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INTRODUCTION

Preamble

501050 340 .1.00 This Facility Planning Guideline supports the provision of optimal environments for care of patients. It accommodates requirements for assessment and treatment, and offers flexibility of space provision to respond to changing practices in health service delivery.

Inpatient settings must be flexible and optimally therapeutic to provide a setting that will enhance the individual's capacity for recovery. Providing natural light and pleasant, relaxing surroundings help to create a positive environment, which can assist the delivery of health care services.

A pleasant and high quality physical environment in which care is to be provided will indicate:

- + The patient is valued and respected;
- + The facility is able to provide the appropriate level of care;
- + Recognition of the positive contribution such environments can make in facilitating recovery and decreasing length of stay;
- + That the staff who provide care are valued, skilled and supported to achieve optimal care of the patient in a safe and rewarding working environment.

Such environments contribute to better patient outcomes and better staff conditions and satisfaction.

Patterns of care frequently change, as do the needs of the populations served. Thus it is critical that physical environments are also flexible and can adapt over time in response to changes in practice and treatment.

Introduction

501051 340 .2.00 This Guideline outlines the specific requirements for the planning of an Inpatient Unit. It must be read in conjunction with generic requirements and Standard Components, which are described in Parts A, B, C, and D of these Guidelines. Inpatient facilities with special needs eg Maternity, Paediatrics, Rehabilitation are covered in separate Guidelines.

Policy Statement

501056 340 .3.00 NSW HEALTH POLICIES

NSW Health's policies for the provision of healthcare services are underpinned by the following foundations:

- + Development of appropriate service models to ensure a comprehensive service network throughout the State;
- + Deployment of resources in a fair and cost effective manner to optimise the health outcomes for service delivery;
- + Development and support for enhanced information systems to monitor, plan and evaluate healthcare services.

The policy framework recognises the multiplicity of our community and the fact that special groups within that community require specific consideration to meet their needs and to enhance the effectiveness of any services provided. These groups include:

- + Aboriginal people;
- + People with physical and sensory disabilities;
- + People from culturally and linguistically diverse backgrounds;
- + The elderly;
- + Children.

Description

501052 340 .4.00 DEFINITION OF MEDICAL/SURGICAL INPATIENT UNIT

Medical/Surgical Inpatient accommodation is for general medical and surgical patients.

In larger Health Care Facilities, this unit includes specialist medical and surgical patients, for example - cardiac, neurology/neurosurgery, infectious diseases, integrated palliative care.

In smaller hospitals - it may also accommodate paediatric, palliative care and obstetric patients.

Patients awaiting placement elsewhere may also be accommodated in this type of facility.

General

501053 340 .5.00 FUNCTION

The Inpatient Unit is the basic nursing unit of a hospital. Its prime function is to provide suitable accommodation for the diagnosis, care and treatment of inpatients. Whilst facilitating the delivery of healthcare services to patients, the Unit must also provide facilities and conditions to meet the working needs of staff.

501054 340 .6.00 POPULATION PROFILE

The population of an Inpatient Unit comprises of:

- + Staff including students and volunteers;
- + Patients;
- + Visitors including relatives and other carers.

There are two main groups of staff:

- + Unit-based staff who primarily provide continuous care to inpatients;
- + Visiting staff who provide periodic or specialist care to inpatients, or support services to the Unit.

The Unit patient population may range from the young to the elderly, comprise a variety of medical and surgical conditions, and come from a number of different ethnic and cultural backgrounds. The diversity of patient needs must be identified during the briefing stages, and the facility must be designed with the flexibility to meet current and future needs.

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A consumer consultation process will assist in ensuring the service to be provided meets realistic consumer expectations.

Visitors are primarily carers and colleagues of inpatients.

PLANNING

Operational Models

501060 340 .7.00 HOURS OF OPERATION

It is assumed that the Unit will operate 24 hours per day, 7 days per week. This may vary for individual facilities.

501991 340 .8.00 OPERATIONAL CHANGE

The organisation, delivery and practice of bedside care is continually changing. New technologies have resulted in an inpatient population that has reduced lengths of stay, increased interventions and a higher dependence on medical services and staff.

An emphasis on the efficient use of resources has led to maximising utilisation of inpatient accommodation as well as diagnostic and therapeutic facilities.

Organisational change has resulted in new structures and practices such as flat management structures, multi-disciplinary teams, care groups and multi-skilling.

The use of computerised systems reduces the need for personal interaction between staff, proximity to specialised inputs and quantity of paper records.

At the same time, the public have increased expectations about the quality and delivery of services.

501057 340 .9.00 MODELS OF CARE

Service demand and the organisation of the delivery of care are important in determining the nature and design of a facility. Different models of organising patient care continue to be developed.

Models of care and flexibility for services to be provided in the future should be defined in the process of Service Planning and the development of Operational Policies, and must be considered throughout the design process.

The physical environment should permit, not restrict the implementation of a range of models of care.

501058 340 .10.00 LEVELS OF CARE

An Inpatient Unit may deliver the following levels of care:

- + High Dependency Nursing Care;
- + Intermediate Nursing Care;
- + Supported / Self Care.

The Unit should be flexible enough to accommodate differing patient mixes as

well as different models of care.

501059 340 .11.00 BED CONFIGURATION

Ward design should address the following bed configuration issues:

- + Enabling flexibility in bed usage and implementation of swing beds;
- + Enabling wards to be condensed during periods of low occupancy to reduce pressure on recurrent costs;
- + Clustering beds to facilitate meal relief, back-up staff assistance on routine or emergency basis and optimise patient supervision by lower numbers of staff particularly at night;
- + Incorporating identical ward design in large centres, modified only where necessary on clinical grounds;
- + Deciding how observation versus privacy and public expectations affects the choice of one, two or four bed rooms.

Operational Policies

501061 340 .12.00 GENERAL

Operational Policies will vary from Unit to Unit depending on a wide range of factors. Users must define their own Operational Policies. Refer to Part B of these Guidelines for a general discussion on Operational Policies.

Policies that may have a significant impact on the planning of an Inpatient Unit include:

- + Admissions procedures;
- + The manner in which food, linen and supplies are ordered, supplied and stored;
- + Medical records management;
- + Staffing profile.

Staffing

501063 340 .13.00 Staffing levels will vary for each Unit, depending on Operational Policies, specialties nursed in the Unit, availability of staff, case mix, dependency and activity levels.

Planning Models

501064 340 .14.00 BED NUMBERS AND COMPLEMENT

Decisions regarding bed numbers, and the size and composition of units and hospitals shall be made when the individual service configuration and staffing profiles of a hospital are identified. These must be approved by NSW Health. The following discussion is offered as a guide only.

501066 340 .15.00 The preferred maximum number of beds in an Acute Inpatient Unit in a Medical or Surgical Unit is 30. However, this will vary depending on the service needs of

individual facilities.

501055 340 .16.00 BEDROOM MIX

This Guideline assumes a standard mix of 6 One-Bed Room and 6 Four-Bed Rooms in each 30 bed unit. Two-Bed Rooms are generally only provided in specialist areas eg Maternity or where required by local service needs.

The mix of bedroom types to be provided shall be determined at Service Planning level in the planning and briefing stages.

Sanitary facilities shall be directly accessible from all bedrooms.

Bedrooms should be arranged to increase flexibility by allowing the accommodation of a range of different types of patients with regard to gender, age, condition etc.

501069 340 .17.00 SWING BEDS

For flexibility and added options for utilisation it may be desirable to include provisions for Swing Beds. This may be a single bed, a group of beds or an entire Unit that may be quickly converted from one category of use to another eg long-stay beds that may be converted to acute beds.

Facility design for Swing Beds will often require additional corridor doors and provision for switching supervision and nurse call operation from one Staff Station to another. Security may also be an issue such as when converting General/Medical beds to Paediatric beds.

501071 340 .18.00 ISOLATION ROOMS

All One-Bed Rooms shall be designed to accommodate patients requiring isolation. These shall be constructed as Class S rooms in accordance with Part D of these Guidelines (Infection Control).

The provision of Class N or P shall be determined by service planning analysis for the particular facility concerned.

501992 340 .19.00 UNIT PLANNING OPTIONS

The planning of Inpatient Units has evolved significantly since the model developed by Florence Nightingale in the 1860s. This evolution has largely been in response to the technologies and philosophy of health care prevalent at the time.

Numerous studies have been undertaken, comparing space and operational efficiencies of alternative planning layouts. However, no one particular layout has been found to be universally superior.

Contemporary planning layouts include single corridors, double corridors (race track), a combination of the two, L, T and Y shaped units and triangular units.

A number of Inpatient Units may be grouped together to form a larger management unit that may permit greater flexibility of use.

At the other end of the scale, Single Inpatient Units may be subdivided into clusters of bedrooms with clinical care managed at the bedside.

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In all cases, planning of an Inpatient Unit will be a response to the physical constraints of the site, local service needs and operational policies.

Functional Areas

501072 340 .20.00 UNIT FUNCTIONAL ZONES

Individual functional spaces with like purposes combine to form Functional Zones:

- + Patient Areas - areas where patients are accommodated or facilities specifically serve patients;
- + Staff Areas - areas accessed by staff, including utility and storage areas;
- + Shared Areas - areas that may be shared by two or more inpatient units.

Services provided and Operational Policies may vary the zoning required.

Functional Relationships

501073 340 .21.00 EXTERNAL

ENVIRONMENT

Inpatient Units should be in a quiet location, with a pleasant outlook and maximum environmental benefits. The location should avoid disturbing sounds, both on and off site eg traffic, mechanical plant, and disturbing views such as cemeteries and mortuaries.

501074 340 .22.00 LOCATION

Inpatient accommodation is the core of every hospital and is supported by a wide range of services. Functional relationships should be determined that will enhance the delivery of those services.

Principal relationships with other Units include:

- + Easy access from the Main Entrance of a facility;
- + Inpatient Units must not be located so that access to one Unit is via another;
- + Ready access to diagnostic facilities such as Medical Imaging and Pathology;
- + Ready access to Emergency and Critical Care Units;
- + Surgical Units require ready access to Operating / Day Procedures Suites;
- + Ready access to staff amenities.

501075 340 .23.00 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.

Optimum internal relationships include:

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- + Patient occupied areas form the core of the unit;
- + The Staff Station and associated areas need direct access and observation of Patient Areas;
- + Utility and storage areas need ready access to both patient and staff work areas;
- + Public Areas should be on the outer edge of the Unit;
- + Shared Areas should be easily accessible from the Units served.

502339 340 .24.00 OBSERVATION

Bedrooms and other areas occupied by patients should be designed and arranged give staff the greatest ability to observe patients.

At the same time, patient privacy issues must be considered.

DESIGN

General

501076 340 . GENERIC GUIDELINE

Refer to Parts B and C for general design requirements.

501077 340 .25.00 Inpatient Unit design involves a compromise between the desire to provide patients, visitors and staff with a safe, pleasant and comfortable environment and the ability to operate the Unit efficiently. For example, the patient's need for privacy must not compromise care.

501078 340 .26.00 Refer to Part B Section 80 for general requirements.

Environmental Considerations

501082 340 .27.00 ACOUSTICS

Refer to Part C of these Guidelines.

Noise is a constant source of complaint from patients and may be damaging to their condition. Noise at night is of particular concern. Confidentiality of patient information must also be protected by acoustic isolation.

Noise sources may be both within and outside the Unit and include:

- + Sanitary facilities;
- + Equipment;
- + Other patients;
- + Staff activities eg meetings, cleaning;

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- + Areas of public movement, lift lobbies, etc;
- + Traffic.

Solutions to be considered include:

- + Select sound absorbing materials and finishes;
- + Use sound isolating construction;
- + Plan to separate quiet areas from noisy areas;
- + Change operational management.

501083 340 .28.00 NATURAL LIGHT

Natural lighting contributes to a sense of wellbeing, help users find their way through the building and improves service outcomes. The use of natural light should be maximised throughout the Unit.

Natural light must be available in all bedrooms.

501084 340 .29.00 OBSERVATION AND PRIVACY

A major conflict in the design of inpatient accommodation is to allow both patients and staff to be able to see each other while also ensuring patient privacy. Different styles of unit design offer varying degrees of visibility / 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 / desires:

- + Elderly patients;
- + Private patients;
- + High Dependency patients need almost constant observation;
- + Intermediate care patients require fairly frequent observation;
- + Supported / self-care patients require passing observation only.

Factors for consideration include:

- + Use of windows in corridor walls and/or doors;
- + Location of beds that may affect sight lines;
- + Location of bed screens to ensure privacy of patients undergoing treatment.
- + Location of sanitary facilities to provide privacy for patients while not preventing observation by staff.

501085 340 .30.00 INTERIOR DESIGN

Interior design 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

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professional environment must always be considered.

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

Infection Control

501079 340 .31.00 As the diagnosis or infectious status of the patients may not be known on admission, standard precautions must be used for all patients at all times.

Refer to Part D of these Guidelines for further information. Staff handwashing facilities, including disposable paper towels, must be readily available and provided in accordance with the ratio set out in Part D.

Space Standards and Components

501086 340 .32.00 ROOM CAPACITY AND DIMENSIONS

The maximum room capacity shall be four patients.

501088 340 .33.00 Refer to Room Layout Sheets for room dimensions. Overall bed dimensions (buffer to buffer) of 2250 mm long x 1050 mm wide are assumed. Minor encroachments including columns and hand basins (as required) that do not interfere with functions may be ignored when determining space requirements.

501089 340 .34.00 BED SPACING / CLEARANCES

Bed dimensions become a critical consideration in determining final room sizes. The dimensions noted in these Guidelines are a recommended bed space.

501090 340 .35.00 In multiple-bed rooms there shall be a clearance of 1200 mm available at the foot of each bed to allow easy movement of equipment and beds. It is preferable for beds on opposite sides of the room to be offset to provide greater privacy.

501091 340 .36.00 In multiple-bed rooms, the minimum distance between bed centre lines shall be 2400 mm.

501092 340 .37.00 Paediatric bedrooms that contain cots may have reduced bed centres, but consideration must be given to the spatial needs of visiting relatives. To allow for more flexible use of the room the 2400 mm centre line is still recommended.

501093 340 .38.00 ERGONOMICS

Refer to Part C of these Guidelines.

501094 340 .39.00 DISABILITY ACCESS

Refer to Part C of these Guidelines.

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501095 340 .40.00 ACCESS

Adequate access and circulation spaces must be provided for the proper use of patient lifters and mobility aids. Particular consideration must be given to circulation around fixed structures such as baths.

Where possible, facilities should allow wheelchair dependent patients to have their normal amount of activity.

501096 340 .41.00 DOORS

Refer to Part C of these Guidelines.

Doorways must be sufficiently wide and high to permit the manoeuvring of beds and equipment without risk of damage to the doorway or the item being moved, and without creating manual handling risks.

501097 340 .42.00 WINDOWS

Refer to Part C of these Guidelines.

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

501098 340 .43.00 CORRIDORS

Refer to Part C of these Guidelines.

Finishes

501102 340 .44.00 WALL PROTECTION

Refer to Part C of these Guidelines.

Adequate wall protection must be provided to surfaces that are subject to damage. Particular attention should be given to areas where bed or trolley movement occurs such as corridors, bed head walls, treatment areas and storage spaces.

501103 340 .45.00 FLOOR FINISHES

Refer to Part C of these Guidelines.

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

Inpatient Units require consideration to be given to acoustic performance, slip resistance, consequences of patient falls, infection control, movement of beds and trolleys and maintenance.

501104 340 .46.00 CEILING FINISHES

Refer to Part C of these Guidelines.

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It should be remembered that patients may spend a considerable amount of time lying in bed looking at the ceiling.

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

Fixtures & Fittings

501105 340 .47.00 BED SCREENS

In all bedrooms each patient shall have visual privacy. Movable curtains are recommended. The design for privacy shall not restrict patient access to the entrance, ensuite, toilet or handwashing functions (if included).

501106 340 .48.00 CURTAINS / BLINDS

Each room shall have partial blackout facilities (blinds or lined curtains) to allow patients to sleep more easily during the daytime.

Safety and Security

501099 340 .49.00 SAFETY

Refer to Part C of these Guidelines.

An Inpatient Unit shall provide a safe and secure environment for patients, staff and visitors while remaining a non-threatening and supportive atmosphere conducive to recovery. Patients are often unaware of their capacities or incapacities. They may be weak, unsteady, affected by medication or confused.

Whether involving patients or staff, most accidents occur in rooms containing sanitary facilities.

The facility, furniture, fittings and equipment must be designed and constructed in such a way that all users of the facility are not exposed to avoidable risks of injury.

501100 340 .50.00 SECURITY

Refer to Part C of these Guidelines.

Security issues are important due to the increasing prevalence of violence and theft in Health Care Facilities.

The arrangement of spaces and zones shall offer a high standard of security through the grouping of like functions, control over access and egress from the Unit and the provision of optimum observation for staff.

The level of observation and visibility has security implications.

501101 340 .51.00 Security issues to be considered in Inpatient Units are included, but not limited to, the table at the end of this section.

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Building Service Requirements

501107 340 .52.00 INFORMATION TECHNOLOGY / COMMUNICATIONS

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

- + Electronic Health Records;
- + Point of Care Clinicals;
- + Picture Archiving Communication System (PACS);
- + Patient Administration System (PAS);
- + Paging and personal telephones replacing some aspects of call systems;
- + Data entry including scripts and investigation requests;
- + Email;
- + Bar coding for supplies and X-rays / Records;
- + Personal duress claims;
- + Telephone system.

501108 340 .53.00 NURSE CALL

Hospitals must provide a call system that allows patients and staff to alert nurses and other health care staff in a discreet manner at all times.

501109 340 .54.00 Nurse call systems must be designed and installed to comply with AS 3811 - Hard wired Patient Alarm Systems.

DURESS ALARMS

To be provided in accordance with NSW Health Policy. Refer to Part C of these Guidelines.

COMPONENTS OF THE UNIT

Staff Areas

910320 340 . BAY/ROOM - BEVERAGE

DESCRIPTION AND FUNCTION

To comply with Standard Components.

LOCATION AND RELATIONSHIPS

To comply with Standard Components.

Introduction

501111 340 .55.00 This section must be read in conjunction with Part B Standard Components, Room Data Sheets and Room Layout Sheets. The following text describes only specific requirements not covered by these other documents.

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Standard Components

- 501592 340 .56.00 Provide the Standard Components as identified in the Generic Schedule of Accommodation. Provision of Offices, Workstations and support areas will be dependant on the Operational Policy and service demand and may vary from the Schedule of Accommodation, however, room sizes should remain consistent.

Non-Standard Components

- 501594 340 .57.00 Provide the Non Standard Components as described in this section, according to Operational Policy and service demand.

- 501596 340 .58.00 LAUNDRY - PATIENT

DESCRIPTION AND FUNCTION

Optional provision. A Patient Laundry should generally be provided in specialist areas such as Mental Health and Rehabilitation Units, or to meet service demand.

Facilities may be provided for the washing, drying and ironing of patients' personal clothing as required. Storage for cleaning agents should also be provided.

A Patient Laundry shall be 6 m².

LOCATION AND RELATIONSHIPS

The Patient Laundry shall be located close to patient bedrooms.

Acoustic privacy to this area should be considered.

Patient Laundries should only be provided where they are justified by service demand.

Staff Areas

- 502013 340 .59.00 BAY - MEAL TROLLEY

DESCRIPTION AND FUNCTION

Similar to Standard Components for Bay - Mobile Equipment.

The requirement for a Bay - Meal Trolley will be dependent on Catering management policies and procedures.

LOCATION AND RELATIONSHIPS

Locate readily accessible to Bedroom Areas.

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APPENDICES

Schedule of Accommodation

501117 340 .60.00 A Generic Schedule of Accommodation for a 30 Bed Unit at Levels 3, 4, 5, and 6 follows. Although categorised by level of service, this does not necessarily lead to different physical requirements.

The Schedule of Accommodation lists generic spaces that form an Inpatient Unit. Quantities and sizes of some spaces will need to be determined in response to the service needs of each unit on a case by case basis.

ROOM / SPACE	Standard Component				Qty x m2	Remarks
PATIENT AREAS -						* Optional
1 BED ROOM	yes				6 x 15	FPU - mix and no. depend on service demand.
1 BED ROOM - SPECIAL	yes				1 x 18	Min. 1 per facility or 1 per 60 beds, may be shared between 2 x IPUs.
1 BED ROOM - ISOLATION	yes				(15)	Class N or P + associated Anterooms; as required by service deman.
2 BED ROOM	yes				(25)	Provide only in specialist units eg Maternity, Rehab, or if required by service demand.
4 BED ROOM	yes				6 x 42	FPU - mix and no. depend on service demand.
ENSUITE - STANDARD	yes				6 x 5	Directly accessible from 1 Bed Rooms.
ENSUITE - SUPER	yes				1 x 6	Locate with 1 Bed Room - Special.
LAUNDRY - PATIENT					(6)*	Specialist areas eg Mental Health, Rehab; or where required by service demand.
LOUNGE - PATIENT	yes				1 x 20	Provided 1 per 60 beds, or shared between 2 units.
SHOWER - PATIENT	yes				6 x 4	To all 4 Bed Rooms.
TOILET - PATIENT	yes				6 x 4	To all 4 Bed Rooms. - 'full assistance'.
STAFF AREAS -						
BAY/ROOM - BEVERAGE	yes				1 x 4	Open bay. Increase area to 5m2 if enclosed in a room.
BAY - HANDWASHING	yes				4 x 1	Provisional. Qty & location to be determined for each facility. Refer Part D.
BAY - LINEN	yes				2 x 2	Qty & location to be determined for each facility.
BAY - MEAL TROLLEY					(4)*	Dependent on catering operational policies.
BAY - MOBILE EQUIPMENT	yes				2 x 4	Qty, size & location depends on equipment to be stored. Quiet location preferred.
BAY - PPE	yes				6 x 1	Plus as required for Unit. Refer Part D.
BAY - RESUSCITATION TROLLEY	yes				1 x 2	
CLEANER'S ROOM	yes				1 x 5	Include separate cupboard for dry goods.
CLEAN UTILITY	yes				1 x 14	Includes medication storage.

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DIRTY UTILITY	yes					1 x 12	2 may be required to minimise travel distances.
DISPOSAL ROOM	yes					1 x 8	Provision depends on waste management operational policies.
MEETING ROOM - 9M2	yes					1 x 9	Interview function, small meetings.
OFFICE - CLINICAL/HANDOVER	yes					1 x 12	
OFFICE - SINGLE PERSON 9M2	yes					2 x 9	NUM office, plus for clinical personnel.
PROPERTY BAY - STAFF	yes					1 x 2	Number of lockers depends on staff complement per shift.
STAFF STATION	yes					1 x 14	Accomm'n for ward clerk dep. on operat'l policy. Size, location TBD for each facility.
STORE - EQUIPMENT	yes					1 x 20	Quiet area with access to patient areas. Size depends on eqt stored, and no. of bays.
STORE - GENERAL	yes					1 x 9	Size in accordance with service demand & operational policies.
SHARED AREAS -							
BATHROOM	yes					1 x 15	Provide one per floor, or as required by service demand.
MEETING - MEDIUM	yes					1 x 15	Tutorial. Shared by 2 units.
OFFICE - SHARED 3 PERSON	yes					1 x 15	Use by CNC, Nurse Educator, Registrars, depending on service demand & oper policy.
STAFF ROOM	yes					1 x 18	Shared by 2 units; staff resources, beverage prep.
TOILET - PUBLIC	yes					1 x 3	Shard by 2 units. Access to disabled toilet also required.
TOILET - STAFF	yes					1 x 3	Dedicated staff toilet. Shared by 2 units.
TREATMENT ROOM	yes					(14)*	May be required in specialist units, or shared by >1 unit. Depends on oper policy.
SUB TOTAL						687	Excludes optional spaces, includes shared spaces.
CIRCULATION - 32%						220	
TOTAL						907	

Functional Relationships

501118 340 .61.00 A diagram of key functional relationships is attached.

Checklists

502025 340 .62.00 A security check list is provided at the end of this section. Refer to Part C for more details designing for safety and security.

References and Further Reading

500604 340 .63.00 The following references should be read in addition to the general references provided in these Guidelines.

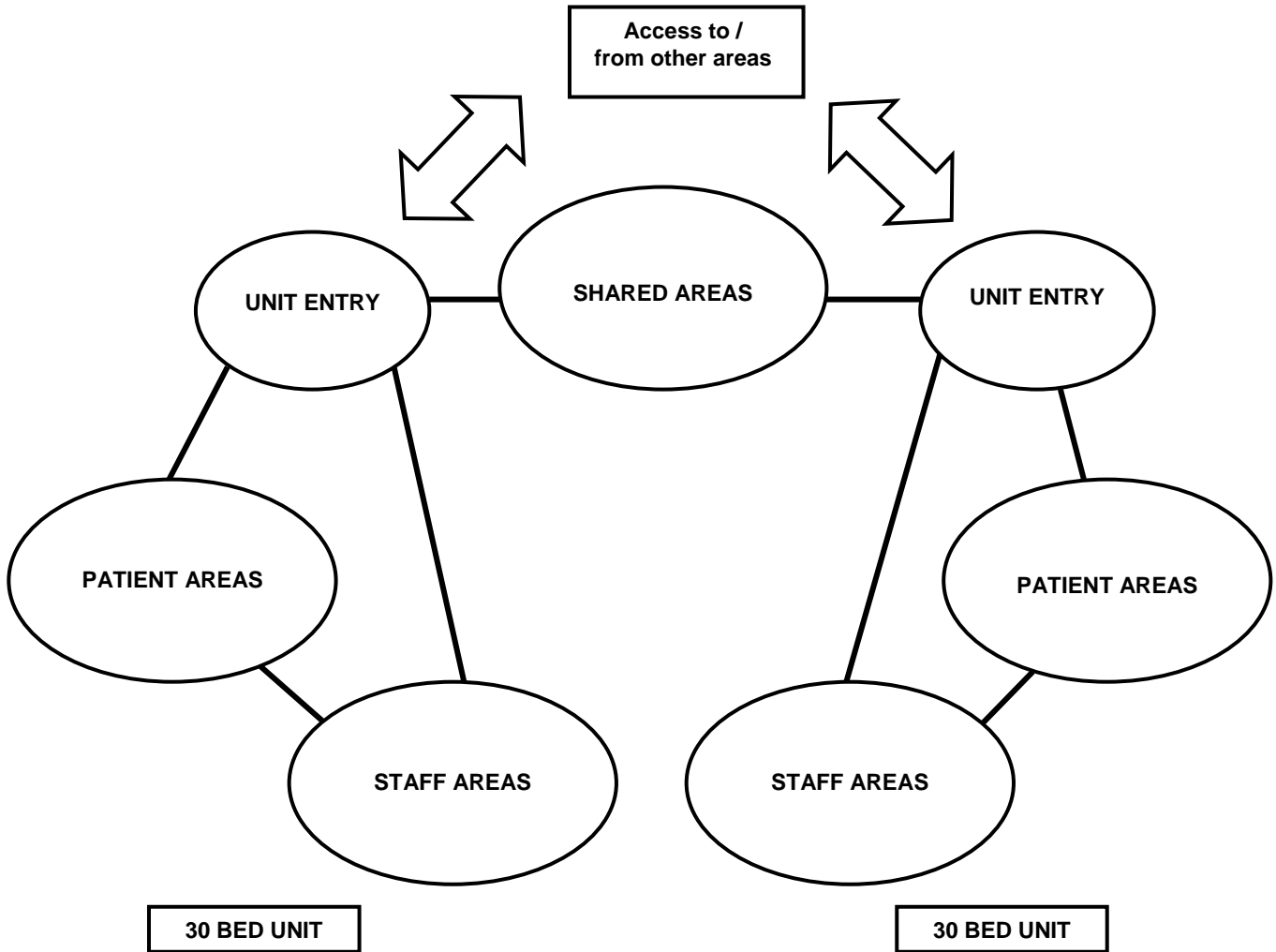
+ DS16 Medical/Surgical Inpatient Unit, Health Building Guidelines, Capital Works Branch, NSW Health Department, 1993

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- + DS26 Mental Health Facility Guideline, Volume 1, NSW Health Department, 2000
- + Capital Works Guidelines, Capital Works & Asset Management Branch, Queensland Health Department, 1998
- + Inpatient Accommodation: Options for Choice, Health Building Note 04, NHS Estates, HMSO, UK, 1997
- + Design and Care in Hospital Planning, Alan Dilani, Karolinska Institut, Stockholm, 1999

FUNCTIONAL RELATIONSHIP DIAGRAM – INPATIENT UNIT

The following diagram sets out the functional relationships between areas in an Inpatient Unit:



SECURITY ISSUES TO BE CONSIDERED IN INPATIENT ACCOMMODATION

GENERIC SAFETY AND/OR SECURITY RISKS	POTENTIAL SOLUTIONS
1. Entry by all relevant personnel visiting or working within the Hospital.	<ol style="list-style-type: none"> 1. Minimise entry and exit doors. 2. CCTV monitoring of Ward entry and exit doorways. 3. After hours remote switch and intercom on entry doors. 4. Use of reed switches on all external doors and swipe card entries.

SPECIFIC SAFETY AND/OR SECURITY RISKS	POTENTIAL SOLUTIONS
1. Relatives / Visitors	<ol style="list-style-type: none"> 1. Good visibility from staff station to Ward. 2. Manage relatives/visitors admittance in the area by restricting visiting hours and/or number of visitors.
2. Patient files	<ol style="list-style-type: none"> 1. Personnel working on these files must return the files to secure area after use or return them to Medical Records Department. 2. If any electronic files are produced, save them in restricted area of hard drive.
3. Furniture fittings and equipment including Computers, Office and Medical Equipment	<ol style="list-style-type: none"> 1. Non-removable 'Asset No.' on all equipment above a predetermined value. 2. Keep equipment in lockable area.
4. Hospital personnel safety	<ol style="list-style-type: none"> 1. Staff working in this area to have knowledge of where the fixed duress system is located and/or use a mobile duress pendant. 2. Design shape of interview rooms and location of desks, etc, in such a way that minimises risk to health personnel. 3. Provide storage and store for items not in constant use that could be used as weapons. (Operational Policy). 4. Minimise furniture that can be used as a weapon, ie, picked up and thrown.
4. Staff and patient personal effects	<ol style="list-style-type: none"> 1. Provision for lockers in staff areas and lockable desk drawer to keep small personal effects. 2. Provision of lockable patient bedside lockers or storage facilities for patient effects. 3. Minimising personal effects kept by patients in the facility
5. Drugs storage	<ol style="list-style-type: none"> 1. Drugs safe to be located in area that can be monitored by staff eg Clean Utility area.

SECURITY CHECKLIST – INPATIENT UNIT

FACILITY:	DEPARTMENT: Inpatient Unit	
RISK ISSUE	DESIGN RESPONSE	
1. Has a CCTV System been considered to monitor the waiting area and/or access to the public access points in the Waiting Area?		
2. How is 'after hours' access provided for patients and how is this access point monitored?		
3. Has a secure "barrier" been installed between staff and the waiting area to: (a) monitor the waiting area; and (b) provide staff contact with patients.		
4. Do staff have access to both fixed and mobile duress systems?		
5. Is access to patient records restricted to staff entitled to that access?		
6. Is a system implemented to prevent theft of equipment, files, personal possessions, etc?		
7. Are drug safes installed in accordance with current regulations?		
8. Is the waiting area furniture incapable of being utilised as a "weapon"?		
9. How is after hours access provided for staff?		
10. How is this area secured during and after hours?		
11. How is the security of patient's valuables managed?		
12. Are there lockable storage areas available for specialised equipment?		
13. Is lockable furniture provided for storage of staff personal effects?		
14. Are interview rooms appropriately designed with specific reference to staff egress, furniture selection, furniture location, provision for storage of equipment, etc.		
DESIGN COMMENTARY/NOTES	DESIGN SIGN OFF	
	Name:	
	Position:	
	Signature:	
	Date:	
	Name:	
	Position:	
	Signature:	
	Date:	
	Name:	
	Position:	
	Signature:	
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INTRODUCTION

	Preamble
501348 360 .1.00	<p>Intensive Care Units provide critical care to patients with life threatening illness or injury. They provide a concentration of clinical expertise, technological and therapeutic resources which are coordinated to care for the critically ill patient.</p> <p>The clinical infrastructure and staff profiles reflect the complex nature of the monitoring and therapeutic interventions undertaken to provide the necessary physiological and psychosocial support required.</p>
	General
300742 360 .2.00	<p>The nature and extent of Intensive Care type facilities may vary greatly from hospital to hospital, and will depend upon the Operational Policies for each facility. In many instances, no Intensive Care facility will be provided at all.</p>

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300743 360 .3.00 In small hospitals, more Intensive Care may be provided in the form of Intensive Nursing Care or High-Dependency Nursing Care beds, within or attached to General Inpatient Units. In these cases, few of the requirements for an Intensive Care Unit will be applicable. The exact level of provision will be established by the Operational Policy.

300823 360 .4.00 Because of their unique requirements, no attempt is made here to suggest standards for all varieties of Specialty Units that may be found in the larger medical facilities. As far as applicable, these standards shall be used. Adaptations, adjustments, and additions shall be made as needed for the functional needs of staff and patients with special consideration for access and inclusion of necessary auxiliary services.

Policy Statement

501350 360 .5.00 The Intensive Care Unit is an integral component of the hospital and, in a broader sense, the critical care system. Demand for Intensive Care Services continues to rise, in part due to increased complexity of treatment. It is anticipated that this trend will continue.

The level of Intensive Care Service provided will vary across sites according to the role delineation of the service and the broader services available at the hospital.

During the planning process it is recommended that planning teams review the following documents:

- + Intensive Care Service Plan, NSW Health, 2001;
- + Intensive Care Strategic Directions - A Framework for the NSW Health System, NSW Health, 1999;
- + NSW Metropolitan Critical Care Plan, NSW Health, 1996;
- + NSW Rural Critical Care Plan, NSW Health, 1998;
- + Better Practice Guidelines for Bed Management, NSW Health, 1998.

Levels of Service/Role Delineation

501349 360 .6.00 LEVELS OF SERVICE/ROLE DELINEATION

There are two key descriptions of role delineation and level of service for Intensive Care Units (ICU). The relationship between the two descriptions is shown in the table below.

The accommodation requirements of the ICU will vary according to its prescribed level of service. The level of service will be determined according to the 'Minimum Standards for Intensive Care Units' (1) and the 'NSW Health Guide to the Role Delineation of Health Services' (2).

There is alignment between the role descriptions contained in these two Guidelines, and it is recommended they be referred to during the planning process for more detailed information.

Minimum Standards
(FICANZCA):
Level 1
Level 2

NSW Health Role
Delineation:
Level 4
Level 5

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Level 3

Level 6

The NSW Health Role Delineations for Intensive Care for Level 2 and 3 Units correspond most closely to requirements of a high dependency service.

A specialist Paediatric Intensive Care Unit equates to a Level 6 (Level 3 FICANZA) intensive care in terms of planning requirements.

(1) Minimum Standards for Intensive Care Units, Joint Faculty of Intensive Care Medicine, Australian and New Zealand College of Anaesthetists and Royal Australasian College of Physicians, June 2003.

(2) Guide to the Role Delineation of Health Services, Third Edition, NSW Health Department, 2002.

PLANNING

Operational Models

501351 360 .7.00 APPLICABLE MODELS

There are four broad models of intensive care applicable within Australia:

501352 360 .8.00 1. COMBINED CRITICAL CARE

The first model is of a combined critical care area encompassing High Dependency Unit, Intensive Care and Coronary Care, usually in a rural or regional hospital where flexibility of bed utilisation is important. This will allow short and medium term intensive care patients to be managed appropriately when required, and at other times, the Unit may be used for the more common cardiology or high dependency patients.

These Units have lower medical and nursing demands, and will usually be staffed on a nurse/patient ratio of significantly less than 'one to one'. These Units may or may not have a dedicated specialist in Intensive Care, but should have an appropriately qualified director who is responsible for ensuring quality assurance, mortality audit and appropriate standards and guidelines for the management of patients.

501353 360 .9.00 2. COMBINED GENERAL INTENSIVE CARE

Larger hospitals and some tertiary hospitals may find it appropriate to combine all patient subgroups within a dedicated Intensive Care Area with the Unit accepting patients with any Intensive Care problem including post-op trauma, neurosurgery, thoracic or cardiothoracic surgery and general medical patients. These Units will usually have a combination of intensive care and high dependency beds, and again, flexibility of medical and nursing workforce is a major consideration in the configuration.

This model offers the advantage that in hospitals where the sub-specialty case load is limited, staff are exposed to a general range of intensive care problems rather than being sent to wards at times when there is no sub-specialty work. Cross fertilisation of education and protocols allows more efficient running when case loads are low within Sub-Specialty Units.

The disadvantage of this model is that many sub-specialty nursing and medical skills may be diluted, and potentially there may be access problems for Sub-Specialty Units when the general intensive care patient load is high.

Operational Models

501354 360 .10.00 3. HOT FLOOR

The 'Hot Floor' model of Intensive Care collocates Sub-Specialty Intensive Care Units, usually encompassing cardiothoracic, trauma, neurosurgical and general intensive cares, with or without a co-located high dependency unit. Other Sub-Specialty Units such as non-invasive ventilation, burns, spinal, and hyperbaric oxygen therapy may be considered as adjuncts to a Hot Floor.

A more comprehensive Hot Floor model could include collocation of ICU with Theatres, Emergency, CCU and parts or all of Medical Imaging.

The Hot Floor model has the principal advantage of collocating services, avoiding duplication and with a single management structure, allows a more efficient medical and nursing overview. The Hot Floor model envisages one set of medical and nursing policies and procedures within one broad cost centre with common goods and services, porter services, orderly services, etc. Most equipment would be standardised across the Hot Floor avoiding duplicated education and minimising service costs.

The Hot Floor model has the advantage that practitioners, particularly nursing, may sub-specialise, allowing development of important sub-specialty nursing skills such as neurosurgical nursing. Rotation through the units allows all staff to experience different aspects of patient care and facilitates the spread of common techniques such as CVVHD, novel monitoring, ICP monitoring, EEG monitoring, etc.

Because Sub-Specialty Areas within the Hot Floor still receive the bulk of their patients from various medical specialties, patients of sub-specialties rarely have their access to ICU beds blocked by other groups. This allows Specialist Units such as Neurosurgery to optimise patient throughput by effectively partially quarantining beds.

The principal disadvantages of a Hot Floor involves two issues. Firstly, the issue of managing a large cohort of nurses and doctors, and secondly the disadvantage of co-locating units if infection control were to become a major problem. This has been highlighted by the SARS outbreak in Asia in 2003. Clearly, there needs to be careful consideration when developing a Hot Floor of how to sub-segregate Units.

501355 360 .11.00 4. SEPARATE INTENSIVE CARE UNITS

The fourth model encompasses a range of differentiated Intensive Care Units within an institution such as a separate General Intensive Care, a separate High Dependency Unit, a separate Cardiothoracic Intensive Care, a separate Neurosurgical Intensive Care, a separate Burns Intensive Care, a separate Trauma Intensive Care etc.

This model has the advantage of allowing different groups to control portions of the Intensive Care resources of a Hospital. For the Sub-Specialist Units within other units of the institution this can avoid the problems associated with bed blockages.

The model encourages the development of sub-specialty medical and nursing skills, however it has the disadvantages of duplicating management, policies and procedures. The problems of physical isolation can, at times, make it difficult to staff the Unit.

Sub-Specialty Units have the additional disadvantage that often new and innovative techniques are difficult to institute within the Sub-Specialty Intensive Care because of infrequent use.

It needs to be noted that as patient acuity increases, most Sub-Specialty Units are seeing more and more multi-system organ failure patients and general intensive care skills need to be enhanced within Sub-Specialty Units.

501356 360 .12.00 GENERAL COMMENTS ON MODELS

In any of these models of ICU serious consideration should be given to developing extra bed capacity for a collocated High Dependency Unit, whether that Unit be spread within the ICU or be a separate Unit. By identically equipping HDU beds the future demands of Intensive Care can better be guaranteed, and potentially the high dependency parts of an ICU can be used to decant patients should there be an internal disaster or infection control issues.

It is clear that as the size of hospitals contracts and the general severity of illness of inpatients increases, many general nursing wards will also be looking after higher dependency patients with monitoring and more invasive modes of therapy, which will require higher nursing and medical skill mix and numbers. These patients will continue to be nursed in standard 15m² 1 Bed Rooms or 18m² 1 Bed Room - Specials as provided for a general ward.

Planning Models

501358 360 .13.00 Two of the key factors that must be considered in the design of an Intensive Care Unit are the ability of staff to observe patients and the proximity of staff to patients. Decentralised Staff Stations/Observation Desks may sometimes be provided, often at a ratio of one per two beds.

The Unit should comprise a centrally located staff base, with adequate space for monitoring and resuscitation equipment, surrounded by patient care bed spaces, which enables staff to maintain visual contact with patients at all times.

A Unit should comprise a maximum cluster of 10 -12 beds with capacity for Isolation Rooms.

Generally a second staff station will be required for more than 12 beds.

Beyond these, clinical zone support facilities such as clean and dirty utilities, equipment and general storage should be in close proximity.

Zones for staff facilities and support areas for relatives should be on the periphery of the Unit.

For the psychological well being of patients and staff, natural light is highly desirable and patient privacy is essential.

Functional Areas

501360 360 .14.00 PATIENT AREAS:

CLINICAL ZONE

This is the main hub of the Unit with all other zones radiating from it.

The Patient Care Zone contains patient bed spaces located in direct visual contact with the Staff Station. The Staff Station should contain space for charting and central monitoring, resuscitation equipment, storage of regularly used medication and viewing facilities.

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Each patient bed space should contain individual medical services including bedside monitoring, call systems and handwashing facilities.

A number of the spaces should be adaptable to the nursing of infectious and immunocompromised patients.

STAFF AREAS:

STAFF AREA

A Staff Area should be located within close proximity to the Clinical Area, but with total privacy to Patient and Public Areas. Adequate Office Space, Staff Amenities and Tutorial and Reception Facilities should be provided, with the possibility of a space that could be provided or converted to provide overnight staff accommodation when necessary.

CLINICAL SUPPORT

The Clinical Support Area is dependent on the defined level of the ICU and its role within the Health Care Facility.

This area may contain Clean Utilities, X-Ray and Pathology Facilities. Where a vacuum tube system is to be used to transport pathology, pharmacy or documents, it should be located in this Area.

NON CLINICAL SUPPORT

While this Area contains the Dirty Utility and the majority of Storage Areas, it is common for some Mobile Equipment Bays to be located within the Clinical Area for easy access to frequently used equipment.

ENTRANCE RECEPTION:

This Public Area should be at the front of the Facility, with privacy from all Patient Areas. It should provide support facilities for families such as Beverage Areas, Waiting Lounges, Grieving Rooms and Interview Rooms. It is suggested that access and exit of patients from the Unit, be separate from these publicly accessible areas.

Functional Relationships

920166 360 .15.00 EXTERNAL

The ICU should be a separate Unit within the hospital with easy access to the Emergency Unit, Operating Unit and Medical Imaging.

300748 360 .16.00 LOCATION

The location shall be arranged to eliminate the need for through traffic.

204071 360 .17.00 ANCILLARY SERVICES

Laboratory, Radiology, Respiratory Therapy, and Pharmacy Services should be available. These services may be provided from the central departments or from satellite facilities as required by the functional program.

920170 360 .18.00 INTERNAL

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PATIENT VISIBILITY

Staff should be able to see patients at all times, either directly or by indirect means such as video monitoring.

This approach permits the monitoring of patient status under both routine and emergency circumstances. Direct line of sight between the patient and the central Staff Station is preferable.

In ICUs with a modular design, patients should be visible from the respective Nursing Sub-Station. Sliding glass doors and partitions facilitate this arrangement and increase access to the room in emergency situations.

920171 360 .19.00 LIGHT AND WINDOWS

The environment provided should minimise stress to patients and staff. Therefore, natural light and views should be available from the Unit.

Windows are an important aspect of sensory orientation, and as many rooms as possible should have windows to reinforce day/night orientation.

Drapes or shades of fireproof fabric can make attractive window coverings and absorb sound. Window treatments should be durable and easy to clean. If drapes or shades are not a viable option, consider the use of tinted glass, reflective glass, exterior overhangs or louvres to control the level of lighting.

If windows cannot be provided in each room, an alternate option is to allow a remote view of an outside window or skylight.

202030 360 .20.00 BEDSIDE MONITORING

Bedside monitoring equipment should be located in a position that makes it easy for staff to access and view the equipment, but does not interfere with their ability to see or physically access the patient.

The bedside nurse and/or monitor technician must be able to observe the monitored status of each patient at a glance. This goal can be achieved either by a Central Monitoring Station, or by bedside monitors that permit the observation of more than one patient simultaneously.

Neither of these methods are intended to replace bedside observation. Weight-bearing surfaces that support the monitoring equipment should be sturdy enough to withstand high levels of strain over time.

It should be assumed that monitoring equipment will increase in volume over time. Therefore, space and electrical facilities should be designed accordingly.

920190 360 .37.00 STAFF WORK AREAS

The staff working area must include:

- + Adequate space for staff to work in comfort while maintaining visual contact with the patient;
- + Adequate space for patient monitoring, resuscitation equipment and medication storage areas (including a refrigerator);
- + Space for a mobile X-Ray machine;

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- + X-Ray viewing facilities enabling simultaneous viewing of multiple X-Rays with space for X-Ray storage;
- + Adequate room for telephones and other communication systems, computers and data collection;
- + The storage of stationery;
- + Adequate space for a receptionist and/ or ward clerk.

DESIGN

Disaster Management

501361 360 .21.00 Planning for all Units should consider each Unit's role in the local Disaster Management Plan.

As a key Unit, the ICU is likely to be important in any Disaster Management Plan.

Disaster planning is discussed in more detail in Part B of the Guidelines.

Environmental Considerations

920173 360 .22.00 ACOUSTICS

Signals from patient call systems, alarms from monitoring equipment, and telephones add to the sensory overload in Critical Care Units. Without reducing their importance or sense of urgency, such signals should be modulated to a level that will alert staff members, yet be rendered less intrusive.

For these reasons:

- + Floor coverings that absorb sound should be used while keeping infection control, maintenance and equipment movement needs under consideration;
- + Walls and ceilings should be constructed of materials with high sound absorption capabilities;
- + Ceiling soffits and baffles help reduce echoed sounds;
- + Doorways should be offset, rather than being placed in symmetrically opposed positions, to reduce sound transmission;
- + Counters, partitions, and glass doors are also effective in reducing noise levels.

920182 360 .23.00 LIGHTING

Appropriate lighting, both general and task, is to be provided throughout the Intensive Care Unit. Refer to the TS11 for specific requirements.

Space Standards and Components

920179 360 .24.00 INTERIOR DESIGN

Colour can be used to prevent an institutional atmosphere. Cleaning, infection control and the patients' perception of a caring environment should always be considered, but the main functional requirement is for staff to be able to observe

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the colour of the patients' skin.

Care must be taken to ensure light reflected onto the patient does not impair the ability of staff to judge the condition of patients. Extremes of colour should be avoided, especially yellow/orange tones.

Environmental Considerations

501598 360 .25.00 NATURAL LIGHT

The use of natural light should be encouraged throughout the unit as this contributes to both staff and patient morale, and is considered likely to improve patient outcomes in an ICU.

In particular, where possible, bed room areas should have access to natural light and outlook.

Infection Control

920178 360 .26.00 Clinical Hand-Washing Facilities shall be provided convenient to the Staff Station and patient bed areas. The ratio of provision shall be one Clinical Hand-Washing Facility for every two patient beds in open-plan areas and one in each Patient Bedroom or cubicle.

Refer Part D of these Guidelines.

501597 360 .27.00 Whether the diagnosis or infectious status of patients is known or unknown, standard precautions should be used for all patients at all times.

Refer Part D of these Guidelines.

Space Standards and Components

501362 360 .28.00 BEDS AND COMPLEMENT

Beds in an Intensive Care Unit may be arranged in clusters of up to 12 beds. Each cluster or group of beds shall have access to the minimum support facilities including:

- + Staff Station (generally 1 per 12 beds or part thereof);
- + Clean Utility;
- + Dirty Utility;
- + Store Room/s;
- + Patient Ensuites;
- + Patient Bathroom;
- + Linen Storage;
- + PPE Bays/Storage;
- + Disposal Room;
- + Pathology Area;

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+ Offices;

+ Support facilities that may be shared between clusters of beds.

300761 360 .29.00 BED SCREENS

Each patient bed space shall have provision for visual privacy from casual observation by other patients and visitors. Bed screens are recommended for open-plan ICU spaces. Blinds or curtains are recommended for cubicle areas or dedicated Patient Bedrooms.

300756 360 .30.00 BED SPACING/CLEARANCES

Where an open-plan arrangement is provided, bed spaces shall be arranged so that there is a clearance of at least 1200 mm from the side of the bed to the nearest fixed obstruction (including bed screens) or wall.

300757 360 .31.00 To facilitate resuscitation procedures without restricting movement of staff, beds, and equipment, the available minimum clear distance between the head of the bed and any fixed obstruction or wall and between the foot of the bed and the bed screen shall be 900 mm.

300758 360 .32.00 When an open plan arrangement is provided, a circulation space or aisle of 2200 mm minimum clear width shall be provided beyond dedicated cubicle space.

300759 360 .33.00 Separate cubicles and Single Patient Bedrooms including Isolation Rooms, shall have minimum dimensions of 3900 mm in either direction.

300760 360 .34.00 All entry points, doors or openings, shall be a minimum of 1200 mm wide, unobstructed. Larger openings may be required for special equipment, as determined by the Operational Policy.

Building Service Requirements

202019 360 .35.00 CORRIDORS

Beds and trolleys within ICU are large and carry valuable and sensitive equipment, and patients who are severely ill.

The size of the basic ICU bed is often enlarged by the addition of monitors, drips and several staff, making movements more difficult than in other areas of the Hospital.

It is important that adequate circulation space is provided for the safe and efficient movement of these trolleys and beds.

Part C of these Guidelines provides information on the required corridor widths etc for Health Care Facilities.

300755 360 .36.00 OBSERVATION WINDOWS

To assist staff observation of patients in cubicles or Single Patient Rooms,