

# **Australasian Health Facility Guidelines**

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## **Part B - Health Facility Briefing and Planning**

### **HPU 260 Cardiac Care Unit**

*Uncontrolled when printed*

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# 01 INTRODUCTION

## 1.1 Preamble

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This Health Planning Unit (HPU) has been developed for use by the design team, project managers and end users to facilitate the process of planning and design.

This revised version has been informed by an extensive consultation process with clinical experts completed during 2017.

## 1.2 Introduction

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This HPU outlines the requirements for a Cardiac Care Unit (CCU) including the additional facility requirements for managing patients with cardiovascular conditions (medical and surgical) in an inpatient unit. This document was previously called a Coronary Care Unit but the name has been changed to reflect the evolving role of specialist cardiac care.

This HPU 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;
- Part C: Design for Access, Mobility, OHS and Security;
- Part D: Infection Prevention and Control; and
- Part E: Building Services and Environmental Design.

For general information regarding general inpatient unit planning and design, it is recommended that this HPU be read in conjunction with HPU 340 Inpatient Accommodation Unit (2016).

Where the CCU is a component of an Intensive Care or High Dependency Unit, refer to HPU360 Intensive Care – General (2016).

Facility requirements for cardiac surgery (intensive care; high dependency beds; operating theatres) are described in HPU360 Intensive Care – General and HPU520 Operating Unit.

This HPU should be read in conjunction with HPU170 Cardiac Investigation Unit (2016) which details requirements for cardiac catheter laboratories, cardiac diagnostics and specialist cardiac outpatient services.

## 1.3 Policy Framework

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Prior to undertaking a project, planners and project staff should familiarise themselves with individual state and territory specific policies.

In relation to the provision of acute cardiac care services, reference should be made to jurisdictional clinical services plans, role delineation and service level information.

Refer to References and Further Reading for additional information relating to individual jurisdictions.

## 1.4 Description

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### 1.4.1 Description of a Cardiac Care Unit

A CCU is a specialised area of a healthcare facility providing intensive care for emergency and acute cardiac illness at a high level of expertise. These units have advanced monitoring and diagnostic equipment and access to a specialist cardiac team with critical care training. Staffing levels are typically more intensive than other inpatient settings.

A cardiac care unit has extended roles beyond the management of coronary artery disease. Patient management includes:

- acute arrhythmias;
- acute heart failure;
- ischemic heart disease and acute coronary syndromes;
- structural heart disease (e.g. congenital abnormalities);
- post recovery care for procedures undertaken in the cardiac catheter lab (CCL) such as percutaneous coronary intervention (PCI), trans-catheter valve replacement; and
- other conditions such as pulmonary embolism and infective endocarditis.

Patient management, treatment and procedures may vary across units with some work undertaken in an ICU or CCU e.g. invasive ventilation and continuous veno-venous haemodialysis (CVVHD) will routinely occur in ICU.

Opportunities to deliver models that manage the full range of cardiac services (medical, procedural and surgical) are possible as some surgical techniques are evolving to less invasive procedures.

Cardiac care services will vary depending on the role delineation and service level of the healthcare facility. Broad features of these services are detailed below (adapted from Clinical Services Capability Framework, Queensland Health):

#### **Level 4 services:**

- may be collocated with an intensive care service or provided as a stand-alone unit;
- provides general cardiac care but will not provide care for critically ill patients requiring advanced haemodynamic monitoring; and
- on-site, non-invasive diagnostic tests and access to diagnostic cardiac catheterisation.

#### **Level 5 services:**

- services generally provided in a stand-alone unit, depending on a critical mass of beds;
- provides comprehensive cardiac care to critically ill and complex cardiac patients; and
- 24 hour access to on-site diagnostic and interventional services and undertakes percutaneous coronary interventions on all but the patients of highest complexity.

#### **Level 6 services:**

- services provided in a stand-alone unit;
- provides highest level of complex care for patients with serious cardiac conditions requiring continuous cardiac and haemodynamic monitoring;
- access to cardiac surgery; and
- a referral service for all other levels of service.

### 1.4.2 Services Provided

Depending on the role delineation or service level, treatments and procedures provided within the CCU may include:

- cardiac monitoring which may be invasive and non-invasive or hard wired, with or without telemetry;
- invasive haemodynamic monitoring;
- co-ordination and administration of appropriate drug therapies, including thrombolysis;
- non-invasive ventilation;
- haemodialysis;
- monitoring of devices used to manage heart failure, (i.e. left ventricular assist device);
- cardioversion – elective and emergency procedures;
- intra-aortic balloon counter-pulsation;
- transthoracic echocardiography (TTE);
- transoesophageal echocardiography (TOE);
- exercise stress testing;
- management of patients with temporary or external pacing wires; and
- patient education and rehabilitation.

### 1.4.3 Future Trends

The services provided by a CCU, particularly in the tertiary setting, are evolving as therapies improve. Such advances are reducing the number of patients with significant cardiac damage resulting from a cardiac event such as myocardial infarction (either ST elevated known as STEMI or non-STEMI), and as a result, the length of stay for these patients is decreasing.

Evolving and new techniques to treat cardiac disease means that patients who are not suitable for certain surgical treatments can now be managed with interventional cardiology procedures (e.g. trans-catheter aortic valve implantation).

The CCU is now the setting for the administration of more complex drugs and therapies. Patients are being transferred to step-down facilities earlier.

Heart failure programmes have resulted in increased survival rates. Heart failure treatments are becoming more complex, resulting in greater levels of ambulatory and inpatient care for heart failure. Reliance on cardiology specialist staff, interventional and diagnostic services is also increasing.

The proportion of older adults being admitted to the CCU is increasing.

## 02 PLANNING

### 2.1 Operational Models

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#### 2.1.1 Hours of Operation

The CCU will provide service 24 hours a day, seven days a week.

#### 2.1.2 Arrangement of Cardiac Services

Consideration should be given to the location of inpatient beds, cardiac diagnostic and interventional services and associated office space as it may be possible to make better use of specialist staff and/or share space between services.

#### 2.1.3 Bed Numbers

Acute cardiac care bed numbers will be dependent on service planning which will project bed numbers, based on historical activity, population growth and clinical trends.

In smaller units there may be a need to provide 'swing beds' (for example with adjacent ICU) to provide a critical mass of beds and allow for expansion or contraction as demand for services change.

#### 2.1.4 Bed Mix

CCU beds will be arranged to facilitate critical care in a mix of single and two-bed rooms.

All single bed rooms can accommodate patients requiring standard contact isolation, but in large centres at least one negative pressure single bedroom with anteroom should be considered for isolation purposes.

The care of bariatric patients will also need to be considered.

Refer to HPU 340 Inpatient Accommodation Unit, Australasian Health Facility Guidelines (AHIA, 2016) for further information when planning cardiology and cardiothoracic inpatient units.

### 2.2 Operational Policies

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#### 2.2.1 General

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

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

#### 2.2.2 Cardiac Rehabilitation

Cardiac rehabilitation includes education in risk factor modifications such as diet, counselling and physical activity.

Cardiac rehabilitation in the CCU context will involve one-on-one education and some group education. Patients will be referred for an ongoing program on discharge.

#### 2.2.3 Medical Imaging

Ready access will be required to medical and cardiac imaging services for a range of imaging needs including chest x-rays, CT including computer tomography coronary angiography (CTCA), MRI, nuclear medicine and PET.

A mobile x-ray machine may be available to use for monitored patients who may be too unwell to transfer and will be located in the medical imaging unit, unless a dedicated machine servicing a range of critical care units can be justified. Alternatively, larger services, collocated with other critical care services, may consider a satellite imaging unit (e.g. chest x-ray) as this reduces travel times and staffing needed to transport monitored patients.

#### **2.2.4 Cardiac Diagnostics and Procedures**

Many cardiac diagnostic tests and procedures may be undertaken at the bed side and may include:

- ECG and echocardiography;
- Arterial sheath removal;
- transoesophageal echo (TOE) and transthoracic echocardiography (TTE);
- insertion of temporary pacing wires;
- pericardiocentesis;
- intra-aortic balloon pump;
- pulmonary artery catheters; and
- cardioversion.

Equipment will generally be stored in the cardiac investigation unit.

Other cardiac tests and diagnostic procedures may require the patient to be transferred to a cardiac investigations unit for procedures such as stress testing, TOE or cardiac angiography. Selected procedures such as a combined TOE/cardioversion may instead be performed in an operating theatre.

#### **2.2.5 Pathology**

Pathology is extensively used by cardiac services and may be facilitated by point-of-care equipment (blood gas analyser, either fixed or hand-held) and pneumatic tube system (taking samples to the pathology unit) in or near the CCU. Infrastructure may be shared with an adjoining unit.

#### **2.2.6 Bedside Monitoring**

Cardiac monitoring equipment should allow visual display at both the bed location and the staff station. Each cardiac care bed should be individually monitored.

Bedside monitors should be mounted so they are visible from the bedroom door, and staff should be able to assess the status of the patient at a glance. Their location should not interfere with physical access to the patient.

The addition of 'slave' monitors in corridors of larger units should be considered.

As the extent of monitoring equipment is likely to increase in the future, consider the need for increased space for equipment placement and storage, and the impact that extra demand that may place on the electrical supply capacity.

#### **2.2.7 Telemetry**

Telemetry is the transmission of cardiac ECG signals to a receiving location via Wi-Fi, where they are displayed for monitoring purposes.

Telemetry (remote monitoring) may be used for patients within the CCU and those in other inpatient units throughout the facility. These patients may be in an adjoining inpatient unit, but telemetry may occur in any unit of the healthcare facility.

A central monitor will be located in the CCU staff station to ensure appropriate skilled observation.

### **2.2.8 Telemedicine**

Telemedicine is the transmission of images, voice and data between two or more health units via telecommunication channels in order to provide clinical advice and consultation, education and training services. It has particular relevance for rural and remote areas. Telemedicine links may allow for patients to be treated closer to home, supported by advice from tertiary or regional referral hospital.

### **2.2.9 Renal Dialysis**

The provision of a dialysis station which includes a water supply and drainage, to an agreed number of CCU beds and will be determined on a project-by-project basis.

### **2.2.10 Storage - Equipment**

Routinely used equipment (e.g. cardiac monitors) will be stored in bed rooms. Equipment storage may be in bays near point of use or in a central store for items used less frequently. Items may include:

- resuscitation trolley;
- non-invasive ventilation machines;
- ECG machine(s);
- intra-aortic balloon pump;
- IV stands and infusion pumps;
- procedure trolleys;
- transport defibrillators, transport packs and transport oxygen cylinders;
- battery chargers;
- walking aids;
- sitting and standing scales;
- workstations on wheels (WOW); and
- pressure relieving mattresses, pillows and positional aids.

### **2.2.11 Visitors**

CCU will have specific policies regarding visiting hours and accommodation for carers guided by the facility's overall operational policies. Visitor amenities may include:

- Patient and visitor lounge;
- ability to room-in with the patient; and
- private spaces for interviews and bereavement etc.

### **2.2.12 Staffing**

The multidisciplinary staff establishment, permanent and visiting, may include:

- medical staff, including cardiologists, registrars and junior medical staff;
- nursing staff, including unit manager, nursing specialists and educators;
- allied health staff, including social worker, dieticians and physiotherapists;
- other staff, including clerical, and environmental services staff;
- students from all disciplines; and
- volunteers.

Staffing levels will vary for each unit, depending on the size of the unit and the operational policies.

## **2.3 Planning Models**

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### **2.3.1 Location**

The location may enable expansion if additional beds are required in the future.

In all instances, by good design and location, the potential for appropriate sharing of facilities with an adjoining unit should be maximised.

Ensure that the CCU and adjoining units do not act as a thoroughfare to other parts of the healthcare facility.

### **2.3.2 Layout**

All cardiac care beds should ideally be visible from the staff station. In larger units, where this cannot be achieved, consideration may be given to providing decentralised staff/work stations with computer support. However, all units require a central staff station with central cardiac monitors to facilitate the early detection of arrhythmias so that staff can respond and plan for ongoing management.

### **2.3.3 Cardiac and Cardiac Surgery Inpatient Unit**

In most respects, an acute cardiac and cardiac surgery inpatient units will be the same as a general medical or surgical inpatient unit with the following additions:

- telemetry equipment and antenna with monitoring at a staff station that may be in the CCU or in the main inpatient unit staff station; and
- access to patient education facilities for cardiac rehabilitation.

## **2.4 Functional Areas**

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### **2.4.1 Functional Zones**

Functional zones may be classified as follows:

- patient areas;
- clinical support areas;
- staff areas including office space and amenities; and
- shared areas.

### **2.4.2 Patient Areas**

Patient areas include bed rooms, ensuites and a patient and family lounge.

Bed rooms may be a mix of single and two bed rooms.

Patient lounges provide an opportunity for socialisation, a destination and a space to meet with family and friends. With an increasing number of single bed rooms, a need for constant monitoring and decreased lengths of stay, the utilisation of this space may be low. Where provided, this space should be provided within the envelope of the CCU so staff can supervise easily.

### 2.4.3 Clinical Support and Shared Areas

The extent of room(s) or spaces that may be shared between CCU and an adjoining inpatient unit or ICU should be determined by the size of the overall CCU itself. Large units may be entirely self-contained with regard to clinical spaces, but may still share some staff amenities and teaching spaces.

Areas accessed by staff in the management of the patient include:

- staff station - central and decentralised and including an clinical workroom;
- interview room;
- clean utility/medication room;
- dirty utility room;
- bays for linen, equipment, resuscitation and WOW;
- storage - equipment and consumables; and
- disposal room (ideally located at the periphery of the unit with direct external access by environmental services staff).

### 2.4.4 Staff Areas

Staff areas include office space and staff amenities.

**Office and related space** for the unit manager and, where indicated, senior nursing staff, such as nursing specialists and educators is usually provided within the envelope of the unit. The location of offices for medical staff will usually be provided in clinical department office which may be located within ready access of the unit.

Access to adequate facilities for staff education and meetings will be needed. In larger units, staff require easy access to simulation training and competency assessment.

Research associated with the provision of all cardiac services will be a feature of tertiary services. While clinical trials staff may visit the unit, office and related space will not be provided within the CCU. Specific requirements will be dependent on scope and scale of research activities.

**Staff amenities** will include a staff room that is readily accessible and may be shared between units for use by all staff and students to facilitate interaction. Staff toilets and lockers should be immediately accessible within the envelope of the unit.

## 2.5 Functional Relationships

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### 2.5.1 External

The CCU will have ready access to:

- cardiac investigation unit, which includes cardiac catheterisation laboratories etc. (noting a collocation of the two services is often preferred);
- emergency department;
- intensive care unit;
- operating theatres; and
- medical imaging, nuclear medicine and PET.

Easy access required to:

- inpatient units for cardiology (step down beds) and cardiothoracic surgery;

- cardiac rehabilitation services;
- pharmacy; and
- pathology.

### **2.5.2 Internal**

Optimal internal relationships to be achieved include those between:

- patient occupied areas forming the core of the unit;
- staff station(s) and associated areas that need direct access and observation of patient areas;
- utility and storage areas that need to be readily accessible to both patient and staff work areas;
- public areas located on the perimeter of the unit; and
- shared areas that should be easily accessible from the units served.

## 03 DESIGN

### 3.1 Accessibility

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There should be a single public entry point to the unit. Ideally a separate access will be provided for staff, patient transfers and for the movement of supplies and waste. Ideally public entry points will be observed by staff.

### 3.2 Parking

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Selected staff will provide on-call services and provision of parking that is both nearby and safe needs to be considered.

For staff parking, refer to Part C: Section 06 Safety and Security Precautions, for further information.

### 3.3 Disaster Planning

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Each site and unit will have operational plans and policies detailing the response to a range of emergency situations both internal and external.

For further information, refer to:

- local jurisdictional disaster management plans;
- AusHFG Part B: Section 80 General Requirements; and
- AusHFG Part C: Section 06 Safety and Security Precautions.

### 3.4 Infection Control

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Determine on a project-by-project basis the need for a negative pressure isolation room. Relevant factors for inclusion are: the size of the unit; its location, and role delineation.

For further information refer to:

- NHMRC, 2010, Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010);
- AusHFG Part D: Infection Prevention and Control; and
- AusHFG Isolation Rooms – Engineering and Design Requirements.

### 3.5 Environmental Considerations

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#### 3.5.1 Acoustics

Alarms and monitors add to the sensory overload in cardiac care units. Without reducing their importance or sense of urgency, such signals should be modulated to a level that will alert staff, yet be rendered less intrusive. For these reasons, surfaces that absorb sound should be used while keeping infection control, maintenance and equipment movement needs under consideration.

#### 3.5.2 Natural Light

Daylight to all bedrooms is essential. Daylight to patient lounge areas and staff rooms is desirable.

### 3.5.3 Privacy

Visual privacy is required for patients, but the higher priority is the requirement for staff to be able to see patients and observe their condition.

### 3.5.4 Interior Décor

Interior décor includes furnishings, style, colour, textures, ambience, perception and taste. This can help prevent an institutional atmosphere. However, cleaning, infection control, fire safety, patient care and the patients' perceptions of a professional environment should always be considered.

Some colours, particularly the bold primaries and green should be avoided in areas where clinical observation occurs such as bedrooms and treatment areas. Such colours may prevent the accurate assessment of skin tones e.g. yellow (jaundice), blue (cyanosis) and red (flushing).

A calming non-threatening environment is desirable. Consideration should be given to include art as a way of providing distraction.

## 3.6 Space Standards and Components

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### 3.6.1 Human Engineering

Human engineering covers those aspects of design that permit effective, appropriate, safe and dignified use by all people, including those with disabilities. Refer to AusHFG Part C Section 704.

### 3.6.2 Ergonomics

Design and build the unit to ensure that patients, staff, visitors and maintenance personnel are not exposed to avoidable risks of injury.

Refer to Part C Section 704 for further details.

### 3.6.3 Access and Mobility

Where necessary, design should comply with AS/NZS 1428:2010 Design for Access and Mobility (Set), AS/ NZS 1428:2010 Design for Access and Mobility (Set) (Standards Australia, 2010). Refer to Part C: Section 704, Human Engineering for details.

### 3.6.4 Building Elements

Building elements include walls, floors, ceilings, doors, windows and corridors and are addressed in detail in the section on Building Elements in AusHFG Part C: Section 03, Space Standards and Dimensions.

**Window** sill heights should be low enough to permit a view to the outside by a patient lying in bed. This is usually 600 millimetres above the finished floor level.

Ensure that **doorways** are sufficiently wide and high enough to permit the manoeuvring of beds, wheelchairs, trolleys and equipment without risk of damage or manual handling risks, particularly in rooms designed for bariatric patients.

**Corridor** widths should accommodate a bed with associated equipment and escorts.

## 3.7 Safety and Security

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### 3.7.1 General

Consideration of safety and security risks should begin during the planning and design phase of a healthcare facility and consider the health and safety of patients, visitors, staff and maintenance personnel.

### 3.7.2 Safety

Considerations within the CCU may include:

- allowing for ceiling-mounted hoists to a nominated number of beds. This will support the care of bariatric patients and those with high care needs;
- inclusion of mobile equipment to store other equipment such as mobile hoists close to the point of care; and
- allocation of bed room and ensuite that is sized and equipped to manage bariatric patients.

### 3.7.3 Security

Security of the various components or zones should be addressed at each stage of the planning and design process and not imposed on a completed building. Aspects of security may include:

- the need for fixed and/or personal duress alarms;
- access control particularly at night;
- observation of access points into the unit; and
- monitoring of patient movements into and out of the unit.

For further information refer to individual jurisdiction policies and to:

- individual jurisdiction security policies where available; and
- AusHFG Part C: Section 06, Safety and Security Precautions.

## 3.8 Finishes

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### 3.8.1 General

Finishes in this context refers to walls, floors, windows and ceilings.

Refer to AusHFG Part C: Section 03, Space Standards and Dimensions for further details.

### 3.8.2 Wall Finishes

Adequate wall protection should be provided to areas that will be regularly subjected to damage. Particular attention should be given to areas where bed or trolley movement occurs such as corridors, bed head walls, treatment areas and equipment bays.

### 3.8.3 Floor Finishes

Floor finishes should be appropriate to the function (e.g. non-slip in wet areas) of the space and be hard wearing, easy to clean and maintain. Clinical areas where patient care and treatments are undertaken should not be carpeted.

Selection of floor finishes should consider manual handling issues, including the impact of the flooring on push or pull forces for wheeled equipment, and be adequate to avoid the potential for slips and trips caused by joints between flooring.

Refer to:

- AusHFG Part C Section 703 Space Standards and Dimension;
- AusHFG Part D Infection Prevention and Control; and
- TS7 - Floor Coverings in Healthcare Buildings, Issue V1.1 (NSW Health, 2009).

### 3.8.4 Ceiling Finishes

Ceiling finishes should be selected with regard to appearance, cleaning, infection control, acoustics and access to services.

Refer to Part C: Section 03, Space Standards and Dimensions.

## 3.9 Fixtures, Fittings & Equipment

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### 3.9.1 Definitions

The Room Data and Room Layout Sheets in the AusHFG define fixtures and fittings as follows:

- fixtures: Items that require service connection (e.g. electrical, hydraulic, mechanical) that include, but are not limited to hand basins, light fittings, medical service panels etc. but exclude fixed items of serviced equipment; and
- fittings: Items attached to walls, floors or ceilings that do not require service connections such as curtain and IV tracks, hooks, mirrors, blinds, joinery, pin boards etc.

For further information, refer to:

- Standard Components - Room Data Sheets (RDS) and Room Layout Sheets (RLS) ; and
- AusHFG Part F: Section 680 Furniture Fittings and Equipment.

## 3.10 Building Service Requirements

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### 3.10.1 General

In addition to topics addressed below, refer to:

- AusHFG Part E: Building Services and Environmental Design; and
- jurisdictional guidelines and policies.

### 3.10.2 Mechanical Services

The temperature within the unit should be maintained within a comfortable range not exceeding 24°C.

### 3.10.3 Electrical Services

Considerations within the CCU include:

- emergency power supply for critical equipment;
- cardiac protection to CCU beds; and
- possible need for UPS to central staff station (if not supplied with the monitor).

For further information refer to AS/NZS 3003:2011 Electrical Installations - Patient Areas (Standards Australia, 2011).

### 3.10.4 Hydraulic

Where infrastructure to support haemodialysis at the bedside is needed, refer to the Standard Component for a Treatment Bay – Renal Dialysis, Type A (room code TRMT-RD-A). Town water will be supplied rather than a reverse osmosis (RO) outlet. Staff will use a portable RO unit instead. This reduces the need for ongoing maintenance of the RO system where use is intermittent.

### **3.10.5 Information Technology and Communications**

A range of information technology and communications infrastructure and systems will need to be considered including:

- infrastructure to support electronic medical records. Solutions may vary and include tablet technology, fixed PCs or mobile workstations;
- cardiac monitor at the bedside and staff station;
- wireless technology to support equipment such as telemetry and WOW;
- videoconferencing capacity/telemedicine;
- electronic health records and other point of care systems;
- bar coders and scanners to support the management of clinical supplies; and
- e-medication management and e-storage systems such as automated dispensing systems.

### **3.10.6 Lighting**

Consider use of examination lights at each bed space. Other lighting to support a range of functions is described in the Standard Component for a 1 Bed Room – CCU for additional information (code 1BR-SP-B).

### **3.10.7 Medical Gases**

Medical gases may be located on wall-mounted service panels or ceiling-mounted pendants.

Where inpatient ensuites are provided, provision should be made for an oxygen outlet.

Refer to the Standard Component for a 1 Bed Room – CCU for additional information (code 1BR-SP-B).

### **3.10.8 Telemetry**

The CCU and cardiac/cardiac surgery inpatient units will require a telemetry monitoring system consisting of, but not limited to:

- sensors appropriate to the particular signals to be monitored;
- battery powered, patient-worn transmitters;
- a radio antenna and receiver; and
- a display unit (monitor) capable of concurrently presenting information from multiple patients (i.e. a central monitor).

## 04 COMPONENTS OF THE UNIT

### 4.1 Standard Components

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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;
- *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](http://www.healthfacilityguidelines.com.au/standardcomponents)

### 4.2 Non-Standard Components

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Non-standard components are unit-specific and provided in accordance with specific operational policies and service demand.

All the rooms and spaces in the schedule of accommodation appear as standard components but may need some slight modification such as a central electrocardiogram (ECG) monitor or printer at the staff station.

## AX APPENDICES

### AX.01 Schedule of Accommodation

A schedule of accommodation (SoA) is shown below and lists generic spaces for this HPU. Quantities and sizes of spaces will need to be determined in response to the service needs of each unit on a case by case basis. Note that:

Scenarios, to help planning staff develop a SoA, are provided for a:

- 12 bed CCU; and
- six bed CCU with is part of a 28 bed inpatient unit. This option allows for sharing of staff and clinical infrastructure in a logical way. In this scenario, it is assumed that six of the 28 beds are sized at 20m<sup>2</sup> with the remaining 22 beds sized in line with a standard inpatient bed room size (15 to 16.5m<sup>2</sup>).

Where CCU beds are being planned as part of an intensive care unit, refer to HPU360 Intensive Care Unit – General.

In some cases, rooms and spaces are described as 'optional' or 'o'. Inclusion of this room or space will be dependent on a range of factors such as operational policies or clinical services planning.

Where an asterisk (\*) is shown in remarks, this denotes possible opportunities to share space with an adjacent unit or service.

#### PATIENT AREAS

**Note 1:** Requirements for a negative pressure room, including anteroom, to be determined on a project-by-project basis.

**Note 2:** Local services may choose to use two bed rooms so numbers have not been indicated in the SoA.

ROOM CODE	ROOM/SPACE	SC/ SC-D	12 Bed Unit		28 Bed Unit		REMARKS
			Qty	m2	Qty	m2	
1BR-SP-B	1 Bed Room – CCU, 20m <sup>2</sup>	Yes	12	20	6	20	
1BR-ST	1 Bed Room – Inboard Ensuite	Yes			6	16	A size of 16.5m <sup>2</sup> is recommended where an 8.4m grid is used.
2BR-ST-A	2 Bed Room – Inboard Ensuite	Yes		27	8	27	Refer Note 2. Assumed that in 28 bed option, all 6 CCU dedicated beds would be single. A size of 29m <sup>2</sup> is recommended where an 8.4m grid is used.
ENS-ST-A1	Ensuite – Standard, 5m <sup>2</sup>	Yes	11	5	19	5	
ENS-BA	Ensuite – Bariatric, 7m <sup>2</sup>	Yes	1	7	1	7	One ensuite sized for bariatric use.
	Discounted Circulation		38%		38%		

**CLINICAL SUPPORT AREAS**

**Note 3:** Procedure room can be considered where double rooms are used to provide accommodation for CCU patients. Otherwise, treatment and procedures are assumed to occur in bed room, sized at 20m<sup>2</sup>.

ROOM CODE	ROOM/SPACE	SC/ SC-D	12 Bed Unit		28 Bed Unit		REMARKS
			Qty	m2	Qty	m2	
SSTN14	Staff Station, 14m <sup>2</sup>	Yes	1	14	1	16	Assume additional space for central monitor and ECG printer.
	Staff Base			5	2	5	Two decentralised bases assumed for 28 bed scenario.
OFF-CLN	Office – Clinical Workroom	Yes	1	12	1	15	
CLUR-14	Clean Utility Room / Medication, 14m <sup>2</sup>	Yes	1	14	1	14	Centrally located.
DTUR-10	Dirty Utility, 10m <sup>2</sup>	Yes	1	10	1	14	SC for 28 bed unit is DTUR-14
BBEV-OP	Bay – Beverage, Open Plan, 4m <sup>2</sup>	Yes	1	4	1	4	
BHWS-B	Bay – Handwashing, Type B	Yes		1		1	Located in corridor as required.
BLIN	Bay – Linen	Yes	1	2	2	2	
BMEQ-4	Bay Mobile Equipment, 4m <sup>2</sup>	Yes	2	4	3	4	A range of equipment such as ECG machine etc. May also be used to store WOW where used.
BPTS	Bay – Pneumatic Tube	Yes	1	1	1	1	Selected services may be able to justify some point of care testing. *In case of 12 bed unit, this facility may be able to be shared with an adjacent unit.
BRES	Bay - Resuscitation	Yes	1	1.5	1	1.5	
CLRM-5	Cleaners Room, 5m <sup>2</sup>	Yes	1	5	1	5	*In case of 12 bed unit, this facility may be able to be shared with an adjacent unit.
DISP-10	Disposal Room, 10m <sup>2</sup>	Yes		10		10	Shared with adjacent unit.
INTF	Interview Room	Yes	1	12	1	12	
STEQ-14	Store – Equipment, 14m <sup>2</sup>	Yes	1	14	1	20	A range of clinical equipment, some will need recharging. SC for 28 bed unit is STEQ-20
STGN-8	Store – General, 8m <sup>2</sup>	Yes	1	8	1	9	SC for 28 bed unit is STGN-9
WCAC	Toilet – Accessible, 6m <sup>2</sup>	Yes		6		6	Visitor toilet. Seek opportunities to share with adjacent unit or as part of visitor amenities each floor.
LNPT-10	Lounge – Patient/Family	Yes	1	12	1	15	Also used to provide waiting space for visitors.
	Discounted Circulation			38%		38%	

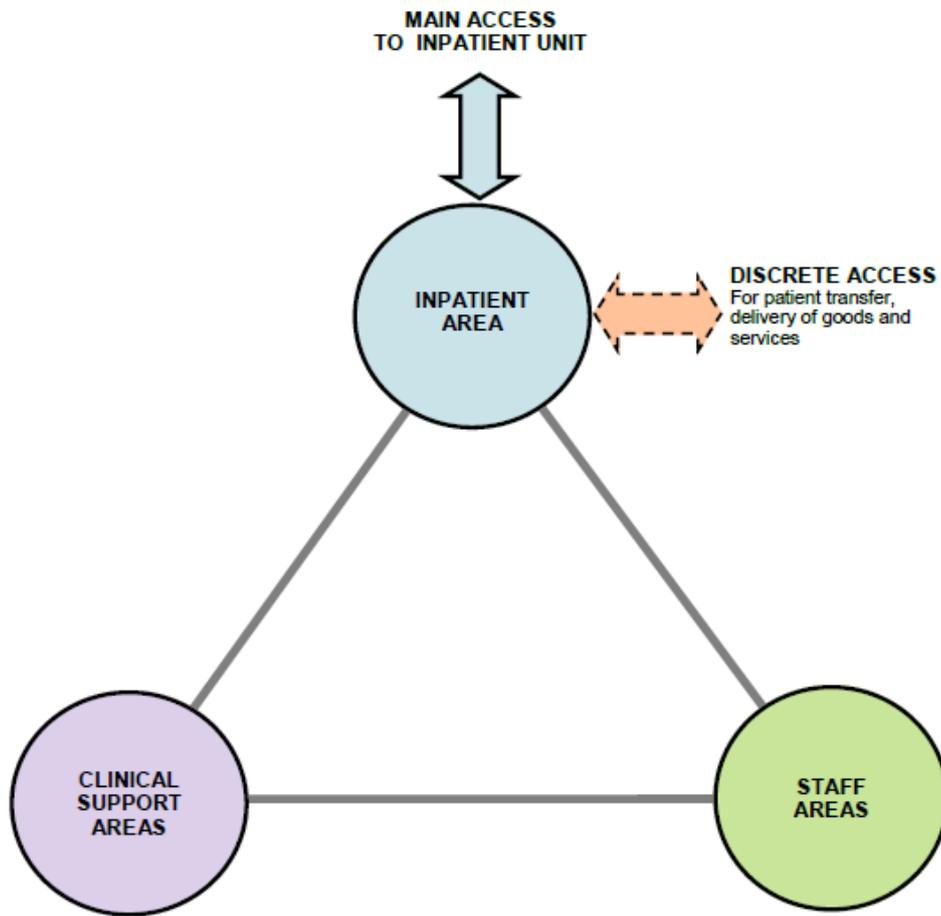
### STAFF AREAS – OFFICE SPACE AND AMENITIES

**Note 4:** Office space listed below is indicative only and will be influenced by jurisdictional policies. A fully developed workforce profile will be needed to inform the development of office and associated space. It is likely that the majority of cardiology medical and research staff will be accommodated in a clinical department rather than the CCU. Local arrangements may also vary (e.g. provision of cardiac rehabilitation).

**Note 5:** Assumed staff may access showers in a central amenity or shared between several departments.

ROOM CODE	ROOM/SPACE	SC/ SC-D	12 Bed Unit		28 Bed Unit		REMARKS
			Qty	m2	Qty	m2	
OFF-S9	Office – Single Person, 9m2	Yes	1	9	1	9	Nursing manager.
OFF-2P	Office – 2 Person Shared, 12m2	Yes	1	12	1	12	e.g. CNE, CNC.
	Office, Workstation, 4.4m2			4.4		4.4	Other staff such as dedicated junior medical staff and allied health.
MEET-L-15	Meeting Room, 15m2	Yes	1	15	1	20	This should be located to serve both patient and staff functions e.g. patient education, family conferences or staff training.
PROP-2	Property Bay – Staff	Yes	1	2	1	3	
SRM-15	Staff Room	Yes	1	15	1	18	
WCST	Toilet – Staff, 3m2	Yes	1	3	2	3	
	Discounted Circulation		38%		38%		

AX.02 Functional Relationships - Diagram



## AX.03 Checklists

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For planning checklists, refer to Parts A, B, C and D of the Guidelines.

## AX.02 References

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- AHIA, 2016, AusHFG Isolation Rooms - Engineering and Design Requirements
- AHIA, 2016, AusHFG Part A: Introduction and Instructions for Use
- AHIA, 2016, AusHFG Part B: Section 80 - General Requirements
- AHIA, 2016, AusHFG Part B: Section 90 - Standard Components
- AHIA, 2016, AusHFG Part C: Design for Access, Mobility, OHS and Security
- AHIA, 2016, AusHFG Part C: Section 03 - Space Standards and Dimensions
- AHIA, 2016, AusHFG Part C: Section 06 - Safety and Security Precautions
- AHIA, 2016, AusHFG Part C: Section 704 - Human Engineering
- AHIA, 2016, AusHFG Part D: Infection Prevention and Control
- AHIA, 2016, AusHFG Part E: Building Services and Environmental Design
- AHIA, 2016, AusHFG Part F: Section 680 - Furniture, Fittings and Equipment
- AHIA, 2016, HPU170: Cardiac Investigation Unit
- AHIA, 2016, HPU520: Operating Unit
- AHIA, 2016, HPU340: Inpatient Accommodation Unit
- AHIA, 2016, HPU360: Intensive Care - General
- NHMRC, 2010, Australian Guidelines for the Prevention and Control of Infection in Healthcare
- NSW Health, 2009, TS7 - Floor Coverings in Healthcare Buildings, Issue V1.1
- Queensland Health, Clinical Services Capability Framework v3.2
- Standards Australia, 2011, AS/NZS 3003:2011 Electrical Installations - Patient Areas

## AX.03 Further Reading

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- American Heart Association Inc. Scientific Statement, 2012;1408-1248 – Evolution of Critical Care Cardiology: Transformation of the Cardiovascular Intensive Care Unit and the Emerging Need for New Medical Staffing and Training Models
- British Cardiovascular Society, 2011 – From Coronary Care Unit to Acute Cardiac Care Unit – The Evolving Role of Specialist Cardiac Care
- Canadian Journal of Cardiology 32, 2016 1197-1199 – Coronary Care Unit to Cardiac Intensive Care Unit: Acute Medical Cardiac Care – Adapting With the Times, Michael E. Bourke MD, FRCPC