حكومة دبي
GOVERNMENT OF DUBAI

هيئة الصحة بدبي
DUBAI HEALTH AUTHORITY

# DHA Health Facility Guidelines 2019

## Part B – Health Facility Briefing & Design

## 400 – Renal Dialysis Unit

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# 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.

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** (**Appendix 4 in Part A**) to briefly describe and record their reasoning based on models of care and unique circumstances.

The details of this FPU follow overleaf.

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# 400. Renal Dialysis Unit

## 1 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 forearm or upper chest for treatment. 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

# 2 Functional & Planning Considerations

## 2.1 Operational Models

The Renal Dialysis Unit typically operates extended hours to provide multiple sessions per day, seven days a week.

Operational Models of Care for a service shall influence the functional planning components for the Unit. The Role Delineation Level of a healthcare facility determines the type and range of the renal dialysis services that are to 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-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

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

## 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 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 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.

# 3 Unit 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

### 3.1 Functional Zones

The Dialysis Unit consists of or should have access to the following Functional Zones for all service delivery methods:

- Main Entry / Reception Area
- Waiting Areas
- Treatment Areas
- Staff Areas
- Support Areas
- Storage Areas:
  - Clinical
  - Non-clinical
  - Bulk items storage e.g. fluids, equipment and dialysis machine
  - Service maintenance

## 4 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.

### 4.1 External Relationships

It is desirable that the Renal Dialysis Unit has ready access to:

- Ease of access to the Unit where the majority of people who 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.

## 4.2 Internal Relationships

The internal planning of the Renal Dialysis Unit should be planned by considering the Units Functional Zones.

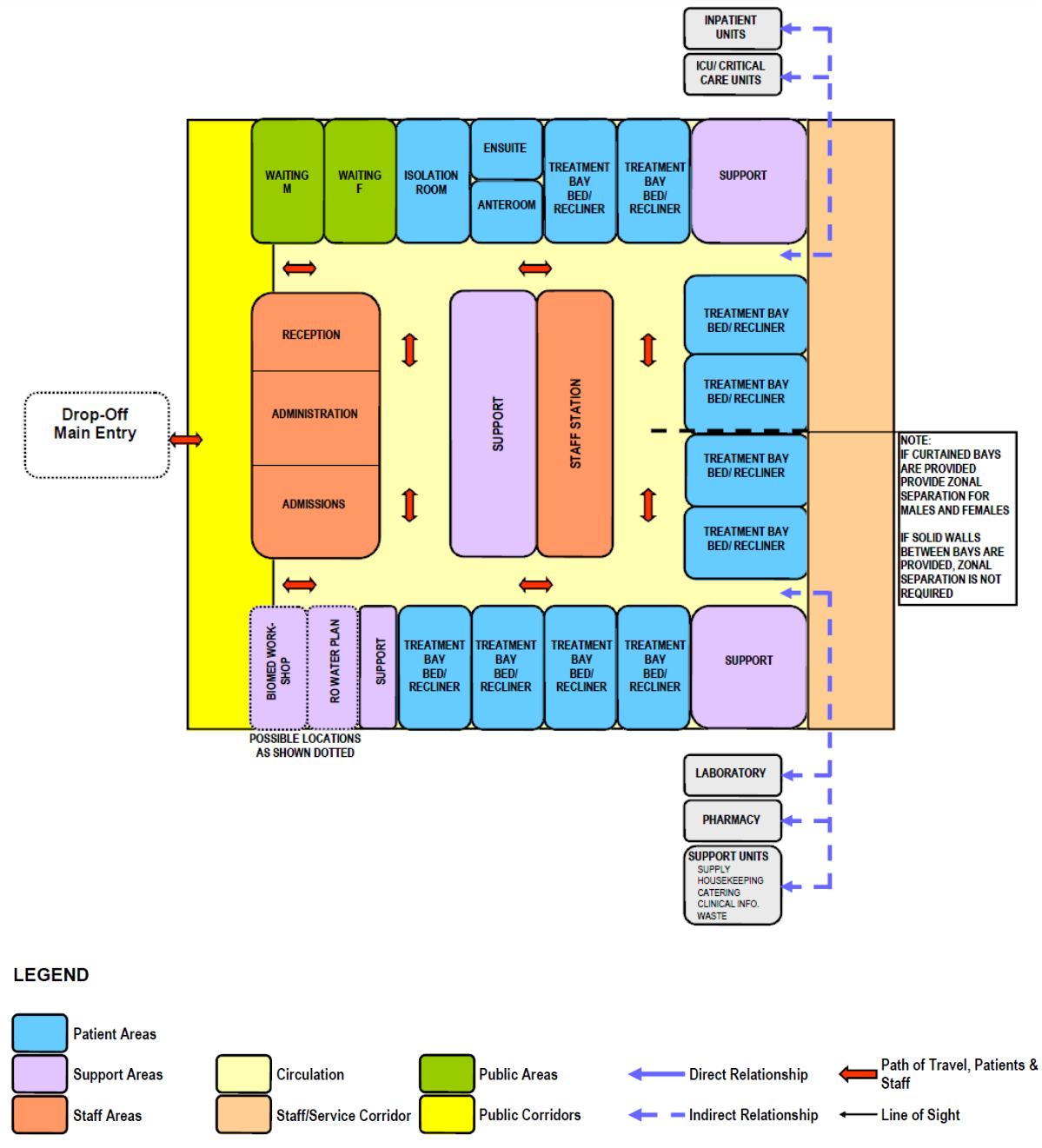
Optimal Internal Relationships to be achieved include those between:

- Patient occupied areas, forming the core of the Unit, which require direct access and observation by staff
- Staff station(s) and associated areas that need direct access and observation of patient areas and ready access to administration 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

## 4.3 Functional Relationships Diagram

The relationships between the various components within a Renal Dialysis 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 Renal Dialysis Unit plans are a variation of the ‘model’ demonstrated below.

The optimum functional relationships of a typical Renal Dialysis Unit are demonstrated in the diagram below.




Important and desirable External Functional Relationships outlined in the diagram include:

- Clear Goods/Services and Bed Access
  - Access to/ from key Clinical Units associated with patient arrivals/ transfers via service corridor
  - Access to/ from key diagnostic facilities - Laboratory and Pharmacy via service corridor

  - Discrete service access for Supply, Catering, Housekeeping, Clinical Information and Waste Units
- Clear Public Entrance
  - Entry for visitors directly from a public corridor to Reception and Waiting
  - Access to / from key public areas, such as the Main Entrance from the public corridor

Important and desirable Internal Relationships outlined in the diagram include:

- Treatment Bay(s) on the perimeter to maximise access to windows or borrowed light
- Staff Station is centralised for maximum patient visibility and access
- Clinical support areas located close to Staff Station(s) and decentralised for ease of staff access
- Reception and Administrative areas located at the Unit entry for control over entry corridors

# 5 Design Considerations

## 5.1 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

## 5.2 Patient Treatment Areas

Patients should be situated so that healthcare providers have direct or indirect visualisation of Patient Treatment Areas. 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 staff.

Treatment Bays shall be 9m$^2$with a clear width of 3meters along the back of the bay to ensure appropriate service placement, machine accommodation and curtain track placement; spaces of 12m$^2$ 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 or recliners.

## 5.3 Environmental Considerations

### 5.3.1 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.

Acoustic treatment is required to the following:

- Patient Bays
- Interview and Meeting Rooms
- Treatment Areas
- Staff Rooms

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.

### 5.3.2 Natural Light

The use of natural light should be maximised throughout the Unit. Windows are an important aspect of sensory orientation and psychological well-being of patients who spend long periods of time in bed.

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.

### 5.3.3 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 privacy of patients undergoing treatment in both private and shared patient areas. Refer to the Standard Components for examples.

Confidentiality for patients 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 Bay to permit curtains to be easily drawn whenever required

## 5.4 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 NFPA standards. 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.

## 5.5 Doors

Door openings to Treatment Areas shall have a minimum of 1200mm clear opening to allow for easy movement of beds and equipment.

## 5.6 Ergonomics

All Dialysis Units shall require access to Uninterrupted Power Supply (UPS) at a percentage to support all functions of the Units dialysis machines if required.

Refer also to **Part E – Engineering** in these Guidelines.

## 5.7 Size of the Unit

The size of the Renal Dialysis Unit is determined by the Clinical Services Plan establishing the intended services scope and complexity.

Schedules of Accommodation have been provided for a hospital-based Unit with 6, 12, 24 and 30 Treatment Bays.

## 5.8 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.

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.

## 5.9 Drug Storage

Drugs prescribed at the hospital should not be stored at patient's bed bays. All drugs should be managed by the responsible Nurses via a Medication Room.

Optionally the Medication Room may be combined with a Clean Utility Room as long as the requirements of both functions are accommodated.

Medications may be manually stored and managed, or alternatively automated Medication Management systems may be utilised.

Narcotic, controlled and semi-controlled drugs must be kept in a secure cabinet within the Medication Room with alarm.

A refrigerator is required to store restricted substances and must be lockable or housed within a lockable storage area.

The Medication Room must have space for parking a medication trolley.

## 5.10 Finishes

Finishes including fabrics, floor, wall and ceiling finishes, should be inviting 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

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 – Access, Mobility, OH&S** and **Part D - Infection Control** of these Guidelines.

### 5.11 Curtains / Blinds

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

## 5.12 Building Services Requirements

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

### 5.12.1 Information and Communication Technology

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

- 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)
- Paging and personal telephones replacing some aspects of call systems
- Data entry including scripts and investigation requests
- Bar coding for supplies and X-rays / Records
- Data and communication outlets, servers and communication room requirements
- Optional availability of Wi-Fi for staff and patients

### 5.12.2 Staff Call

The Renal Dialysis Unit must provide an electronic call system next to each Treatment Bay and all Patient Areas such as Waiting Areas and toilets to allow for patients to alert staff in a discreet manner at all times.

All 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 alert accordingly. The Staff Call system may also use mobile paging systems or SMS to notify staff of a call.

### 5.12.3 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)

### 5.12.4 Heating Ventilation and Air-conditioning (HVAC)

The Unit should be air-conditioned with adjustable temperature and humidity for patient comfort. The Units Dialysate Fluid Bay where dialysis fluid is stored require air-conditioning as temperature is important for some dialysate fluids.

All HVAC units and systems are to comply with services identified in Standard Components and **Part E – Engineering Services**.

### 5.12.5 Pneumatic Tube Systems

The Renal Dialysis 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.

### 5.12.6 Hydraulics

Warm water shall be supplied to all areas accessed by patients within the Unit. This requirement includes all staff handwash basins and sinks located within patient accessible areas. Sinks in staff areas shall be provided with hot and cold water services.

For cold, warm & hot water technical details, refer to **Part E – Engineering Services** in these Guidelines.

A key component of the Renal Dialysis Unit is the need to treat the water that is to 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.

#### 5.12.6.1 Reverse Osmosis (RO)

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 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 provides these services early in the design process to ensure that all requirements are identified as early as possible during planning.

#### 5.12.6.2 Drainage Systems

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.

## 5.13 Infection Control

Infectious patients and immune-suppressed patients may be sharing the same Treatment Bay 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.

### 5.13.1 Hand Basins

Handwashing facilities shall be required in the corridors, Treatment Bays and other areas throughout the Unit as specified by the Standard Components. Where a handwash 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 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 - Hand-washing** and **Part D - Infection Control**.

### 5.13.2 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 minimise the risk of cross infection, it is advisable to designate machines to patient groups such as:

- Hepatitis C patients
- Infectious patients
- Other patients

### 5.13.3 Isolation Rooms

Standard Single, 1 for Male & 1 for Female, 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.

For further information on Isolation Rooms refer to **Part D – Infection Control** in these Guidelines.

## 6 Standard Components of the Unit

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

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

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

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

- Fixtures and Equipment; includes all the serviced equipment typically located in the room along with the services required such as power, data and hydraulics; Fixtures and Equipment

are also identified with a group number as above indicating who is responsible for provision

- Building Services; indicates the requirement for communications, power, Heating, Ventilation and Air conditioning (HVAC), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory

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

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

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

# 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 theroom areas is shown as the Sub Total as the Net Area. The Total area is the Sub Total plus the circulation percentage. The circulation percentage represents the minimum recommended target area for corridors within the Unit in an efficient and appropriate design.

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

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

The table below shows various hospital based Renal Dialysis Unit 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 record in the **Non-Compliance Report** (refer to **Part A - Appendix 4**) with any departure from the Guidelines for consideration by the DHA for approval.

## 7.1 Renal Dialysis Unit – A hospital-based Unit with 6, 12, 24 and 30 Treatment Bays

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6 spaces | | | 12 spaces | | | 24 Spaces | | | 30 Spaces | | | |
| **Entry/ Reception** | | | | | | | | | | | | | | |
| Reception/ Clerical | recl-10-d similar recl-15-d | 1 | x | 10 | 1 | x | 10 | 1 | x | 12 | 1 | x | 15 | Size dependent on staffing numbers and activities |
| Waiting | wait-10-d wait-20-d wait-30-d | 2 | x | 10 | 2 | x | 10 | 2 | x | 20 | 2 | x | 30 | Separate M & F; 1.2 $m^2$ per person; 1.5 $m^2$ per wheelchair |
| Waiting - Family | wait-20-d similar | | | | 1 | x | 20 | 1 | x | 20 | 1 | x | 25 | |
| Consult/ Exam Room | cons-d | 1 | x | 13 | 1 | x | 13 | 2 | x | 13 | 3 | x | 13 | Also for Interviews |
| Meeting Room | meet-l-15-d similar meet-l-30-d | 1 | x | 12 | 1 | x | 20 | 1 | x | 30 | 1 | x | 30 | Optional: May be used for educational purposes. Add $4^2$m if adding Beverage Bay |
| Office - Nurse Manager | off-s9-d | 1 | x | 9 | 1 | x | 9 | 1 | x | 9 | 1 | x | 9 | |
| Store - Photocopy/ Stationery | stps-8-d similar | 1 | x | 6 | 1 | x | 8 | 1 | x | 8 | 1 | x | 8 | Printers, fax, records; may be combined with Reception |
| Store - Files | stfs-10-d similar | | | | 1 | x | 6 | 1 | x | 6 | 1 | x | 8 | Optional; not required for electronic records |
| Training/ Treatment Room | trmt-d | 1 | x | 14 | 1 | x | 14 | 1 | x | 14 | 1 | x | 14 | Optional |
| Toilet - Accessible | wcac-d | 2 | x | 6 | 2 | x | 6 | 2 | x | 6 | 2 | x | 6 | Direct access from the Waiting Room |
| Toilet - Public | wcpu-3-d | | | | | | | 2 | x | 3 | 2 | x | 3 | Direct access from the Waiting Room |
| **Treatment Area** | | | | | | | | | | | | | | |
| Treatment Bay - Renal Dialysis | trmt-rd-d | 5 | x | 9 | 11 | x | 9 | 22 | x | 9 | 28 | x | 9 | |
| Treatment Room - Isolation - Renal Dialysis - Type N | trmt-rd-d similar | 1 | x | 14 | 1 | x | 14 | 2 | x | 14 | 2 | x | 14 | According to service plan & risk assessment, Refer to Part D of the Guideline for isolation rooms types. |
| Ensuite - Standard | ens-st-d | 1 | x | 5 | 1 | x | 5 | 2 | x | 5 | 2 | x | 5 | For Isolation Rooms |
| Anteroom | anrm-d | 1 | x | 6 | 1 | x | 6 | 2 | x | 6 | 2 | x | 6 | For Isolation Rooms |
| Ensuite - Standard | ens-st-d | 2 | x | 5 | 2 | x | 5 | 4 | x | 5 | 4 | x | 5 | For Patient |
| Bay - Beverage | bbev-enc-d | 1 | x | 5 | 1 | x | 5 | 1 | x | 5 | 1 | x | 5 | To receive and issue refreshments to patients |
| Bay - Handwashing, PPE | bhws-ppe-d | 2 | x | 1.5 | 3 | x | 1.5 | 6 | x | 1.5 | 8 | x | 1.5 | Refer to part D |
| Bay - Linen | blin-d | 1 | x | 2 | 1 | x | 2 | 2 | x | 2 | 2 | x | 2 | |
| Bay - Storage (enclosed) | bse-1-d similar | 1 | x | 1 | 1 | x | 1 | 1 | x | 2 | 1 | x | 2 | Optional |
| Bay - Resuscitation Trolley | bres-d | 1 | x | 1.5 | 1 | x | 1.5 | 1 | x | 1.5 | 1 | x | 1.5 | Adjacent to Staff Station |
| Clean Utility | clur-12-d clum-14-d | 1 | x | 12 | 1 | x | 12 | 1 | x | 14 | 1 | x | 14 | Including medications and dressing set-ups |
| Medication Room | medr-d | 1 | x | 10 | 1 | x | 10 | 1 | x | 10 | 1 | x | 10 | May be interconnected with Clean Utility |
| Dialysate Preparation Area | but-1-d similar | 1 | x | 2 | 1 | x | 2 | 2 | x | 2 | 2 | x | 2 | Optional: Adjacent to Dialysate Fluid Bay |
| Dirty Utility | dtur-12-d similar | 1 | x | 10 | 1 | x | 10 | 1 | x | 12 | 1 | x | 12 | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6 spaces | | | 12 spaces | | | 24 Spaces | | | 30 Spaces | | | |
| Staff Station | sstn-14-d similar | 1 | x | 10 | 1 | x | 12 | 2 | x | 10 | 2 | x | 12 | Subdivided in larger Units |
| **Storage Areas (Treatment Zone)** | | | | | | | | | | | | | | |
| Bay - Wheelchair Park | bwc-d similar | 1 | x | 4 | 1 | x | 4 | 1 | x | 8 | 1 | x | 8 | May be subdivided. Wheelchair scale should be provided |
| Dialysate Fluid Bay | bs-2-d similar | 1 | x | 1 | 1 | x | 1 | 2 | x | 2 | 2 | x | 2 | Optional: Located close to Treatment Bay |
| Store - General | stgn-8-d similar | 1 | x | 4 | 1 | x | 4 | 1 | x | 4 | 1 | x | 4 | May be added to Store-Main |
| Store - Main | stgn-8-d stgn-12-d similar stgn-20-d similar | 1 | x | 8 | 1 | x | 16 | 1 | x | 30 | 1 | x | 30 | For fluids and equipment, located on the perimeter of the Unit. Shelving should have 100kg weight capacity |
| **Staff & Support Areas** | | | | | | | | | | | | | | |
| Cleaner's Room | clrm-6-d | 1 | x | 6 | 1 | x | 6 | 1 | x | 6 | 1 | x | 6 | Includes dry storage for cleaning consumables |
| Communications Room | comm-d | 1 | x | * | 1 | x | * | 1 | x | * | 1 | x | * | *Area as required and to be added to Engineering |
| Disposal Room | disp-8-d similar | | | | | | | 1 | x | 10 | 1 | x | 10 | Waste & dirty linen holding |
| Equipment Clean-Up | ecl-10-d similar | 1 | x | 8 | 1 | x | 10 | 1 | x | 12 | 1 | x | 12 | For cleaning and servicing of haemodialysis machinery |
| Property Bay - Staff | prop-3-d | 2 | x | 3 | 2 | x | 3 | 2 | x | 3 | 2 | x | 3 | Discreet, secure location, adj to Staff Room |
| Staff Room | srm-15-d similar srm-25-d | 1 | x | 15 | 1 | x | 15 | 1 | x | 20 | 1 | x | 25 | Discreet location; may be shared |
| Toilet - Staff | wcst-d | 2 | x | 3 | 2 | x | 3 | 2 | x | 3 | 2 | x | 3 | Discreet location |
| Water Treatment Plant Room | wtpl-d similar | 1 | x | * | 1 | x | * | 1 | x | * | 1 | x | * | *Area as required and to be added to engineering, Close to Treatment Areas to reduce piping runs |
| **Sub Total** | | | | **290.5** | | | **394** | | | **638.5** | | | **747.5** | |
| **Circulation %** | | | | **35** | | | **35** | | | **35** | | | **35** | |
| **Area Total** | | | | **932.1** | | | **631.9** | | | **862** | | | **1009.1** | |

Please note the following:

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

# 8 Further Reading

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

- AHIA, Australasian Health Facility Guidelines, Part B Health Facility Briefing and Planning, HPU 0340 - Inpatient Accommodation Unit, Rev 5, 2016; refer to: https://healthfacilityguidelines.com.au/health-planning-units
- DH (Department of Health) (UK), Health Building Note 04-01: Adult Inpatient Facilities, 2009, refer to website: www.estatesknowledge.dh.gov.uk
- DHA (Ministry of Health – UAE), Unified Healthcare Professional Qualification Requirements, 2017, refer to website: https://www.haad.ae
- Guidelines for Design and Construction of Hospitals; The Facility Guidelines Institute, 2018 Edition; refer to website: www.fgiguidelines.org
- Guidelines for Design and Construction of Outpatient Facilities; The Facility Guidelines Institute, 2018 Edition; refer to website: www.fgiguidelines.org
- Health Regulation Sector (DHA), Regulation for Renal Dialysis Unit, 2013, refer to website: https://www.dha.gov.ae/Documents/HRD/RegulationsandStandards/regulations/Regulation%20for%20Renal%20Dialysis%20Unit.pdf
- International Health Facility Guideline (iHFG) www.healthdesign.com.au/ihfg
- Nurse/Midwife: Patient Ratios, ANMF, Australian Nursing and Midwifery Federation, 2016; refer to website: http://www.anmfvic.asn.au/~/media/f06f12244fbb4522af619e1d5304d71d.ashx