

Australasian Health Facility Guidelines

Part B - Health Facility Briefing and Planning

HPU 610 Rehabilitation Unit

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Australasian Health Facility Guidelines

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01 INTRODUCTION

1.1 PREAMBLE

This Health Planning Unit (HPU) has been developed by the Australasian Health Infrastructure Alliance (AHIA) following extensive consultation with clinical experts and consumers during 2016. This HPU is intended to assist in the planning and design for the design team, project managers and end users.

1.2 INTRODUCTION

This HPU outlines the specific requirements for the planning and design of a Rehabilitation Inpatient Unit. A rehabilitation service 'aims to assist people with loss of function and ability due to injury or disease to obtain the highest possible level of independence (physically, psychologically, socially and economically) following that incident or illness' (Australasian Faculty of Rehabilitation Medicine, 2011).

While the information contained in this document can be used to plan a range of rehabilitation inpatient units, additional information will be required for briefing of highly specialised inpatient rehabilitation services such as spinal cord and acquired brain injury.

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

- Part A: Introduction;
- Part B Section 80: General Requirements;
- Part B Section 90: Standard Components, Room Data and Room Layout Sheets;
- Part C: Design for Access, Mobility, OHS and Security;
- Part D: Infection Prevention and Control; and
- Part E: Building Services and Environmental Design.

This HPU should be read in conjunction with the following as there are many areas of similarity:

- HPU140 Allied Health Therapy Unit which describes related facilities; and
- HPU340 Adult Inpatient Unit.

1.3 POLICY FRAMEWORK

Before undertaking a project, planners and project staff should familiarise themselves with individual jurisdictional plans, policies and service specific guidelines. Key policy information includes:

- Standards for the provision of Inpatient Adult Rehabilitation Medicine Services in Public and Private Hospitals 2011 (Australasian Faculty of Rehabilitation Medicine).

Other jurisdictional specific policy information is contained in the Further Reading section of this HPU.

1.4 DESCRIPTION

Rehabilitation services are essential in enhancing the functional independence of a patient with an impairment, disability or handicap. A Rehabilitation Inpatient Unit will provide an environment to deliver time-limited and goal-orientated care using the combined and coordinated use of medical, nursing and allied health staff.

While the model of care delivered within a unit will be influenced by the role delineation/ service level, a larger proportion of the workload will involve medical reconditioning following an acute medical or surgical intervention.

The setting in which rehabilitation occurs will be influenced by the patient's needs and service availability. The rehabilitation of many patients now starts in the acute hospital environment with specialist input provided by the rehabilitation team (e.g. stroke, orthopaedics etc.). Even when patients are transferred to a Rehabilitation Inpatient Unit, they are likely to be less medically stable, requiring a broader range of skills from staff. The dependency of these patients is also significant and in some cases, physical therapy needs to be provided on a one-to-one basis. In addition, many more categories of patient are now being identified as benefiting from rehabilitation (e.g. pulmonary) and demand for services is increasing. Other considerations may include:

- a large proportion of the unit population may be older or elderly patients with chronic conditions and co-morbidities, and with additional disabilities independent of the reason for admission;
- it may be appropriate to differentiate between patients of working age and older patients, with regard to treatment goals, such as; return to the workforce or return to optimum independence in their home or residential aged care; and
- patients may be disfigured (e.g. as a result of burns, throat surgery, etc.) and require a non-threatening, private environment.

The Rehabilitation Inpatient Unit is an inpatient environment with some unique features including:

- the length of stay is typically longer than an acute inpatient unit at a minimum of seven days;
- many allied health staff working in the unit will be permanent staff members. This will have an impact on space required for write-up, case discussion and handovers, and a larger number of students;
- family members may (and are encouraged) to be involved in direct care, and trained to continue and supervise treatment after discharge. Carers may need access to overnight accommodation (patient bedroom or elsewhere) and a quiet retreat of their own. Accommodation for carers is of particular importance for patients from, and in, rural areas and also for female companions/ carers for patients in particular cultural groups; and
- independence and optimal functional recovery are promoted by facilitation of usual activity in a home-like environment. For example when able, patients are encouraged to dress in day clothes and to make use of day facilities, including communal lounge, dining and outdoor areas for recreation when not undergoing therapy.

The continuum of care for rehabilitation services continues beyond the acute and sub-acute inpatient settings. Selected rehabilitation occurs in an outpatient setting or at home. Ideally, all services are organised as a single rehabilitation service so that care is coordinated across the range of inpatient, outpatient and community settings.

Advancements in technology may become routine aspects of rehabilitation (e.g. virtual reality applications, transcranial magnetic stimulation and robotics).

A range of specialist rehabilitation inpatient services will usually be provided on a state-wide basis and may comprise:

- acquired brain injury (ABI) units;
- burns rehabilitation units;
- spinal cord injury units; and
- paediatric rehabilitation units.

These units have specific facility needs generally outside the scope of this document, although non-specialist units may provide services to these patients if no specialised unit is readily accessible. Telehealth service can support these models so that specialist input is provided.

Facilities may have enhancements over and above those listed above, subject to jurisdiction-specific service plans and needs.

Some regions may also provide units specifically designed for geriatric rehabilitation which will impact significantly on facility needs.

Stroke services may be delivered by a dedicated team in a dedicated area within an acute inpatient unit, such as neurology. Stroke units may provide early rehabilitation but are not defined as a rehabilitation unit. Patients may be transferred from the stroke unit to the rehabilitation unit once medically stable and if further inpatient rehabilitation is required.

02 PLANNING

2.1 OPERATIONAL MODELS

2.1.1 Therapy Facilities

The service plan or model of care should identify if therapy areas such as gyms, hydrotherapy, other allied health facilities, ADL and outpatient clinics are to be built as dedicated support spaces for the rehabilitation medicine service only. Alternatively, the facilities may also be used by inpatients from other units and general outpatients. This will impact on the facilities provided, the key functional relationships, and ability to access these other service units. Review of access to all available therapy spaces on the individual site should be considered to maximise utilisation of facilities. The size of the dedicated therapy area for this unit, should reflect the number of beds in the unit, the role delineation, level of service, and length of stay.

Physiotherapy and occupational therapy are detailed in Section 2.4.4 Functional Areas. Other disciplines requiring consideration include dietetics, speech pathology, social work, clinical psychologists and neuropsychologists.

In a rehabilitation unit the patient is expected to continue with ongoing self-directed exercises outside formal therapy sessions. Continuous rehabilitation over the seven day week is considered to improve outcomes and shorten lengths of stay. Therefore, access to external spaces and some exercise or multifunctional spaces outside normal hours, and external space, is an important factor to consider. The availability of staff to provide supervision, will also require consideration.

The above facilities are addressed in detail in HPU 140 Allied Health Therapy Unit which provides details on a campus-wide service.

2.2 OPERATIONAL POLICIES

2.2.1 General

The operational policy issues detailed in this section should be considered when identifying the models of care to be implemented as they will all impact the configuration of the unit and overall space requirements.

Operational policies should be developed as part of the project planning process. Refer to Part B Section 80 for further information.

2.2.2 Patient Management Considerations

Bariatric patients will be admitted to Rehabilitation Inpatient Units. Considerations include:

- the number of bariatric bedrooms provided will be determined by an analysis of activity and the catchment population;
- provision of space to store bariatric equipment, including beds, which are larger in size;
- the design and fit out of therapy spaces including the need for ceiling mounted hoists; and
- corridors and door widths to areas such as consult rooms may need to be sized to accommodate equipment such as wheelchairs.

Patients experiencing **acute confusion states and early stage dementia** are not uncommon in the rehabilitation environment. To manage the safety risks and alleviate agitation, the unit may be designed to provide a safe walking route by providing access to a contained outdoor courtyard accessible from a small pod of beds. Boredom can be a problem if the space is too confining or lacks interest. However, at other times a low stimulus environment may be preferred.

Consideration should be given to:

- design (refer to Fleming, R. and Bennett, K. (2013) *The Environmental Audit Tool*. Dementia Training Study Centre, University of Wollongong;
- the ability to lock down or reduce access to rooms including storage rooms, exits, utility rooms etc.;
- use of technology to notify staff when patients get out of bed, noting however that recent randomised clinical trials of falls sensor mats have not had an impact on the number of falls (Shorr et.al, 2012);
- in general, limiting the number of exits from the building so that staff can be aware of the location of patient and visitors; and
- the use of internal courtyards especially of a suitable size and some outlook or aspect to provide some interest.

Patients may at times exhibit **challenging behaviours**, particularly patients with brain injury and acute confusion conditions. Features that should be considered in the design of rooms to safely accommodate these patients include:

- good observation from staff stations and bases;
- use of mobile duress systems;
- covered service panels (gases, suction, etc.);
- use of patient monitoring devices; and
- tamper-proof fittings.

2.2.3 Activities of Daily Living (ADL) Assessment

Access to a range of simulated home-like environments is needed to assess a patient's level of functioning and to prescribe the equipment needed to support them on discharge. Key spaces include kitchen and bathroom facilities. Where possible, kitchens can be multipurpose spaces and accessed to support other activities such as small groups when not needed for ADL assessments.

These specialised facilities do not need to be dedicated to the Rehabilitation Unit and could be located and could be used by a range of services on site.

In many cases, ADL assessments will be conducted at home as a real life experience is possible and local modifications may be needed.

In addition, general spaces throughout the unit will be used to assess ADL. These spaces include bed rooms, lounge and dining areas.

2.2.4 Independent Living Unit

A small unit may be included to provide both the patient and carer an opportunity to simulate life at home before discharge. The suite will consist of a bed room, ensuite, kitchen, lounge and dining area. The rooms are connected to the nurse call system but will not be fitted out as a typical inpatient bed room. As these spaces are not standard inpatient bed rooms, they may not be included in the bed numbers for the unit.

2.2.5 Medications Management

Models for managing medications may vary to match local policies or complement patient management strategies (e.g. self-medication programs). Some services report the use of a locked draw at the bed side a useful way to manage medications in this longer stay environment. Other services report that this type of model can prove inflexible when patients are encouraged to be out of their bed rooms for extended periods as part of their therapy program.

2.2.6 Storage of Equipment

It is important to accurately assess equipment storage needs. The types and numbers may vary depending on the bed numbers and types of patient care provided. Rehabilitation units require a large range of equipment for trial and use with patients, some of which may be located in a separate equipment pool shared by all services.

Manual handling equipment is of prime importance and needs to be stored close to the point of use such as in equipment bays off corridors.

A storeroom, or rooms, will be required for less frequently used items and many items will be bulky and need floor parking space. Storage areas should be lockable and the design should enable easy retrieval and return of equipment through doors sized for the purpose. Power for charging of equipment will also be required in this area. Many services operate a loan equipment store for use by inpatients and outpatients. This will usually be located on the health care site with access for vehicles so that easy pick up and return can occur.

The use of pressure relieving mattresses can be significant in the rehabilitation inpatient environment. Depending on the mattresses used and the model of provision, additional storage may be needed to store standard mattresses when a consignment product is being used. Other mattresses may just fit over an existing mattress so that storage is not an issue.

Separation of clean and dirty equipment will be needed. In the inpatient environment, equipment will usually be cleaned in a dirty utility room.

2.2.7 Patient Clothing

Patients will be encouraged to wear day clothes. As the length of stay may be extended, access to a patient laundry may be needed. It may be used by the patients themselves (under supervision) or by their carer, and for activities of daily living purposes by the occupational therapists.

2.2.8 Staffing

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

- rehabilitation physicians: specialists, registrars and residents;
- nursing staff: unit manager, clinical nurse consultants, clinical nurse educators, registered nurses, enrolled nurses and other auxiliary nursing staff;
- allied health staff: clinical and neuropsychologists, occupational therapists, physiotherapists, speech pathologists, social workers, dieticians, pharmacists, allied health assistants; recreational and art therapists, prosthetists and orthotists;
- other staff: clerical, and housekeeping support staff;
- students from all disciplines; and
- volunteers.

Staffing levels will vary for each unit, depending on the size of the unit and the operational policies. Refer to the Standards for the Provision of Inpatient Adult Rehabilitation Medicine Services in Public and Private Hospitals for further information.

2.3 PLANNING MODELS

2.3.1 Location

The unit should be accessible whether located on the ground floor or as part of a multi-storey development. Patients should have access to an outdoor area such as a courtyard. Where a unit is located in a stand-alone location, there should be a dedicated weather-protected entry, and a drop-off and pick-up parking facility.

While many Rehabilitation Units may be located on non-acute healthcare sites, the increasing complexity of patients and the trend to start rehabilitation as soon as possible, means many patients still require other support (e.g. medical imaging or the involvement of other medical specialists). Collocation with an acute site makes access to these services easier.

Rehabilitation Units should be located so that staff are not working in isolation or are required to traverse unoccupied areas at night.

2.3.2 Unit Size and Bed Configuration

The total number of beds in a unit will vary depending on the defined service needs of the individual healthcare facility.

Issues to be considered include:

- patient case mix;
- maximum flexibility for the accommodation of a range of different types of patients with regard to condition, age and gender; and
- staffing profile based on role delineation or service level.

Patients undergoing rehabilitation are encouraged to undertake a normal daily routine. This routine includes initiating visits to communal areas and therapy. In order to optimise this normalisation, consider a compact unit design that reduces travel distances from the bed room areas to other shared zones.

2.4 FUNCTIONAL AREAS

2.4.1 Functional Areas

Functional areas of the Rehabilitation Inpatient Unit will comprise:

- entry, reception and waiting areas (where provided in a stand-alone location);
- inpatient areas
 - inpatient bedrooms;
 - independent living unit; and
 - shared patient areas;
- therapy areas;
- clinical support areas; and
- staff areas, including office space and amenities.

2.4.2 Entry, Reception and Waiting

The provision of a dedicated entry, reception and waiting area will be dependent on the location, scale, availability of resources to staff a reception (e.g. ward clerk). Units providing a broader range of services, such as outpatient clinics and/or a day hospital will also need to be considered in terms of reception, waiting space and wayfinding.

Where a dedicated area is provided, visitors entering the unit should have clear view of the reception. The reception will have clear oversight of the entry and waiting areas and act as a control point to other areas of the unit.

The waiting area will accommodate patient equipment such as walking frames and wheelchairs. Unless provided nearby, a range of patient and visitor amenities will be required.

2.4.3 Inpatient Areas

Bed rooms should be located so that they can be easily monitored by staff. Bed rooms may be a mix of single and two bed rooms.

The size and fit-out of **patient bed rooms** may need to consider:

- a range of patients (e.g. bariatric);
- possible capacity to accommodate a carer overnight;
- the longer length of stay with storage required to accommodate more clothing etc. and lockable storage is also needed;
- the requirement to accommodate equipment such as a walking frame or wheelchair. Preferably, the wheelchair should be parked near the bed to facilitate independent access and use. Positioning of electrical services should assist a patient to independently charge batteries for chairs, mobile phones, etc. Storage of patient equipment in rooms also prevents clutter in corridors;
- use of mobile or ceiling mounted lifters;
- inclusion of notice style boards within each room to provide a place for education material, activities schedule etc. These should be viewed by the patient when they are in bed or a chair; and
- inclusion of day and date clocks so that patients can organise their day.

Where an Independent Living Unit is provided, it will be planned to accommodate a couple.

Shared or communal patient areas will comprise:

- lounge;
- dining/activity room; and
- outdoor area (for mobility assessment and recreation).

The lounge area will be used by both patients and their visitors. A TV will usually be located in this room or alternatively, the lounge space arranged in such a way that a smaller TV area is provided. The lounge and dining areas will be located in adjacent locations with direct access to an outdoor area. Furniture provided in this area is important. While seating is needed, many patients will use wheelchairs, including bariatric equipment so that space and layouts need to accommodate both fixed and mobile furniture.

The dining area should be able to accommodate at least two thirds of the patient population, plus the occasional carer. This space will also be used to accommodate group activities including diversional therapy and education. As patients may use a wheelchair, tables will need to accommodate these.

Ready access should be provided to a patient toilet.

The area might include a shaded flat landscaped area, with barbeque amenities that are designed to present a safe and accessible path of travel. This is a separate feature to the mobility garden, which has challenging mobility obstacles. This outdoor area may also be accessible to patients attending therapy on an outpatient or day patient basis.

2.4.4 Therapy and Related Areas

The design of the Rehabilitation Inpatient Unit should provide:

- full wheelchair access to all areas. Note that wheelchairs may vary in size to manage bariatric clients, or may be electric wheelchairs which have a different footprint size and need recharging;
- door widths in all patient accessible areas sized to accommodate mobility aids, trolleys and beds;
- main corridors designed to allow passage of two patients in wheelchairs;
- hand rails in shared areas and corridors;
- a straight 10 metre corridor length for walking assessments; and
- access to stairs for gait assessment and to practise on crutches. In single storey buildings mobile steps may be required.

Patients should have access to an accessible patient toilet near therapy areas.

Access to facilities for **physiotherapy** will generally comprise:

- access to gymnasium space for one-on-one and group activities with equipment appropriate to the conditions to be treated;
- single and double plinths in curtained bays. A ceiling mounted hoist may be needed above plinths; and
- an outdoor mobility and gait training area.

The service model will determine the provision of a hydrotherapy pool. Access to a hydrotherapy pool, where provided, is highly desirable. However, there are difficulties associated with transport of patients and the need to provide access to integrate with community models of care.

Facilities for **occupational therapy** will depend on the conditions to be treated and the extent of services to be provided. Facilities generally comprise:

- therapy rooms for individuals and groups for static and dynamic activities; and
- facilities for activities of daily living (ADL).

Depending on the service profile, additional areas may include:

- facilities for splint making and hand therapy;
- space for the fitting and manufacture of pressure garments;
- computer and vocational retraining;
- customised wheelchair prescription and assessment service; and
- garden therapy area.

A considerable proportion of occupational therapy assessment and treatment of inpatients, such as toileting and showering, may be conducted in bedrooms if facilities are available and appropriate.

Other services may need access to interview or consult rooms.

2.4.5 Clinical Support Areas

These areas will comprise:

- clinical resource or handover office;
- ward clerk station and reception (separate from the reception in the main entry, where provided);

- staff station - may be combined near the ward clerk area or decentralised throughout the unit;
- clean utility/medication and dirty utility rooms;
- beverage pantry;
- resuscitation trolley bay;
- linen trolley bay;
- mobile equipment bay(s) for storing and recharging equipment. This space may also be used to store workstations on wheels;
- storage for bulk clinical consumables;
- equipment storage; and
- flower bay (optional).

2.4.6 Staff Areas

Office space will be provided in accordance with jurisdiction office and staff accommodation policies and the staff establishment, noting many staff will work part-time.

Access to facilities will be required for meetings and interaction with families.

Case conferences and family meetings frequently involve a large number of people. Meeting rooms will need to accommodate patients in wheelchairs, family members and a number of staff with a minimum of ten people. Meetings with family members may, in some instances, need to accommodate the patient in a bed.

Video and teleconference facilities are important especially where units support remote sites.

The number of students of all disciplines will need to be assessed in order to ensure that appropriate facilities are available, for example 'hot-desking', tutorial or meeting rooms etc.

Staff amenities will include lockers for unit-based staff who do not have dedicated office space and should be located in a secure location within the inpatient unit. Consideration may be given to the need for additional lockers for visiting staff and students.

Ideally, a staff room will be provided. In addition staff will have access to toilets. On site access to showers and change areas will be provided.

2.5 FUNCTIONAL RELATIONSHIPS

2.5.1 External

Principal relationships with other units include:

- ready access to the rehabilitation gym, treatment areas, outdoor gait area and hydrotherapy pool, if provided;
- ready access to loan equipment storage areas;
- easy access from the main entry and/or precinct entry;
- easy access to pool cars used by staff for home visits;
- ready access to and from acute medical and surgical inpatient units;
- ready access to diagnostic facilities, such as medical imaging;
- ready but separate access for delivery of food, linen, supplies and removal of waste; and
- ready access to staff amenities where not provided locally.

2.5.2 Internal

Optimal internal relationships to be achieved include:

- staff station(s) and associated areas need direct access to and observation of patient areas;
- utility and storage areas need to be readily accessible to both patient and staff work areas;
- lounge, dining and therapy areas should be readily accessible so that travel distances are reduced. If therapy areas are shared (i.e. inpatient and outpatient care), facilities will be positioned to provide access to external users without impacting on the inpatient unit.
- placing the publicly accessible areas on the periphery of the unit; and
- shared areas, where provided, should be easily accessible by all the units.

03 DESIGN

3.1 ACCESSIBILITY

Design should minimise the number of entrances and ensure that staff and the public can access the unit at entrances adjacent to car parks in order to limit the time spent outside the facility at night. Visiting hours may be unrestricted and therefore consideration will need to be given to visitor access at all times.

Where a unit is provided in a stand-alone location, covered access is required from the main hospital for food, supplies, linen, etc., and for waste removal.

3.2 PARKING

Drop-off and disabled access parking should be available near the unit entry. In addition, access to a parking space that can be used by staff for transfer patients, into their own or their family member's vehicle, would be of value. Ideally, this would be provided with some overhead weather cover.

A car space may be needed for patients to park their own car to assess how they transfer in and out of the vehicle. This is an assessment activity and the location will need to suit.

3.3 DISASTER PLANNING

In the case of disaster, large open gym areas may be used to accommodate large numbers of casualties but this will be considered by local services as part of broader disaster planning.

Refer to AusHFG Part B Section 80 for further information.

3.4 INFECTION CONTROL

The following aspects of planning, design, construction and fit-out contribute to effective infection prevention and control:

- hand hygiene facilities;
- provision for the isolation of infectious patients;
- linen handling;
- separation of 'clean' and 'dirty' work flows;
- storage;
- waste management; and
- surface finishes.

Service planning should inform the number of isolation rooms required.

All patients will need to access therapy areas and cleaning regimes will need to support this pattern of use. Clean-up areas will be needed to clean patient equipment with space to hold dirty equipment.

Allowing for appropriate space between patients in shared rooms (e.g. dining rooms) is recommended to assist and maintain appropriate infection control.

Refer to:

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

3.5 ENVIRONMENTAL CONSIDERATIONS

3.5.1 Acoustics

Noise is a constant source of complaint from patients and may compromise patient comfort and recovery. In particular, noise at night may have a negative impact on the ability of patients to sleep. It is also an important factor in maintaining confidentiality of patient information.

Some patients managed in a Rehabilitation Inpatient Unit may become distressed by noise and therefore acoustics management is important so that stress is reduced. The management of noise generated from staff stations and call systems will also need to be considered.

Selected rooms, such as those used by speech pathologists, should reduce reverberations.

Solutions to be considered include:

- location of the unit;
- use of sound absorbing materials and finishes;
- sound-isolating construction; and
- separation of quiet areas from noisy areas.

3.5.2 Natural Light

Natural light contributes to a sense of wellbeing for all building occupants including patients, staff and other users. Research studies suggest a link between greater levels of natural light and improved clinical outcomes.

Higher levels of natural light may help people better orient themselves in the building, thus enhancing wayfinding. Glare should be minimised.

The use of natural light is essential in clinical areas including gyms.

3.5.3 Privacy

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

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.

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

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

Factors for consideration include:

- use of windows in corridor walls and/or doors;
- location of beds to maximize sight lines;
- proportion of single bed rooms;
- location of bed screens to ensure privacy of patients undergoing treatment; and
- location of ensuites to provide privacy for patients while not limiting observation by staff.

3.5.4 Interior Decor

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

Rehabilitation Inpatient Units seek to equip a patient to resume activities of daily living and routine. A less institutional environment is preferred. Wheelchairs and walking frames will need to be accommodated throughout the unit in addition to other chairs and sofas.

3.5.5 Wayfinding and Signage

All wayfinding should be easily understood by staff and the general public, whether patients or visitors. Where necessary and appropriate, languages other than English and/or consistent use of pictograms and symbols should also be used. Visual landmarks are also useful.

Wayfinding should also be considered from the perspective of out-of-hours use. Certain access points may be locked out of office hours or after visiting hours.

Refer to:

- AusHFG Part C Section 05 – Wayfinding; and
- NSW Health GL2014_018 Wayfinding for Healthcare Facilities.

3.6 SPACE STANDARDS AND COMPONENTS

3.6.1 Human Engineering

Human engineering covers those aspects of design that permit effective, appropriate, safe and dignified use by all people, including those with disabilities. It includes occupational ergonomics, which aims to fit the work practices, furniture, fittings and equipment and work environment to the physical and cognitive capabilities of all persons using the building.

In the rehabilitation context, the use of sensor taps may be appropriate in some areas where patients have limited hand function (e.g. spinal injury, stroke). Height and accessibility need to be considered for patient hand-hygiene facilities, particularly for wheelchair users.

Refer to AusHFG Part C Section 04 Human Engineering.

3.6.2 Ergonomics

The unit should be designed and built to prevent the exposure of patients, staff, visitors and maintenance personnel to avoidable risks of injury.

Poorly designed recurring elements such as height, depth and design of workstations and counters, shelving and the layout of critical rooms have a great impact on the occupational health and safety of staff as well as the welfare of patients.

Refer to Part C Section 03 Space Standards and Dimensions for more details.

3.6.3 Access and Mobility

To promote patient safety and independence, corridors should remain a clear path of travel, noting resting places are ideal in long corridors. Provision of appropriate storage for manual handling aids (mobile hoists) and patient mobility equipment (wheelchairs of all types including bariatric and electric walkers) is critical to maintaining clear corridors. The space provided should enable items kept in this area to be stored and removed easily, and not of a depth that would require equipment to be 'stacked.'

Corridor width and circulation space will need to address the use of larger mobility aides for bariatric patients. Corridors used by patients should be wide enough for two wheelchairs to pass i.e. 1800mm minimum clear space between handrails (on both sides of corridor).

Some examples of the average circulation space sizes required for ambulant persons using the following mobility aids are:

- one person using a walking stick - 750 mm width;
- one person using elbow crutches - 900 mm width;
- one person using two walking sticks - 800 mm width;
- one person using crutches - 950 mm width; and
- one person using walking frame - 900 mm width.

For further information refer to:

- National Construction Code;
- Australian and New Zealand Standards 1428: Set, and
- AusHFG Part C Section 03 for further details.

3.6.4 Building Elements

Building elements include walls, floors, ceilings, doors, windows and corridors. These are addressed in detail in AusHFG Part C Section 3.0 - Space Standards and Dimensions.

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

Ensure doorways are sufficiently wide and high enough to permit the manoeuvring of beds, wheelchairs, trolleys and equipment without risk of damage or manual handling risks. Door handles should be able to be operated single-handed.

3.7 SAFETY AND SECURITY

3.7.1 Safety

The Inpatient Unit should provide a safe and secure environment for patients, staff and visitors while retaining a non-threatening and supportive atmosphere conducive to recovery.

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.

The patient population of this unit in particular requires special consideration in terms of safety. Although perhaps disabled or incapacitated, they are also encouraged to be mobile and self-sufficient. Unless otherwise approved, a rehabilitation unit should provide rails and hand holds in all corridors, ramps, stairs, bathrooms and toilets to ensure safe accessible movement of people.

Hoists, both fixed and mobile, will be used throughout the unit to reduce or eliminate manual handling.

Fittings with visual contrast to equipment and building elements, such as doorways and floor surfaces, will enhance safety for people with sensory and cognitive deficits. This can include grab rails, toilets and cisterns that have a colour contrast and are clearly distinguishable from the wall and floor, rather than 'white upon white' or designed to blend in.

Accidents most often occur in rooms where sanitary facilities are located and therefore attention to floor coverings (e.g. colour, slip resistance) is essential.

Handrails and wheelchair accessibility are required.

Patients undergoing rehabilitation may also have cognitive impairment. A system whereby a patient triggers an alarm if they leave the unit may be needed.

Many safety systems promoted for use in this environment may not be evidence based. For example, a study of low-low beds to prevent falls and injuries arising from falls concluded that the use of these beds did not in fact prevent falls (Haines, et.al, 2010).

Consider an emergency call system in areas where staff may be isolated with patients with unstable health (e.g. ADL kitchens).

3.7.2 Security

The following specific security issues should be considered:

- the need for fixed and/or personal duress alarms in areas such as reception points and staff stations;
- access control particularly at night; and
- control and monitoring of visitors.

3.8 FINISHES

3.8.1 General

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

Refer to AusHFG Part C Section 03 Space Standards and Dimension 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, trolley and equipment movement occurs, such as corridors, bed head walls, treatment and gym areas, equipment and linen trolley bays.

3.8.3 Floor finishes

Floor finishes should be appropriate to the function of the space. Typically vinyl is used in most areas of the unit.

Selection of floor finishes should take into account manual handling issues such as the high use of mobility aids including the impact of the flooring on push and pull forces for wheeled equipment, and be adequate to avoid the potential for slips and trips caused by joints between flooring.

Refer to:

- AusHFG Part C Section 03 Space Standards and Dimension; and
- NSW Health TS7 Floor Coverings in Health Care Buildings.

3.8.4 Ceilings

Acoustic tiles will be used in most areas across the Inpatient Unit excluding areas such as medication stores, wet areas and isolation rooms.

3.9 FIXTURES, FITTINGS & EQUIPMENT

Room Data and Room Layout Sheets in the AusHFG define fixtures, fittings and equipment (FFE).

Refer to the Room Data Sheets (RDS) and Room Layout Sheets (RLS) and:

- AusHFG Part C: Section 3, Space Standards and Dimensions; and
- AusHFG Part F: Section 680 Furniture Fittings and Equipment.

Equipment required to support rehabilitation services changes constantly. It is recommended that selection of patient equipment is done at later stages of the project so that the most up-to-date equipment is chosen.

3.10 BUILDING SERVICE REQUIREMENTS

3.10.1 General

In addition to topics addressed below, also refer to:

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

3.10.2 Air Handling Systems

The management of airflows and the creation of a stable environment are essential to the control of the spread of infection. Air-conditioning should be provided. Selected patient groups (e.g. those with a spinal injury or Multiple Sclerosis) may have thermoregulation issues and the ability to control temperature in individual rooms is beneficial.

3.10.3 Electrical Services

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

3.10.4 Information Technology and Communications

It is recommended that the following information technology and communications issues, and the associated infrastructure requirements, should be addressed to ensure long term flexibility:

- Wi-Fi;
- duress alarm systems: fixed and mobile as required;
- nurse and emergency call systems;
- voice/data to facilitate network access (telephone and computers);
- videoconferencing capacity and telemedicine;
- electronic medical records;
- paging and personal telephones, replacing some aspects of call systems;
- patient access to computers for therapy and personal use. Internet connection is also relevant to promote normal activities, and for specific therapy purposes;
- bar-coding for supplies and records;

- e-learning and simulation; and
- e-medication management and e-storage systems (e.g. automated dispensing systems).

3.10.5 Lighting

Lighting is an important element in promoting a comfortable environment and enhancing patient safety. Key features to consider include the following:

- ensure lighting is adequate during the day and at night;
- it should facilitate access to toilets at night: consider night lights, motion-sensor lights, dimmer switches;
- avoid abrupt changes in illumination levels;
- control glare by managing window treatments, floor and furniture surfaces e.g. non-reflective surfaces at ends of corridors;
- provide indirect lighting wherever possible; and
- provide light switches at a height and style easy and practical for patient use.

3.10.6 Medical Gases

Provision of fixed medical gases and suction to all bed rooms in a rehabilitation inpatient unit, as in general acute units, should be considered on a project-by-project basis. The patient profile may include oxygen dependent patients and patients with tracheostomies requiring regular suction as there is a trend to move patients to rehabilitation units as soon as possible.

The use of cylinders, rather than fixed services, may result in handling, storage and safety issues which need to be considered. Some portable systems will still be required to transfer patients.

The provision of at least oxygen, medical air and suction outlet in each single bedroom provides a flexible approach. Where the case mix does not support this provision, services may consider equipping a selected number of rooms so that an extended range of patient care can be provided. Fixed service gases are not required in the independent living unit. Medical gases and suction may also be needed in gym areas.

3.10.7 Ceiling Structure

Structural capacity will generally be provided to support ceiling hoists in bed rooms and gym areas. It is recommended that ceiling hoists are installed in a number of patients' bedrooms however this may be dependent on jurisdictional policies.

Over time, services may consider extending the range of areas with the structural capacity to accommodate a ceiling track. For example, a track over a planned area within the inpatient unit may be used for remobilisation.

04 COMPONENTS OF THE UNIT

4.1 STANDARD COMPONENTS

Rooms and spaces are defined as:

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

The standard component types are listed in the attached Schedule of Accommodation.

The current Standard Components can be found at:

www.healthfacilityguidelines.com.au/standardcomponents

4.2 NON-STANDARD COMPONENTS

Non-standard components are generally unit-specific and are described below:

DINING AND RECREATION ROOM

Description and Function

The dining and recreation room provides an area for patients to have meals, socialise and undertake recreational activities. The size has been based on two metres squared per occupant to accommodate the turning circle and footprint required for electric wheelchairs and chairs with longer wheelbases. The overall size will depend on the number of persons to be accommodated but should assume 75 percent of the patient population, plus occasional carers and staff.

Location and Relationships

The dining/recreation room may be located adjacent to the lounge area and should have ready access to the outdoors, inpatient areas, and a patient toilet.

Considerations

Fittings and furniture for this area should include:

- individual tables with seating for up to four people, with space for wheelchairs of all types;
- tables that have the capacity to be joined to seat up to ten people;
- domestic style furnishings that may include sideboards and audio equipment;
- large screen television, video game console and computer activities;
- wall and door protection for chairs and wheelchairs;
- a hand basin (Type C) allowing wheelchair access; and
- access to a patient toilet.

Depending on the activities to be undertaken, a recessed sink and cupboards may be appropriate for craft activities.

INDEPENDENT ASSESSMENT SUITE

Description and Function

This is a small unit for the assessment of a patient's ability to manage after discharge. Carers may be involved in this process. The length of stay will vary from patient to patient. Medical gases and services are not required.

The unit should provide a domestic environment including ordinary domestic furniture, carpet, etc. The unit should be self-contained with regard to:

- bedroom area;
- sitting and dining area - including space for a carer to stay overnight;
- small kitchenette/meal preparation area; and
- separate ensuite accessible from within the unit.

Location and Relationships

The suite may be located at the periphery of the unit but should be readily accessible to staff. Access to an outdoor area is highly desirable.

Considerations

Fittings and furniture for this area may include:

- domestic single, double or king single or bariatric bed;
- sofa bed or similar for a carer;
- coffee table;
- bedside table(s) and lamp(s);
- television, DVD and CD player;
- dining table and chairs (to seat two people); and
- a small kitchenette.

OUTDOOR AREAS

Description and Function

An outdoor area will support a range of activities both therapeutic and social such as meeting with family and friends and BBQs. The area will be contained so that patients and visitors will not be able to enter or egress.

Location and Relationships

The outdoor area will ideally be accessed from shared lounge and dining areas so that access is possible at any time. Additional access, where possible may be provided from the gym areas.

Considerations

The outdoor space will provide a range of surfaces and access to steps to assess mobility. Winding paths through obstacles are useful. In addition, some sitting areas are desirable. Some undercover areas are needed to provide protection from the weather. If a BBQ is provided, this would be stored undercover.

APPENDICES

AX.01 SCHEDULE OF ACCOMMODATION

The total number and mix of beds and single bedroom sizes will be determined on a jurisdiction by jurisdiction basis, and as agreed in service plans. Approaches to planning rehabilitation services will vary and include options such as a rehabilitation campus with a large number of inpatient units and related services, a unit located in an acute hospital building or a stand-alone unit on an acute hospital site. Solutions for the provision of therapy space may alter to respond to a particular design solution (e.g. a rehabilitation campus may provide centralised therapy spaces that are shared).

In some cases, Room and Spaces are described as 'Optional' or 'o'. Inclusion of this Room/Space will be dependent on a range of factors such as operational policies or clinical services planning.

ENTRY, RECEPTION AND WAITING

Note 1: This space will only be provided in selected circumstances (e.g. where the unit is provided in a stand-alone location). Where several rehabilitation inpatient units are collocated in a stand-alone location, this space will be shared.

INPATIENT AREAS – BED ROOMS

Note 2: Requirement for negative pressure isolation bed rooms will be decided on a project-by-project basis.

Note 3: Some rehabilitation patients may need to be showered on a shower trolley. It may be possible to arrange the ensuite, or a number of ensuites, so that this activity can be undertaken within the bed room suite rather than a centralised bathroom.

ROOM CODE	ROOM/SPACE	SC/ SC-D	QTY	m2	REMARKS
1BR-ST	1 Bed Room – Inboard Ensuite	Yes		16	Note 2. A size of 16.5m ² is recommended where an 8.4m grid is used. Outboard ensuite options are also suitable.
1BR-BA	1 Bed Room – Bariatric, 18m ²	Yes	1	18	
1BR – SP-A	1 Bed Room – Special	Yes		18	This room size is noted in this guideline to cater for selected specialist rehabilitation services (e.g. spinal injuries).
2BR-ST	2 Bed Room – Inboard Ensuite, 27m ²	Yes		27	A size of 29m ² is recommended where an 8.4m grid is used.
	Independent Assessment Suite		1	25	Inclusion dependent on service model. Assumes open plan unit with bed room area, small lounge, dining and kitchenette. Ensuite allocation additional.
ENS-ST	Ensuite, Standard, 5m ²	Yes		5	One ensuite for each 1 and 2 bed room. Refer Note 5.
ENS-BA	Ensuite, Bariatric, 7m ²	Yes	1	7	Attached to 1 Bed Room – Bariatric.
ENS-SP	Ensuite, Special, 6m ²	Yes		6	Attached to 1 Bed Room – Special.
BATH	Bathroom	Yes	1	15	Optional.
Discounted Circulation			38%		

INPATIENT AREAS – SHARED

Note 4: for the purpose of this example, a 24 bed inpatient unit has been assumed.

ROOM CODE	ROOM/SPACE	SC/ SC-D	QTY	m2	REMARKS
LNPT-20	Lounge – Patient	Yes	1	24	Allocated at 2m2 per person assuming 50% occupancy.
	Dining/Recreation Room		1	36	18 people at 2m2 assuming approximately 75% occupancy.
WCAC	Toilet – Accessible, 6m2	Yes	1	6	Adjacent to shared areas.
LAUN-PT	Laundry – Patient, 6m2	Yes	1	6	Optional, depending on length of stay and local models.
Discounted Circulation			38%		

CLINICAL SUPPORT

ROOM CODE	ROOM/SPACE	SC/ SC-D	QTY	m2	REMARKS
BHWS-B	Bay – Handwashing, Type B	Yes		1	Located along corridors to suit layout and access.
SSTN-14	Staff Station, 14m2	Yes	1	14	
OFF-CLN	Office – Clinical Workroom	Yes	1	15	Provided for multidisciplinary team.
STPS-8	Store – Photocopier/ Stationery, 8m2	Yes	1	8	
MEET-L-20	Meeting Room, 20m2	Yes	1	20	Use for staff training, meeting and activities with families or patient education.
MEET-12	Interview Room, 12m2	Yes	1	12	Wheelchair access needed.
CLUR-14	Clean Utility/Medication Room	Yes	1	14	
DTUR-12	Dirty Utility	Yes	1	10	May need more than one depending on bed numbers and travel distances.
DISP-10	Disposal Room, 10m2	Yes		10	Locate on the IPU periphery for easy retrieval of waste. Should be shared with an adjacent unit where possible.
BBEV-OP	Bay – Beverage, Open Plan, 4m2	Yes	1	4	Ideally collocated with dining room.
BMT-4	Bay – Meal Trolley	Yes	1	4	Ideally collocated with dining room.
BLIN	Bay – Linen	Yes	1	2	Minimum 1:15 beds.
BMEQ-4	Bay – Mobile Equipment, 4m2	Yes		4	No. dependent on assessed need and bed configuration. Likely to require a higher provision than an acute inpatient unit.
BRES	Bay – Resuscitation	Yes	1	1.5	
BFLW-OP	Bay - Flowers	Yes	1	2	Optional.
STEQ-20	Store – Equipment, 20m2	Yes	1	36	Assume 1.5m2 per bed.
CLRM-5	Cleaner's Room	Yes	1	5	
Discounted Circulation			38%		

STAFF AREAS – OFFICE SPACE AND AMENITIES

Note 5: Allocations indicative only and allocations need to be matched to workforce profile and space allocated in line with jurisdictional policies.

ROOM CODE	ROOM/SPACE	SC/ SC-D	QTY	m2	REMARKS
OFF-S9	Office – Single Person, 9m2	Yes	1	9	Unit Manager.
	Workstation, 4.4m2			4.4	e.g. CNC, CNE, allied health.
SRM-15	Staff Room	Yes	1	15	
WCST	Toilet – Staff, 3m2	Yes	2	3	
PROP-2	Property Bay – Staff	Yes	1	2	
SHST	Shower – Staff	Yes	1	3	Unless available from central staff amenities.
Discounted Circulation			25%		

THERAPY SPACE

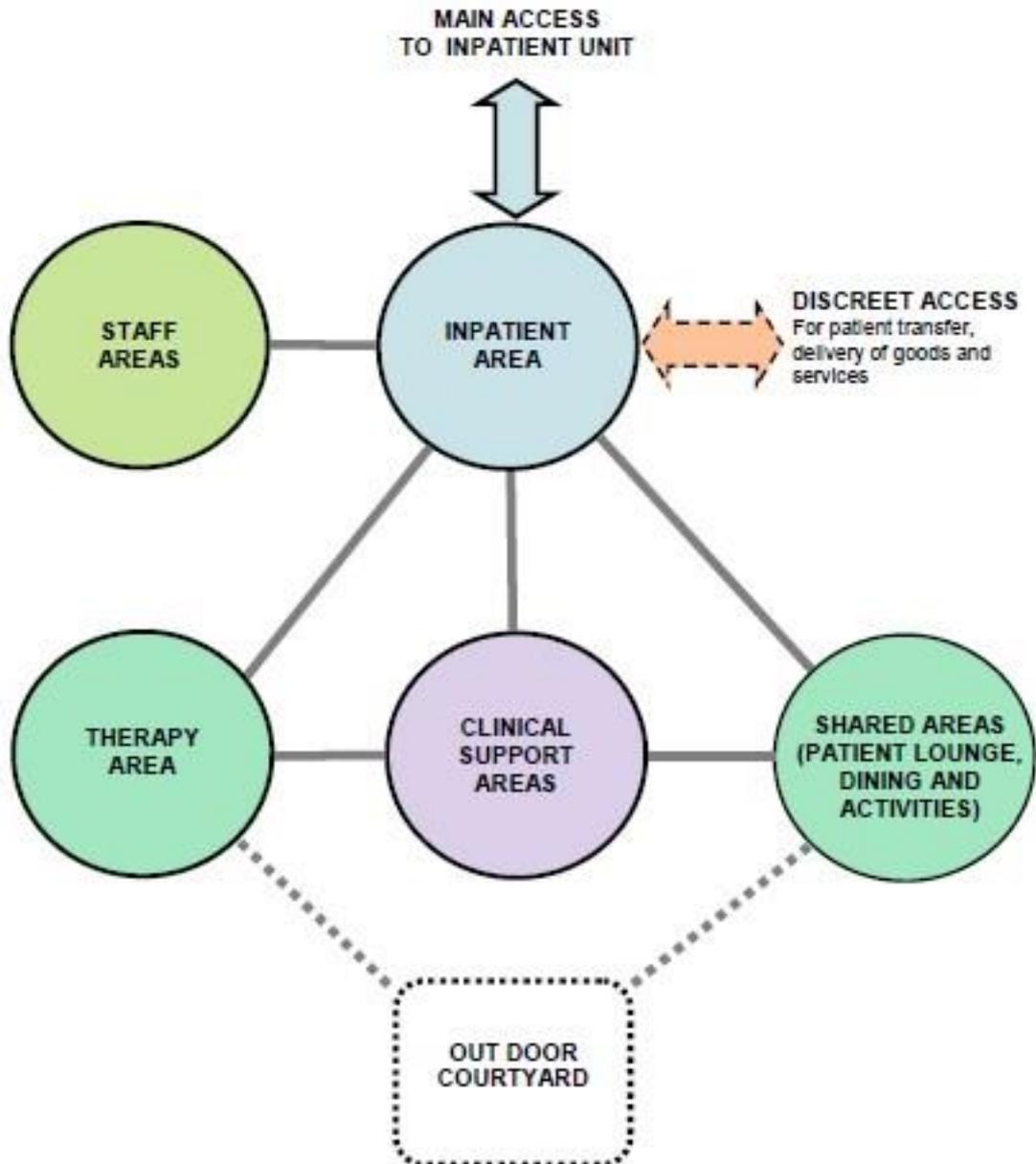
Note 6: This scenario assumes that therapy space is dedicated to support a 24 bed unit. Where space can be shared, this should be explored. Space allocations reflect an assumption of an active rehabilitation program (e.g. stroke, orthopaedic etc.). No space allocations have been provided for prosthetic or orthotic services as it is assumed they may provide a visiting service only.

Note 7: Allocations also assume that loan equipment is not held within the unit and instead stored in a central location.

ROOM CODE	ROOM/SPACE	SC/ SC-D	QTY	m2.	REMARKS
GYAH	Gymnasium	Yes	1	80	Individual treatment.
	Gymnasium		1	35	Group activities. Inclusion dependent on service model. Usually 6-8 patient would participate in these activities.
	Occupational Therapy Room		1	20 (o)	Optional. In many cases, depending on the size and complexity of the service, space can be shared in the main gym area.
	Splinting Room		1	16 (o)	Optional and should only be included if services provided. Space allocated for equipment associated with splinting. May also be used as a closed treatment space.
ADLB	ADL Bathroom	Yes	1	12	
ADLK-OP	ADL Kitchen	Yes	1	12	
CONS	Consult Room	Yes		12	May be used by staff such as speech pathology and medical staff.
INTF	Interview Room	Yes		12	May be used by a range of staff such as social work, psychologists, dietetics etc. Lockable storage required where psychological testing provided.
STEQ-14	Store - Equipment	Yes	1	15	Supporting gyms.
WCPT	Toilet – Patient	Yes	1	4	
Discounted Circulation			30%		

AX.02 FUNCTIONAL RELATIONSHIPS - DIAGRAM

A diagram of key functional relationships is shown below.



AX.03 CHECKLISTS

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

AX.04 REFERENCES

- AHIA, 2016, Part A: Introduction, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2016, Part B: Section 80 General Requirements, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney NSW
- AHIA, 2016, AusHFG Part B: Section 90, Standard Components, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2016, Part B: HPU140 Rehabilitation/Allied Health Unit, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, AHIA, Sydney, NSW;
- AHIA, 2016, Part B: HPU 340 Adult Inpatient Unit, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, AHIA, Sydney, NSW;
- AHIA, 2016, Part C: Design for Access, Mobility, OHS and Security, Space Standards and Dimensions, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2016, Part D: Infection Prevention and Control, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2016, Part E: Building Services and Environmental Design, Australasian Health Facility Guidelines (AHIA, 2016), Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2017, Isolation Rooms – Engineering and Design Requirements, Australasian Health Facility Guidelines (AHIA, 2017), Australasian Health Facility Guidelines, AHIA, Sydney, NSW;
- Australasian Faculty of Rehabilitation Medicine 20011, Standards for the provision of Inpatient Adult Rehabilitation Medicine Services in Public and Private Hospitals, Royal Australasian College of Physicians;
- Australian Standards/New Zealand Standards, 1428.Set: Design for Access and Mobility - Set, SAI Global 2003a;
- Fleming, R. and Bennett, K. (2013) *The Environmental Audit Tool*. Dementia Training Study Centre, University of Wollongong
- Haines, T, Bell, RAR, Varghese, PN. 2010, Pragmatic, Cluster Randomized Trial of a Policy to Introduce Low-Low Beds to Hospital Wards for the Prevention of Falls and Fall Injuries, *Journal of the American Geriatrics Society*, Volume 58, Issue 3 March 2010 pp 435–441
- NHMRC, 2010, Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010), Australian Government, Canberra, Australia
- NSW Health GL2014_018 Wayfinding for Healthcare Facilities

- Shorr, RI, Chandler, AM, Mion, LC, Waters, TM, Liu, M, Daniels, MJ, Kessler, LA, Miler, ST. 2012, Effects of an Intervention to Increase Bed Alarm Use to Prevent Falls in Hospitalized Patients, Ann Internal Medicine. 2012 Nov 20; 157(10); p. 692-699;

AX.05 FURTHER READING

- Barkerm AL, Morello, RT, Wolfe, R, Brand, CA, Haines, TP, Hill, KD, Brauer, SG, Botti, M, Cumming, RG, Livingston, PM, Sherrington, C, Zavarsek S, Lindley, RI, Kamar, J. 6-PACK Program to Decrease Fall Injuries in Acute Hospitals: Cluster Randomised Controlled Trial, BMJ 2016;352:h6781
- Fitting the Task to the Man, A Textbook of Occupational Ergonomics, Etienne Grandjean, Taylor and Francis 1988
- Improving the Environment for Older People in Health Services: An Audit Tool (2006) <https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/rehabilitation-complex-care/geriatric-evaluation-qem>
- Jung, YM & Bridge, C. 2009, The Effectiveness of Ceiling Hoists in Transferring People with Disabilities;
- Worksafe Victoria 2007, Designing Workplaces for Safer Handling of People, Worksafe Victoria.