Australasian Health Facility Guidelines

HPU 340 Adult Acute Inpatient Unit
Part B – Health Facility Briefing and Planning

August 2025

Revision 8

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Cultural Acknowledgement and Terminology

The Australasian Health Facility Guidelines (AusHFG) are developed in collaboration with stakeholders across Australia and Aotearoa, New Zealand.
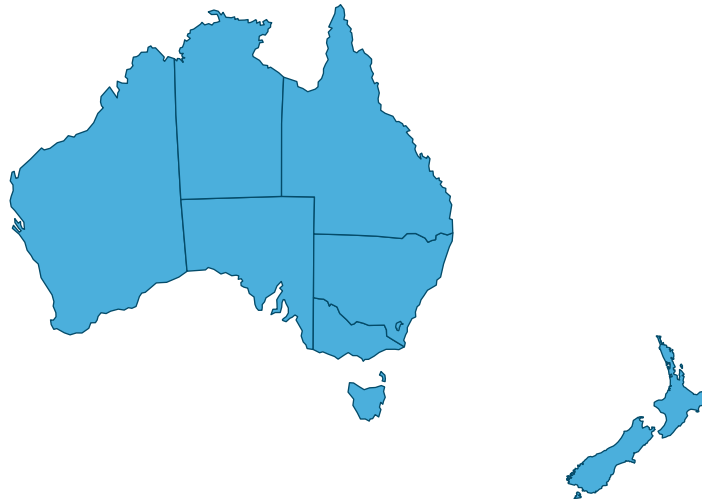
Acknowledgement of Country

We acknowledge the Aboriginal people and Torres Strait Islander People as traditional owners and continuing custodians of the land throughout Australia and the Torres Strait Islands.

We acknowledge their connection to land, sea, sky and community and pay respects to Elders past and present.

Acknowledgement of Te Tiriti o Waitangi

We acknowledge Māori as tāngata whenua in Aotearoa New Zealand.

Te Tiriti o Waitangi obligations have been considered when developing the AusHFG resources.

Terminology and Language in the AusHFG

Throughout the AusHFG resources, the term 'Indigenous Peoples' is used to refer to both the Aboriginal and Torres Strait Islander Peoples of Australia and Māori of Aotearoa, New Zealand. Where references to specific cultural requirements or examples are described, the terms 'Aboriginal and Torres Strait Islander Peoples' and 'Māori' are used specifically. The AusHFG respect the right of Indigenous Peoples to describe their own cultural identities which may include these or other terms, including particular sovereign peoples or traditional place names.

Contents

Acronyms

Acronym	Definition
ABHR	Alcohol-based Hand Rub
ADL	Activities of Daily Living
AGV	Automated Guided Vehicles
AHIA	Australasian Health Infrastructure Alliance
AusHFG	Australasian Health Facility Guidelines
BCA	Building Code of Australia
BMI	Body Mass Index
BPSD	Behavioural and Psychological Symptoms of Dementia
DDA	Commonwealth Disability and Discrimination Act
ENT	Ear, Nose and Throat
FF&E	Fittings, Fixtures and Equipment
ICT	Information, Communications and Technology
IPC	Infection Prevention and Control
IPU	Inpatient Unit
HEPA	High-Efficiency Particulate Air
HPU	Health Planning Unit
HVAC	Heating, Ventilation and Air Conditioning
MAU	Medical Assessment Unit
MDT	Multidisciplinary Team
NCC	National Construction Code
NHPPD	Nursing Hours per Patient Day
NZBC	New Zealand Building Code
PACS	Picture Archiving Communication System
PAS	Patient Administration Systems
PC	Personal Computer
PPE	Personal Protective Equipment
POE	Post Occupancy Evaluation
PCG	Project Control Group
RFID	Radiofrequency Identification
RIS	Radiology Information Systems
RMD	Reusable Medical Device
SC	Standard Components
SC-D	Standard Components–Derived

UPS	Uninterrupted Power Supply
WHS	Work, Health and Safety
WOW	Workstations on Wheels

1 Introduction

1.1 Preamble

The Australasian Health Facility Guidelines (AusHFG) are freely available resources for health services and project teams across Australia and New Zealand to support better planning, design, procurement and management of health facilities.

The AusHFG are an initiative of the Australasian Health Infrastructure Alliance (AHIA), a cross-jurisdictional collaboration of all health authorities across Australia and New Zealand. Part A of the AusHFG provides further information relating to the purpose, structure and use of these resources. It is acknowledged that the application of the AusHFG varies between jurisdictions across Australia and New Zealand.

This document is intended for new-build projects, however, refurbishment projects should adhere to these guidelines as far as is possible. It is acknowledged that meeting the recommended spatial allocation may not be achievable in a refurbishment project.

This AusHFG Health Planning Unit (HPU) has been developed by AHIA following an extensive consultation process completed in 2025.

1.2 Introduction

This HPU outlines the specific requirements for the planning and design of an adult acute inpatient Unit. It should be read in conjunction with the following AusHFG overarching guidance:

- 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, Safety and Security
- Part D: Infection Prevention and Control.
- Pandemic Preparedness – Health Infrastructure Planning and Design Guideline
- Isolation Rooms – Engineering and Design Requirements
- Key Sustainability Guidance
- Arts in Health Framework

This HPU is focussed on adult acute inpatient units. The following AusHFG HPUs address the requirements of service specific inpatient units:

- 260 Cardiac Care Unit
- 510 Maternity Unit
- 540 Paediatric / Adolescent Unit
- 610 Subacute Care Unit
- 132 Child and Adolescent Mental Health Unit
- 134 Adult Acute Mental Health Inpatient Unit
- 135 Older Peoples Acute Mental Health Inpatient Unit
- 136 Non Acute Mental Health Unit.

1.3 Policy Framework

Before undertaking a project, planners and project personnel should familiarise themselves with jurisdictional plans, policies, service specific guidelines and reports. Information relating to jurisdictional policies and guidelines are listed in the Appendices in the References and Further Reading section.

1.4 Description

An acute inpatient unit provides overnight accommodation for the diagnosis, care and treatment of acute inpatients by multidisciplinary teams.

Whilst facilitating the delivery of services to patients, the unit should also provide facilities to support the needs of families/whānau/carers and staff.

In larger healthcare facilities, medical and surgical sub specialities may be accommodated in dedicated units, e.g. cardiac services, neurology / neurosurgery, orthopaedics, etc. In smaller facilities, the unit may accommodate a mix of general medical and surgical, paediatric, palliative care and maternity patients. Specialty units may also be provided depending on the models of care, such as short stay or high observation units as further described in Section 2.1.

Where possible, generic inpatient unit design solutions should be promoted to support future changes to the clinical case mix, models of care and technology, however, it is acknowledged that some specialised units will have specific requirements. The needs of highly specialised units such as burns, infectious diseases and spinal injuries units are not addressed in this HPU, however a number of service specific considerations are noted in Section 2.3.5.

1.5 Overarching Planning and Design Principles

This HPU supports the provision of an optimally therapeutic environment for the assessment, care and treatment of patients. Overarching planning and design principles are outlined below for all acute inpatient units and will underpin the detailed planning and design process.

Collaboration / Person-Centred

The design is responsive to the needs of patients, families / whānau, carers and staff.

Recovery Focus

A welcoming environment that supports contemporary models of care and promotes recovery.

Patient Observation

The environment supports optimal sight lines for staff whilst supporting patient privacy.

Flexibility and Adaptability

The design enables the service to readily respond to future changes to models of care, patient casemix and technology.

Safe Environment

The design provides a safe and secure environment for patients, staff and visitors.

Accessibility

Accessible spaces for patients with all levels of independence and abilities.

Infection Prevention and Control

An environment which minimises the risk of transmission of healthcare associated infections.

Technology Enabled

The design supports contemporary information communications and technology (ICT) systems / digital technologies and is future focussed.

Staff Wellbeing and Support

Staff are safe and supported with access to spaces that enhance their wellbeing.

Design Principle	How this may be achieved
Collaboration/ Person-Centred	• Involve patients, family / whānau and carers, staff and cultural representatives as partners in the planning and design process.
Recovery Focus	• Provide access to natural light, a pleasant external outlook and connection to nature where possible. • Support appropriate acoustic design to minimise the impact of noise. • Application of biophilic design approaches. • Enable family / carers to stay overnight, where required to support the patient's physical, cognitive and/or emotional needs. • Provide spaces to support family, carer, whānau involvement including large family groups depending on local cultural requirements and the anticipated patient case mix. • Include artwork within family spaces to contribute to cultural safety and the wellbeing of families and carers. • Support the use of technology to promote connections with family and friends. • Support involvement of the multidisciplinary team including visiting staff to promote early discharge planning. • Support early allied health / therapy involvement. • Provide opportunities and space for patients to mobilise, improve/maintain their level of independence and engage in meaningful social and cognitive engagement.
Patient Observation	• Provide a balanced response to supporting patients' independence and privacy while maintaining sight lines/appropriate observation. • Appropriate mix of bedroom types to optimise observation of high-risk patient cohorts. • Design strategies to support observation from the corridor and entry door e.g. through use of windows in corridor walls and/or doors while ensuring privacy is maintained. • Appropriate location of beds within the room to maximise sight lines. • Locate the staff station/s within the unit to support direct oversight of high-risk patient cohorts.
Flexibility and Adaptability	• Deliver flexible areas / zones that can readily respond to different consumer cohorts and individual requirements, e.g., accommodation of patients requiring respiratory isolation and patients with extreme behavioural and psychological symptoms of dementia (BPSD). • Incorporate generic unit and room designs and layouts to support future changes to the clinical case mix, models of care and technology.
Safe Environment	• Adopt a risk management approach to minimise harm to patients, staff and visitors. • Implement design features to minimise the risk of falls, such as slip resistant flooring, handrails, and well-lit spaces. • Implement design solutions to better support patients with dementia or delirium. • Ensure the design does not create entrapment or concealment points. • Establish appropriate access control requirements. • Support appropriate provision of manual handling equipment in line with Work, Health and Safety (WHS) requirements. • Ensure adequate storge for lifters and other equipment so they are not stored along corridors or in the patient's rooms. • Ensure that emergency response systems are integrated into the design to provide a quick and effective response in case of emergencies.

Design Principle	How this may be achieved
Accessibility	• Ensure that spaces are accessible for people with mobility challenges, visual or auditory impairments, neurodiversity and other disabilities. • Incorporate universal design principles to create environments that are usable by all individuals, regardless of age, ability, or status.
Infection Prevention and Control	• Ensure ventilation and air conditioning meet required standards and jurisdictional requirements. • Provide appropriate areas to isolate patients known or suspected to be infected with pathogens for which transmission-based precautions are required, or those that are immunocompromised. • Support ready access to hand hygiene facilities and personal protective equipment (PPE). • Ensure the design supports appropriate procedures for waste management, cleaning and linen handling. • Ensure surface finishes, soft furnishings (e.g., curtains, upholstery), fixtures and fittings are easy to clean and maintain.
Technology Enabled	• Provide support for virtual models of care and future technology innovations. • Ensure the design supports current and future models for accessing patient information e.g. workstations on wheels, handheld devices. • Promote efficient medication management processes that minimise medication errors and optimise staff workflows. • Support staff training associated with moving to high technology facilities.
Staff Wellbeing and Support	• Optimise workflows for staff including when staff levels are varied such as overnight. • Minimise travel distances. • Achieve minimum clearances around the bed and through doorways to ensure staff can safely deliver care and operate equipment. • Provide adequately sized meeting spaces with video capabilities for multidisciplinary team and family meetings. • Provide attractive, secure and appropriately sized staff break spaces and amenities. • Provide support for staff, student and carer training. • Include artwork in staff areas to promote a sense of wellbeing and belonging.

2 Planning

2.1 Operational Models

2.1.1 Models of Care

Inpatient care is delivered by multidisciplinary teams including nursing, medical and allied health staff. Patient care may vary from those with high nursing observation / care needs to those requiring medical interventions yet are independent in most activities of daily living (ADLs). The acuity and complexity of patients being managed on adult inpatient units has increased in recent years resulting in a significant proportion of patients that are highly dependent on staff for transfers, mobility and ADLs, a high number of patients requiring mobility aids / wheelchairs and greater levels of risk associated with safety and security. This trend is being driven by:

- changing models of care whereby less complex patients are discharged from hospital earlier and managed in the community
- increasing age of inpatients with increasing prevalence of frailty and cognitive and physical disability
- increasing proportion of patients with behaviours of concern e.g. due to mental health conditions, dementia and delirium
- increasing number of bariatric patients who often require respiratory support e.g. with BiPAP or CPAP
- complex discharge processes and delays relating to residential care placement, National Disability Insurance Scheme (NDIS) and other community supports.

Key principles relating to the model of care for acute inpatient units include:

- patients are cohorted by service specialty and acuity
- clinical pathways may be established for high volume services
- patient care is focussed on functional maintenance and recovery in parallel with disease treatment, optimising clinical outcomes and minimising the length of stay
- integration of the multidisciplinary team is essential to support early mobilisation, prevent avoidable physical and cognitive deterioration, and support safe and timely discharge
- privacy and dignity for the patient, their carers and family are promoted at all times
- family/whānau and carers are encouraged to be involved in the care process and may stay overnight / throughout the day with the patient
- patient, visitor and staff safety are high priorities with a focus on minimising risks associated with hospital acquired infections, medication errors, delirium, falls and occupational violence.

The future service capacity requirements and models of care will inform the size, type and features of the unit(s) to be provided. This may include consideration of the following:

- dedicated speciality versus mixed specialty units (this will depend on the size and capability of the facility)
- speciality clusters within a single unit
- short stay units (<48 hours)
- the management of high acuity patients with significant nursing care needs
- the management of older patients including those with dementia and other forms of cognitive impairment
- the management of patients with behaviours of concern
- the management of patients known or suspected to be infected with pathogens for which transmission-based precautions are required.

Where possible, generic inpatient unit solutions should be promoted to support future changes to the clinical case mix, models of care and technology.

2.1.2   Short Stay Units

Inpatient units may be managed and operated as short stay units for patients requiring rapid assessment and with an anticipated length of stay of less than 48 hours. Examples include a Medical Assessment Unit (MAU) and a Rapid or Acute Assessment Unit.

Short stay units that are associated with emergency presentations and a length of stay of less than 24 hours, e.g. emergency short stay units, are described in HPU 300 Emergency Unit.

Additional information is included at Section 2.3.5.

2.1.3   High / Close Observation Units

High acuity patients who have or who are at risk of life-threatening conditions and require one-to-one or one-to-two nursing care should be accommodated in a critical care unit. However, high or close observation units and beds, providing an intermediate level of care between intensive care and general ward care, may be provided within an inpatient unit depending on the model of care, service profile and role delineation defined in the Clinical Services Plan.

These may be provided as a dedicated unit for a particular clinical specialty or a combination of subspecialties, or the Clinical Services Plan may nominate the collocation of a number of high or close observation beds within specialty inpatient units, e.g. respiratory, cardiology and neurosurgery.

While acuity adaptable beds should be provided across the unit, a decision may be made to notionally identify some beds as high observation.

Additional information is included at Section 2.3.5.

2.1.4   Clinical Specialties

The clinical specialties to be accommodated within the unit should be defined given there are often specific service requirements that will have an impact on planning and design. For example, there are specific planning and design considerations associated with cardiac, respiratory, orthopaedic and haematology/oncology units as outlined in Section 2.3.5.

However, future changes to the clinical specialties and associated models of care should be anticipated and generic inpatient unit solutions implemented where possible.

2.1.5   Integrated Inpatient and Ambulatory Care Models

Integrated inpatient and ambulatory care models are increasingly being provided, particularly for specialties such as paediatrics, maternity, cardiology, respiratory, renal, haematology and oncology. The collocation of overnight beds, day only spaces, diagnostic services and associated support areas within one location may promote the efficient use of specialty staff and improved patient experience through enhanced coordination of care. Where this is being proposed, the adaptability of the model to future changes in capacity requirements (e.g. increased volume of inpatient beds required) or changes to models of care (e.g. an increased proportion of care provided at home) must be considered.

Where integrated models are planned, HPU 155 Ambulatory Care and Community Health will provide further information regarding the planning and design of ambulatory care services including medical day treatment services such as chemotherapy and other infusions services. The following guidelines also include relevant information for inpatient and ambulatory care services associated with these specialties:

- 260 Cardiac Care Unit
- 510 Maternity Unit
- 540 Paediatric / Adolescent Unit

2.1.6 Staffing Models

The staff establishment should be identified early in the planning process including the proposed nursing model and allocated nursing staff (based on ratios for nurses, safe staffing and Nursing Hours per Patient Day – NHPPD as applicable to the various jurisdictions). This will inform the configuration of the unit and required work space and amenities to appropriately support staff to deliver services safely and efficiently. Staffing levels will vary for each unit, depending on the size of the unit and patient acuity.

Staff work practices have changed significantly in recent years in response to the increasing provision of single bedrooms, the use of point of care clinical information systems, and the implementation of bedside handovers. This has changed the way staff care for their patients with technology enabling staff to be located closer to the patients they care for.

There are three main groups of staff working within an inpatient unit:

- unit-based staff (full time, part time and casual) who provide continuous care as part of a multidisciplinary team
- visiting clinical staff who provide episodic or specialist care, and
- support services staff.

Volunteers may provide a range of intermittent services according to local operational policies.

Students may be visiting on ward rounds or based on a unit in a supernumerary, short-term capacity.

Access to work space in clinical and non-clinical areas is essential, including access to PCs for training purposes. The allocation of work space will require reference to local jurisdictional policies.

Workforce shortages have become more challenging since the COVID-19 pandemic and are also being impacted by the changing patient profile relating to increased patient complexity and acuity, and the growing volume of patients presenting with behaviours of concern. It is essential that the design of inpatient units considers staff wellbeing and enables staff to feel safe and supported. The design must support local operational practices associated with safety and security, such as the 'Safewards' model that has been implemented in a number of jurisdictions to limit the occurrence and impacts of occupational violence and to reduce containment and conflict on inpatient units.

2.2 Operational Policies

2.2.1 General

Operational policies have a major impact upon the planning and design and capital and recurrent costs of health facilities. Project teams should review their design proposals with these in mind and be able to demonstrate that the capital and recurrent cost implications of proposed operational policies have been fully considered. Operational policies may have hospital-wide application or be unit specific. A list of general operational policies that may apply can be found in Part B: Section 80 General Requirements.

2.2.2 Hours of Operation

The hours of operation of an Inpatient Unit are usually 24 hours per day, seven days per week.

2.2.3 Management of Special Patient Groups

Considerations relating to a number of special patient groups are outlined below.

Bariatric Patients

The unit should provide a physical environment that supports the optimal care of bariatric patients, with appropriate consideration of staff safety.

A patient with bariatric needs is one who weighs over 120kg or has a Body Mass Index (BMI) of over 30 (NSW Health GL2024_001 Management of Patients with Bariatric Needs). Most fittings, fixtures and equipment (FF&E) within standard patient bedrooms and ensuites will accommodate weights of up to 150kg, and therefore consideration needs to be given to the provision of bariatric facilities to safely accommodate patients weighing greater than this.

The number of dedicated bed rooms and ensuites provided for these patients should be assessed in terms of the percentage of people in the catchment population with a very high BMI, review of recent admitted patient activity, projected increase in people with bariatric needs, and the service level or role delineation of the particular hospital.

A bariatric bed room and ensuite supports the management of patients up to 250kgs with sufficient area to support bariatric patients (with consideration of size and weight). These rooms may be flexibly used for other patient care including where significant additional equipment is required or space to accommodate a bed should a carer need to stay over.

The provision of 'super' bariatric bed rooms and ensuites, for the management of patients up to 450kg, should be restricted to selected healthcare centres only to ensure that safe and effective care is provided. The size and location of FF&E makes this room almost impossible to safely use for other patient care.

The impact of larger equipment such as beds, electric bed movers, chairs and wheelchairs, and the associated space requirements in the use of this equipment such as door widths, turning space in corridors, lift access and the storage of equipment should be considered.

Manual handling issues associated with the transfer and lifting of these patients should be addressed. Specific operational policies should indicate how bariatric patients may be managed in the Unit. This will include consideration of ceiling mounted patient lifters and the approach to weighing bariatric patients, e.g. using specialised beds with in-built scales.

Older Patients

There is an increasing proportion of patients who are old and/or frail and/or have multiple co-morbidities. Physical impairments, e.g. relating to mobility, hearing and vision, and cognitive impairments, e.g. dementia, are more common with advancing age and may be exacerbated by acute illness, leading to functional decline and/or delirium as common and serious hospital complications.

The implementation of appropriate operational policies and design approaches can provide environments that support the maintenance of function and dignity for older people with no disadvantage to younger people. All Inpatient Unit environments should meet the needs of older patients to support restoration or maintenance of independence in a safe environment.

Relevant design considerations are included in Section 2.3.5 including evidenced based design principles to better support people with dementia.

Patients with Unpredictable Behaviours

Patients presenting with unpredictable behaviours may be caused by a range of conditions, including general medical conditions, e.g. acute delirium, brain injury, dementia, intoxication or withdrawal and mental health conditions.

When assessing and managing these patients within inpatient units the safety of the patient, staff and visitors is the priority. Staff should conduct a risk assessment to determine operational responses to support the safe care of the patient in the acute inpatient environment. These may include managing the patient in a single bedroom, removing equipment from the bedroom, locating the patient near the staff station and ensuring optimal line of sight or close observation. Ongoing assessment of these patients is required as their needs may change rapidly.

If patients experiencing extreme behavioural and psychological symptoms of dementia (BPSD) are anticipated to be managed on the unit, consideration will need to be given to the design of the unit to ensure the safety of the patient, staff and other patients and family/carers. Patients experiencing extreme BPSD are typically managed in a single room and require access to other secure spaces to support meaningful activities. The unit should support functional segregation of different areas to help manage the mix of patients as noted in Section 2.3.5.

Also refer to Queensland Health's Dementia, Ageing, and Frailty Clinical Network, 2024 Cognitive Impairment Enabling Environmental Design Principles.

2.2.4   Clinical Support Services

The impact of a clinical expansion on clinical support services must be evaluated early in the planning process to determine how these services will manage the increase in associated workload.

Allied Health Services

Allied health staff are integral members of multidisciplinary teams. The level of service provided will depend on the service case mix, acuity of the patient and local approaches. Allied health staff may be permanently allocated to an inpatient unit or may provide a visiting service.

Generally, the initial consultation and therapy management plan is provided at the patient bedside, however certain assessments, e.g. cognitive assessments, may require quiet spaces to minimise distraction. Space and facilities for unit-based therapy may be provided depending on the service case mix and patient acuity as outlined in section 2.4.5.

Further information is provided in HPU 140 Allied Health / Therapy Unit.

Medication Management

Consider arrangements for the secure delivery, storage, management and administration of medications in the Inpatient Unit as this will affect the space, equipment and ICT systems required. For example, some organisations are implementing vendor managed inventory systems where some medications are delivered from the supplier direct to the point of use, e.g. inpatient unit rather than the pharmacy department managing the receipt and distribution to units.

Pharmacy staff should be consulted when assessing medication and intravenous fluids storage requirements for each Unit. Some specialties, such as Oncology and Renal Units, may have greater storage needs given the volume of fluids to be stored.

The location of medication stores should minimise travel distances, noise, and disruption to staff undertaking medication-related activities.

Options for administering medications within the Inpatient Unit include:

- direct administration from mobile shelving within the medication store
- automated dispensing systems – fixed or mobile.
- lockable medication trolleys
- lockable bedside lockers

Appropriate investigation and analysis of automated dispensing units is recommended prior to confirmation of the preferred system. Refer to HPU 560 Pharmacy Unit for further information.

Mobile dispensing units will need to be docked for recharging or may run on batteries.

The preferred approach for clinical pharmacists and nursing staff to access electronic medication management systems will require confirmation to inform the Information, Communications and Technology (ICT) requirements.

Security and control of access to medication stores should comply with local legislative / jurisdiction requirements.

Consideration should be given to the provision of pneumatic tube systems for the transport of medications where appropriate, whilst ensuring the location of stations must only be accessed by authorised staff.

Medical Imaging

Most patients from acute inpatient units requiring imaging will be transported to the Medical Imaging Unit, assuming they are well enough. However, in some instances, mobile modalities will be brought to the patient.

Given the high volume of patient flows between the Medical Imaging and Inpatient Units, the location of medical imaging services requires consideration, as noted in Section 2.5 Functional Relationships.

Provision of mobile X-ray for infectious patients on inpatient units can be undertaken through a window in the bedroom door assuming appropriate design. This includes provision of an appropriately sized window and patient curtain that can be moved out of the way while still allowing patients to have control over their privacy (i.e. avoid inclusion of integrated blinds).

Pathology

The provision of pneumatic tubes should be considered for efficient access to pathology services.

2.2.5   Non-Clinical Support Services

The impact of a clinical expansion on non-clinical / 'back of house' support services must be evaluated early in the planning process to determine how these services will manage the increase in associated workload This will include the management of food services, linen, waste, cleaning and supplies.

For further information refer to AusHFG HPU 700 Logistics / Back of House Services.

Food Services

The food services model for the health facility will impact on the planning and design requirements for inpatient units. For example, some facilities will require a bay to store a meal trolley while food trays are distributed to patients, whereas for other facilities the meal trolley will be transported directly to patient bedrooms and then returned to the kitchen while a separate trolley will be used to collect finished meal trays.

Consideration also needs to be given to patients requiring modified diets and/or enteral feeding, which will need to be stored on the inpatient unit.

Linen

The delivery and collection of clean and dirty linen will be operationally separated to reduce infection control risks.

Linen bays will be provided to store clean linen, and dirty linen will be placed in dirty linen skips in the dirty utility rooms. Dirty/soiled linen bags ready for collection will be stored in disposal rooms.

Refer to AusHFG Part D: Infection Prevention and Control for further information.

Waste Management

Operational policies for waste management, waste minimisation and recycling should be supported, particularly with regard to:

- waste flows
- types of sizes of various containers for waste
- provision and location of dirty utility rooms and disposal rooms
- provision and location of recycling bins
- location of sharps containers.

It is essential that the design of the unit supports waste recycling processes at all stages including dirty utility rooms, disposal rooms and loading docks. The type and quantity of bins to be accommodated within these areas will depend on the casemix, jurisdictional approaches to waste management and the frequency of waste collection.

The management of clinical and related wastes should be in accordance with:

- AS 3816:2018 Management of Clinical and Related Wastes (Standards Australia)
- NZS 4304:2002 Management of Heathcare Waste (Standards New Zealand)
- Part D: Infection Prevention and Control.

Cleaning

Appropriately located cleaner's rooms are required for direct access to cleaning equipment, cleaning agents and consumables. Storage of bulky cleaning equipment is usually shared between several inpatient units.

Refer to Part D: Infection Prevention and Control for further information.

Storage and Supplies

Consumables and equipment stores should be located and organised to ensure ease of delivery and access by staff. Where mobile equipment is used frequently these items should be located in equipment bays for ease of access. This will include mobile patient lifters.

The provision of automated mobile robots, such as tugs, or automated guided vehicles (AGVs) used to transport waste, linen, food and other services / supplies across the hospital will require consideration during early planning stages to ensure they can be accommodated and recharged. Consideration must also be given to the storage of automatic bed movers and mobile x-ray machines.

Refer to Section 2.4.3 for key design considerations relating to inpatient unit storage.

2.2.6   Information, Communications and Technology

Information, Communications and Technology (ICT) are key enablers for inpatient units to optimise patient care and service efficiencies. ICT systems necessary to support clinical and operational requirements should be assessed during the planning and design process to ensure an appropriate level of capability is provided, that supports future flexibility. The integration of systems should be promoted to support operational efficiencies through automation and the exchange of data between systems.

All units should be designed to support electronic clinical information systems and digitally enabled operational workflows. Consideration needs to be given to the method and location of entering and retrieving patient information. This may occur at the bedside via workstations on wheels (WOWs) or other mobile devices, fixed PCs, and/or at staff stations. ICT infrastructure must support future flexibility, such as the potential transition from WOWs to handheld devices for accessing patient information.

ICT planning must also address patient needs relating to accessing information and meaningful stimulation, acknowledging that these must be accessible for people with physical and cognitive disabilities.

Consideration should be given to determine the ease of cleaning of ICT devices, including compatibility with cleaning solutions.

Other key operational considerations include communication systems, telehealth, electronic medication management and automated medication dispensing systems. Further detail regarding ICT requirements is included in Section 3.10.4.

2.2.7   Virtual Models of Care

The provision of virtual models of care is continuing to grow in line with innovations in technology and these models are integral to clinical operations and staff education. For example, virtual care is enabling patients who are in general hospitals to be monitored from tertiary facilities rather than requiring transfer unless their care requirements escalate. These models are also supporting increased connection between multi-disciplinary teams and external service providers.

A virtual care strategy will need to be considered in the early stages of planning that is consistent with jurisdictional approaches and service networking arrangements. Appropriate facilities and ICT infrastructure will be essential to support these models.

2.3 Planning Models

2.3.1 Unit Location

Inpatient units should be in a quiet location with a pleasant outlook wherever possible. The unit should not be located near sources of noise or sights that may disturb its occupants.

Inpatient units should be collocated in a 24-hour operating area of the health service to maximise the safety of patients and staff and ensure staff are not working in isolation or need to traverse unoccupied areas at night.

Patient transport between units should be considered, e.g. from the Emergency Department and to and from Medical Imaging Unit, to minimise transportation distances and separate this traffic from public travel routes.

2.3.2 Unit Size

The total number of inpatient beds provided will be informed by clinical services planning and will be dependent on the service needs of the individual healthcare facility. Decisions regarding the size and composition of individual inpatient units will reflect an appropriate break up of total bed numbers and should also be guided by the Clinical Services Plan. Where possible a standard inpatient unit size and layout should be provided to support flexibility over time.

Industrial Award conditions which may prescribe nurse to patient ratios and staffing profiles (medical, nursing and allied health), particularly during night shift, need to be taken into consideration.

Operationally efficient units may range from 24 to 32 beds, with multiples of four beds, i.e. 24, 28 and 32 bed units, recommended to support common staffing arrangements.

Inpatient units may be subdivided operationally into pods or clusters for different clinical specialities or levels of acuity. The size of pods also needs to consider efficient nursing arrangements and may vary depending on the clinical needs of the unit and organisation of multidisciplinary teams.

2.3.3 Unit Configuration

The AusHFG provides indicative area requirements and advice on individual room layouts for common rooms, however the overall unit configuration will need to be considered on a project by project basis. There is no one particular unit configuration that has been found to be universally superior. In all cases, the final decision may be a response to the physical constraints of the site, local service needs and operational policies.

Key planning considerations relating to the inpatient unit configuration include:

- the unit layout / circulation model, e.g. single corridor, double corridor or 'race-track', or hybrid arrangements with a mix of single and double corridors
- the required mix of bedroom types, i.e. single versus multi-bed rooms
- standardised room designs and layouts, e.g. same handed design
- inboard, outboard or nested ensuites
- decentralised or centralised staff bases
- easy access to utility rooms to reduce travel distances. Dual access can support this requirement, and
- the impact of the structural grid

The proposed unit configuration should be informed by the following:

- the provision of optimal patient observation

- efficient staffing arrangements and work practices including consideration of the nursing model and allocated resourcing. For example, beds may be arranged to support staff members being allocated a mix single and multi-bed rooms
- the location of the unit and consideration of the varying requirements relating to metropolitan, regional and rural sites
- the need to control entries and exits and avoid potential entrapment points
- access to clinical and operational support areas, e.g. equipment storage and utility rooms, in relation to bed numbers and staff travel distances
- efficient allocation of space including circulation areas
- the location of 'front' and 'back of house' circulation for ease of logistics flows and promotion of patient wellbeing and dignity e.g. disposal rooms should be located in close proximity to the service lifts and a patient bathroom, where provided, should be located away from the public 'front' entry/staff station zone
- maximising access to natural light and reducing noise levels
- ventilation and related infection prevention and control requirements (refer to Section 3.4).

Structural Grid Considerations

The arrangement of the unit will need to consider the location of structural columns and service risers and the impact on functionality of bedrooms and support areas, as well as the location of fire doors with consideration of proposed nursing models.

Some room designs will not align with the structural grid, such as an 8.4m configuration and, in multistorey buildings, this can result in structural columns impacting the functionality of some bedrooms and possibly ensuites. In very tall buildings this impact can be significant given the width of columns, resulting in impacts to the clearance around a patient bed and access to light and views from the window. The 'off-grid' arrangements also impact the functionality of adjacent support areas which may result in the need for larger spatial allowances to meet operational requirements.

Room designs that do align with the structural grid, for example the AusHFG recommended 1 bed-room and 2 bed-room (side by side arrangement) align with an 8.4m structural grid, promote optimal functionality within the bedrooms and support areas including opportunities for dual access to utility rooms that promotes efficient workflows.

2.3.4   Bedroom Mix

The mix of bedroom types, i.e. single versus multi-bed, should be determined in the planning and briefing stages. The impact on capital and recurrent costs should be identified and evaluated as per usual cost benefit processes.

A review of recent literature (as included in Section 5.3 References) demonstrates that there is no single recommended solution regarding the optimal or preferred proportion of single bedrooms to be provided. A systematic review by Bertuzzi et al., 2023 concluded that no clearly consistent conclusions could be drawn about overall benefits of single rooms versus multibed ward spaces. Randomised controlled studies are not practical to assess hospital accommodation and patient outcomes may be influenced by other factors associated with a hospital redevelopment so cannot be solely attributed to a transition to a higher proportion of single bedrooms.

The ideal mix of single vs multibed rooms will need to be determined by individual jurisdictions on a project-by-project basis. However, based on the available evidence and the outcomes from recent hospital developments, it is recommended that 50-60% single bedrooms is an appropriate allocation for most acute medical and surgical inpatient units. This provides benefits associated with the single enclosed rooms, while also catering to some patient cohorts who prefer shared rooms and minimising the impact on staff observation, travel distances and feelings of isolation from colleagues associated with units providing a high proportion of single bedrooms. These are important considerations given the ageing workforce and increasing age and complexity of patients.

A higher or lower proportion of single bedrooms may be considered for some acute medical and surgical units based on a review of:

- patient case mix with regard to acuity, dependency and clinical complexity. Patients requiring higher observation, patients with neurological disorders, older people and children may be more appropriately located in shared bedrooms (Shannon et al., 2018, Bertuzzi et al., 2023)
- local population catchment characteristics such as Indigenous and cultural considerations. Nash et al., 2020 noted that single rooms can exacerbate the sense of isolation for Indigenous patients
- healthcare acquired infection rates and the associated need for isolation facilities
- capital funding - single rooms impose additional capital costs in regard to increased floor area including circulation space, additional ensuite requirements and associated fittings, plus longer runs required for medical gases and power. In addition, the need for greater floor area may impact on the land footprint required
- impact on recurrent costs with regard to staffing requirements, including nursing, cleaning and maintenance, as well as utility costs.

Advantages and Disadvantages

A summary of the advantages and disadvantages of single bedrooms is provided below.

Advantages:

- increased ability to isolate and manage patients with suspected or confirmed conditions that require transmission-based precautions. Hospital acquired infection rates are reduced in single bedrooms (Bertuzzi et al., 2023)
- patients largely indicate a preference for single bedrooms due to greater levels of patient privacy, particularly relating to the use of ensuites, and control over the environment such as reducing noise and light levels enhancing their sleep (Cusask et al., 2023)
- supports greater confidentiality and better quality of communication between health professionals and patients and families, and enhanced family involvement in patient care (Cusask et al., 2023)
- provides greater flexibility in bed management and reduced patient transfers / room moves by avoiding issues associated with age, gender and patient compatibility
- provides a more appropriate environment for the management of:
  - terminally ill and dying patients
  - patients with unpredictable behaviours
  - patients with accompanying support people such as corrective services officers for units located close to prison facilities
- supports provision of treatment at the bedside reducing the need to transfer patients to other clinical spaces, e.g. treatment rooms.

Disadvantages:

- decreased ability for well patients to socialise and support one another and patients may feel isolated and insecure or unsafe (Maben et al., 2016)
- not preferred by some patient groups as noted above (Bertuzzi et al., 2023, Shannon et al., 2018, Nash et al., 2020)
- staff may have decreased visibility of patients from the corridor. This may be significantly reduced with the use of internal glass walls containing internal venetians or roller blinds
- increased staff travel distances, with potential impact on staffing requirements (Søndergaard et al., 2022)
- staff may feel isolated from their colleagues (Cusack et al., 2023) with impacts on team communication and social interaction among staff (Maben et al., 2016)
- a greater number of ensuites plus the overall greater floor area will increase cleaning and maintenance costs over time

- increased utility costs (e.g. heating, lighting and air conditioning) associated with a reduced occupancy density i.e. greater floor area per patient and increased number of ensuites
- increased capital cost associated with the increased floor area, additional ensuites and associated infrastructure requirements.

2.3.5 Design Solutions to Support Special Patient Groups

Older Patients and Patients with Dementia or Delirium

The following design approaches should be considered on all inpatient units to support older people including those with dementia or delirium, who make up a significant proportion of patients across all clinical specialties:

- provide clear cues regarding time (e.g. windows to access daylight, clocks visible from patient beds)
- provide adequate and appropriate artificial lighting while minimising glare with the opportunity for varied lighting including some constant low-level lighting for night time
- ensure easy and visible access to toilets including directional night lighting, door signage and contrasting colour for toilet seats
- provide non-slip and slip resistant floor coverings to minimise falls
- provide adequate accessible storage for clinical equipment and patient belongings to minimise clutter
- use acoustic strategies to minimise noise
- avoid use of contrast within floor surfaces, e.g. patterns and/or features
- provide visual contrast between floors and walls and for important functional features such as door knobs and grab rails
- use visual contrast or camouflage to manage entries and exits and distinguish patient and staff spaces
- use easily understood (e.g. pictorial and/or large format) signage, colour and contrast for wayfinding and orientation. The design should support patients to readily see where they want to go e.g., bedroom, ensuite, lounge etc
- design circulation areas to provide a walking route that allows patients to move about the unit with meaningful destinations e.g. opportunities for engagement with family/friends, whilst providing the ability to control entries and exits and minimise the extent of unsupervised space
- locate and design outside areas to ensure they can easily be viewed by patients (and accessed where appropriate)
- inclusion of carefully selected artworks for improved patient, family and staff experience.

Movement sensing technology is rapidly improving. Project teams are advised to refer to the latest technology, associated evidence, and other facilities that are using these systems for current advice. Whilst technology offers potential solutions for unobtrusive monitoring and management of risks it must be balanced with rights to dignity and autonomy.

Refer to:

- The Dignity Manifesto of Design for People Living with Dementia – this outlines evidence-based design principles to better support people with dementia.
- NSW Agency for Clinical Innovation, 2014, Aged Health Network – 'Key Principles for Improving Healthcare Environments for People with Dementia'.

Patients with Other Cognitive Impairments and / or Unpredictable Behaviours

Patients of any age with difficulty understanding, interpreting, processing and/or sharing information may respond to the unfamiliar and stressful hospital setting with inappropriate and unpredictable behaviours including agitation, aggression or exit seeking that can compromise their care and safety as well as the safety of other patients, staff and visitors.

Features that should be considered in the design of the unit to safely accommodate these patients and minimise the risk to staff and visitors include:

- good observation from staff stations and bases
- design that does not create entrapment or concealment points
- senior staff work areas are located close to the unit to provide support where required
- provision of mobile duress systems
- provision of covered service panels (gases, suction, etc.)
- use of patient monitoring devices
- tamper-proof fittings
- minimise any maintenance and access provisions within these areas.

Design strategies should be informed by a risk assessment that considers the anticipated patient cohort and must be implemented in conjunction with operational responses such as managing the patient in a single bedroom, removing equipment from the bedroom, locating the patient near the staff station and ensuring optimal line of sight or close observation.

A secure area may be provided for units managing patients with extreme BPSD. Local jurisdictional policies will need to be referred to. Design requirements may include the provision of a small pod e.g. two beds that can be secured from the rest of the unit when required with consideration of:

- access to a separate and secure lounge/activity area
- a safe space for staff to work away from patients
- support for carers
- optimising patient observation
- optimising patient and staff safety including consideration of access requirements, staff duress and limiting entrapment points
- other principles of a dementia friendly environment.

Clinical Specialties and Other Service Models

Generic inpatient unit solutions should be promoted where possible. However, a number of variations to the generic approach may be required to meet the specific requirements of individual clinical specialties.

Examples include:

- most cardiac and some general medical units undertake telemetry monitoring of patients. This requires consideration of the space for accommodation of the monitoring equipment and antenna locations
- respiratory units will usually require a higher than average number of negative pressure isolation rooms with anterooms for respiratory isolation of patients (note dedicated infectious diseases units have specific design requirements outside the scope of this HPU)
- orthopaedic units require allied health areas within the unit, or in immediate proximity, to facilitate efficient therapy. In addition, there is a need for large equipment stores for a range of mobility aids and traction devices. The toilets and showers need to accommodate an increased proportion of wheelchair-bound patients including patients with extended leg plasters, and patients on shower trolleys. Large therapy areas and equipment stores are also required for acute neurological, spinal and geriatric inpatient units.
- units accommodating highly immunocompromised patients e.g. haematopoietic stem cell recipients in the pre-engraftment phase and severe burns patients require positive pressure isolation rooms and potentially specific temperature and/or humidity control requirements
- specialist renal units and other units that may require beds to have access to a dialysis station depending on the local model of care for in-central dialysis
- specialist haematology or oncology units may also incorporate a radioactive isotope isolation room. Refer to HPU 500 Nuclear Medicine Unit

- high or close observation units will require consideration of design solutions that support high levels of observation and monitoring. This may include the provision of additional medical gases, power and data, the provision of appropriate monitoring systems and decentralised staff bases to promote high visibility of patients.

- the design of short stay units for patients with an anticipated length of stay of up to 48 hours should be aligned with an inpatient unit for appropriate patient amenity. The design requirements are different to emergency short stay units, with a typical length of stay of less than 24 hours, where an open bay unit design is appropriate. Although a generic inpatient design for short stay inpatient units should be adopted for future flexibility, consideration should be given to:
  - frequency of access to diagnostic services (typically there will be a high volume of patients requiring access to medical imaging, pathology, cardiac investigations and nuclear medicine)
  - specialised equipment including monitoring requirements
  - proposed staff profile and associated support areas acknowledging the intensive nature of service delivery and the requirement for frequent specialist and allied health reviews. There is typically a higher volume of both dedicated and visiting staff on these units
  - preferred mix of single versus multi bed rooms with reference to Section 2.3.4.

- smaller units in regional and rural facilities may include a mix of specialities include palliative care beds. Where provided, consideration should be given to appropriate support areas for patients and families/carers including access to outdoors. Refer to HPU 610 Subacute Care Unit for further information

2.4   Functional Areas

2.4.1   Functional Zones

Functional areas may be classified as follows (although such classification does not necessarily relate to location within the unit):

- patient and family care areas - bedrooms, ensuites, bathrooms and lounges
- clinical support areas
- shared areas, i.e. areas that may be shared by adjacent IPUs
- staff areas including education and training requirements.

Services provided, bed numbers, unit configuration, and operational policies may vary the zoning required.

2.4.2   Patient and Family Care Areas

Bedrooms

Bedrooms may be a mix of single rooms, two bed rooms and four bed rooms. The maximum bedroom capacity should be four patients.

The location of functional zones within a bed room varies depending on the room type. In a single bed room, the staff zone is located closest to the entry door. This enables staff to access the medical services panel quickly and easily. The patient / visitor zone is located on the other side of the bed. This area will include chairs for the patient and visitors, and the location means that frequent interruptions by staff are avoided, and they have close access to the window. For high-risk patient groups, consideration may need to be given to the location of a visitor chair to minimise the risk of entrapment.

To encourage family engagement with care, bedrooms should provide seating for family members and secure storage for family and patient personal belongings.

A carer's lounge / day bed may be provided within the single bedrooms depending on the patient case mix, local operational policies and model of care.

Refer to the AusHFG standard components for patient bedrooms.

Ensuites and Bathrooms

All beds require direct access to an ensuite shower and toilet. Larger ensuites are provided for bariatric patients and disabled patients (independent wheelchair users) to meet accessibility requirements. Door sizes should support safe access of mobility equipment for both the patient and assisting staff. Refer to the AusHFG standard components for ensuites.

The use of space within the single room impacts on the size and location of the ensuite and thus the two rooms should be considered as a unit and not in isolation.

Access to the ensuite should minimise the number of directional turns a patient has to make to reach the toilet, which should be visible from the bed.

The requirements of AS 1428.1, the Commonwealth Disability Discrimination Act and NZS 4121 apply to the provision of ensuites for patients who are normally independent wheelchair users. All standard patient bedrooms and ensuites are accessible to wheelchair-bound patients with assistance. An accessible ensuite is only required for an independent wheelchair user without assistance.

The National Construction Code (Australia) requires one island-type plunge bath on each storey containing an inpatient area. However, if the method of bathing patients in inpatient areas is achieved via a means other than the use of an island-type plunge bath, a BCA Performance Solution Report prepared by the project architect may be sought to justify its omission. The Performance Solution Report must address BCA Performance Requirement FP2.1 in consultation with the relevant project stakeholders and must be approved by the BCA certifier during the design stage. A separate bathroom may be required, however, on some units where patients will frequently require assisted bathing on a shower trolley, such as spinal cord injury units.

Reticulated medical gas outlets (oxygen and suction) may be considered in ensuites on selected specialised units in line with local jurisdictional policies. This is required where oxygen therapy is required to support patients undertaking ADLs and who have low exercise tolerance, e.g. respiratory units, to avoid safety hazards associated with long lengths of oxygen tubing from the bedroom and to avoid low supply associated with portable oxygen cylinders. Suction may be required where it is essential to ensure the safety of the patient, e.g. patients with a high level spinal cord injury. These items should not be installed above the patient toilet.

Patient and Family Lounges

Patient lounges provide an opportunity for socialisation, a destination and a space to meet with family and friends. This is particularly important for those patients accommodated in multi-bed rooms. This space should be provided within the envelope of the Inpatient Unit to enable staff to supervise easily.

Access to beverage making facilities is highly desirable, however the operational management of this facility will require consideration.

An alternative to a dedicated patient lounge may be provision of a family or visitor room such as the Whānau room in New Zealand.

Where a visitors' lounge or Whānau Room is provided, consideration should be given to the local cultural context to ensure the rooms meets the needs of the local community. It should be located and designed to accommodate child visitors without disruption to other patients, their families and visitors. The need to accommodate more than one family group should also be considered.

2.4.3   Clinical Support Areas

Staff Station(s)

Staff stations may be organised around three zones:

- Main staff station located to control the movements of patients, staff and visitors entering and leaving the unit and for receipt of mail, flowers, etc., delivered to the unit. The ward clerk is generally located in this area with ready access to photocopier, files etc

- A clinical work room to be used by the multidisciplinary team to access patient records, locate a 'journey board', view medical images, make phone calls and conduct small meetings
- Decentralised spaces, to allow closer proximity of staff to the patients, may be considered for immediate work associated with patient care. This is facilitated by the use of electronic record systems and point of care management.

The design of these areas must ensure that there are no opportunities for staff entrapment.

Storage – Equipment

Equipment should be located and organised to ensure ease of access by staff. This would include equipment bays or storage areas within the inpatient unit.

Items which are designated to individual patients may be stored in the bed room or ensuite, e.g. shower chair.

Items used regularly for a group of patients, e.g. lifters, weigh scales, mobile sphygmomanometers, may be stored locally in mobile equipment bays. These will require access to power for recharging and may require access to data outlets. Where workstations on wheels (WOWs) are provided these will also require allocated storage areas with access to power (or battery chargers), and although they will be connected to Wi-Fi, data outlets may be required. WOWs are typically provided at a rate of one per nurse on the unit.

Equipment, particularly larger equipment that is floor-parked, needs to be defined so that appropriate storage space can be allocated and ideally a designated 'home' provided to avoid equipment being located in corridors. Specialist units, e.g. spinal injuries and orthopaedics may have additional equipment requirements that will need to be accommodated. Suitable storage should be provided to store a range of equipment, particularly larger equipment to reduce damage, ensure efficient use of space and prevent workplace health and safety (WHS) issues. Allied health services require access to equipment and consumables storage as noted in Section 2.4.5.

Power outlets should be provided for recharging in both mobile equipment bays and equipment stores.

Rarely used items such as high cost equipment, bariatric equipment or equipment requiring cleaning and maintenance, e.g. pressure relieving mattresses, may be stored in a central equipment store that serves all clinical units.

The shape and configuration of storage areas requires consideration, and the use of equipment tracking systems may also be considered.

The storage and recharging of automated mobile robots, e.g. tugs used for the transport of linen and waste, must also be considered. These are typically stored in central locations rather than on inpatient units.

Storage – Sterile Supplies and Consumables

Sterile supplies should be stored in a 'clean store' in a manner that maintains the integrity of packs and prevents contamination from any source, e.g. dust, vermin, sunlight, water, condensation, etc. Temperature monitoring is required, and surfaces should be easy to clean. High-Efficiency Particulate Air (HEPA) filtration is not required.

Supplies should be stored off the floor, with the lowest shelf at least 250mm above floor level to avoid mechanical damage during cleaning. The top shelf should be lower than 1700mm to support WHS requirements.

Refer to AusHFG Part D regarding the requirements of 'sterile stores' vs 'clean stores'.

If sterilised reusable medical devices (RMDs) are stored on the unit compliance with AS 5369 is required.

The size of storage areas will be impacted by the patient casemix. For example, additional storage will be required for dialysis and respiratory inpatient units.

Boxes and non-sterile consumables should be stored in a 'general store' on the unit.

Refer to:

- AusHFG Part D: Infection Prevention and Control
- AS 5369:2023 Reprocessing of reusable medical devices and other devices in health and non-health related facilities.

2.4.4 Staff Areas

Staff Work Areas

Office space for the Unit Manager and senior nursing staff, such as clinical nurse educators, is usually provided within the envelope of the Inpatient Unit. Visiting staff will require access to a write-up area at staff stations and within the clinical workroom.

Access to workstations for virtual care and staff training should also be provided in close proximity to the unit.

Local jurisdictional policies relating to the provision of staff work areas will guide the allocation and arrangement of staff work areas.

Meeting and Teaching Areas

Meeting and tutorial rooms provide space for students and staff to undertake education and ongoing skills maintenance and development. These rooms should be used flexibly and sized to accommodate the maximum number of staff and students regularly utilising the space. The number of spaces to be provided should reflect the frequency of use. Where possible, support should be provided for bookable rooms that can be flexibly used for a range of functions. This minimises the need to build, heat, cool, light and clean poorly utilised spaces.

Consideration should be given to relevant medical college accreditation requirements for specialist training.

Sufficient meeting room capacity is required for Multidisciplinary Team (MDT) meetings and must be located in close proximity to the unit for ease of staff access.

Where possible, these spaces should be located to enhance use by different staff groups from both within and external to the unit without compromising day to day operations of the unit due to excessive through traffic.

All meeting rooms will require support for video conferencing.

Simulation areas are typically provided off the Inpatient Unit, e.g. in a centralised education area.

Staff Amenities

Staff toilets should be immediately accessible within the envelope of the unit. Consideration should be given to the provision of all gender facilities.

Staff lockers should be available within the unit for all staff. Access to full change and end of trip facilities should be available centrally in the healthcare facility.

A staff room should be readily accessible and may be shared between units for use by all staff and students on a ward floor. Ideally, a small lounge or similar space should be available within each unit for staff to take short breaks and debrief in private amongst their peers. This room usually includes a beverage-making facility. This is particularly important for overnight staff when they are not able to leave the unit due to staffing levels and safety reasons.

2.4.5 Shared Areas

Areas shared with adjacent Inpatient Units may include:

- visitor / public amenities
- treatment / procedure room (where provided)
- allied health areas and storage space

- disposal room
- additional equipment storage.

Visitor and Public Amenities

Visitors should have ready access to toilets including an accessible toilet (AS 1428 and NZS 4121) and consideration of all gender facilities. These facilities are best centrally located outside the perimeter of the unit and may be shared by more than one unit.

Treatment and Procedure Rooms

Treatment rooms on inpatient units are often poorly utilised for their intended purpose of undertaking minor procedures. Minor procedures are commonly undertaken at the patient bedside given the increasing provision of single rooms, with patients typically transferred elsewhere for more advanced procedures.

Allied Health Areas and Storage Space

Space and facilities for unit-based therapy may be shared between units and may include:

- access to interview rooms
- access to multidisciplinary team (MDT) meeting rooms that support virtual models of care
- 10m IPU corridor length for walking assessments (existing corridor space)
- satellite multifunctional allied health area, usually shared between two or more IPUs
- an appropriate and safe area to assess and educate patients on stairs and/or steps (a set of stairs may be located in a multifunctional allied health area or in a dedicated bay or end of a corridor with appropriate clearances for safe access)
- access to ADL areas (these are usually provided in one location across the healthcare facility)
- storage for consumables, equipment and mobility aids
- access to write-up area and storage of resource material.

Allied health area requirements will depend on the patient casemix. For example, orthopaedics, trauma, respiratory, cardiothoracic surgery, neurosurgery, neurology and stroke units will require larger allied health areas than general medical inpatient units.

Units with a high turnover of patients will require close access to space for discharge assessment, e.g. walking and stairways. Units with a longer length of stay may require access to space for activities of daily living.

Discussion regarding provision of satellite therapy units on inpatient floors is provided in HPU 140 Allied Health / Therapy Unit. Allied health / therapy areas associated with rehabilitation, older people's health subacute care units and palliative care units are described in HPU 610 Subacute Care Unit.

2.5   Functional Relationships

2.5.1   External

Inpatient accommodation is one of the core functions of every hospital and is supported by a wide range of clinical and non-clinical services. Good functional relationships enhance the delivery of those services.

Principal relationships with other units include:

- easy access from the Main Entrance particularly for visitors
- ready access to diagnostic facilities such as Medical Imaging, Nuclear Medicine, etc
- ready access from Emergency and to and from Critical Care Units
- ready access to Operating and Day Procedure Suites for surgical units
- ready but discreet access for delivery of food, linen, supplies and removal of waste

- ready access to staff amenities not provided locally
- easy, undercover and discrete access to the mortuary (ensuring privacy from public view).

Units that patients do not usually access such as clinical information, pharmacy and pathology may be located more remotely with appropriate system support, e.g. pneumatic tube systems.

2.5.2   Internal

The ability to achieve optimum relationships between component spaces depends on many factors including the nominated site, available space, shape of the space available and specific operational requirements.

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
- shared areas that should be easily accessible from the units served.

3 Design

3.1 Access

There should be only one point of public entry, with close access to the main staff station including the ward clerk/administrator during extended daytime hours to:

- advise visitors if patients have been moved to another bed or are out of the unit for any reason
- prevent access by visitors the patient may not wish to see
- monitor visiting staff and direct them to the appropriate staff member or patient
- monitor patient movements in and out of the unit.

For the safety of patients and staff it is recommended that Inpatient Units are able to be locked down after hours with swipe card (or similar) for access by authorised personnel. If necessary, video intercom should be provided.

A separate and discreet entry is required for staff, patient transfers and goods and supplies, operated by swipe card (or similar) by authorised personnel only.

3.2 Parking

For staff parking, refer to Part C: Design for Access, Mobility, Safety and Security.

3.3 Disaster Planning

Each unit should have operational plans and policies detailing the response to a range of emergency situations both internal and external. Consider issues such as the placement of emergency alarms, the need for uninterrupted power supply (UPS) to essential clinical equipment and the ability to effect complete lock-down.

Refer to Part B: Section 80 and Part C for further information.

3.4 Infection Prevention and Control

3.4.1 General

The following aspects contribute to effective infection prevention and control (IPC) and are relevant within the context of the Inpatient Unit:

- hand hygiene facilities
- provision for the isolation of patients known or suspected to be infected with pathogens for which transmission-based precautions are required
- linen handling
- separation of clean and dirty work flows
- storage
- waste management
- surface finishes.

It is important to ensure that IPC experts are consulted throughout the planning and design process.

Refer to Part D and to individual jurisdictional policies and guidelines for further details.

3.4.2 Hand Hygiene Facilities

Refer to AusHFG Part D: Infection Prevention and Control for detailed information regarding requirements to support optimal hand hygiene.

A risk-based approach is recommended for determining handwash basin locations. A type B hand basin should be positioned for easy access by staff within or directly outside each single bed room (based on local IPC team assessment). One type B handwash basin will be required within each double and four bed room.

Each bed space will have access to alcohol-based hand rub (ABHR). At a minimum, ABHR dispensers will be located as close to the point of care as possible, e.g. within the curtained area of each bed space either at the end of every bed or on the wall of each bed space using either a fixed or removable bracket.

Personal protective equipment (PPE) dispensing stations should not be collocated with the hand basins as this can result in contamination of the PPE.

Facility requirements to support hand hygiene will need to align with local IPC policies and guidelines. Also refer to the relevant AusHFG Standard Components for further detail regarding the recommended location of handwash basins.

3.4.3   Isolation Rooms

In order to promote flexibility of use and to reduce the need for patient transfers, all single bedrooms should be able to accommodate patients requiring standard contact isolation - Class S isolation.

The provision of negative pressure isolation rooms for management of respiratory infections, and positive pressure isolation rooms for highly immunocompromised patients may be determined by service planning analysis for the unit concerned.

Negative pressure isolation rooms should be located close to the entry of the unit to minimise the travel / transfer of those patients through the unit.

Refer to Part D: Infection Prevention and Control and AusHFG Isolation Rooms – Engineering and Design Requirements for further details.

3.4.4   Airborne Precautions and Pandemic Preparedness

In response to lessons learned during the COVID-19 pandemic, it is important that the planning and design of inpatient units supports resilience against future pandemics and optimal infection control practices relating to cases and outbreaks that occur outside of pandemics.

The provision of single bedrooms is an important strategy to reduce the risk of exposure and transmission from patient to patient, however this needs to be considered in the context of the overall anticipated patient casemix and other variables outlined in Section 2.3.4. Multi bedrooms support the ability to cohort patients.

All units will require a space at entry and exit points to support the safe donning and doffing of PPE including storage of items and access to hand hygiene and cleaning products. This may be a room or bay that is used for an alternative function outside of pandemic periods, such as a mobile equipment bay or an adjacent office or interview room that will not be commonly utilised during a pandemic. The space at the end of a corridor that has no through traffic may also provide effective use of space for this function,

Features of the Heating, Ventilation and Air Conditioning (HVAC) design in contemporary inpatient units enhances their adaptability when managing large numbers of patients with acute respiratory infections. These include:

- ability to operate in up to 100% outside air mode (subject to local climate conditions) when required during a pandemic period or event mode or maximising the amount of outside air achievable and providing high grade filtration, and
- dedicated air handling units provided to each inpatient unit.

Where 100% outside air mode is to be used, HVAC systems should also incorporate energy reclaiming systems as required under the National Construction Code (NCC).

For high-risk inpatient units or pods, for example respiratory and infectious diseases units, targeted air pathway strategies should be adopted in line with local jurisdictional guidelines. For example, the provision of ducted return air within individual patient rooms, rather than via a common corridor, should be considered.

Consideration should be given to enabling the provision of mobile x-ray through a window in the bedroom door to minimise the need for health workers to access the room where a patient requires isolation. Refer to Section 2.2.4 for further information. Telemetry may also be supported for this same reason.

Further information is provided in AusHFG Pandemic Preparedness – Health Infrastructure Planning & Design Guidance.

3.5 Environmental Considerations

3.5.1 Acoustics

Noise is a constant source of complaint from patients and may compromise patient comfort and recovery. Noise at night may have a negative impact on the ability of patients to sleep.

Confidentiality of patient information should also be protected.

Noise sources may arise both within and from outside the unit and include:

- sanitary facilities
- equipment
- other patients
- staff activities, e.g. conversations, talking on phone, rounds, meetings, cleaning
- areas of public movement, lift lobbies, etc
- traffic through the unit including visitors, food, linen and other trolleys, or movement of patients into or out of the unit
- helicopter landing site.

Solutions to be considered include:

- location of the unit
- use of sound absorbing materials and finishes
- sound isolating construction
- separation of quiet areas from noisy areas, e.g. avoid locating noisy areas immediately opposite a patient bed room
- changed operational management.

Refer to Part C for further information.

3.5.2 Natural Light and Views

Natural light and views contribute to a sense of wellbeing for all building occupants including patients, staff and other users. Where possible the bed position within a patient bedroom should enable access to views from windows.

Higher levels of natural light may help people better orient themselves in the building thus enhancing wayfinding.

In areas where glare from the sun may impact the visual comfort of occupants, operable blinds with low visual light transmission should be provided.

If natural light is not available to occupied rooms, specialised lighting systems that mimic natural daylight, i.e., circadian lighting or colour temperature adjustable lighting, may be considered.

Greater use of natural light may also reduce energy usage in terms of reducing the need for artificial lighting. However, the provision of daylight and outlooks must be balanced with optimising the thermal envelope to reduce the energy required to heat and cool the space.

3.5.3   Privacy

A major conflict in the design of inpatient accommodation often arises due to the need to ensure that patients and staff can see each other, while also ensuring patient privacy.

Given the need to optimise clinical care and patient safety, bedrooms and other areas occupied by patients should be designed and configured to give staff the greatest ability to observe patients, particularly unstable or vulnerable patients. Different styles of unit design offer varying degrees of visibility or observation. Operational models will support patient observation, for example intentional rounding whereby nursing staff carry out regular checks on each patient at set intervals.

The expected patient mix may be a prime factor in resolving the conflict between observation and privacy. For instance, the following types of patients have differing requirements:

- vulnerable older people especially in single rooms who may feel more secure if they can observe staff or can be observed by staff or other patients
- clinically unstable or high dependency patients who may require almost constant observation
- clinically stable but vulnerable patients who may require frequent observation
- supported or self-care patients who require passing observation only.

Factors for consideration include:

- use of windows in corridor walls and/or doors whilst assisting with observation, require suitable privacy to be maintained
- location of beds to maximise sight lines
- proportion of single bed rooms
- location of bed screens to ensure privacy of patients undergoing treatment
- location of sanitary facilities to provide privacy for patients while not limiting observation by staff.

The provision of appropriate areas for confidential staff discussions and patient/family discussions via virtual care is also essential.

3.5.4   Interior Decor

Interior decor includes artworks, furnishings, style, colour, textures, ambience, perception and taste. This can help prevent an institutional atmosphere. However, quality, cleaning, infection control, fire safety, patient care and the patients' perceptions of a professional environment should 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 for jaundice, blue for cyanosis and red for flushing.

The requirements of local Indigenous peoples and other cultural groups must be considered to ensure the provision of a welcoming and culturally safe space. This will require consultation with representatives from the local Indigenous community and other cultural groups. Key design strategies may include the use of artwork, signage in relevant languages providing a welcome to the unit and appropriate provision of spaces to support family/carers.

Biophilic design principles should be adopted for interior décor as they have proven benefits for mental and physical health including reduced stress and quicker recovery time.

3.5.5   Signage and Wayfinding

Refer to:

- AusHFG Part C: Design for Access, Mobility, Safety and Security; and
- NSW Health Infrastructure, 2022, Wayfinding for Healthcare Facilities

3.5.6   Arts Integration

Arts Integration can support a range of wellbeing initiatives for patients, carers and family, and staff for improved clinical outcomes, patient dignity and agency.

Any artwork commissioned should align with the AusHFG, Arts in Health Framework (Nov. 2022).

3.6   Space Standards and Components

3.6.1   Bed Spacing and Clearances

Refer to the AusHFG Standard Components for IPU specific rooms.

3.6.2   Access and Mobility

The facility must comply with the Commonwealth Disability and Discrimination Act (DDA) and the following standards where applicable:

- Disability (Access to Premises – Buildings) Standard
- National Construction Code (Australia)
- AS1428 (SET) Design for access and mobility
- NZS 4121: Design for access and mobility: Buildings and Associated Facilities.

3.6.3   Building Elements

Building elements include walls, floors, ceilings, doors, windows and corridors. Refer to Part C: Design for Access, Mobility, Safety and Security for further details.

Window sill heights should be low enough to permit a view to the outside by a patient lying in bed.

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

3.6.4   Construction Methods

Alternative construction methods may result in the need for minor adjustments to the recommended inpatient unit design and spatial allocations.

Modular construction is becoming increasingly popular for healthcare projects, particularly for rural and remote areas, to minimise construction time and associated costs, promote flexible use over time, minimise disruption to existing sites and safety risks, and reduce the environmental impact compared with traditional on-site construction methods.

Transportation requirements may limit the dimensions of modules and therefore standard design parameters may need to be altered to achieve the modular approach whilst also maintaining alignment with the clinical and operational requirements of the service.

3.7   Safety And Security

In addition to the information below refer to AusHFG Part C: Design for Access, Mobility, Safety and Security.

3.7.1 Safety

The unit should provide a safe and secure environment for patients, staff and visitors while retaining a non-threatening and supportive atmosphere conducive to recovery. Patients are often unaware of their capacities or incapacities. They may be weak or frail, unsteady, affected by medication or confused. Whether involving patients or staff, most accidents occur in or near sanitary facilities or when getting out of bed.

Design and construction of the facility and selection of furniture, fittings and equipment should ensure that users are not exposed to avoidable risks of injury.

Facility planners and designers should enhance safety by means of the design, the methods of construction and the materials chosen, including the selection of fittings, fixtures and equipment.

3.7.2 Security

Facility planners and designers should enhance security by incorporating the principles of territorial reinforcement, surveillance, space management and access control into design decisions.

In relation to inpatient accommodation the following specific security issues should be considered:

- the need for fixed and/or personal duress alarms
- access control particularly at night
- control and monitoring of visitors
- the design must not create entrapment or concealment points, e.g. at staff stations
- monitoring of patient movements in and out of the unit, especially with regard to older people admitted for other reasons but who may also be living with dementia or other forms of cognitive impairment
- design spaces such as interview rooms to ensure staff have ready access to duress and egress
- alarmed fire exits.

3.7.3 Risk Management

The physical environment has a significant impact on the health and safety of end users. A risk management approach ensures risks are managed systematically utilising a process that supports the anticipation, identification and avoidance of risks that may have an impact on users and services.

Broad consultation with all stakeholders and other identified processes may be utilised to identify risks according to the availability of expertise to ensure security, health and safety risks are proactively managed.

Work Health & Safety (WHS) legislation requires designers to identify, assess and control risks in order to provide an optimal ergonomic design and to do this in consultation with stakeholders.

Safety considerations need to address the health and safety of end users, including staff, maintenance personnel, patients and visitors.

Refer to:

- AS/NZS ISO 31000 Risk Management – Principles and Guidelines.

3.8 Finishes

3.8.1 General

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

Refer to Part C: Design for Access, Mobility, Safety and Security for further details.

3.8.2   Wall Finishes

Adequate wall protection should be provided to areas 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, equipment and linen trolley bays.

3.8.3   Floor Finishes

Floor finishes should be appropriate to the function of the space.

Consider acoustic performance, slip resistance, infection control, movement of beds and trolleys, maintenance and cleaning protocols.

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

Refer to Part C Section and to TS-7 Floor Coverings in Healthcare Buildings (NSW Health and CHAA, UNSW 2009).

3.8.4   Ceiling Finishes

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

Refer to Part C Section, AusHFG Part D and the AusHFG Standard Components for further details.

3.9   Fixtures, Fittings and Equipment

3.9.1   Definitions

The Room Data and Room Layout Sheets in the AusHFG define Fixtures, Fittings and Equipment. Refer to:

- Part C: Design for Access, Mobility, Safety and Security
- AusHFG Part D: Infection, Prevention and Control
- AusHFG Standard Components for IPU specific rooms.

3.9.2   Curtains and Blinds

Each room should have partial blackout facilities (blinds or lined curtains) on the external and internal windows to allow patients to sleep more easily during the daytime, reduce glare and may be considered essential in units dealing with patients with sensitivity to light, e.g. neurological units and eye disorders / surgery.

Refer to AusHFG Part D: Infection Prevention and Control for further information regarding window treatments.

3.10   Building Service Requirements

3.10.1   General

Refer to local jurisdictional requirements relating to building and engineering services. A list of relevant jurisdictional guidelines is included on the AusHFG website: AusHFG External Resources

3.10.2   Air Handling Systems

Provision of natural ventilation to patient care areas should be approached with caution. The management of airflows and the creation of a stable environment are essential to the control of the spread of infection so, generally, air conditioning should be provided.

Refer to AusHFG Part D: Infection Prevention and Control and local jurisdictional engineering guidelines.

3.10.3   Electrical Services

It is essential that services, such as emergency lighting, telephones, duress alarm systems (including the central computer) and electronic locks, are connected to the emergency power supply.

3.10.4   Information Technology and Communication

Address the following ICT issues and the associated infrastructure requirements to ensure long term flexibility:

- wireless technology – Wi-Fi and Mobile In-Building coverage
- radiofrequency identification (RFID) for access control, locks, etc
- duress alarm systems - fixed and personal as required
- nurse and emergency call systems
- e-medication management and e-storage systems, e.g. automated dispensing systems
- biomedical systems
- voice and data (telephone and computers)
- videoconferencing capacity and virtual models of care
- electronic medical records
- Patient Administration Systems (PAS)
- Picture Archiving Communication System (PACS)
- Radiology Information Systems (RIS)
- paging and personal telephones replacing some aspects of call systems
- patient multimedia devices including bedside monitors that function as televisions, computer screens for internet access, etc.
- patient information screen integrated with menu ordering, nurse call and other modalities
- equipment tracking systems
- server and communications rooms
- e-learning and simulation
- booking systems for flexible use rooms such as meeting rooms to optimise utilisation.

3.10.5   Nurse Call System

Healthcare facilities should provide a call system that allows patients and staff to alert other staff. These systems should be compatible throughout the facility.

Consideration should be given to evolving technology associated with nurse call systems such as options for direct voice communication between the patient and the nurse and the use of mobile devices to ensure staff receive notifications when away from the staff station. The nurse call system should:

- allow change of the call notification between end users and the system
- operate within acceptable noise levels
- provide sufficient capacity in terms of the anticipated level of use.

3.10.6   Duress Alarms

Duress alarms, personal or fixed, should be provided in accordance with jurisdiction health policies. Refer to Part C for further information.

3.10.7   Hydraulic Services

The hydraulic services design shall comply with the National Construction Code (Australia), NZ Building Code and local health engineering services guidelines.

Heated water dead legs, measured from the heat source or ring main to the outlet of the fixture, shall not exceed 2L in volume.

Consideration must be given to the impact of negative pressure on floor waste traps. Trap depths should be increased to address this impact.

3.10.8   Medical Gases

Provide oxygen, suction and medical air to each bed as required.

Consideration may be given to providing a number of beds with less visible medical service panels to minimise the risk of injury to / or damage by patients with dementia or other cognitive impairments resulting in unpredictable behaviours. Access to the patient handset must be considered.

Refer to AusHFG Standard Components for patient bedrooms.

3.10.9   Fire Protection Services

The fires services design shall comply with the National Construction Code (Australia) / NZ Building Code's performance requirements or deemed to satisfy reference standards, and the local health engineering services guidelines.

4   Components Of the Unit

4.1   Standard Components

Rooms / spaces are defined as:

- standard components (SC) which refer to rooms or 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 however 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: AusHFG Standard Components.

4.2   Non-Standard Components

Non-Standard Components are generally unit specific and provided in accordance with specific operational policies and service demand.

4.2.1   Multifunctional Allied Health Area

Description and Function

Where ready access to a centralised allied health area is not available, a multifunctional allied health area is recommended to appropriately support the provision of allied health / therapy services. The area should be fitted out depending on the particular service profile, i.e. it may include plinths for one-on-one therapy, or it may include group exercise equipment, or materials and equipment for art and music therapies.

Specialised units, where demand for allied health services is high, e.g. neurosciences and orthopaedics/trauma, will require consideration of a larger allied health area in alignment with projected utilisation.

Location and Relationships

This area should be shared between two or more IPUs. It should be located to enable ease of access for patients and staff. Although the area is often provided outside the envelope of the IPU, connection to emergency response systems is essential.

4.2.2   Bay - Stairs

Description and Function

Where a multifunctional allied health area is not provided a separate area may be required to accommodate a set of training / therapy stairs to assess a patient's level of safety with mobilising up and down stairs and to support educate regarding the use of new mobility aids.

Location and Relationships

This is an optional area to be provided when a multifunctional allied health area / gymnasium is not located in close proximity. It should be located proximally to the inpatient unit to minimise the distance for patients to mobilise / be transferred to the stairs. The stairs should be located to ensure appropriate clearances for safe access and to avoid the stairs needing to be moved given their significant bulk and weight. A bay at the end of a corridor may be appropriate.

Refer to the 'Gymnasium Components – Clearance and Circulation Guide' located with the AusHFG Gymnasium Standard Components for further details regarding typical dimensions and required clearances.

5   Appendices

5.1   Schedule Of Accommodation

Recommended schedules of accommodation are included below for inpatient units with 28 and 32 beds. This assumes an indicative provision of 50% single bedrooms with one bariatric bed room and one negative pressure isolation room. These allocations may need to be adjusted depending on the requirements of the project.

The 'Room / Space' column describes each room or space within the Unit. Some rooms are identified as 'Standard Components' (SC) or as having a corresponding room which can be derived from a SC. These rooms are described as 'Standard Components–Derived' (SC-D). The 'SD/SD-C' column identifies these rooms and relevant room codes and names are provided.

All other rooms are non-standard and will need to be briefed using relevant functional and operational information provided in this HPU.

In some cases, Room / Spaces are described as 'Optional' or 'o'. Inclusion of these areas will depend on the service scope, local clinical requirements and / or local operational policies. To avoid these rooms being allocated to a project by default they have been included separately at the end of the schedule of accommodation. The requirement for each optional area should be confirmed on a project-by-project basis and included where it is essential to meet the service need.

PATIENT AREAS

Room Code	Room Name	SC/ SC-D	Scenario 1 28 Bed IPU Qty	Scenario 1 28 Bed IPU m²	Scenario 2 32 Bed IPU Qty	Scenario 2 32 Bed IPU m²	Comments
1BR-ST-IN1 1BR-ST-IN2 1BR-ST-NE	1 Bed Room - Inboard (A), Outboard (B) or Back to Back Ensuite (D)	SC	12	16.5	14	16.5	May be used as a Type S isolation room. Where a 'back to back ensuite' design is adopted 17.5m2 will be required.
1BR-BA	1 Bed Room - Bariatric	SC	1	18	1	18	Number depends on patient profile. Standard bariatric room, not suitable for management of 'super-bariatric' patients.
1BR-IS-N	1 Bed Room - Isolation - Negative Pressure	SC	1	16.5	1	16.5	Locate close to the entry of the unit.
ANRM	Anteroom	SC	1	6	1	6	Provided as part of N Class rooms.
2BR-ST-IN	2 Bed Room - Inboard (A) or Outboard Ensuite (B)	SC	5	29	6	29	
4BR-ST-IN	4 Bed Room - Inboard Ensuite	SC	1	60	1	60	**Optional.** Supports the ability to divide into 2 x 2 Bed Rooms in the future.
ENS-ST ENS-ST-NE	Ensuite - Standard	SC	19	5	22	5	One per 1 Bed Room and 2 Bed Room; two per 4 Bed Room.
ENS-ACC	Ensuite - Accessible	SC	1	7	1	7	Designed to AS1428. Caters for independent wheelchair patients and replaces standard ensuite. The number and allocation of accessible ensuites is to be determined at a project level depending on the anticipated patient cohort.
ENS-BA	Ensuite - Bariatric	SC	1	7	1	7	One per 1 Bed Room - Bariatric. Standard bariatric room, not suitable for management of 'super-bariatric' patients. All fixtures and fittings must tolerate the patient's weight when seated (e.g. toilet pan) and also leaning (e.g. ensuite basin and rails).
LNGE-20	Lounge - Patient / Visitor	SC	1	20	1	20	Inclusion of tea/coffee making facilities will be dependent on local operational policies. Recommend the lounge can be closed off to support family meetings or large family gatherings. 2 points of egress recommended. Locate within unit for staff oversight.
Discounted Circulation			**38%**		**38%**		Circulation rates may vary for different IPU service types.

SUPPORT AREAS

The number and size of support rooms and spaces may need to change should the unit size adopted be significantly larger or smaller than is typical. For example, a very large IPU may require additional space to store clinical consumables owing to patient numbers.

Room Code	Room Name	SC/ SC-D	Scenario 1 28 Bed IPU		Scenario 2 32 Bed IPU		Comments
			Qty	m^2	Qty	m^2	
BBEV	Bay - Beverage	SC	1	4	1	4	For staff acess to support patient care eg for storage of feeds, reheating food, patient tea/coffee etc. Open bay. If closed, increase to 5m2. Local jurisdictional food services model to be confirmed and area requirements aligned accordingly.
BHWS-B	Bay - Handwashing, Type B	SC	4	1	4	1	Located in corridors.
BLIN	Bay - Linen	SC	2	2	2	2	At least 1 bay per 15 beds.
BMEQ	Bay - Mobile Equipment	SC	2	4	2	4	Number depends on equipment to be stored and frequency of use. Ready access to bed rooms.
BRES	Bay - Resuscitation Trolley	SC	1	1.5	1	1.5	
CLRM-5	Cleaner's Room	SC	1	5	1	5	Shape of room is important to ensure optimal functionality. Includes storage for dry goods. Access to central store for shared, bulky cleaning equipment. Area requirement will depend on local operational models for staffing and cleaning regimens that will impact the type of equipment and number of trolleys to be accommodated. Where more than one trolley will be stored an additional 1.5m2 is required per trolley.
CLN-10	Clean Store	SC	1	10	1	10	For storage of unpacked sterile consumables. May be provided as a combined Clean Store / Medication Room of 24m2 depending on local jurisdictional policies. Previously referred to as a Clean Utility.
MED-14	Medication Room	SC	1	14	1	14	May be provided as a combined Clean Store / Medication Room of 24m2 depending on local jurisdictional policies.
DTUR-14	Dirty Utility	SC	1	14	1	14	A second dirty utility may be required depending on travel distances. This is frequently required for 32 bed units and single corridor designs given the travel distances. If a second dirty utility is required it should be a minimum of 10m2 for close access to a pan sanitiser, waste and linen skips. Allocation to be reviewed against local waste streaming requirements.
INTV	Interview Room	SC	1	12	1	12	Dual egress recommended. Design must support confidential staff and patient/family discussions. Videoconferencing must be supported.
SSTN-14	Staff Station	SC	1	14	1	14	Requirements will depend on staffing profile. Note optional decentralised staff stations included below.
OFF-CLN	Office - Clinical Workroom	SC	1	15	1	15	Locate near staff station.
	Bay - Photocopy/Stationary	SC	1	3	1	3	Collocate with Staff Station.
OFF-1P-9	Office - Single Person	SC	1	9	1	9	For Nurse Unit Manager. Provision of other staff work areas within the unit will depend on local jurisdictional policies. Refer to additional staff work areas below.
STEQ-20	Store - Equipment	SC	1	20	1	20	Size dependent on equipment stored, frequency of use and number of bays.
STGN	Store - General	SC	1	9	1	9	For storage of boxes and non-sterile consumables.
Discounted Circulation			**38%**		**38%**		**Circulation rates may vary for different IPU service types.**

STAFF WORK AREAS AND AMENITIES

Room Code	Room Name	SC/ SC-D	Scenario 1 28 Bed IPU		Scenario 2 32 Bed IPU		Comments
			Qty	m²	Qty	m²	
OFF-WS	Office - Workstation	SC		4.5		4.5	Allocation will be dependent on staff profile and jurisdictional policies relating to staff work areas.
SRM-15	Staff Room	SC	1	15	1	15	Includes a beverage bay.
BPROP	Bay - Property, Staff	SC	1	3	1	3	Capacity for all staff and students located on the IPU. Allocation will depend on local jurisdictional policies.
WCAC	Toilet - Accessible (Staff)	SC	1	6	1	6	Accessible toilet for staff unless accessed through adjacent unit. Number depends on staffing. Consideration should be given to all gender facilities.
Discounted Circulation			**25%**		**25%**		

SHARED AREAS

The areas below are assumed to be shared between two or more inpatient units.

| Room Code	Room Name	SC/ SC-D	Scenario 1 28 Bed IPU		Scenario 2 32 Bed IPU		Comments
			Qty	m²	Qty	m²	
MEET-20	Meeting Room, 20m2	SC	1	20	1	20	May share with adjacent department. Multifunctional use. Size dependent on room usage requirements including staff, MDT and family meetings and education/training requirements. Must support videoconferencing.
DISP-10	Disposal Room	SC	1	10	1	10	May be provided as a shared space between multiple units, however area allocation to be multiplied accordingly ie 20m2 for 2 units. Allocation to be reviewed against local waste streaming requirements.
WCPU	Toilet - Public	SC	1	3	1	3	Number to be determined depending on number of units sharing access to public toilets. Consideration should be given to all gender facilities.
Discounted Circulation			**38%**		**38%**		

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.

Room Code	Room Name	SC/ SC-D	Scenario 1 28 Bed IPU Qty	m²	Scenario 2 32 Bed IPU Qty	m²	Comments
PATIENT AREAS							
1BR-CO-OU1 1BR-CO-OU2	1 Bed Room – Carer Overnight	SC		19		19	**Optional.** Outboard ensuite option for units requiring carers to be accomodated within the bedroom. Number will depend on local models of care and patient casemix.
SUPPORT AREAS							
BMEQ	Bay - Workstation on Wheels	SC-D	1	2	1	2	**Optional.** For WOW storage where access to power is required for recharging (some may use rechargable batteries). Access to data outlets is required. Requirements will depend on operational model for access to patient information, and consideration should be given to support for future technologies.
BMT	Bay - Meal Trolley	SC	1	4	1	4	**Optional.** Provision will depend on food services model. Space dependent on size and capacity of meal trolleys.
	Bay - PPE (Personal Protective Equipment)			0.5		0.5	**Optional.** Provision of bay will depend on approach to storing PPE. May be provided as a wall mounted PPE unit.
SSTN-10	Staff Station - Decentralised	SC	2	5	2	5	**Optional.** Decentralised staff base. Many units use WOWs so staff are mobile and may not require a decentralised base. Location and no dependent on unit configuration. Locate to optimise line of sight to patient care areas.
STAFF AREAS							
BHWS-B	Bay - Handwashing, Type B	SC	1	1	1	1	**Optional**. To be provided close to staff room for hand hygiene if no other corridor HWB located close by.
SHARED AREAS							
BATH	Bathroom	SC	1	15	1	15	**Optional.** Subject to a BCA Performance Solution Report in response to BCA requirements (refer to Section 2.4.2 of the HPU). Rarely included in recent developments. If it is provided it is typically allocated at one bath per floor or shared between two units. A mobile shower trolley is typically more functional than a bath (as indicated in the AusHFG BATH Standard Component).
	Multifunctional Allied Health Area		1	14	1	14	**Optional.** Provision will depend on service requirements and access to centralised allied health unit. To be shared between IPUs, ie 28m2 shared between 2 IPUs. Multifunctional allied health area to be fitted out depending on service profile, ie may include plinths for one on one therapy or group exercise equipment. A set of stairs for assessment / education of patients should be included (however this may be provided within circulation areas subject to design).
	Bay - Stairs		1	5	1	5	**Optional.** Where multifunctional allied health area is not provided. Provided to locate stairs to assess / train safety with walking aids.
STGN	Store - General	SC	1	12	1	12	**Optional.** May be provided between two IPUs to store essential allied health consumables and equipment including mobility aids.
WCAC	Toilet - Accessible	SC	1	6	1	6	**Optional.** To be provided in one location per floor in line with DDA requirements. Note staff also require access to an accessible toilet.
Discounted Circulation			38%		38%		

5.2 Functional Relationship Diagram

The following diagram sets out the functional relationships between zones in an Inpatient Unit.
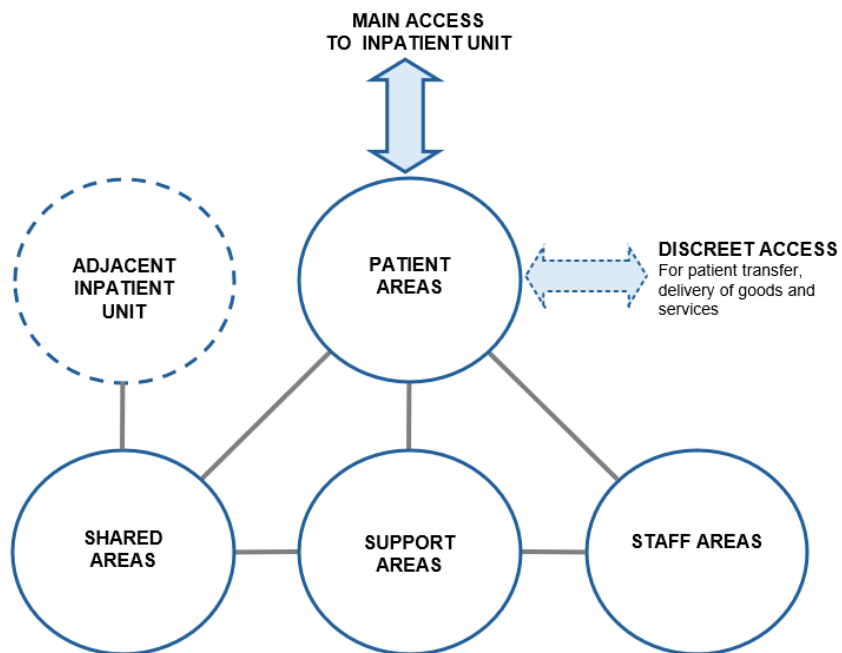
5.3   References

General

- AHIA, 2016, AusHFG Part B: Section 80 General Requirements, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2018, AusHFG Part C: Design for Access, Mobility, Safety and Security, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2025, AusHFG Part D: Infection Prevention and Control, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2024, AusHFG Part B: 132 Child and Adolescent Mental Health Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2024, AusHFG Part B: 134 Adult Acute Mental Health Inpatient Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2019, AusHFG Part B: 135 Older Peoples Acute Mental Health Inpatient Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2019, AusHFG Part B: 136 Non Acute Mental Health Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2021, AusHFG Part B: 140 Allied Health / Therapy Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2023, AusHFG Part B: 260 Cardiac Care Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2023, AusHFG Part B: 510 Maternity Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2023, AusHFG Part B: 540 Paediatric / Adolescent Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2024, AusHFG Part B: 610 Subacute Care Unit, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2017, AusHFG – Isolation Room – Engineering and Design Requirements, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- Fleming, R. and Bennett, K. 2013, *The Environmental Audit Tool.* Dementia Training Study Centre, University of Wollongong

- National Construction Code Australia

- National Health and Medical Research Council (NHMRC), 2019 'Australian Guidelines for the Prevention and Control of Infection in Healthcare', Australian Government, Canberra

- New Zealand Building Code

- New Zealand Standards, 2001, NZS 4121: 2001 Design for access and mobility: Buildings and Associated Facilities

- NSW Agency for Clinical Innovation, 2014, Aged Health Network – 'Key Principles for Improving Healthcare Environments for People with Dementia'

- NSW Health, 2009, TS7 - Floor Coverings in Healthcare Buildings, Issue V1.1 NSW Government, North Sydney, NSW

- NSW Health, 2024, GL2024_001, Management of Patients with Bariatric Needs.

- NSW Health Infrastructure, 2022, Wayfinding for Healthcare Facilities

- Queensland Health's Dementia, Ageing, and Frailty Clinical Network, 2024 Cognitive Impairment Enabling Environmental Design Principles

- Standards Australia, 1998a, AS 3811: Hard-wired patient alarm systems, SAI Global

- Standards Australia, 2010, AS 1428 (Set) Design for access and mobility Set (SAI Global), Standards Australia, Sydney, NSW.
- Standards Australia, 2023, AS 5369:2023 Reprocessing of reusable medical devices and other devices in health and non-health related facilities, Standards Australia, Sydney NSW
- AS/NZS ISO 31000 Risk Management – Principles and Guidelines.
- AS/NZS 3816:2018 Management of clinical and related wastes Standards Australia, Sydney, NSW

Single vs Multibed Rooms

- Bertuzzi et al., 2023, Clinical, humanistic and economic outcomes, including experiencing of patient safety events, associated with admitting patients to single rooms compared with shared accommodation for acute hospital admissions: a systematic review and narrative synthesis, British Medical Journal
- Bloomer et al., 2016, Single-room usage patterns and allocation decision-making in an Australian public hospital: a sequential exploratory study, Journal of Clinical Nursing
- Cusack et al., 2023, Comparison of experiences of nursing staff and patients before and after move to 100% single-bed room hospital in Australia: mixed methods, BMC Health Services Research
- Maben et al., 2015, Evaluating a major innovation in hospital design: workforce implications and impact on patient and staff experiences of all single room hospital accommodation, National Institute for Health and Care Research
- Maben et al., 2016, One size fits all? Mixed methods evaluation of the impact of 100% single-room accommodation on staff and patient experience, safety and costs, British Medical Journal
- Nash et al., 2020, Indigenous Preferences for Inpatient Rooms in Australian Hospitals: A Mixed-Methods Study in Cross-Cultural Design
- Shannon et al., 2018, Bringing the single versus multi-patient room debate to vulnerable patient populations: a systematic review of the impact of room types on hospitalized older people and people with neurological disorders, Intelligent Buildings International
- Søndergaard et al., 2022, Patients' and nurses' experiences of all single-room hospital accommodation: a scoping review, Health Environments Research and Design Journal
- Walker, D, 2016, Challenging the culture of caring of 100 years: the evidence behind single-room provision in hospitals, Future Hospitals Journal

5.4   Further Reading

- Australian Commission on Safety and Quality in Health Care, 2017. National Safety and Quality Health Service Standards User Guide for Aboriginal and Torres Strait Islander Health
- NSW Health 2013, Protecting People & Property: NSW Health Policy and Standards for Security Risk Management in Health Agencies, NSW Health.
- NSW Agency for Clinical Innovation, 2014, ACI Acute Care Taskforce, 'NSW Medical Assessment Unit Model of Care'.
- NSW Agency for Clinical Innovation, 2018, 'Key Principles - Establishment, Governance and Operation of a Close Observation Unit'.
- Te Whatu Ora – Health New Zealand, 2022, New Zealand Health Facility Design Guidance Note, Wellington: Te Whatu Ora.