australasian health infrastructure alliance

Australasian Health Facility Guidelines

Part B - Health Facility Briefing and Planning

0620 Renal Dialysis Unit

Update December 2022:

Section 2.2.13 and Section 5.3 has been updated with the following reference:

- Environmentally Sustainable Design (ESD) Guidelines for Kidney Care Facilities, 2022, Australian and New Zealand Society of Nephrology (ANZSN). Link to this document: Environmentally Sustainable Design (ESD) Guidelines for Kidney Care Facilities, ANZSN

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Australasian Health Facility Guidelines

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01 INTRODUCTION

1.1 PREAMBLE

This Health Planning Unit (HPU) has been developed by the Australasian Health Infrastructure Alliance (AHIA). This revision has been informed by an extensive consultation process that was completed in 2020.

The document is intended to be used by design teams, project managers and end users to facilitate the process of planning and design. It is recommended that the planning and design process incorporates consultation with local clinical and consumer representatives.

1.2 INTRODUCTION

Dialysis involves filtering the blood of excess fluid and waste products normally filtered by the kidneys. Renal Dialysis Units manage patients with both acute and chronic renal failure, however they are most commonly used for the treatment of end-stage renal failure, which is an irreversible reduction in kidney function to the point where the patient cannot survive without dialysis or a kidney transplant.

This HPU outlines specific requirements for the planning and design of renal dialysis units, including considerations relating to training for home dialysis, as provided by selected services.

The document should be read in conjunction with the Australasian Health Facility Guidelines (AusHFG) generic requirements and Standard Components described in:

- Part A: Introduction and Instructions for Use;
- Part B: Section 80: General Requirements;
- Part B: Section 90: Standard Components, Room Data and Room Layout Sheets;
- Part C: Design for Access, Mobility, Safety and Security; and
- Part D: Infection Prevention and Control

1.3 TERMINOLOGY

Haemodialysis (HD) is a treatment for renal failure where the function of the kidneys, to remove substances from the blood, is replaced by a machine. Treatment requires the patient to be attached to the machine for three to six hours per day three days a week via an arteriovenous (AV) fistula, AV graft or central line catheter inserted into their neck or upper chest. This process may be undertaken in a purpose-built centre or using a machine installed in a patient's home.

On-line Haemodiafiltration (HDF) is the combination of haemodialysis and haemofiltration which combines the advantages of high diffusive elimination of small ureamic toxins with high convective removal of large ureamic toxins.

Satellite haemodialysis units are stand-alone dialysis units that may be located on a hospital site, a community health centre or other location. Patients are typically medically stable. Selected satellite services will also provide training for home dialysis, both haemodialysis and peritoneal dialysis.

In-centre haemodialysis units will be collocated in a hospital with other acute services and provide HD and HDF treatment for acute nephrological emergencies; those with significant acute medical or surgical illness not always directly related to their kidney disease; and other hospital inpatients. A high level of medical support is needed as patients are typically medically unstable. Plasma exchange services may also be provided in these units.

Facility based haemodialysis is provided for patients who are unable to manage home haemodialysis but who live a significant distance from a satellite dialysis unit. To enable these patients to remain in their local community, dialysis may be provided within a local health service, e.g. community health centre, small rural hospital or Multi-Purpose Service (MPS), with support from the regional dialysis service. An appropriately equipped area in the health facility will need to be established to support haemodialysis. Staffing is provided by the facility and trained by the regional dialysis service.

Self-care or community-based haemodialysis is provided for patients who can manage their own dialysis, however, in the event that they are unable to undertake it at home due to poor water supply, unsuitable accommodation etc. 'home haemodialysis' is undertaken by the patient in a local health facility through an arrangement with the regional dialysis service. An appropriately equipped area in the health facility will need to be established and staffing is provided to the level of carer support.

Peritoneal dialysis involves the exchange of fluid to and from the abdomen on several occasions each day either manually (Continuous Ambulatory Peritoneal Dialysis) or overnight with the assistance of a machine (Automated Peritoneal Dialysis). Peritoneal dialysis is performed at home but training in technique and problem solving may occur at a Renal Dialysis Unit.

1.4 POLICY FRAMEWORK

Prior to undertaking a project, planners and project staff are encouraged to familiarise themselves with individual State and Territory specific policies (as detailed in the Further Reading section of the Appendices) as well as local operational policies.

Renal services across Australia and New Zealand contribute to the Australian and New Zealand Dialysis and Transplant Registry (ANZDATA). This data set includes a wide range of statistics which relate to the outcomes of treatment of those with end stage renal failure.

http://www.anzdata.org.au/

1.5 DESCRIPTION

Those requiring renal replacement therapy have a range of options including:

- in-centre or hospital haemodialysis (usually associated with tertiary hospitals);
- satellite or stand-alone unit haemodialysis;
- facility based haemodialysis;
- self-care or community-based haemodialysis; and
- home dialysis, either peritoneal or haemodialysis.

This HPU is focussed on the operational and facility requirements associated with in-centre and satellite services, as well as home dialysis training as this may be provided in selected centres. Planning and design considerations relating to facility based and self-care haemodialysis are also addressed.

The target population is adults, however information relating to paediatric dialysis services is addressed in Sections 2.1.3 and 2.4.7.

Planning and design requirements to support the provision of dialysis services for patients in ICU and CCU is provided in AusHFG HPU 360 Intensive Care Unit; HPU 260 Cardiac Care Unit; and the AusHFG Intensive Care standard components.

02 PLANNING

2.1 OPERATIONAL MODELS

2.1.1 Operational Service Models

The operational service model for a dialysis unit will depend on its location, i.e. within a hospital building or a stand-alone service that may be located on a hospital site or within a community health or ambulatory care service.

Each location may affect the requirements for support such as reception, outpatient clinics, teaching and research and staff amenities. For example, where services are located in a stand-alone location, sharing of infrastructure such as reception and staff amenities, is not always possible.

In larger centres, services may collocate other service components such as renal clinics and renal staff administration work areas.

2.1.2 Models of Care

Dialysis services form part of a comprehensive renal service. As such, these services will often:

- act as a resource to other staff and the community regarding dialysis related issues;
- participate in pre-dialysis information sessions to enable those progressing to end stage renal failure may consider their future dialysis options; and
- supervise patients who manage their dialysis at home.

'Renal supportive care' is a key element of the model of care and involves an interdisciplinary approach integrating renal medicine and palliative care to enable patients to better manage their symptoms and support them in living with advanced disease. A range of disciplines may be involved in the delivery of renal supportive care and will commonly include medical and nursing practitioners as well as dietitians and social workers. Planning needs to consider the range of disciplines accessing the unit to inform requirements relating to staff work space and staff amenities, as well as access to meeting rooms for patient, family and staff discussions.

The nature of kidney disease and links with other chronic diseases such as heart disease and diabetes, provides opportunities to consider a broader range of treatment options aimed at prevention. For example, diabetes is the leading cause of end stage renal failure across Australia and New Zealand (ANZDATA 2019). This provides the opportunity for Renal Dialysis Units to provide additional services to address particular issues associated with diabetes.

Nursing staff ratios in a Renal Dialysis Unit will vary depending on the service model including whether home training services are provided; the level of patient acuity and dependency; and the proposed staffing model. The staffing profile will need to be determined early in the planning process to inform planning and design requirements.

Some sites may have volunteers to assist with patient entertainment and support.

Nocturnal dialysis relates to patients managing their haemodialysis treatment overnight while they sleep. This is more commonly provided for patients undertaking home haemodialysis or facility-based home haemodialysis. Services may decide to operate a centre-based, nocturnal service to increase available options. This may also allow for services to be delivered using less treatment spaces as services operate over three shifts. The provision of nocturnal services needs to consider security requirements relating to after-hours access by patients and staff; patient transport; and scheduling of downtime for reverse osmosis (RO) plants.

2.1.3 Paediatric Dialysis Services

Paediatric dialysis is provided through in-centre haemodialysis or home based peritoneal dialysis. Home haemodialysis is not appropriate for these patients, particularly given many receive transplants within a short time period. In-centre dialysis services are only provided in specialist children's hospitals and patient numbers are very small. For this reason, paediatric dialysis services are usually incorporated within a broader service, for example a medical day stay unit.

Staff ratios for paediatric dialysis services are usually 1:1 or 1:2.

Planning and design implications are included in Section 2.4.7.

2.2 OPERATIONAL POLICIES

Operational policies have a major impact on facility requirements and the capital and recurrent costs of health facilities and must be established at the earliest stage possible. Users may be guided by local policies.

Unit specific operational policies are detailed below. For a list of general operational policies that may apply, refer to Part B: Section 80 General Requirements.

2.2.1 Operating Hours

Units typically operate between 7.00am and 9.00pm each day, allowing two sessions per machine per day. Some units will provide a twilight service that commonly operates from 7pm to 11pm.

Units will operate a varying number of days per week from three days in small rural centres to six or seven days in larger centres depending on demand.

On-call services may be provided to support acute hospital services and/or patients at home. Access to in-centre services may be required overnight for acute patients.

Selected services may offer nocturnal dialysis as outlined in Section 2.1.2

The hours of operation are important to establish to ensure security requirements are appropriately addressed.

2.2.2 Patient and Visitor Amenities

A full range of amenities should be located within the unit or in close proximity for those receiving treatment and the carers accompanying them. These should include:

- waiting areas. Patients and their carers can spend a significant amount of time each week in Renal Dialysis Units and it is important that these areas are welcoming and comfortable. There will be activity peaks as patients come and go at scheduled times during each day;
- access to meeting rooms for patient and family meetings with staff;
- toilets, including accessible toilets;
- showers will be required on in-centre units and may be considered in satellite units;
- space to store patient mobility aids and vehicles while the patient is receiving treatment;
- space to store personal effects at each dialysis treatment space;
- space to accommodate a chair for a carer and other health service providers, e.g. podiatrist, while the patient is receiving treatment;
- audio-visual entertainment in waiting areas and each patient treatment space; and
- access to Wi-Fi.

Units may need to consider culturally specific requirements such as separate toilets for males and females. Consultation with cultural representatives is recommended to ensure the delivery of culturally appropriate facilities.

Proximal access to parking and drop off and pick up areas is essential given many patients are elderly, have mobility issues and/or low exercise tolerance.

2.2.3 Dialysate Preparation

Dialysate, also called dialysis fluid, is a solution of water, electrolytes and salts. It is prepared according to individual patient need to help regulate electrolyte and acid-base balance and remove metabolic waste products.

Contemporary practice is for the preparation of dialysate to occur at the patient's chair or bedside. This process is supported by the use of mobile trolleys that are prepared in advance of each shift. Dedicated bays will be required to accommodate these trolleys.

2.2.4 Medical Records Management

Increasingly, services will use an electronic medical record. Staff will access the record via workstations on wheels (WOW), fixed PCs located nearby or other mobile devices e.g. tablets. The proposed model for accessing electronic records requires confirmation to guide spatial and ICT infrastructure requirements.

Haemodialysis machines also have the capability to collect a range of diagnostics that can be linked to an electronic medical record.

Where these systems are in use, one computer is usually provided for each nurse which will reduce the number of PCs required at staff bases.

Where a hard copy record is in use, these records will need to be securely stored.

2.2.5 Medication Management

Medication will be stored on the unit in accordance with jurisdictional policies. The volume of medications stored will depend on the service model and patient profile. The use of medication is significant in in-centre environments as the acuity of patients is high.

Consideration will need to be given to:

- the provision of automated dispensing cabinets which are becoming increasingly common on in-centre units;
- the provision of a drug safe for the storage of controlled drugs within in-centre units. These may also be required on some satellite units;
- the significant volume of refrigerated medications in comparison to other clinical units; and
- refrigerated vaccines to support blood-borne virus screening and management programs.

Medication and vaccine fridges will require 24/7 temperature monitoring. Ergonomic issues will need to be addressed given the frequent access by staff.

2.2.6 Cardiac Monitoring

Cardiac monitoring systems are not commonly required in satellite dialysis units and are not routinely provided in all in-centre units. However, they may be provided in a select number of in-centre treatment bays within hospitals that perform a significant amount of specialised cardiac surgery and that manage a high volume of patients with cardiac failure. This is due to the risk of cardiac arrhythmias caused by electrolyte imbalances.

For other in-centre units, cardiac monitoring systems may be transported with the patient where required to ensure that staff in the relevant critical care unit, i.e. ICU or CCU, can observe the patient via telemetry.

It is important to ensure that staff within the in-centre unit are appropriately trained to manage these patients with access to medical support as required.

Higher risk patients should be managed in ICU or CCU for access to appropriately skilled medical and nursing staff.

The operational policy relating to the management of these patients will require confirmation to inform the requirements relating to cardiac monitoring.

2.2.7 Water for Dialysis

The water used for the preparation of haemodialysis fluids needs treatment to achieve the appropriate quality. This is provided by a water pre-treatment system, which includes various components including Reverse Osmosis (RO) units. RO is the 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.

RO systems may be accommodated within a plant room for water treatment or provided through individual portable RO devices attached to each dialysis machine. Many dialysis units will require a water treatment plant room, as well as several individual portable RO devices for mobile dialysis machines used in other clinical units, e.g. in ICU and CCU. The use of portable RO devices on other clinical units is generally recommended, given the high cost to install and maintain a separate RO plant, however this will depend on the projected utilisation of dialysis services, as well as proximity to and size of the central RO plant.

For smaller dialysis units, a cost benefit analysis should be undertaken to inform the optimal approach to water treatment. The NSW Agency for Clinical Innovation (2018) recommends that a central RO water plant is utilised for dialysis units with six chairs or more to reduce costs associated with maintenance and repair of individual RO devices.

The required system components will be determined through consultation with RO for dialysis experts during the design process.

The water treatment plant room is ideally located as part of the Renal Dialysis Unit to keep tubing runs short for infection control reasons and to make it easy for staff to monitor and service the water treatment systems.

Refer to Section 3.9 for further information.

2.2.8 Maintenance

Haemodialysis machines require routine and ad-hoc maintenance. A service contract is usually in place and renal technicians will visit the Unit to undertake this work. A dedicated, body protected, room will be provided. This workroom will also store spare machines.

Refer to Non-Standard Components for further information.

2.2.9 Storage

Large quantities of liquid substances, disposable consumables and other supplies are delivered on pallets to the unit on a regular basis. Dialysis units will require a significant amount of storage space in comparison to other clinical units.

Key storage requirements include:

- provision of an adequately sized main storeroom with sufficient aisle width to enable access by a pallet lifter. The store room must be located on the perimeter of the unit with easy access from the loading dock and accessible by a pallet lifter. A roller door access may be required to provide adequate width to the entry into this space, especially for larger, stand-alone units. Where units are not provided on the ground floor, the lift must be of a sufficient size to accommodate a pallet lifer;
- heavy duty shelving to hold the large quantities of supplies in an organised and space efficient manner;
- storage for trolleys used to transport consumables to treatment areas;
- temperature and light controlled conditions to ensure the stability of liquid concentrates, especially those which are glucose-based, is maintained;
- separation of general consumables from clinical and dialysis consumables;
- selected consumables will be stored at the point of use, e.g. tape and gauze, although quantities should be kept at a minimum; and
- the delivery of supplies and other 'back of house' activity flows should be separate from public flows.

2.2.10 Food Services

It is usual to provide a light meal to people receiving treatment and have beverages available. Food will be prepared elsewhere and delivered to the unit.

A beverage bay should be provided for relatives and friends to prepare food and beverages for patients receiving treatment. As patients often bring their own food, they will need access to a refrigerator and microwave. This must be separate to the staff room.

2.2.11 Waste Management

Substantial quantities of waste both general and contaminated are generated by the unit. Clinical staff will generally use bins located within the dirty utility room to dispose of used items and linen.

A disposal room will be provided on the external perimeter of the Unit to enable collection of used linen and waste. Disposal rooms should be lockable with external access given waste is usually collected after hours.

Waste should be streamed, and recycling optimised, in line with local policies.

Dialysate concentrate is disposed of in dirty utility rooms. It can be highly corrosive to stainless steel and so alternative materials should be used where they come into contact with dialysate. This may include the installation of a 'slop hopper' disposal unit within dirty utility rooms given these are made of porcelain rather than the more modern flushing rim sinks.

2.2.12 Amenities - Staff

A range of amenities and services are required by staff. Depending on the size and/or location of the service, they may be provided within the Unit or may be shared with another area adjacent to the unit. These will include staff work areas and related support space, toilets, a staff room, lockers and access to a meeting room.

The staff profile required to meet the service requirements of the unit will inform the range and size of amenities and work areas to be provided.

2.2.13 Green Dialysis including Reuse of RO Waste Water

Renal Dialysis Units use large volumes of water; have a high demand for power and generate significant amounts of waste. It is essential that the planning and design process considers the implementation of operational practices that reduce the environmental impact of dialysis including:

- capturing and reusing RO reject water;
- reducing excess power use and considering renewable power options; and
- improving waste management, including optimising waste recycling.

These initiatives are strongly supported by key national renal and dialysis bodies including the Australian and New Zealand Society of Nephrology (ANZSN), the Renal Society of Australasia (RSA), Kidney Health Australia (KHA), and Kidney Health New Zealand.

Water consumption for haemodialysis will vary depending upon the machine type, reverse osmosis (RO) system, and treatment duration and frequency. Up to 70% of purified water may be rejected as part of the reverse osmosis process despite the reject water still being potentially re-usable, e.g. for watering gardens or flushing toilets. This has been successfully implemented within a number of dialysis units across Australia and it is strongly recommended that water saving infrastructure is incorporated into any new build dialysis unit.

For further information refer to:

- Environmentally Sustainable Design (ESD) Guidelines for Kidney Care Facilities, 2022, Australian and New Zealand Society of Nephrology (ANZSC)
- Environmental Sustainability and Renal Care Position Statement, June 2017, joint statement from ANZSN, RSA and KHA; and
- Further reading references noted in Section 5.4.

2.3 PLANNING MODELS

2.3.1 Location

The optimal location of a dialysis unit will depend on the service model being delivered.

For in-centre services, a priority requirement is to minimise travel distances between the dialysis service and relevant inpatient and critical care units. In-centre services are often collocated with renal inpatient units to support flexible staffing arrangements and other operational and spatial efficiencies associated with shared access to support areas. It is, however, acknowledged that some patients will still attend an in-centre service as a day case and therefore, ease of access to parking, patient drop off and pick up areas and transit lounge, where provided, is also required.

Satellite services may be located on a hospital site, a community health centre or other location and will require proximal access to parking, and patient drop off and pick up areas. For hospital-based services, consideration should be given to collocation with other services such as outpatient renal clinics and renal staff administration areas.

Access to natural light and external views should be optimised given the length of time patients attend the unit for treatment.

2.3.2 Unit Size

The number of dialysis treatment spaces to be provided will be informed by clinical services planning. This should include consideration of projected growth in demand to ensure that future expansion of the service, where required, can be readily achieved.

Where large units are provided, treatment spaces should be grouped into pods. Each pod will require its own staff station and support areas to ensure optimal patient observation and to minimise staff travel distances.

The number of bays within each pod should support the staffing ratios proposed for the unit.

2.3.3 Unit Configuration

The scale of the renal dialysis service will influence the arrangement of space.

Patient treatment areas are provided as open bays that may accommodate a recliner chair or patient bed, as well as a number of enclosed patient rooms depending on service requirements. Enclosed rooms are commonly provided for infectious patients; patients who are immunosuppressed including transplant patients; patients with diarrhoea; and for cultural reasons.

Bays may be provided within a large open area surrounding a central staff station or they may be grouped in bays of 4 to 6 chairs. This arrangement supports cohorting of patients, e.g. by age and gender, or for infection control reasons. Patients are generally only able to see the other patients within their bay, however the design of the unit should allow for optimal staff visibility across the full unit.

2.3.4 Cultural Considerations

Local cultural groups should be invited to input to the design of the unit to ensure the delivery of culturally appropriate facilities. This may include the following considerations;

- separation of male and female areas including access to toilets, e.g. through the use of pods;
- separation of age groups where relevant; and
- display of culturally relevant art and the use of culturally sensitive colour schemes.

2.4 FUNCTIONAL AREAS

The unit includes clusters of spaces for the following:

- reception and waiting;
- training, including outreach services (selected services only);
- treatment;
- support areas; and
- staff areas.

Outpatient clinics may be collocated with satellite Renal Dialysis Units but this depends on local service models and arrangements.

2.4.1 Reception and Waiting

A dedicated reception area may be provided, depending on the size of the unit and staffing profile. Where provided, the reception area should be located to provide oversight of the unit entry and waiting areas. It must be designed to support staff safety, including two points of egress to enable staff to retreat into the main unit if they feel unsafe. Duress alarms should also be provided. Barriers for infection control and security may also be considered.

The size of waiting areas will depend on a range of factors, including treatment scheduling (staggered treatment times will minimise the number of patients waiting); access to centralised hospital facilities for waiting with electronic notification systems; and the patient profile. Consideration needs to be given to the accommodation of patients with walking aids and carers that will often accompany patients.

In-centre services usually manage both inpatients and outpatients and will also require a waiting area and reception.

A weigh bay should be located in a central location, so that patients can weigh upon entry and exit.

A beverage bay may be provided in this area.

2.4.2 Training Areas

Home training areas will only be provided at selected sites, as detailed in clinical services plans. Space requirements will be dependent on the expected type and volume of training.

Where training requirements are infrequent, a treatment room may be used. In larger centres, dedicated training rooms for haemodialysis and peritoneal dialysis training may be provided. Training will usually be provided on a one-to-one basis or to two patients at one time.

The location of training rooms should be separated from the main dialysis treatment area; however, consideration should be given to the use of these rooms during urgent peaks in demand, including for additional isolation capacity.

Office space for training and outreach staff will usually be provided adjacent to training rooms.

A meeting room will also service for training and pre-dialysis and related education. This room may also be used for staff meetings.

Storage for the accommodation of home dialysis machines, home reverse osmosis machines and other items will need to be considered.

2.4.3 Treatment Areas

Staff bases will be designed such that patients and nursing staff can see each other, where possible. This will facilitate monitoring, patient wellbeing and interactions with staff. Many consumers report that these arrangements contribute to their satisfaction with Renal Dialysis Units.

As multi-resistant organisms (MRO) are common in renal dialysis units, treatment spaces should also be organised to enable those with the same MRO can be cohorted.

Depending on the patient profile, consideration may be given to the use of pods and/or physical separation between bays to prevent contamination between patients and support separation of patients by gender, age etc.

To support the capture and reuse of rejected RO water, a second drainage point and holding tank will be required.

2.4.4 Support Areas

Support space will include broad groups of rooms including:

- utilities, both clean and dirty, should be located near treatment areas to minimise staff travel;
- access to a treatment room for minor procedures or medical consultations. The inclusion of a treatment room within the unit is optional as it may be accessed through a collocated outpatient or inpatient service;
- access to a beverage bay to receive and issue patient meals and beverages;
- storage for frequently used equipment and consumables, e.g. cannulation trolleys, WOWs, ultrasound machines, BP machines, and other medical equipment, will be contained in equipment bays within the treatment areas; and
- bulk storage, the maintenance or technician’s room and water treatment plant room will be located on the periphery of the unit to facilitate delivery of consumables and equipment.

2.4.5 Staff Areas

A range of areas will be required to support the staff on the unit and include:

- staff work and administration areas. The allocation of these areas will require reference to local jurisdictional policies;
- staff amenities including; staff room, toilets, lockers and a shower; and
- a meeting room for activities including education.

2.4.6 Facility Based and Self Care Haemodialysis

Small health facilities providing facility based and/or self-care haemodialysis will require the following:

- dialysis chair and machine (a minimum of two treatment spaces is recommended to justify the cost of implementing these services remotely);
- portable RO machine;
- plumbing for water outlet and tundish drain (preferably with a second drain and storage tank for reuse of rejected RO water);
- access to a store room for storage of fluids and consumables; and
- close proximity to a nurses station. For facility-based haemodialysis, the nurses station should provide direct oversight of the dialysis chairs.

These service models would usually require a minimum of two patients and a maximum of six. Services with greater than six chairs would be deemed a satellite unit.

2.4.7 Paediatric Services

Key planning and design considerations relating to paediatric dialysis services are noted below.

- The location of the unit is an important consideration. Collocating dialysis treatment bays with a paediatric medical day stay service is a common arrangement to achieve an operationally efficient unit. This includes sharing of support areas including reception and waiting areas. Collocation with the core renal department, i.e. staff admin areas, is also beneficial to enable ready access for staff support.
- Where provided as an integrated unit with another service, a dedicated 'sub' staff station should be provided for the dialysis treatment spaces. Close observation of these patients is essential. Access to electronic medical records (EMR) should ensure that the nursing staff can access patient records while observing the patient at all times.
- Compared with adult dialysis services, there is a greater number of people per chair to be accommodated within the unit due to additional family members, staff (including other disciplines such as play therapists) and teachers.
- Given the small patient numbers, operational policies may be established to enable flexible use of dialysis treatment spaces for other services, e.g. for apheresis or renal biopsies. The ability to store all dialysis machines within a separate store room will promote greater flexibility of use.
- There is no requirement for drug safes as no controlled medications are used in paediatric units.
- Similar storage area per chair is required as per adult services, acknowledging that store rooms will usually be smaller on paediatric units due to the smaller number of treatment spaces. However, it is noted that a wide range of sizes of items, e.g. catheters is required to meet the requirements of all ages.
- Where possible, a separate store should be provided for dialysis services to accommodate dialysis fluids and consumables. Other support areas may be shared with a collocated unit, e.g. medical day stay service.

- Design must also consider play equipment, e.g. game console, toys (including storage) and a whiteboard for teaching etc.
- It is recommended that an RO plant is provided rather than the use of portable RO machines. Ideally this plant should be located to enable beds on intensive care and coronary care units to be plumbed and connected to the same RO plant.

2.5 FUNCTIONAL RELATIONSHIPS

2.5.1 External

Requirements for a satellite unit will be dependent on the location. Direct access to parking and patient drop off and pick up areas (for private vehicles and patient transport) is essential. Ease of access to a transit lounge, where provided, and the loading bay and dock for deliveries of stock is also required.

The priority requirement for in-centre units is proximal access from inpatient and critical care units, depending on the operational arrangements in place. Ease of access for stock deliveries via the loading dock is also essential. Ready access to clinical support services, including pathology (this may be provided via pneumatic tube systems), medical imaging and pharmacy is also required.

Reference to the defined role delineation for the service, where provided, will also guide the functional relationship requirements.

2.5.2 Internal

Easy access from the waiting area to the patient treatment area is essential for the movement of patients to and from treatment areas.

Where training facilities are collocated, these should be separated from treatment areas and organised to ensure that visitors for education and/or training cannot readily access these areas. This maintains the focus on training as an option.

Support areas must be directly accessible from patient treatment areas to ensure that staff travel is reduced.

03 DESIGN

3.1 ACCESS

The Unit should be easily accessible to the public. Covered drop-off areas, close to the entry point must also be considered as well as easy access by patient transport services. Refer to Section 2.3.1 for further detail.

There will be a single public entry point to the unit for access by outpatients. For relevant units, access for inpatient transfers should be via the internal hospital corridors without traversing public areas.

Separate access will be required for the delivery and collection of consumables, haemodialysis machines, food, linen and waste.

External access to the water treatment plant room is required for replacement of the RO equipment and deliveries of salt and media. Internal access is also required to the plant room for staff on the unit.

3.2 PARKING

The majority of patients requiring regular treatment will arrive at the unit by vehicle. This may include private vehicle and transport services. Access to nearby parking, including accessible parking is needed.

A parking space or loading area will be needed for drop-off of machines where stand-alone units are provided.

3.3 DISASTER PLANNING

Environmental factors may influence demand for services. For example, where services are affected within a community, following a natural disaster, those on home dialysis may not have access to power and/or water and will need to visit their nearest Renal Dialysis Unit to continue treatment.

A failure in the RO plant may require the temporary use of portable RO units while the equipment is replaced. Some access to normal tap water will be needed and may be achieved through locating a tap between every second chair.

The design of the unit needs to ensure there are strategies available to manage urgent evacuation requirements.

These and other matters should be considered as part of a business continuity plan.

3.4 INFECTION PREVENTION AND CONTROL

Infection prevention and control involves identification of transmissible agents and intervention to minimise the spread of these infections. The design of all aspects of the unit should take into account the need to ensure a high level of infection control in all aspects of practice.

Key factors that should be taken into consideration are:

- the provision of pods that can be isolated from others to prevent contamination between patients;
- the design should support high levels of hand washing by staff and other persons by the convenient and adequate placement of suitable hand wash basins at a rate of one per three treatment bays as well as in all separate treatment areas, utility areas, toilets and showers;

- alcohol based hand-rub dispensers and personal protective equipment (PPE) should be at the entrance of each single bed room and within each treatment bay or bed room for easy access by staff. This is particularly important given staff are regularly managing fistulas and wound dressings;
- class S isolation rooms should be provided in all units with total numbers dependent on local infection control requirements. The requirement for ensuite bathrooms in the class S isolation rooms is optional based on local operational and infection control advice given they are rarely used by patients on haemodialysis and can be an infection control risk if only used sparingly. In-centre units will typically require a higher number of isolation rooms. In satellite units, multi-resistant organisms are common and patients may be cohorted in isolatable pods. Isolating patients within pods rather than single rooms enables them to maintain social interaction while within the unit; and
- minimal storage of consumables close to patients.

Further reference should be made to:

- jurisdictional policies and guidelines;
- AusHFG, Part D - Infection Prevention and Control, Health Facility Guidelines, 2016; and
- Australian Guidelines for Prevention and Control of Infection in Healthcare (Australian Commission on Safety and Quality in Healthcare). Commonwealth of Australia NHMRC 2019.

3.5 ENVIRONMENTAL CONSIDERATIONS

3.5.1 Acoustics

Many functions undertaken in the unit require consideration of acoustic privacy including:

- meetings and interviews with patients and families;
- use of patient entertainment systems within open bay areas;
- noisy areas such as waiting rooms; and
- staff discussions regarding confidential matters.

Solutions to be considered include:

- selection of sound absorbing materials and finishes;
- planning separation of quiet areas from noisy areas, e.g. separation of waiting areas from treatment areas;
- use of patient earphones to contain noise from entertainment systems; and
- provision of appropriate spaces for private staff discussions.

Refer to the relevant AusHFG Standard Components for design requirements.

3.5.2 Natural Light and Views

The use of natural light should be maximised throughout the unit.

Natural light and a view to pleasant and interesting outdoor areas are of particular importance for people 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.

3.5.3 Privacy

As many units operate an evening shift, lighting systems and window coverings should provide a level of privacy for patients.

Many consumers of renal dialysis service report that social interaction is important, both with nursing staff and other patients. The design should seek to balance privacy, confidentiality and promotion of patient to patient interaction so that wellbeing is optimised.

3.5.4 Interior Decor

This includes style of design, furnishings, colour, textures, ambience, perceptions and taste. The décor of the unit should reduce an institutional atmosphere where possible. This is challenging with the high degree of equipment, services and infection control conditions that are required to deliver the service.

Suggestions to achieve this balance include:

- use of design features such as culturally appropriate 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 that can withstand required cleaning / disinfection regimes; and
- inclusion of corridors at the minimum required widths to meet the service need.

3.6 SAFETY AND SECURITY

3.6.1 Safety

The acuity of patients presenting to the unit will vary depending on whether the service is in-centre or a satellite. Issues that may need to be considered include:

- systems of work should be designed to ensure that staff are located close to patients and observation is facilitated;
- fail-safe connection systems where machines are attached to RO water outlets. This will prevent attachment to standard water outlets;
- specialised equipment, e.g. chairs, lifters etc., to manage weak and/or bariatric patients;
- pallet lifters will be used to deliver supplies to the bulk store. Receipt and movement of these pallets will affect receiving points, circulation routes and door clearances;
- consumable storage should be arranged to ensure that regular access items are easily accessible. Some of the equipment is heavy and slide-out shelving units may be required;
- large pieces of equipment, e.g. haemodialysis machines; and
- furniture, e.g. patient chairs, must be selected for their ease of movement by staff as well as appropriate design features.

3.6.2 Security

Depending on the location and hours of operation, renal dialysis services may need to consider a range of security issues including:

- the use of access control systems to all entries and staff-only areas;
- provide video-intercom systems to ensure those visiting the service out-of-hours can be identified before access to the facility is provided;

- minimisation of entry and exit doors. Where possible, locate receptions and staff bases to ensure that entry and exit points can be observed;
- providing staff with duress points at receptions and staff stations;
- locate the reception area to enable safe egress into the main unit if they feel threatened;
- providing lockers for staff to secure personal belongings;
- consideration of CCTV to provide an adequate view of external areas;
- adequate lighting to ensure that staff and patients can exit the facility at night safely; and
- nearby parking for stand-alone facilities operating at night.

Refer to AusHFG Part C Design for Access, Mobility, Safety and Security, for further information.

3.7 FINISHES

Refer to the AusHFG Part C and Standard Components for dialysis treatment areas for detailed information relating to recommended finishes.

Major pieces of equipment and consumables are moved throughout a Renal Dialysis Unit. The use of wall, door and corner protection will be extensive in patient care and clinical support areas. Wall finishes in treatment areas should be impervious and easy to clean.

Floor finishes should suit the function of the space. In all clinical areas, vinyl, slip resistant flooring with coved skirtings will be used. Slip resistant flooring is required due to the potential risks associated with water spills. Flooring in areas where pallets are delivered should be sturdy to resist damage.

Ceiling finishes should be selected with regard to appearance, cleaning, acoustics and access to building services. In most cases, acoustic ceiling tiles will be used.

3.8 FIXTURES, FITTINGS AND EQUIPMENT

Room Data and Room Layout Sheets in the AusHFGs define fixtures, fittings and equipment (FFE). The FFE specified for each clinical space should consider:

- generic approaches where possible to increase utilisation and flexibility; and
- specialist requirements that will influence fixed equipment and minimum dimensions of particular rooms.

Dialysis chairs that convert to beds are now available and recommended if nocturnal dialysis is provided.

Refer to the Room Data Sheets (RDS) and Room Layout Sheets (RLS) as well as Part C: Design for Access, Mobility, Safety and Security.

3.8.1 Dialysate Concentrate Disposal

FFE selection should consider the impacts of the disposal of dialysate concentrate.

Refer to Section 2.2.3 for further details.

3.9 BUILDING SERVICE REQUIREMENTS

3.9.1 Information Technology and Communications

The following communications systems will be included in the Renal Dialysis Unit:

- telephone - fixed and cordless for use by persons on dialysis;

- computers to access eMR systems and other related information. Solutions may vary and include both fixed and mobile computers. New dialysis machines may be networked and link to the eMR to record and range of patient data, e.g. fluid balance, weight, vitals;
- wireless internet access to support equipment, e.g. workstations on wheels, and patients who choose to bring their own devices;
- electronic journey boards;
- systems for hospital-based units if part of the campus-wide communications system such as paging and intranet;
- teleconferencing and/or videoconferencing capability if there is an identified need as part of the jurisdictional strategy or network;
- some other telehealth modalities may also be required especially in remote and rural sites. Remote monitoring and use of clinical care cameras or Skype-type can be used to troubleshoot or monitor patient status remotely;
- patient / nurse call system;
- patient entertainment system, which may include features such as internet etc., depending on jurisdictional approaches; and
- emergency and duress systems capability in accordance with jurisdictional policies.

3.9.2 Electrical Services

Emergency power will need to be considered in patient areas and RO plant.

3.9.3 Water Treatment Services

Failure to ensure adequate water quality may have dire consequences for patient safety and welfare.

While commercial water treatment systems may undertake the water treatment activities in slightly different ways, 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 five and one micron.
- Phase 5 – the reverse osmosis process.

Reverse Osmosis (RO) is a process where water is demineralised using a semipermeable membrane to encourage mineral salts to pass out of the water to be used in dialysis. Industrial RO uses spiral wound membranes mounted in high pressure containers to activate this process.

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°C), 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 distribution loop should be cross linked polyethylene.

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 room will need to be air-conditioned due to heat generated via the equipment and will require an appropriate load bearing floor.

Water treatment equipment shall be located in an enclosed room. Refer to AusHFG Standard Component – Water Treatment Plan Room for further details. It is acknowledged that the required layout of this room will depend on the type and manufacturer of RO equipment.

External access to the water treatment plant room is required for replacement of the RO equipment and deliveries of salt and media. Media inside the vessels will be removed and exchanged twice a year and the spent media is wet and heavy and wheelbarrows are typically used to move this product. Internal access from the unit is also required for staff monitoring.

At each Treatment Bay – Renal Dialysis, keyed quick connect / disconnect fittings will be required for machine drains and the RO water supply.

The design team should gain local expert input early in the design process to ensure that all requirements are identified as early as possible in the planning process.

For additional information refer to:

- NSW Agency for Clinical Innovation (2018) Water for Dialysis - A Guide for In-Centre, Satellite and Home Haemodialysis in NSW
- SA Government, 2015, South Australian Haemodialysis Guidelines: Routine Water Testing and Reverse Osmosis Monitoring.

3.9.4 Drainage System

Services that facilitate the drainage of waste fluids from the haemodialysis machines must be ventilated to prevent condensation and the subsequent growth of mould. This fact should be kept in mind when designing covers or screens for the drainage systems. Commercial models which comply with the relevant Australian Standards are available.

Drainage should be constructed of a chemically resistant material such as high-density polyethylene.

All treatment and maintenance areas should have sufficient floor waste drainage as disconnected systems can generate huge volumes of water in a short period of time.

3.9.5 Lighting

An examination light is provided at each treatment bay for clinical activities such as cannulation.

Lighting systems should facilitate patient care but patients may also need to adjust light for selected activities such as reading or computer work.

Refer to the Room Data Sheets for the detailed lighting requirements of each specific space.

3.9.6 Medical Gases

Patient treatment spaces and treatment rooms require access to oxygen and suction. Refer to the RDS and RLS for Treatment Bay – Renal Dialysis for the detailed requirements.

04 COMPONENTS OF THE UNIT

4.1 STANDARD COMPONENTS

Standard Components must comply with details in Standard Components described in these Guidelines; refer also to Standard Components Room Data Sheets and Room Layout Sheets.

Standard Components used in the Renal Dialysis Unit are identified in the Schedule of Accommodation. Rooms and spaces are defined as:

- standard components (SC) which refer to rooms and spaces for which room data sheets, room layout sheets (drawings) and textual description have been developed;
- standard components – derived rooms are rooms, based on a SC but they vary in size. In these instances, the standard component will form the broad room 'brief' and room size and contents will be scaled to meet the service requirement; and
- non-standard components which are unique rooms that are usually service-specific and not common.

The standard component types are listed in the attached Schedule of Accommodation. The current Standard Components can be found at:

www.healthfacilityguidelines.com.au/standardcomponents

4.2 NON-STANDARD COMPONENTS

Information relating to Non-Standard Components is detailed below.

TECHNICIAN ROOM / EQUIPMENT CLEAN UP

Description and Function

This room will be used to clean and maintain haemodialysis machines and other equipment and is usually combined with the storage for spare machines.

The number of machines that need to be stored as back-up will be dependent on the unit size. It is expected that a service of 12 chairs may require two spare machines and a 30-chair unit approximately six spare machines.

Location and Relationships

The room should be located so it is accessible to clinical areas of the unit and close to an exit so that machines can be moved in and out of the unit. Access to the water treatment plant is also required.

Considerations

The workroom will have vinyl, non-slip flooring with coved skirting. Floor waste will be needed in case of large spills.

All machines need to be connected to power and plumbing (RO outlet and tundish) so that they can automatically perform their frequent disinfection cycles to be ready for use if a machine in the unit breaks down.

There is an increasing use of haemodiafiltration and the current machines are large and heavy. While servicing, clear access is needed around the machine as panels hinge outwards.

A standing height workbench with sink is required with access to power and data and a tool kit.

Lockable storage will be needed for spare parts and chemicals.

A hand basin will also be provided, and the room must be body protected.

Ultrasound probes are also routinely reprocessed in this room.

05 APPENDICES

5.1 SCHEDULE OF ACCOMMODATION

The following schedules of accommodation provide indicative area allocations for Satellite and In-Centre Dialysis Units. The scenarios provided reflect a range of unit sizes and are based on common staffing profiles for the different types of units. However, the overall unit capacity will be determined through clinical services planning and will reflect the required staffing ratios, acknowledging that this may change over time depending on the patient profile.

Larger sized units will need to be scaled up in accordance with the guidance provided below relating to support areas.

The service model and patient profile will impact on the required spatial allocations, including consideration of the need for training facilities. The number of treatment spaces and the provision of training areas will be informed by detailed clinical services planning.

The 'Room / Space' column describes each room or space within the unit. Some rooms are identified as 'Standard Components' (SC) or a corresponding room which can be derived from a SC. These rooms are known as 'Standard Components - Derived' (SC-D).

Entry, Reception and Waiting

AusHFG Room Code	Room / Space	SC / SC-D	Satellite Unit				In-Centre Unit				Remarks
			10 Chairs		20 Chairs		6 Chairs		12 Chairs		
			Qty	m2	Qty	m2	Qty	m2	Qty	m2	
WAIT-10	Waiting	Yes	1	20	1	40	1	10	1	20	Area recommendation is indicative and will depend on the no. of people to be accommodated, opportunities to stagger appointment times and options for alternative approaches to waiting eg central hospital facilities/cafe. A high proportion of patients will have mobility aids and carers for support. 1.2m2 recommended per seat, 1.5m2 per wheelchair space. Smaller allocation for in-centre units given smaller number of outpatients. Refer to optional reception area below.
MEET-12	Meeting Room	Yes	1	18	1	30	1	12	1	20	For family meetings, staff meetings, multidisciplinary meetings, community training and other functions. Videconferencing required.
BHW	Bay - Weight	Yes	1	2	1	2	1	2	1	2	Ensure design supports access from mobility aids eg scooters. Includes wheelchair scales.
BMEQ-4	Bay - Mobile Equipment	Yes	1	3	1	4	1	2	1	3	For storage of mobility aids and wheelchairs
WCPU-3	Toilet - Public	Yes	2	3	3	3	1	3	2	3	Directly access from the waiting room. Door location should not permit a view into the toilet
	Discounted Circulation		32%		32%		32%		32%		

Treatment Areas

AusHFG Room Code	Room / Space	SC / SC-D	Satellite Unit				In-Centre Unit				Remarks
			10 Chairs		20 Chairs		6 Chairs		12 Chairs		
			Qty	m2	Qty	m2	Qty	m2	Qty	m2	
SSTN-10	Staff Station	Yes	1	10	2	10	1	10	1	14	Area to be adjusted depending on staff profile. Higher ratio of staff to patients on in-centre units. Space may need to be subdivided in larger units. Include electronic journey board (not visible to public).
BPTS	Bay - Pneumatic Tube	Yes	1	1	1	1	1	1	1	1	
PBTR-RD-A PBTR-RD-B	Patient Bay - Renal Dialysis	Yes	9	9	18	9	5	9	10	9	Mix of recliners vs bed bays within these units to be determined based on the patient profile. Bays may be arranged in pods for appropriate cohorting of patients. Refer to optional acute bed bay for in-centre units below.
1BR-H-12	1 Bed Room	Yes	1	12	2	12	1	12	2	12	Number of isolation rooms to be determined based on local infection control requirements. Refer to optional ensuite below.
BHWS-B	Bay - Handwashing, Type B	Yes	3	1	6	1	2	1	4	1	One handwashing basin per three open bays or part thereof.
	Bay - PPE	Yes	1	0.5	1	0.5	1	0.5	1	0.5	A Personal Protective Equipment Bay (one shared between two rooms) outside the isolation room.
WCAC	Toilet - Accessible	Yes			1	6			1	6	For use by patients in open treatment bays
ENS-ACC	Ensuite - Accessible	Yes	1	7	1	7	1	7	1	7	For use by patients in open treatment bays. Shower required for ad hoc instances.
	Discounted Circulation		38%		38%		38%		38%		

Support Areas

AusHFG Room Code	Room / Space	SC / SC-D	Satellite Unit				In-Centre Unit				Remarks
			10 Chairs		20 Chairs		6 Chairs		12 Chairs		
			Qty	m2	Qty	m2	Qty	m2	Qty	m2	
CLUR-12	Clean Store / Medication Room	Yes	1	12	1	14	1	12	1	14	Larger allocation per chair for in-centre units due to higher volume of medications.
BLIN	Bay - Linen	Yes	1	2	2	2	1	2	1	2	Cupboard or trolley bay to hold clean laundry
BRES	Bay - Resus	Yes	1	1.5	1	1.5	1	1.5	1	1.5	Adjacent to staff station
BMEQ-4	Bay - Mobile Equipment	Yes	2	2	2	4	2	2	2	4	Consumable trolleys, IVs, BP machines, ultrasound, WOWs when not in use. Additional area per chair required on in-centre units.
BBEV-OP	Bay - Beverage, Open Plan	Yes	1	4	1	6	1	4	1	5	To receive and issue light meals and beverages for patients.
DTUR-10	Dirty Utility	Yes	1	8	1	10	1	8	1	10	Appropriate disposal unit required for corrosive dialysate concentrate. Refer to HPU Section 2.2.11.
STBK-20	Store - Bulk	Yes	1	18	1	34	1	14	1	22	For dialysis fluid storage. Must be placed on the perimeter of the Unit and be accessible by a pallet lifter. Shelving must have 100kg weight capacity and shelves need to be at least 400mm apart or adjustable.
WTPL	Water Treatment Plant Room	Yes	1	18	1	22	1	18	1	18	Close to treatment areas to reduce piping runs. 18m2 will support a unit of up to 12 chairs. 22m2 will support a unit up to 24 chairs. Final arrangement will depend on type / manufacturer of RO equipment procured.
	Technician Room / Equipment Clean Up	Yes	1	12	1	20	1	8	1	14	For the servicing of dialysis machines. All machines require connection to power and plumbing. Ultrasound probes are also routinely reprocessed in this room.
	Equipment Store		1	10	1	18	1	6	1	12	This is usually combined with the Technician Room above. For storage of spare machines, portable RO units and other equipment. Area requirement will depend on need to store home dialysis equipment. All machines require connection to power and plumbing. Training machines may be stored with training areas if dedicated service provided.
DISP-8	Disposal Room	Yes	1	3	1	5	1	3	1	5	Bay for waste.
CLRM-5	Cleaner's Room	Yes	1	5	1	5	1	5	1	5	
	Discounted Circulation		25%		25%		25%		25%		

Staff Areas

Staff work areas and amenities will be allocated in line with local jurisdictional policies.

AusHFG Room Code	Room / Space	SC / SC-D	Satellite Unit				In-Centre Unit				Remarks
			10 Chairs		20 Chairs		6 Chairs		12 Chairs		
			Qty	m2	Qty	m2	Qty	m2	Qty	m2	
OFF-S9	Office - Single Person	Yes		9		9		9		9	Number and area allocation will depend on staff profile and local jurisdictional policies.
	Office – Workstation			4.4		4.4		4.4		4.4	Number and area allocation will depend on staff profile and local jurisdictional policies.
SRM-15	Staff Room	Yes	1	10	1	14	1	10	1	14	Discreet section of the Unit. Size will be dependent on staff profile. Larger staff ratio per chair for in-centre services. Direct access required as staff are unable to leave the unit.
WCST	Toilet - Staff	Yes	1	3	2	3	1	3	2	3	Discreet location. Access to a shower may also be required. Access to accessible toilet also required.
PROP-2	Property Bay - Staff	Yes	1	0.5	1	1	1	0.5	1	1	Discreet and secure location. Adjacent to Staff Room.
	Discounted Circulation		25%		25%		25%		25%		

Optional Areas

The inclusion of the optional areas below is dependent on the service scope and local clinical and/or operational requirements. The requirement for each area should be confirmed on a project by project basis and included where it is essential to meet the service need.

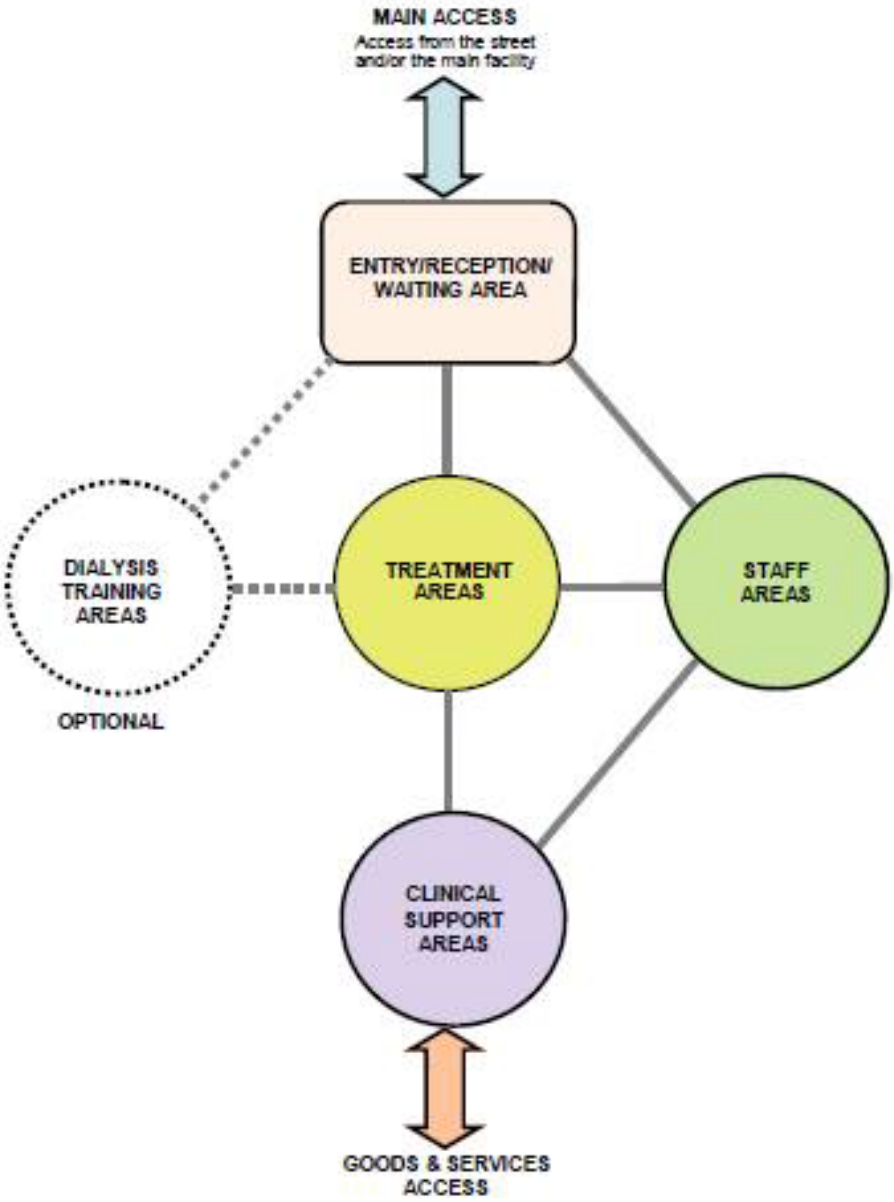
Where there is a developed program of training for home-based dialysis as approved in the Service Plan, a dedicated space is to be provided. For some services, a multi-function space may be appropriate that can be used for some training and/or selected procedural work such as the insertion of catheters etc.

The optional 12m2 renal dialysis treatment bay may be provided for a proportion of bays within in-centre units to accommodate the additional equipment required to manage high acuity patients. The proportion of beds provided at this larger size will depend on the patient profile and the relative mix of inpatients and outpatients attending the unit.

AusHFG Room Code	Room / Space	SC / SC-D	Satellite Unit				In-Centre Unit				Remarks
			10 Chairs		20 Chairs		6 Chairs		12 Chairs		
Entry, Reception & Waiting											
RECL-10	Reception / Clerical	Yes	1	8 (o)	1	10 (o)	1	6 (o)	1	8 (o)	Optional. Inclusion will be dependent on size of unit and resourcing. Design to ensure staff safety.
STPS-8	Store - Photocopy / Stationery	Yes	1	4 (o)	1	6 (o)	1	3 (o)	1	4 (o)	Adjacent to the reception/clerical area to hold printers, stationery etc.
CONS	Consult Room	Yes	1	12 (o)	1	12 (o)	1	12 (o)	1	12 (o)	Optional. May be provided through collocated outpatient clinics.
INTF	Interview Room	Yes	1	12 (o)	1	12 (o)	1	12 (o)	1	12 (o)	Optional, depending on service need and potential to share with adjacent services.
TRMT	Treatment / Training Room		1	14 (o)	1	14 (o)	1	14 (o)	1	14 (o)	Optional, dependent on access to adjacent treatment / procedure room in outpatient or inpatient services and provision of training. Where there is a developed program of training as approved in the Clinical Services Plan dedicated training space/s will be required. Locate to enable flexible use for treatment during peaks in demand.
	Office – Workstation			4.4 (o)		4.4 (o)		4.4 (o)		4.4 (o)	Optional. Requirement will depend on staffing profile and provision of training services. Refer to local jurisdictional policies regarding staff work area allocations. Staff offices / workstations also included under staff areas below.
WCAC	Toilet - Accessible	Yes	1	6 (o)	2	6 (o)	1	6 (o)	1	6 (o)	Optional, may be located with adjacent service. Directly access from the waiting room. Door location should not permit a view into the toilet.
Treatment Areas											
	Treatment Bay - Renal Dialysis, Acute Bed Bay	Yes						12 (o)		12 (o)	Optional. Larger sized bay for high acuity patients within in-centre units. Mix of recliners vs bed bays within these units to be determined based on the patient profile.
ENS-ST	Ensuite - Standard	Yes	1	5 (o)	2	5 (o)	1	5 (o)	2	5 (o)	Optional. Associated with isolation rooms, however these are rarely used for patients on haemodialysis and can be an infection control risk if used sparingly. Requirements will depend on local operational and infection control advice.
Support Areas											
BS-4	Bay - Storage		1	1 (o)	1	2 (o)	1	1 (o)	1	1 (o)	Optional, only required if significant travel distance to bulk store.

5.2 FUNCTIONAL RELATIONSHIPS DIAGRAMS

The following diagram sets out the relationships between zones in a Renal Dialysis Unit.



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5.4 FURTHER READING

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