

Part B – Health Facility Briefing & Design

270 Renal Dialysis Unit



*i*HFG

International Health Facility Guidelines
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270 Renal Dialysis Unit

1 Executive Summary

This Functional Planning Unit (FPU) covers the requirements of a standard Renal Dialysis Unit.

The Renal Dialysis Unit is designed for patients receiving treatment for acute renal failure through the process of Haemodialysis and Peritoneal dialysis. Haemodialysis and Peritoneal dialysis services involve filtering the blood of excess fluid, and waste products normally filtered by the kidneys.

Renal dialysis can be provided in a number of settings as described in the Operational and Planning Models of this FPU. The following FPU description looks at the planning and design of a typical Renal Dialysis Unit situated within a hospital.

There are a number of fundamental planning geometries which are used for the design of Renal Dialysis Units. These have been shown as Functional Relationship Diagrams, indicating the planning principles and preferred relationship of the components.

The size of the Renal Dialysis Unit may vary dependent on the service capacity and demand. The Unit is described to be made up of Treatment Bays/ Spaces as patients may receive treatment in either hospital beds or recliners. Treatment Bays must be able to service both beds and recliners, the percentage of which both are provided to be at the discretion of facility management.

The Schedules of Accommodation are provided using references to Standard Components (typical room templates) and quantities for typical Units at Role Delineation Levels (RDL) 2 to 6 with 6, 12, 24 and 30 Treatment Spaces.

For each of the nominated room types within the SOA the code link to the corresponding Room Data Sheets (RDS) and Room Layout Sheets (RLS) has been provided. Readers may use those codes to access this information on the rooms in the section titled Standard Components on the website.

Further reading material is suggested at the end of this FPU but none are mandatory.

Users who wish to propose minor deviations from these guidelines should use the Non-Compliance Report (in Part A appendices) to briefly describe and record their reasoning based on models of care and unique circumstances. The responsible Health Authority may then consider the circumstances and accept such deviations.

The details of this FPU follow overleaf.

2 Introduction

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. Haemodialysis and Peritoneal dialysis services involve filtering the blood of excess fluid, and waste products normally filtered by the kidneys.

Haemodialysis 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 haemodialysis (dialysis) machine.

Haemodialysis 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.

Haemodialysis management may require the patient to undergo dialysis for 3 to 6 hours on a daily basis over 3 to 4 days a week.

Haemodialysis 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 Haemodialysis. 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 haemodialysis 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.

From a healthcare angle, there is no restriction on the location of Renal Dialysis such as:

- Commercial Tenancy
- Retail Tenancy
- Home
- Outpatient Unit
- Health Centre or Polyclinic

3 Functional and Planning Considerations

Operational Models

Operational models of care for a service will influence the functional planning components for the unit. The role delineation of a healthcare facility determines the type and range of the renal dialysis services that will be provided and the associated support systems along with the services. The Renal Dialysis unit may be provided as:

- one of the departments in a hospital (in-centre 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.

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 multidiscipline 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 clearly 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.

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

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

Functional Relationships

A Functional Relationship can be defined as the correlation between various areas of activity which work together closely to promote the delivery of services that are efficient in terms of management, cost, and human resources. Correct Functional Relationships are identified below.

External

The 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 Storerooms 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.

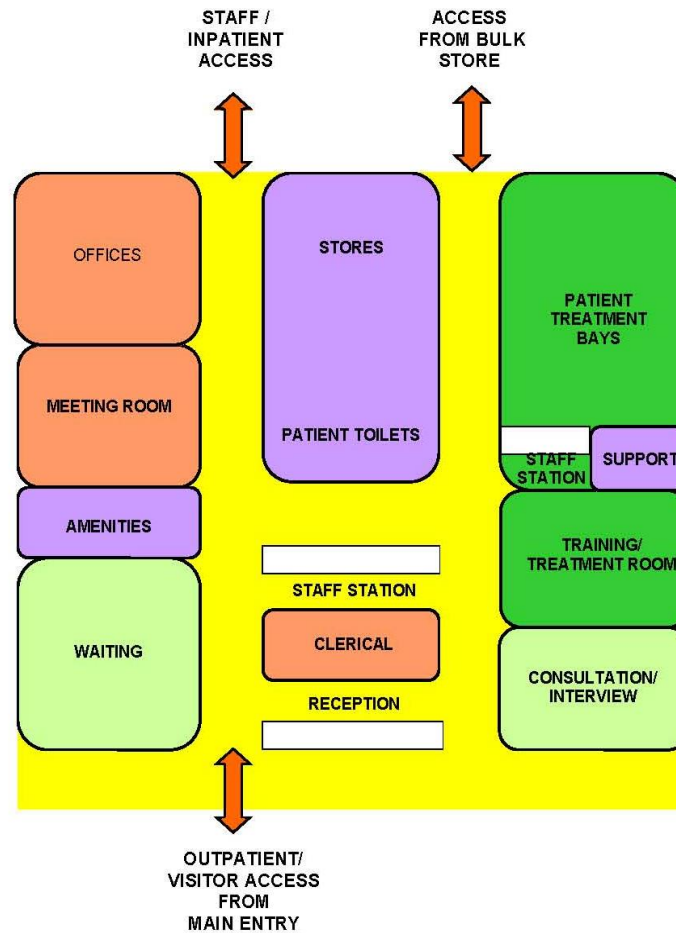
Internal

The internal planning of the Renal Dialysis Unit should be planned by considering the unit's functional areas/zones.

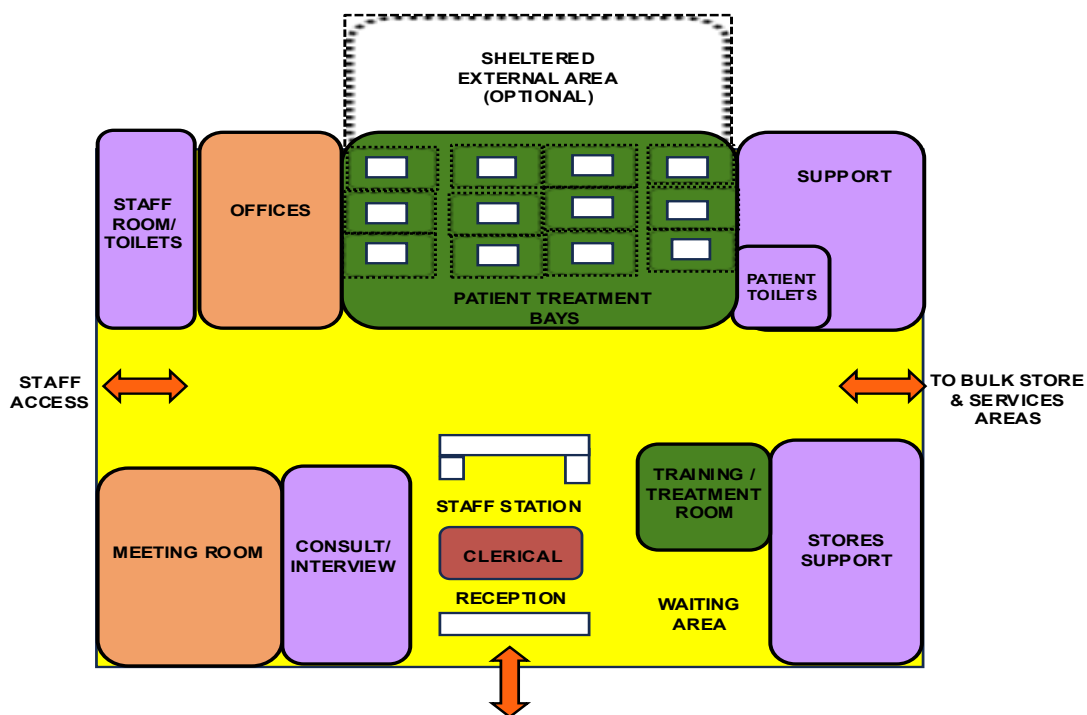
Some of the critical relationships to be considered include:

- Staff workstation requires an unobtrusive view of all patient treatment areas; the inclusion of decentralised 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
- Patient occupied areas, forming the core of the Unit, which require direct access and observation by staff

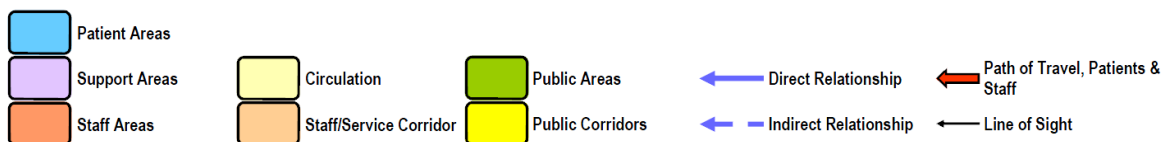
Functional Relationship Diagrams



STANDALONE RENAL DIALYSIS UNIT



LEGEND



4 Design Considerations

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.

Patient Treatment Areas

Patients should be situated so that healthcare providers have direct or indirect visualisation. 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.

Treatment Bays shall be 9 m² with a clear width of 3 m² along the back of the bay to ensure appropriate service placement, machine accommodation, and curtain track placement; spaces of 12 m² need to be considered where more than 50% of patients are receiving dialysis in-patient beds rather than recliners (particularly in RDL 5/6 renal services located in tertiary referral hospitals); bays shall accommodate both beds and recliners.

Environmental Considerations

Acoustics

The Renal Dialysis Unit should be designed to minimise the ambient noise level within the Unit and transmission of sound between Patient Areas, Staff Areas and Public Areas.

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
- Refer also to **Part C – Access, Mobility, and OH&S** in these Guidelines.

Natural Light

Natural light contributes to a sense of wellbeing of patients, staff, visitors and other users. The use of natural light should be maximised throughout the Unit.

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

The design of the Renal Dialysis Unit needs to consider the contradictory requirement for staff visibility of patients while maintaining patient privacy. Unit design and location of staff stations should offer varying degrees of visibility and privacy.

Each Treatment Bay shall be provided with privacy screens to ensure the privacy of patients undergoing treatment in both private and shared patient areas. Refer to the Standard Components for examples.

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

Interior Decor

This includes the style of design, furnishings, colour, 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 colours 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 centralised unit
- television systems with head set access to reduce ambient noise in the Unit.

Space Standards and Components

Accessibility

There should be a weatherproof vehicle drop-off zone with easy access for less-mobile patients and wheelchair bound patients. Design should provide ease of access for wheelchair-bound patients in all patient areas including Consult Rooms and Waiting Areas in accordance with Local Civil Defense Regulations & Policies. Waiting Areas should include spaces for wheelchairs (with power outlets for charging electric mobility equipment) and suitable seating for patients with disabilities or mobility aids. The Unit requires provision for bariatric patients.

Safety and Security

A Renal Dialysis Unit shall provide a safe and secure environment for patients, staff, and visitors while remaining a non-threatening and supportive atmosphere conducive to recovery.

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
- optimise 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.

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

In areas where clinical observation is critical such as Treatment Areas, lighting, and colours selected must not impede the accurate assessment of skin tones. Walls shall be painted with lead-free paint.

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.

Fixtures, Fittings and Equipment

Window Treatments

Windows throughout Treatment Areas of the Unit shall have partial blackout facilities (blinds or lined curtains) to allow patients to rest during the daytime.

Privacy bed screens must be washable, fireproof, and cleanly maintained at all times. Disposable bed screens may also be considered.

If blinds are to be used instead of curtains, the following shall apply:

- Vertical blinds and Holland blinds are preferred over horizontal blinds as they do not provide numerous surfaces for collecting dust
- Horizontal blinds may be used within a double-glazed window assembly with a knob control on the bedroom side

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 (through Wi-Fi)

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

Building Service Requirements

Water Treatment Services

A key component of the Renal Dialysis Unit is the need to treat the water that will be used in the haemodialysis 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 utilised

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 haemodialysis.

Booster pumps may also be required to ensure a certain speed of water (at least 10 metres/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 moulds. These contamination processes are also reduced by the application of heat (85 – 90 ° 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.

Services that facilitate the drainage of fluids from the haemodialysis 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.

Information Technology (IT) and Communications

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:

- Electronic Medical Records (EMR) which may form part of the Health Information System (HIS)
- Hand-held tablets and other smart devices
- Picture Archiving Communication System (PACS)
- DECT phones and computers
- Data entry including scripts and investigation requests
- Barcoding for supplies and X-rays / Records
- Data and communication outlets, servers, and communication room requirements
- Optional availability of Wi-Fi for staff and patients

Nurse Call / Emergency Call / Staff Call

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.

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 Basins

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 due to the nature of dialysis treatment and the risk of exposure to bodily fluids.

Handwashing facilities shall not impact on minimum clear corridor widths. At least one handwashing bay is to be conveniently accessible to the Staff Station. Handbasins are to comply with Standard Components - Bay - Handwashing and Part D - Infection Control.

Antiseptic Hand Rubs

Antiseptic Hand Rubs should be located so they are readily available for use at points of care, at the end of patient beds, and in high-traffic areas.

The placement of Antiseptic Hand Rubs should be consistent and reliable throughout facilities.

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

Antiseptic Hand Rubs are to comply with Part D - Infection Control, in these guidelines.

In order to minimize the risk of cross-infection, it is advisable to designate machines to patient groups such as:

- Hepatitis C patients

- Infectious patients
- Other patients

Isolation Rooms

Standard Single, patient rooms are regarded as Class S isolation. At least one 'Class N - Negative Pressure' Isolation Room shall be provided for each Renal Dialysis Unit as determined by the Clinical Services Plan. These isolation rooms may be used for normal acute care when not required for isolation.

5 Components of the Unit

Standard Components

The Renal Dialysis Unit will contain Standard Components to comply with details described in these Guidelines. Refer also to Standard Components Room Data Sheets (RDS) and Room Layout Sheets (RLS).

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

- Room Primary Information; includes Briefed Area, Occupancy, Room Description and relationships, and special room requirements)
- Building Fabric and Finishes; identifies the fabric and finish required for the room ceiling, floor, walls, doors, and glazing requirements.
- Furniture and Fittings; lists all the fittings and furniture typically located in the room; Furniture and Fittings are identified with a group number indicating who is responsible for providing the item according to a widely accepted description as follows:
- Fixtures and Equipment; includes all the serviced equipment typically located in the room along with the services required such as power, data, and hydraulics; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision.
- Building Services; indicates the requirement for communications, power, Heating, Ventilation and Air conditioning (HVAC), medical gases, nurse/ emergency call, and lighting along with quantities and types where appropriate. Provision of all service items listed is mandatory.

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

- Compliance with the text of these Guidelines
- Minimum floor areas as shown in the schedule of accommodation
- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS

The Renal Dialysis Unit shall consist of Standard Components to comply with the details described in these Guidelines. Refer also to Standard Components Room Data Sheets (RDS) and Room Layout Sheets (RLS) separately provided.

Non-Standard Components

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

6 Schedule of Equipment (SOE)

This Schedule of Equipment (SOE) below lists the major equipment for the key rooms in this FPU

Room Name		
Treatment Bay - Renal Dialysis, Room Code (trmt-rd-i)		
Air flowmeter	Light: examination (optional)	Table: overbed
Chair: recliner, dialysis	Oxygen flowmeter	
Haemodialysis unit	Suction adapter	
Treatment Room - Isolation - Renal Dialysis, Room Code (trmt-rd-s-i)		
Air flowmeter	Light: examination (optional)	Suction adapter
Chair: recliner, dialysis (or inpatient bed)	Monitor: physiologic, acute care (optional, or vital signs monitor)	Table: overbed
Haemodialysis unit	Oxygen flowmeter	

7 Schedule of Accommodation

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

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

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

The table below shows various hospital-based Renal Dialysis Units at RDL 2 to 6 with 6, 12, 24, and 30 Treatment Bays.

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

A hospital-based Unit with 6, 12, 24 and 30 treatment spaces

Room/ Space	Standard Component Room Codes	RDL 2/3 Qty x m ²			RDL4 Qty x m ²			RDL5 Qty x m ²			RDL6 Qty x m ²			Remarks
Entry/ Reception		6 spaces			12 spaces			24 spaces			30 spaces			
Reception/ Clerical	recl-10-i recl-15-i similar	1	x	10	1	x	10	1	x	12	1	x	15	Size dependent on staffing numbers and activities
Waiting	wait-10-i wait-20-i wait-30-i similar	1	x	10	1	x	20	1	x	30	1	x	40	May be divided for separate Female/ Family areas as applicable; may include Beverage bay
Play Area	plap-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Optional
Consult	cons-i	1	x	14	1	x	14	2	x	14	3	x	14	Also for Interviews
Meeting Room	meet-12-i meet-l-20-i meet-l-30-i	1	x	12	1	x	20	1	x	30	1	x	30	Optional; See Note 1
Office - Nurse Manager	off-s9-i	1	x	9	1	x	9	1	x	9	1	x	9	
Store - Photocopy/ Stationery	stps-8-i similar	1	x	6	1	x	8	1	x	8	1	x	8	Printers, fax, records; may be combined with Reception
Store - Files	stfs-8-i similar				1	x	6	1	x	6	1	x	8	Optional; not required for electronic records
Training/ Treatment Room	trmt-i	1	x	14	1	x	14	1	x	14	1	x	14	Optional; See Note 2
Toilet - Accessible	wcac-i	1	x	6	1	x	6	1	x	6	1	x	6	Direct access from the Waiting room, May be gender separated as required
Toilet - Public	wcpu-3-i	2	x	3	1	x	3	2	x	3	2	x	3	Direct access from the Waiting room
Sub Total		58			70			99			121			
Circulation %		35			35			35			35			
Area Total		79			95			134			164			
Treatment Area														
Treatment Bay - Renal Dialysis	trmt-rd-i	5	x	9	11	x	9	22	x	9	28	x	9	See Note 3
Isolation Room - Type S	trmt-is-rd-i	1	x	12	1	x	12	2	x	12	2	x	12	According to service plan & risk assessment
Ensuite - Standard	ens-st-i	1	x	5	1	x	5	2	x	5	2	x	5	For Isolation Rooms
Shower - Accessible	shd-i	1	x	4	1	x	4	2	x	4	2	x	4	
Toilet - Accessible	wcac-i	1	x	6	1	x	6	2	x	6	2	x	6	
Toilet - Patient	wcpt-i	1	x	4	1	x	4	1	x	4	2	x	4	
Bay - Beverage	bbev-enc-i	1	x	5	1	x	5	1	x	5	1	x	5	To receive and issue refreshments to patients
Bay - Handwashing, PPE	bhws-ppe-i	2	x	1.5	3	x	1.5	6	x	1.5	8	x	1.5	Refer to part D
Bay - Linen	blin-i	1	x	2	1	x	2	2	x	2	2	x	2	
Bay - Resuscitation Trolley	bres-i	1	x	1.5	1	x	1.5	1	x	1.5	1	x	1.5	Adjacent to Staff Station
Clean Utility	clur-12-i clur-14-i	1	x	12	1	x	12	1	x	14	1	x	14	Including medications and dressing set-ups
Dialysate Preparation Area	but-2-i	1	x	2	1	x	2	2	x	2	2	x	2	Adjacent to Dialysate Fluid Bay
Dirty Utility	dtur-10-i	1	x	10	1	x	10	1	x	10	1	x	10	
Staff Station	sstn-10-i sstn-12-i	1	x	10	1	x	12	2	x	10	2	x	12	Subdivided in larger Units
Sub Total		121.5			179			323.5			388.5			
Circulation %		35			35			35			35			
Area Total		164			242			437			525			
Storage Areas (Treatment Zone)														
Bay - Wheelchair Park	bwc-i bwc-8-i	1	x	4	1	x	4	1	x	8	1	x	8	May be subdivided
Dialysate Fluid Bay	bs-1-i bs-2-i	1	x	1	1	x	1	2	x	2	2	x	2	See Note 4
Store - General	stgn-4-i	1	x	4	1	x	4	1	x	4	1	x	4	

Part B: Health Facility Briefing & Design
Renal Dialysis Unit

Room/ Space	Standard Component Room Codes	RDL 2/3 Qty x m²			RDL4 Qty x m²			RDL5 Qty x m²			RDL6 Qty x m²			Remarks
Store - Main	stgn-8-i stgn-16-i stgn-30-i	1	x	8	1	x	16	1	x	30	1	x	30	See Note 5
Sub Total		17			25			46			46			
Circulation %		25			25			25			25			
Area Total		21			31			58			58			
Staff & Support Areas														
Cleaner's Room	clrm-6-i clrm-10-i	1	x	6	1	x	6	1	x	10	1	x	10	Includes dry storage for cleaning consumables
Communications Room	comm-ict-i	1	x	0	1	x	0	1	x	0	1	x	0	Area as required and to be added to Engineering
Disposal Room	disp-5-i disp-8-i disp-10-i	1	x	5	1	x	8	1	x	10	1	x	10	Waste & dirty linen holding
Equipment Clean-Up	ecl-8-i ecl-10-i ecl-14-l similar	1	x	8	1	x	10	1	x	12	1	x	12	For cleaning and servicing of haemodialysis and other machinery
Property Bay - Staff	prop-2-i	1	x	2	1	x	2	2	x	2	2	x	2	Discreet, secure location, adj to Staff Room; Include hanging space
Staff Room	srm-15-i srm-20-i srm-25-i	1	x	15	1	x	15	1	x	20	1	x	25	Discreet location; may be shared
Toilet - Staff	wcst-i	1	x	3	1	x	3	2	x	3	2	x	3	Discreet location
Water Treatment Plant Room	wtpl-l similar	1	x	12	1	x	15	1	x	20	1	x	24	Close to treatment areas to reduce piping runs
Sub Total		51			59			82			91			
Circulation %		25			25			25			25			
Area Total		64			74			103			114			
Grand Total		328			441			731			859			

Note 1: Meeting Room; to support patient education, community training and other functions; should have teleconferencing capability; add 4m² to room if including a beverage bay

Note 2: Training/Treatment room; where there is a developed program of training for home based dialysis as approved in the Service Plan a dedicated space should be provided; this space could also be used for related procedures such as the insertion of catheters etc.

Note 3: Treatment Bays; Bay size needs to be 9 square meters with a clear width of 3 meters along the back of the bay to ensure appropriate service placement, machine accommodation and curtain track placement; spaces of 12m² will need to be considered where more than 50% of patients are receiving dialysis in patient beds rather than chairs (particularly in RDL 5/6 renal services located in tertiary referral hospitals); bays will accommodate beds or chairs

Note 4: Dialysate Fluid Bay; to hold dialysis fluid in a convenient location close to treatment bays; temperature is important for some dialysate fluids and this area may require air-conditioning

Note 5: Main Store Room; for general stores, fluids and equipment, to be located on the perimeter of the Unit and accessible by a palette lifter. Shelving must have 100 kg weight capacity and shelves need to be at least 400 mm apart and adjustable.

Please also note the following:

- 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 policies of the Unit.
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.

Part B: Health Facility Briefing & Design
Renal Dialysis Unit

- Office areas are to be provided according to the Unit role delineation, organisational office policy and the number of endorsed full time positions within the Unit
- Staff and support rooms may be shared between Functional Planning Units dependant on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

A Stand-alone/ Satellite Unit with 12, 18, 24 & 30 spaces

Room/ Space	Standard Component Room Codes	RDL 2/3 Qty x m ²			RDL4 Qty x m ²			RDL5 Qty x m ²			RDL6 Qty x m ²			Remarks
Entry/ Reception		12 spaces			18 spaces			24 spaces			30 spaces			
Airlock- Entry	airle-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Covered Entry for Stand-alone Unit
Reception/ Clerical	recl-10-i similar recl-15-i	1	x	9	1	x	9	1	x	12	1	x	15	Size dependent on staffing numbers and activities
Waiting	wait-10-i wait-20-i wait-30-i similar	1	x	10	1	x	20	1	x	30	1	x	40	May be divided for separate Female/ Family areas as applicable; may include Beverage bay
Play Area	plap-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Optional
Consult	cons-i	1	x	14	2	x	14	2	x	14	3	x	14	Also for Interviews
Meeting Room, Medium/ Large	meet-l-20-i meet-l-30-i similar	1	x	20	1	x	20	1	x	40	1	x	40	Optional; See Note 1
Office - Nurse Manager	off-s9-i	1	x	9	1	x	9	1	x	9	1	x	9	
Store - Photocopy/ Stationery	stps-8-i	1	x	8	1	x	8	1	x	8	1	x	8	Printers, fax, records; may be combined with Reception
Store - Files	stfs-8-i similar	1	x	6	1	x	6	1	x	6	1	x	8	
Training/ Treatment Room	trmt-14-i similar	1	x	14	1	x	14	1	x	14	1	x	14	Optional; See Note 2
Toilet - Accessible	wcac-i	1	x	6	1	x	6	1	x	6	1	x	6	Direct access from the Waiting room.
Toilet - Public	wcpu-3-i	1	x	3	2	x	3	2	x	3	2	x	3	Direct access from the Waiting room.
Sub Total		78			102			115			139			
Circulation %		35			35			35			35			
Area Total		106			138			156			188			
Treatment Area														
Treatment Bay - Renal Dialysis	trmt-rd-i	11	x	9	15	x	9	20	x	9	25	x	9	See Note 3
Isolation Room - Type S	trmt-is-rd-i similar	1	x	14	3	x	14	4	x	14	5	x	14	1 per 6 spaces
Ensuite - Standard	ens-st-i	1	x	5	3	x	5	4	x	5	5	x	5	For Isolation Room
Shower - Accessible	shd-i	1	x	4	2	x	4	2	x	4	2	x	4	Patient use
Toilet - Patient	wcpt-i	1	x	4	1	x	4	1	x	4	2	x	4	
Toilet - Accessible	wcac-i	1	x	6	2	x	6	2	x	6	2	x	6	Patient use
Bay - Beverage	bbev-enc-i	1	x	5	1	x	5	1	x	5	1	x	5	To receive and issue refreshments to patients
Bay - Handwashing, PPE	bhws-ppe-i	3	x	1.5	4	x	1.5	6	x	1.5	8	x	1.5	Refer to part D
Bay - Linen	blin-i	1	x	2	1	x	2	1	x	2	1	x	2	
Bay - Resuscitation Trolley	bres-i	1	x	1.5	1	x	1.5	1	x	1.5	1	x	1.5	Adjacent to Staff Station
Clean Utility	clur-12-i similar	1	x	12	1	x	12	1	x	14	1	x	14	Including medications and dressing set-ups
Dialysate Preparation Area	but-2-i	1	x	2	2	x	2	2	x	2	2	x	2	Adjacent to Dialysate Fluid Bay
Dirty Utility	dtur-10-i	1	x	10	1	x	10	1	x	10	1	x	10	
Staff Station	sstn-10-i sstn-12-i	1	x	12	2	x	10	2	x	10	2	x	12	Subdivided in larger Units
Sub Total		181			276.5			345.5			420.5			
Circulation %		35			35			35			35			

Part B: Health Facility Briefing & Design
Renal Dialysis Unit

Room/ Space	Standard Component Room Codes	RDL 2/3 Qty x m ²			RDL4 Qty x m ²			RDL5 Qty x m ²			RDL6 Qty x m ²			Remarks
Area Total				245			373			467			568	
Storage Areas														
Bay - Wheelchair Park	bwc-i bwc-8-i	1	x	4	1	x	4	1	x	8	1	x	8	May be subdivided
Dialysate Fluid Bay	bs-1-i bs-2-i	1	x	1	2	x	1	2	x	2	2	x	2	See Note 4
Store - General	stgn-8-i stgn-10-i stgn-12-i	1	x	8	1	x	8	1	x	10	1	x	12	Size will be dependent on quantity of stock to be held
Store - Main	stgn-8-i stgn-16-i stgn-30-i	1	x	8	1	x	16	1	x	30	1	x	30	See Note 5
Store - Medical Records	stfs-20-i similar	1	x	10	1	x	10	1	x	20	1	x	25	Optional; not required for electronic records; size will be dependent on quantity of records to be held
Sub Total				21			30			52			54	
Circulation %				25			25			25			25	
Area Total				26			38			65			68	
Staff & Support Areas														
Cleaner's Room	clrm-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Includes dry storage for cleaning consumables
Disposal Room	disp-8-i disp-10-i	1	x	8	1	x	10	1	x	10	1	x	10	Waste and dirty linen holding
Equipment Clean-Up	ecl-10-i similar	1	x	10	1	x	10	1	x	12	1	x	12	For cleaning and servicing of haemodialysis machines
Linen Holding - Clean	stgn-8-i	1	x	8	1	x	8	1	x	8	1	x	8	Optional, for additional linen supplies
Loading Dock	lodk-i similar		x	10		x	10	1	x	15	1	x	20	May be shared
Office - Single Person, 12m2	off-s12-i	1	x	12	1	x	12	1	x	12	1	x	12	Practice/ Unit Manager
Office - 2 Person Shared	off-2p-i	1	x	12	1	x	12	1	x	12	1	x	12	According to endorsed full time positions
Property Bay - Staff	prop-2-i	1	x	2	2	x	2	2	x	2	2	x	2	Discreet, secure location, adj to Staff Room; Include hanging space
Store - Gas Bottle	stgb-f-i	1	x	10	1	x	10	1	x	10	1	x	10	Optional, provide if medical gases required
Staff Room	srn-15-i srm-20-i srm-25-i	1	x	15	1	x	15	1	x	20	1	x	25	Discreet location
Toilet - Staff	wcst-i	1	x	3	2	x	3	2	x	3	2	x	3	Discreet location
Water Treatment Plant Room	wtpl-i similar	1	x	15	1	x	18	1	x	20	1	x	24	Close to treatment areas to reduce piping runs
Waste Holding/ Recyclables	waco-i similar	1	x	15	1	x	15	1	x	20	1	x	20	Satellite units may share common facilities
Sub Total				112			122			141			155	
Circulation %				25			25			25			25	
Area Total				140			153			176			194	
Grand Total				516			701			863			1017	

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8 Further Reading

- Australasian Health Facility Guidelines. (AusHFG Version 4.0), Part B Health Facility Briefing and Planning, Rev 4, 2012; refer to website www.healthfacilitydesign.com.au
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, 2010 Edition; refer to website www.fgiguideines.org .
- NSW Health – NSW Haemodialysis ‘Models of Care’ Program, NSW Renal Services Network; 2008