Areas

Description and Function

Food preparation areas are provided as discrete areas for separation of food types. The areas will include benches, sinks, shelving and mobile trolleys for utensils. Ready access to boiling water units and ice dispensing machines will be required.

Location and Relationships

Food preparation areas will be located with ready access to storage areas and refrigeration for food supplies and to cooking areas.

Considerations

The food preparation areas require a temperature controlled environment.

Equipment required for food preparation may include food processors, slicers, mixers, cutters; special power may be required according to manufacturer's specifications and safety considerations may include power cut-off to equipment.

Pot Washing

Description and Function

The Catering Unit shall provide separate stainless steel sinks and drainers or equipment for washing of pots.

Location and Relationships

Pot washing sinks or equipment shall be located with ready access to preparation and cooking areas and may be collocated with dishwashing areas.

Considerations

The Pot washing area requires the following finishes:

- Walls and ceilings that are smooth, impervious and easily cleanable
- Floors that are impervious and non-slip.

Pot scrubbing facilities are required that incorporate emergency manual ware washing facilities in the event of equipment failure.

Servery

Description and Function

The Servery provides an area for plating and serving food with facilities for keeping food warm or cool.

Location and Relationships

The Servery may be located with close access to the Catering Unit and adjacent to Staff Dining Areas.

Considerations

The Servery will require the following finishes:

- Walls and ceilings that are smooth, impervious and easily cleanable
- Floors that are impervious and non-slip.

The Servery will require the following fittings and fixtures:

- A workbench with an impervious top and splash back
- A single or double bowl stainless steel sink set in the bench top supplied with hot and cold reticulated water, lever action or automatically activated taps
- A disposable glove dispenser
- A hand basin, with liquid soap and paper towel dispensers.

Staff Dining Room

Description and Function

The Staff Dining Room provides an area for staff dining and relaxation. The Room shall provide space for all staff potentially requiring sit down dining space during any single shift.

Note: Staggered dining sessions is an acceptable way of reducing the size of this room.

The minimum area for a Staff Dining Room shall be 1. 25m² per person dining at any one time or 9. 5m² whichever is the greater.

A Vending machine area may be provided for after-hours access to prepared food and snacks. The Vending machine area may be located within the Dining Room with security considerations to prevent access to the Catering Unit after-hours.

Location and Relationships

The Staff Dining Room should be located in a staff only, discreet area of the facility with direct access to a circulation corridor. It should have ready access to the Catering Unit. Access to an external dining area is desirable.

Depending on Operational Policy of the hospital, a combined public/staff Dining Area may be provided located close to the entrance area.

Considerations

The Dining Room should incorporate the following:

- External windows
- Dining tables and chairs
- Telephone within or adjacent to the room for staff use
- Acoustic privacy may be required to adjoining areas.

Trolley Cart/Wash

Description and Function

An area shall be provided for stripping, washing and disinfecting of trolleys and carts.

Location and Relationships

The Trolley Wash area should be located remotely from the food preparation and storage areas. It should have ready access to the trolley return and parking areas.

Considerations

The trolley washing area will require:

- Smooth, impervious and easily cleanable surfaces to walls and ceiling
- Impervious and non-slip finishes to the floor
- Hot and cold water outlets.

Blast Chillers

Description and Function

Blast Chillers are required for the Cook-Chill process and are used for rapid chilling of cooked food in order to store food until ready for plating.

Location and Relationships

In Cook/Chill food production, the Blast Chillers will be located with ready access to the cooking and food preparation areas.

Considerations

Blast Chillers will require direct power and should be installed according to manufacturer's specifications.

10.5 Schedule of Accommodation

Typical Catering Unit for Levels 4 to 6

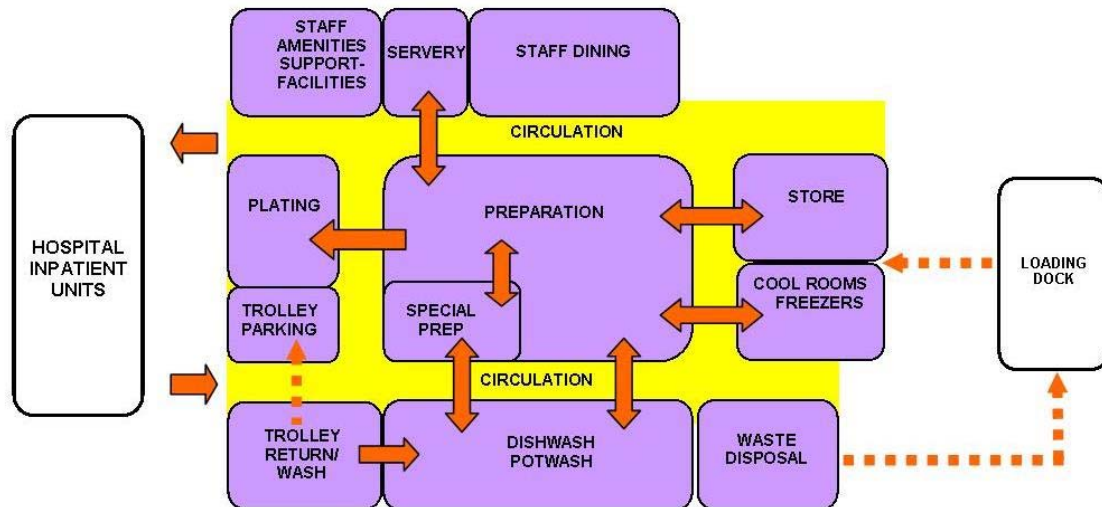
ROOM/SPACE	Standard Component				RDL 4 Qty x m²			RDL 5/6 Qty x m²			Remarks
Entry/Receiving											
Airlock	AIRLE-10-SJ				1	x	10	1	x	10	Entry/Exit, to maintain air pressurisation
Holding/Stripping – Waste Food Trolleys					1	x	30	1	x	50	
Food Trolley Washing					1	x	15	1	x	20	
Dishwashing/Warewashing					1	x	30	1	x	70	
Store – Clean Food Trolleys					1	x	30	1	x	50	
Holding – Non-Organic Wastes	DISP-8-SJ Similar				1	x	10	1	x	15	
Holding – Organic Waste	DISP-8-SJ Similar				1	x	10	1	x	10	
Storage Areas											
Coolroom – Dairy/Vegetable	CORM-SJ				2	x	6	4	x	10	Separate cool rooms for produce as required
Coolroom – Meat	CORM-SJ				2	x	6	3	x	10	Allow for separation of food storage
Coolroom – Freezer	CORM-SJ				2	x	6	3	x	10	Allow for separation of food storage
Store – Dry Goods	STGN-20-SJ Similar				1	x	15	1	x	50	Including dry ingredients
Store – Fruits/Vegetables	STGN-20-SJ Similar				1	x	10	1	x	15	
Store – Eggs	STGN-6-SJ				1	x	6	1	x	6	
Preparation Areas											
Vegetable Washing/Preparation					1	x	10	1	x	20	May be reduced if cooking is offsite
Meat Preparation					1	x	10	1	x	15	May be reduced if cooking is offsite
Poultry Preparation					1	x	10	1	x	15	May be reduced if cooking is offsite
Fish Preparation					1	x	10	1	x	15	May be reduced if cooking is offsite
Pastry Preparation					1	x	10	1	x	30	May be reduced if cooking is offsite
Cold Preparation					1	x	10	1	x	20	May be reduced if cooking is offsite
Holding – Primary Prepared Products					1	x	10	1	x	10	
Cooking/Production Area											
Cooking/Baking					1	x	100	1	x	175	May be reduced if cooking is offsite
Kitchen – Dietetics					1	x	20	1	x	30	Special diets
Kitchen – Special Meals					1	x	10	1	x	20	VIP meals
Packaging/Food Portioning					1	x	30	1	x	60	
Plating/Tray Preparation					1	x	50	1	x	100	
Store – Prepared Products					1	x	15	2	x	20	
Store – Tray Items/Tableware	STGN-20-SJ Similar				1	x	20	1	x	40	Crockery, utensils, trays etc.
Pot Wash					1	x	15	1	x	20	
Meal Trolley Holding					1	x	25	1	x	50	Clean trolleys awaiting plated meals
Support Areas											
Cleaner's Room					1	x	5	1	x	5	
Store – Cleaning Products	STCL-SJ Similar				1	x	5	1	x	5	
Store – Clean Linen	STGN-6-SJ				1	x	3	1	x	6	
Staff Areas											
Staff Dining Room					1	x	75	1	x	100	Optional; Allows 60/80 persons, may

ROOM/SPACE	Standard Component				RDL 4 Qty x m ²			RDL 5/6 Qty x m ²			Remarks
											be located remotely to Catering Unit
Servery					1	x	12	1	x	20	Optional
Vending Machine Area	BVM-3-SJ				1	x	3	2	x	5	Optional; After-hours service
Office – Manager	OFF-S9-SJ Similar				1	x	12	1	x	12	
Office – Supervisor	OFF-S9-SJ OFF-3P-SJ				1	x	9	1	x	15	Shared, 3-person
Office – Chef	OFF-S9-SJ Similar				1	x	9	2	x	12	
Office – Dietician	OFF-S9-SJ				1	x	9	2	x	9	Close to kitchen entrance; No. depends on size and service plan
Office – Dietetics	OFF-2P-SJ				1	x	12	3	x	12	Dietetics staff, shared; No. depends on size and service plan
Office – Assistant Chef	OFF-S9-SJ				1	x	9	2	x	9	Observation into production area; No. depends on size and service plan
Office – Secretarial	OFF-2P-SJ				1	x	9	1	x	12	Shared, 2 person; No. depends on size and service plan
Change – Staff (Male/Female)	CHST-12-SJ CHST-20-SJ				1	x	12	2	x	20	Toilets, Shower, Lockers; May share with general staff amenities
Staff Room	SRM-25-SJ Similar				1	x	20	1	x	25	
Total Net Department							761			1402	
Circulation %							30			30	
Grand Total							989. 3			1822. 6	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

10.6 Functional Relationship Diagram



10.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Department of Health (DH) (UK). 'Health Building Note 10 Catering Department' 1997. Retrieved from: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2010.pdf> 2014
- Monash University Office of Environmental Sustainability (Aus.). 'Greening Up Our Catering: Sustainable Catering Guide' 2009. Retrieved from website: http://fsd.monash.edu.au/files/MU%20Sustainable%20Catering%20Guide%20On%20Screen_1.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguide.org 2014
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11.0 Cleaning and Housekeeping Unit

11.1 Introduction

11.1.1 Description

The Cleaning and Housekeeping Unit is responsible for maintaining the cleanliness of the facility in all areas including Inpatient Units and all public areas.

The Cleaning Service may be contracted or in-house. In addition to the Cleaner's Rooms already requested in the specialist Units, others may be required throughout the facility to maintain a clean and sanitary environment.

11.2 Planning

A typical hospital Cleaning/Housekeeping Unit comprises the following:

- Manager's Office
- Cleaner's Meeting/Briefing room
- Cleaner's Equipment/Supply Store
- Cleaner's Sign-on Bay.

The above facilities are not mandatory. When provided, these should be sized adequately for the number of staff and the amount of equipment stored.

11.2.1 Functional Areas

Facilities shall be provided to clean and sanitize trolleys serving the Cleaning/Housekeeping Unit, Catering Unit and Linen Services. These facilities may be centralized or departmentalized. Storage areas are required for bulk cleaning materials, consumable supplies and equipment. Storage areas may be shared with the Supply Unit.

11.2.2 Functional Relationships

The Cleaning/Housekeeping Unit should be located in a service area of the facility with ready access to the Waste Management Area, the Loading Dock and Laundry/Linen Handling areas.

11.3 Components of the Unit

The Cleaning/Housekeeping Unit will consist of a combination of Standard Components and Non-Standard Components. Standard Components must comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets. Provide the Standard Components as identified in the Schedule of Accommodation.

Non-Standard Components

Provide the Non-Standard Components as identified in this section.

Bay Sign-On

Description and Function

A recessed area is required for staff to sign-on, check and record rosters. The Sign-on Bay shall be a minimum of 4m²

Location and Relationships

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

Considerations

The Sign-on Bay will require the following fittings and services:

- Bench at standing height
- Pinboard for display of rosters (or computer for computerized rosters)
- Computer terminal (optional)
- Power and data outlets for computers as required.

11.4 Schedule of Accommodation

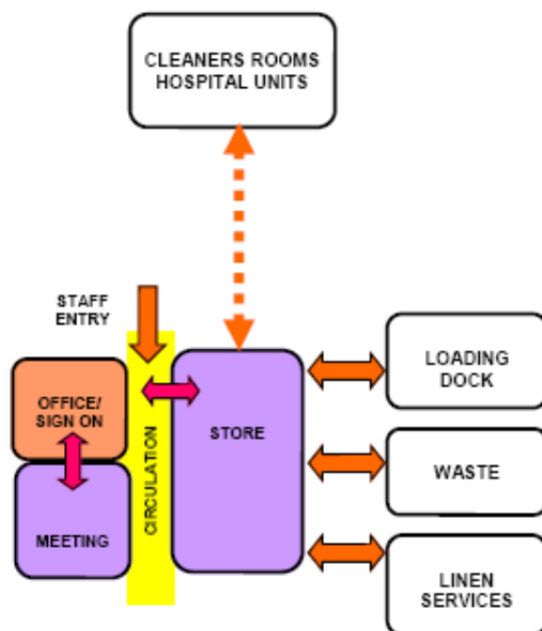
Typical Cleaning and Housekeeping Units at levels 1 to 6

ROOM/SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Cleaning Services											
Bay – Mobile Equipment	BMEQ-4-SJ Similar				1	x	10	1	x	10	Optional
Central Cleaner's Room	CLRM-5-SJ Similar	1	x	10	1	x	10	1	x	20	With storage for cleaning consumables
Store – Chemical	STCM-SJ Similar	1	x	4	1	x	6	1	x	8	For cleaning chemicals as needed
Store – Cleaners	STCL-SJ Similar	1	x	12	1	x	12	1		25	Cleaner's trolleys, cleaning equipment
Staff Areas											
Bay – Sign-On/Off		1	x	4	1	x	4	1	x	4	May be collocated with Office-Manager
Office – Manager	OFF-S9-SJ Similar				1	x	12	1	x	12	
Office – Supervisor	OFF-S9-SJ Similar	1	x	9	1	x	9	2	x	9	Qty depends on staff numbers
Office – Workstation	OFF-WS-SJ							4	x	5.5	Administrative and Clerical support staff; Qty depends on staff numbers
Interview/Meeting Room	MEET-9-SJ							1	x	9	May share with adjacent Unit
Meeting Room	MEET-L-15-SJ Similar							1	x	20	Meetings/training; may share with general staff amenities
Staff Room	SRM-25-SJ							1	x	25	May share with general staff amenities
Toilet – Staff	WCST-SJ							2	x	3	May use general staff change/toilet facilities if located close
Net Department Total		39			63			179			
Circulation %		10			10			10			
Grand Total		42.9			69.3			196.9			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

11.5 Functional Relationship Diagram



11.6 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

12.0 Clinical Information Unit

12.1 Introduction

12.1.1 Description

The function of the Clinical Information Unit is the development and maintenance of health information systems involving the following:

- Retrieval, assembly, sorting and distribution of records for and to the wards and other patient units
- Transcription/typing service for outpatient letters, discharge summaries and operation reports
- Classification (clinical coding) of diseases and procedures for inpatient admissions using an International Classification of Diseases
- Provision of information to management and other authorized staff for purposes such as planning, utilization review, quality assurance, case mix studies and research
- Quality assurance of the medical record to ensure standards are met.

The purpose of the Clinical Information Unit is to provide for the secure maintenance, storage and retrieval of confidential clinical records. Provision should be made for 24-hour availability of clinical records either by a computerized (EMR) or manual system.

A health facility must provide appropriate secure record storage and retrieval to ensure patient confidentiality at all times.

A health facility must store all patient related administrative, historical and medical records in a fire rated construction as indicated in local by-laws.

12.2 Planning

12.2.1 Operational Policies

General

Comprehensive examples of the issues on which unit decision-makers will be required to develop specific operational policies are listed below:

- A centralized record system should be maintained for all inpatient, emergency and outpatient/day patient attendances. Where a centralized system is not possible, the existence of a sub-file must be flagged to allow retrieval of the sub-file for patient care or medico-legal purposes
- A unit numbering system will be used which will provide a single identifying number for every patient who presents to the Hospital i. e. the Medical Record Number (MRN). The MRN will be issued at the time of first admission or attendance and will be used for all subsequent admissions and treatment. Patient identification/registration must comply with Patient Registration standards
- Accurate and up-to-date Patient Administration Systems will be maintained and information relating to patient movements will be updated as soon as the Department is notified
- Terminal digit filing will be used in both active storage and secondary storage
- Correctly completed requests for each record leaving the unit will be required. The tracking of medical records will be facilitated by the use of bar coding on the record folder
- Information will only be released to a third party with the patient's authority except if required for continuing patient care, or according to hospital operational policy
- Medico-legal reports and subpoenas will be prepared in accordance with the local authority confidentiality and legal requirements
- Medical records will be retrieved from secondary storage after-hours only if deemed clinically necessary and staff may be accompanied by a security officer if necessary
- A centralized dictating system utilizing the telephone system may be used
- Transcription of discharge summaries, operation reports and outpatient letters may be carried out in the Unit.

The record management system chosen will also require consideration of operational policies related to implementation of new technologies; cabling for departments; integration with existing communications systems; location of workstations; space and security requirements; air-conditioning requirements and the transition process to be utilized when moving from one system to another.

Electronic Medical Records

The Electronic Medical Record (EMR) is a computerized online record that tracks and details a patient's care during the time spent in hospital. The EMR enables staff to enter patient data at the point of care and allows authorized clinicians and access a patient's records from any online location, at any time, to make rapid assessments and coordinate care. In the future, as electronic systems are implemented, the EMR will begin to replace paper-based records by integrating patient information in a central system. As a result, the provisions for paper based systems may not be required if EMR is provided.

Storage

Medical records must be kept for at least 10–15 years after last attendance or official contact or access by or on behalf of patient, or until the patient attains the age of 25 years, depending on Peer Hospital Group category. If a commercial company is used to dispose of the records they should provide certification to confirm confidentiality. Records must be stored in a fire-rated construction as indicated in the local building bylaws. Note that sprinklers should NOT be installed. It is recommended that valuable paper items be stored in a clean dust free environment, at temperatures between 18 and 20°C and at relative humidity between 45 and 50 per cent.

Staffing Levels

The Staff Establishment in a Unit based on hard copy files will include the following:

- Health Information Managers – a Unit Head of Department and additional professional staff depending on size of Unit
- Clinical coders
- Medical typists
- Administrative staff.

12.2.2 *Planning Models*

Location

Location may depend on whether or not a pneumatic or mechanical automated records transport system is to be installed and the departments to which it is linked. The decision to include such a system will strongly influence the external functional relationships of the Unit with the Outpatients Clinic area, in particular and may reduce the importance of direct access to the Emergency Unit. It must be located to provide natural light and – if possible – views to staff who occupy the area during the working day. Planners must consider possible future uses of the unit envelope for such time as an electronic record system has evolved with consequent reduction in staff and diminishing storage needs. The Unit should be considered as 'soft' space into which an adjoining unit could expand or a new unit established. Secondary storage ideally will be readily accessible to minimize time wasted in access.

Building Design

If a ground level location cannot be achieved, structural engineers must be consulted to calculate the weight of the records in order to ensure appropriate floor reinforcement.

12.2.3 Functional Areas

Rooms, areas, or offices for the following personnel and/or functions shall be provided:

- Medical Records Administrator/coding personnel
- Review and Dictation
- Sorting and Recording
- Microfilming of records, if applicable
- Record Storage, active and archived.

Entry/Reception/Administration

A single controlled point of entry to the Clinical Information Unit for the reception of visitors and staff. A temporary storage area will be required for returned files or files awaiting delivery to departments. A small amount of waiting will be required. The optimum location for the offices for medico-legal staff is the Reception area with dual access from the Waiting Area and from inside the Unit. Entry doors should have a buzzer and key card or similar for secure access for authorized staff. For units that run a 24-hour service, a peep hole in the door and/or a camera/intercom is required for after-hours access. Access will be required within this area to Dictating/Research Cubicles so that visiting staff do not have to traverse the Unit.

Transcription

This area will provide the medical transcription service. Staff should be located in a quieter area of the unit but within close proximity to the dictating and general assembly/sorting area. Consideration should be given to the acoustic treatment of this area as staff need to listen to transcription machines, however staff should not be totally separated from the other department activities.

Clinical Coding

Coding requires an even greater degree of concentration to ensure accuracy so a quiet area is essential. Each coder will need a filing bay to store files awaiting attention plus storage for coding and reference manuals.

Offices

The staff side of the Reception Desk is a convenient location for offices for Health Information Managers to allow easy access for visitors to the Unit.

Photocopying and Printing

Dedicated, acoustically-treated and ventilated space is required. This space may also be used for generating bar code labels etc. This may also include stationery storage. Locate with ready access to the medico-legal offices that generate a large amount of photocopying.

Assembly and Sorting

An open plan area used for the processing activities associated with the filing and preparation of the medical records for clinics, admissions etc. including workstations and sorting tables. Each records officer will need a records storage bay and a trolley at or in close proximity to their workstation. Storage will be required for:

- Records awaiting sorting and assembly
- Records awaiting filing
- Newly assembled records
- Note that records awaiting medico-legal attention will be stored in the Medico-Legal Office.

As this area will be the major activity area of the Unit, it should have natural daylight. This area should be located with direct access to the filing storage areas and Photocopy and Stationery Store.

Shelving and Aisles

The most common and suitable method to file active medical records is on fixed metal shelving units (bays). Archived files may be stored in a compactus but a compactus is not recommended for active files as it can be dangerous and inconvenient if a number of staff wish to access files at the same time. Standard bays are usually 900mm wide and 400mm deep.

Regardless of the number of shelves in each bay (may be seven), the highest shelf should be accessible by a short member of staff using a library stool – usually six levels of shelving. Step ladders are not recommended. Maximum height should be 2175mm. A minimum width of 750mm per aisle between facing bays must be provided; however for efficient retrieval of records, 900mm is recommended as it allows space for trolleys, library stools and for staff to pass each other in the aisles. The main access aisles should be at least 1500mm wide to allow for trolleys passing each other and for exit in the event of fire.

12.2.4 Functional Relationships

General

In a traditional, 'hard copy' environment, the critical relationship is with the Emergency Department for immediate record retrieval. Less critical is the relationship with Ambulatory Care/Outpatient Unit/s as files are usually pulled and delivered to the Units prior to clinic sessions. However, distances for transport of heavy records do need to be considered.

It is also useful to locate the Unit to encourage medical staff access to unwritten discharge summaries and for ease of access for record review etc. In a paperless environment, there will probably be no critical relationships except for staff wanting to access records still in hard copy for research purposes etc.

Archive File Store

All the records requiring storage should meet the statutory requirements beyond the five year active storage period. There are a number of advantages for keeping non-active medical records readily accessible and available. Two of these are:

- Time saving for staff
- Easy access for refileing.

If storage space is a problem and microfilming or scanning of inactive records is being considered, a special room for microfilming will need to be planned. The optimum solution is to locate the archival store within the Unit itself or directly underneath connected by a stairway. It is not often practical to include the space for all the records in a prime clinical area. Consideration should be given to locating the records in a low activity area of the hospital and at the same time remain secure, dry and free from vermin and other insects likely to attack the paper. Fire sprinklers should NOT be installed. Records storage areas must be temperature and humidity controlled for preservation of records.

12.3 Design

12.3.1 General

One main entry and exit for all staff and records is required to ensure the security and confidentiality of the unit and the medical record is maintained.

12.3.2 Environmental Considerations

Acoustics

Refer to Part C of these Guidelines.

Natural Light

Essential in general work areas.

12.3.3 *Space Standards and Components*

Ergonomics

Refer to Part C of these Guidelines.

12.3.4 *Safety and Security*

Shelving and workbenches must meet Occupational Safety and Health Standards.

Due to the confidential nature of the documents being handled in the Unit, careful consideration must be given to the security of the unit. The unit should be secure at all times to protect the records against loss, damage or use by unauthorized personnel. There must also be adequate security for staff and visitors should not be able to enter the department proper without being let in by the receptionist. The counter should be designed so that it would be difficult/impossible to climb over. The required level of security can be achieved by limiting Unit entry/exit points to one (1) equipped with access control – keyed or electronic. All other egress points should be locked and/or locally alarmed. Well signed, local alarms are a strong deterrent to unauthorized egress but the system must be overridden in the case of fire alarm activation in the area. Hospital policy may require a security officer to accompany non-medical records staff in the department where records are required after-hours.

Optical Disk Security

Once a document is scanned, it cannot be lost or tampered with. By storing the original set of disks and using duplicates as working copies, complete sets of records are maintained at all times. The second issue is security of access to the confidential records on the optical disk system. If a full system is implemented, terminals would be located throughout the Hospital. This could pose problems for security of the information being accessed and displayed on these terminals. This means that safeguards must be put in place to prevent viewing of images by unauthorized persons. System access and security systems must have multi-dimensional passwords that can avoid unauthorized intrusion into the system and particular records.

12.3.5 *Finishes*

Wall Protection

Provide wall protection to all areas where trolleys are in use.
Refer also to Part C of these Guidelines.

Ceiling and Floor Finishes

Refer also to Part C of these Guidelines.

12.3.6 *Fixtures and Fittings*

Refer to Part C of these Guidelines and to the Room Data Sheets (RDS) and Room Layout Sheets (RLS) for further detailed information

12.3.7 *Infection Control*

Refer to Part D of these Guidelines for further information.

12.3.8 *Building Service Requirements*

Information Technology/Communications

In addition to the usual hospital communication systems, the Clinical Information Unit has particular needs. These include the need for remote dictating from the administrative and clinical areas to a central dictating unit. Communication systems may include:

- Office phones
- Two-way intercom between designated staff areas or public address system in large units
- phone between the archival and main unit (if archives located off site or not adjacent to the main Medical Record Unit)
- Computer networking systems associated with the Medical Record technology.

Duress Alarm System

Locate duress alarms at Reception.

Lighting

Overhead lighting in the records store must run parallel to the direction of the filing bays to ensure adequate lighting of each aisle.

Floor Loading

Structural engineers must be consulted to calculate the weight of the records in order to ensure appropriate floor reinforcement if a ground level location cannot be provided.

12.4 Components of the Unit

The Clinical Information Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

12.4.1 *Non-Standard Components*

Record Processing Area

Description and Function

An open plan area used for the processing activities associated with the filing and preparation of medical records for clinics, admissions etc. It will incorporate parking for medical record transport trolleys. (Number and dimensions will need to be ascertained). This area may have 'zones' for assembled files ready for issue and records waiting to be refilled. The area will need workstations and sorting tables. Records may also be scanned in this area for digital storage.

Location and Functional Relationships

This area should have direct access to the filing storage areas.

Considerations

At least part of this area should have access to natural light as it will be the major activity area of the department.

Dictation Cubicles

Description and Function

The dictating area will be used by medical staff and others to view and research medical records as well as dictating and completing the discharge summaries.

Location and Functional Relationships

The cubicles should be located on the perimeter of the unit adjacent to but inside the reception area.

Considerations

The number of cubicles will depend on usage and the cubicles may be self-contained or in an open plan office in which case cubicle partitions will be required. The auditory separation of personnel is preferred as extraneous noise will be distracting to the person dictating.

12.5 Schedule of Accommodation

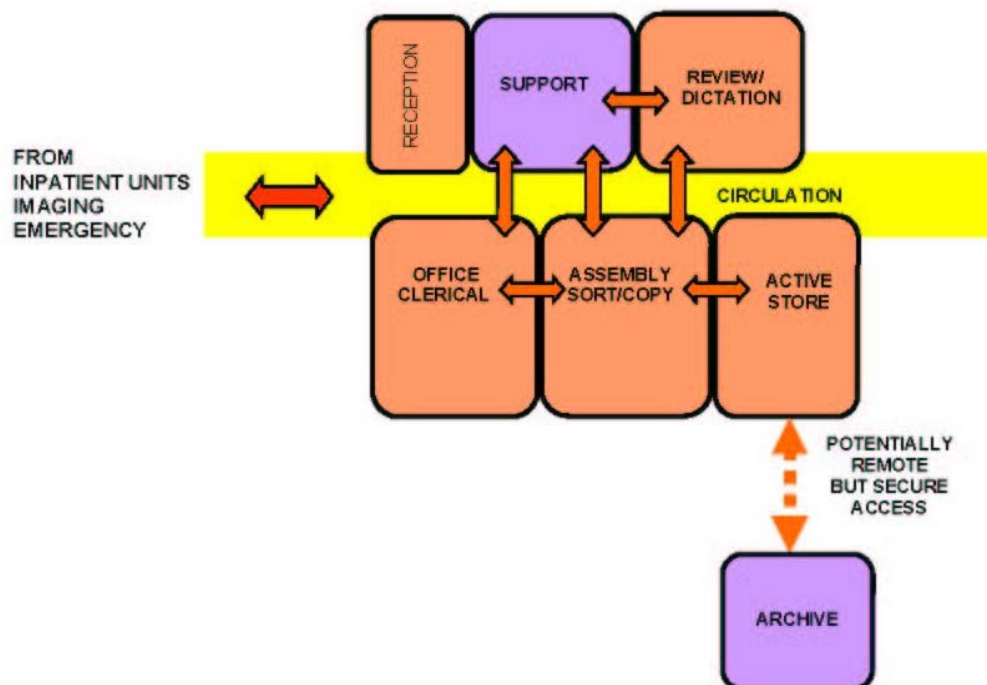
Typical Clinical Information Unit at levels 3 to 6

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entry Reception							
Reception/Clerical	RECL-10-SJ				1 x 10	1 x 10	
Waiting	WAIT-10-SJ Similar				2 x 5	2 x 5	Separate area for female waiting
Interview/Meeting Room	MEET-9-SJ				1 x 9	1 x 9	
Operational Areas							
Office – Manager	OFF-S9-SJ Similar				1 x 12	1 x 12	
Office – 2-Person	OFF-2P-SJ				1 x 12	3 x 12	Medico-legal, administrative staff
Office – Workstation	OFF-WS-SJ				5 x 5.5	12 x 5.5	Data analysis, coders, administrative support, according to staffing numbers
Review/Dictation Cubicles					2 x 4	5 x 4	
Bay – Pneumatic Tube					1 x 1	1 x 1	Optional; Depends on operational policy
Sorting						1 x 15	
Record Processing/Scanning					1 x 50	1 x 70	Dependant on operational policies
Store – Photocopy/Stationery	STPS-8-SJ				1 x 8	1 x 8	
Store – Records (Active)	STRS-80-SJ Similar				1 x 100	1 x 250	Size dependant on number of records to be stored
Store – Records (Archived)	STRS-60-SJ Similar					1 x 250	Size dependant on number of records to be stored
Store – General	STGN-8-SJ Similar				1 x 8	1 x 12	
Bay Mobile Equipment	BMEQ-4-SJ				1 x 4	2 x 4	Trolley parking
Staff Areas							
Meeting Room – Medium	MEET-L-15-SJ				shared	1 x 15	Meetings, education
Property Bay – Staff	PROP-3-SJ					2 x 3	
Staff Room	SRM-15-SJ					1 x 15	
Toilet – Staff	WCST-SJ					2 x 6	May share common staff facilities if located close
Net Department					259.5	825	
Circulation %					15	15	
Grand Total					298.4	948.8	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

12.6 Functional Relationship Diagram



12.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 240 Clinical Information Unit Revision 4' 2012. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/Archive/AusHFG%20Complete%20Version%201.pdf 2014
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- Medical Architecture Research Unit (MARU) (UK). 'Filmless & Paperless Hospitals An Emerging Reality in the UK' 2001. Retrieved from website: http://www1.lsbu.ac.uk/maru/docs/FilmlessandPaperless_Primer.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

13.0 Community Health Unit

13.1 Introduction

This Guideline is a resource to assist with the planning, design and construction of a Community Health Center (CHC). It must be read in conjunction with generic requirements and Standard Components, which are described in other parts of these Guidelines. Community Health Centers may also contain facilities that are more fully covered by other unit specific Guidelines e.g. Ambulatory Care and Rehabilitation.

13.1.1 Description

Community Health facilities can range from single rooms to multi-functional clinics and can either be integrated within a hospital facility or could be a stand-alone building. Specific requirements for the Facility are determined by the range of services to be provided.

13.1.2 Function

The primary role of a Community Health Center is to facilitate the delivery of health care services to clients, whilst also providing suitable facilities to meet the working needs of staff. Activities undertaken include counselling, therapy, health education, community support and group programs. Community Health Services are typically delivered in a community based rather than hospital based setting. A Community Health Center may be the physical base for a service rather than where the service is delivered or a combination of both. Some Community Health Services could also be provided in an Ambulatory Care facility. This will be dictated by the Services Plan for the facility.

13.1.3 Services Provided

Services that may be included in a Community Health Center include:

Primary Health Care

- Allied Health services including Physiotherapy; Occupational Therapy; Podiatry; Chiropractic; Social work; Speech Pathology; Psychology; Audiology; Health Education (e.g. Asthma, Diabetes); Multi-cultural health services; Primary medical services (GPs and nurse practitioners)
- Ambulatory Care and post-acute care services
- Antenatal/Postnatal clinics
- Aged Care services
- Chronic disease management services
- Continence services
- Counselling services (e.g. Bereavement, Adolescents, Problem Gambling, Generalist)
- Child assessment, early childhood services, youth and family health services
- Child Protection Services (including developmental issues, early intervention services and child protection counselling)
- Dietetics and Nutrition
- Dental services
- Family planning
- HIV/AIDS services
- Home nursing services and Outreach Medical Clinics
- Men's health services
- Palliative care and rehabilitation services
- Sexual health and sexual assault services
- Women's health services.

13.2 Planning

13.2.1 Operational Models

Hours of Operation

The Community Health Unit will generally operate up to 12-hours per day, five days per week with some specific services available 24-hours a day. There is an increasing trend towards 'extended hours' services. Outreach services (e.g. community nursing) may be provided over weekends and public holidays. Out of hours access may be required on a planned basis for community groups, voluntary organizations or other specific activities.

Flexibility

As the demand for services vary over time within a Community Health Unit, a flexible accommodation model is recommended. Opportunities for sharing resources and facilities within the unit should also be examined. e.g. Reception and Waiting Areas, Interview and Treatment Rooms. If shared spaces are maximized, it reduces the need for potentially under-utilized special purpose rooms. Similarly, Operational policies should also consider sharing equipment. Location of equipment within the unit is important and easy access to equipment for specific purposes is highly recommended. The design of the unit should ensure that there are ample opportunities for expansion and adaptation for future use.

13.2.2 Operational Policies

Operational policies should be clearly articulated as it can have major impact on facility management and the capital and recurrent costs of health facilities. Operational policies may vary depending on various factors and it is recommended that users of the unit define their own operational policies.

Staffing Levels

Staffing levels will vary for each CHC, depending on Operational Policies, services provided, availability of staff, case mix and activity levels.

13.2.3 Planning Models

Location

The location of CHCs will vary, depending on the outcome of Service Planning at an Area Health Service level. Options for locating centers include:

- Free standing in a community location
- Attached or included in the development of commercial facilities e.g. shopping centers
- On the grounds of a hospital facility.

Configuration

The configuration of a CHC will depend on:

- Population profile
- Service mix
- Staff profile providing the services
- Relationship of the CHC with adjacent hospital facility.

13.2.4 *Functional Areas*

Functional Zones

Individual spaces combine to form zones or groups of spaces with a similar purpose. The relationship between zones is considered important to ensure that CHCs operate efficiently and effectively. A Community Health Center can be subdivided into three key Functional Zones:

- Main Entry/Reception
- Client Areas – activities and treatment including specialist areas such as Occupational Therapy, Physiotherapy, Cardiac, Dental facilities etc.
- Staff Areas.

Client/Specialist Areas

Specialist clinical areas such as Occupational Therapy, Physiotherapy, Prosthetist, Orthotist, may be sited in close proximity to each other so that where possible they can share facilities such as outdoor treatment areas and splinting activities. Physiotherapy and Occupational Therapy staff should have visibility to the treatment areas from their offices. Direct access to an outdoor area from the clinical area is required for Occupational Therapy and Physiotherapy.

Occupational Therapy requires a relatively large treatment area to facilitate individual function activities, Activities of Daily Living, evaluation of equipment needs and group therapeutic activities. If Physiotherapy is to be provided, an area is required to facilitate evaluation, therapeutic exercise and ambulation training. The treatment area needs to accommodate equipment such as electrotherapy machines, several plinths, gym equipment, mats, treatment tables, parallel bars and steps. A specifically designated area should be provided where electric treatment modalities are required for Physiotherapy. A suitable variety and number of counselling/interview rooms should be provided for use by psychologists, social workers and counsellors.

Dental Facilities

Depending on the CHC, there may be a specifically designated Dentistry Consulting Room or a sessional dentist and dental nurse may share accommodation with a Podiatrist. If Dental facilities are included, there will be a need for space for sterilizing equipment, portable X-Ray and X-Ray developing equipment. Areas for Dentistry or Podiatry need to be investigated to allow room for specialized equipment including chairs.

The Dental Facilities should be located with ready access to the Main Entry and Waiting Areas. The Dental facilities must be acoustically isolated and it may be better to separate them from other areas. Access is required for patients using mobility aids such as walking frames or wheelchairs.

13.2.5 *Functional Relationships*

Where possible, Community Health Centers should be in a quiet location, with a pleasant outlook and maximum environmental benefits. A CHC should be located in an area that is accessible to the community by both public and private transport and in close proximity to other local resources. Ideally this location will adjoin other public amenities routinely used by the community e.g. shopping precinct, transport hub, library. It should be noted that a CHC services may be located over more than one site and in more than one community.

Access

Off-street access for vehicles transporting clients must be provided. Easy access is required to Car Parking Areas and other Health Care Facilities on the site if provided. Some services may require a separate and discreet entry point. Ambulance access must be provided to the facility with trolley access to the Main Entry, Waiting and all Client Areas. All-weather vehicle drop-off points should be provided for easy access by clients who are elderly, frail, have limited mobility or who are wheelchair bound.

Internal

The internal plan of the CHC must allow clients to easily move to and from treatment and activity areas, and enable efficient staffing. Optimum internal relationships include:

- Reception/Clerical Areas should have a clear view of Main Entry/Waiting Areas and be visible from adjacent Staff Areas. There should be easy access to stationery and medical records. The Reception Area should provide a barrier controlling access between Waiting and Treatment Areas.
- Consultation/Examination/Interview Rooms should be easily accessible from the Main Entry/Waiting Area as well as the Staff Area
- Meeting/Activity Rooms should be adjacent to the Main Entry/Waiting Area so they can be accessed after-hours, with the rest of the center safely secure
- Staff areas must be designed so they allow staff to easily move between the Main Entry/Reception and Client Areas. Staff offices and amenities should be separate from Client and Public Areas to provide privacy and a quiet work area.

13.3 Design

13.3.1 *Parking*

Generally car parking will be provided for clients and staff. In particular, times of attendance for staff and overnight parking for health service vehicles will impact on requirements. Security issues need to be addressed when planning for after-hours parking. These issues will vary from site to site, and will need to be determined in accordance with Local Authority requirements.

13.3.2 *Disaster Management*

The potential role of Community Health Centers in a disaster management situation should be assessed. Attributes which make it potentially useful in a disaster situation include:

- Large open spaces for disaster management or emergency accommodation
- Consult/Interview Rooms for assessment of victims
- Focal point in the community.

13.3.3 *Infection Control*

Consideration of Infection Control is important in the design of this Unit. Treatment spaces will be used for a variety of clients. It is possible that infectious patients will use the same treatment spaces as immuno-suppressed patients at different times on the same day. Standard precautions must be taken for all clients regardless of their diagnosis or presumed infectious status. Refer to Part D of these Guidelines for further information. Staff hand washing facilities, including disposable paper towels must be readily available.

13.3.4 *Environmental Considerations*

Acoustics

The CHC will require consideration of acoustic privacy including:

- Interviews with clients
- Location noisy areas such as Public Waiting, Dental, Child Health Facilities
- Meeting rooms for staff discussion
- Exclusion of distracting noises during client consultations.

Solutions to be considered should include sound absorbing materials and sound isolating construction, separation of quiet areas from noisy areas etc.

Natural Light

Natural lighting is important for the well-being of patient and staff and assists in orientation of building users which leads to improved service outcomes. The use of natural light should be maximized throughout the Unit. Access to natural light is desirable and highly recommended.

Privacy

For the purpose of Patient privacy and confidentiality, it is important to consider the following:

- Confidentiality of client discussions and records
- Provision of sub-waiting areas for clients wishing or needing to be separated
- Location of windows and doors to ensure privacy of clients.

13.3.5 *Safety and Security*

The facility should provide a safe and secure environment for patients, staff and visitors while remaining a non-threatening and supportive atmosphere conducive to the delivery of services. The facility should cater to patients with varying levels of physical and mental capabilities. The facility, furniture, fittings and equipment must be designed and constructed to minimize risks of injury.

Adequate security should be provided to prevent violence and theft in healthcare facilities. Internal spaces and zones should offer a high standard of security through grouping functions, controlling access and egress from the Unit and providing optimum observation for staff. The level of observation and visibility has security implications. Planning should allow for after-hours access to Public Areas without compromising security of Staff Areas.

13.3.6 *Finishes*

Interior Design

The design of internal spaces with respect to furnishings, style, color, textures, ambience, perception etc. can assist in relaxing patients and preventing an institutional atmosphere. However, cleaning, infection control, fire safety, client service and the patient's perception of a professional environment must always be considered. Some interior spaces may have restrictions on color due to the nature of its function such as clinical observation in treatment areas. Bold primary colors should be avoided in such areas

13.3.7 *Building Services Requirements*

Unit design should address the following Information Technology/Communications issues:

- Paperless records
- Handheld computers, email and paging and personal telephones replacing some aspects of call systems
- Picture Archiving Communication System (PACS)
- Data entry including scripts and investigation requests
- Bar coding of supplies and X-Rays/records
- Data and communication outlets at regular intervals to enable electronic use of records.

Nurse Call and Alarm Systems

The need for provision of a call system that allows clients and staff to alert other health care staff in a discreet manner at all times should be considered. A discreet duress alarm system will be required at all Reception Points and Client Treatment Areas, where a staff member may be alone with a client.

13.4 Components of the Unit

The Community Health Center will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

13.4.1 *Non-Standard Components*

Provide the Non Standard Components as described in this section, according to Operational Policy and service demand.

Entry Canopy

Description and Function

An Entry Canopy is required to provide undercover access to the building from vehicles. Depending on the type of transportation vehicles expected at the facility, the canopy should be large enough to allow maneuvering beneath it.

Location and Relationships

Provide at Main Entry.

Main Entry

Description and Function

The Main Entry to the facility should be clearly displayed through appropriate signage informing people where to proceed. The Entry may incorporate an airlock space and should have proper weather protection. Entry doors should cater to the physically handicapped and may require automatic doors for easy access.

Location and Relationships

This should be located adjacent to a vehicle set down point and readily accessible from the street and parking areas. Reception and Waiting Areas should be adjacent.

Treatment Cubicle – Physiotherapy/Occupational Therapy

Description and Function

Treatment cubicles provided for Physiotherapy and Occupational Therapy will comply with Standard Component Patient Bay – Non-Acute Treatment. Bays may be provided as enclosed rooms for additional privacy.

Location and Relationships

Treatment bays and rooms will require close access to waiting areas for patient access and plaster rooms and other treatment spaces for staff access.

Considerations

In addition to the provisions noted in Standard Components the following may be included:

- Plinth, adjustable height, some may be double size
- Mesh and pulleys for exercises to sides and ceiling space over the plinth

13.5 Schedule of Accommodation

Typical Community Health Unit

The content and size of a Community Health Center varies depending on the location, services provided and throughput. Community Health Services are categorized into six levels of service. However, these do not necessarily lead to different physical requirements.

Sizes and quantity of each space will need to be determined on a case by case basis.

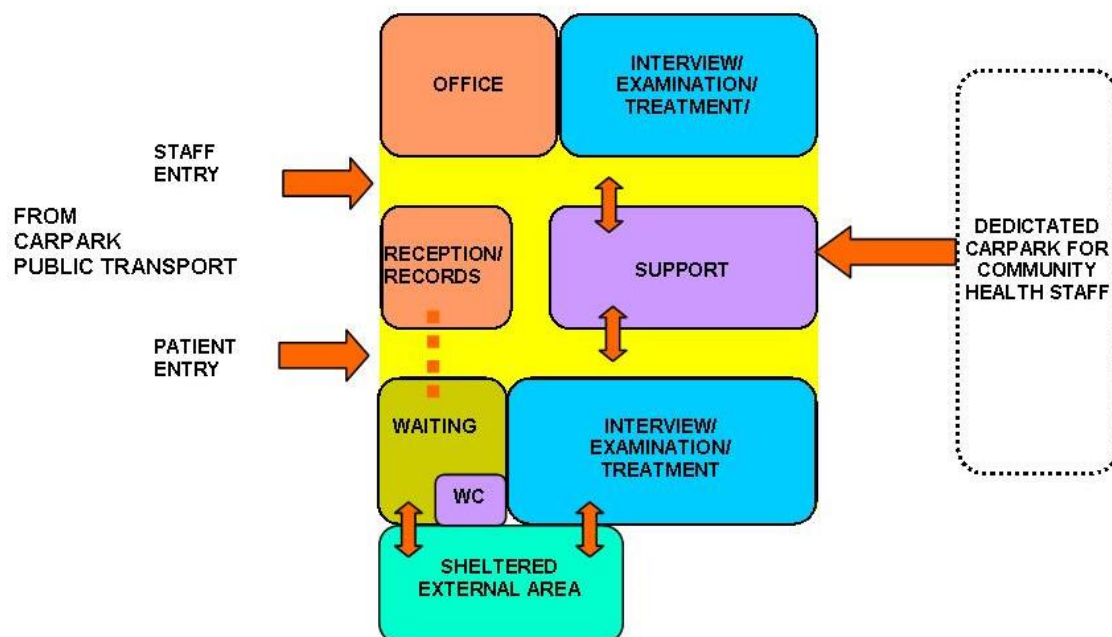
ROOM/SPACE	Standard Component							ALL Levels Qty x m ²	Remarks
Entry/Reception									
Reception/Clerical	RECL-15-SJ							1 x 15	Located in a Main Entry; Up to three staff
Waiting Male/Female	WAIT-30-SJ							2 x 30	Size for client numbers and mix
Waiting – Family	WAIT-30-SJ Similar							1 x 50	Locate near Play Area
Play Area – Paediatric	PLAP-10-SJ (SIMILAR)							1 x 15	Close to Sub-Wait areas, especially for Child and Family services
Bay – Wheelchair Park	BWC-SJ							1 x 4	Also for prams
Toilet – Public	WCPU-3-SJ							2 x 3	May share with adjacent unit
Toilet – Accessible	WCAC-SJ							1 x 6	May share with an adjacent Unit
Parenting Room	PAR-SJ							1 x 6	
Community Health Areas									
Interview Room – Family	INTF-SJ							2 x 12	Suitable for childhood-related services, Family Therapy
Consult Room	CONS-SJ							4 x 14	Multi-functional, programmed use
Display/Reading/Library	LSRA-40-SJ Similar							1 x 50	
Meeting Room – Small	MEET-9-SJ							2 x 9	Interview function including mental health, counselling etc.
Meeting/Group Room	MEET-L-15-SJ Similar							2 x 20	
Meeting Room – Videoconferencing	MEET-L-15-SJ Similar							1 x 20	
Meeting Room – Large	MEET-L-30-SJ Similar							1 x 55	External access for after-hours use
Treatment Room	TRMT-SJ							1 x 14	According to service plan
Specialist Areas – Physiotherapy (Optional)									
Consult Room	CONS-SJ							1 x 14	Assessment/Treatment
Gymnasium	GYAH-45-SJ Similar							2 x 30	For up to six patients/hour. Includes write-up area.
Plaster Room	PLST-SJ							1 x 14	May be shared with Occupational Therapy
Treatment Cubicle – Open	PBTR-H-10-SJ Similar							4 x 7	Separate Male and Female areas
Treatment Cubicle – Closed	PBTR-H-E-12-SJ Similar							2 x 12	Separate Male and Female areas; includes handbasin in room
Bay – Handwashing	BHWS-B-SJ							1 x 1	1 per 4 Treatment bays; refer to Part D
Change Cubicle – Patient	CHPT-SJ							2 x 2	Mix of small/large depends on profile of clientele
Change Cubicle – Accessible	CHPT-D-SJ							2 x 4	Mix of small/large depends on profile of clientele
Shower – Patient	SHPT-SJ							2 x 4	Separate Male and Female
Toilet – Accessible, Patient	WCAC-SJ							2 x 6	Separate Male and Female
Office – Write-up	OFF-WIS-SJ								
Specialist Areas – Occupational Therapy (Optional)									
ADL Kitchen	ADLK-OP-SJ ADLK-ENC-SJ							1 x 12	
ADL Bathroom	ADLB-SJ							1 x 12	
Consult Room	CONS-SJ							1 x 14	Assessment/Treatment
Gymnasium, Paediatric Therapy	GYAH-P-SJ							1 x 45	According to the service plan

ROOM/SPACE	Standard Component							ALL Levels Qty x m ²	Remarks
Store – Equipment,	STEQ-16-SJ Similar							1 x 14	
Office – Write-Up (Shared)	OFF-WIS-SJ							1 x 12	Size dependent on staff numbers
Specialist Areas – Allied Health (Optional)									
Consult Room – Speech Pathology	CONS-SJ							1 x 14	Combined Office/Consult
Observation Room – Speech Pathology	OBS-SJ							1 x 9	As required; with one way window to Small/Medium Meeting room
Audiology Testing Room	AUDIO-SJ							1 x 14	As required by service demand
Podiatry Treatment	PODTR-14-SJ							1 x 14	As required by service demand
Support Areas									
Bay – Linen	BLIN-SJ							1 x 2	Depends on operational policies
Bay – Resuscitation Trolley	BRES-SJ							1 x 1.5	
Cleaner's Room	CLRM-5-SJ							1 x 5	
Clean Utility	CLUR-12-SJ							1 x 12	Optional, Includes medications
Dirty Utility	DTUR-12-SJ							1 x 12	Optional
Disposal Room	DISP-8-SJ							1 x 8	
Equipment Clean-Up	ECL-10-SJ							1 x 10	Shared between disciplines
Pantry	PTRY-SJ							1 x 8	
Store – Equipment	STEQ-10-SJ							1 x 20	Size and Qty depends on equipment to be stored
Store – General	STGN-12-SJ							1 x 12	Central location, shared use
Store – Files	STFS-10-SJ							1 x 20	Depends on records storage policies
Store – Photocopy/Stationery	STPS-8-SJ							1 x 8	
Staff Areas									
Office – Manager	OFF-S9-SJ Similar							1 x 12	Center Manager; Adjacent to Reception and admin areas.
Office – Single Person	OFF-S9-SJ							4 x 9	Senior Allied Health, Nursing/Clinical staff, Depends on staffing numbers .
Office – 4-Person Shared	OFF-4P-SJ							1 x 20	Administration/Allied Health write-up; Qty depends on staffing establishment
Community Nurses Workroom								1 x 35	For up to 15 staff; Size dependant on number of staff
Volunteers Workroom	VWR-20-SJ							1 x 25	10 persons; Area dependant on no of persons
Change – Staff (M/F)	CHST-20-SJ							2 x 20	Toilets, Shower, Lockers; Size depends on staff numbers
Staff Room								1 x 25	
Toilet – Staff								2 x 3	
Net Department Total								1089.5	
Circulation %								35	
Grand Total								1470.8	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

13.6 Functional Relationship Diagram



13.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 255 Community Health Revision 4' 2010. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/aushfg_b_255community_health_4_344-368.pdf 2014
- DH (Department of Health) (UK). 'Health Building Note 12 Out-patients Department' 2004. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142891/HBN_12.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

14.0 Complementary and Alternative Medicine Centers

14.1 Introduction

14.1.1 Description

Complementary and Alternative Medicine (CAM) is a broad term used to describe an array of healthcare approaches outside the conventional, mainstream or 'Western' medicine. Whilst generally used interchangeably, the two terms refer to different concepts. 'Complementary' refers to using a non-mainstream approach together with conventional medicine, whilst 'alternative' refers to using a non-mainstream approach to healthcare which replaces conventional medicine.

Within the context of the broader health system, CAM is usually provided on an outpatient basis. An integrative approach of combining CAM with conventional therapy is being increasingly offered by healthcare providers in managing symptoms and side effects of treatment, health promotion and general improvement in health or well-being.

CAM services may generally be classified into one of two subgroups- natural products or mind and body practices. Natural products may consist of dietary, vitamin and mineral supplements, whilst mind and body practices encompass a diverse range of procedures and techniques administered by a trained practitioner, including yoga, massage therapy, acupuncture and meditation. There are also CAM approaches which do not fit into either of these groups including homeopathy, naturopathy, traditional Chinese medicine and traditional healing practices.

Below is a list of common CAMs:

- Acupuncture
- Aromatherapy
- Ayurveda
- Biofeedback
- Chiropractic and osteopathic
- Chinese herbal medicine
- Electromagnetic therapy
- Homeopathy
- Hypnosis
- Iridology
- Kinesiology
- Massage therapy
- Meditation
- Movement therapies including Feldenkrais method, Alexander technique, Pilates, Rolfing
- Structural Integration, Trager psychophysical integration
- Naturopathy
- Qi gong
- Reflexology
- Reiki
- Tai chi
- Yoga.

The type, range and scope of services will determine the size, design, functional requirements and relationships within and outside of the CAM Center. This shall be described in the Operational Policy of the Center.

Facilities and equipment shall be as necessary to accommodate the requirements of the Scope of Services and Operational Policy. The CAM Center can be incorporated as part of another health facility or as a freestanding and independently-operated center.

Relevant local authority statutory requirements are to be complied with.

14.2 Planning

14.2.1 *Planning Models*

Dedicated CAM Center

It is highly recommended that the CAM Center be located in a dedicated space. If incorporated into a health facility, the CAM Center should be readily accessible by ambulatory patients and located within close proximity to outpatient clinic rooms. A centralized CAM Center maximizes operational flow and contains and maintains the environment and ambience created by the Center.

Unit/Department-Based CAM Treatment and Consultation Spaces

Treatment and consultation spaces may be made available within particular departments throughout a hospital and be colocated with Allied Health services and spaces, although this is not a commonly adopted model and may result in duplication of manpower and equipment. Increasingly, dedicated CAM Centers are located adjacent to Cancer Day Care Units and Fertility and Women's Clinics as their uptake and integration with treatments in these specialty areas become more common place.

14.2.2 *Operational Models*

The CAM Center may extend its service from a single health care facility to outlying facilities. Specific design requirements for manufacture, storage and dispatch of products, and the provision of treatment and services shall be considered for different operational models.

Integrated CAM Center

An integrated CAM Center is colocated with a hospital, medical clinic or other health facility. The facility's operational policy shall determine, in part, the products and services to be supplied by the Center, complementing conventional mainstream medicine, as well as establishing the referral pathways between the Center and the health facility. Products and services beyond the scope of the facility's requirements shall be negotiated and predefined.

Private CAM Center

A private CAM Center may be freestanding to any health facility and its operational model will resemble a private business. The success of the private CAM center is subject to market demand, the products and services supplied and the availability of trained and qualified practitioners. A private Center may also choose to establish more formal relationships with health facilities situated geographically close to optimize business operations, but this will depend on scope of services and products provided.

Treatment and Procedural Services

Treatment and procedural services offered by CAM Centers require sufficient space and equipment for delivery of such services. This may range from large studios for yoga and meditation practices to small treatment spaces for massage therapy and acupuncture.

Product Manufacture

If dietary supplements or natural products are to be manufactured onsite, these must comply with local and international regulatory requirements. Extemporaneous manufacturing will require sufficient space for compounding products. Sterile handling and manufacturing techniques may be needed for the safe manufacture of products for ingestion. The Center must include specialized space and equipment for the refinement, testing, compounding, packaging, labelling and storage of these products. Manufacturing practices and products should be aligned and negotiated with the hospital's pharmacy procedures and products if the Center is colocated with such a health facility.

Hours of Operation

The CAM Center will generally provide services five-days a week, up to 12-hours a day, with hours of operation complementing outpatient clinics and services.

14.2.3 Functional Areas

The functional areas of a CAM Center may be divided into two types – ‘accessible’ and ‘restricted’ as follows:

Public Areas

- Counter/Reception
- Waiting areas for patients; it is possible to share waiting areas with an adjoining unit
- Patient counselling and consult areas
- Patient treatment and consultation spaces in the company or under the direction of a staff member.

Restricted/Staff Areas

- Dispensing area
- Preparation and manufacturing areas of non-sterile products
- Active store for stock storage
- Bulk stores including an unpacking area
- Secured storage for refrigerated items and flammable goods as required
- Clinical Trial facilities if required; clinical trials in CAM Centers may include trials of products and therapies
- Staff Areas including Offices, Workstations, File Stores, Meeting Rooms, Staff Room, Change and Toilets.

Optional Areas

Depending on the scope of services and Operational Policy, the CAM Center may also include:

- Sterile manufacturing suites, along with support facilities including Anterooms, Change Rooms and Storage
- Facilities for clinical trials, which may include dispensing areas, additional treatment spaces, secured storage and records area and workstations
- Extemporaneous manufacturing area which requires extra space for compounding products.

CAM Counter/Reception

The CAM Center Counter/Reception area should be prominent, well-signposted and if also used for cashier functions, appropriate security should be added for cash handling. Patients will present at the counter for products or services and wait for a practitioner to dispense and counsel on the product or lead them to a treatment/consultation space for services.

Waiting Areas

Waiting areas will need to accommodate a range of patients with varying mobility and should be designed for accessibility. Waiting areas will also require ready access to public amenities, baby change and feeding areas, refreshments, play facilities (optional) and public telephones.

Patient Counselling and Consult Areas

Patient counselling and consult areas should be immediately adjacent or readily accessible from the Counter/Reception and Waiting areas. If not entirely enclosed, the area should be designed in such a way to create perceived privacy using a confined space and barricades. Counselling and Consult areas may have dual access for patients and Center staff to increase security.

Treatment/Consultation Space

A Treatment or Consultation space should be accessible to the patient accompanied by a Center staff member or practitioner. It can be located within or exterior to the central CAM Center and requires equipment suitable to the services to be provided within that space. This is determined by the scope of services and may include, but is not limited to:

- Bench and hand-washing basin with fittings
- Patient treatment bench, table or chair for acupuncture and massage
- Movement therapy machines and equipment for Pilates and other manipulative therapies
- Flashlight, magnifying glass, cameras and slit-lamp microscopes for iridology
- Adequate lighting and ventilation
- Durable, stain-resistant and comfortable flooring, particularly for the delivery of yoga and floor-based therapies.

Restricted/Staff Areas

Dispensing Area

A dedicated area for dispensing should enable practitioners to prepare, pack and label products. The dispensing area should have the following equipment nearby to complement and facilitate its operations:

- Shelving and reference texts
- Adequate lighting
- Hand-washing facilities
- Bench for preparation adjacent to dispensing units.

Manufacturing Area

Manufacturing of products in the CAM Center involves the preparation of oral or topical dosage forms, often requiring little manipulation of the main ingredients.

The following minimum elements shall be included if manufacturing is performed onsite:

- Confined dedicated room with HEPA filtered air
- Hand washing facilities directly located next to the entry/exit point of the room
- Non-pervious surfaces and easy to clean walls and flooring
- Bulk compounding area
- Provision of packaging and labelling area
- Quality control area.

Storage

The following minimum elements, in the form of cabinets, shelves, and/or separate rooms or closets, shall be included as required:

- Bulk storage
- Active storage
- Refrigerated storage
- Volatile fluids and alcohol storage with construction as required by the relevant regulations for substances involved
- Storage for general supplies and equipment not in use.

Store – Refrigerated

The refrigerated store can be a room/bay which consists of multiple refrigerators for storing specific ingredients and products; alternatively, a commercial grade cool room may be used. Refrigerated storage should be located in proximity to Assembly/Preparation, other storage areas and the manufacturing area of the Center. Refrigerated storage areas in the CAM Center require the following considerations:

- All access doors shall be lockable
- Temperature monitoring system installed and connect to a centralized alarm/warning system.

Clinical Trials Area

Clinical trials in Complementary and Alternative Medicine require the same application of stringent policies and regulations as clinical medicine trials, particularly in the way of data and safety monitoring, privacy and confidentiality, and the protection of human and animal subjects.

As treatment modes in CAM related clinical trials are varied, the space requirements will be determined by the area of expertise, interests and focus of the CAM Center and the overall health facility. Some examples of recent research in CAM include:

- Yoga practice for back pain
- Mind and body approaches to smoking cessation
- Spinal manipulation for chronic back pain
- Fish oil effects on immunity in mice
- Acupuncture for IVF success
- Hypnosis to treat postmenopausal hot flashes
- Brain effects of meditation
- Melatonin supplements for sleep problems in people with high blood pressure
- Milk thistle extract effects on chronic hepatitis C.

The Clinical Trials Area will include storage, dispensing, packaging, labeling and records holding for clinical trial therapies and treatments. Clinical Trials in some CAM approaches may also incorporate the performance of therapies and procedures on patients; adequate space and equipment should be allocated. The Clinical Trials facilities will be within a separate area of the main CAM Center.

Staff Areas

Offices and workstations will be required for administrative as well as clinical functions and to facilitate educational/research activities. The number of offices provided will be according to the approved staffing levels for the CAM Center. Educational areas will consist of Meeting/Tutorial Room/s; Meeting Room/s with videoconferencing facilities will provide additional capacity for educational activities.

Administration, education and staff welfare areas, including Staff Room/s, Toilets and Meeting Room/s may be shared with nearby adjacent units.

14.2.4 *Functional Relationship*

External

The CAM Center shall be located for convenient access, staff control, and security. The CAM Center should easily accessible from the Main Entry of the health facility and outpatient clinics for patient convenience. It should have ready access to a loading dock for deliveries and depending on its scope of services and Operational Policy may be adjacent to the Inpatient Pharmacy Unit.

Access points provided for the following personnel/purpose shall be carefully considered:

- Visitors and patients of the Center
- Practitioners and Center staff
- Service units for maintenance and delivery of supplies.

Internal

Internally, the CAM Center must provide secure access for delivery of supplies stores areas.

Public access will be required to Reception/Counter, Waiting Areas, Counselling and Consult Areas, and subsequent Treatment and Consultation Spaces.

Restricted staff access will be required to Office/s and Operational Support Areas. Assembly, Preparation, Dispensing Areas and Manufacturing Areas will require close access to drug storage areas. Manufacturing areas may be located in a discrete, low traffic zone within the CAM Center.

14.3 Design

14.3.1 General

Primary concerns in designing the CAM Center include preventing unauthorized entry and maintaining privacy of the Center's operations.

The design of the CAM Center will be largely dependent on the scope of services and Operational Policy of the Center and the facility it is incorporated into, if relevant.

The Operational Policy must determine the degree of integration into the health facility, including access and entries of treatments and services provided by the Center into patient medical histories. For comprehensive care, best practices recommend that CAM Center based treatments and products prescribed by practitioners should be recorded into the patient clinical records and well integrated with the health facility's information technology and data systems. Facilitating this obligation will require more extensive information and communication technology capabilities within the CAM Center.

14.3.2 Environmental Considerations

Natural Light

Natural light is highly desirable within the CAM Center, as well as windows permitting outside views to create a natural ambience in the area. Windows can be frosted or treated to prevent casual viewing from any adjacent public thoroughfare while allowing natural light.

Privacy

Privacy shall be considered in patient treatment and consultation rooms and spaces and counseling areas. Staff observation of patient privacy must be well-balanced within the Center, the following features should be considered in design:

- Location of doors, windows, examination couches and furniture to ensure patient privacy and promote staff security
- Window treatment to provide patient privacy from external and internal viewing
- Confidentiality of patient discussion and patient records.

Acoustics

Patient interview and counseling rooms will require acoustic treatment to maintain privacy, other considerations include waiting areas and other noisy areas should be located away from treatment spaces and staff areas. Consultation/Treatment spaces should be acoustically treated to prevent transmission of noise to adjacent spaces.

14.3.3 Space Standards and Components

Ergonomics

Ergonomics and Occupational Safety and Health (OSH) requirements must be considered in the design process and the selection of fittings and equipment in the CAM Center to ensure optimal operation of the Center and the health and safety of the staff, patients and visitors.

Particular attention should be given to placement of equipment, heights and dimensions of counters and work areas must ensure privacy and security for patients, visitors and staff.

Refer also to Part C of these Guidelines.

Size of the Center

The size of the CAM Center will be determined by the approved Service Plan taking into consideration the needs of the health facility and other external facilities. A Schedule of Accommodation is provided for CAM Center servicing a tertiary level hospital with the capacity to undertake product manufacture onsite.

14.3.4 *Safety and Security*

The CAM Center and any external Treatment and Consultation Spaces must be secured to prevent unauthorized access through doors, windows, wall and ceilings. A security intrusion detector alarm should be fitted to monitor the Center 24-hours a day.

Security measures for consideration will include:

- Electronic door controls and alarms to perimeter doors
- Movement sensors
- Duress alarms at Center counter/reception and in treatment/consultation spaces
- Solid ceilings to prevent access.

14.3.5 *Finishes*

Finishes including fabrics, floors, walls and ceilings should be non-institutional as far as possible and promote a calming atmosphere. The following factors should be considered when selecting finishes:

- Purpose of the rooms
- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning and infection control
- Fire safety
- Movement of equipment.

Refer also to Part C of these Guidelines.

14.3.6 *Fixtures and Fittings*

Equipment, furniture and fittings should be selected and installed to be safe, robust and suitable for heavy usage.

Refer also to Part C of these Guidelines.

14.3.7 *Building Services Requirements*

Heating, Ventilation, Air-Conditioning (HVAC)

All ingredients and product storage areas require temperature and humidity controls; internal room temperature shall be kept below 25°C for optimal storage unless otherwise stated.

Communications

Information technology/communications systems should provide for:

- Sufficient data and power outlets for computers and laptops
- Electronic records and computerized ordering systems
- Video-conferencing/tele-medicine in Meeting Room/s.

14.3.8 *Infection Control*

It is recommended that handwashing facilities are provided as follows:

- In each area where ingredients/products are handled including Preparation Room/s, Assembly/Dispensing Areas and Manufacturing Area
- In support areas.

All hand basins in the CAM Center should permit clinical handwashing with hands-free activation; taps may be wall -mounted, lever operated or sensor operated. Hand basins in non-clinical areas should permit routine hand washing and taps may be basin -mounted and lever operated. Hand basins should include dispensers for soap, antiseptic soap and paper towels.

The quantity and ratio of hand basins to work areas will be determined by the size of the individual areas, the operating policies and standard guidelines relating to the Center's services.

Refer also to Part D of these Guidelines.

14.4 Components of the Unit

The CAM Center will contain Standard Components to comply with details described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

14.5 Schedule of Accommodation

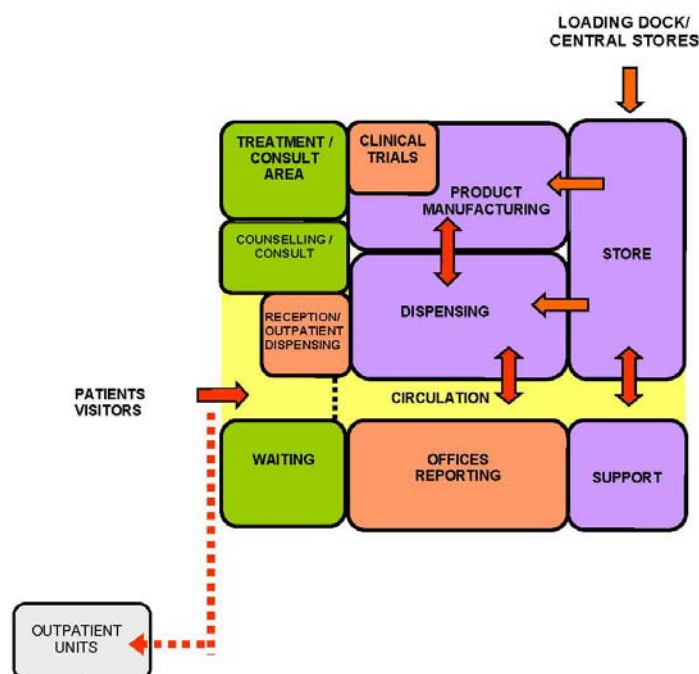
Typical Complementary and Alternative Medicine Unit at levels 4 to 6

ROOM/SPACE	Standard Component	Level 4 Qty x m²			Level 5 Qty x m²			Level 6 Qty x m²			Remarks
Public Areas											
Counter	CAM-CO-SJ	1	x	9	1	x	9	1	x	20	
Meeting Room – Small	MEET-9-SJ	1	x	9	1	x	9	1	x	9	Interview function, small meetings
Staff Areas											
Office – Single Person	OFF-9-SJ OFF-12-SJ	1	x	9	1	x	12	1	x	12	Director
Office – Workstation	OFF-WS-SJ	2	x	5.5	4	x	5.5	6	x	5.5	Qty depends on staffing
Assembly/Preparation	ASPR-20-SJ	1	x	10	1	x	20	1	x	30	
Bay – Handwashing, Type B	BHWS-B-SJ	3	x	1	4	x	1	5	x	1	Unit entrance and corridor recesses, as required.
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	Include cupboard for dry goods
Cool Room	CORM-SJ				2	x	10	2	x	10	Optional, or refrigerators and freezers
Clinical Trials					1	x	12	1	x	12	Optional
Manufacture Room – non-sterile	PREP-SJ	1	x	18	2	x	12	3	X	12	Based on 3m² per person
Store – Bulk	STBK-20-SJ	1	x	40	1	x	100	1	x	150	May include pallets
Store – Files	STFS-8-SJ	1	x	8	1	x	10	1	x	20	Collocate with Ward Clerk
Store – General	STGN-6-SJ	1	x	6	1	x	8	1	x	10	Size in accordance with service demand and operational policies
Store – Ingredients	STBK-5-SJ STBK-10-SJ	1	x	5	1	x	10	1	x	10	
Store – Photocopy/Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	Collocate with Clerk
Store – Refrigeration	STRF-8-SJ	1	x	6	1	x	6	1	x	6	Bay with fridges
Meeting Room – Large	MEET-15-SJ	1	x	15	1	x	20	1	x	25	
Property Bay – Staff	PROP-3-SJ	2	x	2	3	x	3	4	x	3	Number of lockers depends on staff complement per shift
Staff Room	SRM-15-SJ	2	x	15	2	x	20	2	x	20	Unit-specific space, with beverage bay
Toilet – Staff	WCST-SJ	2	x	3	4	x	3	4	x	3	
Shared Areas											
Waiting	WAIT-SUB-I	2	x	5	2	x	10	2	x	10	Separate male/female areas
Treatment Room/Spaces	TRMT-SJ	1	x	14	1	x	14	1	x	14	For specialist units, or shared; Depends on operational policy
Net Department Total		198.5			394.0			509.0			
Circulation %		25			25			25			
Grand Total		248.1			492.5			636.3			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

14.6 Functional Relationship Diagram



The external and internal functional relationships are demonstrated in the diagram above, including:

- Entry for patients and visitors directly from public corridor
- Access to key clinical units associated with the CAM Center via staff corridor
- Entry of good via loading dock directly into stores areas
- Service access required for materials and housekeeping via service corridor.

The optimum internal relationships include the following:

- Reception and waiting areas at the entrance of the CAM Center
- Restricted access to operational areas
- Treatment and Consultation rooms located between accessible and staff-only areas
- Support rooms located on the perimeter for ease of access
- Administration and office areas easily accessible to staff.

14.7 Further Reading

- Australasian Health Facility Guidelines (Aus.). 'Part B Health Facility Briefing and Planning, Rev 4', 2012. Retrieved from website: www.healthfacilitydesign.com.au 2014
- Melbourne IVF (Aus.). 'Adoption of Complementary Therapies' 2014. Retrieved from website: <http://mivf.com.au/about-fertility/how-to-get-pregnant/complementary-therapies-for-pregnancy> 2014
- National Cancer Institute (US). 'Recommendations for use of CAM' 2014. Retrieved from website: <http://www.cancer.gov/cancertopics/cam> 2014
- National Center for Complementary and Alternative Medicine (NCCAM) (US) 2014 for general research information. Retrieved from website: <http://nccam.nih.gov/research/results> 2014
- Refer to DHA website for local licensing requirements www.dha.gov.ae and MOH website www.moh.gov.ae for local approval procedures

- The Facility Guidelines Institute (US). '*Guidelines for Design and Construction of Health Care Facilities*' 2010 Edition. Retrieved from website: www.fgiguide.com 2014.

15.0 Day Surgery/Procedure Unit

15.1 Introduction

15.1.1 Description

A Day Surgery/Procedure Unit is where operative or endoscopic procedures are performed and admission, procedure and discharge occurs on the same date. It comprises one or more Operating Rooms, with provision to deliver anesthesia and accommodation for the immediate post-operative recovery of day patients.

The range of procedures that may be undertaken in a Day Surgery/Procedures Unit may include:

- Surgical procedures, particularly ENT, Dental, Plastic Surgery, Ophthalmology
- Endoscopy – gastrointestinal, respiratory, urology
- Electroconvulsive Therapy (ECT) for mental health inpatients
- Day Medical Procedures including intravenous infusions and minor treatments.

15.2 Planning

15.2.1 Operational Models

The range of options for a Day Surgery/Procedure Unit may include:

- A stand-alone center, fully self-contained
- A dedicated fully self-contained unit within a hospital
- A Unit collocated with a specialist clinical service such as Gastroenterology or Respiratory Medicine, within an acute hospital
- A Unit collocated with the Operating Unit with shared facilities.

If the facility is part of an Acute Care Hospital or other Medical Facility, services can be shared as appropriate to minimize duplication.

15.2.2 Functional Areas

The Day Surgery/Procedure Unit may consist of a number of Functional Zones:

- Entry/Reception/Administration and Waiting areas
- Perioperative Area (provides for admission on the day of surgery), including patient change areas, toilet and lockers
- Procedural Area
- Recovery Area (this may also include extended recovery areas where patients are discharged within 24-hours)
- Discharge Lounge
- Staff Amenities
- Day Medical Unit (if collocated).

Entry/Reception/Waiting Areas

A covered entrance for picking up patients after surgery shall be provided. The Entry may be a shared Outpatient Facility and shall include:

- Reception and information counter or desk
- Waiting areas that allows for the separation of pediatric and adult patients, if organized Pediatric Services are provided
- Convenient access to wheelchair storage
- Convenient access to public toilet facilities
- Convenient access to public telephones.

Administrative Areas

General and individual offices shall be provided as required for business transactions, records and administrative and professional staff. These shall be separate from public and patient areas with provision for confidentiality of records.

Enclosed office spaces shall be provided for:

- Administration and consultation
- Manager/Nurse Unit Manager as required.

Offices are to comply with Standard Components.

Clinical Records

A secure room shall be provided with provision for storage, recording and retrieval of clinical records. If geographically appropriate, and if the Day Procedures Unit is part of, or attached to, an acute hospital, the general clinical records facility might be used in lieu of a dedicated and separate room.

Holding Area

A Holding Area may be provided where gowned patients enter after changing and wait for their procedure. Additional holding areas may be provided for seated patients before an operation or procedure. Such an area must have access to nurse call services.

The Pre-operative Holding area shall be provided with the following minimum requirements as appropriate to the proposed service:

- A patient trolley or patient seating
- Privacy screening
- Handbasins with liquid soap and paper towel fittings
- Patient nurse call/emergency call buttons with pendant handsets and indicators
- Medical gases including oxygen and suction and power outlets to each bed.

Operating/Procedures Rooms

The design of the Operating/Procedure Rooms must allow for adequate space, ready access, free movement and demarcation of sterile and non-sterile zones. Operating Rooms are to comply with Standard Components.

Operating Rooms for Endoscopy

The number and operation of Operating Rooms for Endoscopy shall be as determined by the Service Plan.

Room size may vary, dependent upon:

- The use of video equipment
- Electrosurgical laser treatment
- Fluoroscopy
- Multiple endoscope activity
- Multiple observers
- The use of X-Ray (image intensifying).

Where basic endoscopy is to be performed, the room size shall be no smaller than 36m². Where video equipment is used the room size should be 42m². Larger sizes, where possible, are recommended for flexibility and future developments. The ceiling height shall be 3000mm.

Operating Rooms for Endoscopy shall be fitted out as for a Minor Operating Room, for example, it will be suitable for general anesthetic with appropriate medical gases, power, lighting, air-conditioning and ventilation. Staff assistance call shall be provided. Consideration shall also be given to the special requirements of laser equipment.

A clinical scrub up basin shall be provided outside the entrance to the Operating Rooms for Endoscopy.

Direct access to the Clean-up Room is recommended.

Impervious wall, floor and ceiling treatments are essential for ease of cleaning.

Patient Change Areas

Separate areas shall be provided where outpatients can change from street clothing into hospital gowns and be prepared for surgery, convenient to the Waiting Area. The patient change areas shall include Waiting Rooms and lockers. Design of Change Areas is to facilitate management of patient lockers, patient property and keys.

Perioperative Unit

Where Day Procedures (day-only surgical service) are provided within the same area as Inpatient Acute Surgery (shared facility), the design shall consider the need to separate the two distinct functions at the incoming side. The design shall also preclude unrelated traffic from the Day Procedures Unit and the Operating Unit.

Preparation Room

A Preparation Room may be required for patients undergoing certain procedures such as Endoscopy or Ophthalmology.

If included, the Preparation Room should include:

- Hand basin – Clinical
- Bench, and cupboards for setting up of procedures
- Adequate space for procedures equipment trolleys
- Examination couch
- Patient privacy screening.

Recovery Areas

In larger facilities it is often considered desirable to have a three-stage recovery area. The first stage involves intensive supervision, the second stage has changing facilities in more casual surroundings and in the third stage, the patient is fully mobile and is awaiting discharge. Supervision of the patient is vital at each stage.

If Pediatric Surgery is part of the function, the Recovery Room shall provide for the needs of parents/attendants.

Recovery areas will require:

- Staff station with a centrally located resuscitation trolley
- Linen Bay
- Clean Utility
- Dirty Utility
- Store room.

Stage 1 – Recovery

The number of bed/trolley spaces in the Stage 1 Recovery Area will be dependent upon the nature of surgery or procedures performed as outlined in the Operational Policy and the proposed throughput. As a minimum, two bed/trolley spaces per Operating Room shall be provided. High turnover procedures may require a higher ratio of bed/trolley spaces per Operating Room.

Stage 2 – Recovery

Stage 2 Recovery Room may be provided as required to accommodate:

- Patients who have regained consciousness after anesthesia but require further observation
- Patients who have undergone procedures with local anesthetic.
-

The patient is required to remain under observation until ready for discharge. Patients in this area may recover in trolleys or recliner chairs; each recovery bay should be able to accommodate either trolley or chair. External windows are to be provided in Stage 2 Recovery.

A ratio of three Trolley/Chair Bays to each Operating/Procedure room is considered appropriate.

Stage 3 – Recovery Lounge

The Stage 3 Recovery Lounge is also referred to as a Discharge Lounge. Patients are ambulant, dressed and may await discharge in comfortable chairs. The lounge will require access to patient refreshment facilities and patient toilets.

Seating should be comfortable recliner lounges. A ratio of three Chair Bays to each Operating/Procedure room is considered appropriate.

15.2.3 Functional Relationships

External

The Day Surgery/Procedure Unit will have functional relationships with the following units

- Operating Suite
- Pre-Admission Clinic
- Transit Lounge.

Ambulance Access

A discrete pick-up point, preferably under cover, shall be provided for the transfer of patients to and from the Day Surgery/Procedure Unit.

Car Parking

Adequate car parking facilities with convenient access needs to be provided.

Internal

Within the Unit, key functional relationships will include:

- Unidirectional patient flow from arrival at Reception, through holding, Procedure Rooms, Recovery rooms, then to the Perioperative Unit, Inpatient Unit, Lounge areas and discharge to home
- Separation of clean and dirty traffic flows
- Staff visibility of patient areas for patient supervision and safety.

15.3 Design

15.3.1 General

Pre-operative and post-operative patient facilities can be located together as required.

15.3.2 *Environmental Considerations*

Acoustics

Design should consider reduction of the ambient noise level within the unit, particularly waiting areas.

Acoustic privacy treatment will be required to:

- Consulting/Interview Rooms
- Operating/Procedure Rooms.

Natural Light

The design of the unit should incorporate external views and natural light as far as possible, particularly to Waiting Areas, Pre-operative and Recovery areas.

It is recommended that external views and natural light are provided in staff areas such as Staff Rooms and Offices and areas where staff are confined to one location e.g. Reception, Clean-up Rooms.

When external views and natural light are provided in patient areas, care must be taken to minimize glare and ensure privacy is not compromised. Sun penetration should be controlled to exclude glare and heat gain or loss.

If Procedure Rooms include external windows, provision of controlled level of lighting during procedures will be required and dimmable lighting will be required within the room.

15.3.3 *Safety and Security*

Security measures will include the following:

- Controlled access to Procedural and staff areas
- Security and safe storage of drugs.

15.3.4 *Building Services Requirements*

Radiation Shielding

Radiation shielding to recommended safety standards will be required in all procedure rooms where imaging will occur.

15.4 Components of the Unit

The Day Surgery/Procedure Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

15.4.1 *Non-Standard Components*

Endoscope Store

Description and Function

The Endoscope Store may be provided to store a variety of cleaned and decontaminated and sterile endoscopes, ready to use.

Location and Relationships

The endoscope store will be located immediately adjacent to the endoscope processing room.

Considerations

Endoscopes will be stored in appropriately ventilated cabinets. Air supply to this room should be HEPA filtered to prevent contamination of clean endoscopes.

15.5 Schedule of Accommodation

Typical Day Surgery/ Procedure Units at Levels 3 to 6

The schedule will need to be amended in accordance with the requirements of the Service Plan. Provision of Offices, Workstations and support areas will be dependent on the Operational Policy and service demand and may vary from the Schedule of Accommodation.

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Reception/Pre-op Holding Areas											
Reception/Clerical	RECL-10-SJ Similar				1	x	10	1	x	15	May include space for porter
Waiting – Male/Female	WAIT-10-SJ				2	x	10	2	x	15	Separate areas for female waiting
Waiting – Family	WAIT-20-SJ Similar				1	x	25	1	x	50	
Meeting Room – Small	MEET-9-SJ Similar							1	x	12	Interviews
Patient Bay – Holding	PBTR-H-10-SJ				4	x	10	16	x	10	Provide a minimum of one per Operating/Procedure Room
Office – Write-up Bay	OFF-WIS-SJ				1	x	6	1	x	12	Staff work area based on 3m ² per person
Staff Station	SSTN-5-SJ				1	x	5	1	x	5	
Bay – Handwashing, Type B	BHWS-B-SJ				1	x	1	4	x	1	1 per 4 patient bays
Bay – Linen	BLIN-SJ				1	x	2	1	x	2	1 per 16 patient bays
Bay – Blanket/Fluid Warmer	BBW-SJ				1	x	1	1	x	1	As required
Clean Utility – Sub	CLUR-8-SJ				1	x	8	1	x	8	
Dirty Utility – Sub	DTUR-S-SJ				shared			1	x	8	
Store – Files	STFS-10-SJ				1	x	8	1	x	8	Include recycle bin
Operating Rooms Areas											
					4 Rooms			16 Rooms			
Anaesthetic Induction Room	ANIN-SJ				2	x	15	12	x	15	Optional; provide one per Operating Room; Optional for procedures ORs
Operating Room – General (Short Case)	ORGN-SJ				2	x	42	6	x	42	High turnover cases
Operating Room – General	ORGN-SJ							6	x	42	
Operating Room – Minor	ORMS-SJ				2	x	42	2	x	42	Endoscopy; May be sized at 36m ²
Operating Room – Emergency	ORGN-SJ					x	42	2	x	42	Urgent procedures
Scrub Up	SCRB-6-SJ				4	x	6	16	x	6	One per operating/procedure room
Exit Bay					4	x	8	16	x	8	One per operating/procedure room
Operating Rooms Support Areas											
Audio-Visual Room	AUDV-SJ							1	x	10	Optional
Anaesthetic Store	ANST-SJ				1	x	10	1	x	40	2.5m ² per operating room
Anaesthetic Workroom and Biomedical Equipment	ANWM-SJ				1	x	10	1	x	15	
Bay – Blanket/Fluid Warmer	BBW-SJ							2	x	1	
Bay – Linen	BLIN-SJ				1	x	2	2	x	2	One per eight operating rooms
Bay – Mobile Equipment	BMEQ-4-SJ Similar				4	x	2	16	x	2	One per operating room
Bay – Pathology	BPATH-SJ				1	x	1	1	x	2	Specimen holding and despatch
Blood Store	BLST-SJ				1	x	2	1	x	2	
Cleaner's Room	CLRM-5-SJ				1	x	5	2	x	5	One per eight operating rooms
Clean-Up Room	CLUP-7-SJ				4	x	15	16	x	15	One per operating/procedure room
Disposal Room	DISP-8-SJ				1	x	8	2	x	8	
Flash Steriliser	FST-2-SJ				1	x	2	1	x	2	Depends on operational policies
Office – Write-up Bay	OFF-WI-1-SJ Similar				1	x	3	1	x	6	
Set-up Room	SETUP-8-SJ				2	x	8	4	x	8	Optional; Depends on operational policy

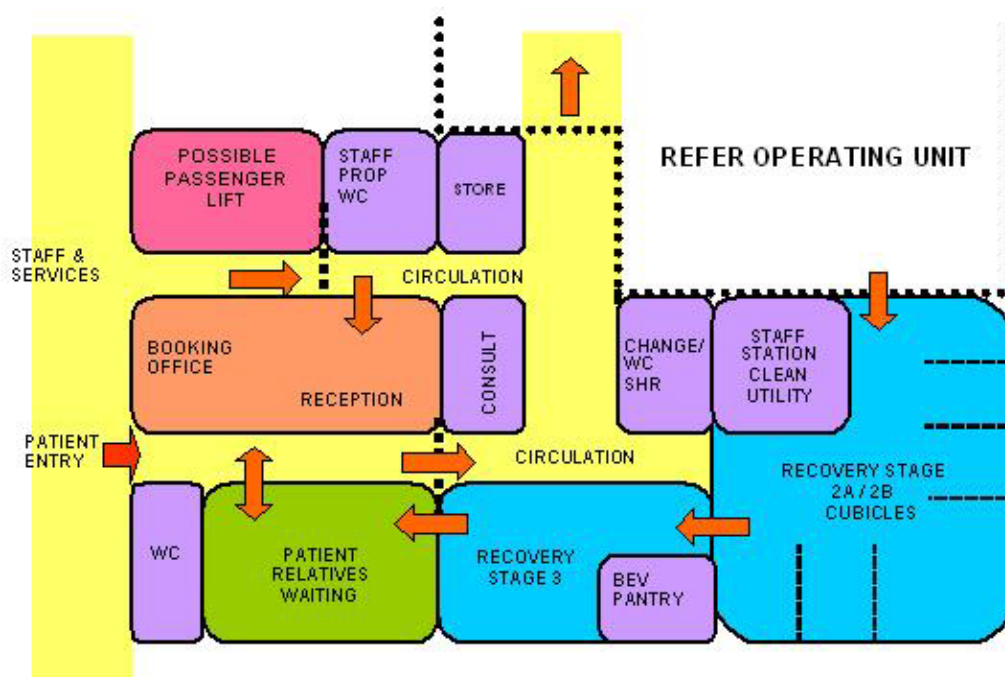
ROOM/SPACE	Standard Component				Level 3/4 Qty x m²			Level 5/6 Qty x m²			Remarks
Store – Equipment, Major	STEQ-16-SJ Similar				1	x	20	2	x	40	5.0m² per operating room
Store – Equipment, Minor	STEQ-16-SJ Similar				1	x	15	2	x	30	3.75m² per operating room
Store – Non-Sterile/Deboxing	STGN-20-SJ Similar				1	x	10	1	x	40	2.5m² per operating room
Store – Sterile Stock	STSS-12-SJ				1	x	40	2	x	80	Provide 10m² per operating room
Recovery Area											
Patient Bay-Recovery Stage 1	PBTR-RS1-SJ				10	x	12	40	x	12	Two bays per operating room; Three bays per short case/endoscopy room; May be divided into halls
Bay – Blanket/Fluid Warmer	BBW-SJ				1	x	1	1	x	1	As required
Bay – Handwashing, Type A	BHWS-A-SJ				2	x	1	10	x	1	One per four recovery bays
Bay – Linen	BLIN-SJ				1	x	2	2	x	2	One per 20 recovery bays
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Clean Utility	CLUR-12-SJ				1	x	12	2	x	12	
Dirty Utility	DTUR-12-SJ				1	x	12	2	x	12	
Staff Station	SSTN-14-SJ Similar				1	x	14	2	x	20	
Store – General	STGN-12-SJ Similar				1	x	8	1	x	12	
Perioperative Areas											
					For 4 ORs			For 16 ORs			
Admissions/Reception											
Reception/Clerical	RECL-10-SJ				1	x	10	1	x	10	
Office – Clerical Support	OFF-2P-SJ							1	x	12	
Waiting – Male/Female	WAIT-10-SJ Similar				2	x	10	2	x	15	Separate female waiting
Waiting – Family	WAIT-20-SJ				1	x	20	1	x	30	
Toilet – Public	WCPU-3-SJ				2	x	3	2	x	3	May share general public amenities
Toilet – Accessible	WCAC-SJ				1	x	6	2	x	6	May share general public amenities
Pre-op Area											
Change – Patient (Male/Female)	CHPT-12-SJ Similar				2	x	12	2	x	24	Includes toilets, showers and lockers
Waiting – Changed Patient	WAIT-10-SJ Similar				2	x	10	2	x	25	Separate male and female areas
Anteroom	ANRM-SJ							1	x	6	For Negative Pressure Isolation Room
Patient Bay – Holding	PBTR-H-10-SJ										Provided in OR area
Patient Bay – Holding, Enclosed, Isolation	PBTR-H-E-12-SJ							1	x	12	Negative Pressure Isolation; As required by service plan
Consult Room	CONS-SJ				2	x	14	6	x	14	
Bay – Handwashing, Type B	BHWS-B-SJ				2	x	1	2	x	1	Accessible to changed waiting areas
Bay – Linen	BLIN-SJ				1	x	2	1	x	2	
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Clean Utility	CLUR-8-SJ CLUR-12-SJ				1	x	8	1	x	12	Includes medications
Ensuite – Standard	ENS-ST-SJ				1	x	5	1	x	5	For enclosed Isolation Bay
Toilet – Patient	WCPT-SJ				1	x	4	2	x	4	
Recovery Areas											
Patient Bay – Recovery, Stage 2	PBTR-H-10-SJ Similar				6	x	10	24	x	10	2 bays per short case/endoscopy ORs; 1 bay per general ORs
Lounge – Recovery, Stage 3	LNPT-RS2-SJ				8		6	32	x	6	3 chairs per short case/endoscopy OR; 1 chair per general OR
Staff Station	SSTN-14-SJ Similar				1	x	14	1	x	20	
Bay – Beverage	BBEV-OP-SJ				1	x	4	1	x	4	
Bay – Blanket/Fluid Warmer	BBW-SJ				1	x	1	1	x	1	As required
Bay – Handwashing, Type A	BHWS-A-SJ							15	x	1	1 per 4 bed bays; 1 per 4 chairs
Bay – Linen	BLIN-SJ				1	x	2	2	x	2	
Bay – Pathology	BPATH-SJ				1	x	1	1	x	1	

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Cleaner's Room	CLRM-5-SJ							1	x	5	May share with adjacent areas
Clean Utility	CLUR-8-SJ CLUR-12-SJ				1	x	8	1	x	12	
Dirty Utility	DTUR-12-SJ				1	x	8	1	x	12	
Disposal Room	DISP-8-SJ							1	x	8	
Store – Equipment	STEQ-10-SJ							1	x	10	
Store – General	STGN-8-SJ Similar				1	x	10	1	x	10	
Staff Areas: Shared											
Change – Staff, Male/Female	CHST-20-SJ Similar				2	x	20	2	x	80	Size according to staffing numbers
Meeting Room – Interviews	MEET-9-SJ				1	x	9	1	x	9	
Meeting Room – Medium/Large	MEET-L-30-SJ							1	x	30	Training/Education/Meetings
Office – Manager	OFF-S9-SJ Similar				1	x	12	1	x	12	Nurse Manager
Office – Single Person	OFF-S9-SJ				1	x	9	2	x	9	Nurse Consultant/Medical Officers
Office – 2-Person Shared	OFF-2P-SJ				1	x	12	2	x	12	Nurse Educators/Clerical support
Staff Room	SRM-25-SJ				1	x	25	2	x	40	May have separate zones for staff
Toilet – Staff	WCST-SJ				1	x	3	2	x	3	In addition to toilets in Change rooms
Net Department Total					1230.5			3945.5			
Circulation %					40			40			
Grand Total					1722.7			5523.7			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

15.6 Functional Relationship Diagram



15.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 270 Day Surgery/Procedure Unit Revision 4' 2010. Retrieved from website: http://www.healthfacilityguidelines.net.au/AusHFG_Documents/Guidelines/Archive/AusHFG%20Complete%20Version%204.pdf 2014
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- Royal College of Nursing (UK). 'Guideline 3; Day Surgery Information; Children and Young People in Day Surgery' 2013. Retrieved from website: http://www.rcn.org.uk/data/assets/pdf_file/0009/78507/004_464.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

16.0 Dental Health Unit

16.1 Introduction

16.1.1 Description

Dental Units may be attached to hospital departments, for example Emergency Units or Outpatients Units, or may be a freestanding department. Refer to Operating Unit for dental surgery as a function of an operating suite.

16.2 Planning

16.2.1 Functional Areas

The Dental Unit will consist of the following Functional Areas:

- Reception Area and Waiting
- Office area for administrative and clerical activities
- Dental Surgery Rooms
- Support Rooms and areas including Clean-up Room, Laboratory, Store, Sterilizing and Plant areas
- Staff Amenities which may be shared with adjacent Units.

Dental imaging will generally use digital processing; an area may be provided for servers and printing equipment.

16.2.2 Functional Relationships

The Dental Unit in a hospital precinct may be located close to other ambulatory care units. It should have ready access to Entry and Waiting areas and public amenities.

16.3 Design

16.3.1 Environmental Considerations

Natural Light

Maximize provision of natural light to areas where staff spend a large proportion of their working day.

Privacy

Privacy must be considered to treatment rooms and where confidential conversations are likely to take place. Acoustic privacy will be required in dental surgery rooms, offices, meeting and interview rooms.

Acoustics

Acoustic performance shall be high within the Unit, particularly dental surgery rooms, conference and meeting rooms.

16.3.2 Space Standards and Components

Ergonomics

Refer to Part C of these Guidelines.

16.3.3 *Safety and Security*

The Dental Unit requires the following security considerations:

- The perimeter of the Unit shall be lockable
- Doors to all offices shall be lockable
- Rooms used for storing equipment and files must be lockable
- Provision of after-hours access and security for staff may be required.

16.3.4 *Finishes*

Refer to Part C of these Guidelines.

16.3.5 *Fixtures and Fittings*

Refer to Part C of these Guidelines and Standard Components for information of fixtures and fittings.

16.3.6 *Building Service Requirements*

Radiation protection requirements for Dental Surgery Rooms will require assessment by radiation specialists. Compliance with any statutory authority regulations is required.

16.4 Components of the Unit

16.4.1 *Introduction*

The Dental Unit will consist of a combination of Standard Components and Non-Standard Components. Standard Components must comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

16.4.2 *Non-Standard Components*

Dental Plant Room

Description and Function

The Dental Plant Room will accommodate equipment including water filtration equipment, silver water treatment system, dental suction plant and air compressors. The Plant Room shall be a minimum of 6m². The size will be dependent on the amount of equipment to be accommodated and the layout.

Location and Relationships

The Plant Room should be located to minimize the impact of noise and heat generated by equipment accommodated within the room on adjacent areas. Access to the Plant Room through an external door is recommended as internal access may present noise issues.

Considerations

Services required for equipment may include compressed air, cold water and both single and three phase power. Additional requirements include floor wastes and tundishes for waste water, external exhausting for suction system air discharge and room ventilation. There may be a requirement to include a pit in the plant room floor to accommodate an air venturi for the suction system. Remote isolation switches for plant should be considered (the sterilizing room or reception are ideal locations) so plant can be easily shut down at the end of the day.

Child Education Area

Description and Function

A child education area may be provided to teach children teeth care and brushing techniques. The education area will consist of basins at child height and a mirror. The area may include more than one basin according to service requirements.

Location and Relationships

The child education area may be incorporated into a dental surgery room or as a separate within the Unit, with ready access to the Waiting areas.

Considerations

Provide warm water to the basins.

16.5 Schedule of Accommodation

Typical Dental Surgery Unit with 2, 4 and 6 chairs

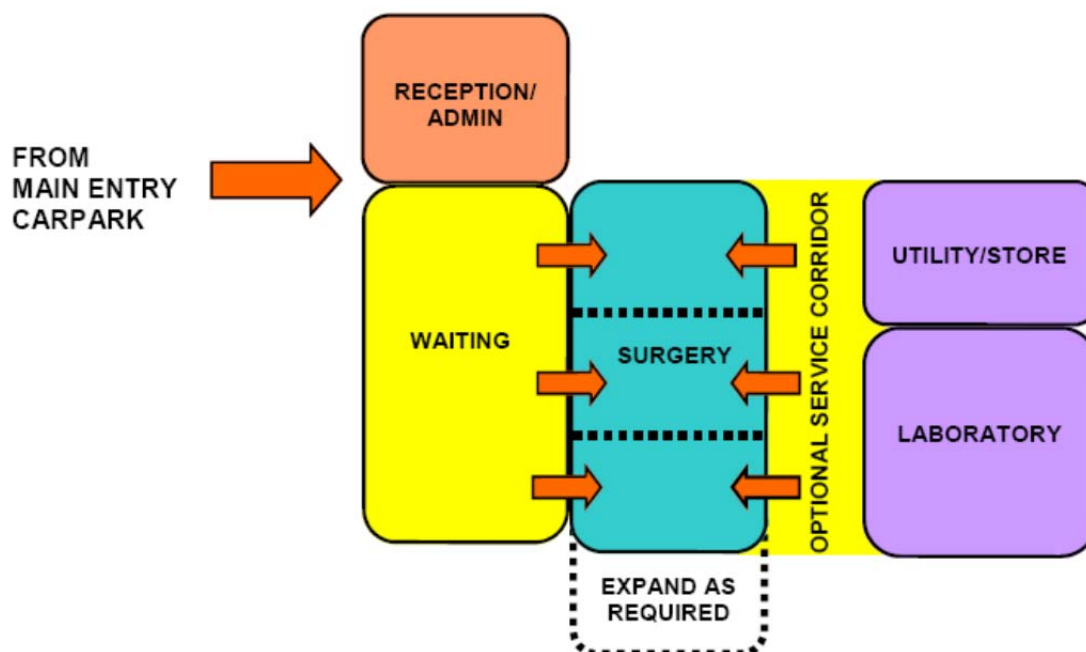
ROOM/SPACE	Standard Component	2 Chairs Qty x m²			4 Chairs Qty x m²			6 Chairs Qty x m²			Remarks
Entrance/Reception Areas											
Reception/Clerical	RECL-10-SJ Similar	1	x	10.0	1	x	10.0	1	x	20.0	
Waiting – Male/Female	WAIT-10-SJ WAIT-20-SJ	2	x	10	2	x	15	2	x	20.0	Cold water dispenser; Separate Female waiting
Waiting – Family	WAIT-10-SJ WAIT-20-SJ	1	x	10	1	x	15	1	x	20	Cold water dispenser
Play Area – Paediatric	PLAP-10-SJ				1	x	10	1	x	15	Optional
Store – Files	STFS-10-SJ	1	x	8	1	x	8	1	x	10	Compactus or fixed shelving
Store – Photocopy/Stationery	STPS-8-SJ				1	x	8	1	x	8	
Toilet – Accessible	WCAC-SJ				2	x	6	2	x	6	May share general public amenities
Toilet – Public	WCPU-3-SJ				2	x	3	2	x	3	May share general public amenities
Treatment Areas											
Dental Consult	DENSR-14-SJ				2	x	14.0	2	x	14.0	Multi-disciplinary use
Multi-purpose Room/Play Area					1	x	14.0	1	x	14.0	Dental Hygiene education, May use a Dental Surgery room
Dental Surgery – Single	DENSR-14-SJ	2	x	14.0	2	x	14.0	3	x	14.0	
Dental Surgery – Single	DENSR-14-SJ				1	x	16.0	1	x	16.0	Additional area for bed access
Dental Surgery (2 Chairs)	DENSR-14-SJ Similar							1	x	40.0	For siblings, families
Patient Bay – Holding/Recovery	PBTR-H-10-SJ	1	x	10	2	x	10	2	x	10	Separate Male and Female bays
Staff Station	SSTN-5-SJ Similar	1	x	5	1	x	5	1	x	8.0	
Support Areas											
Bay – Handwashing, Type B	BHWS-B-SJ	1	x	1	1	x	1	1	x	1	Patient recovery bays
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	1	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ				1	x	4	2	x	4.0	As required
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Cleaner's Room, 5m²	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Compressor Plant Room		1	x	9	1	x	12	1	x	15.0	Access from clinic area and after-hours
Dental Clean-Up	DCLUP-S	1	x	6	1	x	6	1	x	9.0	With pass-through window hatch to Sterilising
Dental Packing/Sterilising		1	x	6	1	x	10	1	x	20.0	With pass through window hatch to Sterile Stock
Dental Plaster Room								1	x	12.0	
Dental Laboratory	DENL-8-SJ	1	x	8	1	x	20.0	1	x	30.0	With enclosed zone for ceramics area
Dental X-Ray	DENXR-SJ	1	x	6.0	1	x	8.0	1	x	10.0	OPG unit (as required); Digital processing
Dirty Utility – Sub	DTUR-8-SJ DTUR-12-SJ	1	x	8	1	x	10	1	x	12	Includes waste disposal
Store – Drugs	STDR-5-SJ Similar	1	x	5	1	x	5	1	x	10.0	
Store – General	STGN-12-SJ	1	x	8	1	x	10	1	x	12	
Store – Sterile Stock	STSS-12-SJ Similar	1	x	8	1	x	10.0	1	x	12.0	May be collocated with instrument Processing
Staff Areas											
Office -Manager	OFF-S9-SJ Similar	1	x	12.0	1	x	12.0	1	x	12.0	Unit Manager
Office – Single Person	OFF-S9-SJ				1	x	9	2	x	9.0	Senior Dental staff, as required
Office – 2-Person Shared	OFF-2P-SJ				1	x	12.0	1	x	12.0	According to staffing numbers
Office – Workstation	OFF-WS-SJ	2	x	5.5	4	x	5.5	6	x	5.5	Quantity to suit staff numbers
Meeting Room – Medium	MEET-L-15-SJ				1	x	15	1	x	20	

ROOM/SPACE	Standard Component	2 Chairs Qty x m ²			4 Chairs Qty x m ²			6 Chairs Qty x m ²			Remarks
Change – Staff (Male/Female)	CHST-12-SJ	2	x	12	2	x	12	2	x	12. 0	Toilet, Shower and Lockers; May be shared with general staff amenities
Staff Room	SRM-15-SJ Similar				1	x	20	1	x	25. 0	May be shared with adjacent Unit
Net Department Total		211. 5			428. 5			602. 5			
Circulation %		35			35			35			
Grand Total		285. 5			578. 5			813. 4			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

16.6 Functional Relationship Diagram



16.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 280 – Oral Health Unit Revision 5' 2014. Retrieved from website: [http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/\[B-0280\]%20Oral%20Health%20Unit.pdf](http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/[B-0280]%20Oral%20Health%20Unit.pdf) 2014
- Department of Health (UK). 'Dental Quality and Outcomes Framework' 2011. Retrieved from website: <https://www.gov.uk/government/publications/dental-quality-and-outcomes-framework> 2014
- DH (Department of Health) (UK). 'Health Building Note 12 Out-patients Department' 2004. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142891/HBN_12.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

17.0 Elderly Home

17.1 Introduction

17.1.1 Description

Residential Aged Care Facilities (RACFs) or 'Elderly Home' provides accommodation and support for older people who can no longer live at home. The classification of people as 'elderly' is influenced by many factors including local and organizational definitions, as well as societal and cultural perceptions. Generally though, it is accepted that 'elderly' is referring to persons in later life, which may be associated with a general decline in function over time.

The care provided by the facility is generally categorized into low-care or high-care, descriptive of their needs for services and resources within the facility. Services can be further specialized for dementia or behavioral related disorders. Low-level care provides a supported environment for residents with services including:

- Accommodation-related services
- Personal care services such as daily living activities, support in rehabilitation if needed and access to health and therapy services as required.

High-level care includes assistance in most daily activities, nursing staff available 24-hours a day, and other medical professionals readily on call. Services include:

- Personal care in daily living
- Allied health services
- Accommodation
- Furnishings and bedding
- Cleaning services and laundry
- Meals and refreshments.

Care can be provided through a RACF for respite, which is temporary or casual residential care to support older people and their carers for short periods of time, or more permanently, when an older person can no longer manage to live at home.

Services provided in RACFs are not limited to nursing care. Residents receive personal care suitable to their requirements, meals, cleaning services, furniture and equipment.

Within the context of the broader health system, RACFs are generally located as a standalone facility within a community, although it can be associated with community or rehabilitation hospitals. The catchment population and scope of services of the RACF will determine its size, design, functional requirements and relationships with hospitals. Facilities and equipment shall be as necessary to accommodate the requirements of the Scope of Services and Operational Policy.

Relevant local authority statutory requirements are to be complied with.

17.2 Planning

17.2.1 Planning Models

Location

The RACF is preferably a single-story building located on the ground floor for ease of movement between spaces, particularly due to greater mobility issues expected in residents. It would also provide resident access to outdoor therapy and recreational areas. A multi-story RACF will require particular attention to be paid to resident movement in, out and around the unit to ensure no unnecessary restrictions are placed on their freedom of movement.

External Planning

The RACF should be integrated into its environment. Planning of external spaces must consider the requirement for the provision of secure gardens and other recreational areas with weather protection. A space within the garden may be designed to allow greater security measures which can be enforced during phases of acute distress or delirium experienced by residents. Fencing should be as unobtrusive as possible and can be made more discrete with practical landscaping and gardening options. The area should be allocated at 10m² per person. Low maintenance and resilient surfaces which complement the natural environment should be used to achieve a balanced environment, whilst enabling residents with limited mobility to enjoy the surroundings.

Other provisions should be made to allow patients the opportunity to engage in daily living activities where possible. Bed rooms and living areas should promote a 'normal' domestic feel.

Internal Planning

Bed spaces that provide privacy for attending to personal and treatment matters are necessary. Bedrooms should be single or double occupancy only, and gender separated. Spaces should be grouped into clusters and defined for the level of care required by residents. Each cluster of bedrooms should include a recreational and lounge space for therapy and activities. Access to outdoor areas should be provided from the lounge space with appropriate weather protection.

Dining areas should be communal and a central space for congregation and socializing.

Additional considerations include:

- Clearly defined residential areas readily identifiable by patients who may be disorientated or confused
- An effective balance between opportunities for resident privacy and the need for staff to monitor them
- Provision of flexible-use spaces that will accommodate a variety of activities
- Inclusion of amenities to support families, carers and official visitors.

17.2.2 Operational Models

The RACF will operate on a 24-hour basis. The delivery of clinical and personal care services will be dependent on the Scope of Services and Operational Policy, including the patient mix, number of beds and the Model of Care to be adopted.

Models of Care

The Model of Care will reflect the number of beds planned for the facility and identify the ratio of high and low level cares as well as spaces specific to care for older persons with dementia, delirium and other behavioral issues.

Non-Institutional Model

Small houses or units are home to a small number of residents (usually 6–12) for the provision of care and treatment. Residents have private rooms and bathrooms that open into a central living and meals area. The family-type setting promotes improved quality of life and greater staff, family and resident satisfaction compared to institutional models.

Strong links to community support agencies and regular social activities involving family will improve socialization; promote living skills and general wellbeing.

Remedial Model

The focus of care provided in this model is on maintaining the residents' autonomy within their recognized abilities and function. Self-care and management is promoted, with care and assistance only provided where there is a distinct need for assistance. Multi-disciplinary assessment and establishment of goals with low-intensity therapy, and assistance with activities of daily living, aim to maximize a resident's independence and function.

Secure Care Model

Regular observation and security of residents with dementia and behavioral issues is crucial. Residents with dementia or other psychogeriatric issues should be regularly assessed and have treatment optimized to reduce hospitalizations and improve the quality of life. Open and tranquil spaces should be available with security features to enforce limited access in and out of these designated areas.

17.2.3 Functional Areas

The RACF will consist of a number of functional areas or zones:

- Entrance/Reception
- Assessment Areas
- Bedrooms
- Ensuites
- Toilets
- Medication Storage/Dispensing Area
- Dining Area
- Servery/Kitchen, collocated with dining facilities
- Activity and Lounge Areas
- Courtyard/Garden Areas
- Storage
- Support Areas including clinical and non-clinical disposal, laundry, IT/communications
- Secure Area for residents suffering acute distress
- Administration and Office Area
- Staff Station
- Staff Amenities.

Entrance/Reception

The Entrance provides direct access to the Facility for residents, families and visitors. It should be easily enable access and transfer from a private or patient transport vehicle with weather protection sufficient to provide shelter for a minibus.

An entry capable of accepting an ambulance trolley and support staff with ease is necessary for residents requiring emergency medical attention. There should be provision for an intercom and CCTV that is viewable between the Entrance, Emergency Entrance (if this is separate to the main entrance) and the Reception and Staff Station. Coded-entry facilities should be installed separating Entrance and Reception areas from the main Facility. This will prevent easy entry and exit from the RACF by residents requiring high-level care or careful supervision due to falls risks or particular psychological states.

Assessment Areas

The Assessment Area will consist of Interview/Consulting Rooms and Examination/Assessment Rooms for use by nursing, allied health, medical and support staff to interview patients, relatives or carers and examine patients as necessary. Duress/Emergency alarms should be fitted in these rooms for safety to consulting staff and patients.

The Assessment Areas should be accessible from the Entrance as well as from the rest of the Facility for use by existing residents for consultation and therapy.

Bedrooms

Bedrooms should be single or double occupancy, the ratio of these types will vary depending on the Scope of Services and Operational Policy. Single bedrooms promote privacy, but double bedrooms can better utilize staff, particularly if level of care required by residents are high, and provide companionship to residents. Dual occupancy bedrooms should allow for gender separation.

Bedrooms should be equipped and fitted out to enable functionality of an 'at home' space, including opportunities for residents to personalize aspects such as a pin-up board and display shelves. An external outlook is necessary from each room.

While domestic-style beds are preferred for ambience, consideration should be given to occupational safety and health issues of staff attending to low-height beds. Allocation of rooms to low- or high-level care functions will better determine the space, fit out and equipment requirements.

Ensuites/Toilets

Each Bedroom is to have access to an Ensuite. Ensuites will provide sufficient space for the maneuvering of a wheelchair and various types of walkers. Considerations must be made to enable assistance aids to be fitted permanently or according to resident needs including transfer benches, commodes, grab rails and shower stools.

High-level care Bedrooms and their Ensuites may require the Ensuites to be accessible from the corridor for emergencies or assistance. Privacy latches should be able to be opened by staff if necessary. Call buttons should be fitted in at least two positions within the Ensuite, one of which can be reached from the toilet, to enable residents to call for assistance or in case of emergencies.

Toilets must also be located throughout the Facility near communal areas and close to outdoor spaces. The same considerations must be taken into account, including space requirements and access and call options to staff in case of emergencies or assistance required. General toilets should have doors which slide for ease of use by residents and prevention of obstruction in either direction, in or out of the toilet.

Medication Storage/Dispensing Area

The Medication Storage and Dispensing Area will be used for storage of resident medication and medication trolley which may be required if the Facility serves a large number of high-level care patients with more extensive medication requirements. A bench should be located within this Area to enable dispensing of medications, preparations of other forms of medications including injections and other treatments.

The Area also should have hand-washing facilities internally or located near the entry/exit point, and adequate lighting. It should be located near the Staff Station and be secure and only accessible by qualified staff members. Space for a resuscitation trolley should also be included depending on the Scope of Services of the Facility.

Dining Area and Servery/Kitchen

Residents will generally have meals in a common Dining Area. The room should be sized to accommodate for all residents and carers. Tables should be height adjustable and movable to accommodate for residents in wheelchairs and using other mobility aids.

A secure Servery/Kitchen should be located adjacent from the meal serving area and Dining Area, and be accessible only by staff. A beverage bay accessible to residents and monitored and restocked by staff should be collocated to the meal service area. Hand washing and toilet facilities can be located near the entry/exit point of the Dining Area. Wall and floor surfaces of the Dining Area and Servery/Kitchen should be impervious and easy to clean.

Low-level care facilities or parts of the facility may have kitchen and meal preparation areas accessible by residents. The Dining Area may be used for other activities when not in use for meals.

Activity and Lounge Areas

Activity and Lounge Areas may be located adjacent to Dining Areas to provide a larger space when required. At least two separate social spaces are required, one for quiet activities and one for noisier recreational activities. Activity Rooms may be provided as multi-function spaces for flexible use. Access to the external areas from these Rooms is desirable, as well as floor to ceiling windows and doors to facilitate the transition. Activity Areas should have hard impervious, easy to clean flooring.

Lounge Areas can have carpeted flooring for comfort and to assist with noise dispersion. It should also have an external outlook. Lounge Areas should be fitted and equipped to enable a range of indoor and relaxing activities, including a television set, music player, bookshelves, storage for indoor card and board games.

Courtyard/Garden Areas

External Courtyard and Garden Areas for elderly residents must be provided, for both mental and physical health. Bench seats and tables should be constructed of solid surface materials and fixed to the ground. External Areas should provide covered space for shade and patient use in inclement weather. Secure storage for activities equipment and access to toilet facilities near the Courtyard/Garden Areas should be considered.

Residents may spend a number of the latter years of their life in the Facility; therefore a family-home type setting is the most ideal. This may incorporate areas of the outdoor space to be allocated specifically to the care and maintenance of resident's themselves. Garden beds may be elevated to a suitable height and be surrounded by comfortable and adequate seating to enable close enjoyment and increase functionality.

An enclosed and secure Courtyard is necessary for residents in a distressed state. This Courtyard should be easily supervised by staff from the Staff Station.

Storage

The following minimum elements, in the form of cabinets, shelves, and/or separate rooms or closets, shall be included as required:

- Linen storage
- Equipment for activities
- Daily living aids not in use or required.

Support Areas

Support Areas include Beverage Bays, Cleaner's Room and Storage, Dirty Utility, Disposal Room and a Linen Store/Cupboard, Equipment Storage, Offices and Stores and should be located in staff only accessible areas. If located within the resident areas, the rooms must be enclosed and lockable

Secure Care Areas

Depending on the Scope of Services, a Secure Care Area will accommodate residents in an acutely distressed mental state, suffering delirium or dementia patients prone to wandering. This Area will require good visibility and supervision from staff. Its location and design should promote a rapid staff response in patient emergencies and avoid transit of residents through other open areas. When required, this Area should provide secure separation from the remainder of the Facility.

Depending on the number of patients the Area is to accommodate, it should also have bedrooms, ensuites, toilets, dining area, lounge and activity areas, and outdoor areas to a smaller scale to the rest of the Facility, but sufficient to create a comfortable environment for residents.

Administration and Office Areas

Administration and Office Areas should be secure allowing staff only access to prevent unauthorized entry and access to resident information and other secure documents. The Facility Manager's Office should be located within, or directly adjacent to resident areas and the Staff Station. Access to workstations for support staff, visiting medical and allied health staff should be considered in an area discreet from the Staff Station.

Staff Station

The Staff Station should be located with good visibility of common areas (Activity, Lounge and Dining Areas) and the Entrance/Reception if possible. The Staff Station design will be dependent on the Model of Care adopted for the Facility and Scope of Services. The Staff Station may be a fully enclosed room with glazed security screen, or open and accessible to patients. Patient information should be secure and records may be electronic.

The functions for this space may include:

- Staff handovers and case discussions
- Information and communication technology
- Storage of stationary and paper records.

Staff Amenities

Staff Amenities will consist of a Staff Room, Lockers, Toilets and Change Rooms. They should be located in a discreet area with restricted entry and be accessible 24-hours a day.

17.2.4 Functional Relationship

External

The RACF may be located in a community setting with close links to health facilities. The Facility will require strong functional links to outsourced supply services including medications, food, linen, general consumable supplies and waste handling for deliveries and collections.

Internal

Restricted staff access will be required to several functional areas including Office and Administration, Staff Amenities, Staff Station, Support Areas and Medication Storage/Dispensing Area.

17.3 Design

17.3.1 General

The design of the RACF will also be based heavily on the Scope of Services and Operational Policy of the Facility itself. The Scope of Services and Operational Policy must consider the levels and types of care to be provided, the ratio of resident care levels to one another and provision of secure care areas for dementia and mentally distressed residents.

The design of the Facility and external spaces should be domestic in nature rather than formal or clinical. The RACF will need to provide a sufficient amount of space for recreation and treatment of residents. The design should:

- Create a therapeutic environment for residents which provide privacy, opportunities for recreation and self-expression
- Keep entry points to a minimum, with additional secure care areas if necessary
- Provide for resident locomotion both indoors and outdoors with unobtrusive environmental boundaries
- Provide staff with opportunities to discreetly monitor and observe residents
- Incorporate appropriately minimally intrusive safety provisions for residents and staff
- Provide clear directional signage around the Facility both internally and externally.

17.3.2 *Environmental Considerations*

Natural Light

Natural light is highly desirable within the Facility, as well as windows permitting outside views to create a natural ambience in the area. Wherever possible, the use of natural light is to be maximized.

All windows and observation panels should be glazed with toughened laminated glass. Polycarbonate is not recommended due to surface scratching which may reduce visibility over time. Internal windows should be double glazed in resident accessible areas; windows and frames are to be flush faced.

For glazing in secure care areas, graduate the impact resistance of the glass from toughest at a lower level to weakest at a high level. Specifically, toughened laminated glass with a minimum nominal thickness of more than 10.0, or equivalent approved is recommended for low level glazing in patient areas. Avoid larger pane sizes in areas where damage to glass may be expected. Smaller panes are inherently stronger for a given thickness than larger panes.

Privacy

Privacy shall be considered in Bedroom, Treatment and Consultation spaces. Staff observation of residents' privacy must be well-balanced within the Facility, the following features should be considered in design:

- Location of doors and windows to ensure residents' privacy and promote staff security
- Window treatment to provide resident privacy from external and internal viewing
- Confidentiality of discussion with residents and their records.

Acoustics

Resident communal spaces will require acoustic treatment to maintain noise control. Acoustic treatment should be applied in the Lounge, Dining and Activities Areas, Bedrooms and Assessment Areas.

17.3.3 *Space Standards and Components*

Ergonomics

Ergonomics and Occupational Safety and Health (OSH) requirements must be considered in the design process and the selection of fittings and equipment in the Facility to ensure optimal operation of the RACF and the health and safety of the staff, residents and visitors.

Particular attention should be given to placement of equipment, heights and dimensions of counters and work areas must ensure privacy and security for residents, visitors and staff.

Size of the Facility

The size of the RACF will be determined by the approved Service Plan and Operational Policy taking into consideration the needs of the Facility and other external facilities. The Schedule of Accommodation has been developed for a 60-bed RACF with capabilities to provide low- and high-level care and secure for residents with dementia or delirium.

For alternative configurations, allocate space for key areas according to the following guide:

- Lounge/Dining/Activity Areas – 7.5m² per resident
- Outdoor areas (Courtyards/Garden Areas) – 7.5m² per resident, with a minimum area of 20m²
- Assessment Areas – 1 per 5 beds.

Accessibility

Ensure all resident accessible areas will accommodate residents and visitors in a wheelchair.

17.3.4 *Safety and Security*

The RACF must be secured to prevent unauthorized access through doors, windows, wall and ceilings. A security intrusion detector alarm should be fitted to monitor the Facility 24-hours a day.

Security measures for consideration will include:

- Electronic door controls and alarms to perimeter doors
- Coded-access entry
- Movement sensors
- Duress alarms at Entrance/Reception and in Assessment Areas
- Solid ceilings to prevent access.

A communication system which enables staff to signal for assistance from other staff should be included.

17.3.5 *Finishes*

Finishes including fabrics, floors, walls and ceilings should be non-institutional as far as possible and promote a relaxing atmosphere. Surface finishes should be impact resistant and easily cleaned. The following factors should be considered when selecting finishes:

- Purpose of rooms
- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning and infection control
- Fire safety
- Movement of equipment.

Refer also to Part C of these Guidelines.

17.3.6 *Fixtures and Fittings*

Equipment, furniture and fittings should be selected and installed to be safe, robust and suitable for heavy usage.

Mirrors should have safety glass or other appropriate impact resistant and shatterproof construction and must not distort the reflected image. Mirrors should be fully fixed to a backing to prevent freeing of loose fragments of broken glass.

Refer also to Part C of these Guidelines.

17.3.7 *Building Services Requirements*

Heating, Ventilation, Air-Conditioning (HVAC)

Temperature controls are required throughout the Facility; internal room temperature shall be kept at a comfortable temperature.

Communications

Information technology/communications systems should provide for:

- Sufficient data and power outlets for computers and laptops
- Electronic records and computerized ordering systems.

Call System

A call system must be provided for emergencies and communication of information from staff to all residents and visitors.

Fixed duress/emergency call buttons should be located strategically around the Facility for convenient access by staff. A patient call system is recommended to be installed to Bedrooms and Bathrooms, and Ensuities. The Operational Policy will determine the need for a resident/staff call system and the type required.

17.3.8 Infection Control

It is recommended that hand-washing facilities are provided as follows:

- Staff Amenities
- Server/Kitchen Areas
- Dining Areas
- Lounge/Activity Rooms
- Support Areas
- Intermittently along corridors of resident Bedrooms in addition to those in General Toilets and Ensuite Bathrooms.

All hand basins in the Facility should permit clinical handwashing with hands-free activation; taps may be wall -mounted, lever operated or sensor operated. Hand basins in non-clinical areas should permit routine hand-washing and taps may be basin -mounted and lever operated. Hand basins should include dispensers for soap, antiseptic soap and paper towels.

The quantity and ratio of hand basins to work areas will be determined by the size of the individual areas, the operating policies and standard guidelines relating to the Facility's services.

Refer also to Part D of these Guidelines.

17.4 Components of the Unit

The Facility will contain Standard Components to comply with details described in these Guidelines. Refer to Standard Components Room Data Sheets and Room Layout Sheets.

17.5 Schedule of Accommodation

Residential Aged care Unit with 32 Beds (Low Care and High Care modules).

This SOA is applicable to Levels 4 to 6.

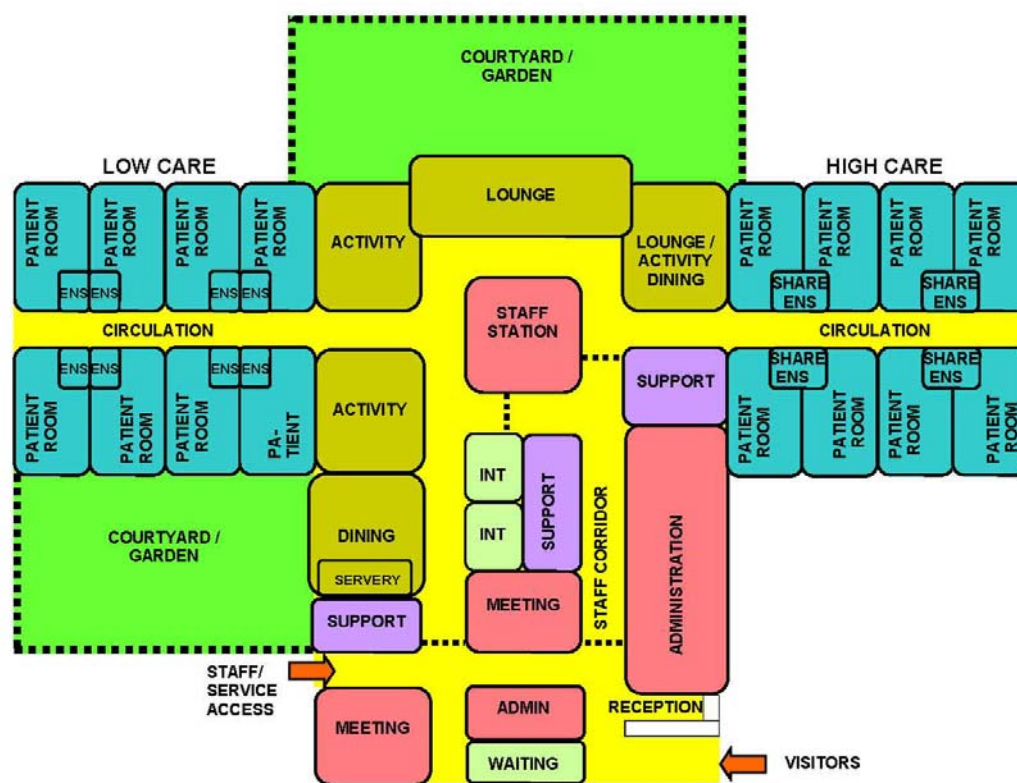
ROOM/SPACE	Standard Component							Levels 4/6 Qty x m ²	Remarks
Entrance/Reception Areas									
Entry Lobby/Airlock	AIRLE-10-SJ							1 x 10	
Reception	REC-9-SJ							1 x 12	
Office – 2-Person Shared	OFF-2P-SJ							1 x 12	
Store – Photocopy/Stationery	STPS-8-SJ							1 x 8	
Store – Files	STFS-10-SJ							1 x 8	
Waiting	WAIT-10-SJ							1 x 15	
Toilet – Public	WCPU-3-SJ							2 x 3	
Toilet – Accessible	WCAC-SJ							1 x 5	
Consult/Interview Room	CONS-MH-SJ							3 x 14	Allow for gender separation
Meeting Room	MEET-L-30-SJ							2 x 30	Also used for Group/Family Therapy
Inpatient Bed Areas – Low Care 16 Beds									
1Bed Room – Low Care	1 BR-LC-SJ							6 x 18	
2 Bed Room – Low Care	2 BR-LC-SJ							5 x 28	
Ensuite – Standard	ENS-ST-SJ							11 x 5	
Bay – Handwashing	BHWS-B-SJ							4 x 1	One to Unit Entry, One per four beds
Bay – Linen	BLIN-SJ							1 x 2	
Inpatient Bed Areas – High Care 16 Beds									
1Bed Room – High Care	1 BR-HC-SJ							6 x 18	
2 Bed Room – High Care	2 BR-HC-SJ							5 x 28	
Lounge/Dining/Activity	LDA-MH-20-SJ (Similar)							1 x 120	
Ensuite – Shared	ENS-MH-SJ							7 x 5	
Bay – Handwashing	BHWS-B-SJ							4 x 1	One to Unit Entry, One per four beds
Bay – Linen	BLIN-SJ							1 x 2	
Shared Areas									
Dining Room	DINMH-30-SJ (SIMILAR)							1 x 50	Based on 7.5m ² per person in total for dining/activities
Pantry/Servery	PTRY-SJ							1 x 15	With servery counter
Lounge/Activity Area	LDA-MH-20-SJ (SIMILAR)							1 x 50	Based on 7.5m ² per person in total for dining/activities
Multi-function Activity Area	MAC-20-SJ							1 x 20	Based on 7.5m ² per person in total for dining/activities
Occupational Therapy Room								1 x 20	Optional
Courtyard/Garden	CTSE-SJ (SIMILAR)							1 x 320	Based on 10m ² per person
Laundry – Patient	LAUN-MH-SJ							1 x 6	
Store – Patient Property	STPP-SJ							1 x 8	
Bathroom	BATH-SJ							1 x 16	Optional
Toilet – Staff	WCST-SJ							1 x 3	Optional if location of main amenities are too remote.
Clinical Support Areas									
Staff Station	SSTN-14-SJ							2 x 14	To oversee all sub-units. May sub-divide if necessary
Office – Clinical Handover	OFF-CLN-SJ							2 x 15	
Medication/Treatment Room	MED-MH-SJ							2 x 12	One per module
Bay – Resuscitation Trolley	BRES-SJ							1 x 1.5	Location in Staff Station or

ROOM/SPACE	Standard Component							Levels 4/6 Qty x m ²	Remarks
									medication/treatment area
Dirty Utility	DTUR-10-SJ							2 x 10	One per module
Cleaners Room	CLRM-S-SJ							1 x 5	
Disposal Room	DISP-S-SJ							1 x 8	
Store – Equipment	STEQ-16-SJ							1 x 16	
Store – General	STGN-9-SJ							1x 9	
Staff Areas									
Office – Single (Director)	OFF-S12-SJ							1 x 12	
Office – Single (Nurse Manager)	OFF-S9-SJ							1 x 9	
Office – Shared – Medical Staff	OFF-WS-SJ							1 x 5.5	Qty determined by Staff numbers
Office – Shared – Nursing Staff	OFF-WS-SJ							2 x 5.5	Qty determined by Staff numbers
Office – Shared – Allied Health	OFF-WS-SJ							2 x 5.5	Qty determined by Staff numbers
Store – Photocopy/Stationery	STPS8-SJ							1 x 8	
Meeting Room	MEET-L-30-SJ							1 x 30	
Staff Room	SRM-20-SJ							1 x 20	
Property Bay – Staff	PROP-3-SJ							2 x 3	
Toilet – Staff	WCST-SJ							2 x 3	
Net Department Total								1664	
Circulation %								35	
Grand Total								2246.4	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

17.6 Functional Relationship Diagram



17.7 Further Reading

- Australasian Health Facility Guidelines (Aus.). 'Part B Health Facility Briefing and Planning, Rev 4', 2012. Retrieved from website: www.healthfacilitydesign.com.au 2014
- Australian Government (Aus.). 'My Aged Care' Retrieved from website: <http://www.myagedcare.gov.au/> 2014
- Evidence behind the Green House and similar models of nursing home care: <http://www.medscape.com/viewarticle/740653> 2014
- Government of Western Australia, Department of Health (Aus.). 'Models of care for aged and community care'. Retrieved from website: <http://www.agedcare.health.wa.gov.au/home/moc.cfm> 2014
- Refer to DHA website for local licensing requirements www.dha.gov.ae and MOH website www.moh.gov.ae for local approval procedures
- The Remedial model of care for older people: <http://www.nursingtimes.net/a-new-model-of-care-for-the-older-person/5042747.article> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

18.0 Emergency Unit

18.1 Introduction

18.1.1 Description

The function of the Emergency Unit is to receive, stabilize and manage patients (adults and children) who present with a large variety of urgent and non-urgent conditions whether self or otherwise referred. The Emergency Unit also provides for the reception and management of disaster patients as part of the Unit's role within each region.

It is recommended that Hospitals that do not provide an Emergency Service display a prominent exterior sign at the main entrance stating this and giving the location of the nearest Hospital with an Emergency Service.

18.2 Planning

18.2.1 Operational Models

The Emergency Unit may be configured in a number of models that may influence facility design including

Fast-Track

Specific patient groups may be assessed and treated via a separate 'fast' track to other EU presentations. This may occur at the triage point, or immediately after triage but in a separate zone. Patient types suitable for this area may include contagious diseases, minor injuries, ambulatory pediatrics. Assessment and treatment may be carried out in Consult/Examination rooms.

Grouping by Patient Acuity

Patients of similar acuity (urgency) or staff intensity may be treated in the same zone. Facilities for this model will include separate areas for resuscitation, acute monitored beds, acute non-monitored beds and ambulatory treatment spaces. There may be separate entry-points (or triage points) for the different areas. Staff may be separately allocated to different areas for each shift, and may require separate Staff Stations and private workspace.

Grouping by Specialty

Patients may be managed in different areas according to the specialty of service they require e.g. acute treatment, complex investigation, complex discharge planning, or pediatrics. Patients may be triaged from a central arrival point, or from separate ambulance and ambulant entry points. Within each Functional Area, patients would be prioritized according to acuity. In this model, separate staffing for each area is required, which would also include separate workspaces for staff.

Other Special Functions

Short Stay Wards/Emergency Medicine Unit/Observation Units may be located adjacent or incorporated into the Emergency Unit. This may allow sharing of administrative, staff and support facilities.

18.2.2 Functional Areas

An Emergency Unit may include the following Functional Areas:

Entrance/Reception/Triage

- Receiving of patients and visitors and administration
- Waiting area for patients, relatives and children
- Assessment for patients.

Patient Treatment Areas

- Assessment and treatment areas including Resuscitation, Acute Treatment bays/rooms, Seclusion Room and Decontamination Facility, Pediatric patient areas, Procedure Rooms
- Short-Stay Ward/Emergency Medicine Unit/Observation Unit
- Primary Care Area – for patients with low acuity conditions
- Stepdown Area – for patients awaiting test results, considered safe, but requiring observation prior to admission or discharge.

Staff and Support Areas

- Clean and Dirty Utility Rooms
- Store rooms
- Linen
- Waste Holding/Cleaners rooms
- Staff amenities, administrative and teaching functions
- Ambulance facilities
- Grieving Room.

The main aggregation of clinical staff will be at the Staff Station in the Acute Treatment/Resuscitation Area. This should be the focus around which the other clinical areas are grouped. The Entrance/Reception Area is the focus of initial presentation.

In addition to standard treatment areas, some departments may require additional, specifically designed areas to fulfil special roles, such as:

- Management of pediatric patients
- Management of major trauma patients
- Management of mental health patients
- Management of patients following sexual assault
- Extended observation and management of patients
- Undergraduate and postgraduate teaching
- Transport and retrieval services
- Tele-medical referral/consultation service.

Entrance Area

The entrance to the Emergency Unit must be at grade-level, well-marked, illuminated, and covered. It shall provide direct access from public roads for ambulance and vehicle traffic, with the entrance and driveway clearly marked. A ramp shall be provided for pedestrian and wheelchair access.

The entrance to the Emergency Unit shall be paved to allow discharge of patients from cars and ambulances. Temporary parking should be provided close to the entrance.

Waiting Area

The Waiting Area should provide sufficient space for waiting patients as well as relatives/escorts. The area should be open and easily observed from the Triage and Reception areas. Seating should be comfortable and adequate. Space should be allowed for wheelchairs, prams, walking aids and patients being assisted. There should be an area where children may play.

Support facilities, such as a television should also be available. Fittings must not provide the opportunity for self-harm or harm towards staff.
 Waiting Areas shall be negatively pressured.

From the Waiting Area there must be access to:

- Triage and Reception Areas
- Toilets
- Baby Change Room
- Light refreshment facilities which may include automatic beverage dispensing machines
- Telephone and change machines
- Health literature.

It is desirable to have separate Waiting Areas, particularly for children. Child play areas will provide equipment suitable for safe play activities, including a television. It shall be separated for sound from the general Waiting Rooms and must be visible to the Triage Nurse.
 The area should be monitored to safeguard security and patient wellbeing.

Reception/Clerical Areas

The Reception Area is required to accommodate:

- Reception of patients and visitors
- Registration interviews of patients
- Collation of clinical records
- Printing of identification labels.

The counter should provide seating and be partitioned for privacy at the interview area. There should be direct communication with the Reception/Triage area and the Staff Station in the Acute Treatment/Observation Area.

The Reception/Clerical Area should be designed with due consideration for the safety of staff. This area requires a duress alarm.

Reception/Triage

The Reception/Triage and Staff Station shall be located where staff can observe and control access to treatment areas, pedestrian and ambulance entrances and public waiting areas. This area requires a duress alarm.

The Emergency Unit should be accessible by two separate entrances: one for ambulance patients and the other for ambulant patients. It is recommended that each entrance area contains a separate foyer that can be sealed by remotely activating the security doors. Access to Treatment Areas should also be restricted by the use of security doors. The Ambulance Entrance should be screened as much as possible for sight and sound from the ambulant patient entrance. Both entrances should direct patient flow towards the Reception/Triage Area.

The Reception/Triage area should have clear a vision to the Waiting Room, the children's play area (if provided) and the ambulance entrance. The Reception/Triage Area may perform observations and provide first aid in relative privacy.

Acute Mental Health Emergency Care Area

The patient who is suffering from an acute psychological or mental health crisis has unique and often complex requirements. An Emergency Unit should have adequate facilities for the reception, assessment, stabilization and initial treatment of patients presenting with acute mental health problems.

It is not intended that this be used for prolonged observation of uncontrolled patients. The main purpose of such an area is to provide a safe and appropriate space to interview and stabilize patients. Acute mental health presentations have the potential to disrupt the normal operation of an Emergency Unit. Conversely, the busy environment of an Emergency Unit may not be conducive to the care of patients with acute mental health crises.

Patient flows should be separated where possible to maximize privacy and minimize disruption. A separate secure entrance for use by community emergency mental health teams and police may be desirable. Patients should be continuously observable by staff either directly or via closed circuit television

The designated area should be within close proximity of other continuously staffed areas of the department, with ready access to assistance when required, As far as possible; the facility should not contain objects that could be thrown at staff. There should be two separate exits to allow the exit of staff if one exit is blocked. The exit doors should open outwards, and should be lockable from the outside but not from the inside. If a window is incorporated, any drapes or blinds shading the window should be operable from outside. All areas should have easily accessible duress alarms.

As far as possible, the area should be free of heavy or breakable furniture, sharp or hard surfaces that could injure an uncontrolled patient, and should incorporate tamper resistant electrical fittings. It should also incorporate interior design features that promote calmness, such as muted colors and soft furnishings and appropriate lighting. Patient tracking devices may enhance security.

The Acute Mental Health Emergency Care Area should be separate enough from adjacent patient care areas to allow privacy for the mental health patient and protection of other patients from potential disturbance or violence. There should be acoustic and visual separation from adjacent clinical areas, but ready access for staff in the event of an urgent need for intervention. The incorporation of sound-insulating material is recommended.

Ideally the Acute Mental health Emergency Care Area facility should contain at least two separate but adjacent areas:

Interview Room (Mental Health)

This room should have two exit doors, swinging outward and lockable from outside, to allow for the escape of staff members when one exit is blocked.

One door should be large enough to allow a patient to be carried through it. Consideration should be given to installing a solid door with safety viewing glass.

The Interview Room should also be:

- Shielded from external noise
- Furnished with only soft furnishings with no hard edges
- Designed in such a way that observation of the patient by staff outside the room is possible at all times; this may be backed up with closed circuit television for the safety of staff
- Arranged to ensure that patients have no access to air vents or hanging points
- Fitted with a smoke detector
- Fitted with duress alarm at each exit.

Examination/Treatment Room (Mental Health)

The Examination/Treatment Room should be immediately adjacent to the Interview room. It should contain adequate facilities for physical examination of the patient; however the inclusion of unnecessary and easily dislodged equipment should be avoided.

If operational policy dictates that intravenous sedation is to occur in this area, it should contain the appropriate facilities and monitoring equipment, -mounted out of reach of a potentially violent patient. It should contain the minimum of additional fittings or hard furnishings that could be used to harm an uncontrolled patient. It should be of sufficient size to allow a restraint team of five people to surround a patient on a standard Emergency Unit bed and should be at least 12m² in floor area.

Acute Treatment Areas

Acute Treatment Areas are used for the management of patients with acute illnesses. Requirements are as follows:

- Areas to fit a standard mobile bed
- Storage space for essential equipment
- Space to allow monitoring equipment to be housed
- Minimum space between beds is 2. 4m
- Each treatment area must be at least 9m² in area.
- All Treatment Areas, including Triage, require the following:
 - Service panel
 - Examination light; the examination light must be a high standard focused light with a power output of 30,000 lux, illuminate a field size of least 15mm and be of robust construction
 - Wall--mounted sphygmomanometer
 - Shelving
 - Waste bins and sharps containers
 - Patient call and emergency call facilities.

Patient Toilet/Showers

In an Emergency Unit the following Patient Toilet/Ensuite facilities will be required,(separate Male and Female):

- Up to eight treatment bays – two Patient Toilets/Ensuite, one each for male/female
- Between nine and 20 treatment bays – four Patient Toilets/Ensuite, two each for male/female
- Between 21 and 40 treatment bays – six Patient Toilet/Ensuite, three each for male/female
- More than 40 treatment bays – eight Patient Toilet/Ensuite, four each for male/female
- At least two of the above Toilets/Ensuites to be Accessible for wheelchairs, one each for male/female.

Consultation Areas

Consult Rooms are to be provided according to Unit size and requirements for examination and treatment of ambulant patients. Consult Rooms are to comply with Standard Components - Consult Room.

Consultation – Outpatients

If an Outpatient Consultation Service is to be provided according to the service plan, the following facilities shall be provided:

- Entrance and Reception; this may be a shared facility with the hospital or other specialty departments
- Waiting Area may be shared
- Consulting/Examination rooms
- Treatment Rooms
- Nurses Office; dependent upon the size of the outpatient service
- Medical Laboratory/Utility Room; the size and type of this facility will be determined by the size of the outpatient service and whether or not shared facilities are available within the hospital
- Dirty Utility/Disposal Room
- Staff Room; may be shared with the hospital
- Toilets and Change Rooms; may be shared with the hospital
- Storage, as required
- Cleaner's Room; may be shared with the hospital

- Environmental Requirements; special attention is to be given to the visual and acoustic privacy of patients when being interviewed and also to the quality of light when being examined (the latter requires adequate natural light or color corrected artificial lighting or task lighting)
- Miscellaneous: construction, finishes, design for disabled access, parking, signposting etc. shall be in accordance with the other relevant sections of these Guidelines.

Decontamination Area

A Decontamination Room should be available for patients who are contaminated with toxic substances. The Decontamination room must:

- Be directly accessible from the ambulance bay without entering any other part of the unit
- Have a flexible water hose, floor drain and contaminated water trap.

Laboratory Area

A designated area for performing laboratory investigations such as arterial blood gas analysis and microscopy should be considered in Units of Levels 5 or 6.

Pharmacy/Medication Area

A Pharmacy/Medication area is required for the storage of medications used within the Emergency Department. Entry should be secure with a self-closing door. The area should be accessible to all clinical areas and have sufficient space to house a refrigerator, which is essential for the storage of heat sensitive drugs.

Resuscitation Area

The Resuscitation Room/Bay is used for the resuscitation and treatment of critically ill or injured patients. The Resuscitation Room/Bay requires:

- Space to fit a specialized resuscitation bed
- Space to ensure 360 degree access to all parts of the patient for uninterrupted procedures
- Circulation space to allow movement of staff and equipment around the work area
- Space for equipment, monitors, storage, wash up and disposal facilities
- Appropriate lighting and equipment to hang IV fluids
- Maximum possible visual and auditory privacy for the occupants of the room and other patients and relatives
- Easy access from the ambulance entrance and separate from patient circulation areas
- Easy access to the Acute Treatment/Observation area from the Staff Station
- A full range of physiological monitoring and resuscitation equipment
- Workbenches, storage cupboards, handbasins, X-Ray viewing facilities (or digital electronic imaging system) and computer access
- Solid partitions between this and other areas are recommended.

Each Resuscitation Bay should be equipped with:

- Service panel, service pendants or pods to maximize access to patients
- Physiological monitor with facility for ECG, printing, NIBP, SpO2, temperature probe, invasive pressure, CO2 monitor
- A light similar to a small, single arm operating light
- Resuscitation patient trolley
- Wall -mounted diagnostic set (ophthalmoscope/auroscope)
- Overhead IV track.

Imaging facilities should include:

- Overhead X-Ray
- X-Ray screening (lead lining) of walls and partitions between beds
- Resuscitation trolley with X-Ray capacity.

Staff Station

The Staff Station should have an uninterrupted vision of the patients. It should be centrally located and be constructed as an enclosed area to ensure confidential information can be conveyed without breach of privacy and to provide security to staff, information and privacy. The use of sliding windows and adjustable blinds can be used to modulate external stimuli and a separate write-up area may be considered.

Short Stay Ward/Emergency Medical Unit (EMU)

This facility may be provided either within or adjacent to the Emergency Unit for the prolonged observation and ongoing treatment of patients who are planned for subsequent discharge (directly from the EU). Patients may be kept in this Unit for diagnosis, treatment, testing or for medical stabilization.

The length of stay in the Unit is generally between four and 24-hours, although Unit policy may require longer stays.

The Unit may also be situated separately to the Emergency Unit, although functionally linked. According to the service plan, dedicated beds for short stay are separately designated and staffed. The types of patients planned to be admitted to this Unit will determine the number and type of beds provided, and the design of associated monitoring and equipment. Staff Stations, work and storage and other support areas will need to be available and may be shared if the unit is located physically close to other treatment areas.

Ambulance Unit

General

Specific requirements of the Ambulance Service/s serving the area shall be obtained and complied with. These requirements will be in relation to areas such as ramp gradients, ambulance parking/unloading area gradients, height clearance and ambulance bay dimensions. Specific information about emergency vehicles and ambulances that will be used for the facility should be acquired from local public and private Ambulance Services.

The following consideration shall be given while designing the Ambulance unit.

- Access for Ambulances shall not conflict with other vehicular or pedestrian traffic
- The Ambulance access to a hospital shall be located away from public entrances and shall be reasonably screened from public view. A separate entrance is required and cannot be shared with the Main Public Entrance
- If the Ambulance Access is directly connected to a Hospital Department (such as Emergency Unit), an air lock shall be provided between the inside and the outside. Ambulance Access to an Emergency Unit shall not be via hospital corridors that are open for public access
- The Ambulance Collection/Drop-off Points in any Hospital must be discreet and shall be covered.

Emergency Units

In Ambulance Bays serving Hospitals which include an Emergency Unit, the following additional requirements shall apply:

- A lockable storage cupboard or room no less than 2m² shall be provided for Ambulance supplies. The cupboard or room shall have adjustable shelves and be lockable with a separate key or keypad lock
- A hose cock with attached hose shall be located close to an Ambulance Bay serving an Emergency Unit. It is recommended that the hose cock and hose be located in a discrete cabinet or recessed bay
- An intercom system shall be provided between the Ambulance door and the Emergency Unit Reception/Clerical Area, Triage Area or Staff Station. The Intercom system shall be integrated with a security CCTV system located to clearly show those requesting entry.

- Emergency Units in Level 5 or 6 Facilities will require a Decontamination Area. If provided, this may be integrated with the Ambulance Bay by incorporating shower heads in a section of the Ambulance Bay ceiling. This may be further enhanced by a retractable plastic screen to contain the water flow. Any water flowing out of such a decontamination area shall be treated as contaminated water and treated accordingly.

Signage

All Ambulance Bays shall be clearly marked and sign-posted. The external signage system shall direct ambulances and vehicles carrying emergency cases to the Ambulance Bays. These signs shall be clearly visible at the entrance to the Hospital and/or any major change of direction. Signs directed to ambulance bays intended for emergency units or birthing units shall be permanently lit during the night. In order to avoid confusion, the signage system shall be designed in such a way that ambulant patients, including ambulant access to an emergency unit are not to be directed to the ambulance bay or ambulance door.

18.2.3 Functional Relationships

The design should allow for rapid access to every space with a minimum of cross traffic. There must be close proximity between the Resuscitation/Acute Treatment areas for non-ambulant patients, other treatment areas for non-ambulant patients and other treatment areas for ambulant patients, so that staff may be relocated at times of high workload. Visitor and patient access to all areas should not traverse clinical areas. Protection of visual, auditory and olfactory privacy is important whilst recognizing the need for observation of patients by staff.

The Emergency Unit will require ready access to the following key functional areas:

- Medical Imaging Unit
- Operating Unit – rapid access is highly desirable for surgical emergencies
- Coronary Care Unit
- Pathology/Blood Bank Unit
- Clinical Records Unit
- Inpatient Accommodation Unit
- Pharmacy Unit - proximity is required
- Outpatients (if an outpatient service is provided adjacent to the Emergency Unit)
- Mortuary.

Clinical Records

Access to clinical records is required so that patients' previous medical histories are obtainable without delay. A system of mechanical or electronic clinical record transfer is desirable to minimize delays and labor costs.

Access to clinical records must be available 24-hours per day.

Medical Imaging

The Medical Imaging Unit should have a general X-Ray table and upright X-Ray facilities. It is possible to provide Medical Imaging as a satellite facility within the Emergency Unit. Additionally, an overhead gantry in the resuscitation area may be provided. The presence/absence of a film processor is dependent upon close proximity to the main Medical Imaging Department or the use of digital radiology. Immediate access to CT scanning, Ultrasound and Nuclear Medicine modalities will enhance the Emergency Unit's effectiveness. A system of electronic display of imaging is desirable.

Pathology

Rapid access to Pathology services is highly desirable to minimize turnaround times for laboratory investigations. Mechanical or pneumatic tube transport systems for specimen and electronic reporting of results are recommended.

Point of care access for electrolyte and blood gas analysis is highly desirable.

Pharmacy

Proximity to the Pharmacy Unit is desirable to enable prescriptions to be filled by patients with limited mobility.

18.3 Design

18.3.1 General

Location and Design

Decisions regarding the site location have a major influence on the eventual cost and operational efficiency of the Emergency Unit staff. The site of the Emergency Unit should, as much as possible, maximize the choices of layout. In particular, sites of access points must be carefully considered.

The Emergency Unit should be located on the ground floor for easy access. It should be adequately signposted.

18.3.2 Car Parking

Car parking should be close to the Entrance, well lit and available exclusively for patients, their relatives and staff. Parking areas should be available close to the Emergency Unit for urgent call in staff.

Undercover car parking should be available for:

- Appropriate number of ambulances which will be determined by the case load and the availability of ambulance access to other parts of the hospital for non-emergency patients
- Taxis and private vehicles that drop-off/pick-up patients adjacent to the ambulance entrance.

18.3.3 Signage

The emergency unit should be clearly identified from all approaches. Signposting that is illuminated is mandatory to allow visibility at night. The use of graphic and character displays such as a white cross on a red background is encouraged.

18.3.4 Environmental Considerations

Acoustics

Clinical Areas should be designed to minimize the transmission of sound between adjacent treatment areas.

The following areas will require acoustic consideration:

- Consult/Interview and triage areas for discussions/interviews with clients
- Seclusion and mental health assessment rooms
- Treatment and Procedure Rooms
- Waiting areas
- Staff Stations.

Natural Light

The use of natural light should be maximized throughout the Unit. Natural lighting contributes to a sense of well-being and assists orientation of patients and visitors and minimizes staff disorientation.

18.3.5 Infection Control

Hand basins for hand-washing should be available within each treatment area and should be accessible without traversing any other clinical area. All hand basins in clinical areas should be of surgical type with hands-free activation (Type A). Dispensers for non-sterile latex gloves should be available in the vicinity of each hand basin and each treatment area.

Refer to Part D - Infection Control for ratios of basins required in clinical areas.

Isolation Rooms

At least one negative pressure Isolation Room should be provided in Units in Level 5 and 6. The need for additional negative pressure Isolation Rooms shall be determined by the infection control risk assessment. Refer to Infection Control Part D.

18.3.6 Space Standards and Components

Bed Spacing

In the Acute Treatment Area there should be at least 2.4m of clear floor space between beds. The minimum length should be three meters.

Corridors

In general, the total corridor area within the department should be minimized to optimize the use of space. Where corridors are necessary, they should be of adequate width to allow the cross passage of two hospital beds without difficulty. There should be adequate space for trolleys to enter or exit any of the Consulting Rooms, and to be turned around. Standard corridors should not be used for storage of equipment.

Note: Refer to Part C - Space Standards and Dimensions for corridor standards.

18.3.7 Safety and Security

The Emergency Unit receives a large number of patients and their visitors, many of whom may be distressed, intoxicated or involved in violence. The hospital has a duty of care to provide for the safety and security of employees, patients and visitors. Both policies and structures should be in place to minimize injury, psychological trauma and damage or loss of property. The precise details of security features should be designed in conjunction with a security risk assessment for the specific site.

The location of an office for security personnel near the entrance should be considered. This room should be positioned so that it allows Security Staff a clear view of the Waiting Room, Triage and Reception Areas. Immediate access to these areas is essential. Remote monitoring of other areas in the department by CCTV and of staff duress/personal alarms should also occur from this area.

Perimeter Access Control

Ambulatory and Ambulance entrances should be separate, with electronically operated locks. Access from the Waiting Areas to the treatment areas should be controlled; patients and visitors should be restricted from accessing these areas without staff authority. There should be restricted access from the remainder of the hospital into the Emergency Unit.

Reception/Triage Areas

The interface between the Waiting Areas and the Reception/Triage Areas should be carefully designed so as to permit communication and reassurance to distressed patients or visitors, yet provide safety and security for staff.

Counters should be of sufficient height and depth to minimize the possibility of them being jumped over or reached over.

The Reception Area should be elevated so that staff may sit at eye level with standing patients or visitors. The Reception/Triage area should have an unobstructed view of the entire Waiting Area.

Fixed and/or personal duress alarms should be positioned in suitable areas as suggested by the security risk assessment.

Uniformed security personnel may be required at very short notice to assist with a safety or security issue.

Relatively secluded or isolated areas should be monitored electronically (for example, by closed circuit television), with monitors in easily visible and continuously staffed areas.

18.3.8 *Finishes*

Wall Protection

Hospital beds, ambulance trolleys, and wheelchairs may cause damage to walls. All wall surfaces in areas which may come into contact with mobile equipment should be reinforced and protected with buffer rails or similar.

Floor Finishes

The floor finishes in all patient care areas and corridors should have the following characteristics:

- Non-slip surface
- Impermeable to water, body fluids
- Durable
- Easy to clean
- Acoustic properties that reduce sound transmission
- Shock absorption to optimize staff comfort but facilitate movement of beds.

Offices, Tutorial Rooms, Staff Rooms, Clerical Areas and the Distressed Relatives' Room should be carpeted.

18.3.9 *Building Service Requirements*

Communications

Emergency Units are high volume users of telecommunications and information technology. Telephones should be available in all offices, at all staff stations, in the clerical area and in all consultation and other clinical rooms. The use of multi-function, wireless communication devices should be considered. Additional phone jacks should be available for the use of facsimile machines and computer modems where required. A dedicated telephone to receive admitting requests from outside medical practitioners is desirable. A cordless phone or phone jack should be available for access to patients' beds.

An electronic Emergency Unit Information System may be installed to support clinical management, patient tracking and departmental administration. Sufficient terminals should be available to ensure that queuing does not occur, even at peak times. Workspace design should include sufficient bench-widths or suitable suspension devices for terminals, keyboards, drives and printers. Additional computer terminals, software and peripheral devices should be installed to enable other departmental functions

An intercom or public address system that can reach all areas of the Emergency Unit should be considered. Public telephones with acoustic hoods should be available in the Waiting Area. A direct line to a taxi company is desirable. Direct telephone lines bypassing the hospital switchboard should be available for use in internal and external emergencies or when the hospital PABX is out of service.

The Staff Station should have a dedicated inward line for the ambulance and police services. There should be facsimile lines in clerical areas as well as between the ambulance service and the

Emergency Unit, including incoming aero-medical transport.

Nurse Call

All patient spaces and clinical areas, including beds, toilets, bathrooms, treatment areas, patient day areas and lounges should have access to an emergency call facility so staff can summon urgent assistance. The emergency call facility should alert to a central module situated adjacent to the Staff Station, as well as to the Staff and Tutorial rooms.

Telemedicine

Emergency Units using telemedicine facilities should have a dedicated, fully enclosed room with appropriate power and communications cabling provided. This room should be of suitable size to allow simultaneous viewing by members of multiple service teams and should be close to the Staff Station.

18.4 Components of the Unit

The Emergency Unit will consist of a combination of Standard Components and Non Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

18.4.1 *Non-Standard Components*

Communications Room – Ambulance

Description and Function

The Ambulance Communications Room is occupied by up to three ambulance officers to communicate between major hospital centers and the ambulance service for coordination of Ambulance movements. The communications base is also a critical co-ordination center in the event of a disaster.

Location and Relationships

The room should be immediately adjacent to the Ambulance entry of the Emergency Unit with direct line of sight to incoming ambulance vehicles and the parking bays.

Considerations

The room will include:

- Workstation benches and chairs for three persons
- Telephones, computer and radio communications systems; radio communications systems may provide direct communication between ambulances and the Emergency Unit, according to Operational Policy.

18.5 Schedule of Accommodation

Typical Emergency Unit at Levels 1 to 6

ROOM/SPACE	Standard Component	Level 1/2 Qty x m²			Level 3/4 Qty x m²			Level 5/6 Qty x m²			Remarks
Entrance Area											
Airlock – Entry	AIRLE-10-SJ	1	x	10	1	x	10	1	x	10	
Reception (Emergency)	REC-E-SJ				1	x	20	1	x	30	Staff to be able to observe and control access
Waiting – Male/Female	WAIT-10-SJ WAIT-30-SJ	2	x	10	2	x	30	2	x	50	Open and fully observable from Reception and Triage
Waiting – Family	WAIT-20-SJ (SIMILAR)	1	x	25	1	x	25	1	x	30	
Play Area – Paediatric	PLAP-10-SJ				1	x	10	1	x	10	Adjoining Waiting area
Parenting Room	PAR-SJ				1	x	6	1	x	6	
Bay – Public Telephone		1	x	2	1	x	2	1	x	2	Accessible from waiting areas; May be combined with vending machines
Bay – Vending Machines	BVM-3-SJ				1	x	3	1	x	3	Accessible from waiting areas; May be combined with public telephones
Bay – Wheelchair Park	BWC-SJ Similar	1	x	2	1	x	4	1	x	8	Wheelchairs and trolley holding
Communications Base Ambulance								1	x	12	
Ambulance Triage	AMBTR-SJ							2	x	12	
Triage Cubicles	PBTR-H-10-SJ	2	x	10	3	x	10	4	x	10	
Meeting Room – 12m²	MEET-9-SJ Similar				1	x	12	1	x	12	May also be used as Grieving Room
Meeting Room – 9m²	MEET-9-SJ				1	x	9	1	x	9	For staff to interview/meet with family and friends of patients
Toilet – Public	WCPU-3-SJ	2	x	3	4	x	3	4	x	3	
Toilet – Accessible	WCAC-SJ	1	x	6	1	x	6	1	x	6	May also include facilities for baby change
Shower – Decontamination	SHDEC-SJ	1	x	8	1	x	8	1	x	8	Check waste water detention requirements
Body Holding		1	x	12	1	x	12	1	x	12	Optional; also used as 'Brought in Dead' room
Police Room	OFF-S9-SJ OFF-2P-SJ	1	x	9	1	x	12	1	x	12	
Patient Areas: Treatment											
Patient Bay – Resuscitation	PBTR-R-SJ Similar	1	x	28	4	x	28	6	x	28	Qty according to service plan. May include X-Ray gantry
Patient Bay – Acute Treatment	PBTR-A12-SJ				4	x	28	25	x	12	Qty according to service plan, including paediatrics
Patient Bay – Non Acute Treatment	PBTR-NA-SJ	2	x	28	6	x	28	35	x	10	Qty according to service plan, including paediatrics
1 Bed Room – Isolation – Negative Pressure	1BR-IS-N-SJ				1	x	18	2	x	18	For isolatable infections
Anteroom	ANRM-SJ				1	x	6	2	x	6	Accessible/adjacent to Isolation Room
Treatment Room – Multi-function	TRMT-SJ	1	x	14	1	x	14	2	x	14	Qty according to service plan
Treatment Room – Secure Assessment	TRSA-SJ				1	x	14	2	x	14	Qty according to service plan
Ensuite – Mental Health	ENS-MH-SJ				1	x	5	2	x	5	For Secure Assessment Rooms
Procedure Room	PROC-20-SJ				1	x	20	2	x	20	Qty according to service plan
Plaster Room	PLST-SJ	1	x	14	1	x	14	2	x	14	Qty according to service plan
Store – Crutches		1	x	2	1	x	2	1	x	2	Close to Plaster Room
General X-Ray	GENXR-SJ							1	x	30	Optional. May not be required if ED near Medical Imaging
Bay – Handwashing, Type A	BHWS-A-S	1	x	1	2	x	1	15	x	1	One Handwash Bay per four Treatment Bays
Bay – Pathology	BPATH-SJ	1	x	1	1	x	1	2	x	1	

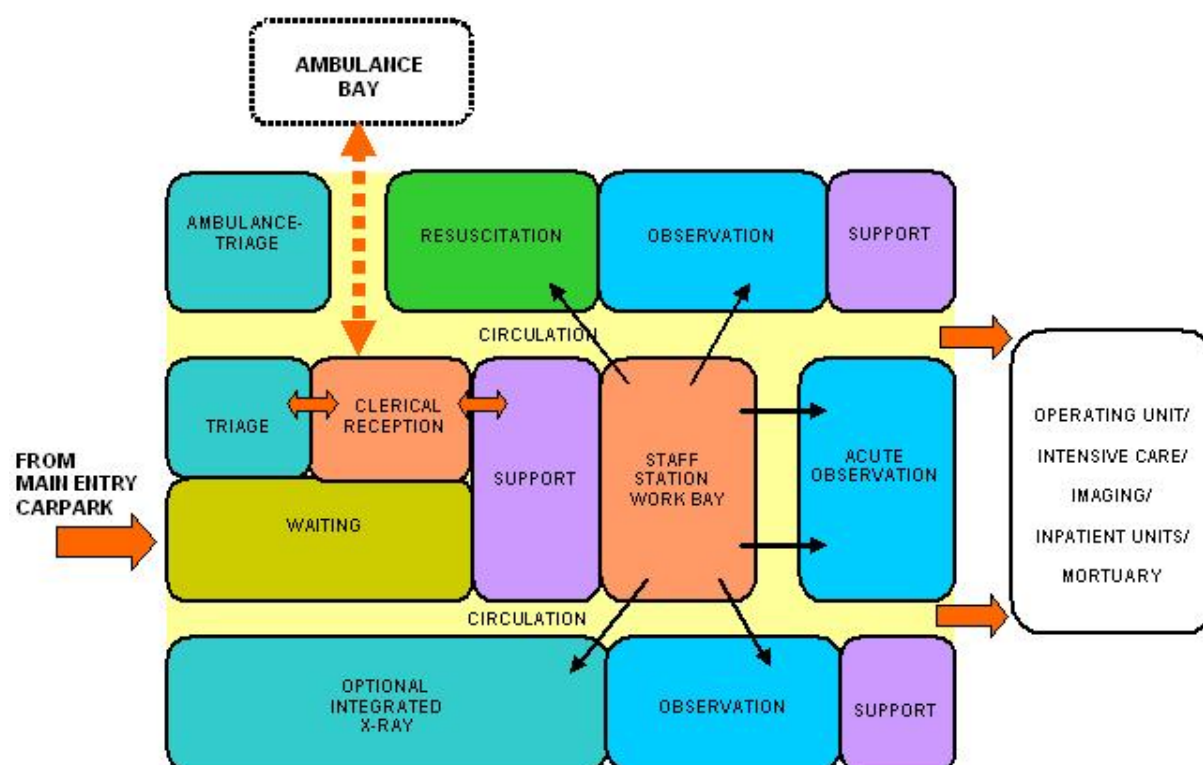
ROOM/SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Ensuite – Standard	ENS-ST-SJ				1	x	5	2	x	5	For Isolation Rooms
Shower – Accessible	SHD-SJ	1	x	4	1	x	4	2	x	4	Accessible from treatment areas
Shower – Patient (M/F)	SHPT-SJ							2	x	4	Accessible from treatment areas
Toilet – Patient (M/F)	WCPT-SJ	2	x	4	2	x	4	3	x	4	Accessible from treatment areas
Toilet – Accessible	WCAC-SJ	1	x	6	1	x	6	2	x	6	Accessible from treatment areas
Emergency Operating Room (Optional)											
Operating Room – Emergency	ORGN-SJ							1	x	42	Optional
Scrub Up/Gowning	SCRB-6-SJ							1	x	6	Optional, for emergency OR
Store – Sterile Stock	STSS-12-SJ							1	x	12	Optional, for emergency OR
Patient Bay – Holding	PBTR-H-10-SJ										
Clean-Up Room	CLUP-7-SJ							1	x	7	Optional, for emergency OR
Support Areas: Emergency Treatment											
Bay – Beverage	BBEV-OP-SJ				1	x	4	2	x	4	
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	3	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ				2	x	4	4	x	4	
Bay – Mobile Equipment	BMEQ-4-SJ (SIMILAR)	1	x	6	1	x	6	2	x	6	Optional. For mobile X-Ray
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	2	x	1.5	Rapid emergency access required
Clean Utility	CLUR-8-SJ CLUR-12-SJ	1	x	8	1	x	12	2	x	12	
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	2	x	5	May be shared
Dirty Utility	DTUR-10-SJ Similar	1	x	8	1	x	10	2	x	10	
Disposal Room	DISP-8-SJ	1	x	8	1	x	8	1	x	10	
Staff Station	SSTN-5-SJ SSTN-20-SJ	1	x	5	1	x	20	3	x	20	Direct oversight of Resus Bays and treatment spaces.
Store – Disaster Equipment	STDE-SJ				1	x	8	1	x	8	
Store – Drugs	STDR-5-SJ				1	x	5	1	x	10	
Store – Equipment	STEQ-16-SJ Similar				1	x	20	1	x	30	Major Store
Store – General Similar	STGN-20-SJ	1	x	10	1	x	20	1	x	30	
X-Ray Viewing and Reporting	XRRR-SJ				1	x	12	1	x	12	Optional
Patient Areas: Fast Track											
Consult Room	CONS-SJ	1	x	14	3	x	14	10	x	14	Qty determined by service plan; should be accessible to treatment areas
Dental Surgery	DENSR-14-SJ							1	x	14	Optional, Qty determined by service plan
Consult Room – ENT/Ophthalmology	CONS-ENT-OPT-SJ	1	x	14	1	x	14	2	x	14	Qty determined by service plan
Patient Bay – Non Acute Treatment	PBTR-NA-SJ				1	x	10	10	x	10	Qty determined by service plan; may have combined bed or recliner bays
Toilet – Accessible	WCAC-SJ							1	x	6	
Toilet – Patient (M/F)	WCPT-SJ				2	x	4	2	x	4	
Support Areas: Fast Track											
Bay – Beverage	BBEV-OP-SJ				1	x	4	1	x	4	
Bay – Handwashing, Type B	BHWS-B-SJ				1	x	1	6	x	1	One per four treatment bays
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ				1	x	4	1	x	4	
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	Rapid emergency access required
Clean Utility	CLUR-8-SJ CLUR-12-SJ				1	x	8	1	x	12	

ROOM/SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Dirty Utility	DTUR-S-SJ DTUR-12-SJ				1	x	8	1	x	12	
Staff Station	SSTN-14-SJ Similar				1	x	8	1	x	12	Direct visual observation and access to treatment spaces.
Store – General	STGN-8-SJ				1	x	8	1	x	10	
Short Stay Ward/Emergency Medicine Unit (Optional)											
					6 Beds			10 Beds			
Patient Bay – Non-Acute treatment	PBTR-NA-SJ				5	x	10	9	x	10	
Anteroom	ANRM-SJ				1	x	6	1	x	6	Accessible/adjacent to Isolation Room
1 Bed Room – Isolation Room (Class N)	1 BR-IS-N-SJ				1	x	28	1	x	28	
Ensuite – Standard	ENS-ST-SJ				1	x	5	1	x	5	For Isolation Room
Toilet – Patient (Male/Female)	WCPT-SJ				1	x	4	2	x	4	
Shower – Patient (Male/Female)	SHPT-SJ				1	x	4	2	x	4	
Bay – Beverage	BBEV-OP-SJ				1	x	4	1	x	4	
Bay – Handwashing, Type B	BHWS-B-SJ				2	x	1	6	x	1	One per four treatment bays
Bay – Linen	BLIN-SJ				1	x	2	2	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ				1	x	4	1	x	4	
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	Rapid emergency access required
Clean Utility	CLUR-8-SJ				1	x	8	1	x	8	
Dirty Utility	DTUR-S-SJ				1	x	8	1	x	8	
Staff Station	SSTN-14-SJ Similar				1	x	8	1	x	12	Direct visual observation and access to treatment spaces.
Store – General	STGN-8-SJ				1	x	8	1	x	10	
Staff Areas											
Change – Staff (Male/Female)	CHST-12-SJ (SIMILAR)				1	x	14	2	x	35	Size and qty for maximum staff per shift
Office – Single Person, 12m ²	OFF-S9-SJ				1	x	12	1	x	12	Director
Office – Single Person, 9m ²	OFF-S9-SJ	1	x	9	2	x	9	4	x	9	Nurse Manager, Secretary, Staff Specialists; Depends on service plan
Office – 2-Person	OFF-2P-SJ							3	x	12	Registrars
Office – 3-Person	OFF-3P-SJ							4	x	15	Medical, Nursing, general use
Overnight Stay – Bedroom	OVBR-SJ	1	x	10	1	x	10	1	x	10	Optional
Overnight Stay –	OVES-SJ	1	x	4	1	x	4	1	x	4	Optional
Meeting Room – Large	MEET-L-15-SJ MEET-L-30-SJ				1	x	15	1	x	30	
Meeting Room – Small/Medium	MEET-9-SJ MEET-L-15-SJ				1	x	12	2	x	15	
Staff Room	SRM-25-SJ Similar				1	x	20	1	x	35	Size for numbers of staff; Includes library area
Store – Photocopy/Stationery	STPS-8-SJ				1	x	8	1	x	8	
Toilet – Staff	WCST-SJ	1	x	3	1	x	3	2	x	3	In addition to Change areas
Staff Areas: Ambulance Service (Optional)											
Reception/Clerical	RECL-10-SJ							1	x	10	
Wash-Up Room	WASH-SJ							1	x	40	Optional
Office – Single Person	OFF-S9-SJ							1	x	9	Administrative activities
Office – 4-Person	OFF-4P-SJ							1	x	20	
Store – General	STGN-12-SJ							1	x	12	
Store – Drugs	STDR-5-SJ							1	x	5	
Net Department Total		363.5			1270.5			2768.0			
Circulation %		40			40			40			
Grand Total		508.9			1778.7			3875.2			

Notes:

- *Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU*
- *Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation*
- *Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus*
- *Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.*

18.6 Functional Relationship Diagram



18.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 300 Emergency Unit Revision 4' 2012. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/Archive/AusHFG%20Complete%20Version%203.pdf 2014
- Department of Health (UK). 'Health Building Note 22; Accident and Emergency Facilities for Children and Adults' 2005. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2022%20v2%20ed2005.pdf> 2014
- Welch, SJ. Healthcare Research and Design Journal. 'Using Data To Drive Emergency Department Design: A Metasynthesis' 2012. Retrieved from website: <https://www.herdjournal.com/article/using-data-drive-emergency-department-design-metasynthesis> 2014
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19.0 Endoscopy Unit

19.1 Introduction

19.1.1 Description

The Endoscopy Unit is a dedicated unit for Endoscopy procedures, a minimally invasive surgical or medical procedure utilizing an instrument called an endoscope which is a long flexible tube that has a lens at one end and a fiber optic camera at the other. This allows for the magnification of an image to be projected onto a video screen for viewing and recording. Endoscopy can be used to examine organs or tissue for diagnostic or therapeutic purposes. Endoscopy procedures may involve the taking of biopsies, dilations, retrieval of foreign objects and removal of stones from the bile duct.

Procedures undertaken in an Endoscopy Unit may include gastrointestinal endoscopy (such as gastroscopy, colonoscopy, ERCP (Endoscopic Retrograde Cholangiopancreatography), endoscopic ultrasound, bronchoscopy, cystoscopy or ureteroscopy, duodenoscopy, hysteroscopy or other specialties. Endoscopy procedures are generally performed in a controlled aseptic procedure room environment or in an Operating room, using sedation or short acting anesthetic medication. Some procedures, such as ERCP may also involve diagnostic imaging equipment. Most endoscopy procedures are performed on a same-day basis.

Endoscopy procedures have advantages for both the facility and the patient including:

- Reduced demand on operating rooms
- Increased patient throughput as procedures are faster
- Procedures are less invasive (the endoscope is inserted through a natural opening) resulting in reduced scarring, quick recovery time and rapid discharge.

19.2 Planning

19.2.1 Operational Models

The range of options for an Endoscopy Unit may include:

- A dedicated fully self-contained unit within a hospital
- A Unit collocated with the Operating Unit with shared facilities
- A Unit collocated with a specialist clinical service such as Gastroenterology or Respiratory Medicine, within a hospital
- A stand-alone center/Day Surgery centers, fully self-contained.
- Rural and Remote endoscopy services.

Patients undergoing endoscopy procedures may be admitted and discharged on the same day, or transferred from and to a referring unit. The Endoscopy Unit will generally operate on a long day basis, with admissions from early morning. Procedures undertaken on a sessional basis and discharges/transfers into the evening.

19.2.2 Planning Models

The configuration of the Endoscopy Unit will be dependent on:

- The procedures performed and the equipment and expertise available
- The patient population the unit will serve
- The location of the Unit – within a hospital, attached to another Unit or stand-alone and the ability to share support services.

The Endoscopy Unit should be located with easy access to and from the entry area for patients, visitors, staff and supplies; a ground floor location is desirable. The location within the complex shall permit free access for outpatients and for the transport of inpatients by bed, trolley or wheelchair. The planning of the Unit should create an efficient flow of patients, staff and supplies through the Unit while maintaining separation of procedure and contaminated areas. Where the endoscopy unit is not located within the main hospital complex, consideration of the provision for enclosed transfer of patients is advisable.

19.2.3 *Functional Areas*

The Endoscopy Unit will consist of the following Functional Areas:

- Entry/Reception including Waiting area for patients and relatives and access for admission of patients
- Assessment/Preparation area which may include consultation, interview, toilet facilities, patient changing and preparation rooms for pre-procedure treatments
- Procedure area
- Recovery areas including first and second stage recovery
- Discharge lounge with interview space for consultation and access to toilet facilities
- Reprocessing area including Clean-up/Decontamination, Sterilizing and scope storage and bulk storage areas
- Staff and support areas; including Equipment (mobile II or X-Ray machines) and linen bays; in stand-alone Units this will include supply areas and waste holding.

Entry/Reception Areas

A covered entrance for patient drop-off and collection after surgery shall be provided. The Entry may be a shared facility providing:

- A reception/information counter or desk
- Waiting areas that allow for the separation of pediatric and female patients as appropriate
- Convenient access to wheelchair storage, public toilets and amenities including public telephones.

The reception desk should be located to have a view of the entry and must provide for privacy of patient information and records.

Waiting areas should be sized according to the expected numbers of patients and support persons and provide for family waiting and patients in wheelchairs or with limited mobility. If pediatric patients are treated in the Unit, play areas should be included.

Assessment/Preparation Areas

Interview and Consultation rooms are required, located with convenient access to the entry and waiting areas to provide for private discussion with patients, review with medical practitioners and anesthetic consultation prior to endoscopy procedures as required.

A patient holding area is required with access to patient changing and toilet facilities. Patients are generally ambulant and may await procedures on a bed or in chairs. Holding areas must provide for male and female separation and patient privacy; screen curtains to bed and chairs spaces is recommended. Storage will be required for patient clothing and valuables. Lockers may be provided or patient clothing and personal items may travel with the patient through each stage of the procedure, recovery and discharge in sealed containers according to the Unit Operational Policy and procedures. A Staff Station should be located to provide close supervision of the holding and Preparation areas.

A Preparation room may be required for patients undergoing endoscopy procedures, where patients may change and undergo preparation procedures. If provided, the Preparation room should include:

- Hand basin – clinical
- Bench and cupboards for setting up of procedures
- Adequate space for procedures equipment trolleys
- Examination couch and comfortable chair
- Desk and a computer terminal for review of test results
- Privacy screening.

Patient holding and Preparation room must have close access to patient toilets. At least one accessible toilet must be provided.

Procedure Areas

In Procedure rooms a clean to dirty workflow must be maintained. The clean area will include sterile supplies and a write-up space with computer and printer to generate endoscopy reports.

The room may be purpose designed to accommodate the following:

- Endoscopy 'stack' and video monitor/s – this equipment contains the light source and video processor required for the endoscopes to produce images
- Endoscope cabinet with clean endoscopes and accessory equipment such as endoscopy biopsy forceps, snares, injectors
- Monitoring equipment to allow continuous monitoring of patient condition during procedures.
- Anesthetic equipment and medication used to provide procedural sedation or short acting anesthetics
- Diathermy and/or Argon plasma coagulation equipment
- Imaging equipment such as Image Intensifier or C-arm X-Ray screening unit depending on procedures to be performed; imaging equipment may be portable or installed in the room.

Procedure rooms may be sized to accommodate the equipment required; the minimum room area recommended for basic endoscopy is 36m². Rooms to accommodate ERCP or video equipment will require a larger space for sterile set-up, general anesthesia and fluoroscopy equipment; a minimum of 42m² is recommended.

Operating Rooms for Endoscopy shall be fitted out as for a Minor Operating Room, for example, it will be suitable for general anesthetic with appropriate medical gases, power, lighting, air-conditioning and ventilation. Staff assistance call must be provided. Consideration also needs to be given to the special requirements of imaging and laser equipment if required.

A clinical scrub up basin shall be provided outside the entrance to the Procedure/Operating Room for Endoscopy.

Procedure/Operating rooms will require direct access to clean-up and decontamination area for rapid processing of endoscopes and their storage

Recovery Areas

The Stage 1 Recovery should be located with close access from the Procedure rooms. Recovery beds will be under direct observation of staff and provide for close supervision and observation of patients including monitoring and medical gases for patient resuscitation in emergencies. The recommended number of Stage 1 Recovery spaces is 2 bed/trolley spaces per Operating/Procedure room.

A Stage 2 Recovery area will be provided to accommodate patients who have regained consciousness after sedation/anesthesia but require further observation.

Patients will remain under staff observation until ready for discharge. Patients in this area may recover in trolleys or recliner chairs; each recovery bay should be able to accommodate either trolley or chair. External windows are to be provided in Stage 2 Recovery. Patients in this area may change into street clothes, and close access to private changing rooms or cubicles is required. Provision should be made in the Stage 2 Recovery area for patient refreshments/beverage bay and access to toilets. Patients may progress to a lounge area to await discharge as required or be discharged directly from the Stage 2 Recovery.

The recommended number of Stage 2 Recovery spaces is 3 bed/chair bays to each Operating/Procedure room.

Pre-Processing Areas

The ability to efficiently and safely process endoscopes is critical to the functioning of the Endoscopy Unit. Endoscope and instrument processing is a multi-step procedure involving decontaminating dirty scopes/instruments, sterilizing of scopes and packaging/storing of clean scopes. Processing of the endoscopes commences as soon as the procedure is complete – the scope is wiped down and placed in a closed container and transported to the clean-up area; if any delay in processing is expected the scopes are soaked in an enzyme detergent solution.

Decontamination includes leak testing, manual pre-cleaning followed by high level disinfection with a disinfectant solution.

Endoscope reprocessing areas should be separate to Procedure/Operating rooms and a unidirectional dirty to clean workflow must be maintained. A centralized reprocessing area is recommended for efficient handling of endoscopes and appropriate air pressurization and ventilation. Cleaning and Disinfection areas must be negatively pressured and ventilated to remove vapors of chemicals used in the process.

The Cleaning and Disinfection of equipment area will include:

- Sinks for soaking and rinsing sufficiently sized to prevent tight coiling of the endoscope which may damage the fiber-optic cables in the instrument
- Ultrasonic cleaner for accessory equipment used in procedures
- Automated endoscope cleaning/disinfecting machines
- Compressed air to aid drying of endoscopic equipment after cleaning
- Hand washing basin
- Safety eyewash facility
- Stainless steel benches with space to accommodate the length of the endoscopes
- Storage for disinfected scopes on a bench or shelf.

The Sterilizing/Disinfection area will include an autoclave to sterilize accessory instruments if a sterile supply service is not available.

Storage provisions will include adequately sized areas for drugs, sterile stock, consumables, linen, resuscitation trolley and mobile equipment which may include mobile imaging equipment. Storage of sterile items and scopes close to the point of use is recommended. Scope storage areas must be positively pressured and HEPA filtered to prevent contamination of clean endoscopes. Scopes may be stored in properly ventilated and temperature controlled cabinets, preferably a pass-through type, located between reprocessing/sterilizing/disinfection areas and the Operating/Procedure room. Endoscope cabinets should allow for endoscopes to hang without coiling preventing damage to either end of the scope.

Staff Amenities

Staff amenities will include change rooms with showers, toilets and lockers and a staff lounge, providing a respite area for staff away from patient and procedural areas. Staff amenities areas may be shared with adjacent areas if appropriate.

19.2.4 Functional Relationships

External

The Endoscopy Unit will have a close functional relationship with the following:

- Car parking areas
- Emergency services
- Main Entry
- Outpatients Unit
- Transit Lounge.

The stand-alone Unit will also require an area for ambulance access for emergency use and ready access to supply services and waste holding areas.

Internal

Within the Unit, key functional relationships will include:

- Unidirectional patient flow from arrival at Reception, through Holding, Procedure Rooms, Recovery rooms, then to the Lounge areas and discharge to home or transfer to other Units
- Separation of clean and dirty traffic flows particularly in Procedures rooms and disinfection/sterilizing areas
- Visibility of patient areas by staff for patient supervision and safety.

19.3 Design

19.3.1 General

The design will need to accommodate all types of patients using the Unit as determined by the endorsed clinical service plan; this may include pediatric patients. Provision should also be made for the management of disabled patients and bariatric patients.

The design should also be able to accommodate changes in equipment technology as well as changing workload and variability to throughputs. Use of modular components and standard rooms sizes are recommended to provide flexibility of design. Future trends in advanced endoscopy include:

- Highly specialized and more invasive procedures that may require facilities similar to an operating suite
- Access to overnight inpatient beds or extended stay wards
- Education and training of medical personnel using simulators that may require space provision or camera and video transmittal from the procedure rooms linked to a remote Meeting/Tutorial room.

19.3.2 Environmental Considerations

Natural Light

The design of the unit should incorporate external views and natural light as far as possible, particularly to Waiting Areas, pre-operative Holding and Recovery areas.

It is recommended that external views and natural light are provided in staff areas such as Staff Rooms, Offices and areas where staff are confined to one location e.g. Reception and Clean-up Rooms.

When external views and natural light are provided in patient areas, care must be taken to minimize glare and ensure privacy is not compromised. Sun penetration should be controlled to exclude glare and heat gain or loss.

In Procedure Rooms, provision of controlled level of lighting during procedures should be considered.

Privacy

Staff observation of patients and patient privacy must be well-balanced within the Unit.

The following features shall be integrated to the design of the Unit:

- Doors and windows to be located appropriately to ensure patient privacy and not comprise staff security.
- Discreet spaces to enable confidentiality of discussions related to a patient and storage of patients medical records.
- Privacy screening to bed and chair bays
- Consultation, Interview and Preparation rooms should not be visible from public or waiting areas; examination couches should not face the door
- Location of patient change areas to provide direct access to waiting areas to prevent patients in gowns travelling through public areas when changed before and after procedures.
- Separation of male, female and pediatric changing rooms and waiting areas.

Acoustics

The design should reduce the intrusive ambient noise level in the Unit particularly in waiting areas.

Acoustic privacy will be required in the following areas:

- Consultation/Interview rooms where confidential patient information will be discussed
- Preparation rooms where patient pre-treatments may be undertaken
- Procedure/Operating rooms.

19.3.3 *Space Standards*

Accessibility

External

The Unit will require a weatherproof vehicle drop-off area with easy access for less-mobile and wheelchair bound patients. Drop-off areas may be shared in Units located within a hospital. Access to other units in the facility should be convenient, covered and not through public thoroughfares.

Internal

All patient areas should be wheelchair accessible and designed to comply with relevant accessibility standards. Reception desks and Staff stations should provide wheelchair accessible counters.

Ergonomics

The Endoscopy Unit should be designed with consideration to ergonomics to ensure an optimal working environment. Design and dimensions of Staff Stations and work areas must ensure privacy and security for patients, visitors and staff.

Refer also to Part C of these Guidelines.

Size of Unit

The number of endoscopy rooms required in the Unit can be calculated using the workload per annum (number of procedures per year according to local population data) divided by the workload per Endoscopy room (the average number of cases per working day). Generally, larger endoscopy units should contain one procedure room per 1,000 to 1,500 procedures performed annually.

19.3.4 *Safety and Security*

Internal spaces and zones should offer a high standard of security through grouping

functions, controlling access and egress from the Unit and providing optimum observation for staff. Patient holding, procedural and recovery areas will require restricted access to prevent unauthorized entry by visitors or others.

Protective clothing and safety equipment including an emergency eye wash station must be available for staff undertaking cleaning/disinfection due to the use of chemicals in the disinfection process.

19.3.5 *Finishes*

The aesthetics of the Unit should be warm and non-institutional as far as possible. The following additional factors should be considered in the selection of finishes:

- Acoustic properties
- Durability
- Ease of cleaning
- Infection control
- Fire safety
- Movement of equipment.

The floor finishes in all patient care and treatment areas should have a non-slip surface and be impermeable to water and body fluids.

Refer also to Part C and Part D of these Guidelines

19.3.6 *Equipment, Fixtures and Fittings*

The Unit should have sufficient endoscopes and accessory equipment to allow for proper cleaning, disinfection and sterilizing to be performed. The quantities of equipment and instruments should also allow for some equipment to be unavailable when awaiting repair or replacement. It is recommended that only fully immiscible endoscopes are used.

Automated endoscopic cleaning/disinfection equipment will require consideration regarding optimum location and services requirements such as water, power and drainage; equipment will be installed according to manufacturers' specifications.

Refer also to Standard Components, Room Data Sheets and Room Layout Sheets for Furniture, Fittings Fixtures and Equipment requirements.

19.3.7 *Building Services Requirements*

Water Treatment

Water filtration is required for cleaning of endoscopes and to supply automated endoscope cleaning/disinfection machines. Water with a high mineral content is unsuitable for rinsing flexible endoscopes and accessory equipment due to mineral deposits that may permanently damage the equipment. Provide water filtration to sinks and automated endoscope cleaning machines according to equipment manufacturers' specifications.

Air Filtration

Ventilation and exhaust is required to extract toxic vapors in Clean-up/disinfection areas. Hazardous chemicals such as glutaraldehyde, OPA or paracetic acid should be used in a closed system with air extraction such as a fume cabinet

Radiation Safety and Shielding

If the Unit is undertaking procedures involving imaging, plans and specifications will require assessment for radiation protection by a certified physicist or other qualified expert as required by the relevant Radiation and Nuclear Safety Agency. The radiation protection assessment will specify the type, location and amount of radiation protection required according to the final equipment selections and layout. Radiation protection

requirements must be incorporated into the final specifications and building plans.

Information Technology/Communications

It is vital to provide reliable and effective IT/Communications service for efficient operation of the Unit. The following items relating to IT/Communications should be addressed in the design:

- Appointment systems
- Patient Administration System (PAS) including clinical records, pathology results, PACS
- Scheduling systems to manage Procedure or operating room sessions
- Endoscopy procedure recording and printing of reports within the Procedure room
- Materials management including bar coding for supplies, x-rays and records
- Management and statistical information required for administration and quality assurance.
- Education and training utilization of video and camera equipment.

Nurse/Emergency Call

Nurse Call and Emergency Call facilities must be provided in all patient areas (e.g. bed/chair spaces, toilets, showers) and procedure areas in order for patients and staff to request urgent assistance. The individual call buttons will alert to a central module situated at or adjacent to the Staff Station. Calls must be audible in Utilities, Staff Room and Meeting Rooms within the Unit. The alert to staff members should be done in a discreet manner at all times.

19.3.8 Infection Control

Consideration of Infection Control is important in the design of this Unit. Separation of clean and dirty workflows in treatment and clean-up areas and separation of patient care areas and contaminated spaces and equipment is critical to the function of the Unit and to prevent cross infection. Procedure/Operating rooms will be used for a variety of clients whose infection status may be unknown. Standard precautions must be taken for all clients regardless of their diagnosis or presumed infectious status. Staff hand washing facilities, including disposable paper towels, must be readily available.

Refer to Part D of these Guidelines for further information.

19.4 Components of the Unit

19.4.1 General

The Endoscopy Unit will consist of Standard Components to comply with details described in these Guidelines. Refer to Standard Components Room Data Sheets and Room Layout Sheets as identified in the Schedule of Accommodation.

19.5 Schedule of Accommodation

Typical Endoscopy Unit with 2, 4 and 6 rooms

ROOM/SPACE	Standard Component	2 Rooms Qty x m²			4 Rooms Qty x m²			6 Rooms Qty x m²			Remarks
Entry/Reception											
Reception/Clerical	RECL-10-SJ RECL-15-SJ	1	x	10	1	x	15	1	x	15	
Waiting	WAIT-20-SJ Similar	1	x	15	1	x	20	1	x	30	May be divided for separate Female areas as applicable
Waiting – Family	WAIT-20-SJ Similar	1	x	15	1	x	20	1	x	30	
Play Area – Paediatric	PLAP-10-SJ	1	x	10	1	x	10	1	x	10	Optional; If paediatric patients treated
Bay – Wheelchair Park	BWC-SJ	1	x	4	1	x	4	1	x	4	May share with adjacent unit if close
Office – Manager	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	Unit Manager
Interview Room – Family	NTF-SJ	1	x	12	1	x	12	1	x	12	Interviews, may be shared
Parenting Room	PAR-SJ	1	x	6	1	x	6	1	x	6	May share with adjacent Unit if close
Store – Files	STFS-10-SJ	1	x	8	1	x	10	1	x	10	For stationery, records, photocopier/printer
Toilet – Accessible	WCAC-SJ	1	x	6	1	x	6	1	x	6	May share general public amenities
Toilet – Public	WCPU-3-SJ	2	x	3	2	x	3	2	x	3	May share general public amenities
Assessment/Preparation											
Consult Room	CONS-SJ	1	x	14	2	x	14	3	x	14	
Meeting Room – Small	MEET-9-SJ	1	x	9	1	x	9	2	x	9	Optional. for Interviews
Change – Patient (Male/Female)	CHPT-12-SJ	2	x	12	2	x	12	2	x	15	
Patient Bay – Holding	PBTR-H-10-SJ	2	x	10	2	x	10	4	x	10	
Treatment/Preparation Room	TRMT-SJ	1	x	14	2	x	14	2	x	14	Optional; Locate near Patient Ensuite
Waiting – Changed Patients (M/F)	WAIT-10-SJ	2	x	5	2	x	10	2	x	15	Comfortable seating
Bay – Handwashing, PPE	BHWS-PPE-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	1	x	2	
Ensuite – Toilet/Shower	ENS-ST-SJ	1	x	5	1	x	5	1	x	5	Locate adjacent to Treatment/Preparation Room
Staff Station/Clean Utility	SSCU-SJ	1	x	9	1	x	9	1	x	9	To oversight holding and changed waiting areas;
Store – General	STGN-6-SJ	1	x	6	1	x	6	1	x	6	
Toilet – Accessible, Patient	WCAC-SJ	1	x	6	1	x	6	1	x	6	
Toilet – Patient	WCPT-SJ	1	x	4	2	x	4	2	x	4	May share with Recovery if close
Procedural Areas											
Procedure/Operating Room	ORMS-SJ	2	x	36	2	x	36	2	x	36	General Endoscopy
Clean-Up Room – Shared	CLUP-7-SJ Similar	1	x	15	2	x	15	3	x	15	Shared between rooms, for immediate post procedure
Scrub Up	SCRB-6-SJ	2	x	6	4	x	6	6	x	6	
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	1	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ Similar	2	x	2.5	4	x	2.5	6	x	2.5	Also for imaging equipment
Store – Sterile Stock	STSS-12-SJ	1	x	12	2	x	12	3	x	12	
Store – Equipment	STEQ-10-SJ	1	x	6	1	x	10	2	x	10	Additional specialist equipment
Recovery Areas											
Patient Bay – Recovery Stage 1	PBTR-RS1-SJ	4	x	12	8	x	12	12	x	12	2 Beds per Procedure/OR; Separate M/F as required
Patient Bay – Recovery Stage 2	PBTR-H-10-SJ	6	x	10	12	x	10	18	x	10	3 Beds/Chairs per Procedure/OR; Separate M/F as req
Recovery Lounge	LNPT-RS2-SJ	4	x	6	6	x	6	8	x	6	Optional; according to service plan; Screened bays
Bay – Beverage	BBEV-OP-SJ	1	x	4	1	x	4	1	x	4	
Bay – Handwashing, Type A	BHWS-A-SJ	1	x	1	2	x	1	3	x	1	One per four beds

19. 0 Endoscopy Unit

ROOM/SPACE	Standard Component	2 Rooms Qty x m ²			4 Rooms Qty x m ²			6 Rooms Qty x m ²			Remarks
(1st Stage Recovery)											
Bay – Handwashing, Type B (2nd/3rd Stage Recovery)	BHWS-B-SJ	3	x	1	5	x	1	7	x	1.0	One per four beds/chairs
Bay – Linen	BLIN-SJ	1	x	2	2	x	2	2	x	2	
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Clean Utility	CLUR-8-SJ CLUR-12-SJ				1	x	8	1	x	12	
Dirty Utility	DTUR-8-SJ	1	x	8	1	x	8	1	x	10	
Property Bay – Patient	PROP-3-SJ	1	x	2	2	x	2	2	x	2	Separate M/F areas
Staff Station	SSTN-14-SJ SSTN-20-SJ	1	x	10	1	x	14	1	x	20	
Store – Equipment	STEQ-10-SJ STEQ-16-SJ	1	x	10	1	x	10	1	x	15	With power for equipment recharging
Store – General	STGN-6-SJ STGN-8-SJ	1	x	6	1	x	8	1	x	8	
Toilet – Accessible, Patient	WCAC-SJ	1	x	6	1	x	6	2	x	6	
Toilet – Patient	WCPT-SJ	1	x	4	2	x	4	2	x	4	
Endoscope/Instrument Processing Areas											
Clean-up/Decontamination		1	x	15	1	x	30	1	x	30	Endoscopes and instruments
Sterilising		1	x	6	1	x	10	1	x	20	Low temp sterilizers and autoclave as required
Endoscope Store		2	x	2	4	x	2	6	x	2	1 Endo. store/cupboard per Procedure room/OR
Staff and Support Areas											
Change – Staff (Male/Female)	CHST-12-SJ CHST-20-SJ	2	x	10	2	x	14	2	x	20	Toilets, Shower and Lockers
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Disposal Room	DISP-8-SJ	1	x	5	1	x	8	1	x	8	May be shared with adjacent Unit
Meeting Room – Small	MEET-L-15-SJ	1	x	12	1	x	12	1	x	15	Optional; may be shared
Office – Single Person, 9m ²	OFF-S9-SJ	1	x	9	1	x	9	2	x	9	Note 1; Nursing/Medical
Office – 2 Person Shared	OFF-2P-SJ				1		12	1		12	Note 1; Clerical support
Property Bay – Staff	PROP-3-SJ	1	x	2	2	x	2	2	x	2	May be shared with adjacent Unit
Staff Room	SRM-15-SJ SRM-25-SJ	1	x	15	1	x	25	1	x	30	May be shared with adjacent Unit
Net Department Total				632			942			1264	
Circulation %				35			35			35	
Grand Total				853. 2			1271. 7			1706. 4	

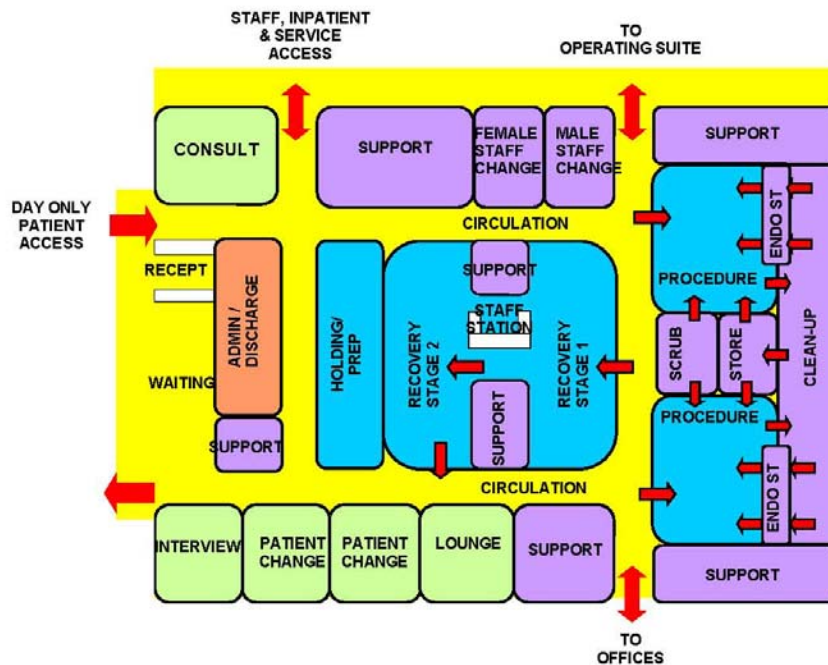
Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

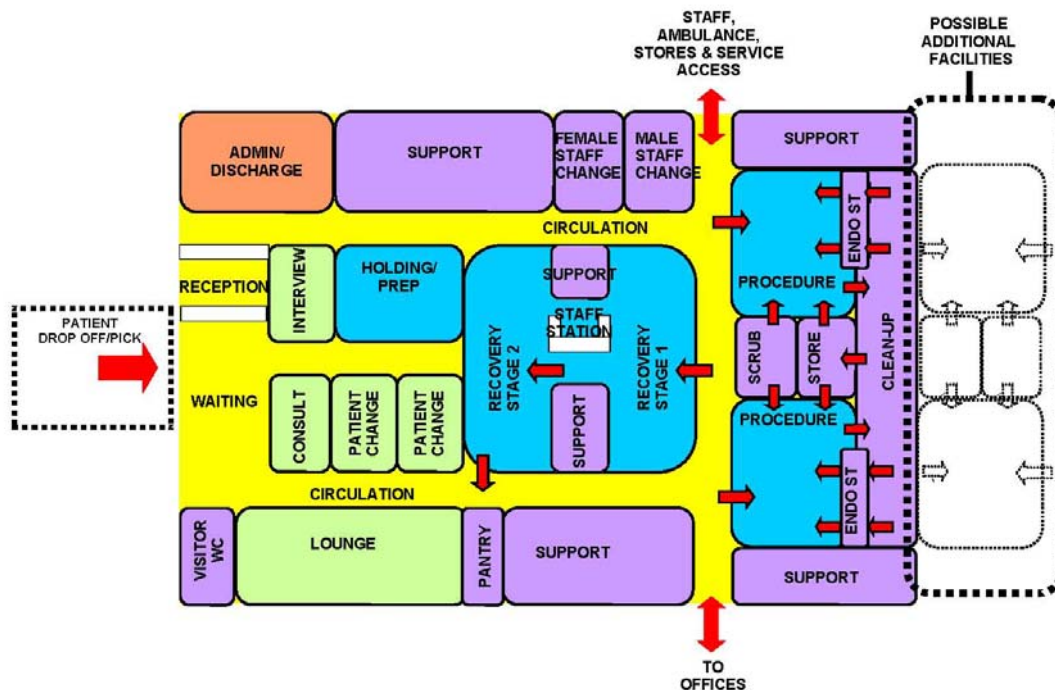


19.6 Functional Relationship Diagram

Unit Located Within a Hospital



Stand-Alone Unit



19.7 Further Reading

- Australasian Health Facility Guidelines (Aus.). '*Part B Health Facility Briefing and Planning, Day Surgery/Procedure Unit, Rev 4*', 2012. Retrieved from website: www.healthfacilitydesign.com.au 2014
- Department of Veteran Affairs, Office of Construction & Facilities Management (US). '*Digestive Diseases – Endoscopy Service*' 2011. Retrieved from website: http://www.wbdg.org/ccb/VA/VADEGUID/digestive_endoscopy.pdf 2014
- Gastroenterological Society of Australia (GESA). '*Endoscopy – Standards for Endoscopy Facilities and Services*' 2011. Retrieved from website: <http://www.gesa.org.au/professional.asp?cid=9&id=131> 2014
- Gastrohep ebook, Peter B Cotton, ed (US). '*Design and Management of Gastrointestinal Endoscopy Units*' 2012. Retrieved from website: www.gastrohep.com 2014
- Health Estates and Facilities Division of the Department of Health (UK). '*Health Briefing Note 52 Volume 2; Accommodation for Day Care Endoscopy Unit*' 1994. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2052%20Vol2%203217269.pdf> 2014
- The Facility Guidelines Institute (US). '*Guidelines for Design and Construction of Health Care Facilities*' 2010 Edition. Retrieved from website: www.fgiguilines.org 2014.

20.0 Engineering and Maintenance Unit

20.1 Introduction

20.1.1 General

All facilities, no matter how large or small, will require environmental support services in the form of:

- Maintenance services
- Engineering
- Cleaning services
- Waste disposal
- Gardening services
- Storage.

20.1.2 Description

A Maintenance Service shall be provided. It may be in-house or contracted, with an on-call repair service. The complexity of the services provided by the facility will dictate the nature and extent of the Maintenance Service required. The Maintenance Service is provided to effect preventative maintenance and repairs to all elements of the facility, from the building fabric to items of specialist equipment.

Areas that require a 24-hour per day, 7-day per week 'on-call' maintenance service are:

- Medical gases and suction systems
- Lifts
- Fire systems
- Bio-electronic equipment
- Any life-support systems
- Emergency power systems
- Boiler plant
- Telecommunications systems including Public Address (PA), Emergency Warning and Intercommunications System (EWIS) and Nurse Call.

The potential life threatening nature of the failure of any of the above systems justifies a 24-hour service.

20.2 Planning

20.2.1 Functional Areas

The Engineering and Maintenance Unit may consist of the following Functional Areas dependent on the Operational Policy and service demand:

- Workshop areas which may include separate areas for carpentry, mechanical, plumbing and electrical services
- Storage areas for all specialty services/trades including paint, gardening and flammable liquids
- Office area for administrative and clerical activities
- Staff amenities which may be shared.

Electronics Workshop

A separate workshop may be provided specifically for the storage, repair and testing of electronic and other medical equipment. The amount of space and type of utilities will vary with the type of equipment involved and types of service and maintenance contracts used.

Engineer Office

If on-staff, an Engineer's Office shall be provided with file space and provision for protected storage of facility drawings, records and manuals.

Gardener Facilities

A room or shed shall be provided for the storage of all the necessary gardening equipment and material. Depending upon the size of the grounds team provision of a Head Gardener's office, hand-washing facilities, toilet and showering facilities should be considered.

Storage Areas

A storage room shall be provided for the storage of building maintenance supplies. Storage for solvents and flammable liquids shall comply with relevant statutory requirements.

Workshop Areas

A general maintenance workshop shall be provided for repair and maintenance. Sufficient space is required for a workbench, drill press, angle grinder, stainless steel trough, tool peg board, storage cabinets. Floor space is also required for the standing of equipment during repairs. Adequate lighting, power and ventilation are required. Note: If Maintenance Services are externally contracted, then a Workshop is not required. Maintenance workshops incorporating carpentry, metal fabrication, plumbing, refrigeration or other noise generating trades shall be acoustically isolated from non-maintenance areas.

20.2.2 *Functional Relationships*

The Engineering and Maintenance Unit should be located on the ground floor to facilitate delivery and dispatch of heavy items of equipment. Access to a loading dock is desirable. The Unit will require ready access to all areas of the hospital and in particular, to plant rooms and areas. Depending on the size of the Unit and the Operational Policy, considerable noise and fumes may be generated by the Unit and care should be taken in locating the Unit relative to other units such as Inpatient Accommodation Units.

20.3 Components of the Unit

20.3.1 *Standard Components*

The Engineering and Maintenance Unit will consist of Standard Components. Provide Standard Components to comply with details in Standard Components in these Guidelines. Refer also to Standard Components Room Data Sheets.

20.4 Schedule of Accommodation

Typical Engineering and Maintenance Unit for a tertiary level hospital

This schedule assumes that all services are provided in-house.

Note: For maximum functionality, some of the workshop areas may be combined into one large area.

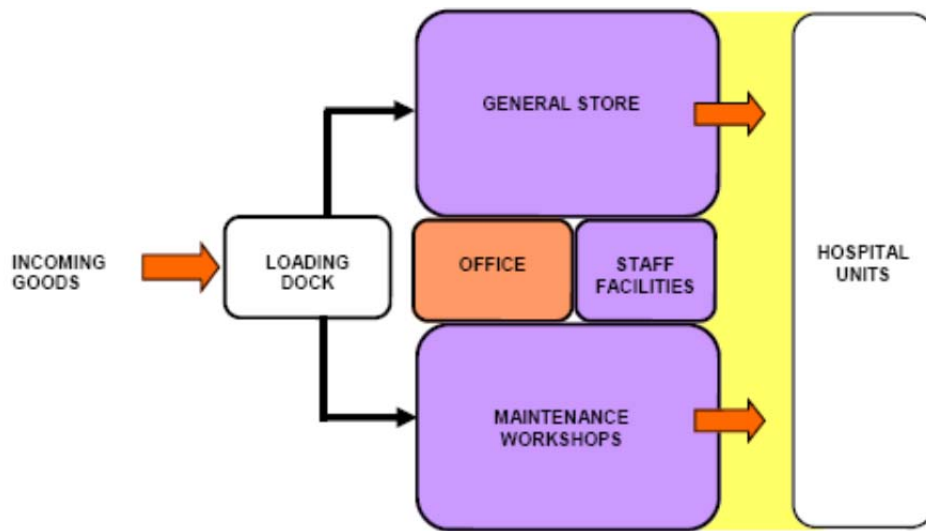
ROOM/SPACE	Standard Component								Level 5/6 Qty x m ²	Remarks
Entry/Reception										
Reception/Clerical	RECL-10-SJ								1 x 10	
Waiting	WAIT-10-SJ								1 x 5	
Office Areas										
Office – Head of Department	OFF-S9-SJ Similar								1 x 12	
Office – Managers/Supervisors	OFF-S9-SJ Similar								3 x 9	
Office – 4-Person Shared	OFF-4P-SJ								1 x 20	Administrative Support
Office – 4-Person Shared	OFF-4P-SJ								1 x 20	Leading Hands
Office – Workstation	OFF-WS-SJ								8 x 5	Facility Planners, Tenders staff, Engineers, Technical staff, Administrative support
Interview/Meeting Room	MEET-9-SJ								2 x 9	Interviews, small meetings
Meeting Room – Small	INTF-SJ								2 x 12	Tender/contract room
Meeting Room – Medium	MEET-L-15-SJ Similar								1 x 20	Group Meetings
Meeting Room – Large	MEET-L-30-SJ								1 x 30	Group meetings, teleconferencing room
Functional Engineering and Maintenance Areas										
BMS Room									1 x 20	
Command and Control Room									1 x 30	Optional; Crisis/Security management
Workshop – Mechanical	WK-GM-SJ								1 x 50	No wall between Mechanical and Civil and Electrical Room
Workshop – Electrical	WS-BM-SJ Similar								1 x 50	
Workshop – Biomedical	WS-BM-SJ								1 x 50	
Workshop/Store – Gardener	WSS-GAR-SJ								1 x 20	
Workshop/Store – Painters	WSS-PT-SJ								1 x 25	
Welding/Grinding area									1 x 20	
Plans and Drawings Room									1 x 20	With review and work areas
Support Areas										
Cleaner's Room	CLRM-5-SJ								1 x 5	
Communications Room	COMM-SJ								1 x 12	
Disposal Room	DISP-8-SJ								1 x 8	May use general waste facility
Store – Files	STFS-10-SJ								1 x 10	Documents, Minutes etc.
Store – Flammable Liquid	STFL-SJ								1 x 9	
Store – Gas Bottle									1 x 30	May be external
Store – General	STGN-20-SJ Similar								1 x 60	Supplies, spare parts, equipment
Store – Photocopy/Stationery	STPS-8-SJ								1 x 8	
Wash-up Room	WASH-SJ								1 x 10	
Staff Area										
Change – Staff (Male/Female)	CHST-12-SJ								2 x 12	
Staff Room	SRM-25-SJ								1 x 25	
Property Bay – Staff	PROP-3-SJ								2 x 3	Lockers

ROOM/SPACE	Standard Component			Level 5/6 Qty x m ²	Remarks
Total Net Department				718	
Circulation %				20	
Grand Total				861. 6	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

20.5 Functional Relationship Diagram



20.6 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

21.0 Health Spas and Clubs

21.1 Introduction

21.1.1 Description

The Spa, Wellness and Fitness centers are devoted to delivering overall wellbeing through a variety of professional services that encourage the renewal of mind, body and spirit. Delivery of these services can be through a range of equipment and facilities for exercising and improving physical fitness, or services provided to condition or beautify the body. These functionalities are segregated into four categories; there is no clear demarcation of service mix provided among these four categories. All the services provided in Medical and Destination Spa shall be performed or supervised by a competent healthcare professional. The Wellness and Fitness centers shall have a Fitness trainer.

21.1.2 Health Seeker Characteristics

The health seekers who are eager to revitalize and rejuvenate the body and mind are treated in Spas, Wellness and Fitness centers. The services provided in these facilities are not alternative to medical or surgical care. Health seekers with a past medical or surgical history, will be availing the services upon the advice of a medical professional. Pregnant woman want to avail the services should take caution and be guided by advice from their Obstetrician.

21.1.3 Services Provided

The Spas are classified into Medical Spa and Destination Spa; the Facility shall be operated under the supervision of licensed healthcare professional. Medical Spa provides services on a day care basis and Destination Spa provides rejuvenation programs on a short stay basis. Destination spas provide a program consisting of healthy cuisine, wellness education, spa services and physical fitness activities with the primary purpose of guiding health seekers to develop healthy habits.

Wellness centers usually offer skin care and body treatments and services. The term Wellness generally refers to wellness of mind, body and soul.

Fitness Centers – place which has equipment, facilities and the provision of adequate space for the purpose of physical exercise. The functional area consists of free weights, cardiovascular training equipment, group exercise classes and personal training facilities, and can include a swimming pool

21.2 Planning

21.2.1 Planning Model

Location

These facilities can be located depends upon the Scope of Services. Options for locating centers include:

- Stand-alone facilities
- Functional Unit attached with the hospital facility.

21.2.2 Operation Models

Hours of Operation

The Facilities providing day services shall be operated during the business hours from Sunday to Thursday. Some departments may provide a limited service at evenings and weekends and therefore careful consideration will need to be given to location, controlled access and security.

Flexibility

The Facilities of the Unit will be utilized by day care and short stay health seekers. It is expected that the majority of clients accommodated in the Spa, Wellness and Fitness Unit shall utilize the services periodically. The function of these Units is inter-related and the design of these facilities could provide areas common for various services.

Models of Care

Each health seeker avail the wellness and spa services from an individual consultant/therapist/trainer. Some of these programs are conducted in groups which assume a staff to patient ratio of 1: 3 or more and incorporates:

- Group exercise/aerobic
- Education programs.

21.2.3 Operational Policies

General

The Operational Policy of a facility may compel the design team to view the various functions and activities within the Unit from the framework of a team philosophy. Accordingly, client flow would determine the definition of spaces.

Daycare Vs Short Stay Services

The services of the Spas, Wellness and Fitness Centers will be provided on a day-only basis. Health seekers attending for a series of treatments by different therapists are considered as receiving day care services. It is intended that no overnight or short stay facilities will be provided by the Spas, Wellness and Fitness Centers as patients are ambulatory and can return to the community between treatments.

Staffing

The staffing operational policy assumptions made in this guideline are:

- Office space will be provided where required for clerical and Center staff including workstations in open treatment areas for immediate documentation.
- 'Hot' desks will be available for students and visiting staff
- Staff wearing uniforms will arrive at the Unit in uniform however shower/change facilities will be required for comfort reasons as much of the work is labor-intensive.

The number of staff will depend on the needs of the individual facilities/service. Staff mix may include – either permanently or when required by referral:

- Director of Spa, Wellness and Fitness Center and/or the head of each therapy discipline
- Therapist of each discipline
- Fitness Trainer
- Sport and Recreational Officers with water safety training, if applicable
- Dieticians/Nutritionists
- Case Coordinators
- Rehabilitation Engineers
- Clerical Staff
- Housekeeper and Cleaning Staff
- Artisan and Transport Staff.

Emergency Equipment

- Oxygen (wall panels or cylinders) for oxygen-dependent patients
- Cardiac monitor for cardiac patients
- Resuscitation trolley/s
- Medical gas service panels in selected locations for emergency use.

21.2.4 Functional Areas

The specialty of Spas, Wellness and Fitness Center has been classified as Medical Spa, Destination Spa, Fitness Center and Wellness Center. Each of these classifications shall have the following functional areas.

The functional areas are segregated as follows:

- Entry, Reception and Waiting Areas
- Therapy Areas which may be shared
- Support Areas including Utilities, Cleaner's Room, Disposal, Pantry and Store Rooms
- Staff Areas including Offices, Meeting Rooms, Staff Change and Toilets.

Therapy Rooms for each of the Spa and Center classifications may vary according to the scope of services provided. The major services are classified as follows.

Entry Areas

The entry canopy is required to provide dry access to the building, if it is freestanding of a health facilities, the following are some considerations:

- Ensuring the covered area is large enough to allow vehicles such as taxis, buses, cars, and emergency vehicles to manoeuvre beneath it, and is structured to facilitate free concurrent traffic flow for multiple vehicles
- The use of clear roofing material to maximize natural light inside the building.
- Best sited at ground floor level, is the first point of contact for members of the community and should display clear directions informing people where to proceed.

Reception

The Spa/Center Counter/Reception area should be prominent, well-signposted and if also used for cashier functions, appropriate security should be added for cash handling. Patients and visitors will present at the counter for services and wait for a staff member to lead them to adjoining areas for services.

Waiting Areas

Waiting areas need to accommodate a range of patients with varying mobility and should be designed for accessibility. Waiting areas will also require ready access to public amenities, baby change and feeding areas, refreshments, play facilities (optional) and public telephones.

Staff Areas

Offices and workstations will be required for administrative as well as clinical functions and to facilitate educational/research activities. The number of offices provided will be according to the approved staffing levels for the Spa/Center. Educational areas will consist of Meeting/Tutorial Room/s; Meeting Room/s with videoconferencing facilities will provide additional capacity for educational activities.

Administration, education and staff welfare areas, including Staff Room/s, Toilets and Meeting Room/s may be shared with nearby adjacent Units.

Therapy Areas/Rooms

A therapy area should be accessible to the patient only in the company of a staff member or practitioner. It requires equipment suitable to the services to be provided within that space. This is determined by the Scope of Services and can include, but is not limited to:

- Bench and hand-washing basin and fittings
- Treatment benches, tables and chairs
- Fitness machines and equipment
- Adequate lighting and ventilation
- Durable, stain-resistant and comfortable flooring.

Swimming Pool/Water-Based Treatments

A swimming pool may be included as part of the Spa/Center for provision of aqua classes and general fitness and exercise. The size will be determined by the Scope of Services and Operational Policy. The swimming pool area must be surrounded by a secure fencing of a considerable height for safety and access points be fitted with child-safe fasteners.

Flooring surrounding and in flow areas directly following access to the swimming pool including change rooms and toilets require non-slip treatment.

Water-based treatment facilities may include steam baths, saunas, colon hydrotherapy and Vichy Showers. Each of these facilities have individual space and equipment requirements. Wall and floor coverings should be impervious and non-slip, and able to withstand long periods of time wet and humid.

The source of water for the swimming pool and water-based treatment spaces must be clean and filtered and the water quality in the swimming pool must be tested and recorded regularly.

Refer to Rehabilitation Unit – Hydrotherapy for standards related to water based treatment spaces.

Exercise Area

The Exercise Area will include machines and equipment for exercise and fitness ranging from treadmills, upright bikes and steppers to muscle and body part-specific machines. A free weights area shall be collocated to the machines and equipment area, as well as exercise balls and stretching mats.

A minimum of 0.3 meters between each machine is required as a safety clearance with electrical cords concealed underneath the flooring or secured with easily-visible adhesive tape. Numerous electrical power points should be located along the wall of the exercise area to accommodate for equipment requiring power. Ceiling power points shall be installed if hanging entertainment units for Health Seekers using machines and equipment are provided. These should clear the ground by a minimum of 2.3 meters. Transit areas within the room should be no less than 1.5 meters wide to enable easy movement of users and in case of emergency and evacuation. The facility should ideally have a set of double doors to allow installation of larger equipment. Emergency exits must be clearly visible with signage.

The flooring shall be low-impact, non-slip and easy to clean, non-static carpet and rubber flooring material should be considered. Walls may be covered with a shatter-proof mirror. Air-conditioning should keep the Unit below 25°C but additional ceiling/wall -mounted fans during maximum usage by Health Seekers may be considered. These should also clear the ground by a minimum of 2.3 meters.

Aerobics/Fitness Studio

The Fitness Class Studio will require a large open space, stage for instructor and high quality multimedia sound system. The flooring should be impervious and easy to clean. Walls may be covered with a shatter proof mirror. Air-conditioning should keep the Unit below 25°C but additional ceiling/wall -mounted fans during maximum usage by Health Seekers may be considered. These should also clear the ground by a minimum of 2.3 meters. Storage facilities may be adjacent to the studio for storage of materials and equipment relating to the fitness classes.

21.2.5 *Functional Relationships*

External

The Spas, Wellness and Fitness Centers shall be located for convenient access, staff control and security. It should have a good relationship with the main entry of the health facility and outpatient areas. An external entrance separate to the health facility may be considered to provide minimal disruption to the operations of the medical services as Health Seekers and patients are generally ambulatory and well.

The Spa/Center shall be located close to the Complementary and Alternative Medicine Center. Access points provided for the following personnel/purpose shall be carefully considered:

- Health Seekers and visitors
- Staff
- Service units for maintenance and delivery of supplies.

Internal

Internally, the Spa/Center should have restricted staff accessible areas such as Offices, Staff Rooms, Meeting Rooms and Staff Change and Toilets. Publicly accessible areas should be located around Public Change, Shower and Toilets and flow through Reception/Counter, Waiting Areas, and subsequent Exercise Area, Studio and Swimming Pool.

21.3 Functional and Design Considerations

21.3.1 *General*

The design philosophy of the Spas, Wellness and Fitness Centers should convey a friendly and inviting environment and should encourage community members to utilize the available facilities for rejuvenating and well-being purposes. A non-institutional, safe and supportive environment needs to be promoted. Building design must be flexible and adaptable to enable the unit to cater for varying client and service needs. Buildings should be designed to cope with a wide range of possible conditions. The aim is to provide an environment that will allow the maximum mobility possible for each person. The facility will include access for disabled persons.

The design of the Spa/Center will also be based heavily on the Scope of Services and Operational Policy of the Center itself, and the facility it is incorporated into, if relevant.

21.3.2 *Accessibility*

If at ground floor, the Spa/Center shall have easy access to the health facility entrance or have its own designated entry, an undercover set-down bay should be provided at the entrance to the Unit for those outpatients who arrive by bus or car and for return of loan equipment with parking for people with disabilities. Access to other units in the facility should be convenient and covered. Drop-off and parking for people with disabilities is recommended.

21.3.3 *Environmental Considerations*

Acoustics

Reception, Waiting Areas, the Exercise Area, Fitness Studio and other noisy areas should be located away from any treatment spaces and staff areas. Storage areas may be strategically placed to minimize the sound generated from the Exercise Area and Fitness Studio.

Lighting

Natural light is highly desirable within the Spa/Center, as well as windows permitting outside views to create a natural ambience in the area. Windows can be frosted or treated to prevent casual viewing from any adjacent public thoroughfare but allow natural light through.

Climate Control

Good climate control and ventilation in Exercise Area, Fitness Studio, Swimming Pool and other treatment and training areas is required.

Space Standards and Components

Ergonomics

Ergonomics and Occupational Safety and Health (OSH) requirements must be considered in the design process and the selection of fittings and equipment in the Spa/Center to ensure optimal operation of the Spa/Center and the health and safety of the staff, patients and visitors.

Particular attention should be given to placement of equipment, heights and dimensions of counters work areas and equipment.

Refer also to Part C of these Guidelines.

21.3.4 *Size of the Center*

The size of the Spas, Wellness and Fitness Center will be determined by the Scope of Services taking into consideration the needs of the health facility and other external facilities. A Schedule of Accommodation is provided for Spa/Center collocated in a tertiary level hospital.

21.3.5 *Safety and Security*

Every aspect of Spa/Center design with regard to finishes, surfaces and fittings must be assessed to determine the potential for accidents or hazards to both patients and staff. The Spa/Center must be secure to prevent unauthorized access through doors, windows, walls and ceilings. A security intrusion detector alarm should be fitted to monitor the Spa/Center after-hours.

Security measures for consideration will include:

- Electronic door controls and alarms to perimeter doors
- Movement sensors
- Duress alarms at Center counter/reception and in treatment/consultation spaces
- Solid ceilings to prevent access.

21.3.6 *Finishes*

It is essential that floor finishes are non-slip, particularly in areas prone to being wet from surrounding facilities. Refer also to Part C of these Guidelines.

21.3.7 *Fixtures and Fittings*

Equipment, furniture and fittings should be selected and installed to be safe, robust and suitable for heavy usage.

Refer also to Part C of these Guidelines.

21.3.8 *Building Service Requirements*

Heating, Ventilation, Air-Conditioning (HVAC)

All areas require temperature and humidity controls; internal room temperature shall be kept below 25°C for maximum comfort of Health Seekers and staff.

Communications

Information technology/communications systems should provide for:

- Sufficient data and power outlets for computers and laptops
- Sufficient power outlets for electronic equipment
- Video-conferencing/tele-medicine in Meeting Rooms.

21.3.9 *Infection Control*

It is recommended that handwashing facilities are provided as follows:

- In each area where ingredients/products are handled including Preparation Room/s, Assembly/Dispensing Areas and Manufacturing Area
- In support areas.

All hand basins in the Spas, Wellness and Fitness Center should permit clinical handwashing with hands-free activation; taps may be wall -mounted, lever operated or sensor operated. Hand basins in non-clinical areas should permit routine hand-washing and taps may be basin -mounted and lever operated. Hand basins should include dispensers for soap, antiseptic soap and paper towels.

The quantity and ratio of hand basins to work areas will be determined by the size of the individual areas, the operating policies and standard guidelines relating to the Center's services.

Refer also to Part D of these Guidelines.

Rehydration Stations

Rehydration stations with drinking fountains, cups and waste bins should be located in each Exercise Area and Fitness Studio. They may also be located in the Reception, Waiting Areas and Public Change to promote rehydration of Health Seekers.

21.4 Components of the Unit

The Spas, Wellness and Fitness Centers will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets. Non Standard Components are described below.

Vichy Shower

A Vichy shower is a kind of shower in which large quantities of warm water are sprayed over a health seeker while laying on a shallow wet bed with drainage points for the water. The shallow wet bed may be similar to a massage table for additional treatments to be performed before, during or after the shower. The shower head equipment is fixed to the wall or ceiling. It should clear the bed by a minimum of 0.7meters or allow a swivel function to enable ease and safety in transfer onto and off the bed.

The Vichy Shower should be located in a dedicated room due to the quantity of water and humidity it creates. Wall and ceiling surfaces should be impervious and easy to clean. Floor surfaces should be non-slip.

Sauna/Steam Room

A Sauna/Steam Room should be located adjacent to bathroom and shower facilities. The Room is an enclosed area and can vary from being relatively small sized to large collective spaces, depending on the Scope of Services. Separate Sauna/Steam Room should be provided for males and females.

A Steam Room has a water-filled generator pumping steam into the enclosed room to provide moist heat, with temperatures typically in the range of 110–114 degrees Fahrenheit and a humidity level of 100 percent.

A sauna provides dry heat in a wood-paneled room from a conventional source such as a stove, or through infrared. The temperature typically ranges from 160–200 degrees Fahrenheit with a low level of humidity

Larger sized Rooms with the capacity for more health seekers should have benches staggered upwards around the source of heat. The surface below the Room must not absorb moisture, such as concrete, tile or linoleum, and the walls require insulation. The flooring may be wooden to match the interior of the Room or tiled for ease in cleaning.

Jacuzzi

A Jacuzzi or hot tub spa may be located either near to bathroom and shower facilities, or near other water facilities such as the swimming pool. A Jacuzzi is a bath with massaging jets.

The surrounding flooring should be non-slip and if elevated off the ground, steps should be provided around the Jacuzzi to facilitate ease of transfer into and out of the Jacuzzi.

Massage Rooms

Depending on the Scope of Services, Massage Rooms can be provided and be either single or dual occupancy. Common types of massage include:

- Acupressure Massage
- Aromatherapy
- Ayurvedic Massage
- Balinese Massage
- Barefoot Deep Tissue Massage Therapy
- Deep Tissue Massage Therapy
- Dry-Water Massage Bed
- Lomi Lomi Massage
- Myofascial Release Massage Therapy
- Reflexology Massage
- Shiatsu Massage
- Stone Massage
- Swedish Massage
- Thai Massage
- Traditional Chinese Massage
- Visceral Manipulation.

The type of massage offered by the Spa, Wellness and Fitness Center determines the equipment required in each Room. Equipment can include specialized massage tables, massage chairs and padded flooring. A hand-washing basin should be provided in each room.

21.5 Schedule of Accommodation

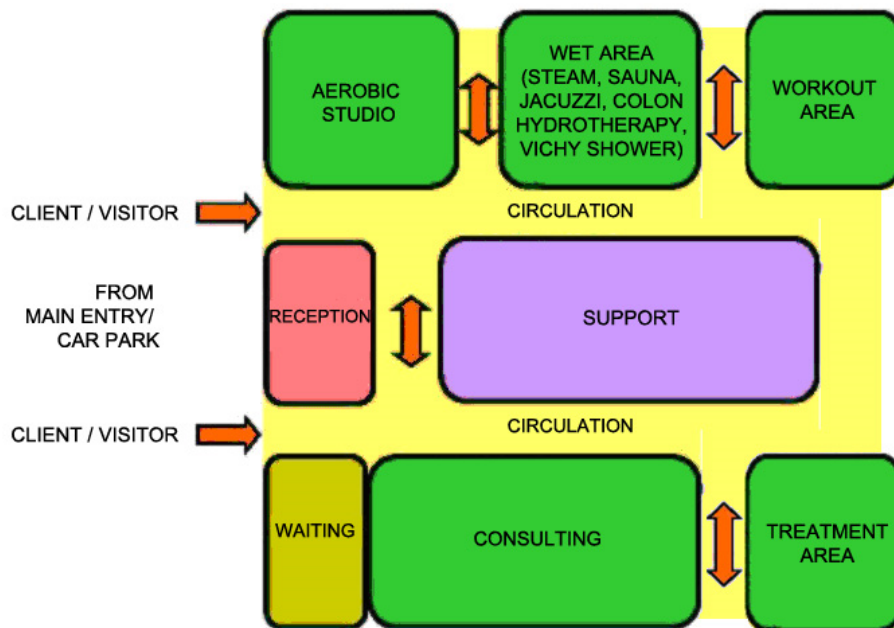
Typical Spa, Wellness and Fitness Center at level 4 to 6

ROOM/SPACE	Standard Component	Level 4 Qty x m²			Level 5 Qty x m²			Level 6 Qty x m²			Remarks
Public Areas											
Counter	CAM-CO-SJ	1	x	9	1	x	9	1	x	20	
Meeting Room - Small	MEET-9-SJ	1	x	9	1	x	9	1	x	9	Interview function, small meetings
Staff Areas											
Office – Single Person	OFF-9-SJ OFF-12-SJ	1	x	9	1	x	12	1	x	12	Director
Office – Workstation	OFF-WS-SJ	2	x	5.5	4	x	5.5	6	x	5.5	Qty depends on staffing
Assembly/Preparation	ASPR-20-SJ	1	x	10	1	x	20	1	x	30	
Bay – Handwashing, Type B	BHWS-B-SJ	3	x	1	4	x	1	5	x	1	Unit entrance and corridor recesses, as required.
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	Include cupboard for dry goods
Cool Room	CORM-SJ				2	x	10	2	x	10	Optional, or refrigerators and freezers
Clinical Trials					1	x	12	1	x	12	Optional
Manufacture Room – non-sterile	PREP-SJ	1	x	18	2	x	12	3	X	12	Based on 3m² per person
Store – Bulk	STBK-20-SJ	1	x	40	1	x	100	1	x	150	May include pallets
Store – Files	STFS-8-SJ	1	x	8	1	x	10	1	x	20	Collocate with Ward Clerk
Store – General	STGN-6-SJ	1	x	6	1	x	8	1	x	10	Size in accordance with service demand and operational policies
Store – Ingredients	STBK-5-SJ STBK-10-SJ	1	x	5	1	x	10	1	x	10	
Store – Photocopy/Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	Collocate with Clerk
Store – Refrigeration	STRF-8-SJ	1	x	6	1	x	6	1	x	6	Bay with fridges
Meeting Room – Large	MEET-15-SJ	1	x	15	1	x	20	1	x	25	
Property Bay – Staff	PROP-3-SJ	2	x	2	3	x	3	4	x	3	Number of lockers depends on staff complement per shift
Staff Room	SRM-15-SJ	2	x	15	2	x	20	2	x	20	Unit-specific space, with beverage bay
Toilet – Staff	WCST-SJ	2	x	3	4	x	3	4	x	3	
Shared Areas											
Waiting	WAIT-SUB-I	2	x	5	2	x	10	2	x	10	Separate male/female areas
Treatment Room/Spaces	TRMT-SJ	1	x	14	1	x	14	1	x	14	For specialist units, or shared; Depends on operational policy
Net Department Total		198.5			394.0			509.0			
Circulation %		25			25			25			
Grand Total		248.1			492.5			636.3			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

21.6 Functional Relationship Diagram



21.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Guidelines for Design and Construction of Health Care Facilities' (Includes ANSI/ASHRAE/ASHE Standard 170–2008, Ventilation of Health Care Facilities); Refer to Section 2. 1 – Common Elements for Australasian Health Facility Guidelines 2010. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australian Standard – AS 2610. 1–2007 Spa Pools, Published in 2007
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

22.0 Hospital Morgue Unit

22.1 Introduction

22.1.1 Description

The Hospital Morgue Unit is a facility for the viewing and/or identification of a body and the temporary holding/storage of bodies prior to transfer to a Mortuary.

The needs of hospital staff, relatives of the deceased and attendant authorized persons should be considered in the design, layout and functionality of the unit to provide a safe and private environment.

The design must address the following:

- Number of bodies to be stored
- Method of storage i. e. refrigerated cabinets, cool room, freezing capacity
- Separation of entries for families to view/identify bodies, and
- Delivery of bodies from inside the hospital and external delivery (if applicable).

It should be noted that the standard hospital Morgue facility should not be used for storage of a body associated with a criminal investigation. In this case the body is evidence and enhanced security should be provided.

22.2 Planning

22.2.1 Operational Model

Hours of Operation

Working hours will be on a routine eight hours per day, five days per week. Work times are assumed 8. 00am– 5. 00pm. The Hospital Morgue Unit will also be accessible to authorized personnel 24-hours per day, 7-days per week.

22.2.2 Model of Care – Body Holding

Two options are available as follows:

- Walk-in cool room for individual trolleys; or
- Bank of refrigerated cabinets.

Consideration should be given to the following:

- Security of bodies
- Isolation and bariatric needs; and
- Expected length of time for retention of bodies.

There are two types of morgue cold chambers:

- Positive temperature +2/+4°C (the most common type),
- Negative temperature -15°C/-25°C (used by forensic institutes for the storage of bodies that have not yet been identified).

22.2.3 Planning Models

The Unit should be located in the same building as the main health facility away from any public area to ensure that is appropriately screened from visibility.

It should be located to ensure easy and discrete access to deliver and/or remove bodies via an exit lobby.

22.2.4 *Functional Areas*

The Hospital Morgue Unit will consist of the following Functional Areas depending on the size of the facility and the Operational Policy:

- Entry Lobby/Administration/Exit Lobby
- Body Holding Area
- Waiting/Viewing Area
- Staff Area.

Entry/Administration/Exit Lobby

The Entry and Exit Lobbies form part of a single space with direct access to the Body Holding Area. The area should include

- Hand basin
- Workstation for body registration and removal details
- Parking space for the transport trolley
- Parking space for a hoist/elevating trolley.

Body Holding Area

The Body Holding Area provides refrigerated space for the temporary storage of bodies. The area should allow for the following:

- Separate spaces/cabinets should be allowed for isolation
- Maneuvering space in front of refrigerated cabinets to insert/withdraw the trays
- 3m² is required for a body on a loose tray or trolley in a cool room.

Waiting/Viewing Area

The area should allow for the following:

- Discrete entrance away from the main hospital to the Waiting Area for relatives, police and others
- Direct visibility into the adjoining Viewing Area.

Storage

The area should allow for the following dedicated areas:

- Lockable storage area for the deceased's personal effects
- Clean linen area
- Cleaning materials and agents
- Used linen collection area
- Plastic body bags and sealing machine area.

Staff Areas

The area should allow for the following:

- Staff areas comprising of office, workstations, meeting/teaching rooms and amenities
- Office for use by the pathologist and police.

22.2.5 *Functional Relationships*

External

Mortuary/Holding facilities shall be accessible through an exterior entrance and shall be located to avoid the need for transporting bodies through public areas. Close proximity to Anatomical Pathology laboratories and relevant clinical areas is desirable for transportation of laboratory specimens.

Internal

The Waiting Area and Viewing Area should be collocated however there should be no access to other sections of the Morgue for viewers.

Entry Lobby, Exit Lobby and Administrative Area form part of a single area.

22.3 Design

22.3.1 Accessibility

External

Morgue Unit is to have separate access as follows:

- Direct access from the Hospital for delivery of the body
- Direct but separate and discreet access for relatives of the deceased from all relevant areas of the hospital to Morgue waiting/viewing area
- Adequate access for funeral directors for vehicle parking and discrete, weather protected, facilities for the collection of bodies
- Adequate access for ambulances delivering bodies
- Adequate access for police vehicles.

Internal

The Body Holding Room is to have direct access to/from:

- The hospital corridor for use by staff
- Viewing Room
- Discreet access from body hold/cool room to hearse and ambulance parking bays.

22.3.2 Infection Control

Bodies stored in the Morgue which may contain infectious diseases that must be contained.

Cleaned instruments and materials shall be re-circulated under normal procedures through the Sterile Supply Unit or autoclaved within the Morgue Unit. The unit shall be designed to control infection utilizing the following:

- Layout designed to minimize cross contamination in work areas
- Provision of a small wash-down/disposal/booting area
- Provision of an adequate number of hand wash facilities
- Provision of appropriate cleaning, waste storage and waste disposal
- Use of suitable materials and finishes
- Specimen storage facilities
- First aid facilities
- Adequate isolation of space and ventilation systems which present potential hazard.

22.3.3 Environmental Considerations

General

The Morgue Unit needs to be designed to provide staff with sufficient space, working surfaces and appropriate equipment to safely carry out their duties.

Interior Design

The interior design of the Morgue Unit shall have due consideration for the following as primary items of design:

- Infection control
- Cooling and ventilation.

The Viewing Room should be a pleasant space and consideration given to adjustable lighting and a music system in the room.

Acoustics

Acoustic design shall ensure that conversations in adjoining rooms cannot be overheard by relatives in the viewing area.

22.3.4 *Space Standards and Components*

Ergonomics

The Morgue Unit shall be ergonomically designed to any potential avoid injury to staff, patients, visitors or maintenance personnel.

Access and Mobility

Where necessary the layout shall comply with the requirements of the Americans with Disabilities Act (ADA) Accessibility Guidelines for Building Facilities.

Doors should be provided with hold-open devices to permit easy transfer of trolleys.

22.3.5 *Safety and Security*

Safety

The interior design of the Morgue Unit shall consider the impact of finishes, surfaces and fittings on safety including the following:

- Floor covering selection
- Adequate drainage
- Protection from protrusions or sharp edges
- Stability and height of equipment or fittings
- Adequate protection against infection and any other hazards.

Security

The security aspects of the Morgue Unit shall consider the following:

- Deceased bodies
- Valuables left on the body
- Specimens removed during autopsy
- Staff personal belongings and security
- Access and egress, particularly after-hours.

22.3.6 *Finishes*

Refer also to Part C of these Guidelines.

Ceiling Finishes

Ceilings must be washable, impermeable and non-porous.

Floor Finishes

Floor finishes shall be non-slip for all wet areas or areas subject to water. It should be impervious, easy to clean, sealed with coving at the edges and have adequate drainage. Drains should be fitted with appropriately filtered traps for ease of hosing down.

Wall Finishes

Wall surfaces in the body holding area should be washable and/or scrubbable.

22.3.7 *Fixtures and Fittings*

Refer also to Part C of these Guidelines and Standard Components for Fixtures and Fittings.

The equipment layout of the Morgue Unit shall ensure:

- Adequate provision for operation and maintenance
- Provision of services as required
- Doors sized to allow for delivery and removal of the equipment
- Design for the required heat loads
- Adequate provision for weight loads.

Safety Showers and Eye Washes

Provide safety shower and eyewash or eye/face wash equipment.

22.3.8 *Building Service Requirements*

Refer also to Part E of these Guidelines.

Air-Conditioning, Heating and Ventilation

The temperature of the body holding area should be maintained within a comfortable range not exceeding 20–21°C. The ventilation system should be isolated from other ventilation systems by being designed to minimize the spread of odors and airborne pathogens.

Air-conditioning to the unit is to be isolated – there should be no return air. Discharge air should be treated with UV to destroy pathogens coming from infected bodies. The exhaust air distributive elements should be with low speed (up to 0.5 m/s) and depending upon the type of dissecting utilized, the air extraction may be at the top (utilizing a hood) or at low level.

In gross specimen storage rooms, the extraction grill should be in the ceiling, above the sink counter area to exhaust chemical fumes with another grille installed at low level. It may be also be beneficial to consider installing an oxygen depletion sensor in the vicinity.

Alarms

The operating temperatures of all cooled and freezing facilities should be continuously monitored and fitted with alarms which are activated when the temperature exceeds a predetermined level. The alarms should be transmitted to a permanently manned station.

Communications

It is recommended that an intercom be provided from the main/exit door to the to the body preparation room, to alert attendants.

Lighting

Provide adequate lighting in all areas.

Power Supply

Provide protective covers to power supply outlets to protect outlets from wetting. Provide an emergency back-up system for the power supply to the refrigeration, high priority equipment and illumination.

22.4 Components of the Unit

22.4.1 *Standard Components*

The Hospital Morgue Unit will contain Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components, Room Data Sheets and Room Layout Sheets.

22.5 Schedule of Accommodation

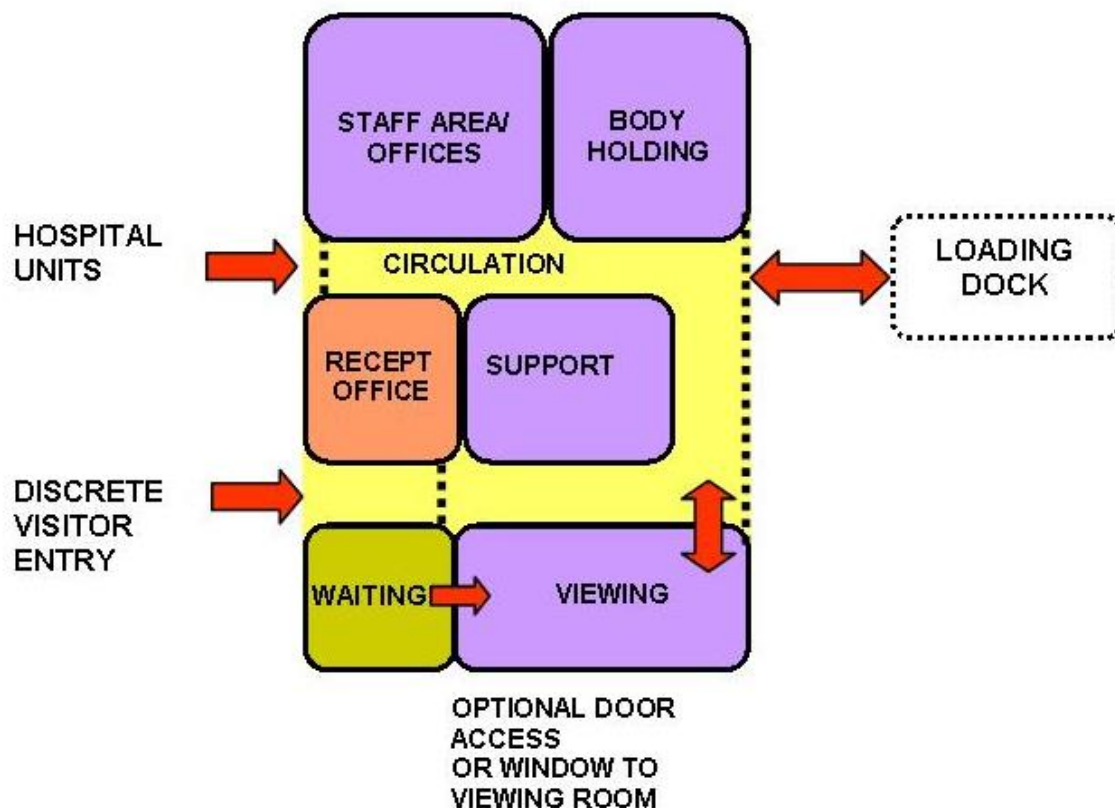
Typical Hospital Morgue Unit at levels 3 to 6

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entry/Reception							
Reception/Clerical	RECL-10-SJ				1 x 12	1 x 12	
Waiting – Male/Female	WAIT-10-SJ				2 x 10	2 x 20	Separate Female Waiting
Waiting – Family	MOR-W-SJ				1 x 20	1 x 30	
Multi-purpose Room	MEET-L-15-SJ					1 x 20	Quiet room, meetings etc.
Toilet – Accessible	WCAC-SJ				1 x 6	1 x 6	May share general public amenities
Toilet – Public, 3m ²	WCPU-3-SJ				1 x 3	1 x 3	May share general public amenities
Operational Areas							
					9 Cabinets	45 Cabinets	
Airlock – Entry	AIRLE-10-SJ Similar				1 x 6	1 x 6	
Bay – Handwashing, Type B	BHWS-B-SJ				2 x 1	2 x 1	At Entry and Exit
Bay – Mortuary Trolley Parking	BMEQ-4-SJ Similar				1 x 4	1 x 6	
Cleaner's Room	CLRM-5-SJ				1 x 5	1 x 5	
Disposal Room	DISP-8-SJ				1 x 8	1 x 8	
Mortuary – Cool Store	MOR-CS-SJ				1 x 25	1 x 75	Body holding cabinets x three tiers in height, hoist, with maintenance access
Mortuary – Viewing Room	MOR-VR-SJ				1 x 8	1 x 20	
Preparation Room (family access)					1 x 15	1 x 20	
Store – General	STGN-8-SJ				1 x 6	1 x 10	Consumable and general stock
Mortuary – Exit Lobby	MOR-EX-SJ				1 x 8	1 x 8	Visual privacy, Airlock
Staff Areas							
Change – Staff (Male/Female)	CHST-12-SJ				2 x 8	2 x 12	
Office – Manager	OFF-S9-SJ				1 x 9	1 x 9	
Office – Workstation	OFF-WS-SJ				1 x 5.5	1 x 5.5	
Net Department Total					167.5	309.5	
Circulation %					20	20	
Grand Total					201.0	371.4	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

22.6 Functional Relationship Diagram



22.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 490 Hospital Mortuary/Autopsy Unit, Revision 5' 2013. Retrieved from website: [http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/\[B-0490\]%20Hospital%20Mortuary%20Autopsy%20Unit.pdf](http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/[B-0490]%20Hospital%20Mortuary%20Autopsy%20Unit.pdf) 2014
- World Health Organization Regional Office for the Eastern Mediterranean (Egypt). 'Ethical Practice in Laboratory Medicine and Forensic Pathology' 1999. Retrieved from website: <http://applications.emro.who.int/dsaf/dsa38.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

23.0 Inpatient Unit – Bariatric

23.1 Introduction

23.1.1 Description

The Bariatric Inpatient Unit is a specially designed, staffed and equipped service of a healthcare facility to provide support, rehabilitation, monitoring and treatment of the obese patient/s in a controlled multi-disciplined inpatient environment.

23.2 Planning

23.2.1 Operational Models

The Bariatric Inpatient Unit can be operated as a stand-alone Unit or as a designated area of an inpatient unit. A stand-alone Bariatric Inpatient Unit may accommodate the obese pre and post-surgical patient/s or patients with chronic disease and related co-morbidities.

Some examples of a stand-alone Bariatric Inpatient Unit may include:

- Bariatric Surgery Unit which provides care for obese patients undergoing weight loss surgery such as gastric banding or gastric bypass
- Bariatric Rehabilitation Unit to assist obese individuals who are committed to weight loss through a variety of supported service e.g. education, exercise planning and support, counselling, dietician consultation.

Levels of Care

The levels of care in the Unit will range from high acute and special care such as High Dependency with a progression to intermediate care while working towards discharge. Bariatric patients requiring 24-hour medical intervention should be transferred to a critical care unit such as ICU or CCU.

23.2.2 Planning Models

Bed Numbers

The preferred maximum number of patients in a stand-alone Bariatric Inpatient Unit is 12 for intermediate and more dependent patients to 20 patient beds for mostly ambulant/self-caring patients. The smaller number of patients would support a higher staff to patient ratio. More patient bedroom accommodation may be provided as required by the Clinical Service Planning document supported by the operational policies and guidelines for the proposed service.

The number of patient beds in a Bariatric Inpatient Unit if integrated in an Inpatient Unit should be determined by the endorsed clinical service plan, operational policies and guidelines. This Guideline discusses the requirements of an integrated six single bedroom Bariatric Inpatient Unit. The clustering of bariatric patient bedrooms is preferred for ease of patient management, their comfort and adjacency to bariatric equipment storage and physical therapy spaces.

Single bedrooms are recommended to allow for gender separation, support patient dignity, as well as provide patients and their visitors with personal individual private space. This Guideline discusses the requirements of a Bariatric Inpatient Unit with single bedroom provisions.

Where shared bedrooms are provided, the room spatial allowance should be sized accordingly. Each shared patient bedroom should be provided with adjacent separate shower and well-anchored toilet and adequate space for bariatric equipment as well as maneuvering space for patient lifters and staff. Supporting a patient's privacy and dignity is a critical consideration when designing a shared bedroom space.

23.2.3 Functional Areas

The Bariatric Inpatient Unit will consist of the following Functional Areas:

- Entry/Reception:
- Waiting Areas (may be shared)
- Meeting Room
- Inpatient Areas:
- Patient Bedrooms
- Ensuites
- Lounge
- Sitting Alcoves
- Gymnasium
- Clinical Support Areas:
- Cleaner's Room
- Clean Utility
- Dirty Utility
- Disposal
- Store rooms
- Staff Offices and Amenities:
- Offices and Workstations
- Meeting Room
- Staff Room
- Toilets and lockers.

Entry/Reception

Waiting Area

Patient and visitor waiting areas should be located close to the Bariatric Inpatient Unit. Obese and morbidly obese patients may also have obese family members and this should be taken into consideration when designing waiting areas to support a Bariatric Inpatient Unit.

The waiting area should be provided with general seating and a minimum of suitable 20% bariatric seating to accommodate up to a seating weight of 270kg, bariatric furniture width, height and depth are larger and will impact on the space and volume of seating that will fit into a space. Wheelchair spaces should be allocated to accommodate the width and depth of bariatric wheelchairs, and provided with power outlets for charging of mobility equipment.

For smaller units, the waiting area may be shared with a co-located FPU. If shared, the obese only sections in the waiting area should be avoided. Discretely incorporated bariatric rated two-seaters or built-in double seats which can also be used by the general public may be included in the design of the waiting area.

Meeting/Multi-Purpose Room

A Meeting Room is used for staff and patient/family conference and case conferences. This room may also be used as a Group Room for specific patient education such as health, lifestyle and nutrition education. This room should be located close to the main entrance of the unit with a second access from the unit. This will allow easy access for family and visitors without entering the unit and ease of access by patients during individual or group meetings.

Inpatient Areas

Patient Bedroom

All bedroom accommodations shall comply with the Standard Components. The bedroom should allow for more than one carer at any one time as well as equipment movement. Patient equipment for lifting and mobility support equipment requires adequate space for safe movement of patients and assisting staff.

Manual handling is a major cause of injury to staff and patients in Bariatric Inpatient Units. Overhead lifters such as ceiling -mounted patient lifters is recommended for all patient bedrooms. Where all bedrooms cannot be provided with ceiling -mounted lifters, 50% of the bedrooms are to have ceiling -mounted lifters and mobile lifters are to be used for other bedrooms and patients. The maximum weight capacity of the bariatric ceiling -mounted lifters will be determined by the facility's operational policies and guidelines. It would be recommended that at least one ceiling -mounted lifter in a bedroom has the capacity to support a maximum weight of 450kg

Patient Ensuite

The patient ensuite is to be directly accessible from the bedrooms.

Ceiling -mounted lifter connected to the bedroom lifter track is recommended for all patient ensuites. Where all ensuites cannot be provided with ceiling -mounted lifters from the bedroom to the ensuite, 50% of the ensuites are to have ceiling -mounted lifters from the bedroom to the ensuite. At least one bedroom to the ensuite is to be provided with a ceiling -mounted lifter track with a maximum weight capacity of 450 kilograms.

Lounge Room

The lounge room should be provided within the patient area of the unit. Television and other entertainment and reading materials may be provided. Bariatric seating and space for bariatric wheelchairs with power outlets for charging of equipment is essential.

Sitting Alcove

Patient sitting alcoves along the corridor may be provided to allow patients to rest while mobilizing around the unit. This alcove may also function as a space for informal conversation between patients and staff, support staff or between patients. The alcove is an alternative patient sitting area to the Lounge Room.

The nook may be provided with bariatric chairs or bariatric rated built-in seating.

Gymnasium

A gymnasium specifically designed for obese patients may be provided within the Unit depending on operational policies or guidelines. The gymnasium will be equipped with gym equipment which can support weights between 250 to 500kg. The patients will be assessed and a program developed that is able to support increased planned and supervised activities supported as part of the overall clinical multi-disciplined team management plan for the patient/s.

The gym may be equipped with wider plinth examination couches, stationary bikes, row machines, arm ergometers, elliptical machines, treadmills, and strength training equipment depending on the services provided by the facility. Group education may also be undertaken in this area.

Ceiling -mounted lifters may be installed in this area to support the weight of obese patients to assist them with transfer or self-rising from sitting position as well as support the patient during assisted mobilization. The gymnasium should include additional space for holding mobile lifting equipment, mobility equipment and bariatric wheelchairs.

Clinical Support Areas

Storage

Bariatric equipment should be stored as close as possible to patient areas to encourage their utilization regularly. The locating of patient manual handling equipment close to or in a patients bedroom should assist with staff utilization to support the patient and provide a safer environment.

Bariatric equipment tends to be larger and subsequently requires more space both in depth and width for each item, larger storage areas or additional smaller storage bays should be considered in a Bariatric Inpatient Unit. Where built-in overhead lifters are not provided in all patient bedrooms, the location and number of storage bays for lifting equipment should be determined early in the design phase of the project.

23.2.4 Functional Relationships

External

For Bariatric Inpatient Units, the principal concept of external planning should be to integrate the planning of the facility to create a safe and dignified entry and exit to the unit.

The Unit should have discreet patient access from Emergency Unit, Operating Unit, Critical Care areas and Imaging Department away from public traffic. Easy access to public lifts and shorter walking travel distances from the lift to the Unit is important to assist ambulant bariatric patients who have planned admission and discharge to walk to/from the Unit independently. The provision of seating areas for short resting breaks on the walking route should be considered.

Internal

The Bariatric Inpatient Unit should be designed so that the patient occupied areas form the core of the unit with direct access and observation of staff. Utility and storage areas should be accessible from both patient and staff work areas. Where a Bariatric Inpatient Unit is a designated as part of another unit, these shared areas should be easily accessible and functional to both units.

23.3 Design

23.3.1 General

The facility design, layout, access, finishes, furniture, fitting and building services may potentially influence the management of bariatric patient. The design of the Unit should respond to a variety of health care requirements of the obese patient. Some of these requirements include:

- Larger space requirements to accommodate special bariatric equipment
- Structural and other architectural design consideration to accommodate ceiling -mounted equipment e.g. patient lifters, toilet bowl fixation, vanity anchoring, grab rail support etc.
- Positioning of patient handling and mobilizing equipment in patient spaces such as bedrooms bathrooms, ensuites and lounge areas
- Climate control requirements – individual room sensors
- Modified care practices to suit patient needs
- OSH of patients and staff
- Evacuation path plans
- Ingress and egress requirements for doorways, corridors and lifts
- Infection prevention and Control.

23.3.2 *Environmental Considerations*

Natural Light

Natural light and views should be available from the Unit for the benefit of staff and patients. Windows are an important aspect of sensory orientation, and all bedrooms should have windows to reinforce day/night orientation.

Privacy

The design of the Unit should be able to support the privacy of patients. The functional design should consider the potential physical exposure of patients bodies when utilizing mobility and lifting equipment.

Acoustics

The Bariatric Inpatient Unit should be designed to minimize the ambient noise level within the unit and transmission of sound between patient areas, staff areas and public areas.

Consideration should be given to location of noisy areas or activity away from quiet areas including patient bedrooms and selection of sound absorbing materials and finishes.

23.3.3 *Space Standards and Components*

Accessibility – External

Ramps and handrails should be available at entrances of the facility to assist bariatric and other less ambulant patients to access the facility. The access path from the car park to the hospital entrance should accommodate the turning radius of bariatric wheelchairs.

Where bariatric beds with built-in weighing scales are not utilized or available bariatric bed weighing scale should be located in close proximity to areas of initial admission if not directly to the Bariatric Inpatient Unit e.g. Emergency Departments.

Accessibility – Internal

At least one facility lift should accommodate a patient on a bariatric bed with attending staff. Lifts should be designed with increased door clearance and weight capacity to accommodate the larger size of the transport equipment and the patient's weight. In new facilities without existing building restrictions, bariatric rated lifts should be located with other patient lifts and not in the service zone where its primary function is for transport of large and heavy medical equipment.

Review of access points to other areas of the facility such as inpatient rooms, treatment rooms, operating suites and other areas where bariatric patients may be treated.

Diagnostic equipment purchases should consider the imaging needs of bariatric patients e.g. ray table weight limits, MRI and CT table weight limits and diameter of the CT bore.

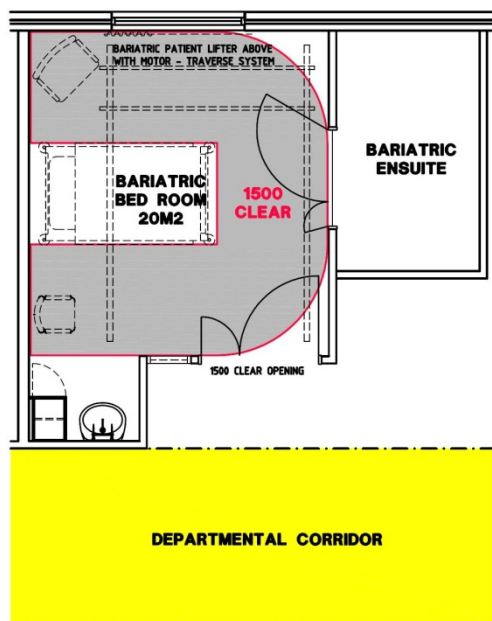
Ergonomics

Occupational Safety and Health (OSH) requirements must be adhered to in the design process to ensure the health and safety of the end users.

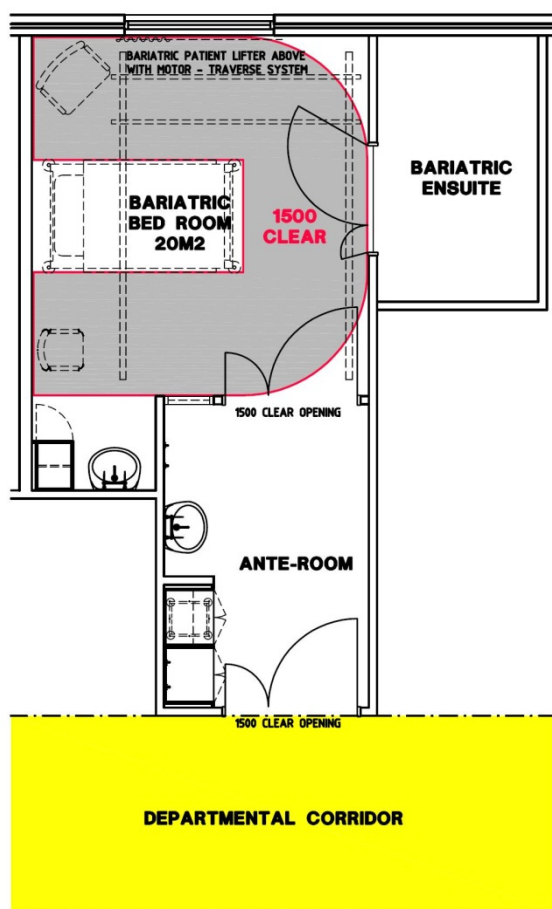
Patient Bedrooms

A minimum clear dimension of 1500mm is required between the sides and the foot of the bed from any wall or any fixed obstructions. Two configurations for Bariatric Bedrooms are shown below:

1 Bedroom – Bariatric



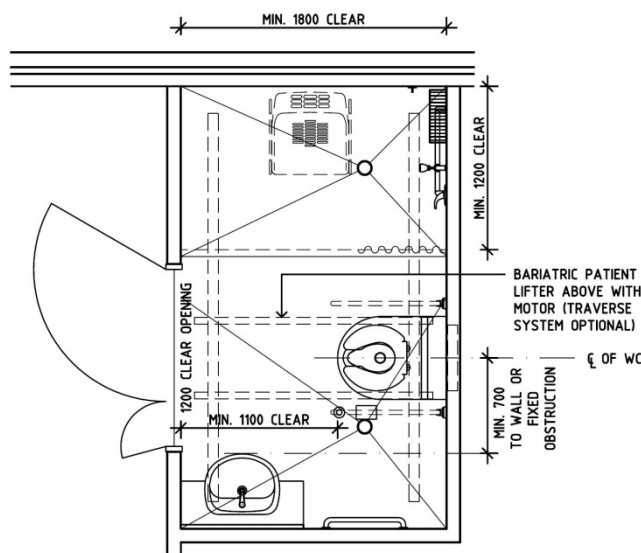
1 Bedroom – Bariatric (Isolation)



Ensuite

Ensuites should be sized to allow for staff assistance on two sides of the patient at the toilet and shower areas. The toilet pan should be floor fixed with bolts to the floor to support weights of up to 450kg and to be -mounted a minimum of 700mm from the finished wall or any fixed obstruction to the centerline of the toilet. A clear space of 1100mm should be provided on the opposite side of the toilet for wheelchair and commode access. Handrails, support rails and vanity basins should be fixed robustly to support the weight of the patients.

The dimension of the shower should be a minimum of 1200mm by 1800mm to allow for staff assistance. A Bariatric Ensuite configuration is shown below:



23.3.4 Safety and Security

Design of the facility and selection of furniture, fittings and equipment should ensure that users are not exposed to avoidable risks of injury.

Patient and visitor movements into and out of the Unit should be monitored to ensure safety of all users. Emergency call, staff assist call buttons and duress alarms should be installed in appropriate locations to alert other staff in the event of emergency.

Emergency evacuation path in the event of a bomb threat or fire should be established during the planning of the Bariatric Inpatient Unit. Evacuation routes should be established and the Bariatric Inpatient Unit should be designed as close as possible to appropriate exits.

23.3.5 Finishes

Floor surfaces that reduce or absorb impact if a patient falls may not be function or sufficiently robust with moving wheeled bariatric equipment as this may result in indentations, marring and shearing of material and should be considered when specifying floor finish. Carpeted or padded vinyl floors may also contribute to excessive shear forces of push and pull on staff as a result of pulling/pushing bariatric patients on wheeled equipment. Floor transitions must be designed to prevent tripping hazards, bumps and strain on staff pushing/pulling wheeled equipment.

23.3.6 Furniture and Equipment

All furniture and equipment for patient use must be bariatric rated to avoid incidences of breakage and injury to patient and staff.

Bariatric Beds

Some bariatric beds now come with built-in scales to accurately weigh bed bound patients without transferring the patient to a weighing scale. Pressure relieving mattresses can prevent pressure points which may arise in the obese patients who have with difficulty in repositioning when either sitting in a chair or lying in bed.

Seating

Bariatric rated reinforced chairs should be used in Bariatric Inpatient Units to avoid injury from broken furniture. Some patient chairs should have armrests and built-in seats should be provided with wall-mounted reinforced handrails to assist in self-rising.

Patient Lifters

Bariatric Inpatient Units aim to maintain, support, educate and improve mobility, independence and the strength of patients while in the Unit. To assist patients and staff, patient handling equipment should be incorporated as a critical design component of the facility.

The provision of appropriate lifting system is critical to the safe movement and supported mobility of patients and ensure safety of staff and support staff environment. Ceiling-mounted lifters are recommended for all patient bedrooms. Where ceiling-mounted lifters are provided, the traverse lifter is preferred as they generally have higher weight capacity and allows for wider area coverage of the room.

A combination of different types and weight requirements of patient lifters and transferring equipment should be considered in this unit. Standing aids maybe adequate for independent patients but passive patient lifters may be required for less ambulant bariatric patients. Passive patient lifters are also utilized to lift a patient from floor if a patient has a fall and required assistance to stand or be transferred to a bed.

Fixtures and Fittings

All fixtures must be bariatric compliant. Handrails along corridors should be reinforced to support mobilizing patients.

It is recommended that toilet seats be floor-mounted unless contraindicated by requirements of Accessibility Standards. Toilet and toilet seats should be able to withstand weight of up to 450kg. Hand washing basin in ensuites should withstand downward static force of 450kg at the edge of the sink.

Wall reinforcements and additional wall fixings may be required for all sanitary grab rails as well as towel rails to efficiently support obese patient in self-rising. Where drop down grab rail is used, heavy-duty rails are to be utilized with reinforced wall support to maintain the robustness and integrity of the rails.

Handheld showerheads are essential in the shower area with sufficient shower hose length to adequately reach areas for washing and be hung on a wall hook after use.

23.3.7 Structural Requirements

Structural engineers must be consulted to calculate the static and dynamic load limit of equipment and persons in order to ensure appropriate floor and ceiling reinforcement.

Ceiling reinforcements will be required in areas with ceiling-mounted lifters such as in patient bedrooms, ensuites and gymnasium.

23.3.8 *Building Service Requirements*

Air-Conditioning

Air-conditioning with temperature control is important in the nursing care of obese patients. Adjustable temperature control may be required to prevent patient overheating and reduce excessive perspiration.

Exhaust System

Storage areas for floor based patient lifters may require air-conditioning or exhaust system depending on the type of batteries to be charged to prevent noxious fumes accumulation in the room.

Nurse/Emergency Call

Nurse Call and Emergency Call facilities must be provided in all patient areas (e.g. bedrooms, toilets, showers, lounge room) and procedure areas in order for patients and staff to request urgent assistance. The individual call buttons will alert to a central module situated at or adjacent to the Staff Station.

23.3.9 *Infection Control*

Standard precautions must be taken for all clients regardless of their diagnosis or presumed infectious status. Patient lifter slings and transferring devices can be a source of infection from general use. Selected equipment should be easy to clean and comply with infection control requirements

Hand washing facilities for staff within the Unit should be readily available. Where a hand wash basin is provided, there shall also be liquid soap and disposable paper towel dispenser, garbage bin and PPE equipment provided.

For further details relating to the Infection control refer to Part D of these Guidelines.

23.4 Components of the Unit

The Bariatric Inpatient Unit will contain Standard Components to comply with details described in these Guidelines. Refer also to Standard Components, Room Data Sheets and Room Layout Sheets.

23.5 Schedule of Accommodation

Typical Inpatient Bariatric Unit at Levels 3 to 6

The number of Bedrooms provided will be determined by the endorsed Service Plan. For RDL 3|4 the 6 bed Bariatric Unit may be attached to another Inpatient Unit and share support and staff facilities. The 18 bed RDL 5|6 Bariatric Unit functions as a self-contained stand-alone unit.

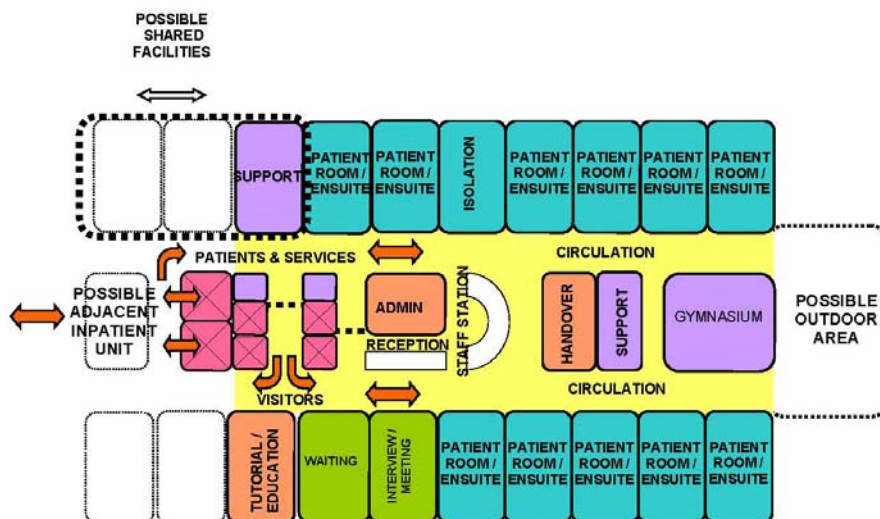
ROOM/SPACE	Standard Components				Level 3 4 Qty x m ²	Level 5 6 Qty x m ²	Remarks
Entry/Reception							
Waiting	WAIT-10-SJ				shared	1 x 15	Maybe combined with waiting area of another unit
Waiting – Family	WAIT-20-SJ WAIT-30-SJ				shared	1 x 30	
Toilet – Public	WCPU-3-SJ				shared	2 x 3	Optional if not available nearby
Toilet – Accessible	WCAC-SJ				shared	1 x 6	Optional if not available nearby
Consult Room – Special					shared	1 x 16	Suitable for bariatric use
Meeting/Multi-Purpose Room	MEET-L-15-SJ				shared	1 x 18	Maybe used as a Group Room
Patient Areas					6 Beds	18 Beds	
1 Bed Room – Bariatric	1 BR-BA-SJ				5 x 20	17 x 20	Provide min one bedroom with 450kg weight limit ceiling-mounted patient lifter
1 Bed Room – Bariatric (Negative Pressure)	1 BR-BA-SJ Similar				1 x 20	1 x 28	Provide ceiling-mounted patient lifter
Anteroom	ANRM-SJ				1 x 6	1 x 6	
Ensuite – Bariatric	ENS-BA-SJ				6 x 7	18 x 7	Provide at least one Ensuite with built-in patient lifter track
Lounge – Patient	LNPT-15-SJ				1 x 15	1 x 30	
Sitting Alcove						2 x 2	Locate along corridors
Gymnasium	GYAH-45-SJ					1 x 45	Optional. Dependent on operational policy.
Support Areas							
Bay – Beverage	BBEV-OP-SJ				1 x 4	1 x 4	
Bay – Blanket Warmer	BBW-SJ				1 x 1	1 x 1	As required
Bay – Handwashing, Type B	BHWS-B-SJ				2 x 1	4 x 1	In addition to handbasins within patient rooms; Near staff station/entry areas
Bay – Linen	BLIN-SJ				1 x 2	2 x 2	
Bay – Mobile Equipment	BMEQ-4-SJ				1 x 4	2 x 4	Locate in low traffic areas. For mobile equipment and patient lifters
Bay – Resuscitation Trolley	BRES-SJ				1 x 1.5	1 x 1.5	
Cleaner's Room	CLRM-5-SJ				shared	1 x 5	
Clean Utility	CLUR-12-SJ Similar				1 x 12	1 x 14	Medication room may be separate
Dirty Utility	DTUR-12-SJ Similar				1 x 10	1 x 12	
Disposal Room	DISP-8-SJ				shared	1 x 8	
Multi-purpose Room	MEET-L-15-SJ				shared	1 x 15	For meetings, staff education, case discussion, teleconferencing, etc.
Office – Clinical Handover	OFF-CLN-SJ				1 x 12	1 x 15	Close to Staff Station.
Staff Station	SSTN-14-SJ Similar				1 x 12	1 x 20	Decentralised staff stations may be provided
Store – Equipment	STEQ-16-SJ Similar				1 x 10	1 x 20	
Store – General	STGN-20-SJ Similar				1 x 8	1 x 20	
Staff Areas							
Office – Manager	OFF-S9-SJ				1 x 9.0	1 x 9.0	Nurse Manager

ROOM/SPACE	Standard Components				Level 3 4 Qty x m ²	Level 5 6 Qty x m ²	Remarks
Office – 3-Person Shared	OFF-3P-SJ					1 x 15.0	Allied Health, Nursing, Medical staff.
Office – Workstation	OFF-WS-SJ				1 x 5.5	2 x 5.5	Nursing educators, shared
Meeting Room	MEET-L-15-SJ				shared	1 x 15	For meetings, staff education, case discussion, teleconferencing etc.
Property Bay – Staff	PROP-3-SJ S				shared	2 x 3.0	Separate male/female locker areas
Staff Room	SRM-15-SJ				shared	1 x 15.0	
Toilet – Staff	WCST-SJ				shared	2 x 3.0	
Net Department Total					276.0	898.5	
Circulation %					35	35	
Grand Total					372.6	1213.0	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

23.6 Functional Relationship Diagram



23.7 Further Reading

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24.0 Inpatient Unit – General

24.1 Introduction

24.1.1 General

The prime function of the Inpatient Unit is to provide appropriate accommodation for the delivery of health care services including diagnosis, care and treatment to inpatients.

The Unit must also provide facilities and conditions to meet the needs of patients and visitors as well as the workplace requirements of staff.

24.1.2 Description

The Inpatient Accommodation Unit is for general medical and surgical patients. In larger health facilities this Unit includes specialist medical and surgical patients, for example, cardiac, neurology/neurosurgery, integrated palliative care and obstetric patients. Patients awaiting placement elsewhere may also be accommodated in this type of facility.

24.2 Planning

24.2.1 Models of Care

Models of Care for an Inpatient Unit may vary dependent upon the patients' acuity and numbers of, and skill level of the nursing staff available.

Examples of the models of care that could be implemented include:

- Patient allocation
- Task assignment
- Team nursing
- Case management
- Primary care (comprehensive range of generalist services by multi-disciplinary teams that include not only GPs and nurses but also allied health professionals and other health workers) or
- A combination of these.

The physical environment should permit of a range of models of care to be implemented, allowing flexibility for future change.

Levels of Care

The levels of care will range from highly acute nursing and specialist care (high dependency); with a progression to intermediate care prior to discharge or transfer (self-care).

Patients requiring 24-hour medical intervention or cover will generally not be nursed or managed within a general inpatient unit.

24.2.2 Planning Models

Bed Numbers and Complements

Each Inpatient Unit may contain up to 32 patient beds and shall have Bedroom accommodation complying with the Standard Components.

For additional beds up to 16 as an extension of a standard 32 bed Unit, this may be permitted with additional support facilities in proportion to the number of beds, for example 1 extra Sub Clean Utility, Sub Dirty Utility and storage.

For additional beds of more than 16, additional support facilities for a full unit (32 beds) will be required, located to serve the additional beds.

The preferred maximum number of beds in an acute Inpatient Unit in Maternity or Pediatric Units is 20–25 beds.

A minimum of 20 % of the total bed complement shall be provided as Single Bedrooms in an Inpatient Unit used for overnight stay; the current trend is to provide a greater proportion of single bedrooms largely for infection control reasons.

Swing Beds

For flexibility and added options for utilization it may be desirable to include provisions for Swing Beds. This may be a single bed, a group of beds that may be quickly converted from one category of use to another. An example might be long-stay beds which may be converted to acute beds.

At any given time, swing beds are part of an Inpatient Unit in terms of the total number of beds and the components of the unit. For example:

- Ward A + Swing Beds = One Inpatient Unit as per these Guidelines.
- Alternatively: Ward B + the same Swing Beds = One Inpatient Unit as per these Guidelines.

Facility design for swing beds will often require additional corridor doors and provision for switching patient/nurse call operation from one Staff Station to another. Security is also an issue, for example, converting General/Medical beds to Pediatric beds.

Unit Planning Options

There are a number of acceptable planning options for Inpatient Units including:

- Single Corridor – Patient and support rooms are clustered along a single corridor
- Double Corridor – racetrack; patient rooms are located on the external aspects of the space and support rooms are clustered in the central areas in a racetrack configuration
- Combinations: – L, T and Y shaped corridors, patient rooms are located along external aspects, support areas may be located in a central core area.

24.2.3 Functional Areas

The Inpatient Accommodation Unit will comprise the following Functional Areas or zones:

- Patient Areas – areas where patients are accommodated or facilities specifically serve patients
- Staff Areas – areas accessed by staff, including utility and storage areas
- Shared Areas – areas that may be shared by two or more Inpatient Units.

24.2.4 Functional Relationships

External

Principal relationships with other Units include:

- Easy access from the Main Entrance of a facility
- Inpatient Units must not be located so that access to one Unit is via another
- Ready access to diagnostic facilities such as Medical Imaging and Pathology
- Ready access to Emergency and Critical Care Units
- Surgical Units require ready access to Operating/Day Procedures Units
- Ready access to staff amenities.

Internal

Optimum internal relationships include:

- Patient occupied areas as the core of the unit
- The Staff Station and associated areas need direct access and observation of Patient Areas
- Utility and storage areas need ready access to both patient and staff work areas
- Public Areas should be on the outer edge of the Unit
- Shared Areas should be easily accessible from the Units served.

24.3 Design

24.3.1 Environmental Considerations

Acoustics

The Inpatient Unit should be designed to minimize the ambient noise level within the unit and transmission of sound between patient areas, staff areas and public areas.

Consideration should be given to location of noisy areas or activity away from quiet areas including patient bedrooms and selection of sound absorbing materials and finishes.

Acoustic treatment will be required to the following:

- Patient bedrooms,
- Interview and meeting rooms
- Consult rooms
- Staff rooms
- Toilets and showers.

Refer also to Part C of these Guidelines.

Natural Light

The use of natural light should be maximized throughout the Unit. Natural light must be available in all bedrooms.

Observation and Privacy

The design of the Inpatient Unit needs to consider the contradictory requirement for staff visibility of patients while maintaining patient privacy. Unit design and location of staff stations will offer varying degrees of visibility and privacy. The patient acuity including high dependency, elderly or intermediate care will be a major influence.

Factors for consideration include:

- Use of windows in internal walls and/or doors
- Location of beds that may affect direct staff visibility
- Provision of bed screens to ensure privacy of patients undergoing treatment;
- Location of sanitary facilities to provide privacy for patients while not preventing observation by staff.

24.3.2 Space Standards and Components

Room Capacity and Dimensions

Maximum room capacity shall be four patients.

Minimum dimensions, excluding such items as ensuites, built-in robes, alcoves, entrance lobbies and floor -mounted mechanical equipment shall be as follows:

ROOM TYPE	WIDTH	LENGTH
Single Bedroom	3450mm	3600mm
Two Bedroom	3450mm	5600mm
Four Bedroom	6100mm	5600mm

Minimum room dimensions are based on overall bed dimensions (buffer to buffer) of 2250mm long x 1050mm wide. Minor encroachments including columns and hand basins that do not interfere with functions may be ignored when determining space requirements

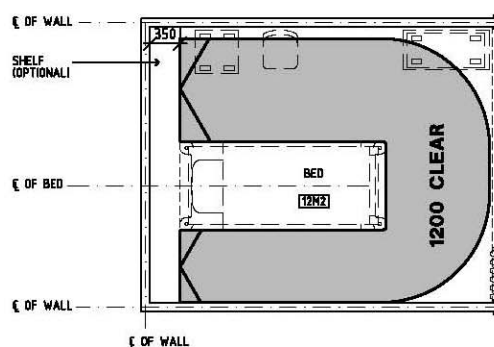
Bed Spacing/Clearances

Bed dimensions become a critical consideration in ascertaining final room sizes. The dimensions noted in these Guidelines are intended as minimums and do not prohibit the use of larger rooms where required.

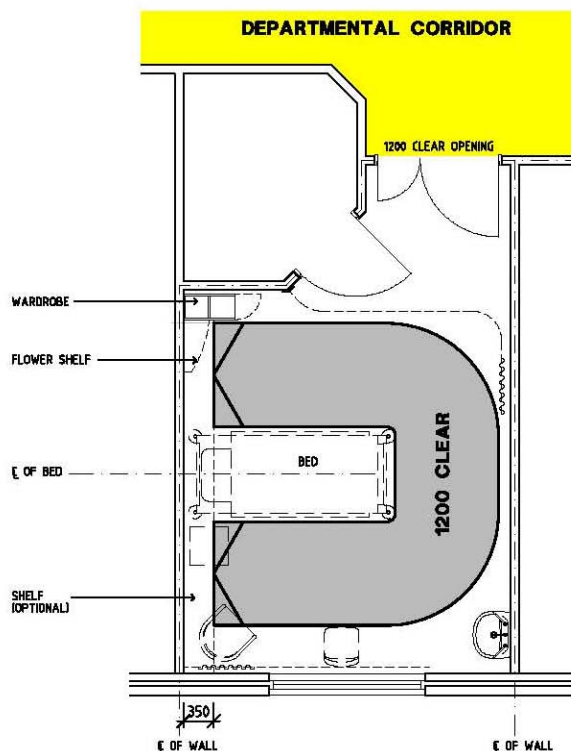
In bed rooms there shall be a clearance of 1200mm available at the foot of each bed to allow for easy movement of equipment and beds.

This is represented diagrammatically below:

 **NO FIXED OBJECTS IN CLEAR CIRCULATION ZONE**



1. TYPICAL BED BAY

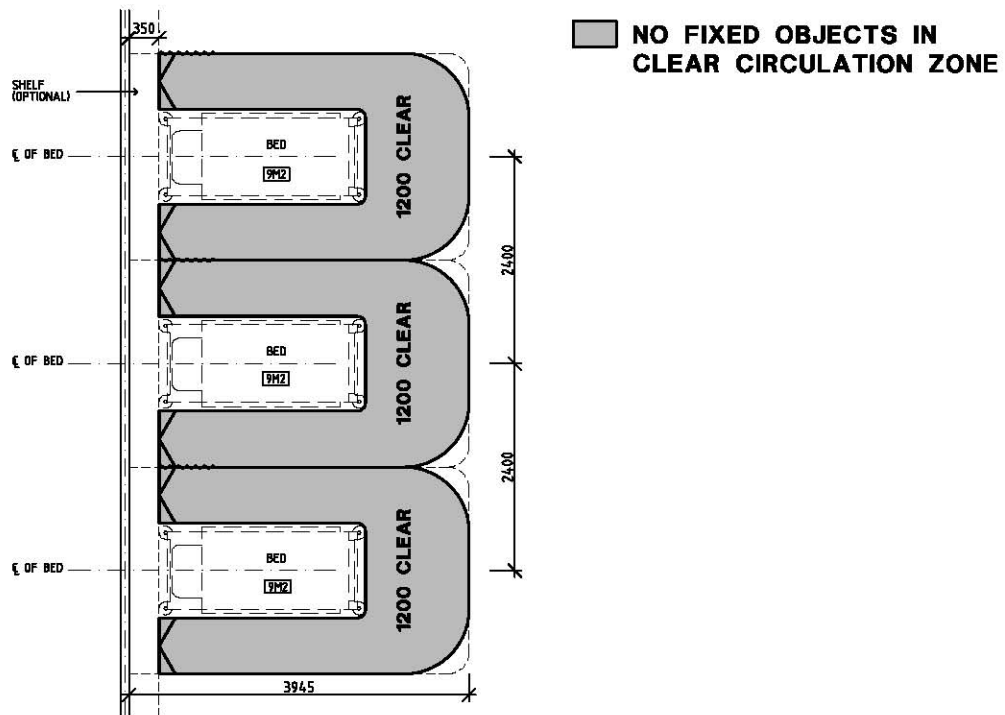


2. TYPICAL BED ROOM

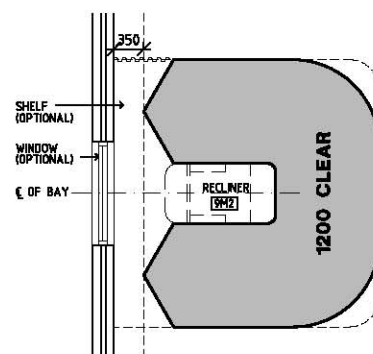
In multiple-bed rooms, the minimum distance between bed center lines shall be 2400mm.

Pediatric bedrooms that contain cots may have reduced bed centers, but consideration must be given to the spatial needs of visiting relatives. To allow for more flexible use of the room the 2400mm center line is still recommended. Consider allowing additional floor area within the room for the children to play.

The clearance required around beds in multiple-bed rooms and chair spaces is represented diagrammatically below:



3. TYPICAL OPEN PLAN BED BAYS



4. TYPICAL CHAIR SPACE

Bariatric Patient Facilities

In each Inpatient Unit provide facilities for bariatric patients according to the facility Operational Policy. Provisions will include:

- Large single Bedroom; Bedrooms will require additional space for a bariatric bed and lifter access
- Large single Ensuite, with access door to permit lifter access with staff assisting patient transfers

All fixtures and fittings for bariatric patients will need to accommodate up to 350kg weight
 Ceiling suspended lifting system may be considered between the Bedroom bed area and the adjacent Ensuite.

24.3.3 Access, Mobility and OSH (Occupational Safety and Health)

Patient wheelchair access bedrooms and ensuites should enable normalization of activity for wheelchair dependent patients, as opposed to patients who are in a wheelchair as a result of their hospitalization.

24.3.4 Infection Control

Handbasins

Hand-washing facilities shall not impact on minimum clear corridor widths. At least one is to be conveniently accessible to the Staff Station. Handbasins are to comply with Standard Components – Bay – Hand-washing and Part D – Infection Control.

Isolation Rooms

At least one 'Class S – Standard' Isolation Room shall be provided for each 32 bed Inpatient Unit. At least one 'Class N – Negative Pressure' Isolation Room shall be provided for each 100 beds in facilities of level four and above. These beds may be used for normal acute care when not required for isolation.

24.3.5 Safety and Security

An Inpatient Unit shall provide a safe and secure environment for patients, staff and visitors, while remaining a non-threatening and supportive atmosphere conducive to recovery.

The facility, furniture, fittings and equipment must be designed and constructed in such a way that all users of the facility are not exposed to avoidable risks of injury.

Security issues are important due to the increasing prevalence of violence and theft in health care facilities.

The arrangement of spaces and zones shall offer a high standard of security through the grouping of like functions, control over access and egress from the Unit and the provision of optimum observation for staff. The level of observation and visibility has security implications

Drug Storage

Each Inpatient Accommodation Unit shall have a lockable storage area or cupboard containing:

- Benches and shelving
- Lockable cupboards for the storage of restricted substances
- A lockable steel cabinet for the storage of drugs of addiction
- A refrigerator, as required; to store restricted substances, it must be lockable or housed within a lockable storage area
- Space for medication trolley.

Note: Storage for dangerous drugs must be in accordance with the relevant legislation.

24.3.6 *Finishes*

Finishes including fabrics, floor, wall and ceiling finishes, should be selected with consideration to infection control, ease of cleaning and fire safety, while avoiding an institutional atmosphere. In areas where clinical observation is critical such as bedrooms and treatment areas, color selected must not impede the accurate assessment of skin tones.

24.3.7 *Fixtures and Fittings*

Bed Screens

In multiple-bed rooms, visual privacy from casual observation by other patients and visitors shall be provided for each patient. The design for privacy shall not restrict patient access to the entrance, toilet or shower.

Curtains/Blinds

Each room shall have partial blackout facilities (blinds or lined curtains) to allow patients to rest during the daytime.

24.3.8 *Building Services Requirements*

Information Technology/Communications

Unit design should address the following Information Technology/Communications issues:

- Paperless records
- Hand-held computers
- PACS
- Paging and personal telephones replacing some aspects of call systems
- Data entry including scripts and investigation requests
- Email
- Bar coding for supplies and X-Rays/Records.

Nurse Call

Hospitals must provide an electronic call system that allows patients and staff to alert nurses and other health care staff in a discreet manner at all times. Patient calls are to be registered at the Staff Stations and must be audible within the service areas of the Unit including Clean Utilities and Dirty Utilities. If calls are not answered the call system should escalate the call priority. The Nurse Call system may also use mobile paging systems or SMS to notify staff of a call.

Patient Entertainment Systems

Patients may be provided with the following entertainment/communications systems according to the Operational Policy of the facility:

- Television
- Telephone
- Radio
- Internet.

Dialysis Stations

The Inpatient Unit should provide one Bedroom with a dialysis drain for use with mobile dialysis equipment, as needed by the Unit Operational Policy.

Pneumatic Tube Systems

The Inpatient Unit may include a pneumatic tube station, as determined by the facility Operational Policy. If provided the station should be located in close proximity to the Staff Station or under direct staff supervision.

Hydraulics

Warm water supplied to all areas accessed by patients within the Inpatient Unit must not exceed 43⁰ C. This requirement included all staff hand wash basins and sinks located within patient accessible areas.

24.4 Components of the Unit

24.4.1 *Standard Components*

The Inpatient Unit will consist of Standard Components which must comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets

24.5 Schedule of Accommodation

24.5.1 Typical Inpatient Unit suitable for all levels

Although categorized by level of service, this does not necessarily lead to different physical requirements.

The Schedule of Accommodation lists generic spaces that form an Inpatient Unit. Quantities and sizes of some spaces will need to be determined in response to the service needs of each unit on a case by case basis.

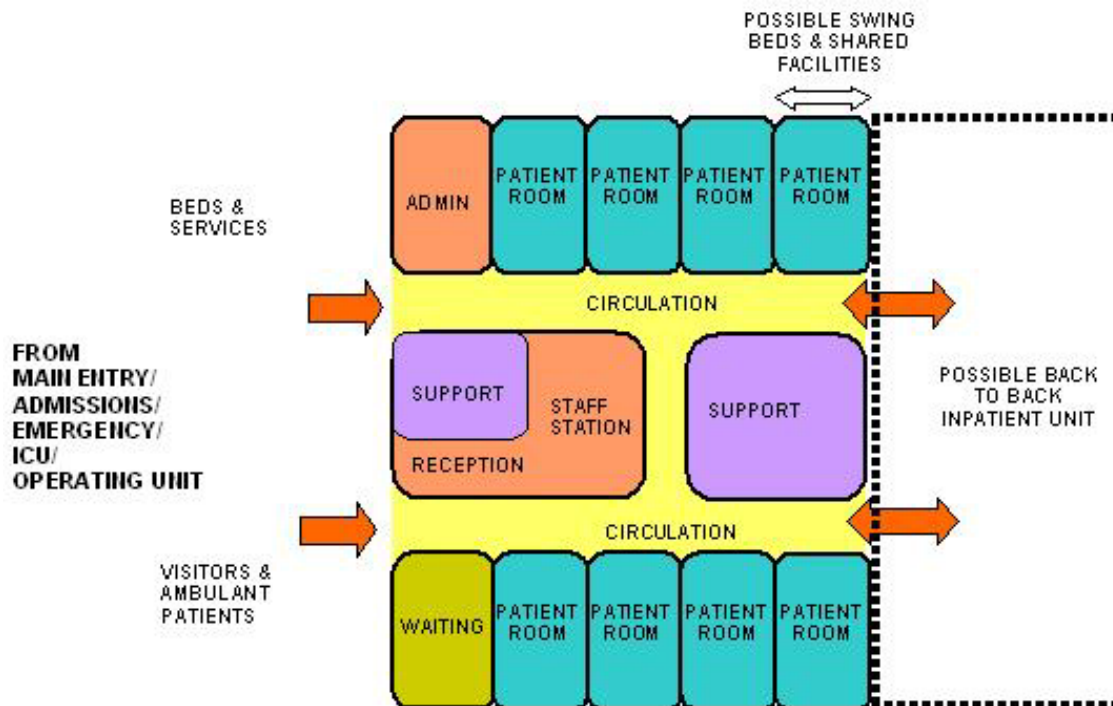
ROOM/SPACE	Standard Component							ALL Levels Qty x m ²	Remarks
Patient Areas									
1 Bed Room – Standard	1 BR-ST-SJ							8 x 18	Mix and no. depend on service demand
1 Bed Room – Large	1 BR-LG-SJ							2 x 28	Min. one per facility; May be used for Bariatric/special patients
2 Bed Room	2 BR-ST-SJ							7 x 28	Mix and no. depend on service demand
4 Bed Room								1 x 49	Optional, depends on service demand
1 Bed Room – Isolation – Negative Pressure	1 BR-IS-N-SJ							2 x 28	Class N; As required by service demand
Anteroom	ANRM-SJ							2 x 6	For 1 Bed Isolation Negative Pressure; as needed
Ensuite – Standard	ENS-ST-SJ							17 x 5	1 each for 1 Bed and 2 Bed rooms, 2 for 4 Bed Rooms
Ensuite – Super	ENS-SP-SJ							2 x 6	For 1 Bed Room – Large; Special fittings for Bariatrics
Lounge – Patient	LNPT-15-SJ							1 x 20	May be shared between Units
Laundry – Patient	LAUN-PT-SJ							1 x 6	For Specialist areas e.g. Rehab; As needed by service demand
Staff Areas									
Bay – Beverage	BBEV-OP-SJ							1 x 4	Open bay. Increase area to 5m ² if enclosed room
Bay – Flowers, Open	BFLW-OP-SJ							1 x 2	Optional
Bay – Handwashing, Type B	BHWS-B-SJ							5 x 1	Unit entrance and corridor recesses, as required.
Bay – Linen	BLIN-SJ							2 x 2	At least one bay per 15 beds
Bay – Meal Trolley	BMEQ-4-SJ Similar							1 x 4	Size may vary depending on size of meal trolley
Bay – Mobile Equipment	BMEQ-4-SJ							1 x 4	Number depends on equipment to be stored and frequency of use
Bay – PPE	BPPE-SJ							6 x 1	Shared between single and Isolation rooms, as required; Refer to Part D
Bay – Resuscitation Trolley	BRES-SJ							1 x 1	
Cleaner's Room	CLRM-5-SJ							1 x 5	Include cupboard for dry goods
Clean Utility	CLUR-12-SJ Similar							1 x 14	With two door access, includes medication
Dirty Utility	DTUR-12-SJ Similar							1 x 14	More than one may be required to minimise travel distances
Disposal Room	DISP-8-SJ							1 x 8	May be shared between units
Meeting Room – Small	MEET-9-SJ							1 x 9	Interview function, small meetings
Office – Single Person	OFF-S9-SJ							1 x 9	Nurse Manager
Office – Clinical/Handover	OFF-CLN-SJ							1 x 15	Locate near staff station
Office – 2-Person Shared	OFF-2P-SJ							1 x 12	Nursing/Medical; Depends on service demand and operational policy.
Office – 3-Person Shared	OFF-3P-SJ							1 x 15	Allied Health/Medical; May be allocated as write up bays
Office – Workstation	OFF-WS-SJ							1 x 5	For ward clerk unless accommodated at Staff Station
Property Bay – Staff	PROP-3-SJ							2 x 3	Number of lockers depends on staff complement per shift

ROOM/SPACE	Standard Component							ALL Levels Qty x m ²	Remarks
Staff Station – Main	SSTN-14-SJ							1 x 14	Size, location determine for each facility
Staff Station – Satellite	SSTN-5-SJ							1 x 5	Optional decentralised bays; Location and number depends on unit plan
Store – Drugs	STDR-5-SJ							1 x 5	Medication Room (if not included in Clean Utility Room)
Store – Equipment	STEQ-16-SJ Similar							1 x 20	Access to patient areas, size depends on equipment stored
Store – General	STGN-8-SJ Similar							1 x 9	Size in accordance with service demand and operational policies
Store – Photocopy/Stationery	STPS-8-SJ							1 x 8	Collocate with Ward Clerk
Staff Room	SRM-15-SJ							1 x 15	Unit-specific space, with beverage bay
Toilet – Staff	WCST-SJ							2 x 3	
Shared Areas									
Bathroom	BATH-SJ							1 x 15	Provide one per floor, or as required by service demand
Lounge – Patient/Family Room	LNPT-15-SJ Similar							1 x 20	Optional. Dependent on service demand, proportion of single rooms
Multi-purpose Room	MEET-L-15-SJ							1 x 15	Size depends on room usage requirements
Treatment Room	TRMT-SJ							1 x 14	For specialist units, or shared; Depends on operational policy
Toilet – Public	WCPU-3-SJ							2 x 3	May share general public amenities
Toilet – Accessible (Public)	WCAC-SJ							1 x 6	May share general public amenities
Super VIP Suite (Optional)									
1 Bed Room – Super VIP	1 BR-SVIP-SJ							1 x 50	Provide according to service demand
Ensuite – Super VIP	ENS-SVIP-SJ							1 x 20	Provide according to service demand
Store – Equipment	STEQ-10-SJ							1 x 10	Provide according to service demand
Pantry – Super VIP	PTRY-SVIP-SJ							1 x 12	Provide according to service demand
Lounge/Dining – Super VIP	LD-SVIP-SJ							1 x 37	Provide according to service demand
Family/Carer Room								1 x 33	Provide according to service demand
Ensuite – Visitor	ENS-VIS-SJ							1 x 5	Provide according to service demand
Net Department Total								1103.0	
Circulation %								32	
Grand Total								1456.0	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

24.6 Functional Relationship Diagram



24.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
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- Grube, M. , Kaufman, K. and York, R. 'Decline in Utilization Rates Signals a Change in the Inpatient Business Model' HealthAffairs Blog (US) 2013. Retrieved from website: <http://healthaffairs.org/blog/2013/03/08/decline-in-utilization-rates-signals-a-change-in-the-inpatient-business-model/> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

25.0 Intensive Care Unit

25.1 Introduction

25.1.1 Description

Intensive Care is a dedicated unit for critically ill patients who require invasive life support, high levels of medical and nursing care and complex treatment. The intensive care unit provides a concentration of clinical expertise, technological and therapeutic resources which are coordinated to care for the critically ill patient.

25.2 Planning

25.2.1 Operational Models

The level of Intensive Care available should support the delineated role of the particular hospital. The role of a particular ICU will vary, depending on staffing, facilities and support services as well as the type and number of patients it has to manage.

There are a number of operational models applicable to intensive care units including:

Combined Critical Care

The Combined Critical Care may include a High Dependency Unit, Intensive Care and/or Coronary Care, often located in a rural or regional hospital where flexibility of bed utilization is important. This will allow short and medium term intensive care patients to be managed appropriately when required, and at other times, the Unit may be used for the more common cardiology or high dependency patients. These Units have lower medical and nursing demands, and will usually be staffed on a nurse/patient ratio of significantly less than 'one to one'.

Combined General Intensive Care

In this model the Intensive Care consists of all patient specialties such as cardiothoracic surgery, orthopedics, neurosurgery, and general medical patients. These Units will usually have a combination of intensive care and high dependency beds.

This model may be adopted where there are limited numbers of sub-specialty critical patients. The disadvantage of this model is that if the general intensive care is fully occupied, critical sub specialty cases may need to remain in standard inpatient units for treatment.

Hot Floor

The 'Hot Floor' model of Intensive Care can be collocated with specialty Intensive Care Units such as cardiothoracic, neurosurgical and general intensive care and may include a high dependency unit.

A comprehensive 'Hot Floor' model may include collocation of ICU with Operating Unit, Emergency, CCU and parts or all of Medical Imaging. The Hot Floor model has the principal advantage of collocating services, avoiding duplication and with a single management structure, allows a more efficient medical and nursing overview.

Advantages of the Hot Floor model include:

- Enables standardization of equipment across the Hot Floor avoiding duplication and minimizes service costs
- Assists practitioners particularly medical and nursing to develop expertise in the specialties
- Prevents access blockage to general ICU beds optimizing patient throughput.

The disadvantages of a Hot Floor involve:

- The management of a large group of nurses and doctors
- Infection control risks including cross infection of patients in co-located units.

Separate Intensive Care Units

This model covers a range of specialty Intensive Care Units provided as disconnected units in separate locations, with an independent management structure for each unit.

Advantages of this model include:

- May help to avoid bed blockages by allowing different groups to control the Intensive Care resources
- Encourages the development of sub-specialty medical and nursing skills.

Disadvantages include duplication of management, policies and procedures and physical isolation of units that may make staffing more difficult.

25.2.2 Functional Areas

The Intensive Care Unit will consist of the following Functional Areas:

- Reception/Waiting Areas
- Patient Treatment Areas including patient beds, ensuites and treatment rooms
- Support Areas including Utility Rooms, Store Rooms, Linen, Disposal Room, Cleaner's Room, Pantry
- Administrative/Office Areas
- Staff Amenities Areas.

Entry/Reception/Waiting Areas

As determined by the size of the ICU and hospital operating policy, a Reception and visitor's/relatives' Waiting Areas shall be provided immediately outside the entry to the ICU, but away from patient and staff traffic areas. It is desirable that this room has provision for a drink dispenser, radio, television and comfortable seating. An Interview Room and a separate area for distressed relatives should be available.

Biomedical Workshops

Dependent upon the size and intended use of the ICU, a dedicated electronic and pneumatic equipment maintenance service may have to be accommodated within the hospital or a 24-hour on-call emergency service made available. This same service would cover the Operating, Emergency and Medical Imaging Units.

If a dedicated workshop is provided, its location should be in an area that is equally accessible to all of the above mentioned departments. The facility should have a degree of sound-proofing and be accessible from a non-sterile area.

Laboratory Facilities

All ICUs must have available 24-hr clinical laboratory services. When this service cannot be provided by the central hospital Laboratory, a satellite laboratory within or immediately adjacent to, the ICU must serve this function. Satellite facilities must be able to provide minimum chemistry and hematology testing, including arterial blood gas analysis.

Overnight Accommodation

Depending upon the availability of nearby commercial accommodation, consideration should be given to the provision of overnight accommodation for relatives and staff, preferably near the unit. This will be dependent upon the size and intended function of the ICU. A motel type bed-sitter level of provision is recommended.

Special Procedures Rooms

A Special Procedures Room shall be provided if required by the Operational Policy.

If a special Procedures Room is required, it should be located within, or immediately adjacent to, the ICU. One special Procedures Room may serve several ICUs in close proximity. Consideration should be given to ease of access for patients transported from areas outside the ICU.

Room size should be sufficient to accommodate the necessary equipment and personnel. Monitoring capabilities, equipment, support services, and safety considerations must be consistent with those services provided in the ICU proper. Work surfaces and storage areas must be adequate enough to maintain all necessary supplies and permit the performance of all desired procedures without the need for staff to leave the room.

Staff Facilities

A Staff Lounge shall be provided within the unit for staff to relax and prepare beverages. Inclusion of a window to the outside is desirable. A Library/Reference area with an appropriate range of bench manuals, textbooks and journals for rapid access 24-hours a day should be available within the Intensive Care Unit.

Storage Areas

Mobile equipment such as cardiopulmonary resuscitation trolleys and mobile X-Ray, that are used and located within the ICU, shall have storage areas that are out of traffic paths but conveniently located for easy access by staff. Consideration should be given to the ever increasing amount of equipment used in the unit.

25.2.3 *Functional Relationships*

The ICU should be a separate unit within the hospital with easy access to the Emergency Unit, Operating Unit and Medical Imaging.

The location shall be arranged to eliminate the need for through traffic.

25.3 Design

25.3.1 *Patient Treatment Areas*

Patients must be situated so that healthcare providers have direct or indirect visualization, such as by video monitoring, at all times. This approach permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of vision between the patient and the central Staff Station. In ICUs with a modular design, patients should be visible from their respective nursing substations.

Sliding glass doors and partitions facilitate this arrangement and increase access to the room in emergency situations

Bedside Monitoring

Bedside monitoring equipment should be located to permit easy access and viewing, and should not interfere with the visualization of, or access to the patient. The bedside nurse and/or monitor technician must be able to observe the monitored status of each patient at a glance. This goal can be achieved either by a central monitoring station, or by bedside monitors that permit the observation of more than one patient simultaneously. Neither of these methods are intended to replace bedside observation.

Weight-bearing surfaces that support the monitoring equipment should be sturdy enough to withstand high levels of strain over time. It should be assumed that monitoring equipment will increase in volume over time. Therefore, space and electrical facilities should be designed accordingly.

Dialysis Facilities

Dialysis facilities should be provided to patient treatment areas according to the Unit's Operational Policy. As a minimum, dialysis facilities should be provided in the Isolation Room/s.

25.3.2 *Environmental Considerations*

Acoustics

Signals from patient call systems, alarms from monitoring equipment, and telephones add to the sensory overload in critical care units. Without reducing their importance or sense of urgency, such signals should be modulated to a level that will alert staff members, yet be rendered less intrusive.

For these reasons, floor coverings that absorb sound should be used while keeping infection control, maintenance, and equipment movement needs under consideration. Walls and ceilings should be constructed of materials with high sound absorption capabilities. Ceiling soffits and baffles help reduce echoed sounds. Doorways should be offset, rather than being placed in symmetrically opposed positions, to reduce sound transmission. Counters, partitions, and glass doors are also effective in reducing noise levels.

Natural Light

Natural light and views should be available from the Unit for the benefit of staff and patients. Windows are an important aspect of sensory orientation, and as many rooms as possible should have windows to reinforce day/night orientation. If windows cannot be provided in each room, an alternate option is to allow a remote view of an outside window or skylight.

25.3.3 *Space Standards and Components*

Where an open plan arrangement is provided, bed spaces shall be arranged so that there is a clearance of at least 1200mm from the side of the bed to the nearest fixed obstruction (including bed screens) or wall. At the head of the bed, at least 900mm clearance shall be allowed between the bed and any fixed obstruction or wall.

When an open plan arrangement is provided, a circulation space of 2200mm minimum clear width shall be provided beyond dedicated cubicle space.

Separate cubicles and Single Patient Bedrooms including Isolation Rooms, shall have minimum dimensions of 3900mm x 3900mm.

25.3.4 *Finishes*

In all areas where patient observation is critical, colors shall be chosen that do not alter the observer's perception of skin color.

25.3.5 *Fixtures and Fittings*

Clocks

An analogue clock/s with a second sweep hand shall be provided and conveniently located for easy reference from all bed positions and the Staff Station.

Bedside Storage

Each patient bed space shall include storage and writing provision for staff use.

Window Treatments

Window treatments should be durable and easy to clean. Consideration may be given to use of double glazing with integral blinds, tinted glass, reflective glass, exterior overhangs or louvers to control the level of lighting.

25.3.6 *Infection Control*

Handbasins

Clinical Hand-washing Facilities shall be provided convenient to the Staff Station and patient bed areas. The ratio of provision shall be one clinical hand-washing facility for every two patient beds in open-plan areas and one in each patient Bedroom or cubicle.

Isolation Rooms

At least one negative pressure Isolation Room per ICU shall be provided in Level 5 and 6 facilities. Entry shall be through an airlock. Clinical hand-washing, gown and mask storage, and waste disposal shall be provided within the airlock. An Ensuite – Special, directly accessible from the Isolation Room, shall also be provided.

All entry points, doors or openings, shall be a minimum of 1200mm wide, unobstructed. Larger openings may be required for special equipment, as determined by the Operational Policy.

25.3.7 *Building Service Requirements*

Mechanical Services

The unit shall have appropriate air-conditioning that allows control of temperature, humidity and air change.

Refer to Part E of these Guidelines for the specific requirements for Mechanical and Electrical provision.

Communications

All ICUs should have an intercommunication system that provides voice linkage between the Staff Station, Patient Modules, Staff-Overnight Stay Rooms, Conference Rooms, and Staff Lounge. Supply Areas and the Visitors' Lounge/Waiting Room may also be included in the system. When appropriate, linkage to key departments such as Blood Bank, Pharmacy, and Clinical Laboratories should be included. In addition to a standard telephone service for each ICU, which should provide hospital-wide and external communications capabilities, there should be a mechanism for emergency internal and external communications when normal systems fail.

Security

Entrance doors need to be secured to prevent unauthorized access. A video intercom with speech should be provided from entrance and exit door to main staff reception completed with door release button for staff access control.

25.4 Components of the Unit

25.4.1 *Standard Components*

The Intensive Care Unit will consist of Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets

25.5 Schedule of Accommodation

Typical Intensive Care Unit at Levels 3 to 6

The Schedule of Accommodation lists generic spaces that form an Intensive Care Unit. Quantities and sizes of some spaces will need to be determined in response to the service needs of each unit on a case by case basis.

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entrance/Reception Area							
Meeting Room	MEET-L-15-SJ				1 x 15	1 x 15	Family Interviews
Toilet – Public	WCPU-3-SJ				2 x 3	2 x 3	Separate Male and Female. Provide if not available nearby
Toilet – Accessible	WCAC-SJ				1 x 6	1 x 6	Optional if not available nearby
Waiting (Male/Female)	WAIT-30-SJ				1 x 20	1 x 30	1. 2m ² per able-bodied person; 1. 5m ² per wheelchair, separate female area
Waiting – Family	WAIT-30-SJ Similar				1 x 30	1 x 50	
Patient Areas					6 Beds	12 Beds	
Patient Bay – Critical	PBC-24-SJ				3 x 24	6 x 24	Group of not more than 12 beds with observation from Staff Station
Patient Bay – Critical (Enclosed)	PBCE-25-SJ				2 x 25	5 x 25	Group of not more than 12 beds with observation from Staff Station
Patient Bay – Critical (Enclosed) Class N Isolation	PBCE-25-SJ Similar				1 x 25	1 x 25	Qty to be determined by service needs. Locate away from Unit entrance.
Anteroom	ANRM-SJ				1 x 6	1 x 6	For Isolation Patient Bay, Class N (Negative Pressure)
Bathroom	BATH-SJ				1 x 16	1 x 16	Inclusion depends on operational policy
Bay – Linen	BLIN-SJ				1 x 2	1 x 2	
Bay – Resuscitation Trolley	BRES-SJ				1 x 1.5	1 x 1.5	
Bay – Beverage	BBEV-ENC-SJ				1 x 5	1 x 5	5m ² allows for enclosed room
Bay – Write-up/Observation					6 x 1	12 x 1	1 for each patient bay
Ensuite – Super					3 x 6	3 x 6	Sized for 'full assistance', i.e. two staff plus medical equipment.
Support Areas							
Bay – Blanket Warmer	BBW-SJ					1 x 1	As required
Bay – Handwashing, PPE	BHWS-PPE-SJ				2 x 1	2 x 1	In addition to basins in Patient Bays, at Entry/Exit and Staff Station
Bay – Mobile Equipment	BMEQ-4-SJ				1 x 4	2 x 4	Locate in quiet low traffic areas
Cleaner's Room	CLRM-5-SJ				1 x 5	1 x 5	
Clean Utility	CLUR-12-SJ				1 x 12	1 x 14	
Dirty Utility	DTUR-12-SJ				1 x 12	1 x 14	
Disposal Room	DISP-8-SJ				1 x 8	1 x 8	Inclusion depends waste management policies
Equipment Clean-Up, Sub Pathology	ECL-SP-SJ				1 x 8	1 x 16	Room may be resized for additional equipment
Respiratory/Biomedical Workroom	REWM-SJ				1 x 20	1 x 20	Inclusion depends on operational policy of unit
Staff Station	SSTN-20-SJ				1 x 14	1 x 20	
Store – Drugs	STDR-5-SJ					1 x 5	Optional; Inclusion depends on operational policy
Store – Equipment	STEQ-16-SJ				1 x 25	1 x 20	Maybe combined as one room
Store – Files	STFS-10-SJ					1 x 10	May be combined with Stationery Store
Store – General	STGN-20-SJ Similar				1 x 15	1 x 30	
Store – Photocopy/Stationery	STPS-8-SJ				1 x 8	1 x 8	
Store – Respiratory	STGN-12-SJ					1 x 20	Inclusion depends on operational policy
Store – Sterile Stock	STSS-12-SJ				1 x 12	1 x 24	

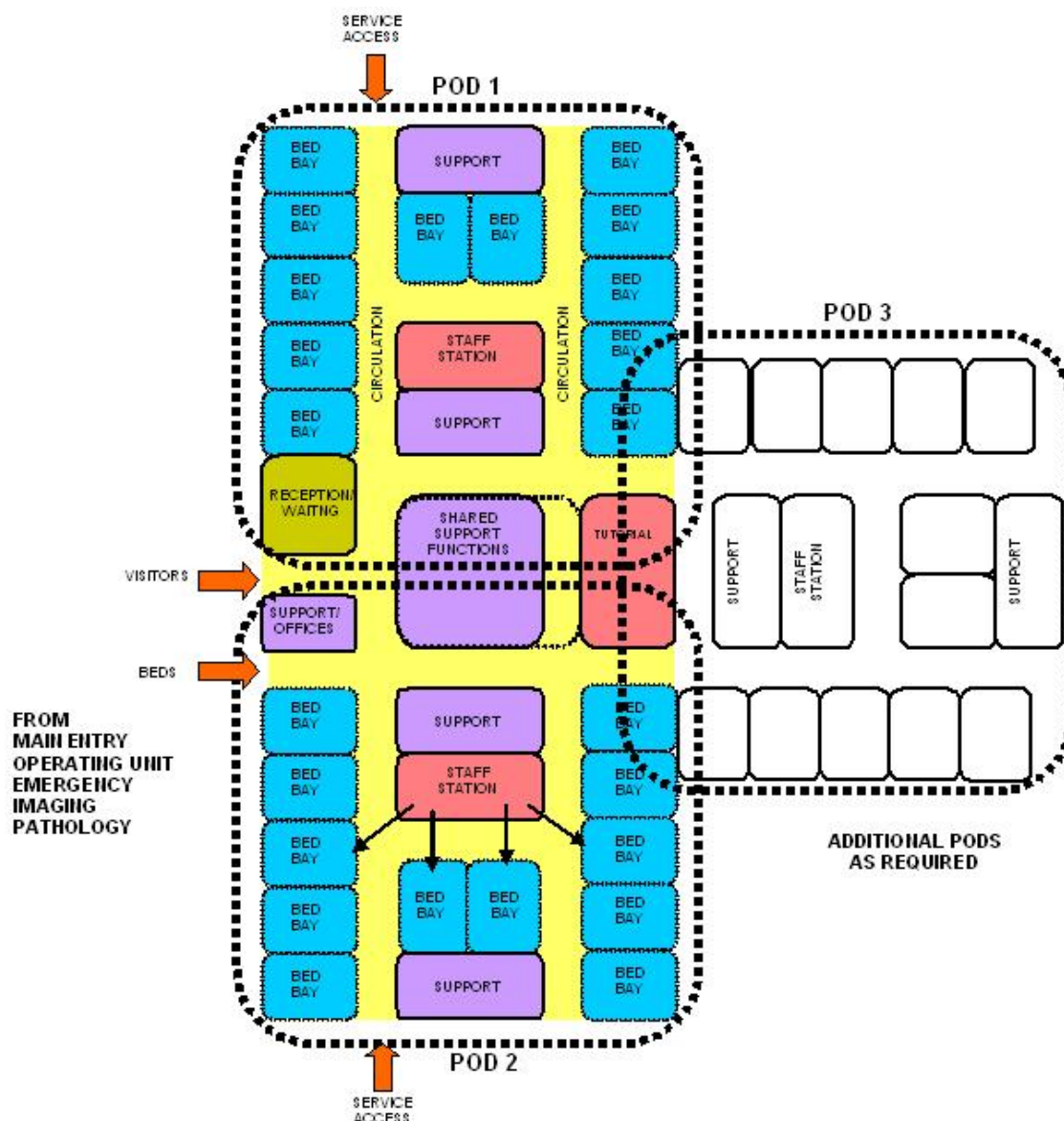
ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
X-Ray Viewing and	XRRR-SJ				1	x	12	1	x	12	
Staff Areas											
Meeting Room – Large	MEET-L-30-SJ							1	x	30	Seminar/Training/Library; 24-hour access; Perimeter of unit
Meeting Room – Medium	MEET-L-15-SJ				1	x	15	1	x	15	Seminar/Training/Library; 24-hour access; Perimeter of unit
Office – Clinical/Handover	OFF-CLN-SJ							1	x	15	Optional; Depends on operational policy; near Staff Station
Office – Single Person, 12m ²	OFF-S9-SJ Similar							1	x	12	Medical Director
Office – Single Person, 9m ²	OFF-S9-SJ				1	x	9	1	x	9	Nurse Unit Manager
Office – Single Person, 9m ²	OFF-S9-SJ				1	x	9	1	x	9	Staff Specialist
Office – 3-Person Shared	OFF-3P-SJ							1	x	15	Nursing/Medical Personnel according to number of staff
Office – Workstation	OFF-WS-SJ				4	x	5.5	8	x	5.5	Nursing/medical/research/secretarial; Number determined by staffing
Overnight Stay – Bedroom	OVBR-SJ							1	x	10	
Overnight Stay – Ensuite	OVES-SJ							1	x	4	
Staff Room	SRM-25-SJ Similar				1	x	20	1	x	35	
Change – Staff (Male/Female)	CHST-20-SJ Similar				2	x	15	2	x	35	Includes toilets, showers, lockers; depends on staffing
Net Department Total							540.5			966.5	
Circulation %							40			40	
Grand Total							756.7			1353.1	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.



25.6 Functional Relationship Diagram



NOTE: MAX 12 BEDS PER POD

25.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- College of Intensive Care Medicine of Australia and New Zealand (CICM). 'Minimum Standards for Intensive Care Units' 2011. Retrieved from website: www.cicm.org.au 2014
- DH (Department of Health) (UK). 'Health Building Note 57: Facilities for Critical Care' 2003. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2057.pdf> 2014
- Intensive Care Society (UK). 'Standards for Intensive Care Units' 1997. Retrieved from website: http://www.md.ucl.ac.be/didac/hosp/architec/UK_Intensive_care.pdf 2014
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26.0 IVF Unit (Fertilization Centers)

26.1 Introduction

26.1.1 Description

The IVF Unit will provide facilities for In vitro fertilization (IVF) procedures. IVF is one of several Assisted Reproductive Techniques (ART) used to help infertile couples to conceive a child. The procedure involves removal of eggs (mature Oocyte or Ovum) from the woman's ovary. Ova are then fertilized with sperm in a laboratory procedure (in vitro). If fertilization occurs, a fertilized ovum, after undergoing several cell divisions, is transferred to the mother for normal development in the uterus, or frozen for later implantation.

The IVF laboratory may use Intracytoplasmic Sperm Injection (ICSI) in the process of IVF.

Services provided by the IVF Unit include:

- Patient consultation and interview on an outpatient basis
- Pretreatment assessment
- Blood collection
- Semen collection
- Artificial insemination
- Ovarian stimulation therapy
- Ultrasound examination
- Oocyte (egg) collection
- Embryo culture
- In vitro/ICSI fertilization
- Cryopreservation
- Embryo transfer
- Recovery.

26.1.2 Licensing of Unit

IVF Units (Fertilization Centers) in the UAE require licensing according to the Cabinet Decision No 36 of 2009 Issuing the Implementing Regulation of Federal Law No (11) of 2008 Concerning the Licensing of Fertilization in the State. All IVF Units are to comply with the requirements stated in the Cabinet Decision document.

26.2 Planning

26.2.1 Planning Models

The IVF Unit may be developed as:

- A stand-alone unit
- A dedicated Unit within a general hospital.

26.2.2 Functional Areas

The IVF Unit may consist of a number of Functional Zones:

Entry/Consult Zone

- Entry/Reception and waiting areas
- Administration/Records
- Interview Room/s
- Consult/Examination/Treatment Room/s
- Ultrasound room/s
- Collection Room/s with Ensuite shower and Toilet
- Public Toilets.

Patient Procedural Zone

- Operating Room/s for oocyte (egg) collection and re-implantation
- Recovery areas
- Change areas and toilets for staff and patients.

Laboratory Zone

- Laboratories (Embryology, IVF, ICSI, Andrology, Genetics)
- Cryopreservation facilities
- Gas Bottle Store.

Staff and Support Zone

- Clean-up and Disposal room
- Store rooms and Sterile store
- Offices, meeting rooms, staff room
- Sterilizing area: if the IVF unit is a stand-alone building, dedicated sterilizing facilities will be required.

Entry/Reception

The Entry and Reception provides the first point of contact for clients. Waiting areas should be calm, comforting and relaxing. They should be divided for gender separation.

Collection Rooms

Collection room/s should be discreet and private, enclosed rooms for collection of sperm samples.

Operating Rooms

Operating room/s will include equipment and facilities for egg collection and embryo transfer, under local anesthetic. Operating rooms will require adjacent Patient and Staff Change Rooms, scrub sink and patient toilet facilities.

Laboratories

Strict protocols for handling and labelling patient specimens in all laboratory areas are required. Laboratory areas should be zoned in a restricted staff access only area.

Embryology/IVF/ICSI Laboratory

The embryology laboratory provides facilities for the handling, preparation, culture and storage of human gametes (sperm and oocytes). Due to the sensitive nature of its functions, the embryology laboratory should be located in a secure and sterile area away from the outpatient/clinic facilities but in close proximity to the procedure room where the oocytes (eggs) are collected. The laboratory is responsible for identifying oocytes in ovarian fluid, culturing these eggs with the partner's sperm, and embryo examination prior to embryo implantation into the patient.

The ICSI (Intracytoplasmic Sperm Injection) laboratory involves the process of injecting a single sperm into the nucleus of the egg using a microscopic needle without affecting the viability of the egg. The zygote (fertilized egg) is then monitored until it starts to divide forming a small cluster of cells known as the blastocyst (in approximately 5 days in the lab) which is then reimplanted to form an embryo.

Andrology Laboratory

The Andrology laboratory performs the evaluation, testing, preparation and storage of sperm specimens. Diagnostic procedures include:

- Semen analysis determine sperm count, motility, viability and morphology,
- Preparation of sperm for fertilization and Intrauterine Insemination (IUI) and thawing of frozen specimens.

Genetics Laboratory

The Genetics Laboratory undertakes cytogenetics studies of the embryo cells, particularly the nucleus which contains the chromosomes that carry genes and their DNA to determine the status of the embryo after IVF and before re-implantation, also referred to as Pre-implantation Genetic Diagnosis (PGD).

This process can also identify and diagnose abnormalities and genetic diseases that may accompany the pregnancy by the use of sophisticated techniques such as Fluorescence In-Situ Hybridization (FISH) or Polymerase Chain Reaction (PCR).

Cryopreservation Facilities

Facilities for cryopreservation will include a separate room for storage of reproductive cells (gametes, zygotes and embryos) in liquid nitrogen storage tanks. Strict protocols on the method of storage and specimen labelling are required for this process (refer to regulations on the licensing of Fertilization Centers in UAE).

26.2.3 *Functional Relationships*

External

The IVF Unit may have a close working relationship with

- Pathology Laboratories
- Pharmacy
- Medical Imaging.

The IVF Unit should be ideally located on the Ground floor. If located on an upper floor, there must be a stretcher carrying lift available.

Internal

Within the IVF Unit the following relationships are significant:

- Laboratory areas should be located with a direct adjacent relationship to the Operating rooms for egg collection and re-implantation
- Laboratories should be located in a separate zone away from the outpatient/consult area and secured.

- Sperm Collection rooms have a close functional relationship with the Andrology Laboratory; specimens require rapid transfer to the laboratory to avoid deterioration.
- Office areas should be separate from the treatment and laboratory zone.

26.3 Design

26.3.1 General

The design of the unit should create a pleasant, reassuring atmosphere for patients whilst retaining the necessary functional requirements associated with clinical spaces and laboratories.

Ideally, waiting areas should be divided into several small 'Family Waiting' zones or 'nooks' to allow partners or close relatives to wait in relative privacy. In addition to the above, in the UAE, separate zones for male and female patients should be provided.

Consideration may be given to a private and discreet entry area for patients, away from general public view.

26.3.2 Environmental Considerations

Natural Light

Natural light is highly desirable where achievable, particularly for laboratory areas where staff will spend a majority of their time.

Privacy

Privacy is essential for confidential conversations and interviews and will minimize stress and discomfort for patients.

Patient privacy and confidentiality can be enhanced by provision of private interview rooms for personal discussions between staff and patients.

Acoustics

Confidential patient information is exchanged between patients and staff, therefore the Interview, Consult, Collection and Treatment rooms should be acoustically treated to maximize privacy.

In acoustically treated rooms, return air grilles should be acoustically treated to avoid transfer of conversations to adjacent areas. Door grilles and undercuts to these areas should be avoided.

26.3.3 Space Standards and Components

Laboratories and storage areas shall be sized to suit the design requirements of the equipment to be used, to provide a safe working environment and to allow the effective movement of staff.

Ergonomics

Laboratories should be designed with consideration to ergonomics to ensure an optimal working environment. Aspects for consideration will include height of benches and chairs, height of equipment in constant use such as microscopes and bio-safety cabinets. Refer also to Part C of these Guidelines.

26.3.4 Safety and Security

Zones within the Unit will require access control to prevent unauthorized access, particularly laboratory areas, cryopreservation areas and staff office areas.

A separate room or a fume hood should be available for procedures requiring use of fixatives.

26.3.5 *Finishes*

Floor finishes should be appropriate to the function of the space. Consideration must be given to the appearance and quality of environment required e.g. non-institutional, acoustic performance, slip resistance, infection control, movement of trolleys and maintenance.

Laboratory, Storage and Procedural areas should have vinyl or similar impervious floors; patient recovery areas and staff offices may be carpeted.

Ceiling and wall finishes, laboratory cabinetry and bench tops must be easily cleaned.

Refer also to Part C and D of these Guidelines.

26.3.6 *Fixtures and Fittings*

Critical items of equipment including incubators and liquid nitrogen storage should be temperature alarmed and monitored. Consideration should also be given to emergency and uninterruptible (UPS) power supplies to critical equipment.

26.3.7 *Building Service Requirements*

Laboratories will require air-conditioning with controlled humidity and temperature to provide an environment that minimizes staff distraction and fatigue.

Procedure rooms will require temperature regulation to assist in maintaining patient temperature at 37 degrees C and prevent deterioration of oocytes.

Power supplies to critical equipment such as incubators, refrigerators, biosafety cabinets should be on emergency supply with generator back-up.

26.3.8 *Infection Control*

All assisted reproductive techniques involve handling of biological material and therefore pose a potential infection control risk to staff and to other patients' reproductive cells (gametes, zygotes, embryos).

Strict infection control measures are required within the unit to protect laboratory staff from potentially contaminated body fluids (follicular fluid etc.) and to ensure aseptic environment for reproductive cells, preventing cross infection. Measures will include:

- Handbasins for staff hand washing in all patient areas and laboratories
- Use of laboratory clothing in laboratories
- Use of theatre clothing in procedure rooms
- Use of laminar flow biosafety cabinets in laboratories (a Class II cabinet should be available for handling of contaminated samples)
- Sharps containers and clinical waste collection and removal.

26.4 Components of the Unit

The IVF Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

26.4.1 *Non-Standard Components*

Collection Room

Description and Function

The Collection Rooms are private and enclosed rooms used for collection of sperm specimens from patients.

Location and Relationships

The Collection rooms have a close functional relationship with the Andrology laboratory; rapid delivery of specimens is required to prevent cell deterioration. The Collection rooms will require an Ensuite shower/toilet.

Considerations

The rooms should include

- Comfortable seating
- Handbasin and fittings including soap and paper towel dispenser
- TV, DVD player
- Acoustic treatment
- A pass-through hatch for specimens.

IVF/ICSI Laboratory

Description and Function

Refer to Functional Areas for a description and functions of the IVF/ICSI laboratory. The space will be enclosed for specialty laboratory functions.

Location and Relationships

The IVF/ICSI Laboratory should be located with a direct relationship to the Operating Room/s for oocyte collection and reimplantation. A pass-through hatch from the Laboratory to each Operating Room is recommended.

Staff change and hand wash areas should be located at the laboratory entry.

Considerations

Fittings and Equipment to be located in this laboratory will include:

- Laboratory benches and storage units
- Laminar flow IVF workstation cabinets
- Bench top microscopes, inverted microscope, stereomicroscope
- CO2 Incubators
- Electrical pipettes
- Variable pipettes
- Fyrite analyzer (CO2 and O2 gas analyzer)
- Laboratory refrigerator
- Hand basin and staff change area at entry.

Laboratory equipment will require emergency power, temperature monitoring and alarms.

The construction of the lab should ensure aseptic and optimal handling of reproductive tissue during all stages of the process. Air-conditioning for the Laboratory will include HEPA filters, controlled humidity (20%) and controlled temperature (22 – 24 degrees C). Access to the laboratory should be limited.

Andrology Laboratory

Description and Function

Refer to Functional Areas for a description and functions of the Andrology laboratory.

The laboratory will include benches and storage units for examination of specimens. The space will be enclosed for specialty laboratory functions.

Location and Relationships

The Andrology Laboratory has a close working relationship with the IVF/ICSI Laboratories. The Collection Room/s should be located in close proximity.

Considerations

Fittings and Equipment to be located in this laboratory will include:

- Laboratory benches and storage units
- Laminar flow IVF workstation cabinets
- Bench top microscopes
- Automatic sperm analyzing units
- CO2 Incubators
- Electrical pipettes
- Variable pipettes
- Mackler cell
- Fyrite analyzer (CO2 and O2 gas analyzer)
- Laboratory refrigerator
- Hand basin and staff change area at entry.

Laboratory equipment will require emergency power, temperature monitoring and alarms.

The construction of the lab should ensure aseptic and optimal handling of reproductive tissue during all stages of the process. Air-conditioning for the Laboratory will include HEPA filters, controlled humidity (20%) and controlled temperature (22–24 degrees C). Access to the laboratory should be limited.

Genetics Laboratory

Description and Function

Refer to Functional Areas for a description and functions of the Genetics laboratory. The functions may be included in the IVF/ICSI Laboratory.

Location and Relationships

The Genetics Laboratory has a close working relationship with the IVF/ICSI Laboratory.

Considerations

Fittings and Equipment to be located in this laboratory will include:

- Laboratory benches and storage units
- Laminar flow IVF workstation cabinets
- Bench top microscopes
- Laboratory refrigerator
- Hand basin and staff change area at entry

Laboratory equipment will require emergency power, temperature monitoring and alarms.

The construction of the lab should ensure aseptic and optimal handling of reproductive tissue during all stages of the process.

Air-conditioning for the Laboratory will include HEPA filters, controlled humidity (20%) and controlled temperature (22–24 degrees C).

Access to the laboratory should be limited.

Cryopreservation Store

Description and Function

Storage room for liquid nitrogen tanks containing frozen gametes. Nitrogen tanks should be stored in an enclosed space in case of nitrogen leakage.

Location and Relationships

The Cryopreservation storage area should be located in close proximity to the Laboratory areas, in an area with controlled access.

Considerations

A monitoring system is required for low levels of liquid nitrogen in the storage tanks and for high levels of nitrogen in the air.

Strict Cryopreservation protocols are required and will include:

- Infection control (minimizing the risk of cross contamination of frozen gametes, zygotes and embryos
- Labelling, packaging and documentation of tissue frozen.

Provide controlled access to the room.

Sterilizing/Packaging

Description and Function

An area where cleaned and dried instruments are sorted, assembled into sets, packaged, and then sterilized in an autoclave.

Location and Relationships

The Sterilizing/Packing Room will be located adjacent to the Clean-up Room where the instruments are cleaned and decontaminated.

Considerations

Fittings and Equipment located in this room will include:

- Hand basin
- Benches and cupboards
- Instrument packing table
- Heat sealing device
- Autoclave
- Cooling trolleys.

The room requires a defined unidirectional workflow for instruments from clean to sterile and then to sterile store. Sterile stock should not be stored in this room to avoid the potential for mixing unsterilized instrument sets with sterile sets.

26.5 Schedule of Accommodation

Typical IVF Unit (Fertilization Centers) at Levels 3 to 6

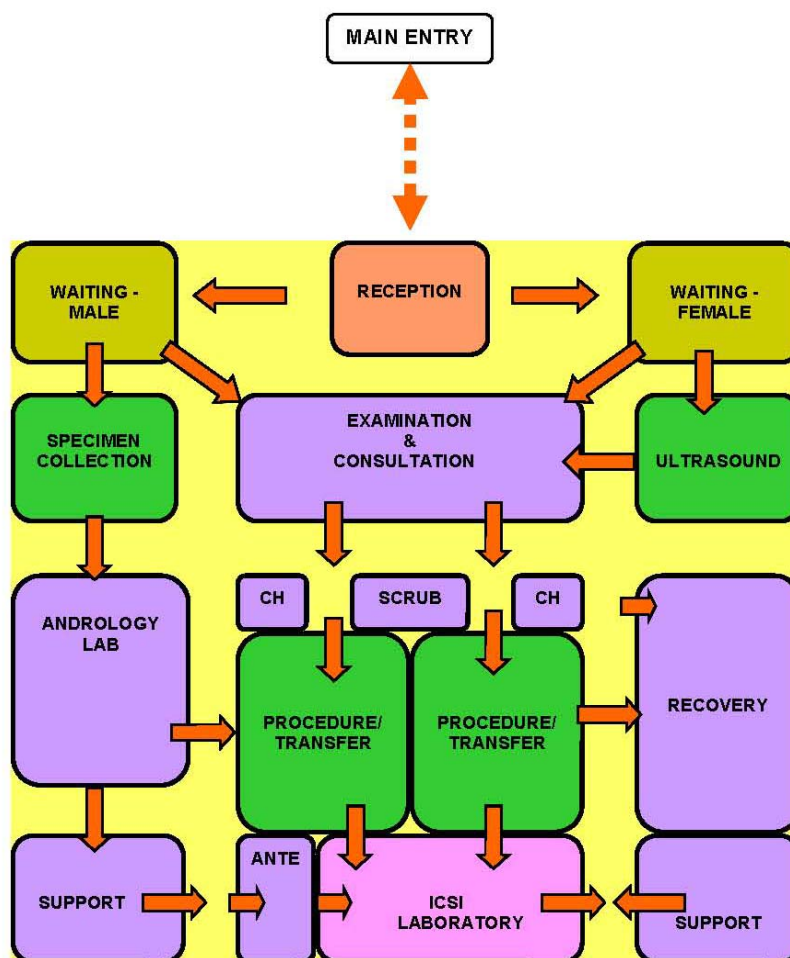
ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entry/Consulting Area							
Reception/Clerical	RECL-15-SJ				1 x 15	1 x 15	
Store – Photocopy/Stationery	STPS-8-SJ				1 x 8	1 x 8	
Store – Files	STFS-10-SJ				1 x 8	1 x 8	
Waiting – Male/Female	WAIT-10-SJ				2 x 10	2 x 15	Separate Female Waiting
Waiting – Family	WAIT-30-SJ				1 x 25	1 x 30	
Interview Room – Family	INTF-SJ				1 x 12	2 x 12	
Consult/Examination Room	CONS-SJ				3 x 14	4 x 14	
Collection Room					2 x 6	2 x 6	Semen samples
Ensuite – Shower/WC	ENS-ST-SJ				2 x 5	2 x 5	Adjacent to Semen Collection Rooms
Blood Collection Bay	BLDC-5-SJ				1 x 5	1 x 5	
Ultrasound	ULTR-SJ				1 x 14	2 x 14	
Toilet – Accessible	WCAC-SJ				1 x 6	1 x 6	May share general public amenities
Toilet – Public	WCPU-3-SJ				1 x 3	1 x 3	May share general public amenities
Patient Procedural Area					2 Proc. Rooms	4 Proc. Rooms	
Operating Room – General	ORGN-SJ				1 x 42	2 x 42	
Procedure Room	PROC-20-SJ				1 x 20	2 x 20	
Change Cubicle – Accessible Patient	CHPT-D-SJ				1 x 4	1 x 4	One adjacent to each Procedure Room
Toilet – Patient	WCPT-SJ				2 x 4	3 x 4	One adjacent to each Procedure Room; One adjacent to Recovery
Change – Staff (Male/Female)	CHST-12-SJ				2 x 12	2 x 14	
Scrub Up/Gowning	SCRB-6-SJ				2 x 6	4 x 6	One for each Operating/Procedure Room
Patient Bay – Holding/Recovery	PBTR-H-10-SJ				4 x 9	8 x 9	Two per Operating/Procedure room
Bay – Handwashing, Type B	BHWS-B-SJ				1 x 1	2 x 1	Refer to Part D
Bay – Beverage	BBEV-OP-SJ				1 x 5	1 x 5	
Bay – Linen	BLIN-SJ				1 x 2	1 x 2	
Bay – Resuscitation Trolley	BRES-SJ				1 x 1.5	1 x 1.5	
Clean Utility	CLUR-8-SJ CLUR-12-SJ				1 x 8	1 x 12	
Dirty Utility	DTUR-S-SJ DTUR-12-SJ				1 x 8	1 x 12	
Staff Station	SSTN-5-SJ SSTN-14-SJ				1 x 5	1 x 10	
Store – General	STGN-8-SJ				1 x 8	1 x 8	
Laboratory Area							
IVF/ICSI Laboratory					1 x 40	1 x 50	Size will be dependent on Service Plan
Andrology Laboratory					1 x 30	1 x 40	Size will be dependent on Service Plan
Genetics Laboratory					1 x 15	1 x 20	PGD functions
Cryopreservation Store					1 x 30	1 x 40	
Store – Gas Bottle					1 x 10	1 x 15	
Change – Staff (Male/Female)	CHST-12-SJ				2 x 10	2 x 10	Includes toilets and change facilities
Support Areas							
Clean-Up Room	CLUP-7-SJ				1 x 7	2 x 10	1 shared between 2 OR/Procedure rooms
Cleaner's Room	CLRM-5-SJ				1 x 5	1 x 5	
Disposal Room	DISP-8-SJ				1 x 5	1 x 8	

ROOM/SPACE	Standard Component				Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Sterilising/Packing					1	x	15	1	x	20	Locate adjacent to Clean-up; Optional, may use SSU
Store – Sterile Stock	STSS-12-SJ				1	x	12	2	x	12	
Staff Areas											
Meeting Room – Medium/Large	MEET-L-30-SJ				1	x	20	1	x	30	
Office – Single Person, 12m ²	OFF-S9-SJ Similar				1	x	12	1	x	12	Manager
Office – Single Person, 9m ²	OFF-S9-SJ							1	x	9	Physician
Office – Single Person, 9m ²	OFF-S9-SJ				1	x	9	1	x	9	Nursing
Office – Workstation	OFF-WS-SJ				1	x	5.5	2	x	5.5	Clerical support as required
Staff Room	SRM-15-SJ				1	x	15	1	x	20	
Property Bay – Staff	PROP-3-SJ				2	x	3	2	x	3	
Net Department Total							621.0			910.5	
Circulation %							35			35	
Grand Total							838.4			1229.2	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

26.6 Functional Relationship Diagram



26.7 Further Reading

- Clinical and Laboratory Standards Institute (CLSI) (US). 'Laboratory Design; Approved Guideline Second edition' 2007. Retrieved from website: http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCsQFjAA&url=http%3A%2F%2Fshopping.netsuite.com%2Fc.1253739%2Fsite%2FSample_pdf%2FQMS04A2_sample.pdf&ei=WqkGU_fwEoG-kAXogoDoBg&usq=AFQjCNFWHbNliIWEDtBaP96YHvIHkFTaUA&bvm=bv.61725948,d.dGI 2014
- Magli, MC. et al. 'Revised Guidelines for Good Practice in IVF Laboratories' European Society of Human Reproduction and Embryology 2008. Retrieved from website: <http://humrep.oxfordjournals.org/content/23/6/1253.long> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014
- UAE, The Cabinet: Cabinet Decision No 36 of 2009 'Issuing the Implementing Regulation of Federal Law No (11) of 2008 Concerning the Licensing of Fertilization Centers in the State'.

27.0 Laboratory Unit

27.1 Introduction

27.1.1 General

The Laboratory Unit provides facilities and equipment for the examination of body tissues and fluids, involving receipt of patient specimens, testing and issue of reports.

The Laboratory may be divided into specialist disciplines including (but not limited to):

- General Laboratory – involves a mixture of anatomical and clinical laboratory specialties in the one Unit
- Anatomical Laboratory – involves the diagnosis of disease based on the microscopic, chemical, immunologic and molecular examination of organs, tissues, and whole bodies (autopsy); Anatomical Pathology is itself divided in subspecialties including Surgical Pathology, Cytopathology and Forensic Pathology.
- Clinical/Chemical Laboratory involves diagnosis of disease through the laboratory analysis of blood and bodily fluids and/or tissues using the tools of Chemistry, Microbiology, Hematology and Molecular Laboratory;
- Hematology is concerned with diseases that affect the blood and the management of blood transfusion services;
- Microbiology is concerned with diseases caused by organisms such as bacteria, viruses, fungi and parasites; clinical aspects involve control of infectious diseases and infections caused by antibiotic-resistant bacteria;
- Genetics/Clinical Cytogenetics – a branch of genetics concerned with studying the structure and function of the cell, particularly the microscopic analysis of chromosomal abnormalities; molecular genetics uses DNA technology to analyses genetic mutations
- Immunology – a broad discipline that deals with the physiological functioning of the immune system and malfunctions of the immune system such as autoimmune diseases, hypersensitivities, immune deficiency and transplant rejection.

27.2 Planning

27.2.1 Functional Areas

The Laboratory Unit will consist of the following Functional Areas:

- Entry/Reception area with patient waiting
- Specimen collection area including patient toilets (this area may also be located remotely in Ambulatory Care areas); the collection area shall have a workbench, space for patient seating and hand washing facilities
- Specimen Reception registration and sorting area
- Laboratories, which may include specialists laboratories
- Support areas, including Clean-up, Sterilization area, Storage areas for reagents, appropriate storage for flammable liquids, general supplies, refrigerated storage for slides and reagents, disposal facilities for contaminated waste
- Refrigerated blood storage
- Staff Areas including Offices, Meeting Rooms, Staff Room, Lockers and Toilets.

Specimen Reception

The Specimen Reception area is where specimens for analysis are received, sorted and held temporarily before dispatch into laboratory areas. The area will require specimen registration facilities which may include computerized/barcode systems, sorting benches and a holding area for specimens including refrigerated holding if required. Following registration, specimens are transported to the relevant laboratory or area for processing and reporting.

Laboratories

Laboratories will be provided according to the Role Delineation and Operational Policy and will require the following considerations:

- Laboratories must be secure with restricted access for dedicated staff only
- Laboratory workbenches with space for equipment such as microscopes, appropriate chemical analyses, incubator/s and centrifuge/s
- Access to vacuum, gas and electrical services at the workbench
- Sinks with hot and cold water; may be used for the disposal of non-toxic fluids
- Hand basin with paper towel and soap fittings for staff hand-washing
- Emergency shower and eye flushing devices; drainage to a separate holding area.

Note: The size of the laboratory shall be appropriate to the function and provide a safe working environment.

27.2.2 *Operational Models*

Laboratory Services may be provided according to the following models and will be dependent on the Role Delineation and the Operational Policy of the facility:

- Onsite laboratory providing a comprehensive range of tests and services
- Onsite provision limited to a stat laboratory for a limited range of urgent tests
- Offsite laboratory with services provided by an external laboratory on a contracted or other basis; the external laboratory may be a separate private business unit
- Networking of hospital laboratories across an area or region with varying arrangements for specialization between laboratories.

27.2.3 *Functional Relationships*

The Laboratory Unit, if in-house, is best located adjacent to the areas that utilize the service the most such as the Operating and Obstetric Units. Collection areas may be located with close access to the Ambulatory Care facilities.

27.3 Design

27.3.1 *Environmental Considerations*

If radioactive materials are employed, facilities shall be available for long-term storage and disposal of these materials. No special provisions will normally be required for body waste products from most patients receiving low level isotope diagnostic material.

27.3.2 *Fixtures and Fittings*

The Operational Policy shall describe the type and location of all special equipment that is to be wired, plumbed, or plugged in, and the utilities required to operate each.

27.3.3 *Safety and Security*

Chemical safety provisions including emergency shower, eye-flushing devices, and appropriate storage for flammable liquids shall be made.

27.4 Components of the Unit

27.4.1 Introduction

The Laboratory Unit will consist of a combination of Standard Components and Non-Standard Components. Standard Components must comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

27.4.2 Standard Components

Provide the Standard Components as identified in the Schedule of Accommodation.
Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

27.4.3 Non-Standard Components

Blood Store

Description and Function

The Blood Store provides for the secure, temperature controlled storage of blood and other blood products for access by authorized staff only.

The Blood Store should be a minimum of 6m².

Location and Relationships

The Blood Store should be located with ready access to Laboratory Unit, Emergency Unit, Operating Unit and Critical Care areas. Consideration shall be given to blood storage location in relation to external after-hours access and security.

Considerations

The blood storage refrigerators shall be secured, accessed by authorized staff only, and equipped with temperature monitoring and alarm signals. Alarms and controls should be located to ensure easy staff control. The blood refrigerators/freezers will require an essential power supply.

27.5 Schedule of Accommodation

Typical Laboratory Unit in a tertiary level hospital

ROOM/SPACE	Standard Component								Level 5/6 Qty x m ²	Remarks
Specimen Reception										
Central Specimen Reception	SPREC-SJ								1 x 20	Includes CSR triage and sign on station and lab coats
Pneumatic Tube Station									1 x 7	Optional
Data Entry									1 x 15	Specimen Registration
Processing Area									1 x 60	Preliminary processing
Work Room									1 x 15	Includes hot desks for lab staff
Refrigerator/Freezer Sample Store									1 x 25	
Store – General	STGN-8-SJ								1 x 10	
Specimen Collection (may be a Satellite Unit)										
Reception	RECL-10-SJ								1 x 12	
Office – 2-Person Shared	OFF-2P-SJ								1 x 12	Clerical support
Waiting – Male/Female	WAIT-10-SJ								2 x 10	Separate female waiting
Toilet – Patient	WCPT-SJ								2 x 4	
Toilet – Accessible	WCAC-SJ								1 x 6	
Specimen Collection Bay	SPECC-SJ								4 x 9	Bed or chair bays
Collection Consult/Training									2 x 15	
Store – General	STGN-12-SJ								1 x 12	
Dirty Utility	DTUR-12-SJ								1 x 12	
Transfusion Medicine (Blood Holding)										
Specimen Reception	SPREC-SJ								1 x 15	
Processing Area									1 x 40	
Office Workstation	OFF-WS-SJ								1 x 10	Supervisor
Blood Products Cool Room									1 x 8	
Blood Products Freezer									1 x 5	
Store – General	STGN-12-SJ								1 x 12	
Haematology										
Specimen Reception/Processing	SPREC-SJ								1 x 25	Receiving and preliminary processing
High Throughput Processing									1 x 100	
Microscopy Workstations									1 x 30	Include slide and files storage
Flow Cytometry									1 x 20	
Cool Room	CORM-SJ								1 x 10	Refrigerated store
Store – General	STGN-12-SJ								1 x 12	
Chemical Pathology										
Specimen Reception/Preparation	SPREC-SJ								1 x 10	Receival and preliminary preparation
High Throughput Processing									1 x 50	
Bay – Freezer/Equipment									1 x 20	
Cool Room	CORM-SJ								1 x 6	
Chemical Pathology Workstations									1 x 25	Including manual processing stations and calibration
Serology										
High Throughput Processing									1 x 25	
Low Throughput/Manual Processing									1 x 45	
Write-up									1 x 10	Shared write-up
Microbiology										

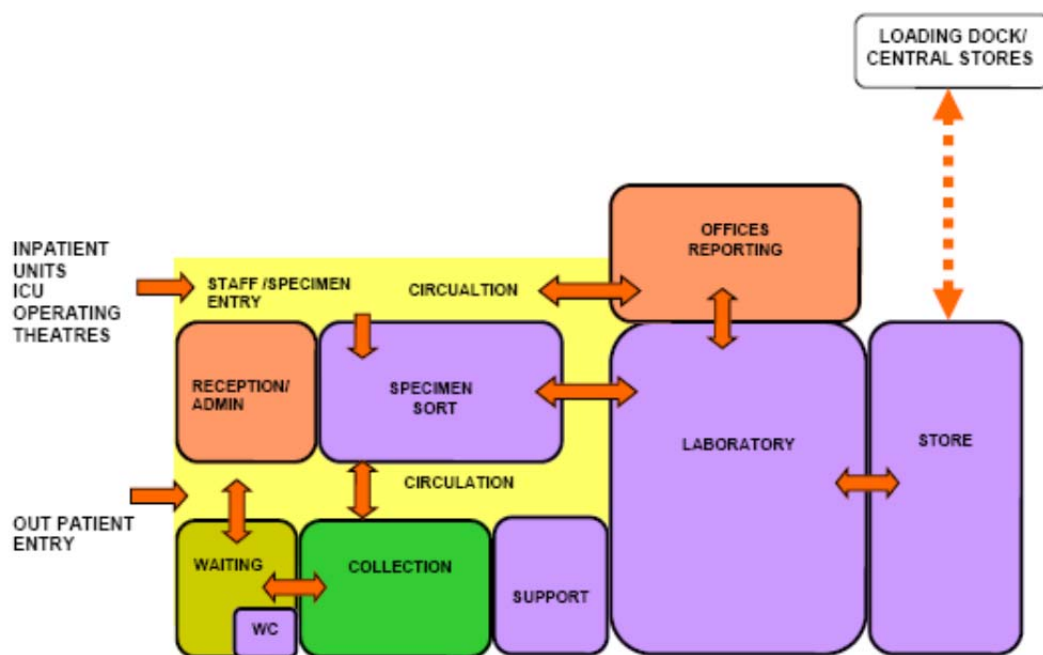
ROOM/SPACE	Standard Component								Level 5/6 Qty x m ²	Remarks
Specimen Reception/Sorting	SPREC-SJ								1 40	Receival, sorting and preliminary processing
Blood Culture Processing									1 15	Includes biohazard safety cabinets, freezers and handwashing
Cool Room – Contaminated Samples	CORM-SJ								1 6	
Cool Room	CORM-SJ								1 10	
Incubator Storage									1 15	
Culture/ Plate Reading and Microscopy Stations									1 40	
Mycology/Microscopy Processing									1 20	
PC3 Laboratory									1 25	Special air-conditioning requirements
PC3 Anteroom									1 6	To PC3 Lab
Molecular Suite										
Genomic NA Extraction Lab									1 x 15	Positive pressure air-conditioning required
Infectious NA Extraction Laboratory									1 x 40	Positive pressure air-conditioning required
Specimen Preparation									1 x 15	Positive pressure air-conditioning required
NA Laboratory – Automated									1 x 20	Negative pressure air-conditioning required
NA Laboratory – Manual									1 x 15	Negative pressure air-conditioning required
Preparation Laboratory									1 x 16	For clean reagents; Positive pressure air conditioning required
Virology Laboratory									1 x 55	Include sorting and stat lab
Anteroom									1 x 9	For Negative pressure labs
Store – Equipment	STEQ-10-SJ Similar								1 x 6	
Anatomical Pathology										
Specimen Reception/Sorting	SPREC-SJ								1 x 12	
Cytology									1 x 20	
Cryostat Room									1 x 15	Frozen sections
Immunohistochemistry (IHC) Laboratory									1 x 15	
Specimen Blocking/Embedding									1 x 15	
Specimen Preparation/ Staining									2 x 18	Manual and automated areas
Microscopy Processing									1 x 50	
Tissue Processing and Cutting									1 x 55	
Store – Chemicals	STCM-SJ Similar								1 x 10	Solvents and flammable liquids
Store – General	STGN-8-SJ Similar								1 x 10	
Support Areas										
Bay – Emergency Shower	BES-SJ								7 x 1	Locate in each laboratory area
Cleaner's Room	CLRM-5-SJ								2 x 5	
Store – Bulk	STGN-20-SJ Similar								1 x 60	For reagents and general consumables
Store – Cold Room	CORM-SJ								1 x 20	May be shared
Store – Receipts and Dispatch									1 x 15	Area for receiving and unpacking/sorting, packing and dispatch
Store – Files	STFS-10-SJ								2 x 20	Documents, files, stationery
Store – General	STGN-20-SJ								1 x 10	
Staff Areas										
Reception	RECL-10-SJ								1 x 10	For Office areas

ROOM/SPACE	Standard Component							Level 5/6 Qty x m ²	Remarks
Office – Director	OFF-CEO-SJ							1 x 15.0	
Office – Pathologists	OFF-S9-SJ Similar							7 x 12.0	For each Lab; Additional space for microscope work area
Office – Laboratory Managers/Supervisors	OFF-S9-SJ Similar							7 x 12.0	For each Lab; Additional space for Microscope work area
Office – 4-Person Shared	OFF-4P-SJ							7 x 20	Write-up for laboratory staff, provide for each specialty
Office – Workstation	OFF-WS-SJ							10 x 5	Clerical, secretarial, administrative support; as required
Meeting Room – Medium	MEET-L-30-SJ							1 x 30	
Meeting Room – Large	MEET-L-30-SJ Similar							1 x 50	
Training Room – Microscope								1 x 20	
Change – Staff (Male/Female)	CHST-20-SJ							2 x 20	Toilets, Shower, Lockers
Property Bay - Staff	PROP-3-SJ Similar							2 x 10	Include provision for lab coats
Staff Room	SRM-25-SJ							1 x 25	
Net Department Total								2114.0	
Circulation %								25	
Grand Total								2642.5	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

27.6 Functional Relationship Diagram



27.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 550 – Pathology Unit Revision 5. 0' 2014. Retrieved from website: [http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/\[B-0550\]%20Pathology%20Unit.pdf](http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/[B-0550]%20Pathology%20Unit.pdf) 2014
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28.0 Linen Handling Unit

28.1 Introduction

28.1.1 Description

Linen handling involves the collection of dirty linen, sorting, washing folding and storage of clean linen for supply to inpatient and ambulatory care units.

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

28.2 Planning

28.2.1 Functional Areas

As a minimum, the following elements shall be provided:

- A separate room for receiving and holding soiled linen until ready for pick-up or processing
- A central, clean linen storage and issuing room/s that has the central storage capacity sufficient for the efficient operation of the hospital, in addition to the linen storage required at individual patient units
- Trolley storage areas with separate storage of clean and soiled linen trolleys out of traffic paths
- A clean linen inspection and mending 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
- Hand-washing facilities shall be provided in each area where soiled linen is handled.

Laundry Offsite

If linen is processed outside the building, provisions shall be made for:

- A service entrance, protected from inclement weather, for loading and unloading of linen
- An area for pick-up and receiving.

Laundry Onsite

If linen is processed in a laundry facility which is part of the hospital, the following shall be provided:

- Laundry processing room with commercial type equipment that can process at least a seven day supply within the regular scheduled work week
- Storage for laundry supplies
- Employee hand-washing facilities in each separate room where clean or soiled linen is processed and handled
- Arrangement of equipment shall permit an orderly work flow with a minimum of cross traffic
- Convenient access to Staff Amenities, usually shared facilities
- Compliance with all of the relevant statutory requirements and regulations is required.

28.2.2 Functional Relationships

The linen exchange area should be situated to allow direct access to and from hospital units through corridors, passages, covered ways, etc. and be adjacent to, an external doorway.

28.3 Components of the Unit

The Laundry/Linen Handling Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines and refer to Standard Components Room Data Sheets.

28.3.1 *Non-Standard Components*

Linen Inspection and Mending

Description and Function

The Linen Handling Unit may include a Linen Inspection and Mending room to examine clean linen and assess for repairs, particularly sheets, wraps and uniforms. Linen examination is undertaken on a large flat surface. Sewing machines may be available for linen repair. If an external linen service is provided, linen inspection and repair may be undertaken offsite.

Location and Relationships

If included, the Linen Inspection and Mending will be located adjacent to the Clean Linen Handling area. The mending area may be located within the room.

Considerations

Linen examination benches or tables may include lighting to the bench surface and a high level of overhead lighting to aid identification of tears and holes in linen.

Other requirements may include

- Ironing facilities
- Tables for folding
- Racks for hanging linen items.

28.4 Schedule of Accommodation

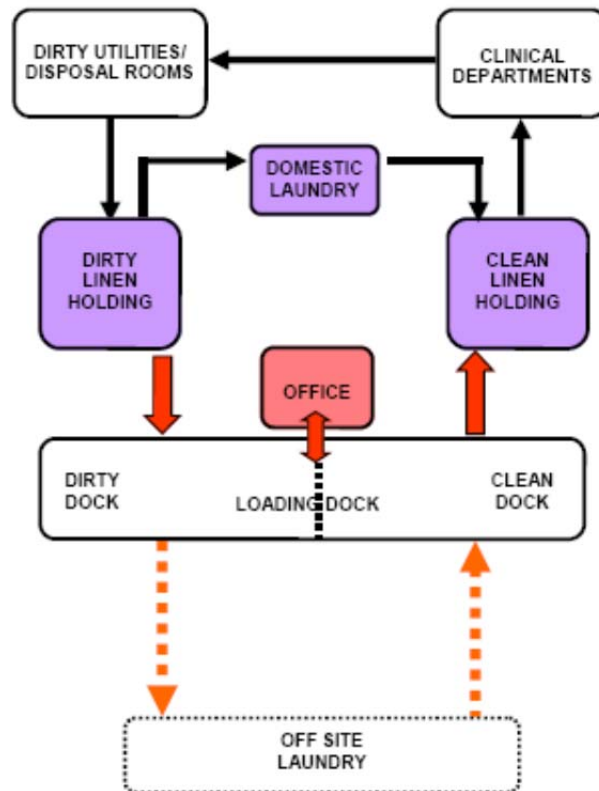
Typical Linen Handling Unit at levels 1 to 6

ROOM/SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Loading Dock - Shared											
Loading Dock	LODK-SJ	1	x	0	1	x	0	1	x	0	External Area under cover; Clean and dirty zones
Linen Services Areas											
Clean Linen Receiving Area	BEQP-12-SJ Similar	1	x	12	1	x	12	1	x	25	
Linen Counting Area					1	x	15	1	x	20	
Linen Holding – Clean	LHO-CL-SJ	1	x	20	1	x	50	1	x	200	
Staff Uniform Room		1	x	10	1	x	20	1	x	25	
Sewing Room					1	x	15	1	x	25	
Soiled Linen Receiving Area		1	x	10	1	x	20	1	x	50	
Linen Holding – Soiled	LHO-SO-SJ	1	x	25	1	x	50	1	x	100	
Laundry – Hospital	LAUN-HO-SJ Similar	1	x	6	1	x	15	1	x	30	Hospital laundry for washing and drying of small quantities of specialised items
Trolley Wash		shared			1	x	15	1	x	20	May share with other service units
Linen Inspection Area					1	x	15	1	x	30	
Staff Areas											
Office – Manager	OFF-S9-SJ Similar				1	x	12	1	x	12	
Office – Supervisor	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	Qty depends on staff numbers
Office - Workstation	OFF-WS-SJ				1	x	5.5	1	x	5.5	Administrative and Clerical support staff
Interview/Meeting Room	MEET-9-SJ							1	x	9	May share with an adjacent Unit
Meeting Room – Medium	MEET-L-15-SJ							1	x	20	Training, meetings; May share with an adjacent Unit
Staff Room	SRM-25-SJ							1	x	25	May share with an adjacent Unit
Toilet – Staff	WCST-SJ							2	x	3	May use general staff change/toilet facilities if located close
Net Department Total		92.0			253.5			611.5			
Circulation %		10			10			10			
Grand Total		101.2			278.9			672.7			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

28.5 Functional Relationship Diagram



28.6 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

29.0 Main Entrance Unit

29.1 Introduction

29.1.1 Description

The Main Entrance Unit provides for the following functions:

- Entry to the hospital
- Drop-off and collection area
- Patient reception
- Patient and visitor enquiries
- Wayfinding.

29.2 Planning

29.2.1 Functional Areas

The Main Entrance shall include the following features:

- Reception desk, which may be shared with Admissions Unit
- Waiting Area, which may be shared with Admissions and other adjacent hospital units
- Holding area for wheelchairs.

The provision of the following features is optional:

- Airlock to the entrance lobby
- Undercover drop-off and collection point.
- Florist
- Kiosk/Coffee Shop
- Gift Shop/Newsagent
- Retail Pharmacy
- ATM/Banks or agencies
- Hairdresser
- Others as considered viable.

29.2.2 Functional Relationships

The Main Entrance may be co-located with the Admissions Unit to share Reception and Waiting Areas. Ready access to Public Amenities is required.

29.3 Design

29.3.1 Environmental Considerations

Entry Area

The entrance shall be at grade level, sheltered from inclement weather, and accessible to the disabled.

Signposting

Particular attention must be given to signposting the Main Entrance and the hospital for the disabled. Relevant guideline requirements for disability are to be applied.

29.4 Components of the Unit

The Main Entrance Unit will consist of a combination of Standard Components and Non-Standard Components.

Provide Standard Components to comply with details in Standard Components in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

29.4.1 *Non-Standard Components*

Lobby

Description and Function

The Entrance lobby is the Main Entrance arrival point for patients and visitors to the facility.

The Lobby will direct visitors to the Reception area and provide waiting areas and public amenities. The size of the Lobby will be determined by the functions to be accommodated and the volume of persons through the area.

Location and Relationships

The Lobby adjoins the Entry Airlock, Main Reception and Waiting areas. Close access to public amenities is required. The Lobby will have direct access to circulation corridors and lifts providing the thoroughfare to hospital units. The lobby should preferably be in close proximity to the drop-off/collection area.

Considerations

Security features provided in this area may be discreet and not noticeable to the observer, including CCTV, security room, and controlled access points.

The Lobby will require:

- Effective signage to direct visitors and staff
- Selection of floor finish to reduce the risk of slips and falls to visitors, patients and staff
- Storage areas for wheelchairs.

Retail Areas

Description and Function

The Lobby area may include a number of retail areas for the convenience of patients, staff and visitors to the facility. The size and requirements of each shop will be dependent on the service provided. Local authority regulations may apply to provision of services such as Coffee Kiosks and Pharmacy.

Location and Relationships

Retail areas will require good public access, and ready access to public amenities.

Considerations

Retail areas will require:

- Security features including lockable perimeter doors
- Signage to shop fronts
- Provision for display of wares
- Services to be provided according to type of retail store

29.5 Schedule of Accommodation

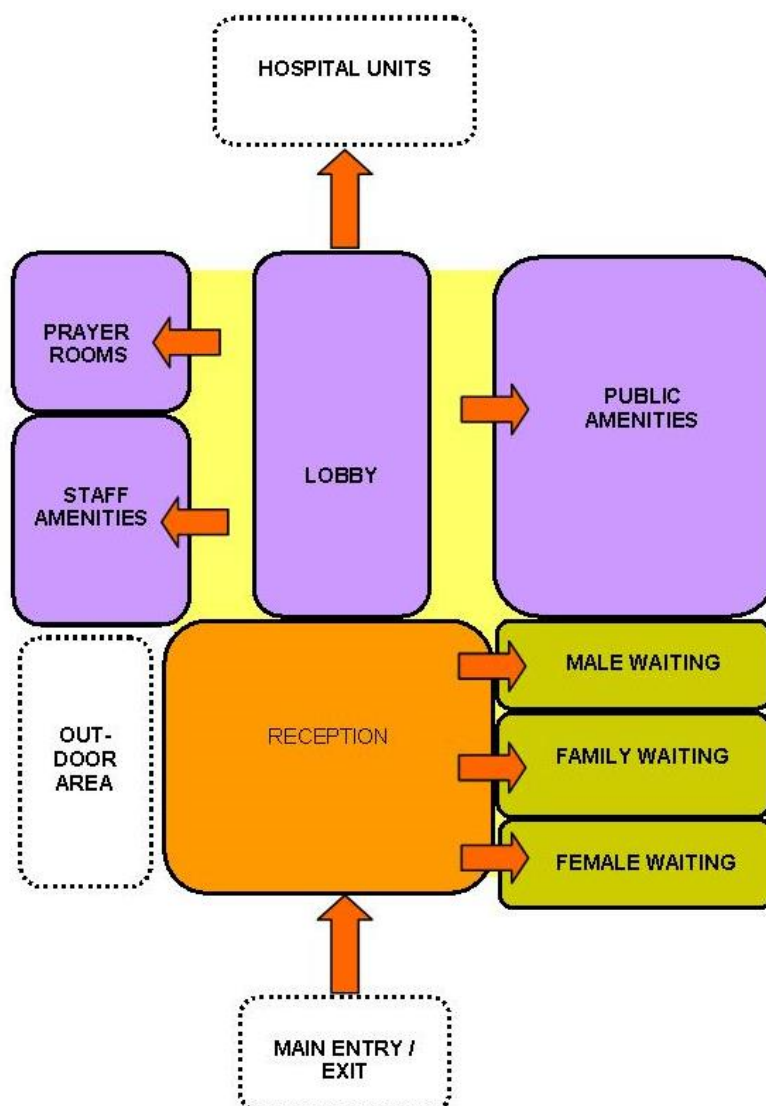
Typical Main Entrance Unit at levels 3 to 6

ROOM/ SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entry/ Reception							
Entry Airlock	AIRLE-10-SJ Similar				1 x 25	1 x 30	
Entry Lobby					1 x 300	1 x 500	According to project brief
Waiting – Male/Female	WAIT-30-SJ Similar				2 x 25	6 x 50	Zones of Waiting areas, separate female waiting
Waiting -Family	WAIT-30-SJ				2 x 30	6 x 30	With play areas for children
Retail – Florist Shop					1 x 30	1 x 30	Optional; Provision and size will depend on service plan
Retail – Coffee Kiosk					1 x 30	1 x 30	Optional; Provision and size will depend on service plan
Retail – Shop/Newsagent					1 x 30	1 x 60	Optional; Provision and size will depend on service plan
Retail - Pharmacy					1 x 30	1 x 60	Optional; Provision and size will depend on service plan
Bay -ATM	BATM-6-SJ				1 x 6	1 x 6	Optional
Reception/ Information Station	RECL-15-SJ Similar					1 x 25	
Drop off/Collection Area					1 x 0	1 x 0	External; size will depend on expected number of cars
Support Areas							
Bay – Wheelchair Park	BWC-SJ				1 x 4	1 x 8	
Parenting Room	PAR-SJ				1 x 6	2 x 6	
Toilets - Public, Female	WCPU-3-SJ				2 x 10	2 x 25	According to numbers of persons using the space
Toilets - Public, Male	WCPU-3-SJ				2 x 10	2 x 25	According to numbers of persons using the space
Toilet - Accessible	WCAC-SJ				1 x 7	2 x 7	
Net Department Total					618.0	1355.0	
Circulation %					20	20	
Grand Total					741.6	1626.0	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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
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29.6 Functional Relationship Diagram



29.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 430 Front Of House Unit Revision 4' 2010. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/aushfg_b_430front_of_house_4_591-614.pdf 2014
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- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideines.org 2014.

30.0 Medical Imaging Unit – General

30.1 Introduction

30.1.1 Description

The Medical Imaging Unit is a discrete unit of the hospital which provides for General X-Ray diagnostic investigations. Depending on the level of service the unit may also provide for diagnostic screening (fluoroscopy), ultrasound, mammography, computed tomography (CT) or interventional radiographic procedures.

The Medical Imaging Unit may be co-located with or incorporate other specialties including Nuclear Medicine, Angiography, MRI, and PET Units.

30.2 Planning

30.2.1 Planning Models

The layout of a Medical Imaging Unit should be developed in compliance with manufacturer's recommendations, because area requirements may vary from machine to machine. Since technology changes frequently and from manufacturer to manufacturer, rooms should be sized larger to allow upgrading of equipment in the future.

Privatization of Services

Increasingly Medical Imaging services are being delivered as a privately owned and operated service. This option needs to be identified early in the planning process as there may be considerable spatial, design and cost implications.

Offsite Services

In smaller hospitals that cannot justify a full Medical Imaging Unit, access to offsite services is an important consideration in the planning phase, in particular, the selection of the site.

30.2.2 Functional Areas

The Medical Imaging Unit may consist of the following Functional Areas depending on the Operational Policy and service demand:

- Reception and Waiting Areas
- Imaging and screening rooms with access to patient change areas and toilets
- Support areas including preparation areas, storage, disposal and utility rooms
- Film processing areas – both daylight and darkroom areas as required; alternatively, medical imaging may be based on a filmless digital imaging system with its own equipment and storage requirements
- Film storage areas
- Viewing and Reporting areas
- Administrative and Office areas
- Staff Amenities areas including Staff Room, Staff Change Rooms and Toilets and access to Meeting Rooms.

Clean Utility/Preparation Areas

The Clean Utility/Preparation Room shall provide for preparation and mixing of contrast media, storage of medications and sterile supplies. The Clean Utility/Preparation Room, if conveniently located, may serve any number of rooms. The Clean Utility/Preparation Room shall comply with requirements identified in Standard Components – Clean Utility. When pre-prepared media is used, additional storage shall be provided for the media.

Film Processing Areas

Digital Imaging will not require film processing areas. If film processing is required, it shall be located convenient to the Imaging Rooms and to the quality control area and will normally involve daylight processing equipment. A Darkroom may be provided for specialized processing if required. The Darkroom, if provided will require special attention to lighting and ventilation. If film processing is required, provide a silver recovery unit.

If the Medical Imaging Unit operates with a filmless, digital imaging system, the appropriate areas for image processing and printing will be required according to the type of system installed.

Film Storage

For digital imaging applications, there will need to be an area for the PACS (Picture Archiving and Communications System) archive storage units.

A room with cabinets or shelves to file hard copies of patient film shall be provided, located close to the Reception/administration area. Archived film may be stored outside the Imaging Unit, but must be properly secured to protect films against loss or damage.

General Radiography/Tomography

Each General will include an upright Bucky stand for chest films. Where volumes are low, OPG, Mammography and Tomography may be added to the General room equipment. This will necessitate a slightly larger room. Tomography is becoming less used with the advent of CT but may be required/preferred by a Urology service. The necessary attachments may be incorporated into a General Room.

At least one General X-Ray room must be sized and located to facilitate transfer of patients from Emergency Unit, if a dedicated room in the EU is not provided.

Orthopantomography (OPG)

OPG is a method of obtaining films of the upper and lower teeth-bearing jaws that supports Trauma, Dental and Fabio-maxillary services. This equipment may be incorporated into a General Room, a separate bay or within the Dental Unit.

Mammography

Mammography imaging may be included for diagnostic purposes. It should be sized to allow prone positioning for some interventional biopsy procedures. Mammography should be located adjacent to an Ultrasound Room for fine needle biopsies. Change Rooms should be discreet and access to an Interview Room will be required.

Ultrasound

Ultrasound imaging is used in a variety of specialties including Obstetrics, Medicine, Surgery, Cardiology and Vascular Surgery. Ultrasound rooms may be provided within the specialty departments or within the Medical Imaging Unit. One ultrasound room should be sized to allow for interventional procedures. There must be access to a toilet and drinking water for ultrasound procedures that require the patient to have a full bladder.

Fluoroscopy

Fluoroscopic/radiographic imaging procedures involve administration of contrast media to the patient, serial repositioning of the patient and the timed use of a fluoroscopic imaging system. The Fluoroscopy room will require a preparation room for barium preparation and an adjacent toilet/shower, accessed from inside the room and from the external corridor.

With the general decline in use of barium contrast studies and advances in equipment technology, fluoroscopy and angiography may be combined in one room. The room must be equipped for anesthesia.

Digital Subtraction Angiography (DSA)

Simple angiography involves injection of a radiographic contrast agent into blood vessels so that vascular structures are enhanced and revealed together with surrounding bony and soft tissue structures. This procedure is used for simple peripheral studies and can be done on a fluoroscopy table.

With DSA, a contrast agent is administered directly, via a catheter, into an artery close to the area to be examined. The subtraction of a pre-contrast mask suppresses interfering structures from the image so that the arteries become clearly defined. This process enables a full spectrum of vascular and non-vascular procedures including angiography, angioplasty, arterial and venous stents, biopsy and drainage procedures and biliary and urologic procedures.

Computerized Tomography (CT)

Refer to the Standard Component for CT Scanning. A Control Room may service two rooms. The room may need to be serviced for general anesthesia. A bed/trolley bay adjacent to each room is required for staff to observe waiting patients.

Magnetic Resonance Imaging (MRI)

MRI will require a dedicated area or suite for access control and protection of/from the magnet (fringe field), and preparation/nursing support areas.

Requirements include:

- Interview room for patient consents and explanations in close proximity
- Storage for MRI-compatible (non-ferrous) equipment
- Lockers for patient property that may interfere with or be damaged by the magnet such as credit cards and keys.

Careful consideration must be given to the location of the MRI in order to minimize the provision and cost of shielding required including the following:

- MRI should not be located under a helipad or next to a sub-station
- Floor/slab must be structurally capable of carrying the weight of the MRI
- Good external access is required for the installation of the MRI; a removable side panel may be more cost effective than dismantling a RF shielded door
- Room size and shape must be able to contain the 5 Gauss magnetic field with the room and consideration should be given to the needs for future 3T MRIs
- Access control needs to be included to ensure only authorized staff enter the MRI room
- Locate away from moving ferrous objects which can interfere such as lifts, cars moving through car parks, construction sites
- Ensure that emergency equipment such as fire extinguishers and medical gas bottles in the vicinity are not made of magnetic iron.

Endoscopic Retrograde Choleopancreatography (ERCP)

ERCP is a diagnostic procedure for examination of the biliary and pancreatic ducts system and may be a therapeutic intervention for removal of gall stones etc. It is a procedure used by gastroenterologists, and may be performed in the Medical Imaging Unit or in an Endoscopy Unit.

30.2.3 *Functional Relationships*

The location of the Medical Imaging Unit, if provided, is variable. Consideration must be given to its proximity to Accident and Emergency, and to the Operating Unit where dedicated in-theatre X-Ray is not provided. The requirement for an Outpatient X-Ray Service may also dictate where in the facility it is located. In most instances, a compromise between travelling distance for inpatients (minor role) and convenience for outpatients (major role) will be made.

30.3 Design

30.3.1 Construction Standards

Special attention is to be given to the following in the design of a Medical Imaging Unit:

- Structural support for equipment including equipment mounted to ceilings
- Level floor for equipment positioning and safe patient movement
- The impact on room space of large diameter electrical cable support tray (in floor and surface - mounted)
- Equipment ventilation
- Procedure timing (clocks)
- Task lighting/dimming and room blackout, as required.
- Construction Standards for a Medical Imaging Unit include the following:
- Provision for cable trays, ducts or conduits should be made in floors, walls, and ceilings as required.
- Ceiling heights may be higher than normal.
- A lay-in type ceiling should be considered for ease of installation, service, and remodeling.

Standards and Codes

Radiological facilities are to comply with relevant State legislation, regulations and statutory requirements.

30.3.2 Environmental Considerations

Acoustics

Acoustic privacy should be provided in all imaging rooms, interview rooms and particularly in reporting areas

Lighting

Provide indirect and dimmable lighting required in all examination rooms for patient comfort. Ceiling -mounted shadowless lighting is required in CT and Angiography imaging rooms.

Privacy

Visual patient privacy is an important consideration to be addressed in the design of imaging rooms and waiting spaces. Privacy screens will be required to imaging and screening rooms.

30.3.3 Infection Control

Hand-washing facilities shall be provided for each Imaging Room, located within or outside the entry to the room. Refer to Part D – Infection Control: Handwashing Facilities for a discussion on the types of basins suitable for this area.

30.3.4 Space Standards and Components

Rooms shall be sized to suit the design requirements of the equipment to be used, to provide a safe working environment and to allow the effective movement of staff and patients.

Ceiling heights shall suit the equipment, but shall not be less than 3000mm for ceiling tube mount installations.

Special consideration should also be given to the width and height of doorways to ensure delivery and removal of equipment is not impeded or prevented, and that patient trolley and bed movement is not hampered.

30.3.5 *Building Service Requirements*

Radiation Protection

Most Medical Imaging requires radiation protection. Plans and specifications will require assessment for radiation protection by a certified physicist or other qualified expert. The radiation protection assessment will specify the type, location and amount of radiation protection required according to the final equipment selections and layout. Radiation protection requirements shall be incorporated into the final specifications and the building plans.

Communications

Nurse Call System

Nurse call buttons shall be located in or near change cubicles, patient-use toilets, showers and at every holding/recovery bay. Staff Assist and Emergency Call buttons are required in all Imaging rooms, Holding and Recovery areas. Annunciator panels in corridors must be located for optimum viewing.

Voice/Data Communications

Voice/data installation may include:

- Voice/data cabling for phones and computers
- Dictation system for reporting and/or voice recognition system
- High speed network for digital and CR equipment
- PACS
- Patient or clinical Information Systems
- Radiology Information System ideally linked to the Patient Information System
- Conferencing facilities.

Fire Sprinklers

Caution is required against the use of pre-activation sprinklers in Medical Imaging areas. It should be ensured that a broken sprinkler does not result in the flow of water from all heads, damaging expensive equipment.

30.4 Components of the Unit

The Medical Imaging – General Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

30.4.1 *Non-Standard Components*

Digital (PACS) Reporting Area

Description and Function

PACS reporting areas will include Radiologist workstations for viewing and reporting on procedures using high resolution (LCD) monitors on which images can be manipulated. A minimum of two linked monitors are required, occasionally four screens are provided.

In addition to the reporting monitors, a dedicated computer will be required for access to the Patient Information System and a system for dictating reports. .

Location and Relationships

Locate in a quiet area with ready access to the imaging rooms. Several workstations may be located in one room but will need to be visually and acoustically separated.

Considerations

The reporting area will require:

- Ergonomic design of the workstation to accommodate the monitors.
- Adequate ventilation and temperature control to individual spaces to minimize risk of monitor failure
- Individual cubicle lighting (dimmable)
- Acoustic measures to ensure quality of voice recordings.

Magnetic Resonance Imaging (MRI) Room

Description and Function

The MRI Room is for MRI scanning procedures. A staff handwashing basin will be located outside the room in close proximity.

Location and Relationships

The MRI room will have an adjacent control room and computer equipment room. Refer to Functional Areas – MRI above for discussion on location and specific requirements.

Considerations

Refer to Functional Areas above for specific requirements. The following are additional considerations:

- Fixtures and fittings are to be non-magnetic
- Electromagnetic shielding (radio frequency enclosure) will be required as advised by a Radiation Consultant
- Installation will be according to manufacturer's specifications; floor to ceiling cable duct with removable covers may be required
- Provide 'X-Ray in Use' lights outside each entry door
- Power to be on emergency supply – all power to MRI to pass through MRI isolation transformer.

30.5 Schedule of Accommodation

Typical Medical Imaging Unit - General at levels 1 to 6

ROOM/ SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Entrance/ Reception Areas											
Reception/ Clerical	RECL-10-SJ Similar	1	x	9	1	x	12	1	x	15	
Waiting	WAIT-10-SJ Similar	2	x	10	2	x	15	2	x	50	Separate Female areas
Play Area - Paediatric	PLAP-10-SJ Similar	1	x	10	1	x	15	1	x	20	Adjacent to waiting area
Bay - Mobile Equipment	BMEQ-4-SJ	1	x	4	1	x	6	2	x	6	Depends on facility requirement
Bay - Water Fountain		1	x	1	1	x	1	2	x	1	
Bay - Wheelchair Park	BWC-SJ	1	x	4	2	x	4	1	x	8	
Bay - Vending Machines		1	x	1	1	x	1	1	x	3	Optional
Office - 4 Person Shared	OFF-4P-SJ	1	x	12	1	x	15	2	x	20	Clerical
Office - Workstation	OFF-WS-SJ				1	x	5.5	1	x	5.5	For transport staff. May be adjacent to trolley parking area
Store - Current Film	STFS-SJ Similar	1	x	20	1	x	50	1	x	100	Optional; Size depends on facility requirement and digital records
Toilet - Public	WCPU-3-SJ	2	x	3	4	x	3	6	x	3	May share general public amenities
Toilet - Accessible	WCAC-SJ	1	x	6	1	x	6	2	x	6	May share general public amenities
Support Areas											
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	2	x	5	
Communications Room	COMM-SJ COMM-20-SJ	1	x	10	1	x	20	1	x	30	PACS server room. Size determined by operational policy
Office - 3 Person Shared	OFF-3P-SJ	1	x	12	1	x	12	1	x	15	PACS operation/ management
Store - Files	STFS-10-SJ	1	x	8	1	x	10	1	x	20	Film/ CDs/ Discs. Size determined by operational policy
Store - General	STGH-12-SJ Similar	1	x	9	1	x	12	1	x	16	
Store - Photocopy/ Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	Printing/ Digitiser
General X-Ray/ OPG/ Fluoroscopy											
General X-Ray	GENXR-SJ	1	x	30	4	x	30	12	x	30	
Orthopantomogram (OPG)								2	x	6	
Screening Room (Fluoroscopy)	SCRN-SJ				1	x	36	3	x	36	
Patient Bay Holding (Male/Female)	PBTR-H-10-SJ	2	x	10	4	x	10	4	x	10	Separate Male/ Female areas
Bay - Handwashing, Type B	BHWS-B-SJ	1		1	1		1	1		1	1 per 4 bed bays; refer to Part D
Bay - Linen	BLIN-SJ	1	x	2	1	x	2	1	x	2	
Bay - Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	2	
Change Cubicle - Patient	CHPT-SJ	2	x	2	6	x	2	20	x	2	2 Change rms per General Imaging room in total
Change Cubicle - Accessible	CHPT-D-SJ	2	x	4	2	x	4	4	x	4	2 Change rms per Imaging room in total
Daylight Processing	DPRO-SJ				1	x	16	1	x	40	Digital processing/ printing; as required by service plan
Dark Room		1	x	6	1	x	6	1	x	6	Optional
Preparation/ Set-up Room (Imaging)	PREP-S-SJ	1	x	9	1	x	9	1	x	9	
Property Bay - Patients	PROP-3-SJ Similar	2	x	2	2	x	4	2	x	8	Patient lockers, Separate Male/ Female areas
Toilet – Patient	WCPT-SJ	2	x	4	2	x	4	2	x	4	Separate Male/ Female areas
Toilet - Accessible	WCAC-SJ	1	x	6	1	x	6	2	x	6	
Waiting – Changed Patients	WAIT-10-SJ	2	x	5	2	x	10	2	x	10	Separate Male/ Female areas

ROOM/ SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
(Male/Female)											
Ultrasound/ Mammography											
Ultrasound	ULTR-SJ	1	x	14	2	x	14	8	x	14	
Change Cubicle - Patient	CHPT-SJ	1	x	2	1	x	2	6	x	2	For ultrasound, Separate Male /Female areas
Change Cubicle - Accessible	CHPT-D-SJ	1	x	4	1	x	4	2	x	4	For Ultrasound
Mammography	MAMMO-SJ	1	x	16	1	x	16	2	x	16	
Change Cubicle - Patient	CHPT-SJ							1	x	2	For Mammography
Change Cubicle - Accessible	CHPT-D-SJ	1	x	4	1	x	4	1	x	4	For Mammography
Daylight Processing (Mammography)	CPR-SJ				1	x	6	1	x	10	
Preparation/ Set-up Room	PREP-S-SJ				1	x	9	2	x	9	
Waiting - Sub	WAIT-10-SJ Similar	2	x	5	4	x	5	4	x	10	Separate Female areas
CT Scanning Area											
CT Scanning - Procedure Room	CTPR-SJ	1	x	45	2	x	45	4	x	45	
CT Scanning - Control Room	CTCR-SJ	1	x	14	1	x	14	4	x	14	Larger space required if shared
Computer Equipment Room	COEQ-SJ	1	x	8	2	x	8	4	x	8	For Imaging modules
Patient Bay Holding (Male/Female)	PBTR-H-10-SJ	2	x	10	2	x	10	4	x	10	Separate Male/ Female areas
Waiting – Changed Patients (Male/Female)	WAIT-10-SJ	2	x	5	2	x	10	2	x	10	Separate Male/ Female areas
Change Cubicle - Patient	CHPT-SJ	1	x	2	2	x	2	4	x	2	
Change Cubicle - Accessible	CHPT-D-SJ	1	x	2	1	x	2	2	x	4	
Bay - Handwashing, Type B	BHWS-B-SJ	1	x	1	1	x	1	1	x	1	1 per 4 bed bays; refer to Part D
Bay - Linen	BLIN-SJ	1	x	2	1	x	2	1	x	2	
Bay - Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	2	
Angiography Area (Optional - depends on service plan)											
Angiography Procedure Room	ANPR-SJ				2	x	42	4	x	42	
Angiography Control/ Reporting Room	ANCR-SJ				2	x	14	4	x	14	May be shared between two procedure rooms
Computer Equipment Room	COEQ-SJ				2	x	8	4	x	8	For Imaging modules
Anaesthetic Induction Room	ANIN-SJ				1	x	15	2	x	15	Optional
Preparation/ Set-up Room	PREP-S-SJ				1	x	9	2	x	9	
Patient Bay Holding (Male/Female)	PBTR-H-10-SJ				2	x	10	4	x	10	Separate Male/ Female areas
Reporting Room	XRRR-SJ				1	x	12	1	x	12	May be combined with control room
Scrub Up/ Gowning	SCRB-6-SJ				2	x	6	4	x	6	Larger space required if shared
Store - Sterile Stock	STSS-12-SJ				2	x	12	4	x	12	
Bay - Handwashing, Type B	BHWS-B-SJ				1	x	1	1	x	1	1 per 4 bed bays; refer to Part D
Bay - Linen	BLIN-SJ				1	x	2	1	x	2	
Bay - Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	2	
Store - Files	STFS-10-SJ				1	x	8	1	x	10	According to operational policies
MRI Area											
MRI Scanning Room					1	x	42	2	x	42	
MRI Control/ Reporting Room	ANCRT-SJ				1	x	14	2	x	14	May be shared between 2 MRI procedure rooms
Computer Equipment Room	COEQ-SJ				1	x	8	2	x	8	Size & configuration as per manufacturer's specifications
MRI Viewing and Reporting	XRRR-SJ				1	x	12	1	x	12	Optional. Maybe combined with Control Room
Change Cubicle - Patient	CHPT-SJ				2	x	2	2	x	2	For MRI

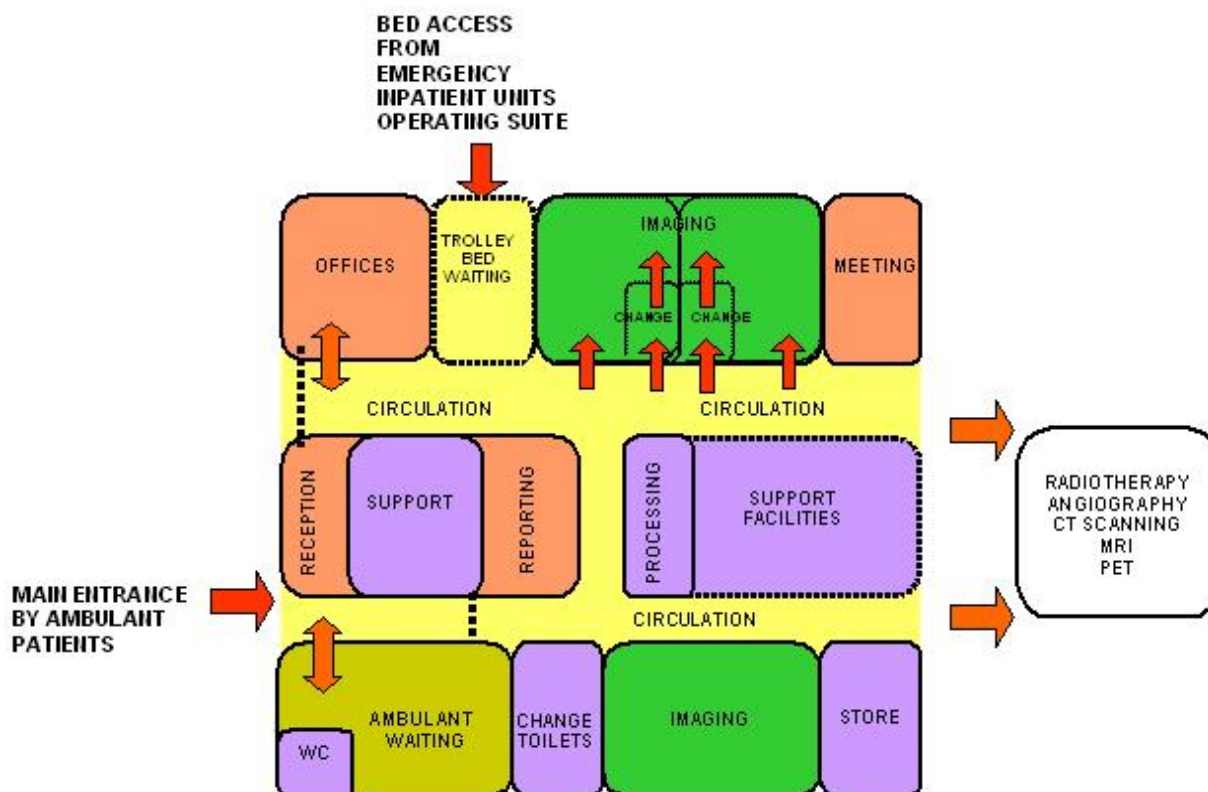
ROOM/ SPACE	Standard Component	Level 1/2 Qty x m ²			Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Patient Bay Holding (Male/Female)	PBTR-H-10-SJ				1	x	10	2	x	10	Separate Male/ Female areas
Property Bay - Patients	PROP-3-SJ				2	x	4	2	x	8	Patient lockers, Separate Male/female areas
Waiting – Changed Patients (Male/Female)	WAIT-10-SJ				2	x	10	2	x	10	Separate Male/ Female areas
Toilet – Patient	WCPT-SJ				2	x	4	2	x	4	Separate Male/ Female areas
Bay - Handwashing, Type B	BHWS-B-SJ				1	x	1	1	x	1	1 per 4 bed bays; refer to Part D
Bay - Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Consult & Holding/ Recovery Area - Shared between Imaging Specialties											
Consult Room	CONS-SJ				1	x	12	2	x	12	
Patient Bay - Holding/ Recovery	PBTR-H-10-SJ				4	x	10	8	x	10	
Procedure Room	PROC-20-SJ Similar				1	x	14	1	x	20	
Bay - Handwashing, Type B	BHWS-B-SJ				1	x	1	2	x	1	1 per 4 bed bays; refer to Part D
Bay - Linen	BLIN-SJ				1	x	2	1	x	2	
Bay - Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Clean Utility	CLUR-12-SJ Similar				1	x	8	1	x	12	
Dirty Utility - Sub	DTUR-8-SJ				1	x	8	1	x	8	
Disposal Room	DISP-8-SJ				1	x	8	1	x	8	
Property Bay - Patients	PROP-3-SJ Similar				2	x	4	2	x	8	Patient lockers
Shower - Patient	SHPT-SJ				1	x	4	1	x	4	
Staff Station	SSTN-14-SJ Similar				1	x	10	1	x	14	
Store - Equipment	STEQ-10-SJ				1	x	10	1	x	12	
Toilet - Patient	WCPT-SJ				2	x	4	2	x	4	Separate Male/ Female areas
Toilet - Accessible	WCPT-D-SJ				1	x	5	1	x	5	
Staff Offices											
Office - Single - 12m2	OFF-12-SJ				1	x	12	1	x	12	Director
Office - Single - 9m2	OFF-S9-SJ				2	x	9	4	x	9	Radiologists and Radiographers
Office - Single - 9m2	OFF-S9-SJ				1	x	9	1	x	9	Nurse Manager
Office - Workstations	OFF-WS-SJ				4	x	5.5	6	x	5.5	Medical / Clerical; according to staffing numbers
Store - Photocopy/ Stationery	STPS-8-SJ				1	x	8	1	x	8	
Meeting Room - Medium	MEET-L-20-SJ				1	x	20	1	x	20	
Meeting Room - Large	MEET-L-30-SJ				shared			1	x	30	
Staff Room	SRM-25-SJ Similar				1	x	20	1	x	25	
Store - Files	STFS-10-SJ							1	x	10	Optional; May include film library
Property Bay - Staff	PROP-3-SJ				2	x	3	2	x	3	Lockers
Toilet - Staff	WCST-SJ				2	x	3	2	x	3	Easily accessible if general staff amenities are remote
Staff Change Room	CHST-12-SJ				2	x	12	2	x	14	Required for facilities with high interventional workload
Total Net Department							410.0			1427.0	2806.5
Circulation %							35			35	35
Grand Total							553.5			1926.5	3788.8

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

30.6 Functional Relationship Diagram



30.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 440 Medical Imaging Unit Revision 5' 2013. Retrieved from website: [http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/\[B-0440\]%20Medical%20Imaging%20Unit.pdf](http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/[B-0440]%20Medical%20Imaging%20Unit.pdf) 2014
- Department of Health (UK). 'Facilities for Diagnostic Imaging and Interventional Radiology HBN 6' 2001. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/149183/HBN_6_V1_DSSA.pdf 2014
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- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

31.0 Medical Imaging Unit – Nuclear Medicine

31.1 Introduction

31.1.1 Description

The Nuclear Medicine Unit provides facilities for the administration of radiopharmaceutical agents to patients and patient imaging for diagnostic purposes and for treatment. The Nuclear Medicine Unit may be provided within the Medical Imaging Unit or as a freestanding Unit. The Unit may or may not include a Radiopharmacy Laboratory. The size of a unit in terms of numbers and type of cameras will be determined by the service plan and clinical needs.

31.2 Planning

31.2.1 Model of Care

The model of care will depend on level of services provided as defined in the service plan and the presence or otherwise of PET as a sub-component of the Nuclear Medicine Unit.

In large centers, it will be a discrete unit. If there are only one or two gamma cameras, it may be a discrete sub-unit of Medical Imaging.

All units will have a Hot Laboratory (Hot Lab). Large centers may or may not include a Radiopharmacy Laboratory that will prepare its own radiopharmaceuticals for general use.

31.2.2 Planning Models

Location

A ground floor site is preferred but if this cannot be achieved, consideration should be given to units above, below and adjoining the proposed location with regard to radiation shielding requirements, the weight of equipment and associated shielding and access for equipment and radioactive isotopes.

The Unit should not act as a thoroughfare to other units of the healthcare facility.

Unit Layout

Staff and patient flows in the Unit are critical to ensure that patients, staff and visitors are not exposed to radiation as a result of travel through or adjacent to areas occupied by dosed patients and scanning rooms. Effective layout can also reduce the need for costly radiation shielding.

Layout should address the need for separation of areas particularly patient and staff corridors and entry areas for outpatients and inpatient on beds/trolleys. Unit design and operational Policies should address the management of radioactive substances including how radioactive substances will be delivered to the Unit and how radioactive waste will be removed.

If provided, the Bone Density Room should be located near the entry to the Nuclear Medicine Unit to ensure patients do not unnecessarily cross areas of radioactivity. The Bone Densitometry room should be located away from dosed patients by distance or shielding to avoid interference to the Bone Density Unit from high ambient radiation levels.

31.2.3 Functional Areas

The Nuclear Medicine Unit consists of the following functional areas:

- Reception/Administration
- Waiting areas for outpatients and inpatients, including toilets
- Patient holding, observation and recovery area
- Treatment areas including gamma camera rooms, specialized scanning imaging rooms (SPECT, PET, PET/CT, bone densitometry), stress testing facilities
- Support areas including utilities, staff station
- Hot Lab/Radioactive Waste Store
- Staff areas including offices and amenities
- Teaching and research facilities (Tertiary Centers).

Patient Waiting

Waiting areas should allow separation of dosed and undosed patients, particularly as some patients may need to wait for 45 minutes after dosing for uptake. It is also preferable to separate dosed patients from relatives and visitors to the unit which may include young adults, pregnant women and children. Dosed patients should have access to drinking water and toilet facilities without having to access general waiting areas.

Outpatients should be separated from inpatients for privacy reasons with separate entrances.

Patient Holding, Observation and Recovery Area

An area will be required for patient holding, recovery and observation including the following:

- A dedicated inpatient entry
- Curtained bed/trolley bays for holding, observation and recovery; the configuration of the overall space should permit both dosed and un-dosed patients to be held safely
- A small staff station with hand basin
- Support rooms including Dirty Utility, Linen Bay, Sterile Stock Store
- Resuscitation trolley (trolley may be located near the Stress Testing Room).

Gamma Camera

The gamma camera is a device used in Nuclear Medicine to image gamma radiation emitting radioisotopes to view and analyses images of the human body or the distribution of medically injected, inhaled, or ingested radionuclides emitting gamma rays, producing a two dimensional image.

The gamma camera consists of one or more flat crystal planes (detectors) optically coupled to an array of photomultiplier tubes, the assembly is known as a 'head', -mounted on a gantry. The gantry is connected to a computer system that both controls the operation of the camera as well as acquisition and storage of acquired images. The gamma camera room will require a control area and radiation screening as assessed by Radiation Consultants.

Single Photon Emission Computed Tomography (SPECT)

SPECT is a nuclear medicine tomographic imaging technique using gamma rays, similar to the conventional gamma camera planar imaging system that is able to provide true 3D information. This information is typically presented as cross-sectional slices through the patient, but can be freely reformatted or manipulated as required.

To acquire SPECT images, the gamma camera is rotated around the patient. Projections are acquired at defined points during the rotation, typically every 3–6 degrees. In most cases, a full 360 degree rotation is used to obtain an optimal reconstruction. The time taken to obtain each projection is also variable, but 15–20 seconds is typical. This gives a total scan time of 15–20 minutes.

A SPECT camera may be combined with a computerized tomography (CT) unit to form a hybrid system and fusion imaging of the physiology and anatomy of the area/s being scanned. SPECT/CT requires a separate control room and radiation screening in accordance with CT requirements.

Viewing and Reporting Area

A dedicated room with dimmable lighting will be required for viewing and reporting on scans. Each workstation should accommodate imaging screens, computers for access to imaging and patient information systems, writing and shelving space for reference materials. The number of reporting stations will depend on service level, number of scanning rooms and the staff establishment.

Hot Lab/Dispensary and Radioactive Waste Storage

Radioactive radiopharmaceuticals are stored and prepared ready for administration to the patient in the Hot Lab. A lead screen barrier is required for the dispensary area. The Dispensary should be located adjacent to the patient dosing room.

A radioactive waste storage area may also be incorporated into or adjacent to this space. Provide radiation shielding as advised by Radiation Consultants. The Waste Store will require a sink and basin with hands-free taps for hand washing and equipment decontamination.

The radioactive storage and preparation area would be generally equipped with a special radioisotope fume hood. This system may need to be fabricated from non-ferrous materials. Exhaust registers should be located at floor and ceiling levels.

Radiopharmacy

The Radiopharmacy is used for preparation, compounding, quality control and dispensing of radiopharmaceuticals for diagnosis and treatment. Radiopharmaceuticals are radioactive isotopes attached to pharmaceutical substances.

Only designated units will have an in-house Radiopharmacy laboratory where cold kits are prepared; these may be used in-house or supplied to other Nuclear Medicine Units.

Many nuclear medicine units (e.g. private practices) may receive a daily delivery of the radiopharmaceutical already prepared and dispensed as individual patient doses. Other isotopes/radionuclides (e.g. gallium, thallium) are delivered weekly or monthly as required, pre-packaged into individual doses for dispensing.

Storage – Equipment and Supplies

Storage is required for:

- Collimators and scanning phantoms, within the scanning rooms.
- Mobile equipment such as wheelchairs, trolleys, lifters and ultrasound scanners, may be located in equipment bays
- Technegas unit and large argon cylinder/s that may be located in an equipment bay ; the Technegas unit and trolley is taken to patients in holding bays or in the camera rooms for patient to inhale Tc99m
- Medical consumables and smaller equipment items
- Sterile stock
- Stationery
- Records/files.

31.2.4 Functional Relationships

The Nuclear Medicine Unit should be located with ready access to the Medical Imaging Unit, PET Unit if provided, Emergency Unit, Operating Unit and Critical Care areas. It requires easy access for ambulant patients and beds/stretchers.

31.3 Design

31.3.1 Construction Standards

Construction Standards for a Nuclear Medicine Unit include the following:

- Flooring shall be adequate to meet load requirements for equipment, patients, and personnel.
- Floors and walls should be constructed of materials that are easily decontaminated in case of radioactive spills.
- Walls should contain necessary support systems for either built-in or mobile oxygen and vacuum, and vents for radioactive gases.
- Provision for cable trays, ducts or conduits should be made in floors, walls, and ceilings as required.
- Ceiling height should be a minimum of three meters in procedure or scanning rooms.
- Ceiling -mounted equipment should have properly designed rigid support structures located above the finished ceiling.
- A lay-in type ceiling should be considered for ease of installation, service and future remodeling.

31.3.2 Environmental Considerations

Acoustics

Acoustic treatment will be required to the following areas:

- SPECT/CT scanning rooms (hybrid units may be noisy)
- Viewing/reporting room
- Consulting rooms.

Refer also to acoustic requirements identified in Standard Components Room Data Sheets.

Natural Light

Natural light is desirable in all patient areas, staff room and staff offices. Lighting level in reporting rooms needs to be adjustable. External windows provided in scanning and uptake rooms should be assessed by a Radiation Consultant for shielding requirements.

31.3.3 Safety and Security

The Nuclear Medicine Unit shall include a safety shower with an eyewash station for use in the event of radioactive spills.

31.3.4 Finishes

Floor finishes and junctions should be smooth, impervious and non-absorbent in case of radiation spills.

31.3.5 Building Service Requirements

Radiation Protection

Plans and specifications will require assessment for radiation protection by a certified physicist or other qualified expert, as required by the appropriate state authorities. The radiation protection assessment will specify the type, location and amount of radiation protection required according to the final equipment selections and layout. Radiation protection requirements shall be incorporated into the final specifications and the building plans.

Radiation shielding will be required to a number of areas as advised by Radiation Consultants including:

- Reception and rooms adjacent to dosed patient rooms
- Dosing/Consult Exam rooms
- Hot Lab/Dispensing room/Radiopharmacy
- Pre-scan uptake rooms/dosed waiting areas, patient toilets
- Cardiac Stress Testing Room
- Scanning Room/s
- Post scanning waiting areas
- Bone Densitometry Room.

Hydraulic Services

Ceiling spaces above gamma cameras and specialty scanning units should not be used for hydraulic services or air-conditioning ducts, to avoid damage to equipment from leakages.

The need for delayed holding tanks within the Nuclear Medicine Unit will require assessment by the Radiation Consultant.

Mechanical Services

Additional cooling and ventilation will be required to Scanning Rooms and associated computer equipment rooms as the equipment is sensitive to excessive ambient heat. Some scanners may require chilled water for cooling. Large temperature changes (greater than 40°C per hour) within scanning rooms need to be avoided to reduce the risk of crystal fracture in gamma cameras. Additional air extraction or exhaust may be required to Camera Room/s where ventilation agents such as Technegas are administered.

In the restricted areas of Patient Examination Room and Storage and Preparation areas, if radioactive gas Xenon is being used, special ventilation is required. Ventilation requirements would be in accordance with the Nuclear Regulatory Commission, publication 'Guide for preparation of Application for Medical Use Program' Guide 10. 8, Appendix 0, edition August 1987 – revision 2. The restricted area should be kept under negative pressure by exhausting at least 15 % more air than supply air. Recirculation of air from these spaces should not be permitted.

The reviewer recommends: The Storage and Preparation Area would be generally equipped with a special radioisotope fume hood. This system may need to be fabricated from non-ferrous materials. This probably refers to the hot lab.

This is also recommended: Exhaust registers should be located at floor and ceiling levels.

General air-conditioning inpatient and staff areas needs to be adjustable for patient and staff comfort; the temperature of the Unit should not exceed 25°C.

Smoke detectors in treatment rooms should be sensitive to radiation.

Hot Lab room air should be negatively pressured and exhausted, not recirculated. The Hot Lab may include a fume cabinet which will require exhausting.

Rooms in which Technegas is used should be negatively pressured to the rest of the Unit.

31.4 Components of the Unit

The Nuclear Medicine Unit will contain a combination of Standard Components and Non-Standard Components, according to the Level of Service. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

31.4.1 *Non-Standard Components*

SPECT and SPECT/CT Scanning Rooms

Description and Function

The SPECT and SPECT/CT Scanning rooms will be used for patient imaging procedures using a SPECT camera or combined SPECT/CT hybrid system. Installation of equipment should be in accordance with manufacturer's recommendations. Room size may vary according to the equipment selected

Location and Relationships

Scanning rooms require ready access from dosing rooms and dosed patient waiting areas. Scanning rooms may be colocated with shared Control rooms to enable monitoring of two rooms simultaneously.

Considerations

- Floor structure should support the equipment weight
- Uninterruptible power supply is required to the cameras and associated computer modules to prevent data loss and/or damage during power surges or loss of supply
- Power to patient areas shall be body protected to protect against electric shock
- Individual room temperature and humidity control is required
- Lighting should be placed to avoid lights shining directly into the patient's eyes and should be dimmable
- Radiation shielding will be required according to assessment by the Radiation Consultant
- Bed/trolley access is required to the room.

Fixtures, fittings and equipment within the room will include:

- Collimator rack/s for a range of collimator sizes should be included; the collimator is a directional guide; the size and length of the collimator holes determine which gamma rays reach the detector in the camera; collimator racks vary according to the model/level of Gamma Camera
- Patient ECG monitoring may be required in the room
- CCTV camera may be included (optional in SPECT/CT room)
- Lead apron rack and aprons will be required in the room or immediately adjacent
- Hand basin – Type B with paper towel and soap fittings
- Television, ceiling or wall -mounted is optional.
- Bench and shelving for preparation and storage may be provided.

Services will include:

- Medical gases – oxygen, suction, medical air on service panel
- Nurse and emergency call system
- Power outlets for patient equipment on the medical services panel and additional power on all walls
- Computer data points on patient services panel, near gamma camera unit and in control areas.

Store – Radioactive Waste

Description and Function

This room will store radioactive waste materials.

Location and Relationships

Ready access to the Hot Laboratory is required.

Considerations

Lead lining is required to ensure safe protection of radioactive materials.

Bone Densitometry Room

Description and Function

Bone densitometry is a non-invasive procedure using a special x-ray scanning machine to determine bone density or strength. It is used to identify those at risk of developing osteoporosis and to monitor change in bone density.

Location and Relationships

The bone densitometry room maybe located within the radiology or nuclear medicine department.

Considerations

The room may have radiation shielding to walls and/or glazing as advised by Radiation Consultant.

31.5 Schedule of Accommodation

Typical Medical Imaging Unit - Nuclear Medicine at levels 4 to 6

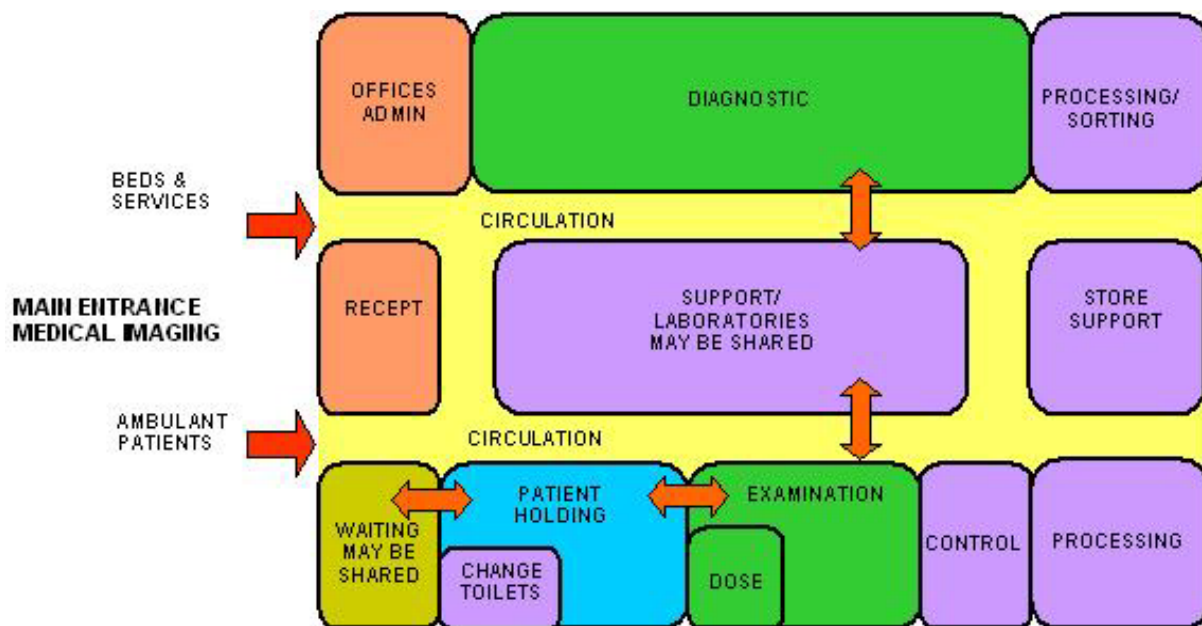
ROOM/ SPACE	Standard Componen	Level4 Qty x m²			Level 5 Qty x m²			Level 6 Qty x m²			Remarks
Entry/ Reception											
Waiting	WAIT-10-SJ Similar	2	x	10	2	x	15	2	x	20	
Reception/ Clerical	RECL-15-SJ	1	x	10	1	x	10	1	x	15	
Meeting Room	MEET-9-SJ	1	x	9	1	x	9	1	x	12	Private meeting or booking
Office - 3 Person Shared	OFF-3P-SJ	1	x	12	1	x	12	1	x	15	Clerical support
Store - Photocopy/ Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	
Store - Files	STFS-10-SJ Similar	1	x	8	1	x	8	1	x	10	
Patient Areas											
Waiting, Undosed	WAIT-10-SJ Similar	2	x	5	2	x	9	2	x	9	Separate Male/Female areas
Waiting- Dosed	WAIT-SEC-SJ	2	x	5	2	x	9	2	x	9	Access to drinking water and toilet facilities, not through general waiting
Toilet - Patient	WCPT-SJ	2	x	4	2	x	4	4	x	4	
Toilet - Accessible	WCAC-SJ	2	x	6	2	x	6	4	x	6	
Shower - Patient	SHPT-SJ	2	x	4	2	x	4	2	x	4	For post- stress testing patient hygiene and incontinent patients
Bay - Beverage, Open plan	BBEV-OP-SJ	1	x	4	1	x	4	1	x	4	
Bay - Wheelchair Park	BWC-SJ Similar				1		4	1	x	6	May also include a patient trolley
Patient Bay - Holding	PBTR-H-10-SJ	2	x	10	3	x	10	8	x	10	Curtained bays
Bay - Handwashing, Type B	BHWS-B-SJ	1	x	1	1	x	1	2	x	1	
Staff Station/ Clean Utility	SSCU-SJ	1	x	9	1	x	9	1	x	10	
Bay - Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	Part of Inpatient Holding Area
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Consult Room	CONS-SJ	1	x	14	2	x	14	4	x	14	
Store - Sterile Stock	STSS-12-SJ	1	x	6	1	x	12	1	x	12	
Dirty Utility - Sub	DTUR-S-SJ Similar	1	x	8	1	x	8	1	x	10	
Disposal Room	DISP-8-SJ	1	x	5	1	x	8	1	x	10	
Treatment Areas											
SPECT Scanning Room (with Control)	GCAM-SJ Similar				1	x	42	2	x	42	Rooms should be rectangular
SPECT/ CT Scanning Room	CTPR-SJ				1	x	48	1	x	48	Rooms should be rectangular
SPECT- Control Room	ANCRT-SJ Similar				1	x	14	1	x	14	
Bay - Mobile Equipment	BMEQE-4-SJ							2	x	4	
Bay - Mobile Equipment	BMEQE-4-SJ Similar	1	x	6	2	x	2	4	x	6	Technogas machine and argon cylinder.
Procedure/ Stress Testing Room	STRT-SJ Similar	1	x	12	1	x	12	1	x	16	
Procedure Room	PROC-20-SJ Similar							1	x	20	Optional. Ideally adjacent to the Hot/Dispensing Lab
Dosing/Consult /Exam Room	CONS-SJ							5	x	12	For dose administration and examination.
Bone Density Measurement Room								1	x	12	

ROOM/ SPACE	Standard Componen	Level4 Qty x m ²			Level 5 Qty x m ²			Level 6 Qty x m ²			Remarks
Bone Density Measurement Room					1	x	16	1	x	16	Trolley/bed access
Store - Equipment/ General	STEQ-10-SJ Similar							1	x	12	
Computer Equipment Room	COEQ-SJ	1	x	8	3	x	8	4	x	8	For scanning equipment
Uptake Room								1	x	12	Radiation Shielded.
Uptake / Induction Room								1	x	18	Radiation Shielded. With GA capacity.
PET/CT Scanning Room								1	x	50	
PET/CT Control Room								1	x	16	May need to be radiation shielded
PET/CT Plant/ Equipment Room								1	x	18	
Viewing and Reporting	XRRR-SJ	1	x	12	1	x	12	1	x	20	4 workstations
Hot Laboratory											
Entry/ Lobby - Isotope Delivery	AIRL-6-SJ	1	x	6	1	x	6	1	x	6	Dual access from main corridor and inside the unit, unless delivered directly
Hot Lab/ Therapy Dispensing	HTLB-SJ	1	x	10	1	x	12	1	x	12	Fume hood, dose calibrator, balance centrifuge etc
Radioactive Waste Holding Store					1	x	20	1	x	20	
Shower - Staff Emergency	BES-SJ	2	x	1	2	x	1	2	x	1	Decontamination
Bay -PPE (Personal Protective Equipment)	BPPE-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Staff Areas											
Office - Single Person	OFF-S9-SJ Similar				1	x	12	1	x	12	Unit Director
Office - Workstation	OFF-WS-SJ	3	x	5.5	4	x	5.5	6	x	5.5	Shared use, As per service plan
Office - Single Person	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	Nurse Unit Manager
Workstation (Registrars)	OFF-WS-SJ							2	x	5.5	
Office - Single Person	OFF-S9-SJ Similar							1	x	12	Chief Physicist
Workstation (Physicists)	OFF-WS-SJ	2	x	5.5	2	x	5.5	4	x	5.5	Optional: as per service plan
Office - Single Person	OFF-S9-SJ							1	x	9	Chief Technologist
Workstation (Technologist)	OFF-WS-SJ	2	x	5.5	2	x	5.5	4	x	5.5	
Office - Single Person	OFF-S9-SJ							1	x	9	Radiopharmacist. Optional.
Workstation (Medical Typists)	OFF-WS-SJ	2	x	5.5	2	x	5.5	4	x	5.5	As per service plan
Staff Room	SRM-25-SJ Similar				2	x	20	1	x	40	May be shared
Meeting Room	MEET-L-15-SJ Similar	1	x	15	1	x	15	2	x	20	
Change - Staff (Male/Female)	CHST-12-SJ/ CHST-20-SJ	2	x	20	2	x	14	2	x	20	
Total Net Department		361.5			626			1189			
Circulation %								35			
Grand Total		488.0			845.1			1605.2			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

31.6 Functional Relationship Diagram



31.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Department of Health (UK). 'Facilities for Diagnostic Imaging and Interventional Radiology HBN 6' 2001. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/149183/HBN_6_V1_DSSA.pdf 2014
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32.0 Medical Logistics

32.1 Introduction

32.1.1 Description

The Medical Logistic Center or the Medical Warehouse provides an area to store medical equipment consumables and disposables, equipment assembly centers and pharmaceutical products. Warehouses shall be designed to accommodate the variety of sensitive materials to be stored, the associated handling equipment, the receiving and shipping operations and associated trucking, as well as the needs of the operating personnel.

Medical logistic centers includes

- General warehouse
- Special warehouse.

The General warehouse shall accommodate the medical equipment, instruments, medical furniture and other materials that do not require a 'sterile area'. The warehouse should have the required provision in the facility for assembling the equipment.

The Special Warehouse shall accommodate the sensitive materials and includes medicines, drugs, consumables and other materials which need to be stored in a clean area.

Facilities must provide a proper environment for the purpose of storing goods and materials that require protection from the elements. The height of the building, size, service requirements and structural complexity are the common factors which affect the construction of a warehouse.

32.2 Planning

32.2.1 Planning Models

Classification of Materials

The Warehouse Unit will consist of the following units depending on the materials stored inside the facility.

- Medical Furniture and Minor and Major Biomedical Equipment
- Medical Instruments
- Medicines, Drugs, fluids, consumables, reagents and dressings materials
- Medical Gases.

Functional Areas

The warehouse shall have the following Functional Areas:

- Loading Dock
- Goods Receipt
- Dispatch
- Storage which may include bulky goods, palletted supplies, flammable equipment, furniture and equipment and gas bottles
- Staff areas including Offices, Workstations and access to Staff Change and Toilets.

The storage area for various materials shall be designed in order to meet the following conditions.

- The area should be clean and dry
- The area should be suitably spaced to allow cleaning and inspection
- All surfaces and shelves should be made of/covered by an impermeable material to enable proper and safe cleaning
- Areas should be adequately lit and ventilated in order for tasks to be performed in a correct and safe manner
- Floor space can accommodate oversized items or the racking configured to store palletized products
- Firefighting equipment should be easily available. Large supplies of flammables should never be stored in the same areas as medicines.

General Considerations

General Considerations for the Medical Warehouse include the following:

- The warehouse shall include the Eyewash stations, fire extinguishers and emergency exits
- High volume low speed (HVLS) fans shall be installed to keep the ventilation effectively
- High speed doors, which open as quickly as eight feet per second, to allow workers and products to keep moving without any delay
- A dock leveler installation must be positioned to stabilize trucks at the loading dock. The leveler will keep the truck straight and secure so that the workers can get on and off the truck with ease
- The roads should be designed for easy movement of trucks. Provision should be made for parking, loading and unloading activities
- The loading and unloading of materials shall have separate vehicle bays. The loading dock shall be designed to safely accommodate the required number of trucks
- Automated or Semi-automated cranes shall be used in order to transfer the materials effectively
- Loading Dock shall be a covered area for transport access to service Units for delivery or collection of goods and shall be zoned into clean and dirty areas. This may be shared between a number of Support Service Units (e.g. Catering Unit, Linen Handling, and Supply Unit).

Special Storage Area

- The sensitive materials or medicines shall be stored in an access controlled environment. Sensitive medicines include narcotics, sedatives, hypnotics, opium preparations, psychotropic medicines and strong analgesics. Refer to the Ministry of Health Formulary Drug List for further information
- Some flammable liquids including acetone, anesthetic ether, alcohols (before dilution) shall be stored in a separate location away from the main storeroom, preferably outside the main storeroom but on the premises and not less than 20m away from the other buildings
- Corrosive or oxidant substances including (but not limited to) acids, alkalis, ammonia solutions and nitrate solutions shall be stored away from flammables, ideally in a separate steel cabinet to prevent leakage. Appropriate industrial-type protective gloves and eyeglasses must be used when handling these items
- In the warehouses, use of cool rooms may be more efficient rather than numerous refrigerators or freezers. Larger facilities should have one cool room with a negative temperature for frozen products (-20°C) and another room with a positive but cold temperature (2°- 8°C) for products requiring refrigeration.

32.2.2 Operational Models

General

Goods Receipt

The warehouse shall have a dedicated Goods Receipt area for the receipt, checking, sorting and temporary holding of incoming stock. Goods Receipt will require off street unloading facilities. The Goods Receipt shall be located near to the Loading Dock with easy access to the Bulk Store.

Dispatch Area

The Dispatch Area shall be designed to manage the range of items that are delivered or collected by external suppliers. It shall be located with easy access to the Loading Dock.

Storage Area

The storeroom and shelves shall be arranged with sufficient space in order to mobilize the materials internally. An area shall be provided for pallets holding cartons as follows:

- At least 10cm (4 inches) off the floor
- At least 30cm (1 foot) away from the walls and other stacks
- Not more than 2.5m (8 feet) high

The Storage area shall be segregated into two clusters namely, bulky items and medical equipment storage. The Storage Areas Capacity shall be determined based on the scope of the services and operational policy of the hospital. Stock items shall be stored in heavy duty shelving or on clean pallets. Based on the requirements, Cool Rooms or refrigerators shall be required for the items which must be stored at cooler temperatures. Sterile items shall be stored separately from non-sterile items. Sterile items are to be stored in shelving which is a minimum of 250mm from the floor and ceiling. Intravenous fluids shall be stored in a designated area within the Bulk Store.

The equipment storage area is used for the storage of medical equipment and furniture. The storage space shall have specific provision based on the type of medical equipment and furniture to be stored.

Administrative Office

The Administrative Office shall consist of the following:

- Workstations with computer
- Meeting Room for porters awaiting assignment
- Store Room for potage trolleys
- Pantry
- Toilets (Male and Female separate)
- Utility room.

Security

The facility should include a security system including trained security personnel, CCTV and safety lockers as required. For special zones, an access control system shall be incorporated. The Security Unit will operate 24-hours every day of the year.

Staffing

The warehouse may include the following staff for efficient operation depending on the operational policy:

- Warehouse Manager
- Store Keepers
- Accountant
- Pharmacist
- Drivers
- Material handling labor
- Security staff.

Operating Hours

The Warehouses will operate during the business hours. It will provide an after-hours emergency services and support with limited entry provisions after-hours.

32.2.3 *Functional Relationship*

External

The warehouse shall have exclusive access to external roads, in order to avoid traffic congestion.

Internal

The storage areas for all delivered supplies shall be located with ready access to the Loading Dock area. This area requires security and controlled access.

32.3 Design

32.3.1 *General*

A special attention should be given to the following parameters irrespective of the size of the warehouse.

Roof

Slanting roof shall be installed to allow rain water drainage. The roof shall be extended over the windows to provide protection from rain and direct sunlight.

Ceiling

A double ceiling shall be installed to provide insulation and to ensure supplies are maintained at the required temperature.

Walls and Floors

The walls and floors of the warehouse should be permanent and smooth for easy cleaning. Walls shall be constructed of brick or concrete blocks. Perforated or bored bricks may be used for the upper portion of the wall to allow ventilation, but these should be screened to prevent the entry of rodents and other pests. The floor shall be constructed or treated to ensure it can withstand frequent movement of heavy products and equipment.

Doors

The doors should be wide enough to allow easy movement of supplies and equipment. Large facilities often use forklifts and other handling equipment. Ensure that the doors are strong and reinforced to provide adequate security. Two strong locks, and install metal grills for extra protection should be ensured.

Windows

The windows should be high and wide to allow adequate ventilation. The location of windows should avoid obstruction by shelves. Windows shall be secured against intrusion and protected with wire mesh to keep out insects.

Ventilation

The warehouse shall be designed to ensure maximum air circulation in order to avoid concentration of fumes or gases and to prevent condensation of moisture on products or walls. Extractor fans may be used to remove fumes, gases, and moisture.

Lighting

The storeroom should be provided with as much natural daylight as possible to avoid the use of either florescent or incandescent bulb lighting. Florescent lighting emits ultraviolet rays, which have a negative effect on certain products. Incandescent bulbs emit heat.

Cupboards

Cupboards shall be provided to store the specific products that must be kept free from dust or light.

Shelves

The shelves and racks should be arranged in rows with a passageway of not less than 90 cm wide and should be adjustable in height. The arrangement of shelving should provide for maximum efficiency and avoid wasting of space; ideally access should be provided to both sides of shelving. Shelves, cupboards, tables, and pallets must be heavy duty construction and materials.

First Aid

A first aid kit should be available to treat employees or visitors who are injured in the facility. The first aid kit shall be placed in a central location that is easily accessible to all employees and clearly marked.

Waste

The facility will generate different types of waste that must be held and destroyed safely including the following:

Non-medical waste

- Cardboard cartons: cardboard shall be recycled or treated as ordinary rubbish
- Garden rubbish: Compost leaves, sticks, weeds, and trimmings from shrubs and trees, if feasible. A separate area shall be designated for composting
- General waste: Where municipal solid waste facilities exist, dispose of ordinary rubbish in the municipal dump. Otherwise, burn or bury it.

Healthcare waste

- Sharps waste: Single-use disposable needles, needles from auto-disable syringes, scalpel blades, disposable trocars, sharp instruments requiring disposal, and sharps waste from laboratory procedures.
- Other hazardous medical waste: Waste contaminated with blood, body fluids, human tissue; compounds such as mercury; pressurized containers; and wastes with high heavy metal content.
- Pharmaceuticals: Expired, damaged, or otherwise unusable medicines and items contaminated by or containing medicinal substances.

32.4 Components of the Unit

Medical Logistics shall contain Standard Components according to the level of service. Provide the Standard Components to comply with details that are described in these guidelines.

32.5 Schedule of Accommodation

Typical Medical Logistics Unit suitable for a tertiary level facility

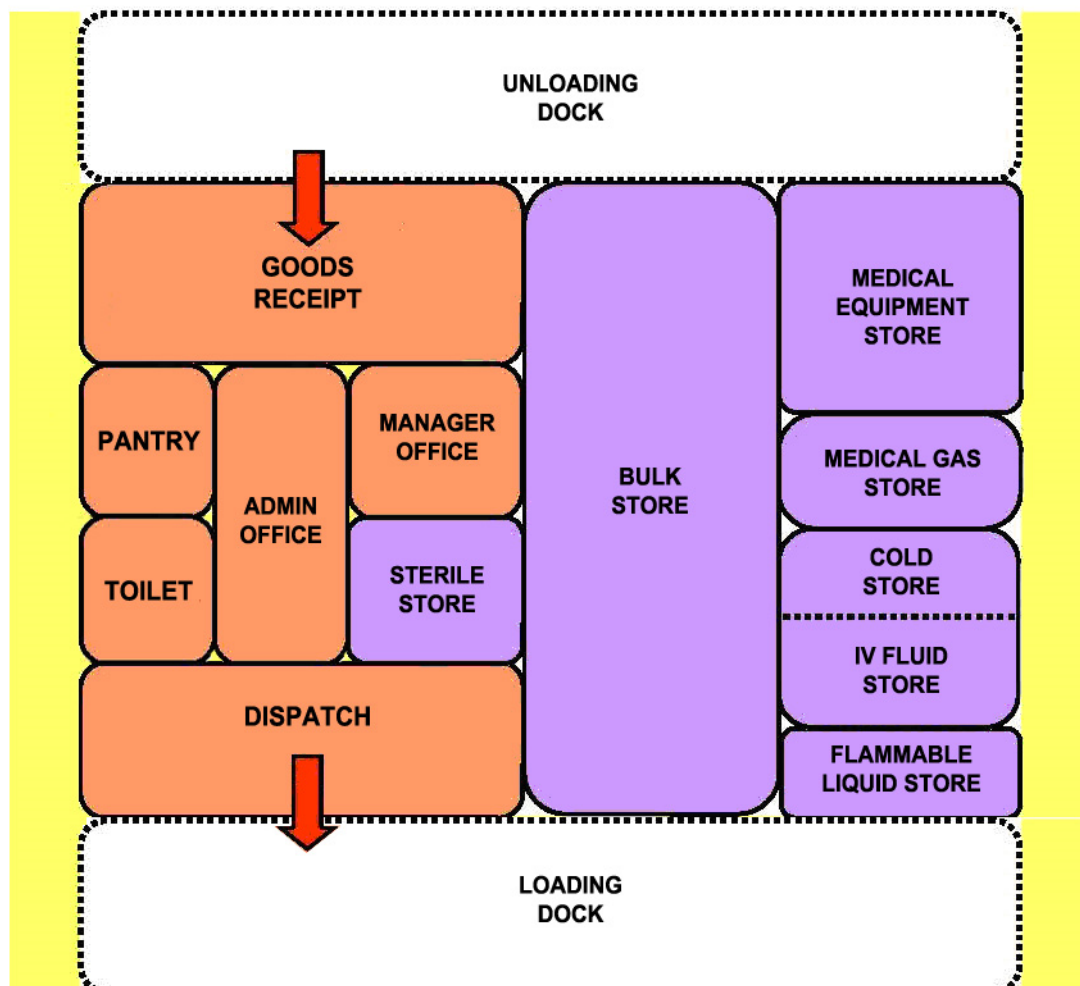
ROOM/ SPACE	Standard Component								Level 5/6 Qty x m ²	Remarks
Medical Logistics Areas										
Loading Dock	LODK-SJ								1 x 0	Covered external area; separate zones for clean/ dirty loading
Staff Base	SSTN-20-SJ								1 x 20	Supervision of Loading Dock
Waiting	WAIT-10-SJ Similar								1 x 5	
Goods Receipt- Sorting/ Holding/ Unpacking									1 x 50	Direct access to Loading Dock
Dispatch									1 x 30	Goods sending - Direct access to Loading Dock
Store - Filing/ Photocopy	STPS-8-SJ								1 x 8	Locate in Goods Receipt
Workstations - Stores Distribution	OFF-WS-SJ								1 x 32	8 workstations; qty dependent on no. of staff
Store - Consumables	STBK-20-SJ Similar								1 x 400	Size dependent on amount of stock to be stored
Store - High Value Items	STBK-20-SJ Similar								1 x 250	Secure area; Size dependent on amount of stock to be stored
Store - Consignment Items	STBK-20-SJ Similar								1 x 100	Secure area; Size dependent on amount of stock to be stored
Store - Flammable Liquid	STFL-SJ Similar								1 x 15	
Store - IV Fluids	STGN-50-SJ								1 x 50	
Store - Sensitive Materials (Drugs)	STDR-5-SJ Similar								1 x 10	May be located in the Pharmacy Unit
Store - Gas Bottles	STGN-20-SJ Similar								1 x 30	May be located externally at a Secure location
Bay - Emergency Shower with Eyewash									1 x 2	Accessible to storage areas
Purchasing										
Office - Manager (Purchasing)	OFF-S9-SJ								1 x 9	
Office - Workstation	OFF-WS-SJ								6 x 4	
Meeting Room	MEET-L-15-SJ								1 x 15	Meetings with company representatives, staff
Store Room - Sample	STBK-20-SJ								1 x 20	Holding of samples and trial products
Staff Areas										
Staff Room	SRM-25-SJ								1 x 25	
Toilet - Staff	WCST-SJ								2 x 3	
Change - Staff									2 x 12	Toilets, shower, lockers, Separate Male/Female areas
Security Room	SECR-10-SJ Similar								1 x 50	With monitoring screens and controls
Net Department Total									1178	
Circulation %									10	
Grand Total									1295.8	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

32.6 Functional Relationship Diagram



32.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). '*Australasian Health Facility Guidelines*'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Ministry of Health (Sharjah). '*Formulary Drug List*' 2012; Retrieved from website: http://www.moh.gov.sa/Portal/WhatsNew/Documents/MOHF_DRUG_LIST_CD.pdf 2014
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33.0 Mental Health Unit – Adult

33.1 Introduction

33.1.1 Description

The Adult Acute Mental Health Inpatient Unit provides assessment, admission and inpatient accommodation in a safe and therapeutic environment suitable for adult mental health patients and staff.

This section is applicable to:

- A stand-alone Adult Acute Mental Health Inpatient Unit or group of units
- A dedicated Adult Acute Mental Health Inpatient Unit within a general hospital
- A number of dedicated Patient Bedrooms as an annex to an Acute Inpatient Unit.

The Operational Policy shall determine the size and function of the Adult Acute Mental Health Inpatient Unit.

An Adult Acute Mental Health Inpatient Unit shall comply with the requirements outlined for Inpatient Accommodation, but with the noted modifications or additions in this section.

33.2 Planning

33.2.1 Planning Models

Some patients may at times exhibit disturbed or high-risk behavior. Appropriate planning and use of materials (for example safety glass, low maintenance/resilient surface etc.) can achieve an environment where all patients can co-exist with minimal disruption to each other. The building should be able to accommodate patients of all levels of disturbance without taking on the characteristics of a jail.

Externally the principal concept of planning should be to integrate the new facility with its surrounds, and with the other buildings. Planning of external spaces must take into account the requirement for provision of a secure garden associated with the High Dependency area, and an open garden area for general use. The area should be based on 10m² per person.

The design of external spaces, as for the building, should be domestic in nature, rather than formal or monumental. They should have the following features:

- The building should consciously have a front and a back
- It should provide opportunities for privacy, recreation and self-expression
- It should provide opportunities for movement/ambulation both indoors and outdoors with unobtrusive environmental boundaries and with appropriate safety provisions
- Single rooms are recommended.

Rooms may be grouped into clusters that can be defined for distinct patient groups; each cluster of rooms should include a recreational space to allow for patient therapy and flexibility for a variety of patient categories.

Additional considerations include:

- Flexibility of space usage through consideration of a range of patient needs for personal and shared space
- Clearly defined patient residential areas readily identifiable by patients who may be disoriented or disturbed
- An effective balance between opportunities for patients' privacy and the need for staff to observe patient behaviors.

33.2.2 Functional Areas

The Adult Acute Mental Health Inpatient Unit will consist of a number of functional areas or zones as follows:

- Main Entry/Reception/Clerical area
- Assessment/Procedural area
- Staff Offices/Administrative and management area
- Staff Amenities area
- Inpatient Area including outdoor areas
- Secure Area including secured courtyard.

Administration and Office Areas

The Unit Manager's Office should be located in, or directly adjacent to the patient area and in particular, the Staff Station.

There should be the capacity to control patient's access to administrative and office areas. There may be a requirement for a communication system between interview areas and the Staff Station to signal the need for assistance. There should be provision for a Secure Store as part of the Group/View Room to house audio-visual equipment.

Admissions Area

The Admissions area will comprise an Admission Office, general purpose Interview Room and Examination Room and will be used by nursing, allied health and medical staff to interview relatives/patients. Examination and consultation of patients will be carried out in these areas. Duress alarms are required in all these areas.

The Admissions Area should be directly screened from the Waiting Area. Noise transmission between these rooms and the waiting area should be reduced to a minimum so that conversations are not overheard.

Day Rooms

At least two separate social spaces shall be provided, one for quiet activities and one appropriate for noisy activities.

ECT Facilities

ECT (Electroconvulsive Therapy) procedures should be undertaken in the Day Procedures Unit, ECT Suite or Operating Unit.

Ensuites

Each bedroom in the open unit is to have its own ensuite. There are a number of configurations – inboard, outboard and between rooms. The latter option is preferred as it maximizes bedroom use and patient observation. The inboard option provides privacy and dignity but should be used with caution for the following reasons:

- A narrow passage may be created at the entrance to the bedroom that may limit observation through the door vision panel
- Blind spots may be created inside the bedroom, facilitate barricading
- Staff attending any emergencies in the room must enter in single file.

The door to ensuites should open in a way to avoid creating a blind spot when open or – with inboard ensuites – enable the ensuite door and bedroom door to be tied together to create a barricade. Ensuite doors are to be lockable by staff when needed and have a privacy latch that can be opened by staff in an emergency.

Entry Areas

The Entrance provides direct access to the unit for patients referred for admission arriving either with relatives, via police or ambulance and alternative access to the unit for patients arriving via the Emergency Unit of the main hospital.

Provision should be made for a gun safe that allows Police to deposit firearms when they are in attendance at the Inpatient Unit.

The Emergency Entrance should be capable of direct approach by ambulance/police vehicles and should have sufficient shelter to allow transfer of patients in shelter from the elements. The Entrance should have an airlock capable of accepting an ambulance trolley with ease.

There should be provision for an intercom between the Emergency Entrance and the Staff Station.

The Entrance Area zone of the building should attempt to break down the 'threshold' feeling of many institutional buildings, while maintaining a sense of direction to the approach.

Group Therapy Area

Space for group therapy shall be provided. This may be combined with the quiet Day Room provided that an additional zero. 7m² per patient is added and a minimum room area of 21m², enclosed for privacy, is available for therapy activities.

Secure Area – Seclusion/High Dependency/Intensive Care

The High Dependency/Intensive Care bedrooms must be lockable and able to be opened from the corridor should a patient attempt to blockade themselves in the room. Doors require a viewing panel, positioned to ensure that should the glass be broken or removed, a patient cannot put an arm through and operate the door lock. High Dependency bedrooms may be accessible to both the low dependency and high dependency sections of the unit. The High Dependency/Intensive Care Areas will require access to a Seclusion Room.

These zones should be capable of secure separation from the remainder of the unit. There should be defined areas for male and female patients

The High Dependency Unit, for client and staff safety purposes, should back onto the Staff Station to ensure easy visibility of the interior of the High Dependency Unit and rapid response in times of patient emergency. Patients in this area will require access to a secured courtyard.

Inpatient Areas

Single Bedrooms

An external outlook coupled with high ceilings adds to the perception of light and space and is a positive contribution to treatment. There should be no 'blind spots' in the rooms particularly any created by open doors and the rooms should be key-lockable from the outside.

Doors should be able to be opened from the corridor should a patient attempt to blockade him/herself in the room. Door viewing panels are optional in open unit bedrooms and will be dependent on the Unit's Operational Policy.

Low wattage night light over the bed space for use by staff when carrying out nighttime observations of patients should be considered.

Acoustic treatment to bedrooms is required to minimize transference of noise between adjoining bedrooms.

Whilst domestic-style beds may be preferred for ambience, consideration should be given to occupational safety and health issues of staff attending to low height beds.

Two Bedrooms

Two bedrooms may be included in the General Inpatient Zone providing an option for sharing, or provide accommodation of a mother and child. They can however be restrictive, result in the disruptive movement of patients to other rooms in order to accommodate new admissions and are generally not recommended.

Occupational Therapy Area

Each Adult Acute Mental health Inpatient Unit shall contain 1.5m² of separate space per patient for Occupational Therapy with a minimum total area of 20.0m².

The space shall include provisions for:

- Hand-washing
- Workbenches
- Storage
- Displays.
- Occupational Therapy Areas may serve more than one Inpatient Unit.

33.2.3 *Functional Relationships*

The Adult Acute Mental health Inpatient Unit should be located with ready access to the Emergency Unit, Main Entry and service and support areas including Catering Unit, Cleaning/Housekeeping, Linen Handling, Waste Management and Supply Unit.

33.3 Design

33.3.1 *Environmental Considerations*

Acoustics

Acoustic treatment should be applied to the following areas:

- Day Areas such as patient living, dining and activities areas
- Patient Bedrooms including high dependency, intensive care and seclusion rooms
- Consulting Rooms
- Admission Areas.

In acoustically treated rooms, return air grilles should be acoustically treated to avoid transfer of conversations to adjacent areas. Door grilles to these areas should be avoided.

Windows and Glazing

Wherever possible, the use of natural light is to be maximized.

All windows and observation panels shall be glazed with safety glass, specifically, toughened laminated glass with a minimum nominal thickness of 10. 38mm, or equivalent approved. Internal windows shall be double-glazed. Windows and frames in patient accessed areas are to be flush faced.

Laminated/toughened glass of various thicknesses should be installed dependent upon the likelihood of patient injury or building damage. Graduate the impact resistance of the glass from toughest at lower level to weakest at high level. Where toughened glass is used, it should be treated with a protective film to ensure glass is held together when broken.

In areas where damage to glass may be expected, avoid larger pane sizes. Smaller panes are inherently stronger for a given thickness than larger panes.

Polycarbonate is not recommended due to surface scratching which will reduce visibility over time.

Where windows are openable, effective security features such as narrow windows that will not allow patient escape, shall be provided. Locks, under the control of staff, shall be fitted.

33.3.2 *Space Standards and Components*

Size of Unit

The schedule of accommodation has been developed for typical 20 and 30 Bed Adult Acute Mental health Inpatient Units. For alternative configurations, allocate space for key areas according to the following guide:

- Lounge/dining/activity areas – Secure Observation – 7.5m² per person
- Lounge/dining/activity areas – General – 5.5m² per person
- Outdoor areas (courtyards and terraces) – Secure – 10m² per person
- Outdoor areas (courtyards and terraces) – General – 5m² per person
- Courtyard and Terrace – minimum area – 20m²
- Consultation rooms – 1 per 5 beds
- Examination/assessment rooms – 1–2 per unit.

33.3.3 *Safety and Security*

Security within the facility and the surrounding outdoor area, related to patient movement requires careful consideration and may include use of video surveillance and motion sensors. The security of access for staff, community and domestic service deliveries should also be considered.

The design should assist staff to carry out their duties safely and to supervise patients by allowing or restricting access to areas in a manner which is consistent with patient needs/skills. Staff should be able to view patient movements and activities as naturally as possible, whenever necessary.

Controlled and/or concealed access will be required as an option in a number of functional areas. Functionally the only difference between an open and a closed (locked) area in their design should be the provision of controls over the flow to, from and throughout the facility. Such controls should be as unobtrusive as possible.

A communication system which enables staff to signal for assistance from other staff i.e. Duress alarms should be included. The system should be discreet and included in all Staff Stations, Reception areas, Meeting Rooms, Consult rooms and client treatment rooms.

33.3.4 *Finishes*

The aesthetics are to be warm and user-friendly wherever possible.

Ceilings

Ceiling linings in patient areas within the Unit are to be solid sheet – not ceiling tiles. Provide secure, tamper resistant, solid sheet ceilings to patient areas in secure zones, seclusion rooms and High Dependency Units and Psychiatric Intensive Care Areas.

Refer also to Part C of these Guidelines.

33.3.5 *Fixtures and Fittings*

Fixtures and fittings should be safe and durable. Generally, all fixings should be heavy duty, concealed, and where exposed, tamper proof. Fittings, including hooks, curtain tracks, bathroom fittings, should be plastic where possible, and have a breaking strain of not more than 15kgs.

Fittings should avoid the potential to be used either as a weapon or to inflict personal damage or self-harm. Paintings, mirrors and signage should be rigidly fixed to walls with tamper proof fixings.

Mirrors shall be of safety glass or other appropriate impact resistant and shatterproof construction. They shall be fully glued to a backing to prevent availability of loose fragments of broken glass.

Holland blinds, Venetian blinds and curtains should be avoided in patient areas. Curtain tracks, pelmets and other fittings that provide potential for patients to hang themselves should be avoided or designed so that the potential is removed.

33.3.6 *Building Services*

Avoid exposed services; for example, sink wastes which may be easily damaged.

Light fittings, smoke detectors, thermal detectors and air-conditioning vents to higher dependent areas, particularly Seclusion Rooms, should be vandal proof and incapable of supporting a patient's weight.

Patient/Nurse Call System

The Unit Operational Policy will determine the need for inclusion of a patient/nurse call system and the type required. This may be provided as personal alert systems worn by staff. Considerations include location of buttons that may not always be in easy reach of patients, patient abuse of systems and the type of patients in the Unit that are usually ambulant and able to seek assistance from staff independently. If installed buttons are provided, they must be tamper proof and covered. Nurse call pendants should not be provided due to the associated risk of self-harm or the ability to use the cable as a weapon.

33.4 Components of the Unit

The Adult Acute Mental Health Inpatient Unit will consist of a combination of Standard Components and Non-Standard Components.

Provide the Standard Components as identified in the Schedule of Accommodation and to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

33.4.1 *Non-Standard Components*

Sitting Area (PICU)

Description and Function

A small sitting area may be provided for the use of patients, external to secure bedroom areas for PICU patients. Sitting areas need to be under direct observation of staff.

Location and Relationships

Locate in the PICU secured zone, adjacent to the bedroom, with direct observation of staff.

Considerations

Furniture is to be soft, foam type to prevent harm to patients and avoid being used as an implement.

33.5 Schedule of Accommodation

Typical Mental Health Unit - Adult with 20 and 30 Beds

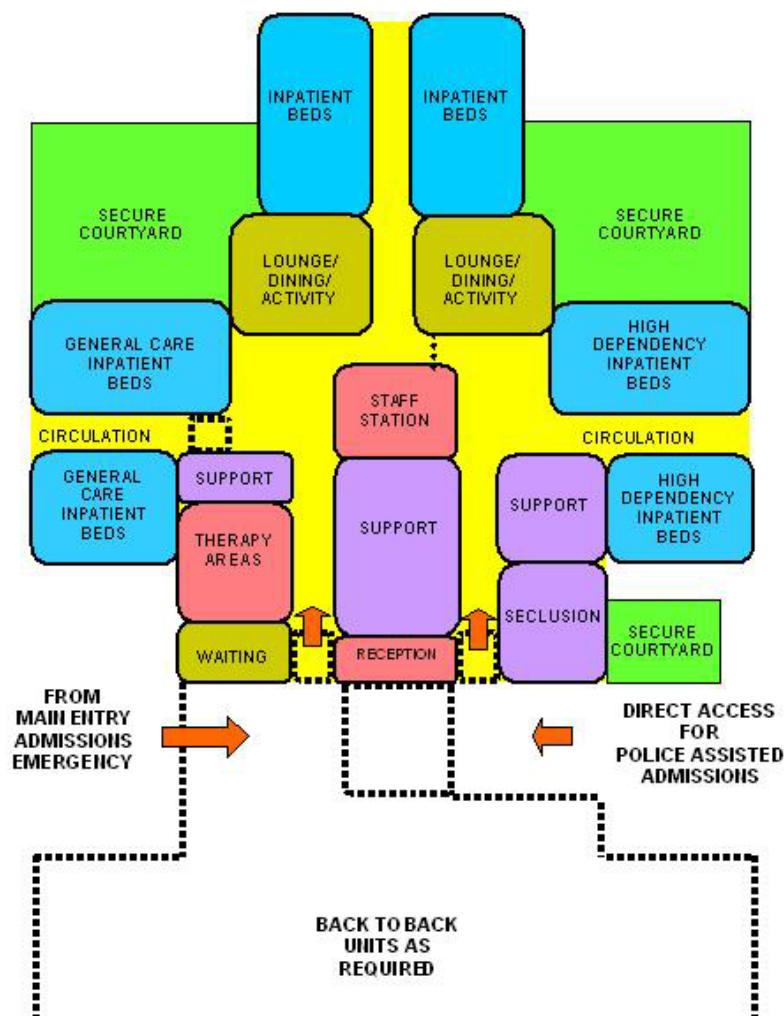
ROOM/SPACE	Standard Component				20 Beds Qty x m ²	30 Beds Qty x m ²	Remarks
Entrance/Reception Areas							
Entry Lobby/Airlock	AIRLE-10-SJ				1 x 10	1 x 10	Optional
Reception	RECL-10-SJ				1 x 10	1 x 12	
Store – Photocopy/Stationery	STPS-8-SJ				1 x 8	1 x 8	
Store – Files	STFS-10-SJ				1 x 10	1 x 10	
Waiting – Male/Female	WAIT-10-SJ				x	1 x 15	Separate Female area
Waiting – Family	WAIT-20-SJ				1 x 25	1 x 25	May include Child Play area
Toilet – Accessible	WCAC-SJ				1 x 6	1 x 6	
Consult/Interview Room - Mental Health	CONS-INT-MH-SJ				4 x 14	6 x 14	Allow for gender separation, based on 1 per 10 beds excluding PICU
Meeting Room and Review Board	MEET-L-15-SJ				1 x 20	1 x 30	Also used for Group/Family Therapy
General Open Unit: Patient Areas							
1 Bed Room – Mental Health	1 BR-MH-SJ				10 x 28	18 x 28	
2 Bed Room – Mental Health	2 BR-MH-SJ				1 x 28	1 x 28	
Ensuite – Mental Health	ENS-MH-SJ				6 x 5	8 x 5	2 Ensuities per 10 Bed Room
Seclusion Room	SECL-SJ				1 x 15	1 x 15	Optional room depending on Operational Policy
Bay – Handwashing	BHWS-B-SJ				4 x 1	6 x 1	1 to Unit Entry
Dining Room	DINMH-30-SJ				1 x 150	1 x 200	Based on 5.5m ² per person.
Pantry (with Servery Counter)	SERV-MH-SJ				1 x 15	1 x 15	
Lounge/Activity Area	LNAC-30-SJ				1 x 30	1 x 50	
Multi-function Activity Area	MAC-20-SJ				1 x 40	1 x 50	
Gymnasium (Mental Health)	GYAH-45-SJ				1 x 20	1 x 20	Optional
Courtyard					1 x 80	1 x 120	External area = 200m ² based on 5m ² per person
Laundry – Mental Health	LAUN-MH-SJ				1 x 8	1 x 8	Lockable
Bay – Linen	BLIN-SJ				2 x 2	2 x 3	
Store – Patient Property	STPP-SJ				1 x 14	1 x 14	
Toilet – Staff	WCST-SJ				1 x 3	2 x 3	
Clinical Support Areas							
Staff Station	SSTN-14-SJ SSTN-20-SJ				1 x 14	1 x 20	May be sub-divided to achieve better visualisation of patients
Office – Clinical Handover	OFF-CLN-SJ				1 x 15	1 x 15	
Medication/Treatment Room	MED-MH-SJ				1 x 16	1 x 16	Includes spatial allowance for Resuscitation Trolley
Bay – Resuscitation	BRES-SJ				1 x 1.5	1 x 1.5	
Dirty Utility	DTUR-12-SJ				1 x 12	1 x 12	
Store – Equipment	STEQ-10-SJ STEQ-16-SJ				1 x 10	1 x 16	
Cleaner's Room	CLRM-5-SJ				1 x 5	1 x 5	
Disposal Room	DISP-8-SJ				1 x 10	1 x 10	
Store – General	STGN-8-SJ				1 x 9	1 x 9	
Observation/Secure Unit							
					8 Beds	10 Beds	Remarks
Entry/Waiting – Secure	WAIT-SEC-SJ				1 x 6	1 x 6	Optional; include safe for police firearms

ROOM/SPACE	Standard Component				20 Beds Qty x m ²			30 Beds Qty x m ²			Remarks
Exam/Assessment Room	EXAS-MH-SJ				1	x	15	1	x	15	
1 Bedroom – Mental Health	1 BR-MH-SJ				8	x	28	10	x	28	
Ensuite – Mental Health	ENS-MH-SJ				1	x	5	1	x	5	Optional; 2 Ensuites per 10 Bed Room
Toilet – Patient	ENS-MH-SJ				1	x	4	1	x	4	
Shower – Patient	ENS-MH-SJ				1	x	4	1	x	4	
Bay – Handwash	BHWS-B-SJ				2	x	1	2	x	1	
Lounge/Dining – Activities	LDA-MH-20-SJ				1	x	80	1	x	100	Based on 7.5m ² per person
Multi-functional Activity Area	MAC-20-SJ				1	x	28	1	x	32	Optional
Seclusion Room	SECL-SJ				1	x	15	1	x	15	
Secured Courtyard					1	x	80	1	x	100	Based on 10m ² per person
Toilet – Staff	WCST-SJ				1	x	3	1	x	3	Optional
Staff Areas											
Office – Single (Director)					1	x	12	1	x	12	
Office – Single Person (Nurse Manager)	OFF-S9-SJ				1	x	9	1	x	9	
Office – Single (Psychiatrist)					1	x	12	1	x	12	
Office – Shared – Medical Staff	OFF-2P-SJ				1	x	12	2	x	12	No. determined by Staff numbers
Office – Shared – Nursing Staff	OFF-2P-SJ				1	x	12	2	x	12	No. determined by Staff numbers
Office – Shared – Allied Health	OFF-2P-SJ				1	x	12	2	x	12	No. determined by Staff numbers
Store – Photocopy/Stationery	STPS-8-SJ				1	x	8	1	x	8	
Meeting Room	MEET-L-15-SJ MEET-L-30-SJ				1	x	20	1	x	30	
Staff Room	SRM-15-SJ SRM-25-SJ				1	x	15	1	x	20	
Shower Staff	SHST-SJ				1	x	3	1	x	3	
Property Bay – Staff	PROP-3-SJ				1	x	3	2	x	3	
Toilet – Staff	WCST-SJ				2	x	3	2	x	3	
Net Department Total							1548.5			2130.5	
Circulation %							32			32	
Grand Total							2044.0			2812.3	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

33.6 Functional Relationship Diagram



33.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning, Adult Acute Mental Health Inpatient Unit Rev 5' 2012. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20%2000134%20Adult%20Mental%20Health%20Acute%20Inpatient%20Unit.pdf 2014
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34.0 Mental Health Unit – Child and Adolescent

34.1 Introduction

34.1.1 Description

The Child Acute Mental Health Inpatient Unit provides short-term acute inpatient mental health assessment and treatment of children up to 10 to 12 years of age and adolescents up to 16–18 years where community approaches have proven (or are likely to prove) inadequate.

The design, layout and functionality of Child and Adolescent Mental Health Units should meet the developmental needs of their age group. Notably, the Child and Adolescent Unit should enable active family involvement in daily care, treatment and program activities including family admission and residence where appropriate.

The patients in each unit will have a broad range of mental health problems and disorders and challenging behaviors that must be managed safely and effectively. The layout and design of the Child and Adolescent units will need to accommodate children and young people at varying stages of social, emotional and intellectual development. Young people in the Adolescent Unit will have families and others involved in their care who should feel welcome in the unit.

The unit may admit and treat patients who have:

- A risk of self-injury
- A risk of self-neglect
- A risk of injury to others
- A severe affective disorder
- Psychosis including early onset schizophrenia
- Pervasive developmental disorders
- Anorexia nervosa and related eating disorders
- Severe anxiety disorders
- Obsessive compulsive disorder
- Tourette's syndrome
- Co-morbid drug and alcohol problems
- Severe family relationship difficulties.

34.2 Planning

34.2.1 Models of Care

Models of care include:

- Children and adolescents together in a fully integrated unit, with separate programs and activities for relevant age groups; this arrangement optimizes staffing and enables efficient use of resources;
- Children and adolescents in the same unit but separate 'zones' designed to cater for their differing needs; they should operate as two discrete service types with separate functional areas, programs and activities although co-location allows sharing of facilities
- Inclusion of a secured dedicated unit collocated with a pediatric precinct to allow children to participate in activities with other children such as school and play therapy
- Collocation of a Day Unit to minimize the need for hospitalization; the Day unit would provide for day activities and close down at night.

34.2.2 Functional Areas

The Unit will cater for both male and female patient and family members as required. The Unit should provide Bedrooms that can accommodate family members in a bed sitting arrangement with a separate bedroom to the child, with a shared Ensuite.

Support areas required in Child/Adolescent Units will include:

- Multi-purpose Group Therapy/Activity rooms that can also be used for education purposes
- Large Interview Rooms to accommodate families
- Outdoor space for recreation activities.
- Storage for general ward equipment, occupational therapy equipment and a range of age appropriate, therapy, sport and recreation equipment in each setting.

Office accommodation should be located in a non-patient area of the unit with secured access/egress.

Assessment/Medication Room (may be shared)

The Unit will include a suitably equipped room for physical/neurological examinations that will also contain locked cupboards for dressings, medications and emergency equipment in keeping with legislative requirements. The Room will require two entry/exit doors.

External Relaxation/Activities Area

Each unit will require discrete and separate outdoor relaxation areas.

These areas will not be locked but access to and from the units should be only from the respective unit and easily observed and monitored by staff. Staff should however be able to prevent access to these areas at night. A common external activity area may be shared if units are co-located.

High Dependency/Intensive Care Unit (Adolescent Unit only)

The Adolescent Unit will require a lockable high dependency unit consisting of at least one seclusion room and toilet/bath/shower room opening onto a locked lounge area that has direct access to an external secure courtyard separate to other external recreation areas. Entry to this area directly from outside the unit will be required for police assisted admissions or where a young person is highly disturbed and at immediate risk of harm to themselves or others.

Patient Bedrooms

Single Patient Bedrooms shall be provided, each with an Ensuite. The patient bedroom doors must be able to be unlocked from the outside, even if locked on the inside. It is advisable to have the capacity to restrict the access to the Ensuite.

The fittings and furniture include:

- Built-in wardrobe
- Built-in desk
- Pinboard for photos and posters.

Fittings must not provide opportunities for self-harm and are to have a breaking strain of less than 15kg. Blinds to external windows are to be within double-glazing. Chairs should be lightweight and flexible.

Services will include the following:

- Two power outlets – RCD protected
- Staff alarm system.
- Medical gases will not be required.

Patient Ensuites

An Ensuite shall be provided to each bedroom to comply with Standard Components Ensuite – Mental Health. The fittings must not provide opportunities for self-harm and are to have a breaking strain of less than 15kg.

Patient/Family/Carer Bedrooms

Bedrooms for parents or other family members should include a double bed and a single bed and be of sufficient size to allow a fold away cot for very young children. A shared Ensuite to enable parents/carers to look after their child accommodated in another room should be available to each parent/family/carers bedroom.

Reception/Entry Area

The entrance to each unit should be readily observable from the nursing station/office and should incorporate a greeting/waiting area for family, friends and others that is separated from all other functional areas on the units. The area should assist staff to prevent unauthorized entry to the unit and to provide a safe and therapeutic environment for children, adolescents and family members, (passive observation of the patient activity/recreation area from the ward office/nurses station is desirable).

Office Accommodation

Offices and workstations shall be provided according to the Operational Policy and staffing establishment. The office area should be located in the 'patient free' area of the unit. Administrative and office areas may be shared with adjacent units.

34.2.3 *Functional Relationships*

The Child and Adolescent Acute Mental health Inpatient Units shall have functional relationships with the following units, services and organizations:

- Emergency Unit
- Pediatric Inpatient Unit
- Pediatric Outpatient services
- Diagnostic Pathology Unit
- Allied Health Unit
- Early childhood services
- Child and family support services
- Community services including day programs
- Drug treatment services
- Adult Mental health Services
- Adolescent medical units.

34.3 Design

34.3.1 *General*

The Child and Adolescent Mental health Unit should be located on the ground floor.

The following design issues are mandatory requirements:

- Access to the Unit must not be through other units, also the unit must not form a thoroughfare to any other unit
- Bedrooms should provide a comfortable domestic environment with comfortable, robust furniture and furnishings

- All glazing must be a grade of safety glass suitable for mental health applications
- Where co-located, the Child and Adolescent Acute Mental health Inpatient Units should allow full independent operation and separation while enabling common use of appropriate facilities
- Rooms and equipment need to meet the therapeutic and educational requirements of the patient group, with provisions for video conferencing in at least one large family Meeting Room and video recording in at least one Interview Room or wet and dry Therapy/Play Room
- The Entry areas to both Units require a Visitors' Toilet – Disabled with baby change facilities and a Waiting Area in close proximity
- Design elements incorporating additional security measures should not be evident to the casual observer.

34.3.2 *Environmental Considerations*

Acoustics

Acoustic treatment should be applied to the following areas:

- Day Areas such as patient living, dining and activities areas
- Patient Bedrooms including high dependency, intensive care and seclusion rooms
- Consulting Rooms
- Admission Areas.

In acoustically treated rooms, return air grilles should be acoustically treated to avoid transfer of conversations to adjacent areas. Door grilles to these areas should be avoided.

Windows and Glazing

Wherever possible, the use of natural light is to be maximized.

All windows and observation panels shall be glazed with safety glass, specifically, toughened laminated glass with a minimum nominal thickness of 10. 38mm, or equivalent approved. Internal windows shall be double-glazed. Windows and frames in patient accessed areas are to be flush faced.

Laminated/toughened glass of various thicknesses should be installed dependent upon the likelihood of patient injury or building damage. Graduate the impact resistance of the glass from toughest at lower level to weakest at high level. Where toughened glass is used, it should be treated with a protective film to ensure glass is held together when broken.

In areas where damage to glass may be expected, avoid larger pane sizes. Smaller panes are inherently stronger for a given thickness than larger panes.

Polycarbonate is not recommended due to surface scratching which will reduce visibility over time.

Where windows are openable, effective security features such as narrow windows that will not allow patient escape, shall be provided. Locks, under the control of staff, shall be fitted.

34.3.3 *Space Standards and Components*

Provide space for key areas according to the following guide:

- Lounge/Activities areas for social activities, 3.5m² per patient minimum
- Activities/Dining areas, 5.5m² per patient, minimum.
- Separate Dining area 1. 5m² per patient.
- Courtyard and Terrace – minimum area – 20m²
- Outdoor areas (courtyards and terraces) – General – 5m² per person.

34.3.4 *Safety and Security*

The entry to the Child and Adolescent Acute Mental Health Inpatient Units should have a direct view of the Reception/Staff Station. Security features are required at all entrances and exits. These may include electronic locking, intercoms, and video surveillance (CCTV).

A separate secured entry may be required for patients arriving with a police escort (applicable to Adolescent Units only).

The design should assist staff to carry out their duties safely and to supervise patients by allowing or restricting access to areas in a manner that is consistent with patient needs/skills. Staff should be able to view patient movements and activities as naturally as possible, whenever necessary and may be assisted by CCTV where appropriate.

Controlled and/or concealed access will be required as an option in a number of functional areas.

All Meeting, Counselling, Group Therapy, Family Therapy and Review Board Meeting rooms require two means of egress and a duress alarm.

34.3.5 *Fixtures and Fittings*

Furniture should be robust but lightweight and designed to minimize damage or injury if thrown.

Fixtures and fittings should be safe and durable and avoid the potential to be used either as a weapon or to inflict personal damage.

Generally, all fixings should be heavy duty, concealed, and where exposed, tamper proof. Fittings, including hooks, curtain tracks, bathroom fittings, should be plastic where possible, and have a breaking strain of not more than 15kgs.

Paintings, mirrors and signage should be rigidly fixed to walls with tamper proof fixings.

Mirrors shall be of safety glass or other appropriate impact resistant and shatterproof construction. They shall be fully glued to a backing to prevent availability of loose fragments of broken glass.

Holland blinds, Venetian blinds and curtains should be avoided in patient areas. Curtain tracks, pelmets and other fittings that provide potential for patients to hang themselves should be avoided or designed so that the potential is removed.

34.3.6 *Building Services Requirements*

Avoid exposed services; for example, sink wastes that may be easily damaged. Refer to Part E of these Guidelines for further information.

34.4 Components of the Unit

The Child and Adolescent Acute Mental health Inpatient Unit will consist of a combination of Standard Components and Non-Standard Components. Provide the Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

34.4.1 *Non-Standard Components*

Play Therapy Room

Description and Function

A Play Therapy Room shall be provided for 'regressive' therapies such as artwork, doll play and clay modelling. The room shall be designed with the young child 10–12 years in mind.

Location and Relationships

The Play Therapy Room should be located within the patient treatment/therapy zone of the Unit.

Considerations

Fittings, fixtures and equipment will include:

- Bench, open under
- Storage cupboards for materials
- Whiteboard
- Chairs
- Hand basin with soap and paper towel fittings.
- Finishes should be smooth and easily cleaned, flooring should be vinyl.

Recreation/Day Area

Description and Function

A Recreation/Day area shall be provided for a wide range of activities including watching TV, listening to music, computer and other activities.

Location and Relationships

The area requires ready access to the secured courtyard and must be overseen from the Staff Station.

Considerations

Fittings and furniture should be suitable for children up to 10–12 years, for teenagers up to the age of 18 and visiting family members.

Quiet/Time Out Room

Description and Function

The unit will require a room to be used for quiet time/time out for agitated and distressed children. The room will be lockable and permit observation by staff while providing privacy to the room occupant.

Location and Relationships

The room should be located in an area that will minimize disruption to unit activities. The room should have ready access to a toilet and washing facilities close by that does not require traversing the unit.

Considerations

The room will be very plain and simple with unbreakable fittings. The room will be similar to Lounge-Patient, suitable for mental health areas. Television, DVD and CD players are not permitted in this room.

Computer Room

Description and Function

The Computer Room will provide an area for children and adolescents to access computers and use computer games.

Location and Relationships

The Computer Room will be located in the activities area of the Unit with ready access to patient areas and with direct visibility of staff.

Considerations

The room will include the following furniture, fittings and equipment:

- Computer desks
- Computers
- Computer games consoles
- Chairs suitable for computer desks
- Whiteboard (optional).

All furniture in the area will need to be sturdy, vandal resistant and suitable for mental health areas. Electrical outlets will require RCD protection. All cables will need to be secured and not accessible to patients.

34.5 Schedule of Accommodation

Typical Mental Health Unit - Child and Adolescent at Level 5/6

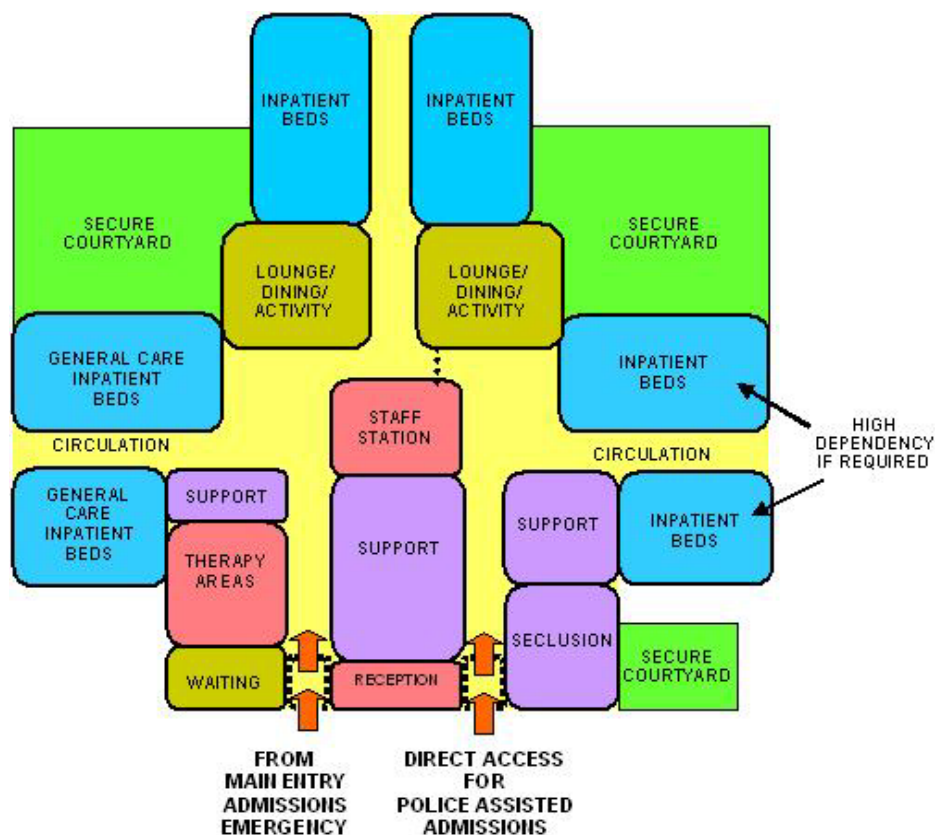
ROOM/SPACE	Standard Component							Level 5/6 Qty x m ²	Remarks
Entrance/Reception Areas									
Airlock – Entry	AIRLE-10-SJ							1 x 10	
Waiting – Male/Female	WAIT-10-SJ Similar							1 x 25	Separate areas for Female waiting
Waiting – Family	WAIT-20-SJ							1 x 25	
Play Area – Paediatric	PLAP-10-SJ							1 x 10	
Toilet – Accessible	WCAC-SJ							1 x 6	Including Baby Change
Consultation Room (Mental Health)	CONS-INT-MH-SJ							2 x 14	
General Open Unit: Patient Areas									
								8 Beds	
1 Bed Room – Mental Health	1 BR-MH-SJ							6 x 28	
1 Bed Room – Mental Health Special	1 BR-MH-SJ							2 x 28	For bariatric patients and/or a child and parent
Ensuite – Mental Health	ENS-MH-SJ							2 x 5	
Bathroom	BATH-SJ							1 x 16	May use raised shower bath for small children
Medication/Treatment Room	MED-MH-SJ							1 x 12	
Bay – Handwashing, Type B	BHWS-B-SJ							2 x 1	1 per 4 beds
Bay – Resuscitation Trolley	BRES-SJ							1 x 1.5	May be co-located with Medical/Treatment Room
Multi-Function Room (Mental Health)	MAC-20-SJ							1 x 20	Classroom, crafts; may include patient lockers for craft work
Recreation/Day Area (Mental Health)								1 x 56	Recreation/ Dining Areas based on 7m ² per person x 8
Play Therapy Room								1 x 12	
Dining Room (Mental Health)	DINMH-30-SJ							1 x 30	Assumes 8 patients plus 4 family members
Servery/Pantry (Mental Health)	SERV-MH-SJ							1 x 15	Collocated with Dining Room
Quiet/Time Out Room								1 x 9	
Computer Room								1 x 12	
Store – Patient Property	STPP-SJ							1 x 8	
Laundry – Mental Health	LAUN-MH-SJ							1 x 6	Optional
Gymnasium	GYAH-45-SJ							1 x 20	Optional
Lounge – Parent	LNPA-12-SJ							1 x 12	
Courtyard – Secure								1 x 40	Based on 5m ² per person
Clinical Support Areas									
Bay – Linen	BLIN-SJ							1 x 2	
Dirty Utility	DTUR-12-SJ							1 x 12	
Staff Station	SSTN-14-SJ							1 x 20	
Office – Clinical/Handover	OFF-CLN-SJ							1 x 15	
Store – Equipment	STEQ-10-SJ							1 x 14	
Store – General	STGN-8-SJ							1 x 9	
Cleaner's Room	CLRM-5-SJ							1 x 5	
Disposal Room	DISP-8-SJ							1 x 8	
Observation/Secure Unit (Optional)									
								4 Beds	

ROOM/SPACE	Standard Component							Level 5/6 Qty x m ²	Remarks
Waiting – Secure	WAIT-SEC-SJ							1 x 6	Entry area
Examination/Assessment Room	EXAS-MH-SJ							1 x 15	
Staff Station	SSTN-14-SJ							1 x 10	Optional depending on planning layout
Seclusion Room	SECL-SJ							1 x 12	
1 Bed Room – Mental Health	1 BR-MH-SJ							4 x 28	
Ensuite – Mental Health	ENS-MH-SJ							5 x 5	
Bay – Handwashing, Type B	BHWS-B-SJ							2 x 1	
Lounge/Dining – Activities	LDA-MH-20-SJ							1 x 30	7.5m ² per person
Courtyard - Secure								1 x 40	10m ² per person
Staff Areas									
Office – CEO, Clinical Director	OFF-CEO-SJ							1 x 15	
Office – Single Person (Psychiatrist)	OFF-S9-SJ							1 x 12	
Office – Single Person (Nurse Manager)	OFF-S9-SJ							1 x 9	
Office – Workstation (Nursing Staff)	OFF-WS-SJ							4 x 5.5	Qty based on staff numbers
Office – Workstation (Allied Health)	OFF-WS-SJ							2 x 5.5	Qty based on staff numbers
Office – Workstation (Clerical)	OFF-WS-SJ							1 x 5.5	
Office – Workstation (Visiting Professionals)	OFF-WS-SJ							2 x 5.5	Qty based on staff numbers
Meeting Room – Medium/Large	MEET-L-30-SJ							1 x 25	
Store – Photocopy/Stationery	STPS-8-SJ							1 x 8	
Staff Room	SRM-25-SJ							1 x 20	With Beverage Bay
Property Bay – Staff	PROP-3-SJ							2 x 3	Separate Female areas
Toilet – Staff	WCST-SJ							2 x 3	Separate for Male and Female
Net Department Total								1107	
Circulation %								32	
Grand Total								1461.24	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

34.6 Functional Relationship Diagram



34.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 132 Child and Adolescent Mental Health Rev 5' 2012. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20_%20000132%20Child%20and%20Adolescent%20Mental%20Health%20Unit.pdf 2014
- DH (Department of Health) (UK). 'Health Building Note 35 'Accommodation for People with Mental Illness, Part 1 – The Acute Unit', 2006. Retrieved from website: www.estatesknowledge.dh.gov.uk 2014
- Royal College of Psychiatrists (UK) 'Building and Sustaining Specialist CAMHS to Improve Outcomes for Children and Young People – Update of Guidance on Workforce, Capacity and Functions of CAMHS in the UK', 2013. Retrieved from website: <http://www.rcpsych.ac.uk/files/pdfversion/CR182.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideines.org 2014
- UNICEF. 'Convention on the Rights of the Child, Article 12' 2013. Retrieved from website: http://www.unicef.org/publications/files/Implementation_Handbook_for_the_Convention_on_the_Rights_of_the_Child.pdf 2014.

35.0 Mobile Healthcare Unit

35.1 Introduction

35.1.1 Description

A mobile unit may be described as any mobile, transportable or re-locatable structure intended to provide shared medical services to the community on a permanent or temporary basis. Mobile units are usually pre-manufactured and equipped with services and transported to the desired location for operation. The size of the units is restricted by transportation guidelines and therefore usually low occupancy facilities. A mobile unit does not necessarily have to be on wheels as long as it can be de-mounted and transported easily.

35.2 Planning

35.2.1 Planning Models

Mobile units generally cater to low occurrence services that may complement services already being provided by a hospital facility. It may also be a service that requires expensive capital investment and thus shared by a community, locality or region. The types of services provided by a mobile unit may depend on the level of services being provided at the main hospital or facility. Some examples of Mobile units are:

- Mobile Hospital/Dispensary
- Mobile Imaging unit
- Mobile Breast Screening Unit.

35.2.2 Operational Policies

Operational policies will largely depend on the Operational policies adapted by the related departments or the main hospital facility that the mobile unit is affiliated to. It is important that staff working in the mobile unit have input in its working.

35.2.3 Functional Relationships

Location and Access

Access to and from the unit should be given proper consideration to take into account staff and patients. The location of the unit should preferably be in close proximity to its related department or its patient base. Proper consideration needs to be given with respect to turning radius, parking and service access to the mobile unit.

For mobile MRI units, gauss fields of various strengths generated by the equipment shall be considered, both for the environmental and interference effects. Radio frequency interference shall be considered when planning a site. MRI mobile units shall consider providing adequate access for cryogen servicing of the magnet.

Parking and Drop-Off Zones

Sites shall provide hazard-free drop-off zones and adequate parking for patients.

35.2.4 Functional Areas

Entrance/Reception Areas

Protection from the elements during transport to and from the mobile unit shall be provided. This can be achieved by providing permanent or temporary patient/staff walkways.

Waiting Areas

The facility shall provide waiting space for patient privacy as close to the unit docking area as possible. The facility shall provide patient/staff toilets as close to the unit docking area as possible.

Clinical Areas

The clinical areas should have easy access to the relevant departments and other critical resources required to provide the services. The internal planning of the unit should provide patient and staff direct access to services located in the mobile unit. Patient access should adhere to disability, privacy and safety guidelines. Adequate hand wash basins should be provided according to infection control guidelines.

35.3 Design

35.3.1 *Environmental Considerations*

Mobile units should adhere to local environment laws and regulations as may apply. Natural light may be desirable in patient areas depending on the type of services being provided. Exhaust from mobile units should be directed away from patient areas.

35.3.2 *Space Standards and Components*

Stairs and landings to and from mobile units should comply with local construction codes. Ramps are required for handicapped access and should comply with Disability guidelines. Depending on the planning of the unit, handrails should be provided for patient safety and comfort.

Construction Standards

The design and construction of mobile units will be according to the applicable construction codes and subject to approval and testing by the relevant authority. The mobile unit will adhere to all patient/staff safety regulations relating to fire safety, Occupation health and safety and radiation protection.

35.3.3 *Safety and Security*

Fire Protection

Manual fire extinguishers shall be provided in accordance Life safety codes. Fire detection, alarm, and communications capabilities shall be installed and connected to facility central alarm system on all new units in accordance with relevant Life safety codes.

35.3.4 *Finishes*

Interior finish materials should be fire retardant or non-combustible. Colors can be used to enhance patient experience. Refer to Part C for restrictions on use of specific.

35.3.5 *Building Services Requirements*

Electrical and Heating, Ventilation, Air-Conditioning (HVAC)

Main switchboards and panels should be located in accessible location for maintenance but away from high traffic areas. They should be located in dry ventilated areas free from explosive flames and corrosive elements. Receptacles should be water proof if they are located externally and should be sufficient for various tasks to be performed. Air-conditioning, heating, ventilating, ductwork, shall be installed in accordance with local construction codes.

Telecommunication and Information Systems

Locations for terminating telecommunications and information system devices shall be located within easy access to authorized personnel. Special air-conditioning and voltage regulation shall be provided when recommended by the manufacturer.

Lighting

Consideration shall be given to the special needs of the elderly. Excessive contrast in lighting levels that makes effective sight adaptation difficult shall be minimized. Approaches to buildings and parking lots and all occupied spaces shall have lighting fixtures that can be illuminated as necessary.

36.0 Obstetrics Unit

36.1 Introduction

36.1.1 Description

The Obstetric Unit is a discreet Unit providing facilities for the safe prenatal care, delivery and post natal care of mothers and their babies.

The number of birthing preparation rooms and the size of the associated service areas shall be as required by the proposed obstetrical workload as outlined in the Operational Policy.

The exact scope of the unit is described in the Role Delineation Level that allows for four different levels at which the unit can operate.

The description of the unit within this Guideline is based on a Level 4 unit that typically suits patients (both mothers and babies) with low to medium risk factors and associated complications. It caters for approximately 1000 deliveries per annum and is based on 24 patient beds, 4 birthing rooms and a special care nursery.

Within the unit, patients with specific needs will be taken into consideration through the creation of dedicated zones:

- Mothers having normal deliveries
- Mothers suffering from antenatal or postnatal complications, requiring acute maternity care
- Babies requiring minimal care
- Babies requiring care for complications arising from medium risk factors
- Babies requiring care for severe complications, in anticipation of a transfer to a Neonatal Unit of a higher delineation.

It is expected the Obstetric Unit, including the nursery, will be managed as one unit.

36.2 Planning

36.2.1 Planning Models

Obstetrics consists of the following processes:

- Labor
- Delivery/Birthing
- Recovery
- Postnatal (or Post-Partum)
- Separate from these four processes, the baby infant nurseries.

A traditional Obstetrical model is based on the patient being moved between areas dedicated to the individual processes. The preferred design for an Obstetric Unit however, particularly for smaller birthing centers, includes a number of self-contained rooms fitted out to perform several of the processes, without the patient having to move according to the following:

- The design model combining labor, delivery and recovery in one room will be referred to as an LDR model. The patient is only moved from this room in case of complications (to the Caesarean section delivery room) or after recover, to an in-patient room
- The design model combining all four processes will be referred to as LDRP model. Here the patient remains in one room for her entire stay.

Larger birthing centers may adopt a more traditional model where dedicated maternity in-patient beds are provided, combined with a separate birthing suite. If the birthing center does not provide a stand-alone Special Care Nursery or Neonatal Intensive Care Unit, a Level 1 nursery may be provided.

36.2.2 Functional Areas

The Obstetric Unit consists of the following functional areas:

- Reception and arrival area including provisions for visitors and administrative activities
- Inpatient areas for general mother care and for acute care (both antenatal and post natal)
- Birthing areas
- Neonatal Nursery area – General Care Nursery area
- Shared support and staff areas including facilities that can be shared between zones or Units.
- The Obstetric Unit will require rapid access to Operating Unit for emergency Caesarean Section deliveries; the Operational Policy will determine the requirement for Operating facilities located within the Birthing Area.

Reception Area

The reception is the receiving hub of the unit and should therefore ensure the security of the entire department through access control, duress alarm buttons as a minimum and baby tagging as a preferred option. Mothers, their supporters and members of the public will need to have good access to public phones and separate male/female toilet facilities, prayer rooms (a minimum of 1 prayer room per sex, per floor) and waiting areas. A separate waiting area for families should be provided too, preferably with a small play area for children. Considering the substantial volume of flowers and gifts delivered to the unit, secure holding space should be provided adjacent the reception.

The reception may be used for the registration of expectant mothers; alternatively, this can occur within the maternity ambulatory care area. Good access from reception to the nursing administration offices and education areas is beneficial.

Inpatient Area

The inpatient area shall cater for both antenatal and postnatal patients. Although the unit described under this section is based on 24 patient beds – preferably only single rooms, for acute care and mother care – the bed numbers and mix will ultimately be determined by specific service conditions such as patient demographics, operational policies, cultural issues etc.

Mother care areas shall be designed to suit mothers and babies who are well whereas the acute care area shall cater for antenatal patients, post natal patients with complications or simply for mothers recovering from Caesarean sections.

Patient rooms shall be grouped together in zones corresponding to their different levels of dependency. The more relaxed environment of mother care rooms can be located further away from the staff observation posts and the support areas whereas the more clinical acute care rooms shall be located to allow for effective staff observation and ease of access from the support areas.

With regards to the different type of rooms:

- Due to requirement for a high level of privacy, the use of double rooms should be avoided unless specifically requested by the operator
- Subject to the level of service provided and the likelihood of contagious diseases in the population, a pair of adjoining negative pressure isolation rooms with anterooms shall be provided.

Birthing Area

The birthing area caters for all the processes surrounding the birth of a newborn: assessment, labor, delivery (with/without intervention), bonding between mother (and the greater family) and child, resting and recovery and finally, the transfer to an inpatient unit or a discharge in case of a community midwifery program. Where the LDRP model is followed, obviously most of these processes will be taking place in one dedicated room.

An Obstetric Unit shall have:

- Birthing rooms, typically, LDR type
- At least one multi-purpose assessment room for consultations, examinations and if required, for delivery
- Family/supporters facilities, allowing them to take part of the entire birthing process.

If water birthing is included in the Operational Policy, the Unit will require access to a dedicated Bathroom. The Bathroom will require a large peninsular bath, with access to both sides of the bath. The Bathroom shall have a minimum area of 10m² and comply with all other requirements noted in Standard Components – Bathroom.

Note: These Guidelines do not imply endorsement of Water Birthing as a safe or appropriate operational model.

Nursery Area

A Level 1 nursery (General Care) could be provided as a supplementary area to the maternity inpatient area, under a level three or 4 Obstetrics Unit. The general care nursery will provide for the general care of healthy babies, such as:

- Feeding the baby
- Bathing, changing and weighing the baby
- Allowing the baby to sleep during the day in blacked out conditions
- Provide education to staff and parents
- Phototherapy
- Short-term care, including the provision of assisted ventilation, for babies who suffer from complications and while they are waiting to be transferred to a neonatal intensive care unit/facility.

The general nursery should allow for cot spaces to comply with Standard Components; the clear space between the cots should be at least one meter. The number of cots will depend on the rooming-in policy of the facility and/or the statistics on how many mothers prefer/are able to proceed with rooming-in.

A Level 2 nursery (Special Care) will provide similar care as a Level 1 but also cater for premature newborns who are ill or who are simply recovering. Due to their prematurity and/or low weight, they will be cared for in humidicribs and bassinets.

Shared Support and Staff Areas

Like elsewhere in the facility, sharing space, equipment and staffing should be promoted, both within the unit and with other units. Within the unit sharing of staff stations, support and waiting areas should be possible between the different zones. Toilet facilities, prayer rooms and educational spaces could be shared with other units. Obviously, where spaces are shared, the size should be increased proportionally.

Operating Rooms and Support Facilities

If provided within the Obstetric Unit, Operating Room and support rooms shall have:

- Operating Room to comply with Standard Components – Operating Room, General; provision should be made for twin baby resuscitation areas within the operating room
- Scrub-up/Gowning Bay to comply with Standard Components Scrub-up/Gowning, 6m²
- Clean-up Room
- Two Patient Bed Bays for Recovery for each Operating Room, to comply with Standard Components Patient Bay, Recovery Stage 1.

The time taken to travel to the Operating Room from the Birthing area ideally should not exceed three minutes. An assessment of the distance between the Birthing area and the Operating Rooms should be done taking into consideration the average speed of travel and whether lifts are involved including any delays associated with lift travel.

36.2.3 *Functional Relationships*

External

The Obstetric Unit shall be located and designed to prohibit non-related traffic through the unit. When Birthing and Operating Rooms are in close proximity, access and service arrangements shall be such that neither staff nor patients need to travel through one area to reach the other.

It is highly desirable that, if an Intensive Care facility is to be provided for Obstetric use, it should be located as near as possible to the Obstetric Unit.

The unit should be in close proximity to:

- Short-term parking/drop-off bay for dropping off expectant mothers
- Hospital car parking and public transport access points
- Flower delivery car parking bay
- Ambulance transport parking bay
- Helipad.

Internal

The entrance to the unit shall provide direct access to the reception area. Adjacent reception separate waiting areas are required for males, females and families. From there, direct access to assessment/consultation/examination, nursery, inpatient and birthing areas shall be provided.

Direct access to a climate controlled internal garden or courtyard for mothers and their supporters would be beneficial. Refer to the attached Functional Relationship Diagram.

36.3 Design

36.3.1 *General*

The Obstetric Unit shall be located and designed to prohibit non-related traffic through the unit. When Birthing and Operating Rooms are in close proximity, access and service arrangements shall be such that neither staff nor patients need to travel through one area to reach the other. It is highly desirable that, if an Intensive Care facility is to be provided for Obstetric use, then it be located as near as possible to the Obstetric Unit.

36.3.2 *Environmental Considerations*

Natural Light

Essential to all patient rooms (mothers and babies).

Privacy

Privacy is essential for both the assessment and birthing to avoid direct views into the room from the outside, both through the windows and through the door – i.e. do not provide viewing panels and a privacy curtain should be allowed for. Furthermore, the foot end of the bed should be facing away from the door or the access point.

Acoustics

Within the nursery, sound absorption and insulation techniques should be applied to soften the noise created by crying babies and their support equipment. This however should not impede the quality of observation or ease of access between staff/support areas and the nursery.

Similar techniques should be applied to the birthing rooms, allowing mothers to give birth without disturbing other patients.

The unit in general should be isolated from disturbing sounds of traffic and sirens of ambulances, either through its strategic location or through applying sound absorption and insulation techniques.

Refer to Part C of these Guidelines for more information.

36.3.3 *Space Standards and Components*

Doors

Appropriately sized and located doors shall be provided for emergency bed transfer to the Birthing or Operating Units. Also refer to Part C of these Guidelines.

Ergonomics

Refer to Part C of these Guidelines for more information.

36.3.4 *Safety and Security*

The number of access points to the unit should be minimized. All entries should be under direct control of staff and while the daytime access is to be via the reception area, after-hours access should give direct access to the birthing area. As a minimum, this entry point should be fitted out with video intercom and remote access hardware, allowing for 24-hours access for expectant mothers, support persons of patients in the In-patient area or parents of neonates.

All entry points should also be controlled through an Access Control System – a combination of reed switches, electric strike/magnetic locks and card readers. Card readers should be provided on both sides of these entry points and these only should be deactivated in case of an emergency.

To increase the safety of newborns even further, the use of electronic tagging should be promoted. This involves a combination of the infant wearing a tag around the ankle and sensor panels located at every access point to the unit (and perhaps the entire hospital).

All reception areas and staff stations to have duress alarm buttons in obscure but easily accessible locations.

Where lifting devices are used for the baths within the birthing rooms, special attention should be given to the storage and handling of this equipment.

To ensure the correct milk is provided to the right infant, breast milk storage freezers and fridges should be lockable or located within a lockable formula room with access restricted to staff only or to mothers under staff supervision.

36.3.5 *Finishes*

A homely, non-clinical ambience is preferred for the nursery and birthing rooms. Medical equipment and services should be easily accessible but concealed behind built in joinery or screens.

Colors should be chosen carefully to avoid an adverse impact on the skin color of patients and neonates, particularly of jaundiced babies.

Refer to Part C of these Guidelines for more information on wall protection, floor finishes and ceiling finishes.

36.3.6 *Fixtures and Fittings*

Refer to Part C of these Guidelines, the Room Layout Sheets (RLS) and Room Data Sheets (RDS) for more information.

36.3.7 *Building Service Requirements*

Lighting

All High Dependency Care areas such as birthing suites (including bathroom/ensuite), birthing/assessment rooms, nurseries and areas for the examination/resuscitation and bathing of babies are to have dimmable color-corrected lighting.

HVAC

The birthing rooms and nurseries should be serviced by individual HVAC systems, allowing raising the temperature quickly to 25–27 degrees Celsius when a baby is born. The temperature control devices should be located within the room and should only be accessible to the staff.

Communications

All new phone, data and staff/emergency call systems should be compatible with hospital wide systems already in use. Annunciator panels should be located in strategic points within the hospital circulation area and should be of the 'non-scrolling' type, allowing all calls to be displayed at the same time. The audible signal of these call systems should be controllable to ensure minimal disturbance to patients at night.

36.3.8 *Infection Control*

Each birthing room should have a scrub basin. Each patient room should have a hand basin. Each pair of isolation rooms should have a hand basin outside.

Each nursery should have a hand basin at the point of entry, both for staff and parents. Within the nursery, minimum one hand basin should be provided per six cots and the distance between any point in the nursery to the closest basin should not exceed six meters.

The placenta is to be treated as contaminated waste and should be disposed of according to the correct waste management policy. Disposal using placental macerators is not appropriate and should be avoided. Freezer storage should be provided within the unit to allow for collection by the family, for cultural reasons.

36.4 Components of the Unit

36.4.1 *General*

The Obstetric Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

36.4.2 *Non-Standard Components*

Birthing/Examination Room

Description and Function

This room is primarily used to teach parents baby bathing techniques and to examine the infant. Provide purpose-built baby baths for occupational safety and health reasons. Portable baths or bassinets may be used for demonstration purposes, generally within the patient room.

Location and Relationships

The Bathing/Examination room may be provided as part of a nursery or a maternity inpatient unit.

Considerations

The room will require:

- Bench with inbuilt baby bath; consideration should be given to the bench height and the mounting of baby baths to ensure ease of access for staff and mothers
- Warm water supply to baby baths and sinks; controlled temperature range
- Overhead heating to baby bathing area (in addition to air-conditioning to prevent babies becoming cold)
- Storage space for baby linen
- Baby scales and measuring equipment
- Lighting level in the bathing/exam area to permit the examination of baby skin tones.

36.5 Schedule of Accommodation

Typical Birthing Unit at levels 3 to 6

ROOM/ SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Entry / Reception							
Reception/ Clerical	RECL-10-SJ Similar				1 x 10	1 x 12	
Waiting - Male/ Female	WAIT-10-SJ Similar				2 x 15	2 x 30	Separate Female areas
Waiting - Family	WAIT-30-SJ Similar				1 x 20	1 x 50	
Play Area	PLAP-10-SJ				1 x 10	1 x 10	Adjacent to family waiting
Consult/ Interview	CONS-SJ				1 x 14	1 x 14	
Toilet - Accessible	WCAC-SJ				1 x 6	1 x 6	May share general public amenities
Toilet - Public	WCPU-3-SJ				2 x 3	1 x 3	May share general public amenities
Bay - Wheelchair Park	BWC-SJ				1 x 4	1 x 4	As required
Patient Areas					6 Rooms	10 Rooms	
Examination/ Assessment Birthing Room - LDR	BIRM-SJ				1 x 28	1 x 28	Will act as back-up Birthing Room
Birthing Room - LDR	BIRM-SJ				5 x 28	9 x 28	
Ensuite - Birthing Room	ENS-BR-SJ-A				5 x 10	8 x 10	
Bathroom - Birthing Room	BATH-SJ				1 x 15	2 x 15	Adjoining Birthing Rooms
Store - Birthing Room					6 x 3	10 x 3	1 per Birthing Room
Support Areas							
Bay - Beverage	BBEV-OP-SJ				1 x 4	1 x 4	
Bay - Linen	BLIN-SJ				1 x 2	1 x 2	
Bay - Blanket/ Fluid Warmer	BBW-SJ				1 x 1	1 x 1	As required
Bay - Mobile Equipment	BMEQE-4-SJ				1 x 4	1 x 4	
Bay - Resuscitation Trolley	BRES-SJ				1 x 1.5	1 x 1.5	
Clean Utility	CLUR-12-SJ				1 x 12	1 x 12	
Cleaner's Room	CLRM-5-SJ				1 x 5	1 x 5	
Dirty Utility	DTUR-12-SJ				1 x 12	1 x 12	
Disposal Room	DISP-8-SJ				1 x 8	1 x 8	
Medication Room						1 x 14	Optional
Store - Equipment	STEQ-16-SJ Similar				1 x 16	1 x 20	
Staff Station	SSTN-14-SJ Similar				2 x 12	2 x 14	Provide staff stations to supervise a group of LDR rooms
Store - General	STGN-12-SJ Similar				1 x 10	1 x 12	Size in accordance with service demand & operational policies
Staff Areas							
Office - Clinical/ Handover	OFF-CLN-SJ				1 x 15	1 x 15	Locate near staff station
Office - Unit Manager	OFF-S9-SJ				1 x 9	1 x 9	
Office - 2 Person	OFF-2P-SJ					1 x 12	Nursing/ Medical; according to staff numbers
Overnight Stay - Bedroom	OVBR-SJ				1 x 10	1 x 10	Optional; for staff on call
Overnight Stay - Ensuite	OVES-SJ				1 x 4	1 x 4	Optional; for staff on call
Meeting Room	MEET-L-15-SJ				1 x 15	1 x 15	
Staff Room	SRM-15-SJ Similar				1 x 25	1 x 25	
Change - Staff (Male/ Female)	CHST-14-SJ				2 x 12	2 x 14	Toilet, Shower & Lockers
Total Net Department					552.5	820.5	

ROOM/ SPACE	Standard Component		Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Circulation %			40	40	
Grand Total			773.5	1148.7	

Operating Room (Optional)

ROOM/ SPACE	Standard Component		Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Operating Room Areas (Optional)					
Anaesthetic Induction Room	ANIN-SJ			1 x 15	
Operating Room - General	ORGN-SJ			1 x 42	
Clean-Up Room	CLUP-7-SJ			1 x 7	
Scrub Up / Gowning	SCRB-6-SJ			1 x 6	
Store - Sterile Stock	STSS-12-SJ			1 x 12	
Patient Bay - Recovery, Stage 1	PBTR-RS1-SJ			1 x 12	
Bay - Handwashing, Type B	BHWS-B-SJ			1 x 1	
Bay - Linen	BLIN-SJ			1 x 2	
Bay - Resuscitation Trolley	BRES-SJ			1 x 1.5	
Staff Station/ Clean Utility	SSCU-SJ			1 x 9	
Total Net Department				107.5	
Circulation %				40	
Grand Total				150.5	

Nursery Areas at levels 3 to 6

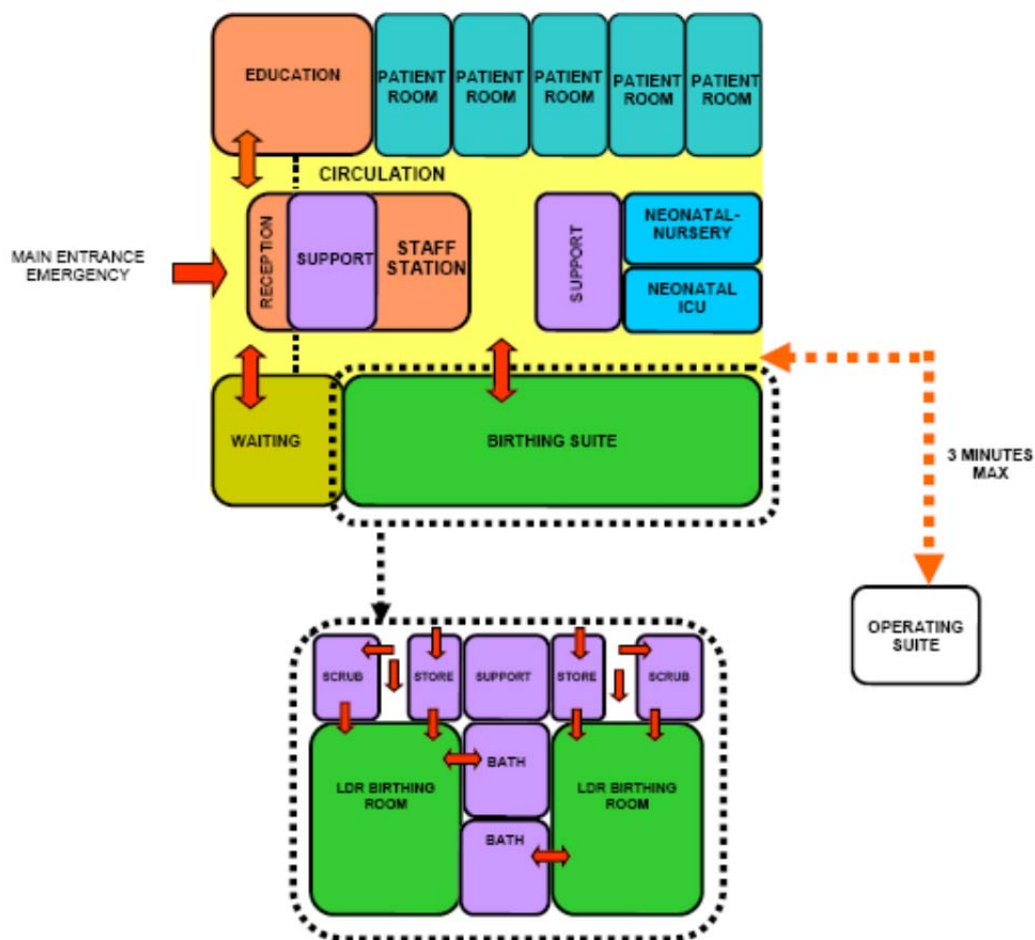
ROOM/ SPACE	Standard Component		Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Nursery - General Care			10 Cots	15 Cots	
Neonatal Bay - General Care	NBGC-SJ		10 x 5	15 x 5	Qty will depend on number of Birthing Rooms, beds and service plan
Staff Station/ Clean Utility	SSCU-SJ		1 x 9	1 x 9	
Bathing/ Examination			1 x 10	1 x 10	
Bay - Handwashing, Type B	BHWS-B-SJ		3 x 1	4 x 1	1 per 4 cots; refer to Part D
Bay - Linen	BLIN-SJ		1 x 2	1 x 2	
Bay - Resuscitation Trolley	BRES-SJ		1 x 1.5	1 x 1.5	
Clean-Up Room	CLUP-7-SJ		1 x 7	1 x 7	
Disposal Room	DISP-8-SJ		shared	1 x 8	
Feeding Room	FEED-SJ		1 x 7	1 x 7	
Formula Room	FORM-SJ		1 x 10	1 x 10	
Store - Equipment	STEQ-10-SJ		1 x 10	1 x 10	
Store - General	STGN-6-SJ		1 x 6	1 x 6	
Nursery - Special Care			8 Cots	Refer to NICU	
Neonatal Bay - Special Care	NBSC-SJ		8 x 10		Qty will depend on number of Birthing Rooms, beds and service plan
Staff Station	SSTN-14-SJ		1 x 14		
Bathing/ Examination			1 x 10		
Bay - Handwashing, Type B	BHWS-B-SJ		4 x 1		1 per 2 cots; refer to Part D
Bay - Linen	BLIN-SJ		1 x 2		
Bay - Resuscitation Trolley	BRES-SJ		1 x 1.5		
Clean-Up Room	CLUP-7-SJ		1 x 7		
Clean Utility, 12m2	CLUR-12-SJ		1 x 12		

ROOM/ SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Disposal Room	DISP-8-SJ				shared		
Feeding Room	FEED-SJ				1 x 7		
Formula Room	FORM-SJ				1 x 10		
Store - Equipment	STEQ-14-SJ				1 x 14		
Store - General	STGN-6-SJ				1 x 6		
Total Net Department					283.0	149.5	
Circulation %					35	35	
Grand Total					382.1	201.8	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

36.6 Functional Relationship Diagram



36.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- DH (Department of Health) (UK). 'NHS Health Building Note 09–02: Maternity Care Facilities' 2013. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147876/HBN_09-02_Final.pdf 2014
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- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014
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37.0 Oncology Unit – Chemotherapy and Radiotherapy

37.1 Introduction

37.1.1 Description

The diagnosis, management and treatment of cancer may involve a combination of treatment plans to provide the most effective treatments. The following identified some of the methods that may be provided as part of an individual management plan or more commonly a combination of treatment therapies:

- Surgical intervention
- Chemotherapy
- Radiation Therapy
- Hormone Therapy.

The Chemotherapy Unit provides for the clinical treatment and management of patients undergoing Chemotherapy treatment for cancer. Chemotherapy is prescribed for the treatment of diseases, especially cancers using specific cytotoxic agents or drugs that are destructive to malignant cells and tissues.

Chemotherapy can be given by various routes:

- Intravenously – through a vein or artery e.g. PICC line, Central Venous Catheter, Portacaths
- Injection – Intramuscularly or Subcutaneously
- Intrathecal – into the central nervous system via the cerebrospinal fluid
- Intrapleural – into the chest cavity
- Intraperitoneal – into the abdominal cavity
- Intravesical – into the bladder
- Intralesional/Intratumoral – directly into the tumor
- Topically – either as a cream or lotion
- Orally.

Services that support and are linked with chemotherapy service may include:

- Physiotherapy (Lymphedema management)
- Occupational therapy
- Dietetic/Nutrition services
- Clinical Psychology
- Social work services
- Community and outreach cancer services
- Palliative Care
- Complementary therapies (e.g. relaxation, stress management and massage)
- Wig and prosthesis services.

The function of the Chemotherapy Unit may include:

- Chemotherapy Administration
- Administration of blood products and/or other supportive therapies
- Blood collection
- Clinical procedures and examination
- Patient and family education and support
- Clinical trial management
- Coordinating and making of appointments.

The Chemotherapy Unit may also be referred to as Medical Oncology Unit.

The purpose of the Radiotherapy Unit is to provide facilities and equipment for treatment of patients using radioactive rays. The Radiotherapy Unit may contain one or both electron beam therapy and radiation therapy. Although not recommended, a Simulation Room may be omitted in small linear accelerator facilities where other positioning geometry is provided.

Room sizes and specifications for a Radiotherapy Unit should accommodate the equipment manufacturer's recommendations, as space requirements may vary from one machine to another and one manufacturer to another. Radiotherapy Unit may also be referred to as Radiation Oncology Unit.

37.2 Planning

37.2.1 Operational Models

Operational models of care for a service will influence the functional planning components for the unit. The role delineation of a hospital will determine the type and range of oncology services to be provided.

- Some of the common operational models for a Chemotherapy Unit includes:
- Hospital based unit – a unit within the hospital
- Satellite Unit – on a hospital campus but not in a hospital
- Stand-alone unit – positioned in a community setting
- Integrated Cancer Care
 - Outpatients (Ambulatory Care) Unit
 - Radiotherapy/Radiation Service
 - Diagnostic Service as part of Radiotherapy Unit.

The hours of operation for a Chemotherapy Unit will depend on the level of service being provided. Units commonly operate on a 5–7-day week basis, with 8–12 hour working days providing 2–3 sessions per day. Chemotherapy infusions may take 15 minutes to 12 hours or longer.

The Chemotherapy Unit is applicable to the following Operational Models:

- Hospital based unit – a unit within the hospital
- Satellite Unit – on a hospital campus but not in a hospital
- Stand-alone unit – positioned in a community setting
- Integrated Cancer Care
 - Outpatients (Ambulatory Care) Unit
 - Radiotherapy/Radiation Service
 - Diagnostic Service as part of Radiotherapy Unit.

The Radiotherapy Unit will typically operate from 8am to 6pm daily, week days; however, extended hours of operation may occur according to the unit operational policy.

The preferred model of care for Radiotherapy Unit is where cancer services are collocated and provided in a purpose-built facility. The benefits of this model are improved communications between all members of the team, resulting in optimal clinical management, efficiency and best outcomes for patients. Separation of planning and therapy is not recommended.

37.2.2 Planning Models

Following factors should be considered when planning a Chemotherapy Unit:

- The operational model chosen as part of the planning model
- Age and mix of the patient group
- Acuity of the proposed or current patient group
- Comorbidity of the patient group
- Rate of infectious diseases to be expected in the patient group.

The Radiotherapy Unit should generally be located on ground level due to the weight of the equipment and shielding requirements, for ease of installation and replacement of specialized equipment. It should be located with ready access for outpatients, including people with disabilities, ambulances, and for inpatients in wheelchairs, on beds or trolleys. If the Unit is located in a free-standing building, careful consideration must be given to covered links between the Center and the main hospital particularly for inpatients on beds/trolleys, goods and supplies, and access to other departments such as Medical Imaging or Pathology.

37.2.3 Functional Areas

The Chemotherapy Unit will consist of or have access to the following functional areas for all service delivery methods:

- Main Entry/Reception Area
- Interview Room
- Waiting
- Clinical Consultation room
- Procedure room
- Treatment Areas
- Isolation room/s
- Clean Utility/Medication room
- Dirty utility
- Pantry
- Staff Areas
- Support Areas
- Storage Areas
 - Clinical
 - Non clinical
 - Bulk items storage e.g. fluids, equipment including infusion/syringe pump storage
- Waste Disposal Room.

The Radiotherapy Unit may include the following Functional Areas or zones:

- Reception, Waiting, administrative and records areas
- Consult area
- Treatment Planning area including simulation
- Appliance area for molds with storage
- Medical physics
- Radiation treatment areas including Radiotherapy Bunkers and Brachytherapy suite with patient holding, waiting, change rooms and toilets
- Support areas including Consult, Utilities, Cleaner's Room, Store, Disposal rooms
- Staff areas including Staff Station, Offices, Staff Change and Toilets.

Reception/Waiting

The Reception area will provide for administrative tasks such as appointments as well as receiving and directing patients to the appropriate zone for consulting, treatment planning or radiotherapy treatment. The waiting area should accommodate a range of patients and visitors with accessible areas and conveniently located public and patient amenities. A child play area should be incorporated into the main waiting area.

Facilities for volunteers and transport staff may also be provided in this area.

Consult Area

The Consult area may accommodate multi-disciplinary teams for patient consultation, follow-up and case review. Patients are generally assessed weekly by a Radiation Oncologist throughout the course of their treatment and will be referred to other specialists and allied health personnel as required including Dietitians and Social Workers. The area may include Procedure rooms for minor procedures including endoscopic examinations, pleural taps and peritoneal drains. The Consult area should have access to blood collection rooms and patient toilets for specimen collection. Interview and conference rooms are required for patient and family education that may include computers for review of treatment programs.

The Consult area should be located with easy access for outpatients without entering radiation treatment zones.

Treatment Area

Treatment planning requirements include:

- Treatment planning rooms with computer workstations which may include including planning room for Brachytherapy where required by the service plan
- Simulator/CT suite
- Patient and visitor amenities (change cubicles, toilets, sub-waiting, trolley holding);
- Offices and workstations for radiation therapists, trainees and students;
- Offices for data checking and transfer in a quiet and discreet area.

Radiation Treatment Area

The radiation treatment zone includes:

- Bunkers with entry/exit maze
- Control areas
- Change cubicles and patient toilets which are required immediately adjacent to radiation treatment areas
- Sub-Waiting areas located conveniently to each bunker
- Support areas including patient bays, clean utility, dirty utility, staff station, preparation and storage areas.

Brachytherapy Treatment Areas

The Brachytherapy treatment room is used for delivery of a radiation source through a tube or applicator, implanted during surgery. The Brachytherapy room is similar to a radiation bunker and equipped as an operating room with services to provide for anesthesia. Support facilities required include:

- Induction room
- Scrub-up area
- Patient recovery bays
- Sterile stock area.

Appliance Areas

The Appliance area is provided for manufacturing of masks and molds for use in radiotherapy treatment and includes:

- Mold Fitting room accommodating a patient trolley and patient positioning accessories
- Mold Workshop/s; workshops require special exhaust for molten metal used to fabricate photons and electron shielding; foam cutters and vacuum formers will be used in this area to manufacture custom masks; a separate dirty/noisy workshop to accommodate machinery and drills may be required
- Storage for materials used to manufacture immobilization devices and heavy molds used to manufacture masks that are held in the unit or the duration of the patient's treatment.

Medical Physics/Biomedical Engineering

Medical Physics staff supervise the physical aspects of radiation treatment and radiation safety of staff, patients and visitors. Medical physicists provide scientific support for all treatment machines, simulators, CT, MRI and PET imaging, computer planning systems, brachytherapy sources and equipment as well as dosimetry, quality assurance and radiation safety.

Biomedical Engineering services may be provided in-house or by external contractors. The service provides maintenance and service support to an extensive range of treatment and non-treatment equipment in Radiation Oncology. Biomedical engineers work closely with Medical Physicists to provide regular calibration and compliance checks of all treatment delivery and diagnostic machines.

Facility requirements include:

- Offices and workstations for physicists, physics assistants, electronics biomedical engineers
- Physics laboratory to manufacture equipment not available commercially for patient treatment such as installation of rigid attachments for patient hoists, calibration jigs for physics, mask creation appliances
- Storage for Medical Physics equipment including bulky water tanks and phantoms;- technical support (IT office and work area/storage)
- Electronic/biomedical engineering workshop
- Dark room x-ray processor as required for machine commissioning and imaging of special.

Support Areas

The following optional support areas may be required:

- Quality control area with illuminated X-Ray viewing boxes
- Dosimetry equipment area
- Hypothermia Room (may be combined with an Examination Room).

37.2.4 Functional Relationships

It is not mandatory to co-locate Chemotherapy Unit with Radiotherapy Unit, as patients are unlikely to be at both units during the same visit except in the case of an Integrated Cancer Care Center.

Planning of a Chemotherapy Unit should address the following key issues:

External

- Ease of access to the unit where the majority of people will arrive by car on a daily basis.
- Separation of walking and stretcher/ambulance patient arrivals
- Safe access to the units storerooms for the delivery of bulk items e.g. Bulk fluids which may arrive or be stored on a palette requiring mechanical lifting, moving and storage
- Safe access for the delivery of food, clean linen, pharmacy, consumables, disposable items and the related removal of bulk cytotoxic chemotherapy waste and soiled linen etc.

Internal

The internal planning of the Chemotherapy Unit should be planned by considering the units functional areas/zones. Cancer service delivery is supported by a multi-discipline team management approach.

Some of the critical relationships to be considered include:

- Staff work station requires an unobtrusive view of all patient treatment areas. The inclusion of decentralized staff areas may be considered in larger units that have multiple rooms or treatment spaces
- Clustering number of treatment spaces and/or individual cubicles
- Provision of working spaces for visiting multi-discipline team members
- Reception requires a clear view of entry and exit/egress points of the Unit
- Easy access from the waiting area to the patient treatment area for the convenient arrival and departure of patients and families

- Functional relationship of isolation rooms to the entry of the unit with access to outdoor views and space.

The Radiotherapy Unit should be located with ready access for ambulant patients and beds/trolleys. The Unit may be co-located with Medical Imaging Units. If intra-operative therapy is proposed, the Radiotherapy Unit should be located close to the Operating Unit or with a direct link. A ground level location is preferred due to the weight of the equipment and shielding requirements, and for ease of installation and replacement. There will also be a restriction on the type of departments located above the Radiation Oncology bunkers.

37.3 Design

37.3.1 General

The Chemotherapy Unit should be designed to provide:

- Ease of public access for people who may arrive either walking, using mobility equipment, families with children or on an Ambulance stretcher or patient trolley
- Ease of access to public parking for people who are often debilitated and who are undergoing a scheduled period of chemotherapy on a regular basis
- Ease of delivery of large amounts of fluids on palettes to the Unit on a regular basis
- Consideration to the type of floor finishes as staff movement to/from and between patients during chemotherapy treatments and review is constant e.g. cushioned vinyl as used in physical therapies areas.

Radiotherapy Units should be designed to avoid exposing patients, staff and visitors to risks such as injury or radiation hazard. The design of the unit should create a pleasant, reassuring atmosphere for patients whilst retaining the necessary functional requirements associated with clinical spaces and radiation treatment areas.

37.3.2 Patient Treatment Areas

In a Chemotherapy Unit, patients should be situated so that healthcare providers have direct or indirect visualization. This approach permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of vision between the patient, carer and staff.

Clarification of the type and number of chemotherapy spaces to be provided e.g. cubical, screened areas and isolation room numbers.

37.3.3 Environmental Considerations

Natural Lighting

Natural light contributes to a sense of wellbeing of patients, staff, visitors and other users. The use of natural light should be maximized throughout a Chemotherapy Unit.

Natural light and a view to pleasant and interesting outdoor areas is of particular importance for people who spend long periods of time sitting and laying in a chemotherapy chair or bed. Every effort should be made to provide a view to all treatment areas either by locating treatment bays/cubicles/bedrooms adjacent to a window or enabling unobstructed sight lines through areas to an outdoor view.

Construction Standards

The flooring for a Radiotherapy Unit shall be adequate to meet the load requirements for equipment, patients and personnel. Provision for cable ducts or conduits should be made in the floors and ceilings as required. Ceiling -mounted equipment should have properly designed rigid support structures located above the finished ceiling. The minimum recommended ceiling height is 3meters. A lay-in type of ceiling should be considered for ease of installation and service.

The linear accelerator installation may require an opening in a wall and coordination of the entry door size to allow for future servicing of the equipment.

Radiation Protection

Cobalt and linear accelerator rooms require radiation protection that may include concrete walls, floors and ceiling to a specified thickness. The radiation protection needs of the unit shall be assessed by a certified physicist or appropriate state agency. This assessment is to specify the type, location, and amount of protection to be installed in accordance with final approved department layout and equipment selection. The radiation protection requirements shall be incorporated into the final plans and specifications.

Design of the bunker rooms may incorporate a maze entry to assist with radiation protection; a neutron door may also be required depending on the type of linear accelerator used.

Privacy

Confidentiality and privacy when requested for persons receiving treatment and the area design should be considered as a critical element during the design process. The Chemotherapy Unit should be designed to:

- Ensure confidentiality of personal discussions and medical records
- Provide an adequate number of rooms for discreet discussions and treatments to occur when required
- Enable sufficient space within each treatment space to permit curtains to be easily closed whenever required
- Appropriately locate windows and doors to enhance visual and acoustic privacy.

Acoustics

Many of the functions undertaken in the Chemotherapy Unit require consideration of acoustic privacy including:

- Family/case conference/interviews rooms
- Isolation of noisy areas such as waiting rooms from clinical areas e.g. clean and dirty utilities
- Staff discussions regarding confidential matters (meeting rooms)
- Noise sources may arise both within and from outside the dialysis unit and may include:
 - Sanitary facilities
 - Equipment
 - Other patients/clients
 - Staff activities
 - Traffic through the unit e.g. visitors, food, linen or other trolleys.

Solutions to be considered include:

- Selection of sound absorbing materials and finishes
- Use of sound isolating construction
- Planning to separate quiet areas from noisy areas
- Review of operational management and patient/client flows. This may include separate areas for patients with special needs
- Location of the unit.

Similarly in the Radiotherapy Unit, acoustic treatment will be required to all examination, consultation rooms and offices to ensure privacy for discussions with patients, families and staff. Provide for the control of noise associated with machinery in the appliance fabrication workshop areas.

Lighting

Radiation bunkers and simulators will require dimmable lighting with adjustable lighting levels for patient comfort. All patient areas in the Unit will require lighting with clinical color rendering. General lighting in staff work areas should be even, sufficient for illumination of the work area and non-reflective. Refer also to Part C of these Guidelines.

Interior Decor

Interior decor includes furnishings, style, color, textures and ambience, influenced by perception and culture. The décor of the Chemotherapy Unit should be of a standard that meets the expectations of people using the services and make every effort to reduce an institutional atmosphere. Cleaning, infection control, fire safety and patient care requirements and the patients' perception of a professional inviting environment should always be considered. Suggestions to achieve this balance include the following:

- Use of design features such as colors and artworks to distract the sight from clinical areas
 - Inclusion of soft furnishings that act as a design feature such as screening, lounges in waiting areas and window treatments
 - Elimination of corridors through good design wherever possible
 - Inclusion of corridors at the minimum required widths to meet the service needs e.g. wide corridors are a feature that potentiates institutional environments
 - Provision of a beverage bay for people to use while waiting
 - Background music through a piped system or a centralized unit
 - Television systems with head set access at the treatment cubicles
- Some of the above features can also be considered for the Radiotherapy Unit.

37.3.4 Space Standards and Components

Accessibility – External

There should be a weatherproof vehicle drop-off zone with easy access for less-mobile patients and wheelchair bound patients. Consideration should be given to the separation of ambulant and non-ambulant patient arrivals to enhance privacy of ambulance and or stretcher patients frequenting the service.

Access and Mobility

Within workshop and appliance room areas, the number of doors should be kept to a minimum to facilitate the movement of equipment; double doors will be provided to all workshop areas. All patient areas should be designed for access by wheelchairs. Refer also to Part C of these Guidelines for additional information.

Safety and Security

Security measures may include:

- Emergency 'stop' buttons in treatment bunkers and control rooms
- Controlled access to equipment storage areas to protect sensitive equipment
- Controlled staff access after-hours
- CCTV camera surveillance of bunkers, access and exit points
- Fixed and personal duress alarms.

Ergonomics

Heights and depths of benches and workstations in the radiation treatment area need to allow staff to efficiently work from standing and seated positions. The emergency stop button should be placed within easy reach of attending staff.

37.3.5 *Safety and Security*

Equipment, furniture, fittings and the facility itself should be designed and constructed to ensure that users are not exposed to avoidable risks or injury. The service is more likely to be located in an area away from the inpatient units and isolated after-hours.

A high standard of safety and security can be achieved by careful configuration of spaces and zones to include:

- Control access/egress to and from the Unit
- Optimize visual observation for staff
- Use of CCTV to entry and communication systems enable contact after normal work hours
- Similar functions shall be co-located for ease of staff management
- Emergency 'stop' buttons in treatment bunkers and control rooms
- Controlled access to equipment storage areas to protect sensitive equipment
- Controlled staff access after-hours
- CCTV camera surveillance of bunkers, access and exit points
- Fixed and personal duress alarms.

Access to public areas shall be considered with care so that the safety and security of staff areas within the Unit are not compromised.

Refer also to Part C of these Guidelines.

37.3.6 *Finishes*

Floor and ceiling finishes shall be selected to suit the function of the space and promote a pleasant environment for patients, family, carers, visitors and staff.

The following factors shall be considered:

- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning
- Meeting infection control standards
- Floor type finishes
- Movement of equipment.

All surface finishes are to be washable including walls and ceilings. Floor surfaces should be impervious, easy to clean, sealed and coved at the edges.

Refer also to Part C of these Guidelines.

37.3.7 *Fixtures and Fittings*

Equipment such as the linear accelerator and control equipment must be installed to the manufacturer's specifications and recommendations, in particular:

- Space requirements may vary according to equipment selection
- Doors will need to be sized to allow passage of equipment
- Structural assessment will be required for equipment weight loads
- Adequate space will be required for maintenance of major equipment ensuring adequate access to cabinets and control units.

Safety shower and eye wash or eye/face wash equipment must be readily accessible where cytotoxic drugs are dispensed and administered.

Refer to Part C of these Guidelines and Standard Components of individual rooms for information related to fixtures and fittings.

37.3.8 *Building Service Requirements*

Communications and Information Technology

It is vital to provide reliable and effective Technology/Communications service for efficient operation of the Unit. The following items relating to Technology/Communication to support the planning, design and the current and future expansion of the Unit and support the development of technical and operational guidelines lines supported by written procedures and processes.

Examples are as follows:

- Bar coding for supplies, x-rays and records
- Data entry (e.g. scripts and investigative requests)
- Email
- Access to picture archiving communications systems (PACS)
- Paging systems
- Electronic medical records and medical record storage systems
- Point of clinical care
- Patient Administration System (PAS)
- BMS System for drug fridges
- Videoconferencing, teleconferencing/telemedicine
- Wireless technology considerations Duress alarm systems – fixed and mobile units
- Communications rooms and server requirements.

Nurse Call and Emergency Call facilities shall be provided in all patient areas (e.g. Bed/chair spaces, toilets and bathrooms) and clinical areas in order for patients and staff to request for urgent assistance. The individual call buttons shall alert to distributed identified ceiling -mounted annunciators and also to a central module situated at or adjacent to the Staff Station /s. The alert to staff members should be done in a discreet manner.

Provision of Duress Alarm System is required for the safety of staff members who may at times face threats imposed by clients/visitors. Call buttons will be required at all reception/staff station areas and consultation/treatment areas where a staff may have to spend time with a client in isolation or alone. The combination of fixed and mobile duress units should be considered as part of the safety review during planning for the unit.

Inclusion of medical gases (oxygen and suction) units of one per two chairs should be provided.

Communications and information systems installed in the unit may include:

- Voice/data outlets
- Telephone and video conferencing capacity
- PACS imaging system, electronic records and radiotherapy information management systems
- Patient/nurse, emergency call system and duress call as required
- CCTV for patient viewing, treatment delivery computers and intercoms to allow the radiation therapist to monitor and communicate with the patient from the control area during treatment.

Mechanical Services

General air-conditioning needs to cool equipment but outlets should not be placed directly over partially undressed patients on beds or trolleys. The temperature of the unit should be maintained within a comfortable range not exceeding 25 degrees C for optimal operating efficiency and patient comfort.

Air condition systems should be designed with consideration to the following:

- Appropriate air exchanges and exhaust for chemicals and dust in the appliance workshop
- Sufficient cooling for heat generating equipment in radiotherapy treatment, computer equipment rooms.

Smoke detectors in radiation treatment and simulator rooms must be of the type not sensitive to radiation (i.e. photoelectric) and require special consideration.

Infection Control

Infectious patients and immune-suppressed patients may be sharing the same treatment space at the different times of the same day. The design of all aspects for the Unit should take into consideration the need to ensure a high level of infection control in all aspects of clinical and non-clinical practice.

Isolation room/s numbers should be reviewed as part of the planning aspects of the project relevant to the proposed service needs.

Hand washing facilities for staff within the Unit should be readily available. Where a hand wash basin is provided, there shall also be liquid soap and disposable paper towels provided and PPE equipment.

For further details relating to the Infection control refer to Part D of these Guidelines.

37.4 Components of the Unit

37.4.1 Introduction

The Oncology Unit will contain Standard Components according to the Level of Service. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

37.5 Schedule of Accommodation

Typical Oncology - Chemotherapy with 12, 24 and 30 treatment spaces

ROOM/ SPACE	Standard Component	12 spaces Qty x m²			24 spaces Qty x m²			30 spaces Qty x m²			Remarks
Entry/ Reception											
Airlock Entry	AIRLE-10-SJ	1	x	10	1	x	10	1	x	10	Covered entry for stand-alone Unit
Reception/ Clerical	RECL-15-SJ Similar	1	x	9	1	x	12	1	x	15	Size dependent on staffing Numbers and activities
Waiting	WAIT-20-SJ Similar	2	x	10	2	x	15	2	x	20	Separate Female areas
Waiting- Family	WAIT-10-SJ Similar	1	x	10	1	x	15	1	x	20	May include a child Play Area
Store- Photocopy/Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	
Store- Files	STFS-10-SJ	1	x	10	1	x	10	1	x	10	Depends on operational policies
Toilet- Accessible	WCAC-SJ	1	x	6	1	x	6	1	x	6	
Toilet- Public	WCPU-3-SJ	2	x	4	2	x	4	2	x	4	
Consult Room	CONS-SJ	1	x	14	3	x	14	4	x	14	For counselling, interviews and education
Patient Areas: Treatment											
Treatment Bay - Chemotherapy	TRMT-CHE-SJ	9	x	9	20	x	9	23	x	9	Group of 10 chair bays
Treatment Bed Bay - Chemotherapy	TRMT-CHE-SJ	2	x	9	3	x	9	4	x	9	Group of 4 bed bays
Isolation Room	1 BR-IS-N-SJ	1	x	28	1	x	28	3	x	28	Depending on service needs
Ensuite- Standard	ENS-ST-SJ	1	x	5	2	x	5	3	x	5	
Staff Station / Clean Utility	SSCU-SJ Similar	2	x	9	2	x	14	2	x	20	overlooking groups of chair & bed bays
Toile - Accessible	WCAC-SJ	1	x	6	1	x	6	2	x	6	
Toilet - Patient	WCPT-SJ	2	x	4	2	x	4	3	x	4	Separate Male and Female
Support Areas											
Bay - Beverage	BBEV-ENC-SJ	1	x	5	1	x	5	1	x	5	
Bay - Emergency Shower	BES-SJ	1	x	1	1	x	1	1	x	1	
Bay - Handwashing, Type B	BHWS-B-SJ	3	x	1	6	x	1	8	x	1	1 per 4 bays
Bay - Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	
Bay - Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Cytotoxic Room	CYT-SJ Similar	1	x	10	1	x	15	1	x	20	
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Dirty Utility	DTUR-12-SJ Similar	1	x	12	1	x	14	1	x	14	
Disposal Room	DISP-8-SJ	1	x	8	1	x	8	1	x	8	
Store - Equipment	STEQ-16-SJ Similar	1	x	16	1	x	20	1	x	25	
Store - General	STGN-8-SJ Similar	1	x	10	1	x	12	1	x	15	
Staff Areas											
Meeting Room	MEET-L-15-SJ Similar	shared			1	x	15	1	x	20	
Office - Unit Manager	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	
Office - 2 Person Shared	OFF-2P-SJ				2	x	12	2	x	12	Nursing/ Medical/ Allied Health use
Change - Staff (Male/Female)	CHST-12-SJ	2	x	12	2	x	12	2	x	15	Toilet, Shower, Lockers
Staff Room	SRM-15-SJ Similar	1	x	15	1	x	20	1	x	25	

ROOM/ SPACE	Standard Component	12 spaces Qty x m ²	24 spaces Qty x m ²	30 spaces Qty x m ²	Remarks
Net Department Total		380.5	609.5	788.5	
Circulation %		35	35	35	
Grand Total		513.7	822.8	1064.5	

Oncology - Radiotherapy with 2 and 4 bunkers

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m ²	4 Bunkers Qty x m ²	Remarks
Entry/ Reception							
Airlock - Entry	AIRLE-10-SJ				1 x 10	1 x 10	For stand-alone units or direct
Waiting	WAIT-30-SJ				2 x 15	2 x 25	Separate for Male/Female areas
Reception/ Clerical	RECL-15-SJ				1 x 10	1 x 10	2 staff
Bay Wheelchair	BWC-SJ				1 x 4	1 x 6	1 trolley; 2-5 wheelchairs
Store - Files	STFS-10-SJ				1 x 10	1 x 15	
Store- Photocopy / Stationery	STPS-8-SJ				1 x 8	1 x 8	
Meeting Room	MEET-L-15-SJ Similar				x	1 x 12	Resource and education function
Interview Room- Family	INTF-SJ				1 x 12	1 x 12	
Toilet- Accessible	WCAC-SJ				1 x 6	1 x 6	
Toilet - Public	WCPU-3-SJ				2 x 4	2 x 4	Separate Male/Female areas
Volunteers Workroom	VWR-20-SJ				1 x 20	1 x 20	Optional
Clinic Area							
Consult Room	CONS-SJ				2 x 14	4 x 14	
Treatment Room	TRMT-SJ				1 x 14	1 x 14	
Patient Bay - Holding/ Recovery	PBTR-H-10-SJ Similar				2 x 9	4 x 9	
Bay- Handwashing, Type B	BHWS-B-SJ				1 x 1	2 x 1	For Bed Bays
Bay - Linen	BLIN-SJ				1 x 2	1 x 2	
Bay - Resuscitation Trolley	BRES-SJ				1 x 1.5	1 x 1.5	
Staff Station/ Clean Utility	SSCU-SJ				1 x 15	1 x 15	
Dirty Utility - Sub	DTUR-S-SJ				1 x 8	1 x 8	
Toilet - Patient	WCPT-SJ				1 x 4	1 x 4	
Treatment Planning							
Radiotherapy Treatment Planning	RAD-TRP-SJ				1 x 40	1 x 60	Qty per staffing establishment
Waiting	WAIT-10-SJ				2 x 10	2 x 20	1 wheelchair space; separate areas for Male/Female
Patient Bay - Holding	PBTR-H-10-				2 x 10	4 x 10	Separate for Male/Female areas
Office - Chief Radiographer	OFF-S9-SJ Similar				1 x 12	1 x 12	
Office – Single Person	OFF-S9-SJ				3 x 9	3 x 9	To staff specialist as per service plan
Office – 2 Person Shared	OFF-2P-SJ				1 x 12	1 x 12	As per service plan
Office – Workstation	OFF-WS-SJ				1 x 5.5	2 x 5.5	To staff specialist, qty per staffing establishment
Physics Laboratory	PHLAB-SJ				x 24	1 x 40	
Store - General	STGN-6-SJ				x 10	1 x 20	
Store – Equipment (Physics)	STEQ-10-SJ STEQ-16-SJ				1 x 10	1 x 20	
Radiotherapy Simulator Room	RAD-SIM-SJ				1 x 44	1 x 44	
Simulator Control Room	RAD-BCTR-SJ				1 x 17	2 x 17	1 room shared between Simulator rooms
Toilet - Accessible	WCAC-SJ				2 x 6	2 x 6	Separate Male/female patients
Change Cubicle - Accessible	CHPT-D-SJ				2 x 4	2 x 4	

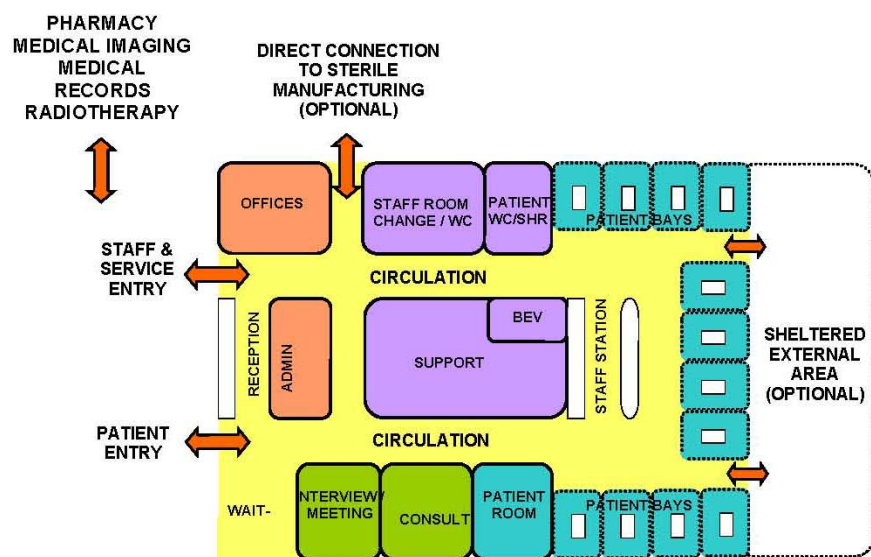
ROOM/ SPACE	Standard Component				2 Bunkers Qty x m ²			4 Bunkers Qty x m ²			Remarks
Mould Room -	MLD-WS-SJ				1	x	30	1	x	30	Includes workshop and fitting areas
Toilet - Patient	WCPT-SJ					x		1	x	4	
Toilet - Staff	WCST-SJ				2	x	3	2	x	3	Separate Male/Female areas
Clean-Up Room	CLUP-7-SJ				1	x	10	1	x	10	
Patient Bays - Paediatric Preparation/ Recovery	PBTR-H-10-SJ Similar				1	x	10	1	x	20	
Bay -Handwashing, Type B	BHWS-B-SJ				1	x	1	2	x	1	
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Dark Room					1	x	6	1	x	6	Optional
Workshop – Biomedical	WS-BM-SJ				1	x	40	1	x	50	
X-ray Viewing and Reporting	XRRR-SJ				1	x	12	1	x	12	PACS may be used
Radiation Treatment											
Bunker Waiting	WAIT-10-SJ Similar				2	x	3	4	x	3	Separate Male/Female areas
Bay – Linen Trolley	BLIN-SJ				1	x	2	1	x	2	
Bay – Wheelchair Park,	BWC-SJ				1	x	4	2	x	4	
Change Cubicle - Patient	CHPT-SJ				2	x	2	4	x	2	Separate Male/Female areas
Change Cubicle - Accessible	CHPT-D-SJ				2	x	4	2	x	4	Separate Male/Female areas
Interview Room	INTF-SJ					x		4	x	12	1 per bunker
Radiotherapy Bunker Room	RAD-BUNK-SJ				2	x	150	4	x	150	150m2 spatial allocation for one linear accelerator bunker includes maze &
Radiotherapy Bunker Control Room	RAD-BCTR-SJ				2	x	17	4	x	17	
Office - 3 Person Shared	OFF-3P-SJ					x		1	x	15	Shared between 4 bunkers
Store - Equipment	STEQ-10-SJ				1	x	10	1	x	14	
Toilet - Patient	WCPT-SJ				2	x	4	4	x	4	Separate Male/Female areas
Brachytherapy Suite (Optional)											
Staff Station/ Clean Utility	SSCU-SJ							1	x	9	
Waiting - Sub								1	x	5	
Patient Bays - Holding/ Recovery	PBTR-H-10-SJ Similar							1	x	10	Separate Male/Female areas; for patient recovery
Bay - Handwashing, Type B	BHWS-B-SJ							1	x	1	
Bay - Linen	BLIN-SJ							1	x	2	
Bay – PPE (Personal Protective Equipment)	BPPE-SJ							1	x	1.5	
Bay - Resuscitation Trolley	BRES-SJ							1	x	1.5	
Toilet - Patient	WCPT-SJ							1	x	4	
Change - Staff (Male/Female)	CHST-12-SJ Similar							2	x	10	
Brachytherapy Treatment Planning	RAD-TRP-SJ							1	x	58	
Scrub Up	SCRUB-6-SJ							1	x	6	
Operating Room - Minor	ORMS-SJ							1	x	36	
Store - Sterile Stock	STSS-12-SJ							1	x	7	Adjacent to Minor OT
CT Scanning - Procedure Room	CTPR-SJ							1	x	45	
CT Scanning - Control Room	CTCR-SJ							1	x	10	
Airlock	AIRL-6-SJ							1	x	6	To sterile areas
Change Cubicle - Accessible	CHPT-D-SJ							1	x	5	
Toilet - Patient	WCPT-SJ							1	x	4	
Clean-up/ Dirty Utility - Sub	CLUP-7-SJ/							1	x	9	
Bay - Linen	BLIN-SJ							1	x	2	
Store - General	STGN-8-SJ Similar							1	x	10	

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m ²			4 Bunkers Qty x m ²		Remarks
Cleaner's Room	CLRM-5-SJ							1	x	5.5
Brachytherapy Control Room								1	x	17
Staff Areas										
Toilet - Staff	WCST-SJ				2	x	3	4	x	3
Office – Single Person	OFF-S12-SJ				1	x	12	1	x	12
Office- Single Person	OFF-S9-SJ				3	x	9	5	x	9
Office – 2 Person Shared	OFF-2P-SJ				1	x	2	2	x	2
Staff Room	SRM-25-SJ				1	x	20	1	x	30
Shower - Staff	SHST-SJ				2	x	3	2	x	3
Property Bay - Staff	PROP-3-SJ				1	x	3	1	x	3
Meeting Room	MEET-L-30-				1	x	20	1	x	40
Shared Support Areas										
Cleaner's Room	CLRM-5-SJ				1	x	5	1	x	5
Store - General	STGN-20-SJ				1	x	20	1	x	20
Store - Equipment	STEQ-16-SJ Similar				1	x	15	1	x	15
Disposal Room	DISP-8-SJ				1	x	10	1	x	10
Expansion Areas										
Radiotherapy Bunker/ Control Shell Areas	RAD-BCTR-SJ							2	x	180
Allow for Shell area for 2 x Bunkers, Control, Change rooms, Waiting										
Net Department Total					1109.5			2452.5		
Circulation %					35			35		
Grand Total					1497.8			3310.9		

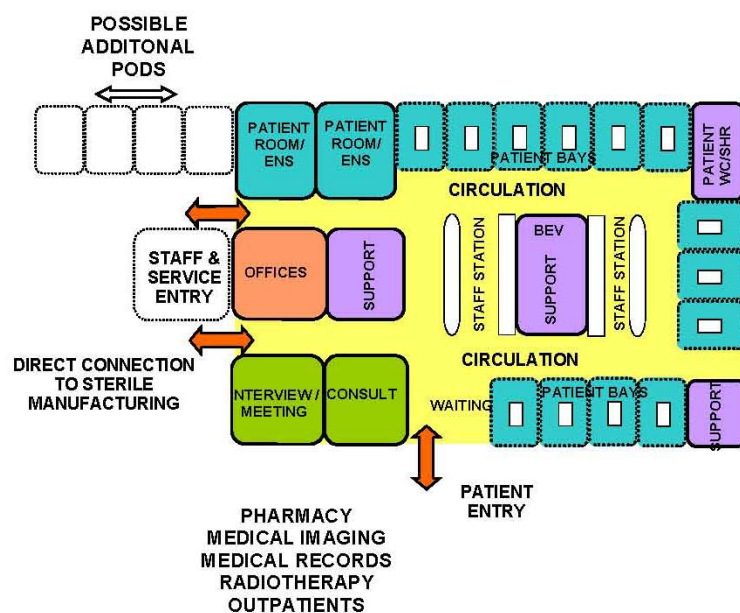
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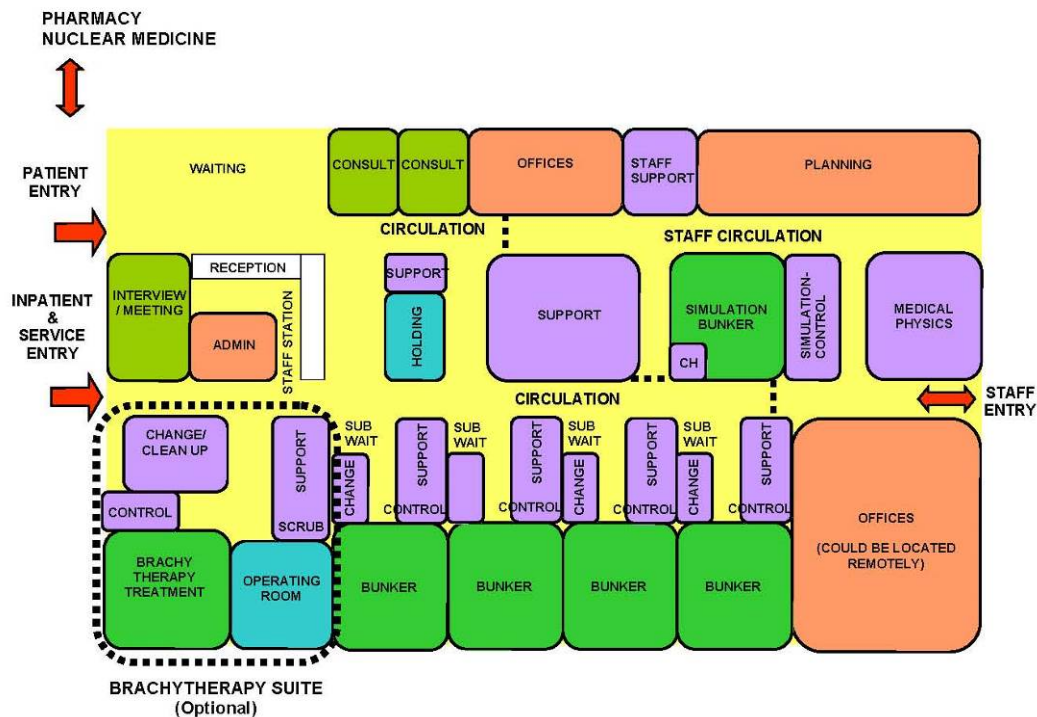
- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the Service 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

37.6 Functional Relationship Diagram



ALTERNATE





37.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning; 155 Ambulatory Care Unit Rev 4' 2012. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/ausfhg_abcdf_index_4_.pdf 2014
- Bodey, GP. and Rosenbaum, B. (US). 'Protected Environments in Cancer Chemotherapy: Design and Function of a Large Unit' Medical and Pediatric Oncology 1981. 9(1): 23–34. Retrieved from website: <http://www.ncbi.nlm.nih.gov/pubmed/7464692> 2014
- Canadian Association of Provincial Cancer Agencies (CAPCA). 'Guidelines for Developing Ambulatory Chemotherapy Pre-printed Orders' 2011. Retrieved from: <http://www.capca.ca/wp-content/uploads/PPO-Guidelines-FINAL-Jan-9-20111.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

38.0 Operating Unit

38.1 Introduction

38.1.1 Description

The Operating Unit provides a safe and controlled environment for the operative care of patients undergoing diagnostic/surgical procedures under anesthesia and perioperative care including post procedure recovery.

38.2 Planning

38.2.1 Operational Models

Operation models include the following options:

Integrated Ambulatory Care Model

This is a dedicated unit where patients access surgical and/or medical procedures and other complementary services on a planned day-only basis.

Perioperative Model

In this model patients have planned surgery and are admitted as a day-only or day-of-surgery admission in a dedicated facility. Surgery and first stage recovery is undertaken in the Operating Unit. Day-only cases are then transferred back to the facility for pre-discharge care. Day-of-surgery admissions may be transferred to an inpatient unit following recovery.

Short Stay Surgery Model

This is a dedicated unit where patients have planned surgery as a day-only or overnight admission; patients are transferred to the Operating Unit for surgery and first stage recovery, and then returned to the facility. Post-operative stay is usually less than 48 hours.

Specialist Surgery Model

This model provides for a single specialty or compatible specialties such as ophthalmology, plastic surgery or urology. Patients are admitted and discharged on a day-only basis.

38.2.2 Planning Models

The Operating Unit shall be located and arranged to prevent non-related traffic through the suite.

The number of Operating Rooms and Recovery beds and the sizes of the service areas shall be based on the service plan and expected surgical workload. The size, location, and configuration of the surgical suite and support service departments shall reflect the projected caseload and service plan of the Unit.

A number of planning models may be adopted including:

Single Corridor

The single corridor model involves travel of all supplies (clean and used) as well as patients (pre and post-operative) in one main corridor. There is ongoing debate as to the suitability of this approach. However, this option is considered suitable provided:

- The main corridor is sufficiently wide in order to permit separation of passage of goods and services;
- Handling of clean supplies and waste is carefully managed to avoid cross contamination.

A major disadvantage of this planning model is that a patient awaiting surgery may be exposed to post-operative patients

Dual Corridor or Race Track

The Dual Corridor or 'Race Track' model allows all the Operating rooms to be accessed from an external corridor for patients and directly from a central Set Up/Sterile Stock Room for sterile goods. This model aims to separate 'dirty' from 'clean' traffic by controlling the uses of each corridor.

In this design, there must not be cross traffic of staff and supplies from the decontaminated/soiled areas to the sterile/clean areas.

In this model, stock and staff can be concentrated in one location, preventing duplication of equipment stock and staff.

Clusters of Operating Rooms

In this model Operating Rooms may be clustered according to specialty, with a shared Sterile Stock and Set-Up Room for each group or cluster.

Disadvantages of this model include:

- Additional corridor and circulation space required for corridors around clusters of rooms, which reduces the available space for stock;
- Potential duplication of stock and additional staff requirements may result in increased operating costs.

Dedicated Theatres with Fixed or Mobile Equipment

In this model Operating rooms are dedicated to specific types of surgery such as hybrid operating/imaging rooms, urology, vascular, neurology or other specialties requiring specific equipment. This may be beneficial in larger suites where the case volume justifies specialization; however, smaller suites may favor flexibility of Operating Room use. Fixed equipment can preclude the multi-functional use of the room.

TSSU/CSSU

The Operating Unit is a major user of sterile stock and the location of the instrument processing area and sterile stock is of high importance.

There are two main options available for supply of sterile stock to the Operating Unit:

- A dedicated TSSU (Theatre Sterile Supply Unit) serving only the Operating Unit
- A CSSU (Central Sterile Supply Unit) that also serves other areas of the hospital.

The TSSU may be located within the Operating Suite or externally. It is preferable to locate the TSSU adjacent with direct access to the Operating Suite. The TSSU may also be located on another floor of the building connected by dedicated clean and used goods lifts.

The CSSU may be located in a service zone of the hospital. There is a strong functional link between the CSSU and the Operating Unit; efficient transport of stock to and from each unit will require careful planning.

38.2.3 Functional Areas

The Operating Unit consists of the following functional areas:

- Admissions and Reception Area for receipt and admission of patients to the Unit, with general overseeing of day to day operations, control of entry and exit from the Unit and completion of general administrative tasks
- Holding areas for holding and management of patients prior to their operation or procedure
- Operating Rooms area where procedures are carried out
- Support Areas including storage and management of stock and sterile supplies, disposal of waste and sterilization of smaller items

- Recovery Areas where patients are assisted through the process of recovering from the effects of anesthetic
- Administrative and Staff Areas including Change Rooms, Staff Room, Offices and administrative space for clinical staff.

Dental Surgery

In addition to the standard operating room equipment and services (refer to Standard Component Operating Room), items considered essential for dental procedures are as follows:

- One compressed dental air outlet situated close to the service panels for medical gases, suction and electrical outlets, with the provision of a regulated bottle of appropriate compressed air as emergency backup or secondary use
- Facilities for dental X-Ray.

Laboratory Areas

Depending on the service plan and unit policy, an area for preparation and examination of frozen sections may be provided. This may be part of the general Pathology Laboratory if immediate results are obtainable without unnecessary delay in the completion of surgery.

Staff Amenities

Appropriate Change Rooms, toilet and showers shall be provided for male and female personnel (nurse, doctors and technicians) working within the Operating Unit. The Change Rooms shall contain adequate lockers, showers, toilets, hand basins and space for donning surgical attire and booting. Staff Change Rooms shall be arranged to encourage a one-way traffic pattern so that personnel entering from outside the surgical suite can change and move directly into the Operating Unit.

Alternatively, the entrance to the Change Rooms may be planned in direct view of a Staff Station at the entrance to the Operating Unit. The Change Room entrance door shall be provided with locks or electronic access devices to prevent the entry of unauthorized persons into the Operating Unit.

Notes:

- It is desirable but not mandatory to increase the number of facilities for female change rooms by approximately 30%
- In male change rooms 50% of toilets may be replaced with urinals
- Warm air hand dryers shall be avoided.

Flash Sterilizing Facilities

A Flash Sterilizer should be located in the unit, however, the use of this method of sterilizing should be restricted to situations where a single instrument has been dropped and there is no sterile duplicate available. Flash sterilizing is not suitable for processing of cannulated, complex instruments, suction and other tubing, textiles, paper or liquids.

Storage

Adequate Equipment Store room/s for equipment and supplies used in the Operating Unit shall be provided. Equipment Stores shall be provided at the minimum rate of 10m² per Operating Room.

Note:

- Store Rooms do not necessarily require doors.
- Store Rooms are best designed in an elongated rectangular shape to allow easy access to all items.
- The design of the Operating Unit should allow for ease of access to the storage areas for delivery of Operating Unit consumables. Controlled access from an external corridor is highly desirable.

Mobile Equipment Bays shall be provided for equipment such as portable X-Ray equipment, stretchers, trolleys, warming devices and mobile equipment. Mobile Equipment Bays shall comply with Standard Components and provided at the minimum quantity of one per operating room. Equipment Bays are best designed as elongated rectangular shapes and may be combined for space efficiency.

Biomedical Store/Workshop

An area for testing operating equipment may be included in the Operating Unit. This room may be collocated with a General Store, or a dedicated room for this purpose may be necessary. A direct corridor access to this room is recommended, with controlled access to the remainder of the Operating Unit

38.2.4 *Functional Relationships*

The Operating Unit requires close relationships with the following areas, particularly for urgent cases:

- Emergency Unit
- Intensive Care Units
- Obstetric Unit
- Helipad.

Links between these Units and the Operating Unit should be rapid, direct and discreet; transit of severely ill patients to and from the Unit through public corridors should be avoided.

The Operating Unit has a direct operation link with the following Units:

- Perioperative Unit/Day Surgery
- TSSU/CSSU.

Other Units that have a close relationship include:

- Pathology
- Imaging
- Obstetric/Birthing Unit for Caesarean Section procedures.

38.3 Design

38.3.1 *Environmental Considerations*

Natural Light

The need for an external view from the Operating Room is an important consideration. Provision of windows need to consider the following:

- Vision from the Operating Room could be through a corridor, set up area or directly to the external environment
- Many procedures require black-out
- There are heating, cooling and shading implications for windows in the Unit located on the outside of the building that may have an impact on the recurrent costs for maintenance and cleaning
- Viewing windows from a corridor to the Operating Room can be useful for supervision and training purposes
- Windows to Recovery, Staff Lounge and TSSU areas where staff spend a majority of their time should be given a high priority.

38.3.2 *Finishes*

Operating Units shall have the following finishes:

- Floors that are smooth, non-slip impervious material laid in a continuous washable material and graded where necessary to fall to floor waste; floor material that resists staining is recommended
- Wall finishes which are seamless, impervious and washable
- Ceilings which are smooth and impervious
- Intersections of walls and architraves to be rendered watertight junctions.

In all areas where patient observation is critical such as Operating Room/s, Anesthetic Room/s, Recovery Area/Room, Holding Area/Room, colors shall be chosen that do not alter the observer's perception of skin color.

38.3.3 *Infection Control*

Infection control issues are paramount in the Operating Unit and require careful attention to planning models and separation of clean and dirty workflows. Refer to Part D Infection Control in these Guidelines for additional information.

38.3.4 *Safety and Security*

Access control is required to the patient and staff entry areas of the Operating Unit. Limiting the number of entries and locating the Reception area with direct overview of entry areas is highly desirable.

38.3.5 *Building Services Requirements*

Medical Gases

Main storage of medical gases must be outside the facility and reticulated internally to gas outlets. Provision shall be made for additional separate storage of reserve gas cylinders necessary to complete at least one-day's procedures.

38.4 Components of the Unit

The Operating Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

38.4.1 *Non-Standard Components*

Perfusion Room

Description and Function

The Perfusion Room is for the preparation of perfusion equipment, and where set-up for cardiac procedures is undertaken.

Location and Relationships

The room will be located in close proximity to the Cardiac Operating Room/s and adjacent to a Perfusion Store.

Considerations

Room requirements may include:

- Heavy duty shelving for storage of perfusion fluids and equipment
- Computer workstation for a perfusion technician including power and data outlets
- Handwashing basin Type B with paper towel and soap fittings
- Bench, sink and cupboard unit for servicing of the perfusion machine.

38.5 Schedule of Accommodation

Typical Operating Unit at levels 3 to 6

ROOM/SPACE	Standard Component	Level 3 Qty x m ²			Level 4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Admissions/Reception											
		4 ORs			8 ORs			16 ORs			
Reception/Clerical	RECL-10-SJ RECL-15-SJ	1	x	12	1	x	12	1	x	15	May include space for porter
Waiting – Male/Female	WAIT-10-SJ WAIT-20-SJ	2	x	20	2	x	20	2	x	25	Separate for Male/Female areas
Meeting Room	MEET-9-SJ	1	x	9	1	x	9	1	x	12	
Pre-Operative Holding Areas											
Patient Bay – Holding	PBTR-H-10-SJ	4	x	10	8	x	10	16	x	10	Provide one per operating room, separate for Male/Female areas
Staff Station	SSTN-5-SJ							1	x	5	Reception area can be used for levels 2–4
Office – Write-up Bay	OFF-WIS-SJ	1	x	6	1	x	6	1	x	6	
Bay – Handwashing, Type A	BHWS-A-SJ	1	x	1	2	x	1	4	x	1	
Bay – Linen	BLIN-SJ	1	x	2	2	x	2	2	x	2	
Bay – Blanket/Fluid Warmer	BBW-SJ				1	x	1	2	x	1	
Clean Utility	CLUR-8-SJ	1	x	8	1	x	8	1	x	8	For level 2–3 clean utility could be collocated with staff station
Dirty Utility	CLUR-8-SJ				1	x	8	1	x	8	
Operating Rooms Areas											
Anaesthetic Induction Room	ANIN-SJ	4	x	15	8	x	15	16	x	15	Optional; May increase room size according to service provision
Operating Room – General (Digital)	ORGN-SJ	4	x	42	8	x	42	4	x	42	
Operating Room – Large (Specialist)	ORLA-SJ							2	x	58	Specialist OR Rooms e.g. Cardiac, Neuro, Ophthalmology, Orthopaedics
Operating Room – Vascular/Cardiac Imaging	OR-VC-SJ							2	x	70	
Operating Room – Hybrid – CT Scanning	OR-HY-CT-SJ							1	x	70	
Operating Room – Hybrid – MRI Scanning								1	x	70	
Operating Room – Robotics								2	x	70	
Operating Room – Emergency								4	x	55	Urgent/Emergency cases
Scrub Up/Gowning	SCRB-6-SJ	4	x	8	8	x	8	16	x	8	1 per operating room
Exit Bay		4	x	8	8	x	8	16	x	8	1 per operating room
Support Areas											
Audio-visual Room	AUDV-SJ							1	x	10	
Anaesthetic Store	ANST-SJ	1	x	15	1	x	25	1	x	45	2.5m ² per operating room
Anaesthetic Workroom and Biomedical Equipment	ANWM-SJ	1	x	10	1	x	15	1	x	20	
Bay – Blanket/Fluid Warmer	BBW-SJ	1	x	1	2	x	1	2	x	1	
Bay – Linen		1	x	2	1	x	2	2	x	2	1 per 8 operating rooms
Bay – Mobile Equipment	BMEQ-4-SJ	4	x	4	8	x	4	16	x	4	1 per operating room
Bay – Pathology	BPATH-SJ	1	x	1	1	x	1	1	x	1	Optional; Level 3,4
Blood Store	BLST-SJ	1	x	2	1	x	2	2	x	2	
Cleaner's Room	CLRM-5-SJ	1	x	8	1	x	8	2	x	5	1 per 8 operating rooms
Clean-Up Room – Shared	CLUP-7-SJ	2	x	15	4	x	15	8	x	15	1 per 2 operating rooms
Disposal Room	DISP-8-SJ	1	x	10	1	x	10	2	x	10	
Flash Steriliser	FST-2-SJ	1	x	2	1	x	2	1	x	2	
Office – Write-up Bay	OFF-WIS-SJ	1	x	6	2	x	6	2	x	6	

ROOM/SPACE	Standard Component	Level 3 Qty x m ²			Level 4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Set-up Room	SETUP-8-SJ	2	x	8	4	x	8	8	x	8	Optional; depends on operational policy
Store – Equipment, Major	STEQ-10-SJ STEQ-16-SJ	1	x	20	1	x	40	2	x	40	5.0m ² per operating room
Store – Equipment, Minor	STEQ-10-SJ STEQ-16-SJ	1	x	15	1	x	30	2	x	30	3.75m ² per operating room
Store – Non-Sterile/Deboxing	STGN-20-SJ	1	x	15	1	x	25	1	x	45	2.5m ² per operating room
Store – Sterile Stock	STSS-12-SJ STSS-20-SJ	1	x	40	2	x	40	2	x	80	Provide 10m ² per operating room
Perfusion Room								1	x	20	Optional, for cardiac surgery; As required by service plan
Store – Perfusion	STGN-20-SJ							1	x	20	Optional, if Perfusion room is required
Recovery Areas											
Patient Bay – Recovery Stage 1 (Male/Female)	PBTR-RS1-SJ	8	x	12	16	x	12	32	x	12	2 bays per operating room; May be divided into halls
Bay – Blanket/Fluid Warmer	BBW-SJ	1	x	1	1	x	1	2	x	1	1 per 16 Recovery bays
Bay – Handwashing, Type A	BHWS-A-SJ	2	x	1	4	x	1	8	x	1	1 per 4 recovery bays
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	1 per 18 recovery bays
Bay – Resuscitation Trolley	BRES-SJ	2	x	1.5	2	x	1.5	1	x	1.5	
Clean Utility	CLUR-12-SJ	1	x	12	2	x	12	2	x	14	
Dirty Utility	DTUR-12-SJ	1	x	12	2	x	12	2	x	14	
Staff Station – Recovery	SSTN-14-SJ SSTN-20-SJ	2	x	12	2	x	12	2	x	20	1 each for Male/Female areas
Store – General	STGN-6-SJ STGN-12-SJ	2	x	6	2	x	6	2	x	10	
Staff Areas: Shared											
Change – Staff (Male/Female)	CHST-20-SJ	2	x	30	2	x	50	2	x	120	Includes showers and toilets separate male/female areas
Toilet – Staff	WCST-SJ							2	x	3	Addition to toilets in Staff change; Separate Male/Female
Meeting Room – Small	MEET-9-SJ							1	x	9	
Meeting Room – Medium/Large	MEET-L-15-SJ MEET-L-30-SJ				1	x	15	2	x	30	
Meeting Room – 12m ² Optional		1	x	12	1	x	12	1	x	12	According to staffing establishment
Office – Single Person	OFF-S9-SJ	1	x	12	1	x	12	2	x	12	Nurse Manager
Office – Single Person	OFF-S9-SJ	1	x	9	1	x	9	2	x	9	Clinical Nurse Consultant
Office – Single Person	OFF-S9-SJ	1	x	9	3	x	9	3	x	9	Surgeon, Anaesthetist, Nurse Educator
Office – 2-Person Shared	OFF-2P-SJ	1	x	12	1	x	12	2	x	12	Nurse Educators/Clerical
Office – 3-Person Shared	OFF-3P-SJ										
Staff Room	SRM-15-SJ SRM-25-SJ	1	x	25	1	x	50	2	x	50	May have separate zones
Toilet - Staff		2	x	3	2	x	3	2	x	3	In addition to toilets in Staff Change areas
Net Department Total				928			1661			3498.5	
Circulation %				40			40			40	
Grand Total				1299.2			2325.4			4897.9	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus

- *Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.*

38.6 Functional Relationship Diagrams

The relationships between the various components within an Operating Unit are best described by functional relationships diagrams. The requirements for infection control and patient management result in a number of planning 'models' that have proved successful through numerous built examples and many years of practice. Most Operating Unit plans are a variation of one of these 'models'.

A plan substantially based on one of these diagrams is 'deemed to satisfy' the requirements of these Guidelines. A plan that is significantly different to these diagrams should be carefully examined against all the individual requirements of these Guidelines, especially those of Infection Control to determine if it is acceptable.

In reviewing and using the enclosed Operating Unit flow diagrams, designers should carefully consider a number of issues:

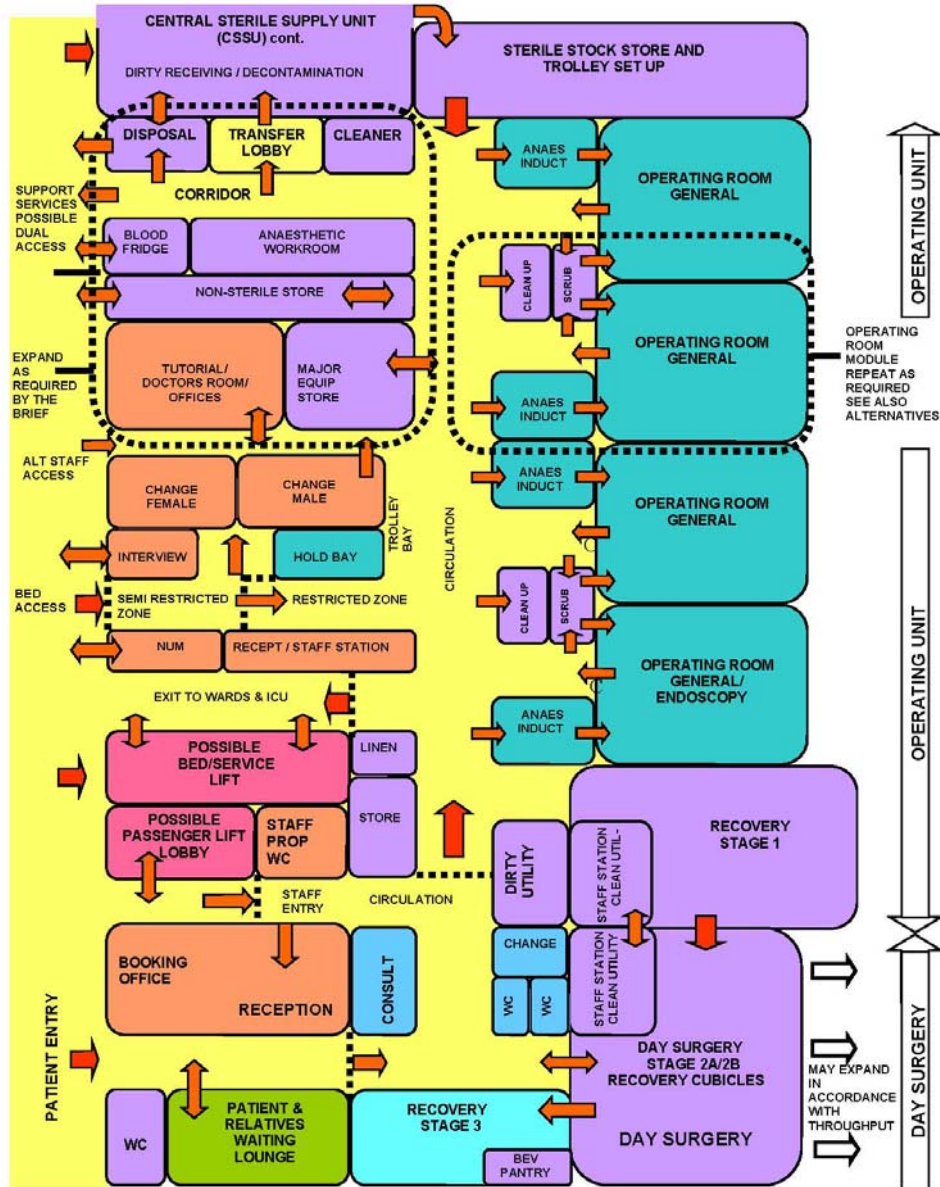
- Each flow diagram represents a method of managing the patient access, clean/dirty flow, air pressurization, sterilization of dropped instruments etc.
- The diagrams are different but each addresses the issues involved in a satisfactory manner. Each option may suit a different management mode or building configuration.
- Designers are strongly cautioned against creating hybrid options by combining features of various diagrams. This may result in wrong clean/dirty flows or other unacceptable features. If in doubt, designers should seek advice from specialist Operating Room consultants and Infection Control nurses.

The functional relationship diagrams in Enclosures 1 and 2 show base linear models. The models can be stretched to create the number of Operating Rooms desired. The support facilities required also grow with the number of Operating Rooms.

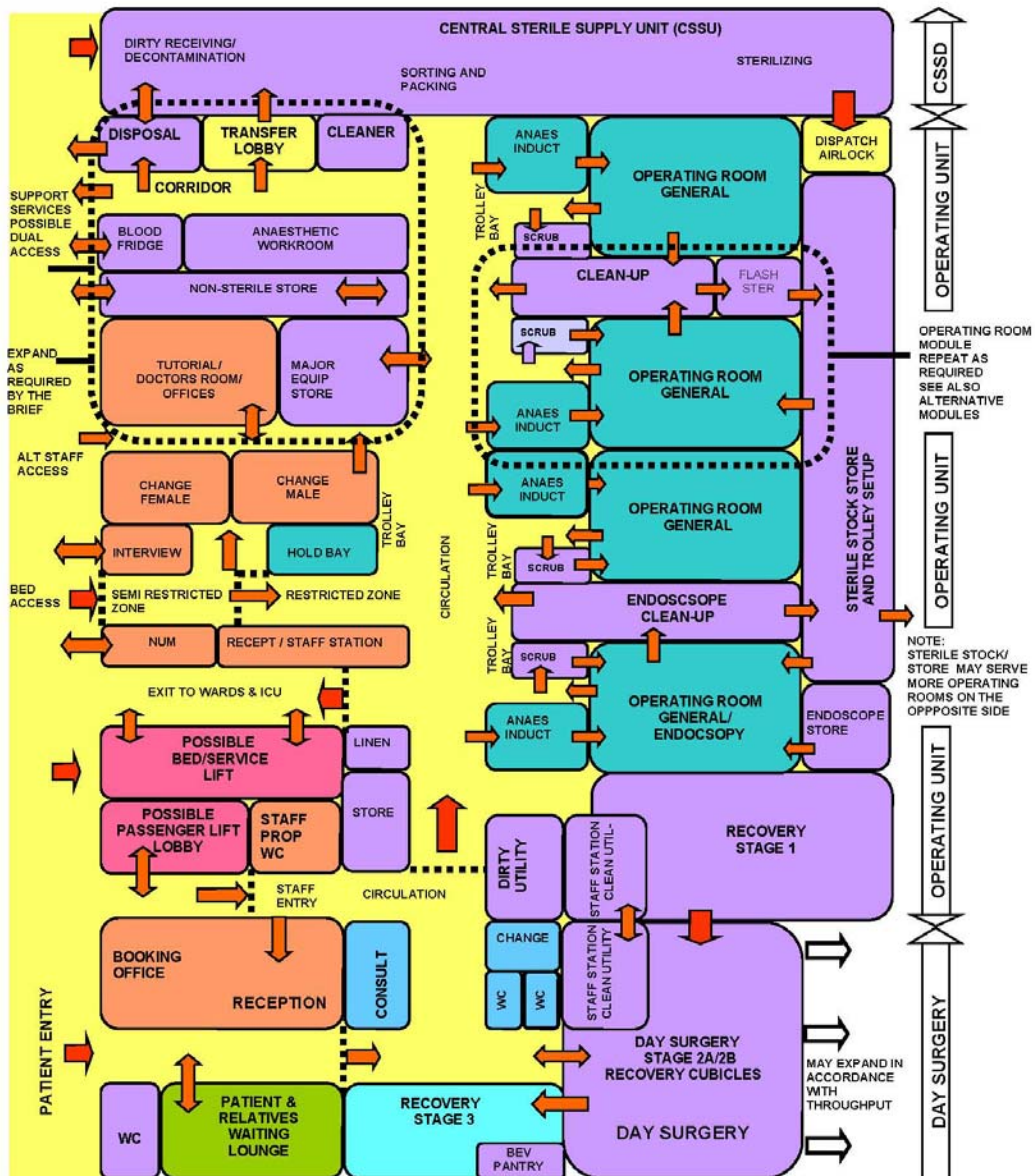
Each module includes the configuration of:

- Operating Rooms
- Anesthetic Induction Rooms
- Scrub Bays or Rooms
- Sterile Stock Store/Set-up Room
- Clean-up Room
- Flash Sterilizing Bay.

NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY
NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEANDIRTY HOISTS
NOTE 3 IF STERILE STOCK IS REMOTE FROM OPERATING ROOM, A CASE CART SYSTEM SHOULD BE USED
NOTE 4 ANAESTHETIC INDUCTION ROOM IS OPTIONAL AND MAY BE CONSIDERED A HOLDING ROOM



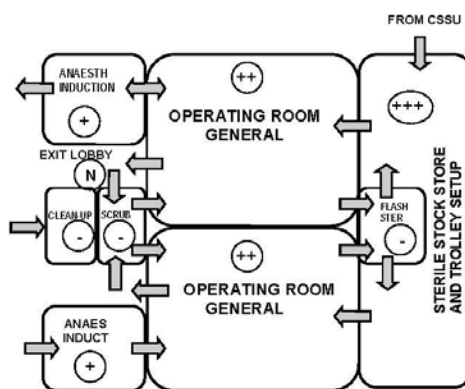
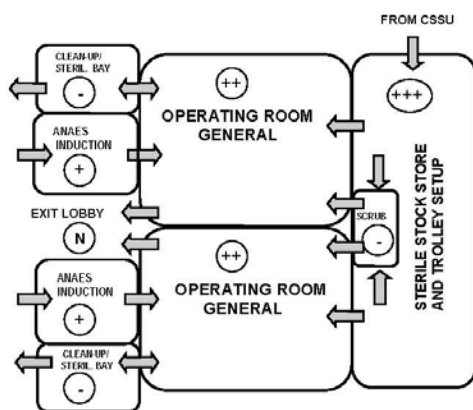
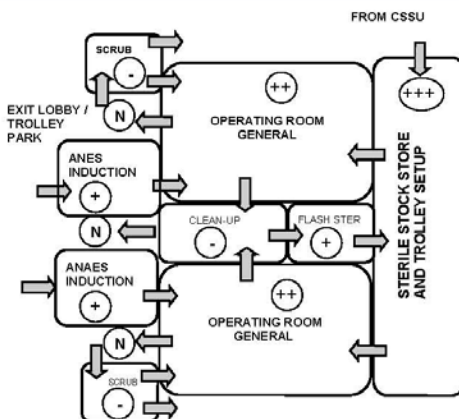
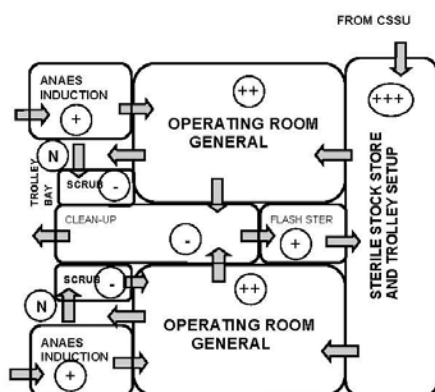
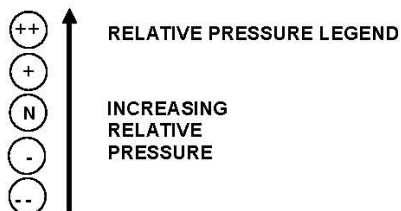
NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY
NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEAN/DIRTY HOISTS
NOTE 3 OPERATING ROOM MODULE MAY BE MIRRORED AGAINST STERILE STOCK STORE TO DOUBLE THE NUMBER OF OPERATING ROOMS
NOTE 4 ANAESTHETIC INDUCTION ROOM IS OPTIONAL AND MAY BE CONSIDERED A HOLDING ROOM



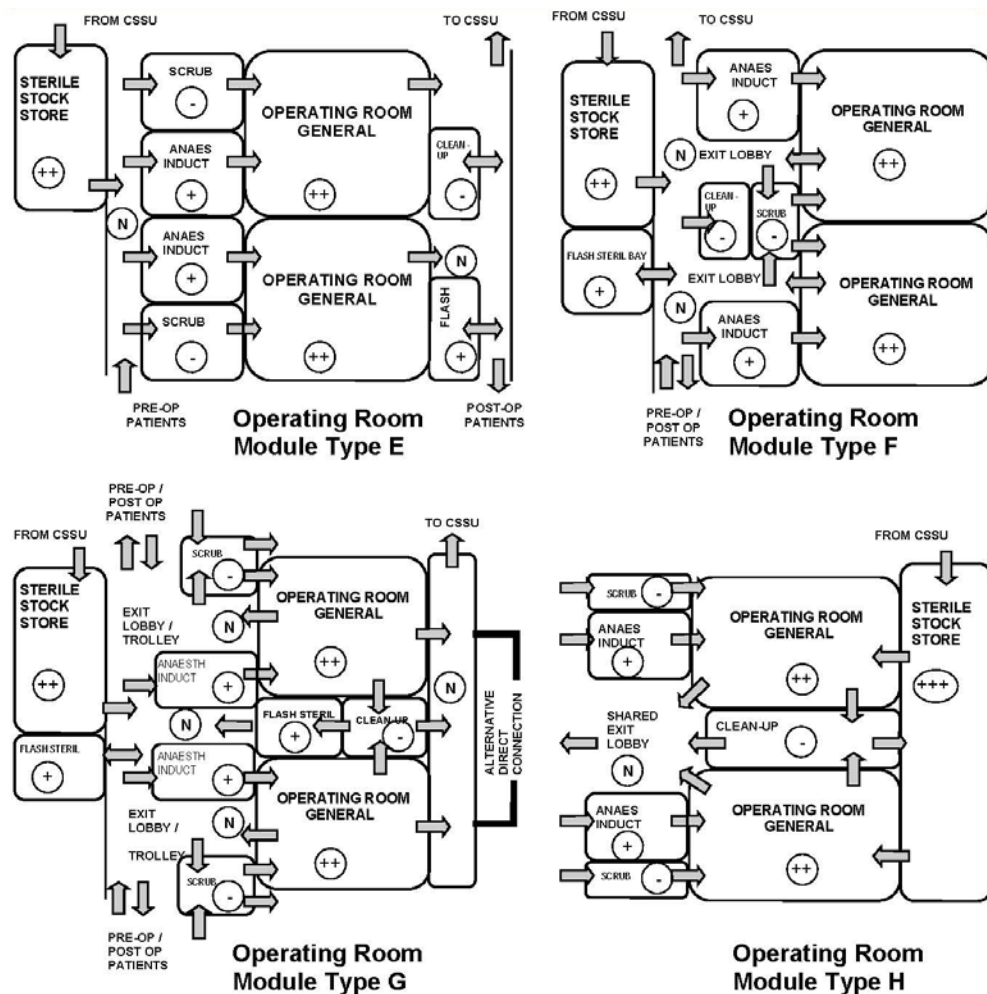
Enclosure 3: Operating Room Modules A, B, C and D With Air Pressurization

Legend

- NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY
 NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEAN/DIRTY HOISTS
 NOTE 3 OPERATING ROOM MODULE MAY BE MIRRORED AGAINST STERILE STOCK STORE TO DOUBLE THE NUMBER OF OPERATING ROOMS
 NOTE 4 ANAESTHETIC INDUCTION ROOM IS OPTIONAL AND MAY BE CONSIDERED A HOLDING ROOM
 NOTE 5 AIR PRESSURISATION IS NOTED ACCORDING TO THE FOLLOWING LEGEND:



Enclosure 4: Operating Room Modules E, F, G and H With Air Pressurization



38.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- NHS Estates, Department of Health (UK). 'Health Building Note 26: Facilities for Surgical Procedures Volume 1' 2004. Retrieved from website: <http://www.johnsonmedical.com/2011/article/pdf/HBN%2026%20Facilities%20for%20Surgical%20Procedures%20V1.pdf> 2014
- Rostenberg, B. and Barach, P. 'Desperately Seeking Safety – Creating Integrated Surgical / Imaging Environments That Do Less Harm' Asian Hospital & Healthcare Management 2007. Retrieved from website: http://www.asianhbm.com/facilities_operations/safety_surgical_imaging_environment.htm 2014
- Rostenberg, B. 'Surgology is Coming! Designing for the Convergence of Surgery and Interventional Radiology.' Health Facilities Management 2005
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

39.0 Pharmacy Unit

39.1 Introduction

39.1.1 Description

The purpose of the Pharmacy Unit is to provide all inpatient and outpatient pharmacy services including dispensing, preparation of non-sterile and sterile commodities as required, conducting clinical trials as needed, reporting on adverse drug reactions and the provision of drug information and education.

The size and type of service to be provided in the Pharmacy Unit will depend upon the type of drug distribution system used, number of patients to be served, and extent of shared or purchased services. This shall be described in the Operational Policy of the Unit.

Facilities (including satellite, if applicable) and equipment shall be as necessary to accommodate the requirements of the Operational Policy. If unit dose procedure is used, provide additional space and equipment for supplies, packaging, labelling, and storage, as well as for the carts.

Relevant local authority statutory requirements are to be complied with.

39.2 Planning

39.2.1 Operational Models

A Pharmacy may extend its service from a single health care facility to outlying facilities. Specific design requirements for packing, storage and dispatch of goods shall be considered for different operational models.

Unit Dose Systems

The unit dosage system involves packaging of each dose of each medication for patients in a blister pack to provide easy and uniform medication dispensing. For a unit dosage system, the Pharmacy must include additional space and equipment for supplies, packaging, labelling and storage.

Private Pharmacy

If a private Pharmacy is also to be provided within the hospital's retail area, the hospital's operational policy shall determine the type of prescription drugs to be supplied by the private Pharmacy. It shall also study the impact it has on the main Pharmacy in relation to outpatient dispensing.

39.2.2 Planning Models

Dedicated Outpatient Pharmacy

In facilities where the main Pharmacy cannot be located in a position readily accessible to outpatients' areas due to site constraints, then a separate Outpatient Pharmacy may be provided. This arrangement may result in duplication of services, equipment and support facilities.

Satellite Pharmacy Facilities

Satellite Pharmacy Units refer to a series of rooms/suites in a hospital that is remotely positioned from the main Pharmacy and yet managed by the staff of the main Pharmacy. This may include for example, a dedicated Cytotoxic Unit within a Cancer Day Care Unit or an After-hours Drug store.

Unit-Based Pharmacy

This refers to medication areas located within an Inpatient Unit and may include automated dispensing. Unit based facilities may be located within the Clean Utility or dedicated Medication Rooms in Inpatient Units. Facilities will include secured drug storage, refrigerated drug storage, space for medication trolleys and computer access for pharmacy personnel.

39.2.3 Functional Areas

The functional areas of a Pharmacy Unit may be sub-divided into two types – ‘restricted’ and ‘accessible’ as follows:

Restricted Areas

- Dispensing Areas which may include separate areas for inpatients and ambulatory patients (outpatients)
- Preparation and manufacturing areas of non-sterile goods
- Active store for imprest stock storage, including assembly and dispatch areas with space allocated for trolley parking
- Bulk stores including unpacking area
- Secured stores for accountable drugs, refrigerated stores and flammable goods storage
- Dispatch area for deliveries to inpatient units
- Drug information areas
- Staff areas including Offices, Workstations, Meeting Rooms, Staff Room, Change and Toilets.

Accessible Areas

- Reception and Waiting areas for outpatients; it is possible to share waiting areas with an adjoining unit
- Patient counselling and consult areas
- After-hours drug store for access only by authorized personnel and direct entry from outside the main Pharmacy Unit if located within; this room can also be located within a 24-hour zone of the hospital.

Optional Areas

- Depending on the Role Delineation and Operational Policy, the Pharmacy may also include:
- Sterile Manufacturing, which may include sterile and cytotoxic manufacturing suites, along with support facilities including Anterooms, Change Rooms and Storage
- Facilities for clinical trials, which may include dispensing areas, secured storage and records area and workstations
- Extemporaneous manufacturing area which requires extra space for compounding products.

Sterile Preparation Areas

Sterile preparation area refers to either Cleanroom facilities housing clean workstations fitted with laminar cabinets or other types of pharmaceutical isolators to meet relevant standard. This includes cytotoxic suites.

Manufacturing Areas

The following minimum elements shall be included if manufacturing is performed onsite:

- Bulk compounding area
- Provision of packaging and labelling area
- Quality control area.

Automated Dispensing Stations

An automated Dispensing Station may be provided on an Inpatient or Critical Care Unit to dispense prescriptions for patients in that Unit. The Dispensing Station remains under the control of the Pharmacy Unit.

An automated Dispensing Station should be equipped with:

- Automated Dispensing units and refrigerated dispensing units as required; installation according to manufacturer's specifications
- Shelving for reference texts
- Lighting level adequate for drug preparation areas
- Hand-washing facilities in close proximity
- Bench for drug preparation adjacent to dispensing units.

Satellite Pharmacy

A Pharmacy Unit Satellite is a room or unit in a hospital that is located remote from the Pharmacy Unit.

A Satellite Pharmacy requires:

- Bench and sink of stainless steel or other impervious material, supplied with hot and cold water
- Dispensing bench of stainless steel or impervious material; sized according to requirement for dispensing, labelling and packaging
- Computer workstations according to number of Pharmacists in the Satellite unit
- An area for counselling of clients about dispensed or other medicines so that privacy can be assured
- Adequate lighting and ventilation for drug preparation and dispensing
- Air temperature and humidity control suitable to the storage of drugs and medicines
- Handwashing basin and fittings.

The Satellite Pharmacy must be:

- Constructed to prevent unauthorized access by persons other than staff through doors, windows, walls and ceilings
- Fitted with a security intrusion detector alarm that is control room monitored to a central agency on a 24-hour basis.

Storage

The following minimum elements, in the form of cabinets, shelves, and/or separate rooms or closets, shall be included as required:

- Bulk storage
- Active storage
- Refrigerated storage
- Volatile fluids and alcohol storage with construction as required by the relevant regulations for substances involved
- Secure storage for narcotics and controlled drugs
- Storage for general supplies and equipment not in use.
- Storage for prescriptions and any documents required by relevant legislation.

39.2.4 Functional Relationships

External

The Pharmacy Unit shall be located for convenient access, staff control, and security. Direct access to loading dock and bulk storage is required if not located within the main Pharmacy Unit.

Internal

- Access points provided for the following personnel/purpose shall be carefully considered:
- Visitors to the Unit
- Pharmacy Staff
- Non-Pharmacy staff to collect prescriptions and medications
- Delivery and prescription collection for outpatients
- Supplies delivery.

An interview room for outpatients when provided shall have dual access – separate entries from public area and staff area. Access shall be controlled from inside of the Pharmacy.

Corridors and door openings shall provide sufficient clearance for large items and equipment from bulk stores.

39.3 Design

39.3.1 General

Design may include provisions for barcode technology for patient prescription identification and tracking as well as electronic prescribing, which will require computer and scanning equipment including additional power and data outlets.

39.3.2 Environmental Considerations

Natural Light

Natural light is highly desirable within the Unit as well as windows permitting outside views. However, such provisions shall not compromise the security of the Unit. Unauthorized entry and maintaining privacy of the operations of the Unit are the primary concerns in the design of the Unit. Windows shall not permit casual viewing from any adjacent public thoroughfare.

Privacy

Privacy shall be considered in patient consultation areas.

Acoustics

Patient interview and counselling rooms will require acoustic treatment.

39.3.3 Space Standards and Components

Ergonomics

Storage systems selected within the Unit shall be accessible to all types of staff.

Refer also to Part C of these Guidelines.

39.3.4 Safety and Security

Pharmacy Units and Pharmacies are required to be constructed so as to be as secure as practicable from unauthorized access through doors, windows, walls and ceilings, and to be fitted with a security intrusion detector alarm which is control room monitored to a central agency on a 24-hour basis.

Security measures for consideration will include:

- Electronic door controls
- Movement sensors
- Duress alarms to Dispensing counters
- Security glazing or shutters to Dispensing counters
- CCTV monitoring for remote monitoring.

Accountable Drugs Stores/Safe shall not be placed in a room positioned on the perimeter of the premises or adjoining a staircase.

39.3.5 *Finishes*

Wall protection shall be installed to prevent damage to walls caused by all types of trolleys.

Refer also to Part C of these Guidelines.

39.3.6 *Fixtures and Fittings*

Refer to Part C of these Guidelines and Standard Components for requirements related to fixtures and fittings.

39.3.7 *Building Service Requirements*

Refer to Part E of these Guidelines.

HVAC

All drug storage areas shall have temperature and humidity controls; internal room temperature shall be kept below 25°C.

39.3.8 *Infection Control*

Hand-washing facilities shall be provided within each separate room where open medication is handled. Sterile Suites must have scrub facilities.

Refer also to Part D of these Guidelines.

39.4 Components of the Unit

39.4.1 *General*

The Pharmacy Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

39.4.2 *Non-Standard Components*

Clinical Trials Dispensing

Description and Function

The Clinical Trials Dispensing area will include storage, dispensing, packaging, labelling and records holding for clinical trials drugs. The Clinical Trials facilities will be a separate area within the main Pharmacy.

Location and Relationships

Clinical Trials storage, preparation and dispensing will be located in a separate area within the Pharmacy, and will have ready access to patient Interview and Consultation rooms.

Considerations

Clinical Trials drugs/medications area will require the following considerations:

- Workspace with computer for Pharmacist
- Preparation bench and sink
- Lockable storage for clinical trials drugs, separate from other Pharmacy supplies
- Lockable records storage
- Staff handwashing basin should be located in close proximity.

Aseptic Room (Sterile Manufacturing/Cytotoxic Room)

Description and Function

The Aseptic Room and the Cytotoxic Room are Clean Rooms for manufacturing of medications in a sterile environment. The room will contain laminar flow cabinets and or isolators for sterile manufacturing. The room will be positive pressure and be accessed via an Anteroom.

An external outlook is desirable.

Location and Relationships

Depending on the location of the Pharmacy Unit, the Aseptic Room/Cytotoxic Room will be ideally located on the perimeter of the facility with an external outlook. Access via an Anteroom is required.

Considerations

The following features shall be considered while designing sterile manufacturing facility:

- Electronic door management system to prevent the opening of both doors in the Anteroom at the same time.
- Handwashing facilities shall be provided immediate outside the Aseptic (Clean) Rooms in adjoining Anteroom; hand basins are not to be located within the Aseptic (Clean) Rooms.
- Provide an intercom system shall be provided between Aseptic (Clean) Rooms and Anteroom
- High-resolution CCTV cameras for remote monitoring
- Comply with room requirements in relevant international Clean Room standards for sterile and cytotoxic manufacturing.

Store – Refrigeration

Description and Function

This can be a room/bay which consist of multiple refrigerators for storing specific medications. Alternatively, a commercial grade cool room can also be used.

Location and Relationships

This shall be located in proximity to assembly/preparation area and other storage area within the Unit.

Considerations

Refrigerated storage areas in the Pharmacy will require the following considerations:

- All access doors (either to room or refrigerators) shall be lockable
- Temperature monitoring system installed and connect to a centralized alarm/warning system

39.5 Schedule of Accommodation

Typical Pharmacy Unit at levels 3 to 6

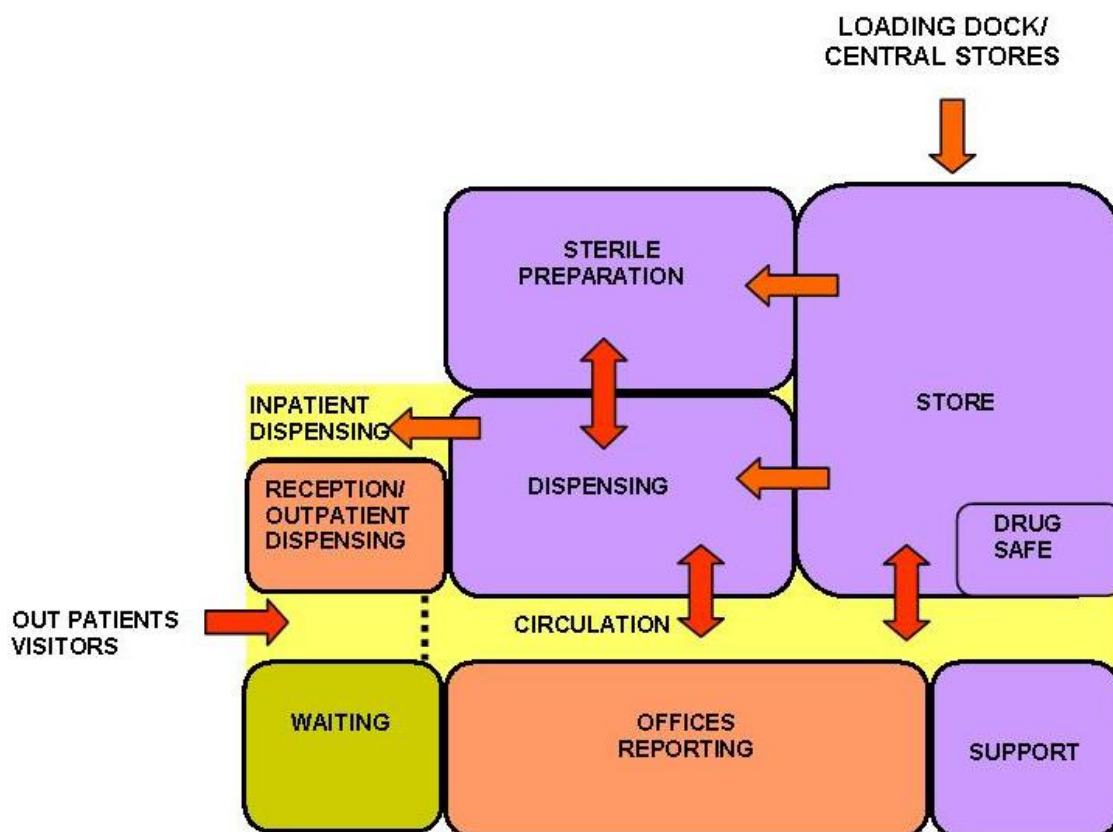
ROOM/ SPACE	Standard Component	Level 3 Qty x m²			Level 4 Qty x m²			Level 5/6 Qty x m²			Remarks
Entry/ Reception											
Pharmacy Counter	PHA-CO-SJ	1	x	9	1	x	9	1	x	20	with dedicated staff entry
Waiting	WAIT-10-SJ Similar	2	x	10	2	x	10	2	x	20	Separate Female Waiting
Interview/ Meeting Room	MEET-9-SJ	1	x	9	1	x	9	2	x	9	Interview/ counselling; Dual access from Waiting & Pharmacy.
Operational Areas											
After Hours Drug Store	AHDR-SJ Similar				1	x	4	1	x	10	May be remote or at the Pharmacy perimeter with inside/outside access.
Assembly / Dispensing	ASPR-20-SJ Similar	1	x	25	1	x	50	1	x	120	Area allows for automated dispensing
Bay - Handwashing	BHWS-B-SJ	2	x	1	2	x	1	4	x	1	With ease of access to all preparation areas
Bay - Pneumatic Tube		1	x	2	1	x	2	1	x	4	Optional; depends on operational policy
Bay - Emergency Shower	BES-SJ	1	x	2	1	x	2	1	x	2	Emergency use with eyewash
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Clean-Up Room	CLUP-P-SJ Similar	1	x	6	1	x	8	1	x	10	Locate near manufacturing areas
Cool Room	CORM-SJ Similar	1	x	6*	1	x	10	1	x	25	* Or refrigeration area
Dispatch/ Collection		1	x	10	1	x	15	1	x	20	Imprest trolleys
Dispensing - Clinical Trials								1	x	12	Optional
Goods Receipt - Pharmacy	GRE-SJ Similar	1	x	10	1	x	15	1	x	25	Direct and/or from remote Bulk Store
Preparation Room - Manufacturing Non-sterile	PREP-SJ	1	x	12	1	x	18	1	x	36	Based on 3m2 per person. Preparation of extemporaneous compounds.
Store - Accountable Drugs	STDR-5-SJ Similar	1	x	5	1	x	5	1	x	10	May be wall mounted or walk-in safe. Near Assembly & Office for observation.
Store - Archives (Registers/ Prescriptions)	STFS-10-SJ Similar	1	x	10	1	x	10	1	x	15	
Store - Assembly / Dispensing	STBK-20-SJ Similar	1	x	25	1	x	75	1	x	100	Locate near Assembly/ Dispensing
Store - Bulk	STBK-20-SJ Similar	1	x	25	1	x	50	1	x	100	May include pallets.
Store - Dispensing Supplies	STGN-12-SJ Simlar	1	x	6	1	x	10	1	x	25	Labels etc.
Store - IV Fluids	STBK-20-SJ Similar							1	x	50	May be part of Bulk Store.
Store - Inflammable Chemicals & Reagents	STFL-SJ Similar	1	x	12	1	x	12	1	x	12	
Staff Areas											
Change - Staff (Male/Female)	CHST-12-SJ Similar	2	x	10	2	x	12	2	x	20	Toilet, Shower and Lockers
Meeting Room	MEET-L-15-SJ Similar	shared			1	x	15	1	x	20	Meeting, Tutorials
Office - Director	OFF-S9-SJ	1	x	12	1	x	12	1	x	12	Near entry for observation & visitor access.
Office - Drug Information	OFF-S9-SJ	1	x	9	1	x	9	1	x	18	Optional; will require internet access
Office - Workstation (Pharmacists)	OFF-WS-SJ	2	x	5.5	4	x	5.5	8	x	5.5	As per Staff Establishment. Shared or open plan.
Property Bay - Staff	PROP-3-SJ Similar				2	x	3	2	x	6	Additional lockers and area for coats
Staff Room	SRM-25-SJ Similar	1	x	15	1	x	20	1	x	30	
Store - Photocopy/ Stationery	STPS-8-SJ				1	x	8	1	x	8	
Sterile Manufacturing (Optional)						2 Clean Rooms					

ROOM/ SPACE	Standard Component	Level 3 Qty x m ²			Level 4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Dispatch Counter								1	x	15	With pass through hatches
Assembly/ Preparation	ASPR-20-SJ							1	x	40	
Bay - Emergency Shower	BES-SJ							1	x	1	with eye wash station
Clean-Up Room	CLUP-7-SJ Similar							1	x	10	
Change - Staff (Male/Female)	CHPT-12-SJ Similar							2	x	12	For sterile suite
Anteroom	ANRM-SJ							2	x	12	1 per Clean Room
Airlock	AIRL-6-SJ							2	x	6	1 per Clean Room
Clean Room (Aseptic)								1	x	20	With interlocking pass through hatch to Prep area
Clean Room (Cytotoxic)								1	x	15	With interlocking pass through hatch to Prep area
Preparation Area	PREP-SJ							1	x	30	Central to Clean Rooms, interlocking pass through hatches to Clean Room
Store - Sterile Stock	STSS-12-SJ Similar							1	x	15	ready access to Clean Rooms
Store - General	STGN-12-SJ							1	x	12	
Net Department Total		263.0			447.0			1065.0			
Circulation %		25			25			25			
Grand Total		328.8			558.8			1331.3			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

39.6 Functional Relationship Diagram



39.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 560 Pharmacy Unit Revision 4' 2010. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/aushfg_b_560pharmacy_unit_4_843-859.pdf 2014
- Department of Health (DH) (UK). 'Medicines Management Health Building Note 14–01 Pharmacy and Radiopharmacy Facilities' 2013. Retrieved from website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147883/HBN_14-01_Final.pdf 2014
- Dubai Health Authority (UAE). 'Healthcare Facilities Guidelines Planning Design Construction and Commissioning' 2009. Retrieved from website: <http://www.dha.gov.ae/EN/SectorsDirectorates/Directorates/HealthRegulation/Documents/Health%20Facility%20Guidelines.pdf> 2014
- Refer also to DHA website for local licensing requirements www.dha.gov.ae and MOH website www.moh.gov.ae for local approval procedures
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideelines.org 2014.

40.0 Public and Staff Amenities Unit

40.1 Introduction

40.1.1 Description

The Amenities Unit shall provide facilities for the convenience and comfort of staff and visitors to the hospital. Some of the amenities may optionally be used by patients who are permitted to access other areas of the hospital.

40.2 Planning

40.2.1 Planning Models

Amenities may be provided in a uniform configuration to Main Entry areas, public areas, staff areas and every level of the hospital, to ensure ease of access and consistency in location.

40.2.2 Functional Areas

The Amenities Unit will consist of the following Functional Areas:

- Public Toilets
- Staff Toilets
- Staff Change Rooms
- Disabled Toilets
- Bay for drinking water
- Prayer Rooms
- Ablutions Rooms.

Public Toilets

Public Toilets should be located in a discreet area with ready access to Lifts and Waiting Areas. Public facilities should include access to baby change and parenting rooms for baby feeding.

Staff Change Rooms/Toilets

Staff Change rooms will include staff showers and locker areas. Change rooms, toilets and locker areas shall be provided separately for Male and Female staff.

Prayer Rooms

Separate Male and Female Prayer rooms shall be provided, located in a discreet but accessible area. Provide Prayer Rooms on every level of the building. Refer to Section 4-Planning-Local Design Regulations for Design Considerations for Prayer Rooms; refer to Standard Components for additional Prayer Room requirements.

Ablutions Rooms

Ablutions Rooms shall be provided adjacent to Prayer Rooms for the appropriate washing of hands and feet.

40.2.3 Functional Relationships

Public and Staff Amenities should be located close to the Main Entrance with ready access to waiting areas and lifts. Amenities including Prayer Rooms will be required in public areas on every level of the hospital for ease of access.

40.3 Design

40.3.1 General

The design of amenities should create a pleasant atmosphere for staff and visitors to the hospital, whilst retaining the necessary functional requirements.

Consideration should be given to private and discreet entry areas for toilets and ablutions facilities.

40.3.2 Environmental Considerations

Natural Light

Natural light is highly desirable where achievable, particularly for Prayer Rooms.

Privacy

Privacy is essential for toilets and ablutions rooms, while providing ease of access.

Acoustics

Acoustic treatment will be required to all Prayer Rooms, Toilet and Ablutions rooms.

40.3.3 Space Standards and Components

Prayer Rooms, Change areas, Toilets and Ablutions rooms shall be sized to suit the numbers of persons requiring use of the facilities and allow safe and effective movement of people through the rooms.

Safety and Security

Staff Change and Locker areas shall be secured with electronic access.

Finishes

Floor finishes should be appropriate to the function of the space. Toilets and ablutions facilities should be tiled or vinyl floors with a suitable non-slip finish.

Consideration must be given to the appearance and quality of environment required e.g. non-institutional, acoustic performance, slip resistance and infection control.

Wall finishes, cabinetry and bench tops must be easily cleaned.

Refer also to Part C of these Guidelines.

Fixtures and Fittings

Fittings and fixtures shall be robust and allow heavy usage in public and staff areas.

Building Service Requirements

Amenities areas will require air-conditioning with controlled humidity and temperature to provide a comfortable environment for visitors and staff.

40.4 Components of the Unit

40.4.1 General

Patient and Staff Amenities will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

40.4.2 Non-Standard Components

Bay – Drinking Water

Description and Function

The Bay – Drinking Water provides a recessed area for a drinking water unit.

Location and Relationships

The bay will be located in public access areas close to Waiting areas.

Considerations

The Bay will include:

- Wall and floor finishes suitable for wet areas
- Drinking water fountain, with hydraulic connection to drinking water. Refillable water coolers may also be used. Recurrent cost to the facility should be considered when choosing the water source.
- Fittings may include a dispenser for cups and waste bin.

40.5 Schedule of Accommodation

Typical Public Amenities at Levels 3 to 6

ROOM/SPACE	Standard Component	Level 3 Qty x m²			Level 4 Qty x m²			Level 5 and 6 Qty x m²			Remarks
Public Amenities											
Waiting – Male/Female	WAIT-10-SJ	2	x	15	2	x	20	2	x	30	Locate in public areas, lift cores on every level, every block, Separate Female area
Toilet – Public, Female	WCPU-3-SJ	2	x	4	2	x	4	4	x	4	Toilets, basins; Locate in lift core on every level, for each block
Toilet – Public, Male	WCPU-3-SJ	2	x	4	2	x	4	4	x	4	Toilets, basins
Toilet – Accessible	WCAC-SJ	2	x	6	2	x	6	4	x	6	Locate in lift core, on every level, every block, separate Male/Female areas
Parenting Room	PAR-SJ	1	x	6	2	x	6	2	x	6	Baby feeding and changing; Locate in lift cores on every level, every block
Prayer/Spiritual Room	PRAR-20-SJ	2	x	15	2	x	20	2	x	25	Convenient access, locate in public areas
Ablution Room (Prayer Room)	ABLR-SJ	2	x	8	2	x	8	2	x	13	For religious ablutions; Locate near Prayer rooms
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	Locate with each public toilet facility
Bay – Drinking Water		1	x	1	2	x	1	4	x	1	Conveniently located in public areas
Bay – Vending Machine	BVM-3-SJ	1	x	3	1	x	3	2	x	3	Conveniently located in public areas
Net Department Total		119			146			219			
Circulation %		10			10			10			
Grand Total		130.9			160.6			240.9			

Typical Staff Amenities at levels 3 to 6

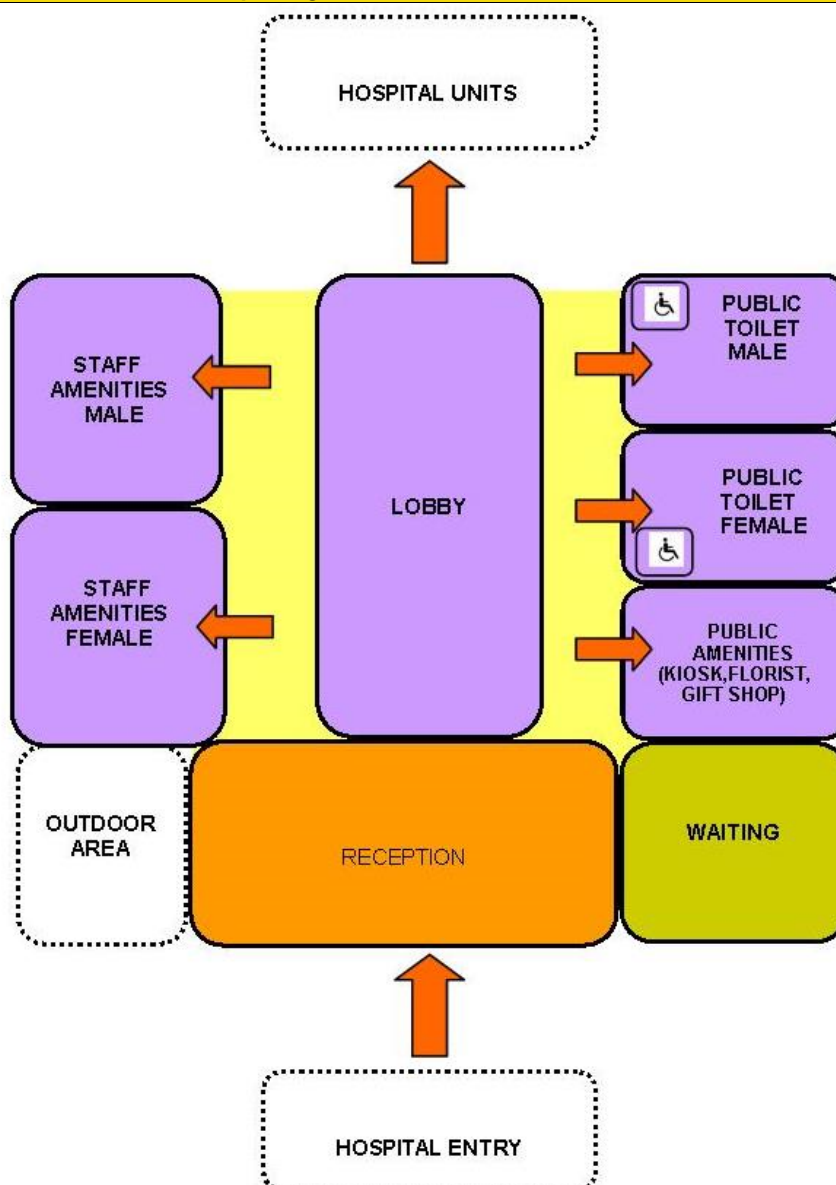
ROOM/ SPACE	Standard Component	Level 3 Qty x m²			Level 4 Qty x m²			Level 5 & 6 Qty x m²			Remarks
Staff Amenities Areas											
Gymnasium	GYAH-45-SJ							1	x	75	Optional; suitable for indoor activities e.g. pilates, yoga, aerobics, exercises
Change - Staff (Male/Female)	CHST-12-SJ							2	x	10	for Gym, separate Male/Female areas
Library & Study/ Reading Area	LSRA-40-SJ				1	x	20	1	x	50	
Change - Staff, Male/Female	CHPT-12-SJ CHPT-20-SJ	2	x	12	2	x	12	2	x	20	Dependant on staffing numbers, Separate Male/Female areas
Staff Lounge / Dining		1	x	25	1	x	30	1	x	70	Up to 50 persons
Prayer Room	PRAR-20-SJ	2	x	15	2	x	20	2	x	25	Decentralised locations; convenient access
Ablution Room (Prayer Room)	ABLR-SJ	2	x	8	2	x	8	2	x	13	For religious ablutions; locate near Prayer rooms
Toilets - Staff (Male/Female)	WCST-SJ	2	x	3	2	x	3	2	x	3	Provide in staff access zones, separate Male/Female areas
Toilet - Accessible	WCAC-SJ	2	x	6	2	x	6	2	x	6	Provide in staff access zones, strategically located
Net Department Total		113			148			349			
Circulation %								10			
Grand Total		124.3			162.8			383.9			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus*
- *Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.*

40.6 Functional Relationship Diagram



40.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 430 Front Of House Unit Revision 4' 2010. Retrieved from website: http://www.healthdesign.com.au/ahfg/Full_Index/aushfg_b_430front_of_house_4_591-614.pdf 2014
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- FM Link Online Journal. 'Benchmarking Employee Benefits'. Retrieved from website: <http://www.fmlink.com/article.cgi?type=Benchmarking&title=Benchmarking%20Employee%20Benefits&pub=Facility%20Issues&id=40537&mode=source> 2014

- The Facility Guidelines Institute (US). '*Guidelines for Design and Construction of Health Care Facilities*' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

41.0 Rehabilitation – Allied Health Unit

41.1 Introduction

41.1.1 Description

The Rehabilitation – Allied Health Unit provides a multi-disciplinary rehabilitation service care in which the clinical intent or treatment goal is to improve the functional status of a patient with an impairment, disability or handicap.

Facilities for Physiotherapy and Occupational Therapy will vary greatly, ranging from large, purpose-designed, central facilities for inpatients and/or outpatients, to basic on-ward or bedside services. Extent, design and location of facilities will be affected by presence or otherwise of the following services (not inclusive):

- Rehabilitation Medicine
- Aged Care
- Spinal Cord Injury Service
- Orthopedic Services
- Neurosciences – (Strokes, Multiple Sclerosis, Traumatic Brain Injuries etc.)
- Amputees
- Hand Surgery/Plastic Services.

Speech Pathology plays a major role in Neonatal, Pediatric, ENT/Maxillofacial and neurological services; in the absence of these, Speech Pathology may be provided on a part-time basis. Children's Hospitals or major Pediatric Services generate their own specific spatial needs.

At higher Role Delineation levels it is possible that each discipline may have its own discrete department but every attempt should be made to co-locate the therapy units to maximize the potential for sharing and to facilitate multi-disciplinary care. The rehabilitation services will be supported by full time Social Work services. At Level 4, Dietetics and Podiatry are generally provided as part time services and can be incorporated into the Unit. At Levels 5 and 6 they will have their own discrete Units and are excluded from the Schedule of Accommodation at those levels. Clinical Psychology and Neuropsychology also play an important role in some aspects of service provision and will need their own or access to office/treatment areas.

41.1.2 Patient Characteristics

All ages from children to the frail aged may be treated. Almost all patients attending for physiotherapy are physically incapacitated to some extent many of whom use wheelchairs or walking aids and – increasingly – motorized chairs that have implications for parking and recharging. Many patients may be disfigured (burns, throat surgery etc.) and require a non-threatening, private environment. Patients may require access to interpreter services.

41.2 Planning

41.2.1 Operation Models

Hours of Operation

The Unit will generally operate during business hours Monday to Friday with after-hours on-call physiotherapy services available for inpatient units as required. Some departments may provide a limited service at evenings and weekends. If used for health education classes (e.g. antenatal classes), after-hours access will be required. If a hydrotherapy pool is part of the facility, this too may be made available to the community after-hours and at weekends and therefore careful consideration will need to be given to location, controlled access and security.

Flexibility

The facilities of the Unit will be utilized by inpatients and outpatients. It is expected that the majority of inpatients accommodated in the Rehabilitation Inpatient Unit will attend the Unit on a daily basis. The function of these two units is inter-related and the design of the Rehabilitation Unit could provide areas common to both units. As with other areas of health care, rehabilitation services are constantly evolving. This is manifest in terms of:

- Clinical development – many more categories of patient are able to be rehabilitated than was previously considered feasible
- Organizational development – the interrelationship of the various medical, nursing and allied health services that participate in the rehabilitation process is of paramount importance
- Technological development – advances in technology have developed techniques which will ultimately become routine aspects of rehabilitation. Such developments include kinematic analysis, electromyography and ergometry.

Models of Care

Traditionally the model of care has been one-to-one, therapist to patient. Increasingly an educative model is being used that assumes a staff to patient ratio of 1:4 or more and incorporates:

- Group sessions for peer support;
- Group exercise classes;
- Involvement of carers so that they can learn how much activity the patients can safely tolerate at home and how best to support them;
- Education programs.

There may need to be separate areas for Respiratory and Cardiac Rehabilitation and general rehabilitation as the patients have differing needs and sometimes equipment. However this will depend on the number of sessions and every opportunity should be made to share areas between programs.

Satellite Units

One of the problems of providing therapy services for inpatients within the Unit itself is transport to and from hospital units, particularly, for example, neuroscience patients whose attention span may be limited and who need a quiet environment. It also requires either a portering service or use of valuable therapist time in transport functions. If distance from inpatient units to the Rehabilitation therapy areas is considerable and throughput can justify, provision of a small satellite unit may be considered – mainly for physiotherapy – near the units most affected, usually Neuroscience and Orthopedics. Or alternatively, a small therapy/multi-purpose room in an inpatient unit may serve such a purpose.

Hydrotherapy

Whilst there are differing opinions as to the therapeutic benefits of hydrotherapy, a designated Rehabilitation service will probably require access to a hydrotherapy pool. However, in other circumstances, the need for a pool should be carefully considered as the cost per unit of treatment is high and conditions for which hydrotherapy is the only appropriate treatment are limited. Hydrotherapy pools should only be provided where patient numbers can be justified and where the pool is required for a minimum of four hours each day, five days a week. Utilization of the pool may be extended by making the pool available to groups within the community for their use at times when it is not required for specific therapeutic purposes. Alternatively, use of a pool already established in the community may be used.

Gait Analysis Laboratory

Quantitative gait analysis is useful in objective assessment and documentation of walking ability as well as identifying the underlying causes of walking abnormalities in patients with cerebral palsy, stroke, head injury and other neuromuscular problems. The results of gait analysis have been shown to be useful in determining the best course of treatment in these patients. Equipment for gait analysis may be incorporated into a gymnasium.

Outdoor Gait Area

It is essential to provide mobility training on a range of uneven surfaces necessary for community integration.

41.2.2 Operational Policies

General

Depending upon the needs of the individual hospital, it may be decided that the Rehabilitation Allied Health Unit will provide the location for the hospital's Acute Therapy Services. If such a Policy is adopted it may be necessary to upgrade the accommodation to provide:

- Additional therapy spaces for general acute inpatient and outpatient therapy
- Additional group office space for physiotherapists to write up notes
- Additional staff amenities.

The Guideline defines functional spaces as discrete areas for defined activities. The Operational Policy of a facility may compel the design team to view the various functions and activities within the Unit from the framework of a team philosophy. Accordingly, patient flow would determine the definition of spaces rather than individual allied health discipline.

Outpatients Vs Day Patients

The original 'Day Hospital' concept often accommodated patients for respite care; in modern units patients are admitted for treatment, not respite. Patients attending for a single treatment by a single therapist are classified as outpatients. Patients attending for a series of treatments by different therapists will be admitted as day patients where stay is in excess of 4 hours. This latter category will need an area for rest and refreshment between treatments.

Medical Records and X-Rays

Assuming a hard copy system, it is usual for non-inpatient records to be kept in the Unit for the duration of treatment. For a hard copy system, x-ray viewing boxes will be required and films requested from the Medical Imaging Unit. When records become electronic, there will be direct data entry and design should indicate likely locations for computers and allow for appropriate power and cabling. Assuming a digital PACS system, X-Ray films are available on screen so viewing monitors will be needed.

Patient Lifters/Transfers

Patient handling measures may include ceiling hoist systems for transfers from wheelchair to plinth, or mobile lifters. Mobile patient lifters will require bays with power for recharging. The Gymnasium should include additional space for holding lifting devices.

Recharging Electric Wheelchairs

Inpatients normally using electric wheelchairs or motorized chairs may need somewhere to park and recharge their equipment whilst in hospital. In inpatient and rehabilitation units where wheelchair use is significant, provide sufficient facilities to recharge patients' electric wheelchairs and motorized chairs overnight including power outlets. Ideally wheelchair parking areas should not impede corridor space.

Specific Needs in Inpatient Units

To avoid unnecessary transport to and from the main unit, space and facilities for ward-based therapy could be considered. Include but not confined to:

- 10m corridor length for walking tests
- Storage for equipment and mobility aids
- Ward-based treatment space larger than the area around a patient's bed
- Access to stairs for practicing crutches
- Access to write-up area and storage of resource material.

Staffing

The staffing operational policy assumptions made in this guideline are:

- Office space will be provided where required for clerical and allied health staff including workstations in open treatment areas for immediate documentation
- 'Hot' desks will be available for students and visiting staff
- Staff wearing uniforms will arrive at the Unit in uniform however shower/change facilities will be required for comfort reasons as much of the work is labor-intensive.

The number of staff will depend on the needs of the individual hospital/service. Staff mix may include – either permanently or when required by referral:

- Director of Rehabilitation Medicine and/or the head of each therapy discipline
- Medical staff
- Nursing staff
- Physiotherapists
- Occupational therapists
- Social workers
- Speech pathologist
- Neuropsychologist (where brain impairment is an issue)
- Clinical psychologist (for treatment of complex behavioral disturbances)
- Prosthetists/Orthotists
- Aides
- Podiatrist
- Sport and Recreational Officers
- Dietitians
- Diversional Therapist
- Vocational Trainers
- Case Co-ordinators
- Rehabilitation Engineers
- Clerical staff
- Housekeeper and cleaning staff
- Artisan and transport staff
- Students of various disciplines.

Teaching

Most units will be involved with undergraduate and/or postgraduate training. Attendance will be variable. Students will need write-up space near the area of activity and numbers will need to be ascertained. Facilities will include a workstation for the supervisor and student lockers.

Emergency Equipment

- Oxygen (wall panels or cylinders) for oxygen-dependent patients
- Cardiac monitor for cardiac patients
- Resuscitation trolley/s
- Medical gas service panels in selected locations for emergency use.

41.2.3 Functional Areas

The Rehabilitation – Allied Health services may include Dietetics, Hydrotherapy, Occupational Therapy, Physiotherapy, Podiatry, Psychology, Speech Pathology, and Social Work.

The Rehabilitation – Allied Health Unit will include the following Functional Areas:

- Entry, Reception and Waiting areas
- Patient accommodation areas including Lounge and Dining areas
- Patient Therapy areas which may be shared
- Support areas including Utilities, Cleaner's Room, Disposal, Pantry and Store Rooms
- Staff areas including Offices, Meeting Rooms, Staff Change and Toilets.

Occupational Therapy

Where an Occupational Therapy service is to be provided the following functions or facilities shall be allowed for:

- Therapy areas
- Office/Administrative areas
- Hand-washing facilities
- Availability of Accessible Toilets.

Physiotherapy

Where a Physiotherapy service is to be provided the following facilities shall be allowed for:

- Individual treatment area or areas that provide for patient privacy
- Staff hand-washing facilities close to each treatment space; this may serve several treatment spaces
- An exercise area with facilities appropriate for the level of intended service
- Clean linen storage; in the form of built-in cupboards, cabinets or on mobile storage trolleys
- Storage for equipment and supplies
- Storage for soiled linen and waste
- Patient dressing and changing with secure storage of clothing and valuables, showering and toilet facilities
- Ice-making facilities to be available in or near the department
- Wall oxygen in patient waiting areas depending on service mode, and access to appropriate outdoor therapy areas.

Entry Areas

The entry canopy is required to provide dry access to the building. Design considerations include:

- Ensuring the covered area is large enough to allow vehicles such as taxis, buses, cars, and emergency vehicles to manoeuvre beneath it, and is structured to facilitate free concurrent traffic flow for multiple vehicles
- The use of clear roofing material to maximize natural light inside the building
- The external Entrance Area, best sited at ground floor level, is the first point of contact for members of the community and should display clear directions informing people where to proceed.

Design considerations include:

- Vehicle access is required at all times
- Entry facilities should be suitable for people with disabilities, such as limited mobility and poor vision
- The entry can incorporate an airlock space and may have sensor or automatically opening doors to facilitate access.

Patient Lounge Areas

A Lounge Area is required for therapeutic and social purposes. These include reading, writing and watching television or videos. The Lounge, Kitchenette and Dining Areas may be combined in a large Multi-purpose Day Room or in separate but adjacent areas.

Service Areas

The service entry is required so that deliveries to the facility do not have to pass through the main entrance of the building. It may also provide ambulance service access and egress in emergency circumstances.

Design considerations include:

- An area large enough to allow vehicles including ambulances to turn and manoeuvre
- A large space with blank wall space for temporary storage of items such as linen or food trolleys, furniture or equipment for repair
- Access to soiled linen should only be available through the service entry or in large institutions separate zones may be available for the various utilities and deliveries
- Adequate infection control
- A loading bay that gives access for delivery staff and staff loading equipment and mobility aids into vehicles, located away from the client entry point.

Wheelchair Parking

An area should be provided near the entrance for parking wheelchairs and electric scooters. The wheelchair parking area requires power outlets for recharging of electric wheelchairs and scooters when they are not in use. Cupboards may be provided over wheelchairs for additional storage.

41.2.4 *Hydrotherapy Pool*

The need for a hydrotherapy pool should be carefully considered. The cost per unit of treatment is high and conditions for which hydrotherapy is the only appropriate treatment are limited. Hydrotherapy pools should only be provided where patient numbers are appropriate and where the pool is required for a minimum of four hours per day, five days per week.

Pool Size

The recommended pool size is 7500mm x 4500mm. A rectangular shape is recommended, with the length of the pool generally one and a half times the width.

Pool Depth

To optimize the use of a pool for therapeutic purposes, consideration should be given to the average height of both the smallest users and the tallest users. The recommended minimum depth is 800mm at the shallow end and the maximum depth is 1500mm at the deep end.

Gradient of Pool Floor

The floor of the pool should contain no steps.

Entry to Pool

Steps are the accepted method of entry and exit and can also provide functional training. Steps should be placed at the shallow end of the pool and should not intrude into the working area of the pool.

A hoist should be provided and placed at a depth where the therapist can stand and maintain body balance to float the patient off and on the hoist without difficulty.

Temperature

The water temperature should be maintained in the range of 30–35 degrees Celsius with an optimum temperature of 34–35 degrees for most conditions being treated. The ambient temperature should be lower than the water temperature for comfort of pool side staff and patients.

Humidity control needs to be provided to minimize condensation. A pool cover may be considered to assist in maintaining water temperature and to reduce heating costs.

Reflection

The lighting should allow the floor of the pool to be seen and should minimize reflection/glare off the surface of the water.

Pool Surrounds

Non-slip surfaces shall be used for the pool surrounds. Ample space should be provided around the pool for staff and patient movements as well as to provide space for patients who are waiting to enter the pool or relaxing after leaving the pool. The building structure, including all fittings, should be rust-proof.

Change Facilities

Change facilities will be required for patients and staff; the size will be dependent upon the size of the pool and the expected number of users.

Emergency Call Systems

Adequate emergency call points should be provided. Emergency call points should also be accessible from the concourse area and from within the pool.

Plant Room

A Plant Room will be required for water treatment plant and any associated equipment.

Footbaths/Showers

Footbaths, foot sprays or showers may be considered in the design of the pool area.

Security

Security design should address:

- Personal security of patients and staff
- Property security of patients and staff
- Unit premises and equipment
- Emergency access and egress.

Storage

Design should address the following storage requirements:

- Therapy equipment
- Consumables, and pool supplies
- Pool aids and exercise equipment
- Personal property of patient and staff.

41.2.5 *Functional Relationships*

The most critical relationship in circumstances where Rehabilitation Medicine is an established service is with its own Inpatient Unit/s. However, consideration must also be given to necessary relationships with those units most utilizing therapy services in terms of the logistics of patient travel and transport. In some instances there may need to be duplication of facilities. The Unit should have ready access to allied health units such as speech pathology, social work and the like where those units are not represented or located within the Unit itself. Physiotherapy areas will require ready access to Orthopedic Clinics.

41.3 Design

41.3.1 *General*

The design philosophy of the Rehabilitation Unit should convey a friendly and inviting environment and should encourage community members to utilize the available facilities for rehabilitation purposes. A non-institutional, safe and supportive environment needs to be promoted. Building design must be flexible and adaptable to enable the unit to cater for varying client and service needs.

Buildings should be designed to cope with a wide range of possible conditions. The aim is to provide an environment that will allow the maximum mobility possible for each person. The Rehabilitation Unit will include access for disabled persons.

41.3.2 *Accessibility*

External

If at ground floor unit with its own entry, an undercover set-down bay should be provided at the entrance to the Unit for those outpatients who arrive by bus or car and for return of loan equipment with parking for people with disabilities. Access to other units in the facility should be convenient and covered.

Internal

The Unit should be accessible from the inside hospital's main entrance. Wheelchair access is required to all patient-accessed areas of the Unit. Access equipment is desirable.

Parking

Drop-off and parking for people with disabilities is recommended.

41.3.3 *Environmental Considerations*

Acoustics

The majority of the therapy areas of the Unit are open space. Further, the activities undertaken therein require hard, impervious flooring (timber or sheet vinyl) and generate noise. Other areas within the Unit require acoustic privacy in order to be effective or prevent embarrassment such as Respiratory Treatment Rooms and rooms used for women's health disorders. Account should be taken of the potential sources of noise within as well as from outside the Unit. Solutions to the various acoustic characteristics and requirements include:

- Use of curtains and other soft fabrics
- Use of solid core doors
- Co-locate potentially noisy areas
- Strategic positioning of storage areas to create a sound buffer
- Carpet in patient areas is not recommended.
- Speech Pathology rooms have specific requirements in order to operate effectively.

Lighting

Natural lighting is essential in large treatment areas such as gymnasiums and in Staff Rooms. Consideration should be given to lighting levels for patients who are visually impaired.

Climate Control

Good temperature control and ventilation in treatment areas as work can be arduous for both patients and staff. It is important to remember that certain patients such as those with spinal cord injuries are unable to regulate their body temperature. It is therefore imperative that the gymnasium is air-conditioned. Regardless of orientation, there must be means of sun control.

Interior Design

The rehabilitation process is often a long one with patients commencing attendance at the Unit as inpatients and continuing as outpatients. Consequently, the Unit should seek to provide a welcoming and supportive environment as it is essential that patients feel positive about returning to the Unit on a regular basis.

41.3.4 *Space Standards and Components*

Some examples of the average circulation space sizes required for ambulant people using the following mobility aids are:

- One person using a walking stick – 750mm width
- One person using elbow crutches – 900mm width
- One person using two walking sticks – 800mm width
- One person using crutches – 950mm width
- One person using walking frame – 900mm width.

41.3.5 *Safety and Security*

Safety

The patient population of this unit in particular requires special consideration in terms of safety as they will be at once disabled or incapacitated and yet are being encouraged to be mobile and self-sufficient. Every aspect of unit design with regard to finishes, surfaces and fittings must be assessed to determine the potential for accidents or hazards to both patients and staff. Sanitary facilities are where most accidents or mishaps occur, to both patients and staff. In particular, consider:

- Slippery or wet floors
- Protrusions or sharp edges
- Stability and height of equipment or fittings
- Choice of floor covering
- Handrails and wheelchair access are mandatory.

Security

Security aspects should be considered for after-hours access control if used by the general public for classes, e.g. hydrotherapy.

41.3.6 *Finishes*

It is essential that floor finishes are non-slip and do not create 'drag' for patients using walking aids and wheelchairs.

Refer also to Part C of these Guidelines.

41.3.7 *Fixtures and Fittings*

Height of light switches need to abide by accessibility codes. Handrails on both sides of corridors are recommended.

Also refer to Part C of these Guidelines and to the Room Data Sheets (RDS) and Room Layout Sheets (RLS) for further detailed information

41.3.8 *Building Services Requirements*

Information Technology and Management

IT infrastructure must be compatible with overall hospital systems. There must be sufficient data points and power for computers and student laptops for direct entry of electronic records in the future and for viewing of digital images (PACS).

Duress Alarm System

Locate at Reception and in Treatment Areas.

Nurse and Emergency Call Systems

Nurse call systems in all individual rooms and cubicles including those in Gymnasiums. Staff Assist and Emergency Call at regular intervals. Annunciators (non-scrolling) located in Reception, corridors, treatment areas and Staff Room.

41.4 Components of the Unit

41.4.1 *General*

The Rehabilitation – Allied Health Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

41.4.2 *Non-Standard Components*

ADL Computer Room

Description and Function

The ADL Computer Room provides an area for activities of daily living (ADL) patient assessment and training for computer activities. A range of variable height computer desks will be included. Doors to this room are optional.

Location and Relationships

The ADL computer room may be located adjacent to the ADL Lounge or other ADL assessment areas.

Considerations

Provide adjustable height computer workstations with the following:

- A variety of desktop and laptop computers
- Printer and telephone
- Power and data outlets for each.

Bay – Drinking Water

Description and Function

The Bay – Drinking Water provides a recessed area for a drinking water unit.

Location and Relationships

The bay will be located in public access areas close to waiting areas.

Considerations

The Bay will include:

- Wall and floor finishes suitable for wet areas
- Drinking water fountain, with hydraulic connection to drinking water. Refillable water coolers may also be used. Recurrent cost to the facility should be considered when choosing the water source.
- Fittings may include a dispenser for cups and waste bin.

Occupational Therapy Rooms

Description and Function

The Occupational Therapy Rooms are large spaces provided to enable a range of static and dynamic activities to take place. The rooms may include space for table based activities, such as upper limb activities or functional mobility activities such as woodwork or splinting activities in a workshop environment.

The Rooms area will be sized according to the number of patients to be accommodated, the activities to be undertaken and will be dependent on Operational Policy and service demand.

Location and Relationships

The Occupational Therapy area may be located adjacent to rehabilitation therapy areas, with ready access to waiting and amenities areas.

Considerations

Fittings and Equipment required in this area may include:

- Benches with inset sink, wheelchair accessible
- Shelving for storage of equipment or tools
- Tables, adjustable height
- Chairs, adjustable height
- Hand-washing basin with liquid soap and paper towel fittings
- Pinboard and whiteboard for displays
- Sufficient GPOs for equipment or tools to be used in activity areas.

Workshop areas will require suitable air extraction and exhaust for woodwork activities.

Optical Shop

Description/Function

An Optical Shop is where clients and patients can have eye tests and purchase prescribed spectacles. It has a combined clinical and retail function.

Location and Relationships

The Optical Shop shall be located near the main entry and among other retail outlets if provided within a larger facility. A glazed shop-front is recommended and shall be positioned next to the major traffic (main corridor).

Considerations

The following areas and functions shall be included in an optical shop:

- Large and well-lit open plan area with display cabinets including a small counter for cashier and paperwork
- A consult room for eye test including slit lamp, light box (or projector for projected image), handwashing basin, drug refrigerator etc.
- Workroom for fitting/adjusting spectacles
- Facilities for disinfection, sterilization and instruments reprocessing if required by the Operational Policy
- An office for the optometrist (or can be part of the consult room if sufficient space is provided)
- Storage for spectacles, patient records, stationery etc.
- Access to toilet facilities (can be shared if located in a larger premise).

Plant Room – Water Treatment

Description/Function

The Water Treatment Plant Room is a lockable room for water treatment plant equipment used in the hydrotherapy pool and may include booster pumps and filters.

Plant equipment must be installed according to manufacturer's specifications.

Location and Relationships

The Water Treatment Plant Room should be located in close proximity to the Hydrotherapy Pool with easy access for staff to monitor and service the water treatment systems.

Considerations

Design Requirements include the following:

- Ventilation, exhaust and/or air-conditioning must be designed to accommodate the heat loads of the specified equipment
- High level sound isolation is required to ensure noise generated from this room does not invade the pool area
- Structural Engineer's assessment must be sought for floor load bearing capacity with respect to water treatment plant equipment
- Service access will be required around the perimeter of all plant equipment
- The room will require drainage.

41.5 Schedule of Accommodation

Typical Rehabilitation Unit - Allied Health at levels 4 to 6

ROOM/SPACE	Standard Component	Level 4 Qty x m ²			Level 5 Qty x m ²			Level 6 Qty x m ²			Remarks
Entry/Reception											
Entry/Reception	RECL-10-SJ RECL-15-SJ	1	x	10	1	x	12	1	x	15	2 staff
Store – Photocopy/Stationer, 8m ²	STPS-8-SJ	1	x	8	1	x	8	1	x	8	
Store – Files	STFS-10-SJ	1	x	4	1	x	8	1	x	10	
Waiting	WAIT-10-SJ WAIT-30-SJ	2	x	10	2	x	20	2	x	30	Based on 1.2m ² per person, 1.5m ² for wheelchairs. Separate Female areas
Patient Bay – Holding, 10m ²	PBTR-H-10-SJ		x		2	x	10	4	x	10	Separate Female areas
Bay – Wheelchair Park, 4m ²	BWC-SJ	1	x	4	1	x	4	2	x	4	
Toilet – Patient	WCPT-SJ	1	x	4	1	x	4	2	x	4	Separate Male/Female areas
Toilet – Accessible	WCAC-SJ	1	x	6	2	x	6	2	x	6	
Optical Shop		1	x	20	1	x	30	1	x	40	Optional
Allied Health											
Audiology Testing Room	AUDIO-SJ	1	x	14	1	x	14	1	x	14	
Observation Room – Audiology	OBS-SJ	1	x	9	1	x	9	1	x	9	
Office/Consult – Audiology	CONS-SJ	1	x	14	2	x	14	2	x	14	
Office/Consult, Clinical Psychology	CONS-SJ	1	x	14	1	x	14	1	x	14	No. depends on service level
Office/Consult – Speech Pathology	CONS-SJ	1	x	14	2	x	14	2	x	14	
Office – Single Person, 9m ² Dietetics	OFF-S9-SJ	1	x	9	1	x	9	1	x	12	
Office – Single Person, 9m ² Social Worker	OFF-S9-SJ	1	x	9	1	x	9	1	x	12	
Office/Treatment – Speech Pathology	CONS-SJ	1	x	14	1	x	14	1	x	14	
Observation Room – Speech Pathology	OBS-SJ	1	x	9	1	x	9	1	x	9	
Store – General, Speech Pathology	STGN-6-SJ STGN-8-SJ	1	x	6	1	x	6	1	x	8	
Podiatry Treatment, 14m ²	PODTR-14-SJ	1	x	14	1	x	14	1	x	14	
Meeting Room – Group Room	MEET-L-15-SJ MEET-L-30-SJ	1	x	15	1	x	15	1	x	20	
Occupational Therapy											
ADL Bathroom	ADLB-SJ	1	x	12	1	x	12	2	x	12	
ADL Lounge	ADLN-SJ	1	x	12	1	x	12	2	x	12	
ADL Bed Room	ADLBR-SJ	1	x	15	1	x	15	2	x	15	
ADL Computer Room		1	x	15		x	15	2	x	20	
ADL Kitchen	ADLK-OP-SJ	1	x	12	1	x	12	2	x	12	Size allows for a number of patients, may be enclosed or open
ADL Laundry		1	x	8	1	x	8	2	x	8	Optional
Loan Pool Equipment	HYDST-SJ		x		1	x	10	1	x	20	Size will depend on extent of service
Clean-Up Room	ECL-LE-10-SJ				1	x	10	1	x	10	For returned loan equipment
Plaster Room (Splint Room)	PLST-SJ				1	x	14	1	x	14	Optional; Specifically hand splinting; 2–3 patients plus wet prep area
Occupational Therapy Gym, Adult	GYAH-45-SJ	1	x	30	1	x	45	1	x	70	6–7m ² per person
Occupational Therapy Gym, Paediatric	GYAH-P-SJ				1	x	40	1	x	60	10 m ² per person
Occupational Therapy Workshop			x			x		1	x	50	Five patients
Store - General	STEQ-8-SJ							1	x	8	

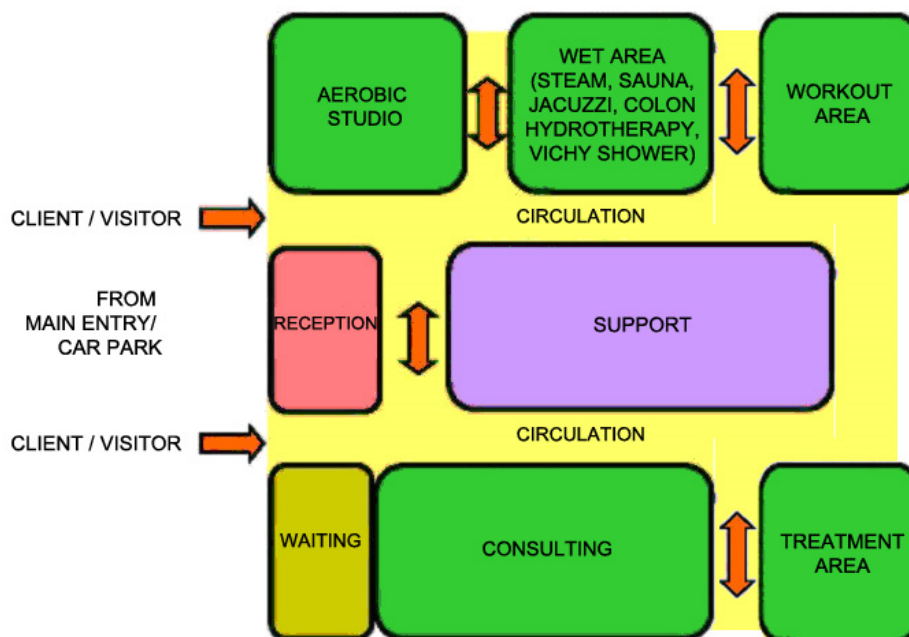
ROOM/SPACE	Standard Component	Level 4 Qty x m ²			Level 5 Qty x m ²			Level 6 Qty x m ²			Remarks
Store - Materials and Equipment	STEQ-10-SJ STEQ-16-SJ	1	x	10	1	x	14	1	x	25	
Store – Timber and Metal	STEQ-16-SJ	1	x		1	x	20	1	x	25	If Workshop provided
Store – Assessment Wheelchairs	STEQ-10-SJ STEQ-16-SJ	1	x	10	1	x	15	1	x	20	
Physiotherapy0											
Physiotherapy Gymnasium	GYAH-45-SJ	2	x	45	2	x	60	2	x	80	6–7m ² per person; Separate gyms for specialist treatment (SG)
Gymnasium – Group Classes			x			x		1	x	50	6–7m ² per person; Treadmills, bikes, etc. Include workstation for staff write-up
Patient Bay – Non-Acute Treatment, 10m ² (Treatment, Single)	PBTR-NA-SJ	2	x	10	4	x	10	6	x	10	Private cubicles, No. depends on service demand
Bay – Water Fountain		1	x	1	1	x	1	1	x	1	From original Sharjah, not in SG, keep or delete???
Bay – Mobile Equipment	BMEQ-4-SJ	1	x	4	1	x	10	1	x	10	
Bay – Handwashing, Type B	BHWS-B-SJ	2	x	1	4	x	1	6	x	1	Conveniently located to treatment areas
Office – Write-Up Bay	OFF-WIS-SJ	1	x	6	1	x	9	1	x	12	
Toilet – Accessible		2	x	6	2	x	6	2	x	6	
Toilet – Patient		2	x	4	2	x	4	2	x	4	May share nearby toilet facility
Plaster	PLST-SJ				1	x	14	1	x	14	Also used for splinting
Treatment Room	TRMT-SJ	1	x	14	1	x	14	1	x	14	Respiratory and other conditions requiring privacy. No. will depend on service profile
Workroom			x			x		1	x	14	"Wet" area for manufacturing splints, ice machine, hydrocollator etc.
Store – Equipment	STEQ-16-SJ	1	x	15	1	x	20	1	x	20	For exercise equipment
Store – Equipment	STEQ-10-SJ STEQ-16-SJ	1	x	10	1	x	15	1	x	25	For gym equipment
Shared Clinical Support Areas											
Assessment/Interview Room			x			x		2	x	10	Multi-disciplinary use
Consulting/Examination Room	CONS-SJ	1	x	14	2	x	14	2	x	14	Multi-disciplinary use
Bay – Linen			x			x		1	x	2	
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Bay – Mobile Equipment	BMEQ-4-SJ		x			x		1	x	10	Parking for various items of electrotherapy equipment
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Clean Utility	CLUR-12-SJ	1	x	12	1	x	12	1	x	12	
Dirty Utility	DTUR-S-SJ	1	x	8	1	x	8	1	x	8	
Disposal Room	DISP-8-SJ	1	x	8	1	x	8	1	x	8	
Staff Areas											
Office – Director		1	x	12	1	x	12	1	x	12	
Office – Head of Department, OT	OFF-S9-SJ	1	x	9	1	x	12	1	x	12	
Office – Workstations – OT	OFF-WS-SJ	1	x	5.5	2	x	5.5	6	x	5.5	No. will depend on staff establishment
Office – Head of Department, Physiotherapy	OFF-S9-SJ	1	x	9	1	x	12	1	x	12	
Office – 2-Person Shared (Physio)	OFF-2P-SJ	1	x	12	1	x	12	1	x	12	
Office – Workstations – Physio	OFF-WS-SJ	1	x	5.5	2	x	5.5	6	x	5.5	No. will depend on staff establishment
Student Room								1	x	14	
Meeting Room	MEET-L-15-SJ MEET-L-30-SJ	1	x	15	1	x	20	1	x	25	
Staff Room	SRM-15-SJ SRM-25-SJ	2	x	15	2	x	18	2	x	25	
Change – Staff (Male/Female)	CHST-12-SJ CHST-20-SJ	2	x	9	2	x	12	2	x	20	Separate Male/female areas
Hydrotherapy (Optional)											

ROOM/SPACE	Standard Component	Level 4 Qty x m ²			Level 5 Qty x m ²			Level 6 Qty x m ²			Remarks
Office – Supervisor	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	
Office – Workstation	OFF-WS-SJ	1	x	5.5	2	x	5.5	2	x	5.5	Qty according to staffing establishment
Toilet/Shower/Change - Patient	CHPT-12-SJ	2	x	12	2	x	24	2	x	24	
Toilet/Shower/Change – Staff	CHST-12-SJ CHST-20-SJ	2	x	12	2	x	20	2	x	20	
Shower – Patient	SHPT-SJ	2	x	4	3	x	4	5	x	4	Separate Male/Female areas adjacent to Pool concourse
Hydrotherapy Pool and Surrounds	HYDP-SJ	1	x	90	1	x	240	1	x	240	Pool size 12m x 20m; Area includes surrounding concourse
Hydrotherapy Pool Open Shower Area	HYDSH-SJ	1	x	6	1	x	6	1	x	6	On pool concourse
Shower – Accessible	SHD-SJ	2	x	4	2	x	4	1	x	5	Separate Male/Female areas; patient use
Toilet – Accessible		2	x	6	2	x	6	2	x	6	Separate Male/Female areas; patient use
Hydrotherapy Pool Store	HYDST-SJ	1	x	9	1	x	12	1	x	16	Pool equipment
Water Treatment Plant Room		1	x	20	1	x	20	1	x	20	
Net Department Total		904			1446.5			2013.5			
Circulation %		32			32			32			
Grand Total		1193.3			1909.4			2657.8			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

41.6 Functional Relationship Diagram



41.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 610 Rehabilitation Inpatient Unit' 2012. Retrieved from website: http://www.healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20%2000610%20Rehabilitation%20Inpatient%20Unit.pdf 2014
- Department of Health (DH) (UK). 'Health Briefing Note 8 Facilities for Rehabilitation Services' 2004. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN%2008%20Rehab2000.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideines.org 2014.

42.0 Renal Dialysis Unit

42.1 Introduction

42.1.1 Description

Renal Dialysis is a medical process that becomes necessary when the normal functions of the kidneys become compromised by reduced kidney function and kidney failure. This may be due to disease, injury, infection or genetic factors. Renal failure may be classified as either Acute Renal Failure or chronic Kidney Disease. Hemodialysis and Peritoneal dialysis services involve filtering the blood of excess fluid, and waste products normally filtered by the kidneys.

Hemodialysis is a treatment for end stage renal failure where the function of the kidneys to remove substances from the blood is replaced by the use of a hemodialysis (dialysis) machine. Hemodialysis requires the patient to have one of the following – arterio-venous fistula, vein graft (artificial graft) or central line catheter inserted into their neck or upper chest for dialysis. Hemodialysis management may require the patient to undergo dialysis for 3 to 6 hours on a daily basis over 3 to 4 days a week.

Hemodialysis may be undertaken in the following locations:

- A hospital
- A Satellite unit
- A Stand-alone unit
- A Self-care unit
- At home.

Peritoneal dialysis is an alternative to Hemodialysis. Peritoneal dialysis involves the exchange of fluid to and from the abdominal peritoneum via an inserted peritoneal catheter 3 to 4 times each day with this being undertaken either manually or with the assistance of a machine (Automated Peritoneal Dialysis – APD) for 8 to 10 hours, generally overnight. Peritoneal dialysis is usually performed at home after supported technical training and education either as an inpatient or outpatient at a community dialysis unit.

The functions of the Renal Dialysis unit are:

- To receive and provide dialysis services to people who have been referred from the community or a hospital inpatient unit
- To provide training for patients, family members and/or relevant others in procedures related to hemodialysis and/or peritoneal dialysis (optional)
- To act as a resource to the community, other staff and agencies with regards to the requirements of renal health services.

42.2 Planning

42.2.1 Operational Models

Operational models of care for a service will influence the functional planning components for the unit. The role delineation of a hospital will determine the type and range of the renal dialysis services that will be provided and the associated support systems and services. The Renal Dialysis unit may be provided as:

- One of the departments in a hospital (in-center care) and also support dialysis services as required in an ICU, CCU or in a Renal Inpatient Unit
- A dialysis unit planned as a satellite unit which may be situated on the hospital site/campus or a stand-alone unit located within a community setting.

42.2.2 *Models of Care*

Renal dialysis can be provided in a number of settings as described in the operational models and Planning Models.

The development of the models of care to deliver a renal dialysis service is provided by a multi-discipline team to support the patient/client, their family and or carer. The important role of education should also be considered in the development of models of care.

The development of clear documented models of care by the service for the proposed renal dialysis unit should assist with the design development and planning, ensuring the future functionality of the unit.

Hours of Operation

Units operate from early morning until late afternoon providing multiple sessions per day. Some units may operate for extended hours to accommodate working patients/clients.

42.2.3 *Planning Models*

Some of the factors that should be taken into consideration when planning a Renal Dialysis Unit include:

- The operational model chosen as part of the planning model
- Age and mix of the patient group
- Acuity of the proposed or current patient group
- Comorbidity of the patient group
- Rate of infectious diseases to be expected in the patient group.

Service Delivery Methods

This FPU is applicable to the following Operational Models

- Hospital based unit – a unit within the hospital
- Satellite Unit – on a hospital campus but not in a hospital unit
- Stand-alone unit – positioned in a community setting.

42.2.4 *Functional Areas*

The Dialysis Unit will consist of or have access to the following functional areas for all service delivery methods:

- Main Entry/Reception Area
- Waiting
- Treatment Areas
- Staff Areas
- Support Areas
- Storage Areas:
 - Clinical
 - Non Clinical
 - Bulk items storage e.g. Fluids, equipment and dialysis machine
 - Service maintenance.

42.2.5 *Functional Relationships*

External

Planning is to address the following key issues:

- Ease of access to the unit where the majority of people will arrive by car on a daily basis
- Separation of walking and stretcher/ambulance patient arrivals
- Safe access to the Unit Store rooms for the delivery of bulk items e.g. fluids on a palette requiring mechanical lifting, moving and storage
- Safe access for the delivery of food, clean linen, pharmacy, consumables, disposable items and the related removal of bulk waste and soiled linen etc.

Internal

The internal planning of the Renal Dialysis Unit should be planned by considering the units functional areas/zones.

Some of the critical relationships to be considered include:

- Staff work station requires an unobtrusive view of all patient treatment areas; the inclusion of decentralized staff work areas may be considered in larger units that have multiple rooms or treatment spaces
- Reception requires a clear view of entry and exit/egress points of the Unit
- Easy access from the Waiting area to the Patient Treatment area for the convenient arrival and departure of patients and family
- Functional relationship of training and isolation rooms to the entry of the unit with access to outdoor space.

42.3 Design

42.3.1 *General*

The Unit shall be designed to provide:

- Ease of public access for patients who may arrive either walking, using mobility equipment, families with children, on an ambulance stretcher or patient trolley
- Ease of access to public parking for patients who are often debilitated and who may need to visit the unit on a regular basis
- Ease of delivery of large amounts of fluids (dialysate) on palettes to the Unit on a regular basis.

42.3.2 *Patient Treatment Areas*

Patients should be situated so that healthcare providers have direct or indirect visualization. This approach permits the monitoring of patient status under both routine and emergency circumstances.

The preferred design is to allow a direct line of vision between the patient and the staff.

42.3.3 *Environmental Considerations*

Natural Light

Natural light contributes to a sense of wellbeing of patients, staff, visitors and other users. The use of natural light should be maximized throughout the Unit.

Natural light and a view to pleasant and interesting outdoor areas is of particular importance for patients who spend long periods of time sitting in dialysis chairs. Every effort should be made to provide a view to all treatment areas either by locating treatment bays adjacent to a window or enabling unobstructed sight lines through areas to an outdoor view.

Privacy

Confidentiality for persons receiving treatment is a highly important consideration to be addressed. The Unit should be designed to:

- Ensure confidentiality of personal discussions and medical records
- Provide an adequate number of rooms for discreet discussions and treatments to occur whenever required
- Enable sufficient space within each treatment space to permit curtains to be easily drawn whenever required
- Appropriately locate windows and doors to enhance visual and acoustic privacy.
- Acoustics.

Many of the functions undertaken in the Unit require consideration of acoustic privacy including:

- Family/case conference/interviews rooms
- Isolation of noisy areas such as waiting rooms from clinical areas e.g. clean and dirty utilities
- Staff discussions regarding confidential matters (including Meeting rooms)
- Noise sources may arise both within and from outside the dialysis unit and may include:
 - Sanitary facilities
 - Equipment
 - Other patients/clients
 - Staff activities
 - Traffic through the unit e.g. visitors, food, linen or other trolleys.

Solutions to be considered include:

- Selection of sound absorbing materials and finishes
- Use of sound isolating construction
- Planning to separate quiet areas from noisy areas
- Review of operational management and patient/client flows. This may include separate areas for patients with special needs.
- Location of the unit.

Interior Design

This includes the style of design, furnishings, color, textures and ambience, influenced by perceptions and culture. The décor of the Unit should be of a standard that meets the expectations of people using the services and make every effort to reduce an institutional atmosphere. Cleaning, infection control, fire safety, patient care requirements and the patients' perception of a professional inviting environment should always be considered.

Suggestions to achieve this balance include the following:

- Use of design features such as colors and artworks to distract the sight from clinical areas
- Inclusion of soft furnishings that act as a design feature such as screening, lounges, in waiting areas and window treatments
- Elimination of corridors through good design wherever possible
- Inclusion of corridors at the minimum required widths to meet the service needs e.g. wide corridors are a feature that potentiates institutional environments
- Provision of a beverage bay for people to use while waiting
- Background music through a piped system or a centralized unit
- Television systems with head set access to reduce ambient noise in the Unit.

42.3.4 *Space Standards and Components*

Accessibility – External

There should be a weatherproof vehicle drop-off zone with easy access for less-mobile patients and wheelchair bound patients. Consideration should be given to the separation of ambulant and non-ambulant patient arrivals to enhance privacy of ambulance and or stretcher patients frequenting the service.

42.3.5 *Safety and Security*

Equipment, furniture, fittings and the facility itself should be designed and constructed to ensure that users are not exposed to avoidable risks or injury. A high standard of safety and security can be achieved by careful configuration of spaces and zones to include:

- Control access/egress to and from the Unit
- Optimize visual observation for staff
- Similar functions shall be co-located for easy staff management.

Access to public areas shall be considered with care so that the safety and security of staff areas within the Unit are not compromised.

Refer also to Part C of these Guidelines.

42.3.6 *Finishes*

Floor and ceiling finishes shall be selected to suit the function of the space and promote a pleasant environment for patients, visitors and staff.

The following factors shall be considered:

- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning
- Infection control
- Movement of equipment.

Refer also to Part C and Part D of these Guidelines.

42.3.7 *Fixtures and Fittings*

Refer to Part C of these Guidelines and Standard Components of individual rooms for information related to fixtures and fittings.

42.3.8 *Building Service Requirements*

Communications/Information Technology

It is vital to provide reliable and effective Information Technology/Communications service for efficient operation of the Unit. The following items relating to Information Technology/Communication to support the planning, design and the current and future expansion of the Unit and support the development of technical and operational guidelines require consideration early in the planning process:

- Bar coding for supplies, X-Rays and records
- Data entry (e.g. scripts and investigative requests)
- Email
- Access to Picture Archival Communications System (PACS) viewing
- Paging systems
- Electronic medical records and medical record storage systems
- Point of clinical care
- Patient administration system
- Building management system (BMS)
- Videoconferencing, teleconferencing/telemedicine
- Wireless technology considerations including duress alarm systems – fixed and mobile units
- Communications rooms and server requirements.

Nurse Call and Emergency Call facilities shall be provided in all patient areas (e.g. Bed/chair spaces, Toilets and Bathrooms) and clinical areas in order for patients and staff to request for urgent assistance. The individual call buttons shall alert to distributed identified ceiling -mounted

annunciators and also to a central module situated at or adjacent to the Staff Station /s or to a paging system. The alert to staff members should be done in a discreet manner.

Provision of a duress alarm system is required for the safety of staff members who may at times face threats imposed by clients/visitors. Call buttons will be required at all Reception/Staff Station areas and Consultation/Treatment areas where a staff may have to spend time with a client in isolation or alone. The combination of fixed and mobile duress units should be considered as part of the safety review during planning for the unit.

Water Treatment Services

A key component of the Renal Dialysis Unit is the need to treat the water that will be used in the hemodialysis process to remove any contaminants. Different commercial water treatment systems may undertake the water treatment activities in slightly different ways but in general the main phases of water treatment occur in the following sequence:

Phase 1: Particle filtration to 20 microns.

Phase 2: Water softening to remove calcium and magnesium carbonate.

Phase 3: Carbon filtration to remove chlorine; chlorine is taken out as late as possible in the process so that its disinfection properties are utilized.

Phase 4: Particle filtration to 5 and 1 micron.

Phase 5: Reverse Osmosis Process.

Planning considerations for the design and installation of the water pre-treatment include:

- Water feed quality
- Pressure of the feed water
- Maximum water flow – consideration of the growth of service activity
- Average water flow per day – consideration of the growth of the service
- Spatial requirement to safely install and operate the water pre-treatment plant
- Drainage requirements
- Weight of the water pre-treatment plant and the ability of the floor to safely support that weight
- Water quality monitoring systems
- Power supply requirements
- Facilities and access to safely service and maintain the water pre-treatment plant
- Water distribution loop.

Components of water treatment services include:

- Feed water temperature control
 - High feed water temperatures may require a heat exchanger to cool the feed water; if the feed water is cold it can be heated by mixing hot and cold water with a thermostatic mixing valve.
- Back flow preventer
 - All water pre-treatment systems require a form of back flow prevention device; this device prevents the water in the pre-treatment system from flowing back into the source water supply system; a reduced pressure zone device (RPZD) or a break tank with an air gap may be used.
- Multimedia depth filter
 - Particulates of 10 microns or greater are removed by a multimedia filter (or depth bed filter); these particulates can clog the carbon and softener tanks, destroy the Reverse Osmosis (RO) pump, and foul the RO membrane.

Reverse Osmosis (RO) is a process of forcing water from one side of a semi-permeable membrane to the other, producing purified water by leaving behind the dissolved solids and organic particles. The equipment that performs this process is usually referred to as the RO system. The aim of all the above processes is to improve the purity of the water to be used by removal of particulates, salts and bacteria before it comes into contact with the person receiving hemodialysis.

Booster pumps may also be required to ensure a certain speed of water (at least 10 meters/second) and a certain pressure of water (varies dependent on the concentration of the salt solution on the reject side of the membrane) to enable these processes and to limit the ability of tubing contamination by bacteria and molds. These contamination processes are also reduced by the application of heat (85 – 90 degrees Celsius), eliminating any right angle bends, ensuring the internal surfaces of tubing have a high level of smoothness and by keeping tubing runs as short as possible.

The Plant Room for water treatment is ideally located as part of the Renal Dialysis Unit to keep tubing runs short and to make it easy for staff to monitor and service the water treatment systems.

The Design Team should gain expert input from the agency that will provide these services early in the design process to ensure that all requirements are identified as early as possible during planning.

Drainage System

Services that facilitate the drainage of fluids from the hemodialysis machines must be ventilated to prevent condensation and the subsequent growth of mould. This should be considered when designing covers or screens for the drainage systems. Commercial models which comply with the relevant Standards are available.

42.3.9 Infection Control

Infectious patients and immune-suppressed patients may be sharing the same treatment space at the different times of the same day. The design of all aspects for the Unit should take into consideration the need to ensure a high level of infection control in all aspects of clinical and non-clinical practice.

Hand washing facilities for staff within the Unit should be readily available. Where a hand wash basin is provided, there shall also be liquid soap, disposable paper towels and waste bin provided and PPE equipment.

For further details relating to the Infection Control refer to Part D of these Guidelines.

42.4 Components of the Unit

The Renal Dialysis Unit will contain Standard Components to comply with details described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

42.5 Schedule of Accommodation

Typical Renal Dialysis Unit with 6, 12 and 30 chairs

ROOM/SPACE	Standard Component	6 Chairs Qty x m²			12 Chairs Qty x m²			30 Chairs Qty x m²			Remarks
Entry/Consulting Area											
Reception/Clerical	RECK-10-5J RECL-15-5J	1	x	9	1	x	9	1	x	15	
Waiting	WAIT-10-SJ WAIT-30-SJ	1	x	10	1	x	10	1	x	25	Include waiting for families, may include public phone and beverage bay
Consult Room	CONS-SJ	1	x	14	1	x	14	3	x	14	Also for Interviews
Staff Station	SSTN-5-SJ	1	x	10	1	x	12	2	x	12	Subdivided in larger Units
Store – Files	STFS-10-SJ				1	x	6	1	x	12	Optional; Not required for electronic records
Store – Photocopy/Stationery	STPS-8-SJ	1	x	6	1	x	8	1	x	8	Printers, fax, records; May be combined with Reception
Toilet – Accessible	WCAC-SJ	1	x	6	1	x	6	1	x	6	May be shared
Toilet – Public	WCPU-3-SJ	1	x	3	1	x	3	2	x	3	May be shared
Patient Areas: Treatment											
Bay – Beverage	BBEV-ENC-SJ	1	x	5	1	x	5	1	x	5	To receive and issue refreshments to patients
Bay – Handwashing, Type B	BHWS-B-SJ	2	x	1	3	x	1	10	x	1	1 per 4 chair/bed bays
Bay – Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	
Bay – Mobile Equipment	BMEQ-4-SJ	1	x	4	1	x	4	1	x	4	Mobile equipment, weighing scales
Bay – PPE (Personal Protective Equipment)	BPPE-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Bay – Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Bay – Storage (Dialysis Fluid)	BS-2-SJ	1	x	2	1	x	2	3	x	2	To hold dialysis fluid close to treatment bays; 1 per cluster of chairs
Bay – Wheelchair Park	BWC-SJ	1	x	4	1	x	4	1	x	8	May be subdivided
Bay – Utility (Dialysate Preparation)	BUT-2-SJ	1	x	2	1	x	2	3	x	2	Adjacent to Bay-Storage, Dialysis Fluid; 1 per cluster of chairs
Clean Utility	CLUR-12-SJ	1	x	12	1	x	12	1	x	12	Including medications and dressing set-ups
Dirty Utility	DTUR-12-SJ	1	x	12	1	x	12	2	x	12	
Isolation Room – Type S		1	x	14	1	x	14	2	x	14	
Shower – Accessible	SHD-SJ	1	x	4	1	x	4	2	x	4	
Treatment Bay-Renal Dialysis	TRMT-RD-SJ	5	x	9	11	x	9	28	x	9	Arrange in clusters of 10 chairs
Training/Treatment/Procedure Room	TRMT-SJ	1	x	15	1	x	15	1	x	15	Optional
Ensuite – Standard	ENS-ST-SJ	1	x	5	1	x	5	2	x	5	1 per enclosed bay
Toilet – Patient	WCPT-SJ	1	x	4	1	x	4	4	x	4	1 per 8 bays
Toilet – Accessible, Patient	WCAC-SJ	1	x	6	1	x	6	1	x	6	May be shared
Staff Station	SSTN-14-SJ	1	x	10	1	x	12	3	x	20	1 per cluster of chairs
Support Areas											
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	10	Includes dry storage for cleaning consumables
Equipment Clean-Up	ECL-10-SJ	1	x	8	1	x	10	1	x	12	For the cleaning and servicing of haemodialysis and other machinery
Disposal Room	DISP-8-SJ	1	x	5	1	x	8	1	x	10	Waste and dirty linen holding
Store – Equipment	STEQ-10-SJ	1	x	8	1		10	1	x	15	
Store – General	STGN-6-SJ	1	x	6	1	x	6	1	x	30	
Store – Main		1		8	1		16	1		30	
Water Treatment Plant Room		1	x	12	1		15	1	x	25	Close to treatment areas
Staff Areas											
Change – Staff (Male/Female)	CHST-20-SJ	1	x	12	1	x	14	2	x	14	Toilet, Shower, Lockers

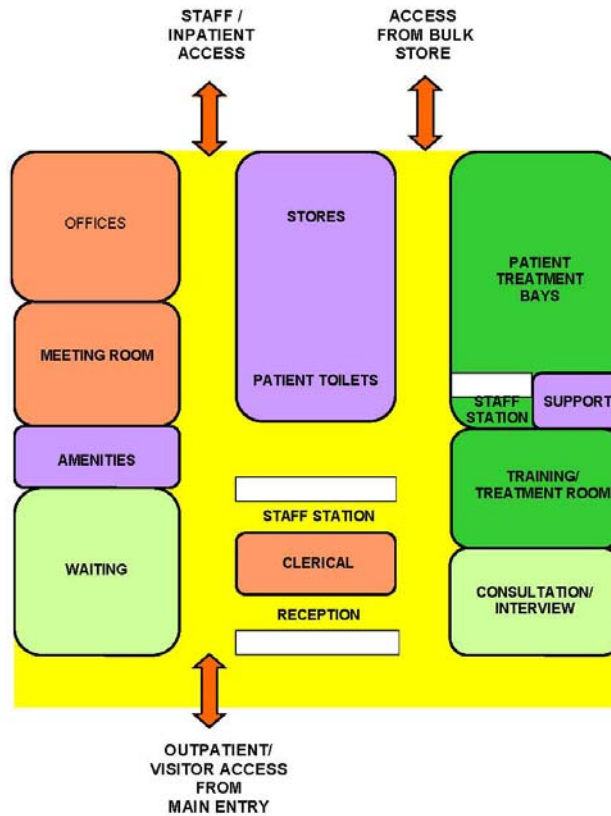
ROOM/SPACE	Standard Component	6 Chairs Qty x m ²			12 Chairs Qty x m ²			30 Chairs Qty x m ²			Remarks
Meeting Room	MEET-L-30-SJ	1	x	12	1	x	20	1	x	30	Optional
Office – Manager	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	
Office – 2-Person Shared	OFF-2P-SJ							1	x	12	Nursing/Medical; According to staffing numbers
Staff Room	SRM-15-SJ SRM-25-SJ	1	x	15	1	x	15	1	x	25	Discreet location; May be shared
Net Department Total		309			404			851			
Circulation %								32			
Grand Total		407.88			533.28			1123.32			

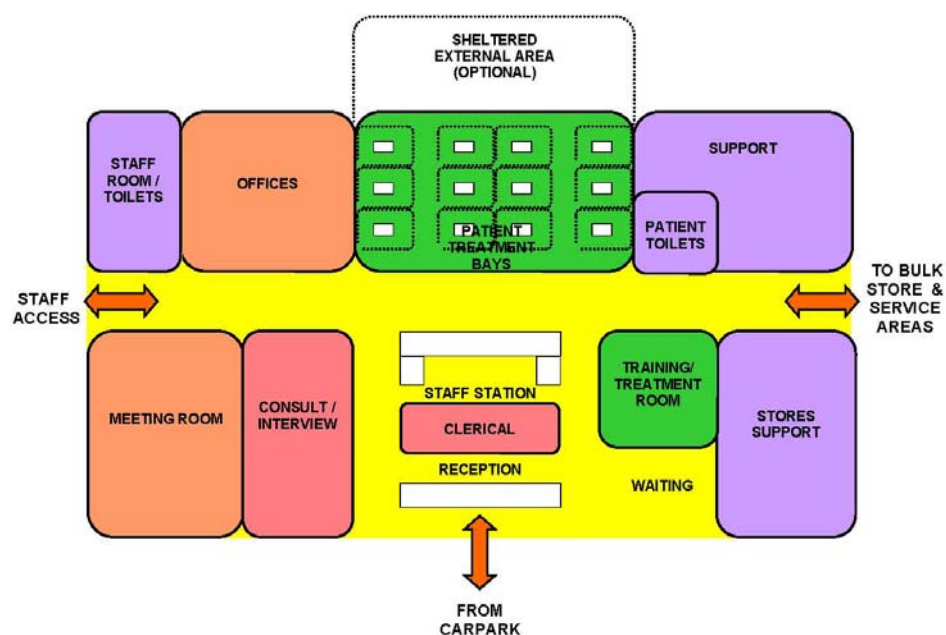
Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

42.6 Functional Relationship Diagram

Hospital-Based Unit



Stand-Alone/Satellite Unit

42.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
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- NSW Renal Services Network, NSW Health (Aus.). 'NSW Hemodialysis 'Models of Care' Program' 2008. Retrieved from website: http://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0004/155047/moc_report_2009.pdf 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014
- Westgarth, F. , Chiarella, M. and Tranter, S. 'The Hemodialysis 'Models of Care Program' Renal Society of Australasia Journal 2012. Retrieved from website: <http://www.renalsociety.org/RSAJ/journal/mar12/westgarth.pdf> 2014.

43.0 Sterile Supply Unit (SSU)

43.1 Introduction

43.1.1 General

A Hospital must provide adequate facilities for cleaning, sterilization and storage of equipment and instruments to ensure the care and safety of patients, and the safety of staff, at all times.

The sterilization process may be carried out entirely or partially onsite, the latter relying on an external supply source to regularly restock the hospital sterile goods store/s. The scale of operation can be small or large, dependent upon the requirements of the serviced departments, for example, an Operating Unit requires the services of a Theatre Sterile Supply Unit (TSSU) or a full Central Sterile Supply Unit (CSSU), whereas an Acute Inpatient Unit requires only a basic sterile supply service.

43.2 Planning

43.2.1 Operational Models

The size and role of the sterile goods supply service shall be clearly defined in the Operational Policy Statement. Operational policies will be drafted on project specific basis by users and staff of the Sterile Supply Unit, the Operating unit and all other relevant staff associated with this service.

43.2.2 Functional Areas

The Central Sterile Supply Unit will include the following functional areas or zones:

- Receiving Area where soiled articles for recycling are received on trolleys from Units throughout the facility
- Decontamination Area where all articles are sorted, rinsed, ultrasonically cleaned or mechanically washed then mechanically dried; this area may also include cleaning of the delivery trolleys
- Packing Area (Clean Workroom) where the clean instruments, equipment and other articles are sorted, counted and packaged for sterilizing
- Sterilizing and Cooling Area where sterilizers are loaded, set into operation and unloaded following completion of the sterilizing cycle
- Dispatch Area where sterile stock is held prior to dispatch to Units in the facility; distribution trolleys may also be located in this area
- Administrative Areas including Offices or Workstations
- Staff Amenities which includes Staff Toilets, Change Rooms and Staff Rooms; these may also be shared with Operating Unit if convenient.

Administrative Areas

A separate room, or space within the Workroom, shall be provided for routine clerical/administrative procedures. The provision of a separate office will depend upon the size of the unit/department. An area for write-up and storage of stationery and files shall be provided.

Clean Workroom

The Clean Workroom will provide packing tables and equipment for assembly of cleaned and dry instruments into sets, wrapped and sealed ready for sterilization. The Clean Workroom shall be in a separate area to instrument preparation. Linen folding, where required, shall be carried out in a separate room, preferably the laundry. The air handling system shall be filtered or discharged direct to the outside to prevent lint build-up and related industrial and fire safety problems. High level supply and low level exhaust is the recommended airflow pattern, with localized high level extraction for heat removal only. Special attention shall be given to the height and depth of workbenches to allow staff to

work sitting or standing. Views to the outside are considered highly desirable. A handwashing basin shall be provided at the perimeter of the room to avoid water contamination of wrapped instrument sets.

Distribution

A distribution point, if required, shall be provided in the form of a staffed counter or stable door, or a pass through cupboard from the sterile store into an adjacent service corridor. No general access is allowed to the SSU.

Receiving and Decontamination Areas

The Receival area will be used for return of used trolleys and instruments to the Unit for processing. The Decontamination area is where instruments are rinsed, ultrasonically cleaned if appropriate, washed/decontaminated through instrument processing equipment and dried. Special instruments may be hand washed in this area. Instruments may be tracked by using an instrument tracking system.

Staff Amenities

Showers, toilets and secure lockers for staff employed in this area shall be provided. These facilities shall be conveniently located and may be shared with the Operating Unit staff in cases where the Sterile Supply Department is attached to the Operating Unit. A lunch room can be a shared central facility outside the Sterile Supply Department. Access to a training room in close proximity to SSU for formal training activities is recommended. Facilities shall also be provided in the Change Room to store caps, overalls and footwear protection. 'Barrier' principles are observed when entering the unit.

Storage

A room shall be provided for the storage of processed sterile packs etc. Ventilation, humidity and temperature control is required. Supply air pressure shall be positive with respect to surrounding areas and the level of filtration shall equal or exceed that of the Operating Room. Storage cupboards shall be fitted with doors. A separate room shall be provided to store stock that is 'clean' but not sterile. Access to this room shall be provided from outside the unit for stocking, and from within the unit for drawing stock to process. Space shall also be provided for storing trolleys as required.

43.2.3 *Functional Relationships*

The Sterile Supply Unit (SSU) should be located with direct or close access to the Operating Unit. In the event where Operating Unit and SSU are on different floors, sterile and dirty lifts will be required to run directly between the two units. SSU should also have ready access to Supply Unit and Linen Handling Unit for delivery of supplies. Access to the CSSU should be restricted to authorized personnel only.

Refer also the Functional Relationships Diagrams in this section.

43.3 Design

43.3.1 *General*

The planning of the facility must provide for separate clean and dirty working areas with a defined unidirectional workflow that prevents cross contamination of items being processed.

43.3.2 *Communications*

A telephone or intercom system should be installed within the Clean Workroom and/or Office to allow communication with outside personnel and departments, without breaching the 'clean barrier' regime.

43.3.3 *Finishes*

Floor finishes shall be easy to clean. Wet areas shall have a suitable non slip finish. Welded sheet vinyl, covered up the wall, is recommended. Wall finishes shall also be easy to clean, with special consideration for damage by trolleys. Windows, if provided, must be unable to be opened. The ceiling shall be of a flush type and sealed against the walls.

43.3.4 *Building Service Requirements*

Air Filtration

Where the Sterile Supply Unit is attached to an Operating Unit, ventilation shall be provided by a treated air supply, with compliant air-conditioning systems and HEPA filters.

Lighting

Light fittings shall be fully recessed and selected to prevent dust and insects from entering. Light levels shall be not less than 400 lux.

Signage

Door signs are required to provide instruction as to the closed nature of the department and the limited access points for services.

43.4 Components of the Unit

43.4.1 *Introduction*

The Central Sterile Supply Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

43.4.2 *Non-Standard Components*

Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

Receiving Area

Description and Function

A lobby shall be provided for return of used items and trolleys.

Location and Relationships

The Receiving Area should be located with ready access to Trolley Wash and Decontamination area.

Considerations

The Receiving Area will require:

- Smooth, impervious and easily cleanable surfaces to walls and ceiling
- Impervious and non-slip finishes to the floor
- Hot and cold water outlets
- Staff hand washing basin.

Trolley/Cart Wash

Description and Function

An area shall be provided for stripping, washing and disinfecting of trolleys and carts.

Location and Relationships

The Trolley Wash area should be located with ready access to Receiving Area.

Considerations

The trolley washing area will require:

- Smooth, impervious and easily cleanable surfaces to walls and ceiling
- Impervious and non-slip finishes to the floor
- Hot and cold water outlets.
- An automated trolley wash unit may be used.

Decontamination

Description and Function

The Decontamination area shall contain work space and equipment for sorting, decontamination and cleaning medical and surgical equipment, and for disposal of used/soiled material. It shall include hand-washing facilities. The Decontamination functions may also be provided in a Clean-Up Room. There will be a need to provide special types of cleaning equipment, dependent on the level of service, for example, ultrasonic cleaners, anesthetic tubing washers and dryers.

Location and Relationships

The Decontamination area should be located between the Receiving area and the Clean Workroom/Packing area.

Considerations

The Decontamination area will require the following finishes:

- Walls and ceiling that are smooth, impervious, and easily cleanable
- Floors that are impervious and non-slip.

Fittings and fixtures located in this area will include the following:

- Stainless steel deep bowl sinks with tubing manifolds (air and water) and additional water outlets for water pistols
- Stainless steel benches
- Instrument and tubing washers/decontaminators, according to service requirements
- Ultrasonic cleaner, according to service requirements
- Instrument and tubing dryers, according to service requirements
- Staff handwashing basin
- Exhaust air extraction over sinks and equipment doors.

Clean Workroom/Packing

Description and Function

The Clean Workroom/Packing area is where cleaned and dried instruments are removed from the decontaminating/drying equipment, sorted, assembled into sets and packaged, ready for sterilizing.

Location and Relationships

The Clean Workroom/Packing area will be located between the Decontamination area and the Sterilizing area, with a unidirectional workflow from contaminated to clean areas.

Considerations

Refer to Functional Areas above for inclusions in this room. Consideration should be given to ergonomics aspects of packing tables, adjustable height tables and equipment is recommended. Instruments in this area may be tracked by using an instrument tracking system.

Sterilizing and Cooling

Description and Function

The Sterilizing and Cooling Area provides accommodation for sterilizers and parking space for sterilizer and cooling trolleys. Following unloading of the sterilizer, packs should not be handled until cool. Specialized sterilizers such as ethylene oxide, require separate installation and accommodation. Low temperature specialized sterilizers require separate installation according to manufacturer's recommendations. The size of the area will be dependent on the number and type of sterilizers installed.

Location and Relationships

The Sterilizing and Cooling area should be located between the Sorting and Packing area and the Dispatch area. Special consideration shall be given to the location of the sterilizers. External access to a sterilizer duct is highly desirable so that repairs or routine maintenance do not interfere with the activities within the Workroom. A duct enclosure can also minimize heat build-up within the Workroom. An exhaust over the front of the sterilizer/s shall also be considered, to extract both heat (cabinet) and steam (opening door).

Considerations

An exhaust over the front of the sterilizer/s shall be considered, to extract both heat (cabinet) and steam (opening door).

43.5 Schedule of Accommodation

Typical Sterile Supply Unit with 2 and 4 sterilisers

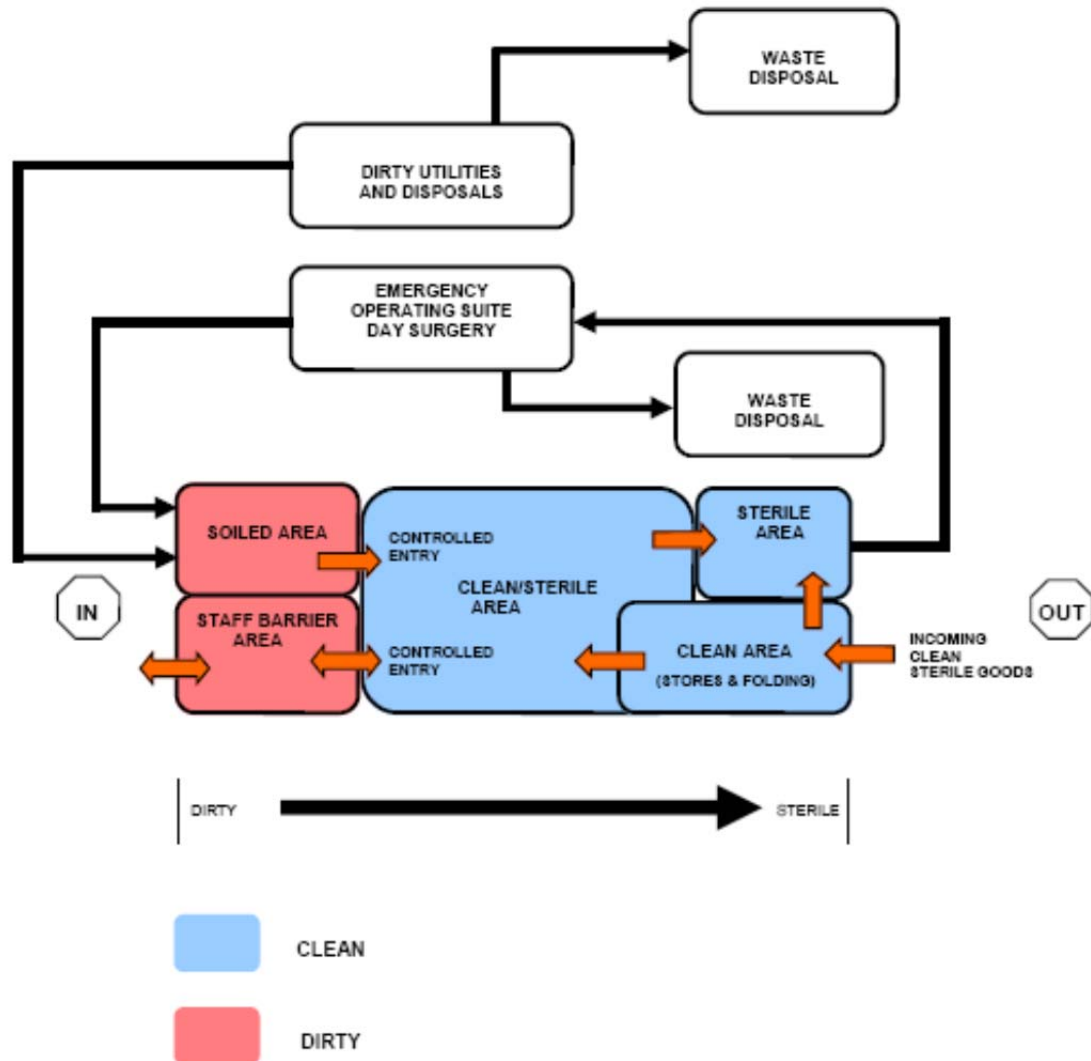
ROOM/SPACE	Standard Component				2 Sterilizers Qty x m ²				4 Sterilizers Qty x m ²	Remarks
Entry/Reception										
Reception Clerical	RECL-15-SJ RECL-15-SJ				1	x	9	1	x	12
Store – Photocopy/Stationery	STPS-8-SJ				1	x	8	1	x	8
Sterile Supply Areas										
Cleaner's Room	CLRM-5-SJ				1	x	5	1	x	5
Disposal Room	DISP-8-SJ				1	x	10	1	x	10
Goods Receipt – Non Sterile Stock					1	x	15	1	x	25
Receiving Area – Used Items					1	x	20	1	x	35
Trolley Park					1	x	60	1	x	120
Trolley Wash					1	x	20	1	x	30
Decontaminating/Instrument Washing/Trolley Stripping					1	x	60	1	x	170
Instrument Sorting/Assembly/Packing					1	x	110	1	x	220
Sterilising – High Temperature					1	x	60	1	x	120
Sterilising – Low Temperature					1	x	16	1	x	30
Cooling Area					1	x	50	1	x	120
Store – Chemical					1	x	6	1	x	6
Store – Sterile Stock	STSS-20-SJ				1	x	65	1	x	125
Store – General	STGN-12-SJ STGN-20-SJ				1	x	12	1	x	20
Store - Loan Set Equipment Receiving/Dispatching	STGN-8-SJ STGN-12-SJ				1	x	9	1	x	12
Staff Areas										
Change – Staff (Male/Female)	CHST-12-SJ CHST-20-SJ				2	x	20	2	x	30
Meeting Room	MEET-L-15-SJ MEET-L-30-SJ				1	x	20	1	x	30
Office – Manager	OFF-S9-SJ				1	x	9	1	x	12
Staff Room					2	x	15	2	x	20
Net Department Total							634			1210
Circulation %							20			20
Grand Total							760.8			1452

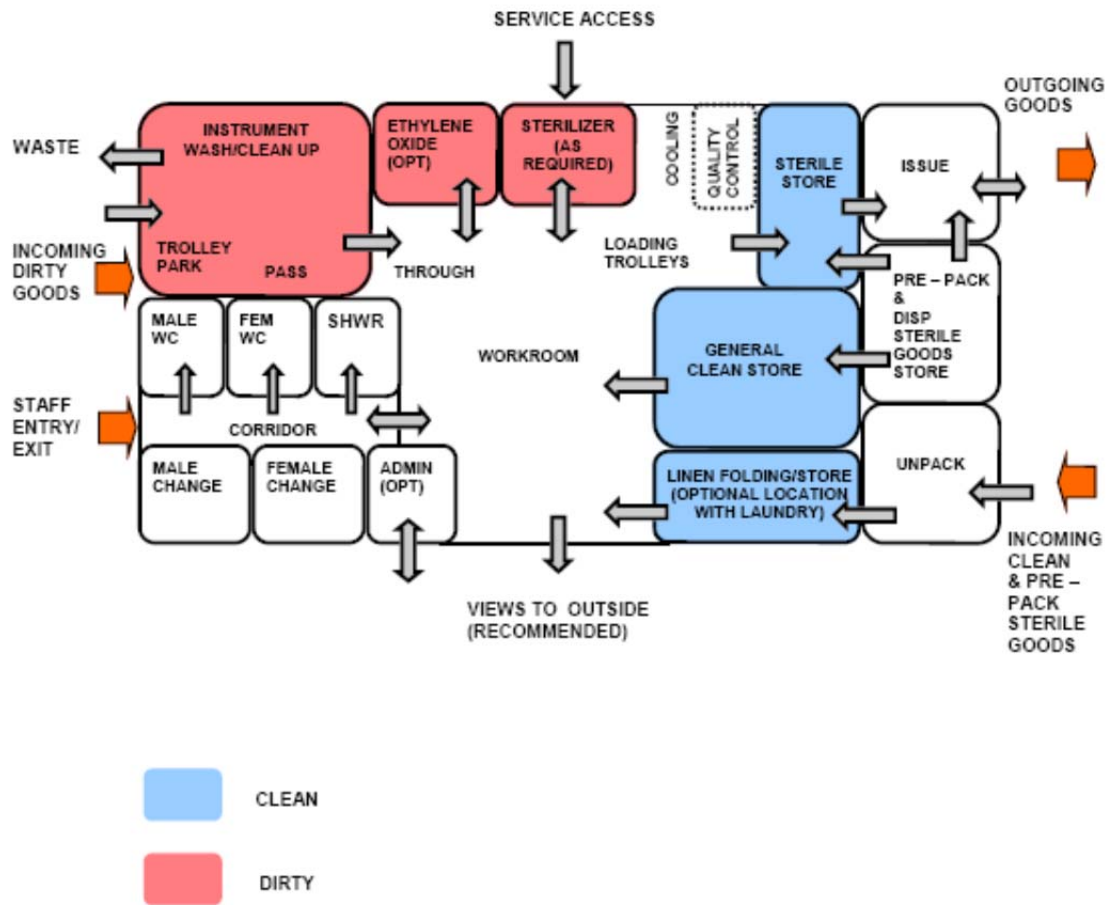
Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and

accessibility to each unit and may provide scope to reduce duplication of facilities.

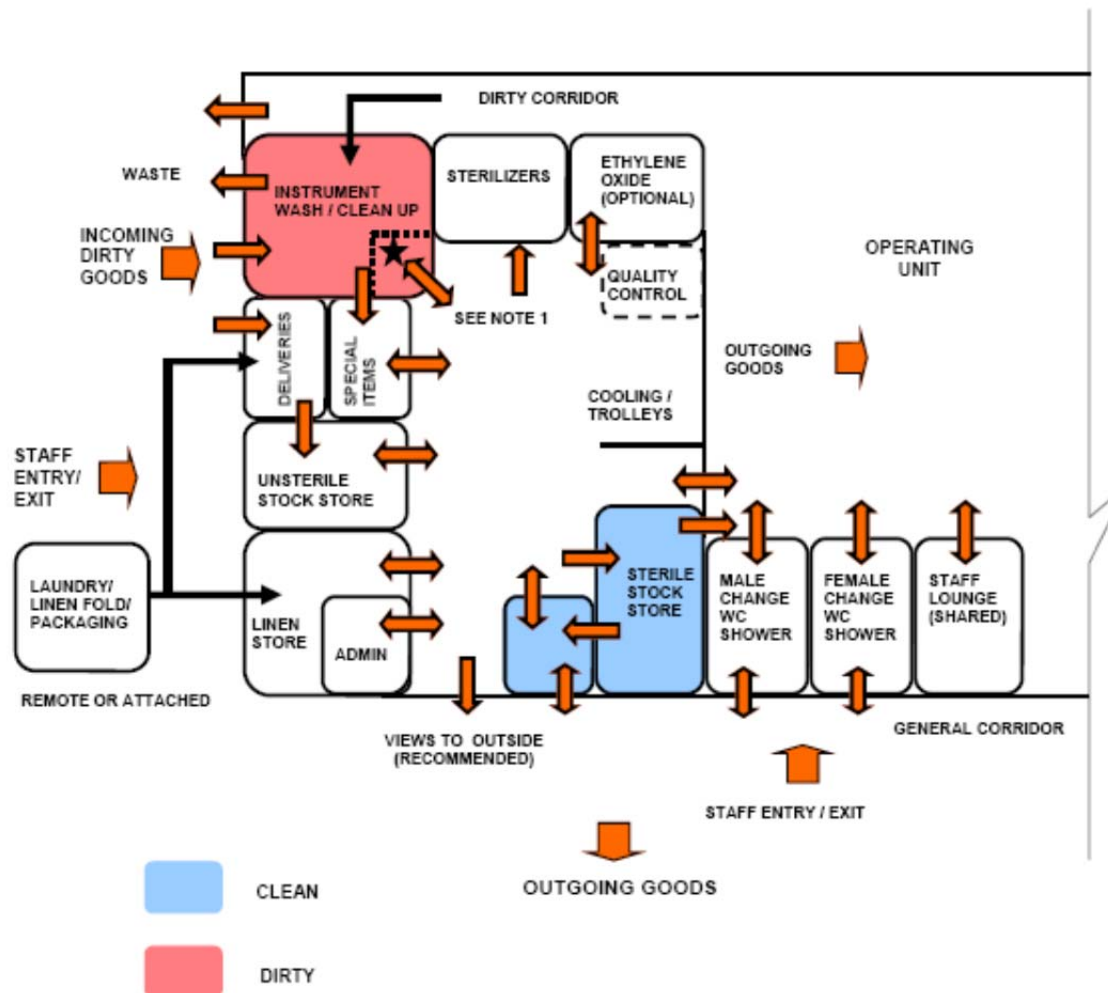
43.6 Functional Relationship Diagram





NOTE 1 DIRECT ACCESS (OTHER THAN PASS THROUGH) BETWEEN INSTRUMENT WASH AND THE WORKROOM SHOULD BE RESTRICTED OTHER THAN IN SMALL FACILITIES WHERE DUPLICATION OF STAFF FOR BOTH "CLEAN" AND "DIRTY" AREAS IS NOT POSSIBLE

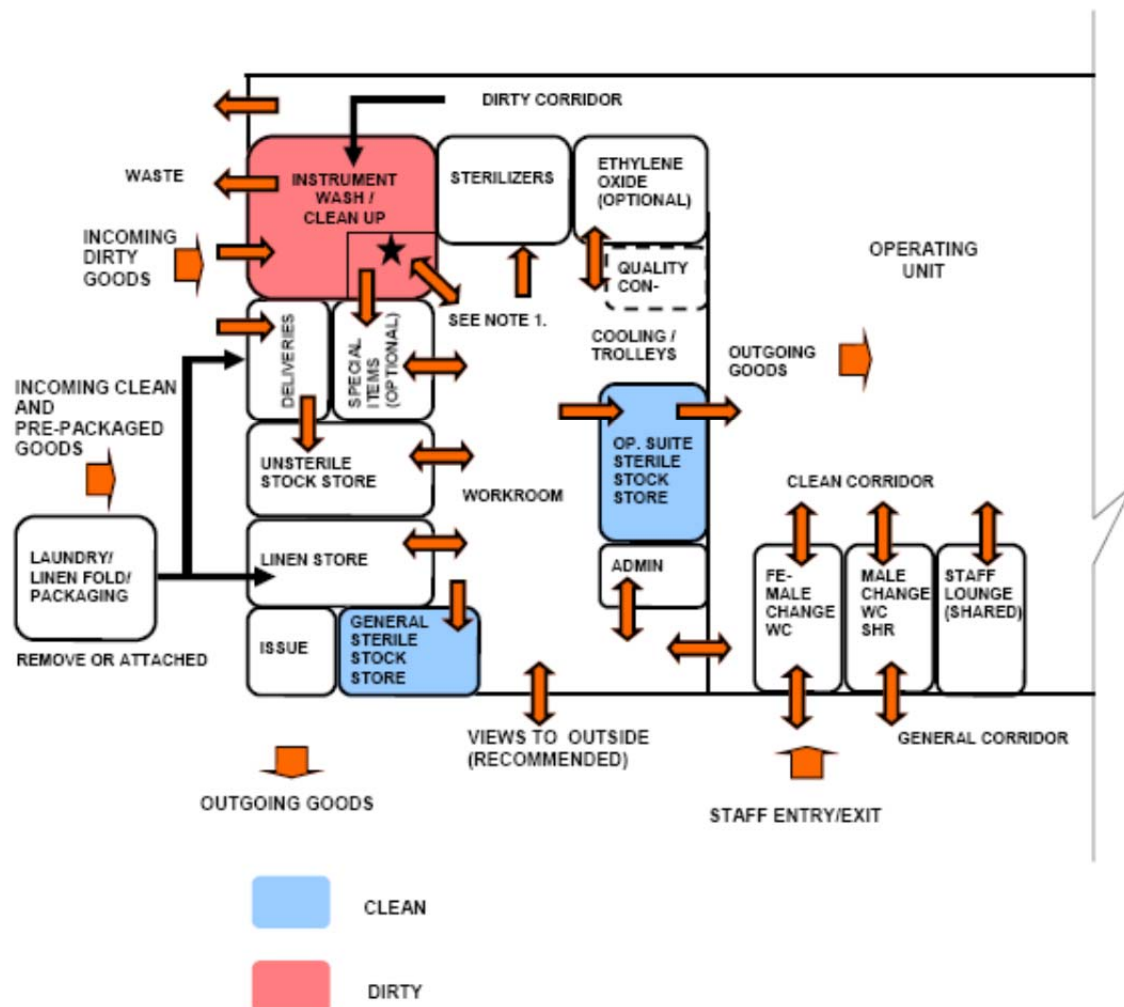
★ BARRIER ENTRY (SRUC - UP, GOWN, ETC PRIOR TO RE - ENTRY)





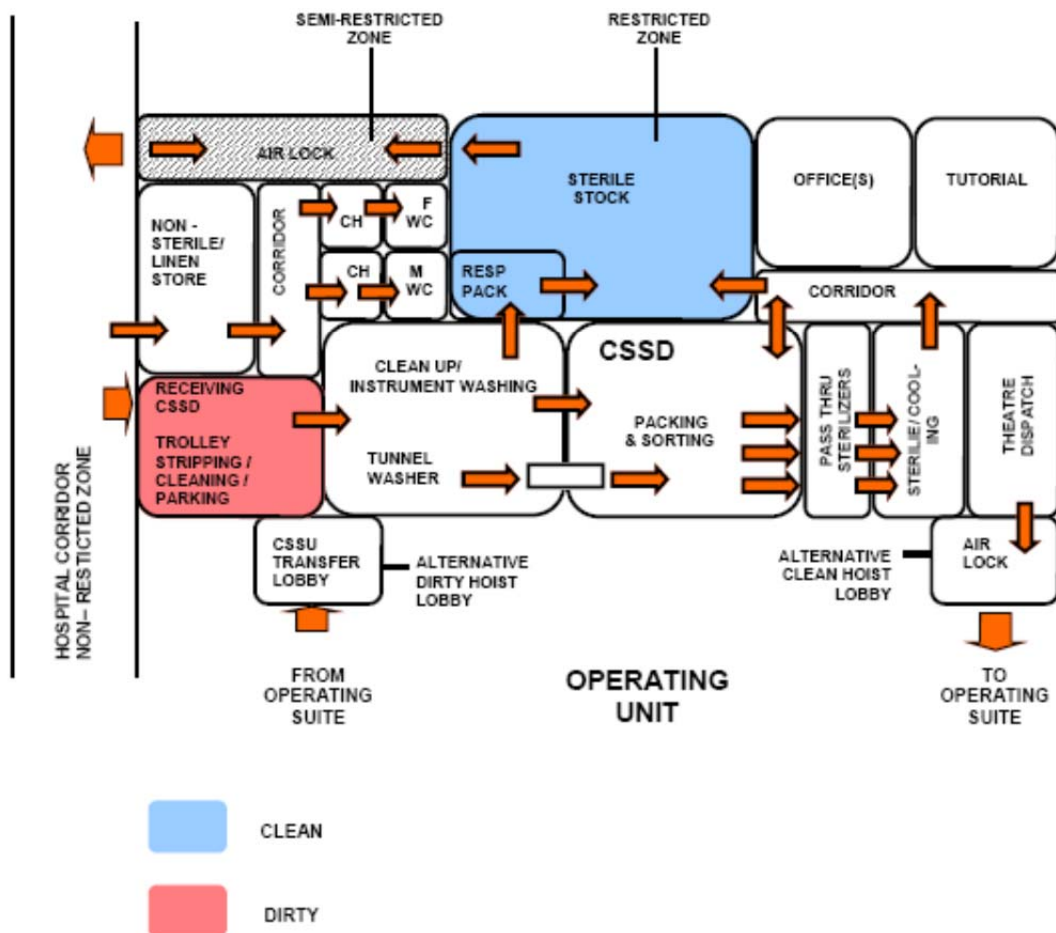
NOTE 1 DIRECT ACCESS (OTHER THAN PASS THROUGH) BETWEEN INSTRUMENT WASH AND THE WORKROOM SHOULD BE RESTRICTED OTHER THAN IN SMALL FACILITIES WHERE DUPLICATION OF STAFF FOR BOTH "CLEAN" AND "DIRTY" AREAS IS NOT POSSIBLE

★ BARRIER ENTRY (SRUC - UP, GOWN, ETC PRIOR TO RE - ENTRY)



NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY

NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEAN/DIRTY HOISTS
CSSU TRANSFER LOBBY MAY BE REPLACED WITH DIRTY HOIST LOBBY
THEATRE DISPATCH AIR-LOCK MAY BE REPLACED WITH CLEAN HOIST LOBBY



43.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). 'Part B – Health Facility Briefing and Planning 190 Sterile Supply Unit' Revision 4' 2010. Retrieved from website: http://healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20%2000190%20Sterile%20Supply%20Unit.pdf 2014
- Department of Health (DH) (UK). 'Health Briefing Note 13 Sterile Services Department' 2004. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN13321412x1992.pdf> 2014
- National Coordinating Committee on Therapeutic Goods (NCCTG) (Aus.). 'Standard for the Operation of Sterile Supply/Services in Health Care Facilities' 1995. Retrieved from website: <http://www.tga.gov.au/index.htm> 2014
- Standards Australia (Aus.). AS/NZS 4187 Cleaning, Disinfecting and Sterilizing Reusable Medical and Surgical Instruments and Equipment, and Maintenance of Associated Environments in Health Care Facilities' 2003. Retrieved from website: <http://www.saiglobal.com/PDFTemp/Previews/OSH/as/as4000/4100/4187.pdf> 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

44.0 Supply Unit

44.1 Introduction

44.1.1 Description

The Supply Unit shall provide for the following functions:

- Purchase and receipt of equipment and bulk medical supplies
- Storage of bulk dry goods, consumables, intravenous fluids, drugs and flammable liquids
- Storage of surplus hospital equipment and equipment awaiting repairs
- Deliveries to hospital units for regular restocking of unit based supplies.

44.2 Planning

44.2.1 Planning Models

Supply Unit will consist of a number rooms and areas for storing high volumes of goods, equipment and furniture as necessary. They may vary in sizes to suit the need of the Facility. These storage areas may be located within the Unit itself or away from the Unit.

44.2.2 Functional Areas

The Supply Unit may consist of the following Functional Areas:

- Loading Dock
- Receivals area
- Dispatch areas for stock awaiting collection
- Storage areas which may include bulk stores, palletted supplies, flammable stores, furniture and equipment, gas bottles and equipment for loan to outpatients
- Staff areas including Offices, Workstations and access to Staff Change and Toilets.

Receivals Area

- A dedicated Receivals Area shall be provided for the receipt, checking, sorting and temporary holding of incoming stock. The Receivals Area will require off street unloading facilities.
- The Receivals Area shall be located adjacent to the Loading Dock and with ready access to the Bulk Store.
- Security for incoming stock will require consideration. Visual control of the area from the Store Manager's office is recommended. The Receivals Area may include a workstation with computer.

Storage Areas – Equipment for Loan

- Additional storage areas for equipment for loan to patients and outpatients shall be provided in an amount not less than 5 percent of the total area of the Outpatient Facilities. This may be combined with and in addition to the general stores or be located in a central area within the Outpatient Unit. This storage requirement is generally for therapy equipment and mobility aids loaned to patients. A portion of this storage area may be provided offsite.

44.2.3 Functional Relationships

External

The Supply Unit may be located in a separate building onsite, but the preferred location is within the main building. A portion of the storage may be located offsite. Protection against inclement weather during transfer of supplies shall be provided. Fire protection and security are important considerations.

Internal

- The Bulk Store is the primary storage area for all delivered supplies and store prior to distribution to various Hospital Units. It shall be located with ready access to the Loading Dock area. This area requires security and controlled access.

44.3 Design

44.3.1 General

Loading Dock shall be a covered area for transport access to service Units for delivery or collection of goods and shall be zoned into clean and dirty areas. This may be shared between a number of Support Service Units (e.g. Catering Unit, Linen Handling, Supply Unit).

44.3.2 Environmental Considerations

Natural Light

Provide natural light to office and staff areas where possible.

44.3.3 Space Standards and Components

Ergonomics

Consideration shall be given to the need for manual handling devices such as dock levelers.

Refer also to Part C of these Guidelines.

Safety and Security

All entrances and exits shall be secured. An intercom or call bell should be located at the dock entrance area to announce deliveries when doors are closed. CCTV monitoring may be required in the delivery dock.

Finishes

Wall protection shall be installed to prevent damage to walls caused by all types of trolleys.

Refer also to Part C of these Guidelines.

Fixtures and Fittings

Refer to Part C of these Guidelines and Standard Components for information of fixtures and fittings.

Building Service Requirements

Refer to Part E of these Guidelines.

Infection Control

Refer to Part D of these Guidelines.

44.4 Components of the Unit

44.4.1 General

The Supply Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

44.4.2 Non Standard Components

Receivals Area

Description and Function

Refer to Planning – Functional Areas for a description of Receivals area. Sufficient space shall be provided in this area for sorting and unpacking.

Location and Relationships

The Receivals area shall be located with direct access to the Loading Dock.

Dispatch Area

Description and Function

The Dispatch area will be used to hold stores that are ready to be collected by external contractors or delivered to hospital units.

Location and Relationships

The Dispatch area shall be located with direct access to the Loading Dock.

44.5 Schedule of Accommodation

Typical Supply Unit at levels 3 to 6

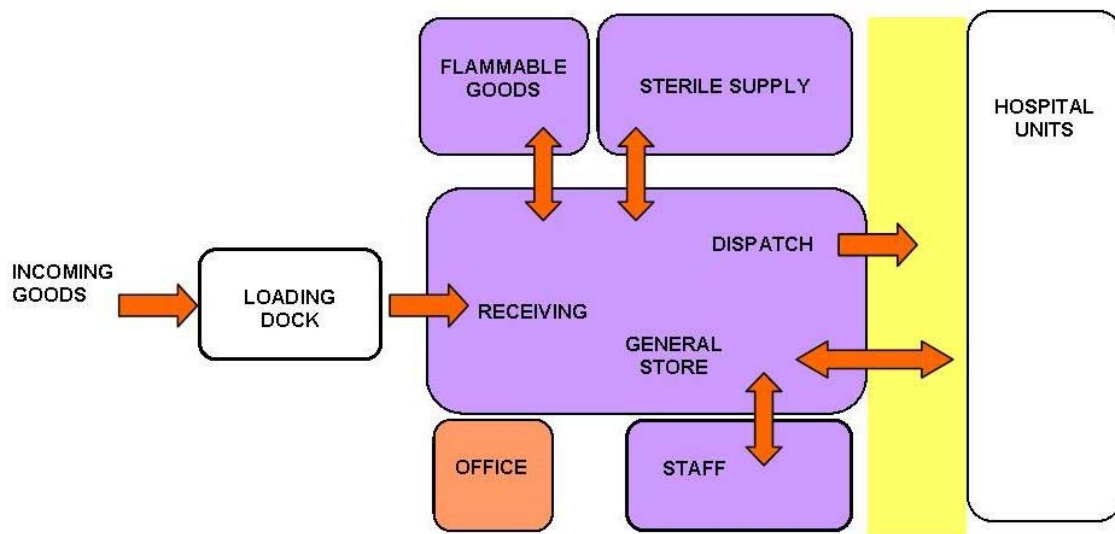
ROOM/ SPACE	Standard Component				Level 3/4 Qty x m ²	Level 5/6 Qty x m ²	Remarks
Operational Areas							
Loading Dock	LODK-SJ				1 x 0	1 x 0	Covered external area; separate zones for clean/ dirty loading
Staff Base	SSTN-20-SJ Similar				1 x 10	1 x 20	Supervision of Loading Dock
Waiting	WAIT-10-SJ Similar				1 x 5	1 x 5	
Goods Receipt- Sorting/ Holding/ Unpacking					1 x 20	1 x 50	Direct access to Loading Dock
Dispatch					1 x 20	1 x 30	Goods sending - Direct access to Loading Dock
Store - Filing/ Photocopy	STPS-8-SJ				1 x 8	1 x 8	Locate in Goods Receipt
Workstations - Stores Distribution	OFF-WS-SJ				1 x 16	1 x 32	4m2 per workstation; qty dependent on no. of staff
Store - Consumables	STBK-20-SJ Similar				1 x 150	1 x 400	Size dependent on amount of stock to be stored
Store - High Value Items	STBK-20-SJ Similar				1 x 50	1 x 250	Secure area; Size dependent on amount of stock to be stored
Store - Consignment Items	STBK-20-SJ Similar				1 x 20	1 x 100	Secure area; Size dependent on amount of stock to be stored
Store - Flammable Liquid	STFL-SJ Similar				1 x 6	1 x 15	
Store - IV Fluids	STGN-50-SJ				1 x 15	1 x 50	
Store - Drugs	STDR-5-SJ Similar				1 x 5	1 x 10	May be located in the Pharmacy Unit
Store - Gas Bottles	STGN-20-SJ Similar				1 x 10	1 x 30	May be located externally in a secure location; area depends on facility size
Bay - Emergency Shower with Eyewash	BES-SJ				1 x 2	1 x 2	Accessible to storage areas
Office Areas							
Office - Manager	OFF-S9-SJ Similar				1 x 12	1 x 12	
Office - Purchasing	OFF-S9-SJ				1 x 9	1 x 9	
Office - Workstation	OFF-WS-SJ				2 x 4	6 x 4	Administrative support; As required by operational policies
Meeting Room	MEET-L-15-SJ				shared		Meetings with company representatives, staff
Store Room - Sample	STBK-20-SJ				1 x 10	1 x 20	Holding of samples and trial products
Staff Areas							
Staff Room	SRM-25-SJ Similar				1 x 15	1 x 25	
Toilet - Staff	WCST-SJ				2 x 3		
Change - Staff						2 x 12	Toilets, shower, lockers, Separate Male/Female areas
Net Department Total					397.0	1131.0	
Circulation %					10	10	
Grand Total					436.7	1244.1	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the 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 staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

44.6 Functional Relationship Diagram



44.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- NSW Health (Aus.). 'Goods and Services Procurement Policy' 2013. Retrieved from website: http://www0.health.nsw.gov.au/policies/pd/2013/PD2013_023.html 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.

45.0 Waste Management Unit

45.1 Introduction

A hospital must have a Waste Management Unit for storing waste and used linen. The Waste Management Unit shall have the following features:

- Located close to all functional areas
- Accessible from within the unit and externally
- Fitted with a deadlock
- Located away from food and clean storage areas
- Not accessible to the public.

45.2 Planning

45.2.1 Functional Areas

The Waste Management Unit will include the following Functional Areas:

- Enclosed dust free workstation with a workbench, telephone and computer outlet to undertake recording and reporting functions; it should have visual control of the waste handling facility
- General dry waste skip or compactor area with direct contractor access for removal; general waste may be compacted on site
- General wet waste holding area
- Loading Dock and area with provision for front load bins
- Clinical waste holding and cool room
- Paper and recyclable materials collection
- Clean bin storage area; a variety of bins need to be stored pending distribution to the hospital units
- Storage space for consumables such as plastic bin liners and cleaning materials; could be located adjacent to the Work Management Station.

The following Functional Areas are optional requirements:

- An area for bin receiving with room for pull tug and cart trolley access and bin sorting may be required.
- A waste weighing and recording station, which includes a floor level digital weighbridge and bar code recorder, will be required if waste handling policy includes weighing and tracking.
- An upright freezer may be required to store tissue pending dispatch for incineration.

Bulk Waste Movement

The waste handling area will be frequently serviced by site and contractor's vehicles removing waste in carts and front loading bulk bins. It is important that adequate traffic access is provided for delivery and removal of all wastes. The access roads need to be adequate and turning areas uncongested. Noise levels may be significant during waste collection periods.

Bulk waste bin movement around the site and during the disposal process may require that the bins are accessed from a raised dock. A variable level platform may be considered as an option.

Clinical Waste

Contaminated waste bins should be located in strategic collection points for each clinical section. These collection points need to be easily accessible to the staff responsible for disposing of wastes, as well as to those servicing the facility in removing and replacing the bins. Clinical waste bins are collected and held in an air conditioned room or cool room in the Waste Holding area for removal by external contractors.

Contaminated waste bins should not be accessible to the public and should preferably be out of sight in a secure area.

Separate color-coded bins will be required for the disposal of sharps, human tissue, cytotoxic and radioactive materials.

Human tissue, cytotoxic and radioactive materials are only likely to occur in specific clinical units. Provision of receptacles and storage space for these materials will be required in the specific unit on an as-needed basis.

45.3 Design

45.3.1 *Functional Relationships*

Servicing of waste and linen storage areas should be undertaken via thoroughfares that avoid regular public, patients and staff facilities. Particular attention should be made to avoiding food handling and high profile public areas. A service lift devoted to materials movement within the hospital is highly recommended.

General

The Waste Management Unit should be designed to secure the material, reduce organic decomposition, contain odors and allow hygienic cleaning of storage areas and carts. Larger institutions may benefit from the installation of a mechanized bin washing facility. Liquid waste emanating from disinfection procedures may need to be stabilized before disposal in sewerage systems.

Infection Control

Walls and floors in areas used for bin storage should be sealed to allow easy cleaning. Hand-washing facilities should be located adjacent to the waste collection area where clinical waste is handled.

Building Service Requirements

Building service requirements for the Waste Management Unit will include the following:

- The temperature with the waste handling area should be maintained at a temperature that helps control odors; ideally a negative pressure environment should be provided to contain the spread of odors.
- The areas used to store waste materials need to be secure from vermin and rodent infestation.
- Hot and cold water outlets with a hose spray are the minimum requirements to be provided for cleaning waste holding areas and bins as required
- A high pressure wash down unit should be provided for the adequate cleaning of the area.
- Drainage from this area may include disinfectants; therefore liquid wastes may require special treatment prior to discharge.
- Walls and floors should be sealed to withstand the frequent wash downs and the floors graded to allow run off.

45.4 Components of the Unit

45.4.1 General

The Waste Management Unit will contain a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.

45.4.2 Non-Standard Components

Introduction

Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

Bin Washing Area

Description and Function

The Bin Washing Area will provide an area and facilities for washing of bins as required. Bins may be cleaned offsite by external waste removal contractors.

Considerations

Hot and cold water outlets with a hose spray are the minimum requirements to be provided for cleaning bins as required. Reticulated steam, pressure cleaning systems and air blow drying facilities may also be considered.

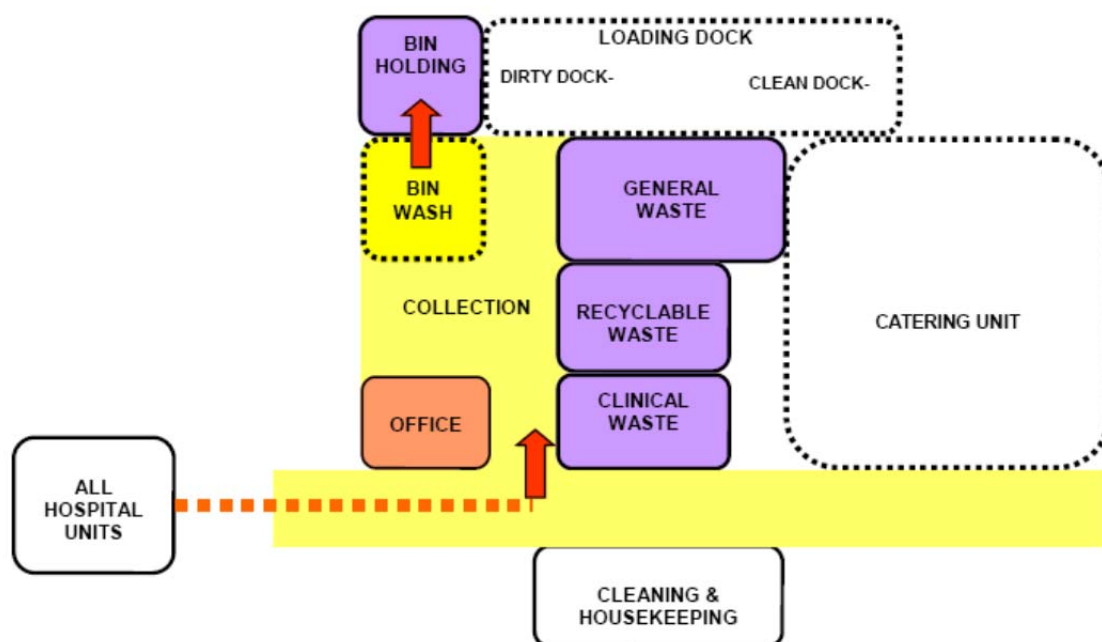
45.5 Schedule of Accommodation

Typical Waste Management Unit at levels 3 to 6

ROOM/ SPACE	Standard Component				Level 3/4 Qty x m ²			Level 5/6 Qty x m ²			Remarks
Loading Dock - Shared											
Loading Dock	LODK-SJ				1	x	0	1	x	0	External Area under cover; clean and dirty zones
Waste Handling											
General Waste Hold	WACO-SJ Similar				1	x	75	1	x	150	Including general wet and dry waste; size depends on size of facility
Clinical Waste Hold	DISP-8-SJ Similar				1	x	100	1	x	200	Includes sharps bins; air-conditioned; size depends on size of facility
Flammable/ Chemical Waste Hold	STFL-SJ Similar				1	x	9	1	x	40	Size depends on amount of material to be stored
Recycled Waste Hold	WACO-SJ Similar				1	x	40	1	x	80	Paper, cardboard, plastics etc
Bin Washing					1	x	10	1	x	20	Bin washing may be done off-site
Clean Bin Holding	DISP-8-SJ Similar				1	x	15	1	x	30	Includes sharps bins
Staff Areas											
Office - Manager	OFF-S9-SJ Similar				1	x	12	1	x	12	
Office - Supervisor	OFF-S9-SJ							1	x	9	Qty depends on staff numbers
Office - Workstation	OFF-WS-SJ				1	x	5	1	x	5	Administrative & Clerical support staff
Interview/ Meeting Room	MEET-9-SJ				shared			1	x	9	
Meeting Room	MEET-L-15-SJ Similar				shared			1	x	20	May share with an adjacent Unit
Staff Room	SRM-25-SJ				shared			1	x	25	May share with an adjacent Unit
Toilet - Staff	WCST-SJ				2	x	3	2	x	3	May use general staff change/ toilet facilities if located close
Net Department Total					272.0			606.0			
Circulation %					20			20			
Grand Total					326.4			727.2			

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the Service Plan and the Operational Policies of the Unit
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- The Facility Guidelines Institute (US). '*Guidelines for Design and Construction of Health Care Facilities*' 2010 Edition. Retrieved from website: www.fgiguideines.org 2014.

46.0 Appendix A – Role Delineation Level Guide

Note: Appendix A attached overleaf.

SHCC Application Guidelines

Role Delineation Guide and Matrix



INTRODUCTION

Role Delineation refers to a level of service that describes the complexity of the clinical activities undertaken by that service. The level is chiefly determined by the presence of medical, nursing and other health care personnel who hold qualifications compatible with the defined level of care.

Each level of service has associated minimum standards, support services and staffing profiles considered appropriate.

Role delineation is a process which ensures that clinical services are provided safely, and are appropriately supported by the provision of adequate staffing numbers and profiles, minimum safety standards and other requirements.

The aim of this Guide is to provide a consistent language which health care providers, planners and health officials can use when describing health services. The Guide also acts as a tool for planning, review and approval of health facilities.

Levels of Service range from 0 to 6 for each major clinical activity or support service associated with health facilities with Level 0 referring to the lowest complexity service and Level 6 describing the most complex.

Not all services which are provided by health care facilities are described in the Role Delineation Guide - only the core services for hospitals and community health facilities. Those services not identified will generally follow the Role Delineation of the particular hospital or facility they are applicable to.

A hospital or health care facility is deemed to be at a particular level when the majority of clinical and support services provided are of that particular level.

It is possible to determine the role delineation level of a particular hospital component or the entire hospital between two defined levels, eg between levels 4 & 5. This usually applies to existing facilities which may have minor deficiencies in certain areas compared with the full definition of a role delineation level.

This Guide does not attempt to describe all the services which are provided by Health Care Facilities, but confines itself to those that are widely considered to be the core services for Hospitals and Community Health Care Facilities.

SPECIALITIES AND SUBSPECIALITIES					
MEDICAL			SURGICAL		
Generalist	Type I Subspecialties	Type II Subspecialties	Generalist	Type I Subspecialties	Type II Subspecialties
<ul style="list-style-type: none"> Physician 	<ul style="list-style-type: none"> Cardiology Dermatology Endocrinology Gastroenterology Geriatric medicine Neurology Renal Medicine Rheumatology Venereology Paediatrics Respiratory Medicine 	<ul style="list-style-type: none"> Clinical Haematology Clinical Microbiology Immunology Medical Oncology Palliative Care Radiotherapeutic Oncology Genetics Clinical Infectious Diseases 	<ul style="list-style-type: none"> General Surgeon 	<ul style="list-style-type: none"> Ear, Nose and Throat Obstetrics and Gynaecology Ophthalmology Orthopaedics Urology 	<ul style="list-style-type: none"> Cardiothoracic Neurosurgery Plastic surgery Transplant Surgery Vascular Surgery Burns

ROLE DELINEATION LEVEL (RDL) – INPATIENT SERVICES	
1	Outpatient care – RN and visiting GP. In remote areas possibly support via telephone
2	Outpatient and inpatient care – plus 24 hour GP cover and limited visiting general specialists for outpatient services only
3	Outpatient and inpatient care – plus visiting general specialists (low risk obstetrics and elective surgery)
4	Outpatient and inpatient care – plus resident general specialists plus visiting Type I subspecialists, plus some junior medical staff
5	Outpatient and inpatient care – plus visiting Type II subspecialists plus some medical staffing plus HDU. May include some research and training.
6	Statewide services, including Type II subspecialists and research/education/training

ROLE DELINEATION LEVEL (RDL) – AMBULATORY CARE SERVICES	
1	GP only
2	GP and outpatient clinic at discharge hospital. Limited access to generalist domiciliary nursing
3	Visiting specialist. Some hospital avoidance/hospital substitution. Some early discharge services. Access to generalist domiciliary nursing and some allied health
4	Links with HACC. Increasing range and complexity of hospital avoidance/substitution/early discharge. Chronic disease programs. Visiting medical specialist. Good access to generalist allied health/nursing staff
5	Specialist medical/nursing/allied health staff. Increased range and complexity. HACC integration. Enhanced diagnostics. Teaching and training role
6	Research role. Fully integrated ambulatory care services. Fully integrated diagnostics

ABBREVIATIONS							
ED	Emergency Department	DUE's	Drug Usage Evaluation	ICU	Intensive Care Unit	RMO	Registered Medical Officer
BBV	Blood Borne	EEG	Electro-encephalogram	LUCS	Lower Uterine Caesarian Section	RM	Registered Midwife
CCU	Coronary Care Unit	EMG	Electro-myelogram	MRI	Magnetic Resonance Image	RN	Registered Nurse
CD	Communicable Disease	ENT	Ear, nose and throat	O&G	Obstetrics and Gynaecology	SP	Speech Therapist
CDC	Child Development Centre	GEM	Geriatric Evaluation Management	OR	Operating Room	SRN	Senior Registered Nurse
CHN	Child Health Nurse	GP	General Practitioner	OT	Occupational Therapist	STI	Sexually Transmitted Infection
COPMI	Children of Parents with Mental Illness	HACC	Home and Community Care	PET	Positron Emission Tomography		
CT	Computerised Axial Tomography	HDU	High Dependency Unit	PT	Physiotherapist		

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Medical Services						
General	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician/general internal medicine specialist and maybe some Type I specialists 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician and GPs Outpatient consultation by visiting Type I sub-specialists Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician and GPs and some/all Type I sub-specialists Visiting Type II sub-specialists Registrar/RMO/Intern CCU/HDU Regional referral role Some undergraduate teaching Emergency services available by on call specialist 	As for level 5 plus: <ul style="list-style-type: none"> Full range of medical sub-specialists Type I and II and emergency medical services Statewide referral role in certain subspecialties Undergraduate and postgraduate teaching role
Cardiology	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician and possibly cardiologist 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting cardiologist Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident cardiologist Registrar/RMO/Intern CCU/HDU Includes Cath Labs Regional referral role Access specialist SRN Some undergraduate teaching and possibly some research role Links with level 5 rehabilitation service Emergency services available by on call cardiologists 	As for level 5 plus: <ul style="list-style-type: none"> Full range cardiac services including cardiac sub-specialties and emergency services CCU/HDU Statewide referral role Undergraduate and postgraduate teaching role Research role
Endocrinology	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting endocrinologist Diabetes education service and integrated hospital/community diabetes management service Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident endocrinologist Registrar/RMO Regional referral role Access to specialist SRN Diabetes education service and integrated hospital/community diabetes management service Some undergraduate teaching and possibly research role Links to level 5 rehabilitation service Emergency care available from on call specialist 	As for level 5 plus: <ul style="list-style-type: none"> Full range of endocrinology services, with endocrinology department and emergency care Statewide referral role Undergraduate and postgraduate teaching role Research role

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Geriatric	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP and possibly visiting general physician 24 hour cover by RN Possibly respite care 	As for level 2 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Resident GP and visiting general physician 24 hour cover by RN and by GP Respite care and limited rehabilitation services 	As for level 3 plus: <ul style="list-style-type: none"> Access to consultant physician specialising in geriatric medicine Active assessment and rehabilitation services for inpatients and outpatients 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident specialist Registrar/RMO Link with inpatient rehabilitation unit Inpatient assessment unit and domiciliary consultant services Access to specialist SRN Some undergraduate teaching Links with geriatric psychiatry services 	As for level 5 plus: <ul style="list-style-type: none"> Resident geriatrician Undergraduate and postgraduate teaching role Research role Statewide referral role
Neurology	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP Inpatient Care 24 hour cover by RN Outpatient care by visiting general physician and possibly neurologist 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting neurologist Links with at least level 4 geriatric and rehabilitation services Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident neurologist Registrar/RMO Regional referral role Access to specialist SRN Some undergraduate teaching and possibly some research role Neurosurgery support, EMG, nerve conduction, evoked responses and EEG on site Emergency services provided by on call neurologist 	As for level 5 plus: <ul style="list-style-type: none"> Full range of neurology services, with neurology department and emergency care Statewide referral role Undergraduate and postgraduate teaching role Access to CT and MRI and possibly PET Research role
Renal – general	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> General physician (likely to be visiting) inpatient care GP care 24 hour cover by RN Outpatient care by visiting general physician and possibly renal specialist May accommodate self care dialysis in-patients 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting renal specialist Self care dialysis unit with links to larger renal unit Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident renal specialists Registrar/RMO Emergency services provided by on call specialist Regional referral role Access to specialist SRN Some undergraduate teaching and possibly some research role All types of dialysis available and renal biopsies performed Provides a full range of dialysis access surgery 	As for level 5 plus: <ul style="list-style-type: none"> Full range of renal services, with renal department and emergency care services Renal transplantation available Coordinated by full time renal unit manager Statewide referral role and statewide geographical area based service delivery role Undergraduate and postgraduate teaching role Research role Provides a full range of dialysis access surgery

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Renal – dialysis		<ul style="list-style-type: none"> Services offered by a general health service/clinic Care under supervision of GP with or without RN Self-caring stable patients Outreach support for home dialysis, possibly under remote direction from a Level 5 or Level 6 dialysis facility 	As for level 2 plus: <ul style="list-style-type: none"> Community-based satellite service Predominately self-caring stable patients Specialist RN Visiting specialist for more complicated cases Some assessment services 	As for level 3 plus: <ul style="list-style-type: none"> General hospital-based satellite service Visiting specialist or general physician with nephrology skills More complicated cases Assessment services Specialist RN Access to on-site allied health support (eg; Dietitians and Social Workers) 	As for level 4 plus: <ul style="list-style-type: none"> Resident specialist Access to specialist SRN More complicated cases Assessment services Regional referral role Access to on-site allied health support (eg; Dietitians and Social Workers) 	As for level 5 plus: <ul style="list-style-type: none"> Resident specialist More complicated cases Provides acute dialysis when necessary Assessment services Undergraduate and postgraduate teaching role Statewide centre of excellence and referral role Access to specialist SRN Access to on-site allied health support (eg; Dietitians and Social Workers) Complicated assessment and treatment of unstable co-morbidities
Oncology	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician and possibly oncologist 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting oncologist Links with radiotherapy, palliative care and pain management services Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident oncologist Registrar/RMO Regional referral role Access to specialist SNR Some undergraduate teaching and possibly some research role Multidisciplinary management of patients including case conferences. Links with palliative care services and may have pain management clinic Emergency care available Access to specialist SRN 	As for level 5 plus: <ul style="list-style-type: none"> Full range of oncology services, with oncology department and emergency services Statewide referral role Undergraduate and postgraduate teaching role Research role Access to specialist SNR
Radiation Oncology				<ul style="list-style-type: none"> Visiting radiation oncologist working in conjunction with comprehensive cancer service No treatment facilities 	As for level 4 plus: <ul style="list-style-type: none"> Basic radiation oncology service with minimum equipment - possibly only one machine Has access to radiation oncologists, physicists and radiation therapists Access to specialist SRN Links to level 5 palliative care service 	As for level 5 plus: <ul style="list-style-type: none"> Full range of radiation oncology services, located in principle referral centre with access to all subspecialties Statewide referral role Undergraduate and postgraduate teaching role Research role Fully integrated computerised planning, treatment and verification systems Mechanical and biomedical support facilities

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Respiratory	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician and possibly respiratory specialist 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting respiratory specialist Specialist RN 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident respiratory specialist Registrar/RMO Regional referral role Access to specialist SRN Some undergraduate teaching and possibly some research role Access to level 5 cardiology and cardiothoracic surgery Emergency care provided by on call specialist 	As for level 5 plus: <ul style="list-style-type: none"> Full range of respiratory services, with respiratory department and emergency care Statewide referral role Undergraduate and postgraduate teaching role Research role Has a respiratory function laboratory Access to specialist SRN
Palliative Care	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Management by GPs and generalist nurses 24 hour coverage Linkage with community based services provided by Silver Chain Nursing Association 	As for level 2 plus: <ul style="list-style-type: none"> Inpatient care by accredited GP or specialist physician 24 hour cover clinical nurse with experience in palliative care services Outpatient care by visiting general physician and possibly palliative care specialist 	As for level 3 plus: <ul style="list-style-type: none"> Palliative care inpatient beds managed by GP or medical practitioner specialising in palliative care Access to specialist SRN Seamless linkage to Silver Chain Nursing Association who provide community based palliative care 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident palliative care physician Registrar/RMO Regional referral role Access to specialist SRN Undergraduate teaching and some research role Integrated community/hospice consultative service under direction of palliative care physician Links with oncology, radiotherapy, anaesthetics, psychiatry, pain clinic and rehabilitation 	As for level 5 plus: <ul style="list-style-type: none"> Full range of palliative care services with palliative care specialist providing consultancy to other units referral hospitals Emergency services available Statewide referral role Undergraduate and postgraduate teaching role Has staff with conjoint appointments with hospice Access to specialist SRN
Gastroenterology	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Inpatient and outpatient care Visiting GP 24 hour cover by RN 	As for level 2 plus: <ul style="list-style-type: none"> GP inpatient care 24 hour cover by RN Outpatient care by visiting general physician and possibly gastroenterologist Possibly have fibre optic endoscopy by accredited medical practitioner 	As for level 3 plus: <ul style="list-style-type: none"> Inpatient care by resident general physician Outpatient consultation by visiting gastroenterologist Regular endoscopy service including colonoscopy Specialist RN Gastroenterology services provided by integrated physician and surgical services 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient care by resident gastroenterologist Registrar/RMO Regional referral role Access to specialist SRN Some undergraduate teaching and possibly some research role Full endoscopy service Emergency care available by on call specialist 	As for level 5 plus: <ul style="list-style-type: none"> Full range of gastroenterology services, with gastroenterology department and emergency care Statewide referral role Undergraduate and postgraduate teaching role Research role Access to specialist SRN

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Surgical Services						
General	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> Minor outpatient and same day procedures only by GP or visiting general surgeon Inpatient care following surgery elsewhere 	As for level 2 plus: <ul style="list-style-type: none"> Day surgery type cases, uncomplicated elective surgery and emergency surgery GP and visiting general surgical specialist Visiting anaesthetist with visiting surgeon Theatre trained RN 	As for level 3 plus: <ul style="list-style-type: none"> Surgery by GPs, general surgeons and visiting Type I sub-specialists Broad range of day and general surgery and some specialty surgery Theatre trained nurses More than 1 theatre May include high-dependency nursing unit 	As for level 4 plus: <ul style="list-style-type: none"> General surgeons Some/all Type I sub-specialists Visiting Type II sub-specialists Registrar/RMO ICU Regional referral role May have some teaching and research role Undertakes most emergency surgery May include kidney transplantation in selected sites 	As for level 5 plus: <ul style="list-style-type: none"> Full range of surgical sub-specialists Type I and II Statewide referral role Undergraduate and post graduate teaching role Research role Undertakes emergency surgery May include kidney and liver transplantation in selected sites
ENT				<ul style="list-style-type: none"> Common and intermediate surgery done on low or moderate risk patients by visiting ENT surgeon No neuro-optic or intracranial surgery 	As for level 4 plus: <ul style="list-style-type: none"> Diagnostic services and surgery on low, moderate and high risk patients by on call ENT surgeon Access to specialist SRN Regional referral role May have some teaching and research role Links with oncology, radiotherapy and palliative care services Limited neuro-optic surgery 	As for level 5 plus: <ul style="list-style-type: none"> Ability to deal with all cases including full range of complex cases in association with other specialists including neuro-optic and intracranial procedures, as long as level 6 neurosurgery available on site Emergency services available Statewide referral role Undergraduate and post graduate teaching role Research role ENT registrar/RMO
Gynaecology		<ul style="list-style-type: none"> Minor outpatient and same day procedures only by GP or visiting general surgeon Inpatient care following surgery elsewhere 	As for level 2 plus: <ul style="list-style-type: none"> Common and intermediate procedures on low or moderate risk patients by visiting general surgeon 	As for level 3 plus: <ul style="list-style-type: none"> Common, intermediate and some major procedures on low and moderate risk patients performed by visiting gynaecologists Links with oncology, radiotherapy and palliative care services 	As for level 4 plus: <ul style="list-style-type: none"> Diagnostic services and surgery on low, moderate and high risk patients by on call gynaecologists Access to specialist SRN May have gynaecology registrar/RMO Regional referral role May have some teaching and research role 	As for level 5 plus: <ul style="list-style-type: none"> Ability to deal with all cases including full range of complex cases in association with other specialists including reproductive endocrinology, infertility, gynaecological malignancy Full emergency services Statewide referral role Undergraduate and post graduate teaching role Research role Gynaecology registrar/RMO and possibly registrars in subspecialties

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Ophthalmology			<ul style="list-style-type: none"> Minor procedures and diagnosis on low risk patients by visiting ophthalmic surgeon 	As for level 3 plus: <ul style="list-style-type: none"> Procedures on low or moderate risk patients performed by visiting ophthalmic surgeon Access to orthoptists 	As for level 4 plus: <ul style="list-style-type: none"> Diagnostic services and surgery on low, moderate and high risk patients by on call ophthalmic surgeon Orthoptists on staff May have teaching and research role 	As for level 5 plus: <ul style="list-style-type: none"> Ability to deal with all cases including full range of complex cases in association with other specialists Full emergency services Ophthalmology registrar/RMO Access to specialist SRN Able to undertake neuro-ophthalmology where level 6 neurosurgery available on site Access to level 5 radiotherapy Statewide referral role Undergraduate and post graduate teaching role Research role
Orthopaedics		<ul style="list-style-type: none"> Minor reduction of fractures performed on low risk patients by GP or visiting general surgeon with experience in orthopedics Orthopaedic consultation available 	As for level 2 plus: <ul style="list-style-type: none"> Common and intermediate procedures on low or moderate risk patients performed by visiting orthopaedic or general surgeon credentialed in orthopaedics General orthopaedic equipment and theatre x-ray available Preferably access to specialist SRN 	As for level 3 plus: <ul style="list-style-type: none"> Common and intermediate procedures on low or moderate risk patients performed by on call orthopaedic surgeon Access to level 4 rehabilitation service Access to specialist SRN 	As for level 4 plus: <ul style="list-style-type: none"> Full range of major diagnostic and procedures on low, moderate and high risk patients performed by on call orthopaedic surgeons May provide regional services May have teaching and research role Orthopaedic registrar on call Access to subspecialties Link to level 5 rehabilitation service Access to specialist SRN 	As for level 5 plus: <ul style="list-style-type: none"> Ability to deal with all cases including full range of complex cases (and all emergency) in association with other specialists Statewide referral role Undergraduate and post graduate teaching role Research role Link to level 6 rehabilitation role Access to specialist SRN
Urology			<ul style="list-style-type: none"> Common and intermediate procedures on low or moderate risk patients performed by visiting urologist or general surgeon credentialed in urology 	As for level 3 plus: <ul style="list-style-type: none"> Some major procedures on low or moderate risk patients performed by visiting urologist Has links with oncology, radiotherapy and palliative care services 	As for level 4 plus: <ul style="list-style-type: none"> Full range of major diagnostic and procedures on low, moderate and high risk patients performed by on call urologist Access to specialist SRN May provide regional services and teaching and research role 	As for level 5 plus: <ul style="list-style-type: none"> Ability to deal with all cases including full range of complex cases (and all emergency) in association with other specialists Urology Registrar/RMO Statewide referral role Undergraduate and post graduate teaching role Research role

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Cardiothoracic				<ul style="list-style-type: none"> • Elective and emergency thoracic procedures by visiting/on call thoracic surgeons 	As for level 4 plus: <ul style="list-style-type: none"> • Elective and emergency thoracic and elective cardiothoracic procedures by visiting/on call cardiothoracic surgeons • Level 5 rehabilitation services available on site • Link with palliative care and pain management services • Access to specialist SRN • Some regional referral role • ICU/CCU 	As for level 5 plus: <ul style="list-style-type: none"> • Elective & emergency thoracic & cardiothoracic procedures by cardiothoracic surgeons • Able to deal with highly complex diagnosis & treatment in association with other specialties • Cardiothoracic registrar/RMO • Statewide referral role • Undergraduate & post graduate teaching role • Research role • Level 6 ICU • To include heart & lung transplantation at selected sites
Vascular surgery			<ul style="list-style-type: none"> • Common minor and uncomplicated elective vascular surgery • Performed by visiting vascular or general surgeons 	As for level 3 plus: <ul style="list-style-type: none"> • Common, intermediate and some major procedures on low and moderate risk patients performed by visiting vascular surgeons or general surgeons • Pre-operative rehabilitation specialist consultant available 	As for level 4 plus: <ul style="list-style-type: none"> • Diagnostic services and surgery on low, moderate and high risk patients by on call vascular or general surgeon • May have regional referral • May have some teaching and training and research role • Link with level 5 rehabilitation services 	As for level 5 plus: <ul style="list-style-type: none"> • Ability to deal with all cases including full range of complex cases in association with other specialists • Provides all emergency services • On call vascular surgeon • Access to specialist SNR • Statewide referral role • Undergraduate and post graduate teaching role • Research role
Neurosurgery				<ul style="list-style-type: none"> • Minor head injuries dealt with by general surgeon • Neurosurgical consultation available • Operating equipment adequate for emergency neurosurgery • Link with level 4 rehabilitation services 	As for level 4 plus: <ul style="list-style-type: none"> • Diagnostic services and surgery on low, moderate and high risk patients by on call neurosurgeon • Designated neurosurgical beds • Access to specialist SRN • 24 hour access to CT • Link with brain and spinal injury rehabilitation • May have some teaching & research role 	As for level 5 plus: <ul style="list-style-type: none"> • Able to deal with all cases including all emergency cases • Neurosurgical ward & neuro-surgical high dependency/ICU • Neurosurgery registrar/RMO • Link with level 5 rehabilitation service • Access to specialist SRN • Statewide referral role • Undergraduate & post graduate teaching role • Research role
Plastics		<ul style="list-style-type: none"> • Minor outpatients and same day procedures by GP 	As for level 2 plus: <ul style="list-style-type: none"> • As for level 2 but procedures may require visiting plastics surgeon 	As for level 3 plus: <ul style="list-style-type: none"> • Selected minor procedures on low and moderate risk patients by visiting plastic surgeons 	As for level 4 plus: <ul style="list-style-type: none"> • Diagnostic services & surgery on low, moderate & high risk patients by on call plastic surgeons • Link with level 5 rehabilitation services • May have some teaching & training role • Visiting burns L6 specialist 	As for level 5 plus: <ul style="list-style-type: none"> • Able to deal with all cases including all emergency cases • Plastics registrar/RMO • Access to specialist SRN • Statewide referral role • Undergraduate & post graduate teaching role • May have research role

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Burns		<ul style="list-style-type: none"> Minor outpatient and same day procedures only by GP Able to provide emergency stabilisation service for burns 	As for level 2 plus: <ul style="list-style-type: none"> General surgeon able to provide services for minor/moderate burns to small areas of body 	As for level 3 plus: <ul style="list-style-type: none"> General surgeon providing services for minor/moderate burns to small parts of body Access to specialist SNR Links to level 4 rehabilitation services 	As for level 4 plus: <ul style="list-style-type: none"> General surgeon providing services for minor/moderate burns to small parts of body 24 hour on call registrar Access to specialist SRN Links to level 5 rehabilitation services 	As for level 5 plus: <ul style="list-style-type: none"> Full range of burns services, with a special burns unit, including all emergency cases 24 hour on call cover Statewide referral role Emergency care services provided by on call specialist Access to specialist SRN Undergraduate and post graduate teaching role Research role
Emergency/Trauma Services						
Emergency Department				<ul style="list-style-type: none"> Local GPs rostered to provide 24 hour cover with service by RN Emergency operating theatre facilities Resuscitation and stabilisation On-call generalist specialists Access to specialist SRN 	As for level 4 plus: <ul style="list-style-type: none"> Medically staffed 24 hours per day Medical and surgical sub-specialists available on-call Accepts transfers from other hospitals in region Access to ICU and CCU facilities Access to specialist SRN 	As for level 5 plus: <ul style="list-style-type: none"> Emergency medicine consultant on duty 24 hours per day* Statewide referral role Access to specialist SRN Backup from full range of medical and surgical specialists and diagnostic services ICU and CCU facilities
Urgent Primary Care	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed Basic resuscitation equipment and drugs 	As for level 1 plus: <ul style="list-style-type: none"> Limited GP cover Services by RN Resuscitation and stabilisation capability 	As for level 2 plus: <ul style="list-style-type: none"> Local GPs rostered to provide 24 hour cover with service by RN Minor procedure capability Resuscitation and stabilisation capability 			
Obstetrics Services						
Obstetrics	<ul style="list-style-type: none"> No planned deliveries Antenatal, post natal care is carried out by GPs (potentially visiting) with or without the assistance of RN/RM depending on the type of patient care needed 	As for level 1 plus: <ul style="list-style-type: none"> No planned deliveries Inpatient care following delivery elsewhere Antenatal, post natal care is carried out by GPs with or without the assistance of RN/RM depending on the type of patient care needed 	As for level 2 plus: <ul style="list-style-type: none"> Planned deliveries of low risk mothers/babies Service by GPs and trained mid-wives LUCS transferred elsewhere but must be within safe timeframe Visiting obstetrician Access to Level 1 Special Care Nursery 	As for level 3 plus: <ul style="list-style-type: none"> Planned deliveries of low and moderate risk mothers/babies Access to accredited obstetric and paediatric trained doctors Able to cope with sudden unexpected risks Caesarian section capability Access to Level 2A Special Care Nursery 	As for level 4 plus: <ul style="list-style-type: none"> Deliveries of low, moderate and high risk mothers/babies Able to cope with most complications Service provided by specialist obstetricians and paediatricians to high risk patients Registrar/RMO Access to specialist paediatricians/obstetricians and trained nurses and allied health Regional referral role Access to Level 2B Special Care Nursery 	As for level 5 plus: <ul style="list-style-type: none"> Specialist obstetric unit for state Obstetric registrar and midwives training Access to specialist SRN 24 hour cover by obstetricians and paediatricians Access to Level 3 Special Care Nursery

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Paediatrics Services						
Paediatrics	<ul style="list-style-type: none"> Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed Stabilisation and first aid 	As for level 1 plus: <ul style="list-style-type: none"> Paediatric medical beds – care by general physician On call paediatric advice No surgery 	As for level 2 plus: <ul style="list-style-type: none"> Outpatient care by visiting paediatrician Limited surgery by visiting paediatric surgeon or surgeon with paediatric skills Day surgery, uncomplicated elective surgery and emergency surgery Designated paediatric medical ward Inpatient medical care by GP or general physician or paediatrician 	As for level 3 plus: <ul style="list-style-type: none"> Outpatient care by resident paediatrician Limited surgery by visiting paediatric surgeon Day surgery, uncomplicated elective surgery and emergency surgery Designated medical ward Inpatient medical care by visiting paediatrician Access to specialist SRN Possibly Resident/RMO rotations from Level 5 or 6 facility 	As for level 4 plus: <ul style="list-style-type: none"> Inpatient and outpatient care by resident paediatrician Registrar/RMO Regional referral role Some undergraduate teaching Range of paediatric surgery Resident paediatric surgeon 24 hour on call paediatric anaesthetist Neonatal ICU Access to specialist SRN 	As for level 5 plus: <ul style="list-style-type: none"> Inpatient and outpatient care by resident paediatrician Registrar/RMO Statewide referral role Undergraduate and postgraduate teaching role Full range of paediatric surgery Resident paediatric surgeon Neonatal ICU Operates in specialist facility Access to specialist SRN
Neonatology			<ul style="list-style-type: none"> Obstetricians, paediatricians and anaesthetists on call 24 hours Normal low risk pregnancies and deliveries and management of newborns > 36 weeks gestation with minimal complications Level 1 Special Care Nursery Basic life support for neonates available with access to 24 hour anaesthetic and neonatal resuscitation service 	As for level 3 plus: <ul style="list-style-type: none"> Obstetricians and paediatricians on call 24 hours Low to moderate risk pregnancies and deliveries and management of newborns > 34 weeks gestation with minimal complications Level 2A Special Care Nursery with low dependency patients and low-level Oxygen therapy and airway management Basic life support for neonates available with access to 24 hr anaesthetic and neonatal resuscitation service Provides short-term mechanical ventilation (<6 hours) pending transfer 	As for level 4 plus: <ul style="list-style-type: none"> Has access to clinical and diagnostic paediatric subspecialties Obstetricians and paediatricians on call 24 hours Medical officer(s) on site 24 hours Moderate to high-risk pregnancies and deliveries and management of newborns > 32 weeks gestation with minimal complications Level 2B Special Care Nursery with high dependency patients and provision of short term mechanical ventilation (< 6 hours) pending transfer Access to specialist SRN Multi-disciplinary follow up service provided Role in post graduate medical and nursing education 	As for level 5 plus: <ul style="list-style-type: none"> Has access to clinical and diagnostic paediatric subspecialties Medical officer(s) on site 24 hours High-risk, high dependency pregnancies and deliveries Management of newborns < 32 weeks gestation Level 3 Special Care Nursery with high dependency patients and provision of medium -long term mechanical ventilation and full life-support Undertakes neonatal surgery and care for complex congenital and metabolic diseases of the newborn – note currently at PMH Access to specialist SRN On-site multi-disciplinary services Role in post graduate medical and nursing education Has neonatology research

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Rehabilitation Services						
Rehabilitation	<ul style="list-style-type: none"> Visiting consultative services provided on request Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed 		As for level 1 plus: <ul style="list-style-type: none"> Regular visiting services provided by district/regional allied health staff Limited level allied health availability 	As for level 3 plus: <ul style="list-style-type: none"> Full time salaried physiotherapy, occupational therapy Speech and social work services District referral role Limited day hospital program 	As for level 4 plus: <ul style="list-style-type: none"> Rehab program for both inpatient and outpatient Linkages between regions and designated metropolitan hospitals Have a day hospital with: <ul style="list-style-type: none"> Memory clinic Falls Clinic Continence clinic A GEM unit if ED services collocated Part time services of Geriatrician¹ Rehab Specialist with experienced RN/PT/ OT/SP/ Dietitian Collocated with psychogeriatric services 	As for level 5 plus: <ul style="list-style-type: none"> Will have GEM unit Have access to acute care Full time rehab specialist Full time geriatrician as per footnote of level 5 Tertiary level rehab services (Statewide Rehab Centre) only in one level 6 hospital with a full time clinical director
Continuing Care Services						
Community assessment	<ul style="list-style-type: none"> Visiting services on as required basis 		As for level 1 plus: <ul style="list-style-type: none"> Regular visiting service supported by limited local allied health 	As for level 3 plus: <ul style="list-style-type: none"> Visiting service supported by local allied health professionals Most disciplines available 	As for level 4 plus: <ul style="list-style-type: none"> Home base for team with regional / district responsibilities - part time geriatrician 	
Prevention and Promotion Services						
Environmental Health Health Protection including food, air, water, radiation, pharmaceutical, pesticides, mosquito borne diseases.	<ul style="list-style-type: none"> Local Government responsibility with access to DOH statewide unit when required 		As for level 1 plus: <ul style="list-style-type: none"> Assist statewide services investigation of local incidents 	As for level 3 plus: <ul style="list-style-type: none"> Coordinate investigations of local incidents 	As for level 4 plus: <ul style="list-style-type: none"> Comprehensive multidisciplinary Population Health Unit 	As for level 5 plus: <ul style="list-style-type: none"> Statewide program, planning, and coordination roles Dedicated officers with statewide responsibilities and legislated service functions
Communicable Disease Control <ul style="list-style-type: none"> Includes food and water borne diseases, vaccination programs, STI's, BBV's and indigenous diseases 	<ul style="list-style-type: none"> Visiting primary care providers, including GPs and Community Health Nurses 	As for level 1 plus: <ul style="list-style-type: none"> Resident primary care provider supporting state programs including GPs and Community Health Nurses 		As for level 2 plus: <ul style="list-style-type: none"> CDC Nurse in Population Health Unit 	As for level 4 plus: <ul style="list-style-type: none"> Comprehensive multidisciplinary Population Health Unit with disease control doctor and capacity to: <ul style="list-style-type: none"> Investigate cases/ outbreaks Perform contact tracing Coordinate regional vaccination programs etc 	As for level 5 plus: <ul style="list-style-type: none"> Statewide program, planning, and coordination roles Dedicated officers with statewide responsibilities and legislated service functions

¹ Geriatrician should ideally be full time, with part time spent in Level 6 supporting GEM and acute care, and part time in level 5 supporting in rehabilitation unit/day hospital and GEM unit.

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Child and Community Health <ul style="list-style-type: none"> Community Health Services, School Health Services, Child Health Services, Child Development Services 	<ul style="list-style-type: none"> Visiting primary care providers, including GPs and Community Health Nurses 	As for level 1 plus: <ul style="list-style-type: none"> Resident primary care providers with access to statewide program initiatives 		As for level 2 plus: <ul style="list-style-type: none"> Community Health Centre/ Child Development Centre 	As for level 4 plus: <ul style="list-style-type: none"> Comprehensive multidisciplinary Population Health Unit with community health staff 	As for level 5 plus: <ul style="list-style-type: none"> Statewide Program, planning, and coordination roles
Health Promotion <ul style="list-style-type: none"> Primary prevention including lifestyle diseases and injury prevention 	<ul style="list-style-type: none"> Visiting primary care providers with access to DOH statewide program resources. Exposure to mass media campaigns 		As for level 1 plus: <ul style="list-style-type: none"> Resident primary care providers with awareness of statewide program initiatives 		As for level 3 plus: <ul style="list-style-type: none"> Comprehensive multidisciplinary Population Health Unit including resident officers with health promotion training 	As for level 5 plus: <ul style="list-style-type: none"> Statewide Program, planning, and coordination roles Dedicated officers with statewide responsibilities
Breastscreen <ul style="list-style-type: none"> Screening and assessment 		<ul style="list-style-type: none"> Visiting service by mobile screening unit All images read by specialist radiologist 	As for level 2 plus: <ul style="list-style-type: none"> Fixed site screening clinic 		As for level 3 plus: <ul style="list-style-type: none"> Assessment by an experienced multidisciplinary team of screen detected abnormalities 	As for level 5 plus: <ul style="list-style-type: none"> Statewide program, planning, and coordination roles Dedicated officers with statewide responsibilities
Cervical <ul style="list-style-type: none"> Health promotion, screening awareness, maintain cervical cytology register 	<ul style="list-style-type: none"> Visiting primary care providers 		As for level 1 plus: <ul style="list-style-type: none"> Resident primary care providers, including GPs 		As for level 3 plus: <ul style="list-style-type: none"> Pathology laboratories trained in the collation and reporting of Cervical Cytology Registry data 	As for level 5 plus: <ul style="list-style-type: none"> Statewide Program, planning, and coordination roles Dedicated officers with statewide responsibilities
Genomics <ul style="list-style-type: none"> Education, research 	<ul style="list-style-type: none"> Visiting primary care providers with no specific program 	As for level 1 plus: <ul style="list-style-type: none"> Visiting primary care providers with access to statewide education and information 	As for level 2 plus: <ul style="list-style-type: none"> Resident primary care providers with access to statewide education and information 			As for level 5 plus: <ul style="list-style-type: none"> Statewide Program, planning, and coordination roles Dedicated officers with statewide responsibilities
Primary Care Services						
GP based Community nursing	<ul style="list-style-type: none"> Visiting GP or GP by phone Some visiting allied health Other services such as child health and post natal care by RN 		As for level 1 plus: <ul style="list-style-type: none"> Resident GPs Some visiting Type I specialists (outpatients) Resident or visiting physiotherapy Other visiting allied health Other services by RN/CHN (resident) 	As for level 3 plus: <ul style="list-style-type: none"> Resident GPs Most visiting Type I sub-specialists Majority allied health available Resident community nursing specialist 	As for level 4 plus: <ul style="list-style-type: none"> Resident GPs Resident some/all Type I sub-specialists Visiting Type II sub-specialists Full range of allied health Extensive community nursing service 	As for level 5 plus: <ul style="list-style-type: none"> Resident GPs Full range of Type I and II sub-specialists Full range of allied health Extensive community nursing service Research and teaching role

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Ambulatory Care Services						
Surgical	<ul style="list-style-type: none"> • GP only 	As for level 1 plus: <ul style="list-style-type: none"> • GP and specialist outpatient clinic at discharge hospital • Limited access to generalist domiciliary nursing 	As for level 2 plus: <ul style="list-style-type: none"> • Visiting specialist • Some hospital avoidance/hospital substitution • Some early discharge services • Access to generalist domiciliary nursing and some allied health 	As for level 3 plus: <ul style="list-style-type: none"> • Links with HACC • Increasing range and complexity of hospital avoidance/substitution/early discharge • Chronic disease programs • Visiting medical specialist • Good access to generalist allied health/nursing staff 	As for level 4 plus: <ul style="list-style-type: none"> • Specialist medical/nursing/allied health staff • Increased range and complexity • HACC integration • Enhanced diagnostics • Teaching and training role 	As for level 5 plus: <ul style="list-style-type: none"> • Research role • Fully integrated ambulatory care services • Fully integrated diagnostics • Includes regional subacute centre/service
Medical	<ul style="list-style-type: none"> • GP only 	As for level 1 plus: <ul style="list-style-type: none"> • GP and specialist outpatient clinic at discharge hospital • Limited access to generalist domiciliary nursing 	As for level 2 plus: <ul style="list-style-type: none"> • Visiting specialist • Some hospital avoidance/hospital substitution • Some early discharge services • Access to generalist domiciliary nursing and some allied health 	As for level 3 plus: <ul style="list-style-type: none"> • Links with HACC • Increasing range and complexity of hospital avoidance/substitution/early discharge • Chronic disease programs • Visiting medical specialist • Good access to generalist allied health/nursing staff 	As for level 4 plus: <ul style="list-style-type: none"> • Specialist medical/nursing/allied health staff • Increased range and complexity • HACC integration • Enhanced diagnostics • Teaching and training role 	As for level 5 plus: <ul style="list-style-type: none"> • Research role • Fully integrated ambulatory care services • Fully integrated diagnostics • Includes regional subacute centre/service
Rehabilitation	<ul style="list-style-type: none"> • GP only 	As for level 1 plus: <ul style="list-style-type: none"> • GP and specialist outpatient clinic at discharge hospital • Limited access to generalist domiciliary nursing 	As for level 2 plus: <ul style="list-style-type: none"> • Visiting specialist • Some hospital avoidance/hospital substitution • Some early discharge services • Access to generalist domiciliary nursing and some allied health 	As for level 3 plus: <ul style="list-style-type: none"> • Links with HACC • Increasing range and complexity of hospital avoidance/substitution/early discharge • Chronic disease programs • Visiting medical specialist • Good access to generalist allied health/nursing staff 	As for level 4 plus: <ul style="list-style-type: none"> • Specialist medical/nursing/allied health staff • Increased range and complexity • HACC integration • Enhanced diagnostics • Teaching and training role 	As for level 5 plus: <ul style="list-style-type: none"> • Research role • Fully integrated ambulatory care services • Fully integrated diagnostics • Includes regional subacute centre/service
Continuing Care	<ul style="list-style-type: none"> • GP only 	As for level 1 plus: <ul style="list-style-type: none"> • GP and specialist outpatient clinic at discharge hospital • Limited access to generalist domiciliary nursing 	As for level 2 plus: <ul style="list-style-type: none"> • Visiting specialist • Some hospital avoidance/hospital substitution • Some early discharge services • Access to generalist domiciliary nursing and some allied health 	As for level 3 plus: <ul style="list-style-type: none"> • Links with HACC • Increasing range and complexity of hospital avoidance/substitution/early discharge • Chronic disease programs • Resident/visiting medical specialist • Good access to generalist allied health/nursing staff 	As for level 4 plus: <ul style="list-style-type: none"> • Specialist medical/nursing/allied health staff • Increased range and complexity • HACC integration • Enhanced diagnostics • Teaching and training role 	As for level 5 plus: <ul style="list-style-type: none"> • Research role • Fully integrated ambulatory care services • Fully integrated diagnostics • Includes regional subacute centre/service

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Paediatrics	<ul style="list-style-type: none"> GP only 	As for level 1 plus: <ul style="list-style-type: none"> GP and specialist outpatient clinic at discharge hospital Limited access to generalist domiciliary nursing 	As for level 2 plus: <ul style="list-style-type: none"> Visiting specialist Some hospital avoidance/hospital substitution Some early discharge services Access to generalist domiciliary nursing and some allied health 	As for level 3 plus: <ul style="list-style-type: none"> Increasing range and complexity of hospital avoidance/substitution/early discharge Chronic disease programs Visiting medical specialist Good access to generalist allied health/nursing staff 	As for level 4 plus: <ul style="list-style-type: none"> Specialist medical/nursing/allied health staff Increased range and complexity Enhanced diagnostics Teaching and training role 	As for level 5 plus: <ul style="list-style-type: none"> Research role Fully integrated ambulatory care services Fully integrated diagnostics Includes regional subacute centre/service
Obstetrics	<ul style="list-style-type: none"> Community based GP with or without community nursing post only 	As for level 1 plus: <ul style="list-style-type: none"> No planned deliveries Outpatient clinic for antenatal and post natal care by visiting GP obstetrician with or without registered midwife Limited access to generalist domiciliary nursing care 	As for level 2 plus: <ul style="list-style-type: none"> GP obstetrician and midwifery services Visiting specialist obstetrician Outpatient clinic for antenatal and post natal care Some early discharge programs Access to domiciliary nursing care and visiting midwife Basic ultrasound and pathology services 	As for level 3 plus: <ul style="list-style-type: none"> Specialist obstetrician Early discharge programs Home visiting midwives Diagnostic ultrasound with specialist radiologist offering antenatal screening Full range pathology services Visiting genetic services 	As for level 4 plus: <ul style="list-style-type: none"> Specialist obstetrician Specialised antenatal and postnatal education and support programs Teaching and training role Enhanced diagnostics 	As for level 5 plus: <ul style="list-style-type: none"> Research role State obstetric support service/unit (SOSU) Specialist obstetric services including maternal foetal medicine subspecialty, obstetric medicine, genetic services Fully integrated ambulatory care services (social work, psychological medicine etc) Fully integrated diagnostic services

Mental Health Ambulatory Care Services are covered under Mental Health Services

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Child and Adolescents Mental Health, Adult Mental Health, Older Persons Mental Health Services						
Mental health promotion and illness prevention	<ul style="list-style-type: none"> Promotion of mental health in the community Eg. Improving mental health literacy, resource centres and stigma reduction strategies. Eg. Exposure to mass media campaigns 	As for level 1 plus: <ul style="list-style-type: none"> Universal prevention Identification of risk factors for mental illness and intervention at the population level before initial onset of a disorder Eg. Programs to prevent bullying in schools, Aussie Optimism. Triple P Eg. Local community activity that improves quality of life including Mental Health Week 	As for level 2 plus: <ul style="list-style-type: none"> Selective prevention Targeting population groups at risk of developing a disorder to prevent its onset Eg. Support for COPMI 	As for level 3 plus: <ul style="list-style-type: none"> Indicated prevention Targeting high risk individuals who may have detectable signs and symptoms foreshadowing mental illness Eg. Suicide prevention strategies 	As for level 4 plus: <ul style="list-style-type: none"> Early intervention for those with early signs and symptoms of a mental disorder or a first episode of mental illness. Eg. Early episode psychosis programs 	As for level 5 plus: <ul style="list-style-type: none"> Relapse prevention for those identified with mental illness GP(s) and local mental health team member(s) with visiting psychiatrist Eg. Changes (RPH relapse prevention program) and Wellness Recovery Action Plan (WRAP) a consumer led program
Emergency services (hospital based)			<ul style="list-style-type: none"> Mainstream providers telephone support from on call team member /psychiatric emergency team 	As for level 3 plus: <ul style="list-style-type: none"> Limited ED mental health liaison nursing service 24 hour on call liaison psychiatrist medical service 	As for level 4 plus: <ul style="list-style-type: none"> On duty ED mental health liaison nursing service On duty psychiatrist medical service 	As for level 5 plus: <ul style="list-style-type: none"> On duty ED mental health liaison nursing service On duty psychiatrist medical service Acute admission unit service
Inpatient services			<ul style="list-style-type: none"> General hospital inpatient services without designated mental health beds, providing mental health care for voluntary patients admitted under management of GP or other medical officer 	As for level 3 plus: <ul style="list-style-type: none"> Special mental health care suite with designated beds Generally operated on demand without permanent staff (rooming in services) Facility is unauthorised 	As for level 4 plus: <ul style="list-style-type: none"> Dedicated acute mental health hospital or designated mental health inpatient units in acute hospitals Psychiatrist consultation available and on call 24 hours Comprehensive team 	As for level 5 plus: <ul style="list-style-type: none"> Specialist statewide services provided A strong academic and research component in the service
Community clinical based services	<ul style="list-style-type: none"> Local primary health 	As for level 1 plus: <ul style="list-style-type: none"> Visiting mental health professional(s) 	As for level 2 plus: <ul style="list-style-type: none"> Locally based mental health team Not Multidisciplinary 	As for level 3 plus: <ul style="list-style-type: none"> Community mental health program with multidisciplinary team Services generally provided during core business hours only Limited range assessment and treatment programs provided 	As for level 4 plus: <ul style="list-style-type: none"> Community mental health program with multidisciplinary team 7 day a week cover Extensive range of assessment and treatment programs Some limited after hours services may be provided Eg. Multisystemic Therapy for families Eg. Intensive clinical rehabilitation 	As for level 5 plus: <ul style="list-style-type: none"> Community mental health program with multidisciplinary team providing 24 hour / 7 day a week cover Specialist statewide services provided Eg. Psychiatric emergency services Eg. Specialist residential service Eg. Forensic discharge service
Day therapy services (hospital based)			<ul style="list-style-type: none"> Some limited services 	As for level 3 plus: <ul style="list-style-type: none"> Limited range of day therapy services 	As for level 4 plus: <ul style="list-style-type: none"> Extensive range of day therapy services 	As for level 5 plus: <ul style="list-style-type: none"> Multidisciplinary team Statewide or specialist referral role

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Community non clinical support programs		<ul style="list-style-type: none"> GP and community health centre based screening and early detection of mental illness Eg. GPs and community health centres 	As for level 2 plus: <ul style="list-style-type: none"> Nonclinical community support (including psychosocial, disability, recreational, & respite to individuals) in their own homes & the community up to 10 hours per week Independent living program (with supportive landlord) Drop-in centres and facilitating recreational activities Carer respite Carer support & education Independent living skills support They do not all relate to respite. This is the range of community support services 	As for level 3 plus: <ul style="list-style-type: none"> Non clinical community support up to 30 hours per week Psychosocial support Services for youth at risk of homelessness and long term mental illness 	As for level 4 plus: <ul style="list-style-type: none"> Non clinical community support up to 40 hours per week Intensive disability support for adults at risk of homelessness Consumer respite/crisis care Supported accommodation services 	As for level 5 plus: <ul style="list-style-type: none"> Non clinical 24 hour mental health accommodation and rehabilitation in residential accommodation
Intermediate care			<ul style="list-style-type: none"> Clinically supervised service in person's home 	As for level 3 plus: <ul style="list-style-type: none"> Clinically supervised service in a facility or person's home Sub acute care 	As for level 4 plus: <ul style="list-style-type: none"> Clinically staffed 24/7 Unauthorised facility Sub acute care 	As for level 5 plus: <ul style="list-style-type: none"> Clinically staffed 24/7 Authorised facility Statewide referral role Sub acute care
Statewide Mental Health Services						
Forensic					<ul style="list-style-type: none"> Specialist mental health program with multidisciplinary team Extensive range of assessment and treatment programs including forensic discharge & accommodation program 	As for level 5 plus: <ul style="list-style-type: none"> Specialist statewide inpatient services provided A strong academic and research component in the service
Maternal					<ul style="list-style-type: none"> Specialist mental health program with multidisciplinary team Extensive range of assessment & treatment programs 	As for level 5 plus: <ul style="list-style-type: none"> Specialist statewide inpatient services provided A strong academic and research component in the service
Neurological					<ul style="list-style-type: none"> Specialist mental health program with multidisciplinary team Extensive range of assessment and treatment programs 	As for level 5 plus: <ul style="list-style-type: none"> Specialist statewide inpatient services provided Includes ABI and intellectual disability A strong academic and research component in the service
Alcohol and Drug					<ul style="list-style-type: none"> Specialist mental health program with multidisciplinary team Extensive range of assessment and treatment programs 	As for level 5 plus: <ul style="list-style-type: none"> Specialist statewide inpatient services provided

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Other • Eating disorder					<ul style="list-style-type: none"> • Specialist mental health program with multidisciplinary team • Extensive range of assessment and treatment programs 	As for level 5 plus: <ul style="list-style-type: none"> • Specialist statewide inpatient services provided • A strong academic and research component in the service

Clinical Support Services						
Pathology	<ul style="list-style-type: none"> Specimen collection by RN Specimens transmittal to referral laboratory 	As for level 1 plus: <ul style="list-style-type: none"> Specimen collection by RN Specimens transmittal to referral laboratory 	As for level 2 plus: <ul style="list-style-type: none"> Specimen collection by RN for transmittal to referral laboratory Able to perform a defined range urgent tests 	As for level 3 plus: <ul style="list-style-type: none"> Performs range of basic tests May have blood gas analyser Blood bank Services surrounding Full time laboratory technologists 	As for level 4 plus: <ul style="list-style-type: none"> 24 hour on site service Pathology department Full time pathologist Microbiology and histopathology available Regional referral role 	As for level 5 plus: <ul style="list-style-type: none"> Statewide referral role Teaching and research role Specialist registrar in training
Radiology		<ul style="list-style-type: none"> Mobile service and limited to x-ray of extremities, chest, abdomen Interpreted by onsite doctor/health professional 	As for level 2 plus: <ul style="list-style-type: none"> As level 2, plus has on site designated room Radiographer in attendance who has regular access to radiological consultation Simple ultrasound capacity for foetal monitoring Teleradiology facility available 	As for level 3 plus: <ul style="list-style-type: none"> As level 3, with facilities for general and fluoroscopy, in addition to mobile CD for wards, OR and ED Auto film processing capacity Mobile image intensifier in OR and/or ICU/CCU Staff radiographer on call 24 hours Visiting specialist radiological appointment Always has ultrasound May have CT scanner Registered nurse as required Teleradiology facility available 	As for level 4 plus: <ul style="list-style-type: none"> As Level 4 plus established Department Full ultrasound Has radiologist in charge May have radiology registrar Has registered nurse 24 hour on site service for urgent x-rays CT scanner on site or locally available PACs available Possible MRI 	As for level 5 plus: <ul style="list-style-type: none"> As level 5, plus special rooms for digital angiography, neuroradiology etc CT scan and full ultrasound service available 24 hours Always has MRI and digital angiography Has radiology registrar and post graduate fellows Performs invasive procedures PACs available
Pharmacy	<ul style="list-style-type: none"> Service oversight by pharmacist located elsewhere Drugs supplied on individual prescription from community pharmacy 	As for level 1 plus: <ul style="list-style-type: none"> Visiting pharmacist from regional hospital Minimal clinical service Staff education Drugs provided by regional hospital 	As for level 2 plus: <ul style="list-style-type: none"> At least one pharmacist employed full time Pharmacy drug purchasing and distribution to inpatients in accordance with state drug policies and formulary May provide pharmacy undergraduate and postgraduate teaching role May have regional role 	As for level 3 plus: <ul style="list-style-type: none"> More than one pharmacist employed Emergency after hours on-call service Limited clinical pharmacy service to inpatients Limited outpatients dispensing Develops local drug policies Participates in hospital committees May provide pharmacy undergraduate and postgraduate teaching role May have regional role 	As for level 4 plus: <ul style="list-style-type: none"> 6 day service and on call service Inpatient and outpatient services Drug information Extensive clinical pharmacy service to inpatients Intravenous additive and/or cytotoxic drug preparation Extemporaneous dispensing Support for clinical trials Undergraduate and postgraduate pharmacy teaching role May have regional role 	As for level 5 plus: <ul style="list-style-type: none"> 7 day service 24 hour on-call service Specialist pharmacist positions eg oncology, cardiology, paediatrics, geriatrics, psychiatry, drug information Involved in research, clinical trials, clinical review, DUE's, Provide undergraduate and postgraduate teaching role Product evaluation with drug use/policy development

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
ICU/HDU			<ul style="list-style-type: none"> • High dependency area for general ward patients requiring observation over and above that available in general ward area 	As for level 3 plus: <ul style="list-style-type: none"> • Provides basic, multisystem life support usually for less than a 24 hour period • Able to provide mechanical ventilation and simple cardiovascular monitoring for a period of at least several hours, or care of a similar nature • Specialist RN • Access to specialist SRN 	As for level 4 plus: <ul style="list-style-type: none"> • Provides complex, multisystem life support • Able to provide mechanical ventilation, extracorporeal renal support services and invasive cardiovascular monitoring for a period of at least several days, or for longer periods in remote areas or care of a similar nature • Specialist RN • Access to specialist SRN 	As for level 5 plus: <ul style="list-style-type: none"> • Provides complex, multisystem life support for an indefinite period • Tertiary referral centre for patients in need of intensive care services • Have extensive backup laboratory and clinical service facilities to support the tertiary referral role • Able to provide mechanical ventilation, extracorporeal renal support services and invasive cardiovascular monitoring for an indefinite period, or care of a similar nature • Specialist RN • Access to specialist SRN
Paediatric ICU						As for level 5 plus: <ul style="list-style-type: none"> • Provides complex, multisystem life support for an indefinite period • Tertiary referral centre for children needing intensive care • Have extensive backup laboratory and clinical service facilities to support this tertiary role • Able to provide mechanical ventilation, extracorporeal renal support services and invasive cardiovascular monitoring for an indefinite period to infants and children less than 16 years of age, or care of a similar nature • Specialist RN • Access to specialist SRN

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
CCU				<p>As for level 3 plus:</p> <ul style="list-style-type: none"> • Able to supply critical care expertise for coronary patients • Provides a level of care more intensive than ward based care • Discrete area within the health facility (may be combined within an ICU or HDU) • Non invasive monitoring • Can provide resuscitation and stabilisation of emergencies until transfer or retrieval to a back up facility • Specialist RN • Access to specialist SRN • Formal link with public or private health facility(s) for patient referral and transfer to/from a higher level of service, to ensure safe service provision 	<p>As for level 4 plus:</p> <ul style="list-style-type: none"> • Able to provide additional monitoring capacity (central monitoring at staff station) for cardiac patients and increased medical and nursing support • Specialist RN • Access to specialist SRN • As for CCU service level 4 plus: <ul style="list-style-type: none"> • Bedside and central monitoring capacity (able to monitor patients at the staff station) 	<p>As for level 5 plus:</p> <ul style="list-style-type: none"> • Provides full range of cardiac monitoring (including invasive monitoring) for cardiac patients • Full cardiology support including 24 hour on call echocardiography, angiography, angioplasty and permanent pacemaker services • Specialist RN • Access to specialist SRN • As for CCU service level 5 plus: <ul style="list-style-type: none"> • Invasive cardiovascular monitoring (indefinitely) • Highest level referral centre for CCU patients with active liaison with lower level critical care services for referrals and transfer of patients to ensure safe service provision
Anaesthetics	<ul style="list-style-type: none"> • Analgesia/minimal sedation available by visiting medical officer 		<p>As for level 2 plus:</p> <ul style="list-style-type: none"> • General Anaesthetics on low risk patients given GP anaesthetists or general anaesthetist • May have visiting specialist anaesthetist 	<p>As for level 3 plus:</p> <ul style="list-style-type: none"> • General anaesthetics on low risk patients given by accredited medical practitioner • Specialist anaesthetist appointed for consultation and to provide service for moderate risk patients • Specific operating room anaesthetic staff support available 	<p>As for level 4 plus:</p> <ul style="list-style-type: none"> • Specialist anaesthetist on 24 hour roster for low, moderate and high risk patients • Nominated specialist director of anaesthetic staff • Anaesthetic registrar on site 24 hours 	<p>As for level 5 plus:</p> <ul style="list-style-type: none"> • 24 specialist anaesthetist roster • Sub specialists, research and teaching of graduates and undergraduates • 24 hour on site anaesthetic registrar • Teaching and research role
Operating Theatres		<p>As for level 1 plus:</p> <ul style="list-style-type: none"> • Minor procedure capability no emergency operating theatre 	<p>As for level 2 plus:</p> <ul style="list-style-type: none"> • Single operating theatre for minor / same day procedures • 24 hour cover for caesarian section if performing obstetrics 	<p>As for level 3 plus:</p> <ul style="list-style-type: none"> • More than one operating theatre / procedure room • Separate recovery • Accredited medical practitioner providing anaesthetic services • Specialist RN • Access to specialist SRN 	<p>As for level 4 plus:</p> <ul style="list-style-type: none"> • Specialist anaesthetist on 24 hour roster for low, moderate and high risk patients • Medical officer on site 24 hours • Access to ICU • Specialist RN • Access to specialist SRN 	<p>As for level 5 plus:</p> <ul style="list-style-type: none"> • Multiple operating theatres and procedure rooms • Major and complex procedures (cardiothoracic and transplant) • Teaching and research role • Specialist RN • Access to specialist SRN
Training and Research		<p>As for level 1 plus:</p> <ul style="list-style-type: none"> • Limited – possible medical student with visiting GP 	<p>As for level 2 plus:</p> <ul style="list-style-type: none"> • Some medical nursing and allied health training 	<p>As for level 3 plus:</p> <ul style="list-style-type: none"> • Some registrar and resident training • Some specialist nursing and allied health training • Possibly collaborative research 	<p>As for level 4 plus:</p> <ul style="list-style-type: none"> • Small research unit • Specialist training for nursing and allied health • Some intern, resident and registrar training 	<p>As for level 5 plus:</p> <ul style="list-style-type: none"> • Academic Unit Research Institute • Full training program at all levels • Formal training links with the universities