Australasian Health Facility Guidelines

HPU 390 Neonatal Care Unit

Part B – Health Facility Briefing and Planning

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Version **8**

AHIA australasian health infrastructure alliance
AusHFG Australasian Health Facility Guidelines

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Australasian Health Facility Guidelines

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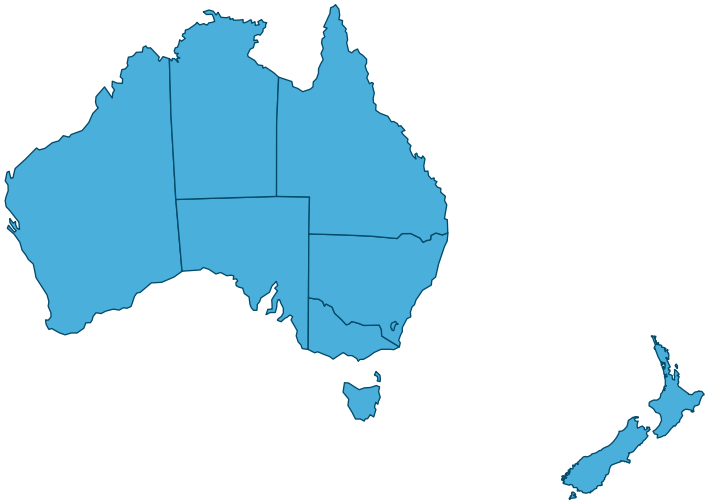
Cultural Acknowledgement and Terminology

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



Acknowledgement of Country

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

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

Acknowledgement of Te Tiriti o Waitangi

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

Terminology and Language in the AusHFG

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

Contents

Acronyms

Acronym	Definition
ABHR	Alcohol-based Hand Rub
AHIA	Australasian Health Infrastructure Alliance
AS	Australian Standard
AS/NZS	Australian and New Zealand Standard
AusHFG	Australasian Health Facility Guidelines
Class N	Negative Pressure Isolation Room
CPAP	Continuous Positive Airways Pressure
dB(A)	A-weighted decibels
EBM	Expressed Breastmilk
HHFNC	Humidified High Flow Nasal Cannula
HPU	Health Planning Unit
ICT	Information Communications and Technology
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
LAeq	A-weighted equivalent continuous sound level
NCC	National Construction Code (Australia)
NETS	Newborn & paediatric Emergency Transport Service
NHMRC	National Health and Medical Research Council
NUM	Nurse Unit Manager
NZBC	New Zealand Building Code
PACS	Picture Archiving and Communication System
SC	Standard Components
SC-D	Standard Components - Derived
UPS	Uninterruptible Power Supply
WHS	Workplace Health and Safety

1 Introduction

1.1 Preamble

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

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

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

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

1.2 Introduction

1.2.1 General

This document should be read in conjunction with AusHFG generic requirements including Standard Components described in:

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

Broadly, the provision of care to newborns ranges from community hospitals providing services to women with uncomplicated pregnancies to large metropolitan hospitals offering neonatal intensive care facilities. This HPU is focussed on neonatal care units providing neonatal intensive care, high dependency care and/or special care as part of a perinatal service or children's hospital.

Facilities associated with babies cared for on a maternity unit, generally babies with a gestational age of 37 weeks or over, are outside the scope of this HPU. Paediatric Intensive Care Units (PICU) may also care for newborns, where access to sub-specialty services is required, and are included in HPU 360 Intensive Care Unit.

The following related AusHFG resources should also be referenced where appropriate:

- Isolation Rooms - Engineering and Design Requirements
- Pandemic Preparedness - Health Infrastructure Planning & Design Guidance

1.3 Policy Framework

Prior to undertaking a project, planners and project personnel are encouraged to familiarise themselves with individual state and territory specific policies (as detailed in the Further Reading section of the Appendices), and with the following publications:

- The Royal Australasian College of Physicians (RACP), Paediatrics & Child Health Division, Position Statements
- European Foundation for the Care of Newborn Infants (EFCNI), European Standards of Care for Newborn Health
- Altimier, L., Barton, S.A., Bender, J. et al., 2023, Recommended standards for newborn ICU design.

This HPU reflects the significant volume of evidence regarding the improvement in neonatal health outcomes associated with unit designs that optimise family integrated care models.

1.4 Description

1.4.1 Model of Care

Neonatal care services are normally organised across a health jurisdiction in a 'hub and spoke' arrangement to ensure that the catchment population has access to both locally provided services and highly specialised services provided by tertiary hospitals, e.g. intensive care. Children's hospitals provide subspecialty services including neonatal surgery and care for complex congenital and metabolic conditions.

Neonatal care units provide a range of services including care of low birth weight and/or premature newborns, and/or newborns born with congenital conditions or other problems that may compromise health and survival.

The care of newborns is provided by a multidisciplinary health team through a 'family integrated care' model and is based on the following key principles:

- the physical, psychological and social needs of both the newborn and their family are at the 'heart' of all care given
- parents have unlimited access to their newborn and are active participants in their care. This includes removal of any restrictions to parent access to provide them with support to exercise choice and control over when they need to attend to and care for their newborn.
- early and continuous skin-to-skin contact between parents and the newborn when clinically appropriate and support for breastfeeding
- protection of the newborn from negative environmental stimuli and access to positive sensory stimulation from parents and other caregivers
- provision of a range of support strategies and education for families. This incorporates education to support parents as part of the integrated team providing care for the newborn rather than passive visitors.
- the provision of culturally appropriate care.

Evidence supports family integrated care models given it contributes to a reduction in length of stay, improved breastfeeding rates, reduced readmission rates and improved neurodevelopmental outcomes. Refer to:

- Ortenstrand, A et al., 2010, 'The Stockholm Neonatal Family Centered Care Study: Effects on Length of Stay and Infant Morbidity'
- Lester BM, et al., 2016, '18-Month Follow-Up of Infants Cared for in a Single-Family Room Neonatal Intensive Care Unit'.

Specialised neonatology input may begin in the antenatal period with the planned management of birth where neonatal congenital condition or illness is expected. The model of care promotes the birth of a newborn in a location where it will receive timely access to the required level of care to minimise the risks of transporting extremely preterm newborns.

Most health jurisdictions provide statewide newborn retrieval and transfer services. These services provide expert clinical advice, clinical co-ordination, emergency treatment and stabilisation, and inter-hospital transport for very sick newborns. This service complements the local retrieval role provided by most neonatal care services, e.g. on-site.

Neonatal services also provide follow-up and ongoing care after discharge. This ranges from planned follow-up clinics to ad-hoc service provision where parents may 'drop-in' when problems arise. Specialised nursing and allied health staff are often required to support these services, e.g. discharge planning, lactation, and home support.

1.4.2 Level of Service and Service Capability

The following broad terms are used within this HPU, rather than numerical role delineation levels, to avoid confusion associated with variations between jurisdictions. These terms are reflected in the Schedule of Accommodation (Appendix 5.1) and the associated Standard Components. However, project teams should

ensure the planning and design approach aligns with the specified role delineation as defined by the relevant local jurisdiction.

Intensive Care and High Dependency Care

Neonatal intensive care and high dependency care are provided in discrete, environmentally controlled units that are designed, equipped and staffed to care for premature, medically unstable or critically ill newborns that require continuous respiratory support or other intensive interventions. Neonatal Intensive Care Unit is often shortened to NICU and High Dependency Care is also referred to as ‘step-down’ or ‘high need care’ in some jurisdictions. Key service requirements include:

- comprehensive neonatal care for all newborns within a multidisciplinary management model
- full range of respiratory support (including invasive and non-invasive ventilation), invasive blood pressure monitoring, therapeutic hypothermia, total parenteral nutrition and exchange transfusion
- access to point of care testing equipment capable of instantly measuring blood gases, electrolytes, bilirubin and haemoglobin
- access to 24-hour medical imaging including general x-ray, neonatal echocardiography, cranial ultrasonography and MRI
- specialist statewide services will provide neonatal surgical services and care for complex congenital and metabolic diseases of the newborn. These may be provided within a children’s hospital or in a perinatal unit collocated with a children’s hospital.

Special Care

Special care caters for newborns requiring less care and supervision but who are not sufficiently stable to be discharged. Special Care is also known as ‘low dependency care’, ‘non-complex care’ or ‘non-intensive care’. Key service requirements include:

- continuous cardiorespiratory monitoring including non-invasive blood pressure monitoring
- short to long term continuous oxygen therapy and respiratory support
- humidified high flow nasal cannula (HHFNC) oxygen and/or continuous positive airways pressure (CPAP) may be provided in special care units with appropriate training, staffing provision and support from intensive care units. Consideration required for larger bays (Patient Bay/Room - Neonatal, Special Care, Flex) for newborns requiring long-term CPAP and HHFNC oxygenation.
- initiation and maintenance of intravenous therapy
- ongoing care for newborns who have stepped down from intensive care/high dependency care
- newborns requiring stabilisation prior to transfer to a neonatal intensive care service.

There are variations between jurisdictions regarding neonatal role delineation. The project team will need to consult with local jurisdictions to ensure the final planning and design approach aligns with the specified role delineation and the number of neonatal service cot types to be provided aligns with the clinical service plan.

2 Planning

2.1 Operational Models

2.1.1 Overarching Planning and Design Principles

Overarching operational models in Neonatal Care Unit include the core principles of ‘newborn-centred’ and ‘family integrated care’ models while facilitating the work of staff. Other environmental planning and design

principles were also identified as having significant effect on both short-term and long-term outcomes of neonatal care.

Newborn-Centred Care

The Neonatal Care Unit should:

- meet the early attachment needs of newborns and optimise bonding time with both parents
- support the changing needs of newborns as they grow and develop
- minimise the risk of adverse occurrences, especially infection.

Family Integrated Care

Parents and other family members play a pivotal role in the care of the newborn and therefore the Neonatal Care Unit should provide:

- support for parents to stay with the child as much as possible including overnight within the bay/room or in close proximity to the unit (this assists in reducing stress and anxiety and improving confidence and breastfeeding success)
- adequate space and amenity for families at the bedside to care for their newborn, provide kangaroo care (skin to skin contact) and breastfeed/express breast milk including support for the mother to express in a private space or at the bedside
- sufficient access for a mother to be transported on a bed to the newborn following delivery if required
- facilities to support care-by-parent models prior to discharge (rooming in or transitional care)
- education for families, empowering them to become active participants in the care of their newborn
- access to appropriate amenities for families within the unit including food, drink, toilets, showers, desk space and outlets for recharging of mobile devices
- appropriate artwork within family spaces to contribute to cultural safety and wellbeing of families and carers.

Healing Environment

The physical development of the pre-term newborn outside the womb must continue in a more artificial environment of the Neonatal Care Unit. A healing physical environment can be provided by having an environment that provides:

- comfortable space for family to be near their newborn
- an environment that conserves the newborn's energy and enhances recovery
- a space that minimises stressful and painful stimulus such as noxious sounds, hot/cold temperature, bright lights and frequent repetitive handling
- an overall reduced environmental sensory stimulation therefore reducing newborn stress
- an environment incorporating biophilic design elements, carefully balanced with infection prevention and control (IPC) principles.

Integrative Developmental Care

To effectively provide for the newborn's development especially pre-term newborns, the Neonatal Care Unit should provide:

- an environment that safeguards newborn sleep
- a space that allows for skin-to-skin contact with the mother and the family but also allows for developmentally supportive positioning and handling when the newborn is in the cot
- amenities and facilities to allow mothers to breast feed as optimising nutrition has well-documented effects on newborn brain development.

Culturally Sensitive Design

Healthcare professionals in Neonatal Care Unit need to be aware and understand the different cultural, religious, spiritual belief systems and approaches to life, birth, and death. In addition, the planning, design and artwork should provide:

- a welcoming environment
- a culturally responsive and trauma-informed care to assist family to feel safer to express their religious, cultural, spiritual needs, and where they can practice their traditions and rituals
- bereavement/quiet space
- space to perform ceremonies relating to birth and death.

Culturally Sensitive Design can incorporate space and operational scope for culturally embedded artforms (e.g. visual storytelling, oral traditions, shared creative practice). Provision of culturally meaningful décor, artefacts, or spaces for creative expression can affirm identity and enhance emotional safety.

Healthcare projects in Australia should incorporate consultation with local Aboriginal and Torres Strait Islander health leaders, community elders, and traditional owners to ensure a culturally informed unit design.

For Aotearoa New Zealand health facility projects, consultation with local iwi is also important to ensure units are designed to be welcoming and adhere to local kawa and tikanga. Specific guidance to supplement the AusHFG for Aotearoa New Zealand health facility projects can be found in Te Whatu Ora – Health New Zealand, 2022, New Zealand Health Facility Design Guidance Note.

Refer to AusHFG Culturally Sensitive Planning and Design for additional guidance.

Design for Emotional Wellbeing

Creating a supportive and positive environment in Neonatal Care Unit is of utmost importance to families who are experiencing high level of stress therefore the unit should provide:

- an environment which provides support coping with stress and promoting wellness
- design which promotes a sense of control such as easy wayfinding and access to information
- humanised parent spaces such as providing less clinical lounge spaces or sitting area where family can take a break from the clinical patient spaces or where parents can work from their computer
- positive distraction with artwork, photographs, calming colours or view to outdoors from a window
- privacy for families with an extremely ill or dying newborn
- social support opportunities by allowing families to congregate and engage with each other.

Staff Wellbeing and Support

The unit design will provide an optimal working environment for staff and include:

- a pleasant and supportive working environment
- optimal line of sight to other staff and ability to communicate with other staff
- good access to and observation of patients
- flexibility in staff allocation and work practices
- involvement of the multidisciplinary team
- appropriate information technology and communication systems
- continuing education and training facilities such as simulation spaces
- adequate staff support space including staff work areas and amenities
- artwork in staff stations and respite areas to contribute to the wellbeing, belonging and innovation among health workforces.

Safe Environment

The Neonatal Care Unit must be safe for all including the newborns, family, visitors and staff. The unit should provide:

- an environment for all newborns that prevents accidental injury or falls
- opportunities for family involvement in newborn safety
- design that minimises any adverse events by identifying design elements that may contribute to preventable medical and medication errors
- allocated storage spaces to reduce clutter
- lockable doors to high-risk rooms such as medication room, dirty utility and treatment room which may be accessed by siblings of the patient.

Infection Prevention and Control

To minimise the risk of transmission of healthcare associated infections, the neonatal environment should provide:

- design elements of the patient spaces, equipment, and other surfaces that are easy to keep clean
- access to hand hygiene facilities and personal protective equipment (PPE) for staff, family and visitors
- isolation/single rooms for newborns requiring isolation due to potential pathogen transmission or immunocompromised conditions
- facilities, medical devices, furniture and fittings that are easy to clean and decontaminate including wet areas such as baby baths.

Design for Flexibility

The design of the neonatal rooms should allow for individualised care and the ability to adapt to changing requirements. Some design elements may include:

- provision of mobile furniture for use by family such as seats, recliners and beds
- versatile privacy solution such as solid surface screens which can be easily expanded and rolled in and out as required for open bays
- flexible working space solutions such as provision of pendant or wall mounted services to suit the operational needs of the unit.

Education and Research Based

Some of the elements which may be provided in Neonatal Care Unit include:

- integrating best evidence-based healthcare to inform healthcare practice for newborn care
- translating research into design of spaces and infrastructure to improve patient care, safety and outcomes
- identifying the need for change and improvement based on the best evidence that are applied to the design of the unit
- provision of spaces to facilitate staff and student learning which include simulations, hands-on training and practical experiences.

Technology Enabled

Neonatal care relies heavily on advances in medical technology to optimise care and improve survival of pre-term newborns. Technology is also used to improve communication and access to the unit. Technology can assist parents of newborns in a Neonatal Care Unit to improve parent-newborn bonding, reduce parental stress and separation and improve parental mental well-being.

For consideration are:

- telehealth to assist smaller healthcare facilities during newborn resuscitation or for tele-consult with other sub-specialities such as neurology and cardiology
- approved IT systems in areas of patient identification, electronic records, patient monitoring and medication dispensing
- camera use in a Neonatal Care Unit depending on the operational policy of the unit
- telehealth technology which may be used to communicate with families of recently discharged newborns for follow up
- technology-enabled visitor access to the Neonatal Care Unit
- technology for live streaming of newborn to parents if allowed by jurisdiction.

2.1.2 Workforce

The staff establishment will be dependent on the level of service/role delineation and the unit size. Staff may include:

- medical staff (clinical director, fellows, consultants, registrars and junior medical staff)
- nursing staff (nurse unit manager, clinical nurse consultants, clinical nurse educators, nurse practitioners, clinical nurse specialists, lactation consultants, midwives, discharge liaison staff, home care nurses)
- allied health staff (social workers, aboriginal liaison officers, Aboriginal and/or Torres Strait Islander and/or Māori health workers, speech pathologists, psychologists, pharmacists, newborn hearing screeners, sonographers, physiotherapists and occupational therapists)
- technical support staff including biomedical engineers
- educators and researchers
- clerical/administrative staff (ward clerk, secretary, data collectors)
- ancillary (patient assistant) and other operational support staff, cleaners
- pastoral care/spiritual care
- charity organisations
- volunteers
- peer to peer support groups
- students.

The design, layout and configuration of the unit should support the planned nurse to patient ratios. These ratios will be determined by senior medical and nursing staff according to the individual newborn's condition and need, and access to monitoring systems.

Provision of staff work areas will depend on the staff establishment and the need to be located in/near the unit and will comply with jurisdictional policies.

2.2 Operational Policies

2.2.1 General

Operational policies have a major impact upon the planning and design and capital and recurrent costs of health facilities.

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

2.2.2 Hours of Operation

The unit will operate 24 hours per day, seven days per week.

Emergency admissions will be received from the birthing suite, operating suite, post-natal units, emergency department or via external retrieval as 24-hour readiness for admissions is essential.

Parents will generally have unrestricted access to the unit. Depending on local operational guidelines siblings and other family members may visit and/or stay within the unit.

2.2.3 Resuscitation

Resuscitation of newborns in incubators may be carried out in-situ for those in incubators. However, this approach may be less suitable in a multi-cot room setting where newborns are in bassinets. To ensure timely and effective intervention, each neonatal care unit should have immediate access to resuscitation facilities, either through a fixed, dedicated resuscitation space, a procedure room or a mobile neonatal resuscitation device.

Equipment should include an open radiant-heated cot with facilities including oxygen, medical air and suction, power outlets, oxygen saturation and cardiac monitoring, laryngoscopes, equipment for assisted ventilation, secure drugs storage and video camera. It is important that unobstructed line of sight is provided to resuscitation facilities and staff can readily summon assistance as required.

In some jurisdictions, a camera may be installed including telemedicine camera, video for training or Newborn & paediatric Emergency Transport Service (NETS) camera.

2.2.4 Newborn Retrieval and Transfers

As all units will undertake intra-hospital transfers, provision must be made for storage and recharging of this equipment.

For those units where an external retrieval and back transfer service is an integral component of the Neonatal Care Unit, the spatial and design requirements will depend on:

- the size of the team and its relationship to neonatal care staff, i.e. whether there is a separate team dedicated to transport
- the role of the team
- the need for administrative (including a computer for data entry) and education space
- the amount and type of equipment, including clothing
- the extent of the communication system
- parking arrangements for dedicated vehicles
- access to the emergency vehicle bay and/or helicopter landing site.

Project teams should consult with local retrieval services to ensure that clinical spaces are appropriately designed and equipped to facilitate the timely and safe stabilisation of newborns requiring transfer. An area or room of sufficient size is required to support the workings of the team. This may be provided through an appropriately sized Procedure Room or 2 cot bay that can be flexibly used to accommodate one newborn when required for this function. The retrieval space should be located close to the staff station for ease of access to clinical support when required. It should be near the centre of the unit, but it is important to consider visual protection from the daily activity of the unit and through passage of visitors and families.

The interview room should also be located with easy access for family conference prior to transfer, if required. Also consider storage of retrieval equipment which should be readily available and accessible during retrieval.

Telemedicine is commonly used to augment the emergency consultation and retrieval process and will require consideration of optimal camera positions to support these services.

2.2.5 Neonatal Surgical Procedures

Children's hospitals will perform neonatal surgery in the operating suite. However, some perinatal and surgical neonatal intensive care units may perform selected procedures in the unit as unstable newborns are not able to be moved safely. In selected cases, a neonatal room is sized and equipped to undertake surgical procedures.

A common procedure conducted in Neonatal Intensive Care Units is laser therapy for retinopathy. A quiet and dark space is required and is commonly provided within a Procedure Room equipped with relevant lighting, medical gases, equipment, power supply, laser screening and in-use warning lights. In smaller units, an isolation room may be equipped for this purpose.

2.2.6 Palliative Care

When a life limiting condition is diagnosed, family oriented, multidisciplinary, neonatal palliative care is essential to optimise quality of life for the newborn and the family. Parents should be supported to stay with their newborn at all times in a setting that meets their wishes and spiritual needs.

Consideration should be given to the provision of a family bereavement area including a neonatal care room that is appropriately designed to manage end of life care; a collocated space to accommodate parents with consideration of cultural requirements; and discreet access for additional family members. The room also needs to cater for mothers who are still recovering or have limited mobility.

Privacy is crucial not only for the grieving parents of the newborn but also to minimise the impact on other parents in the unit.

Also refer to 4.2.3 Patient Room – Neonatal, Palliative Care.

2.2.7 Lactation, Milk Preparation and Storage

Infants may receive nutrition through breast milk from their mother, formula, donor human milk and/or parenteral nutrition.

Breast Milk

Space at the cot space and a dedicated feeding room will be available to support mothers who are breastfeeding or expressing. The room can serve as an area where mothers can get to know each other and to support cultural practices. Privacy should be assured for mothers who are breastfeeding or expressing.

Milk Preparation and Storage

A preparation room will be required to make up feeds including additives to breast milk and formula. Many services, including most children's hospitals, will provide a centralised milk preparation service.

The storage of milk in refrigerators and freezers must align with local policies, including the processes for thawing frozen milk. The product needs to be stored in a way that makes each newborns milk supply easy to identify and reduces the risk of being mixed up with other supplies.

Parents will also need access to a utility space to clean, store and sterilise equipment such as breast pumps. It is assumed that bottles and teats will be single-use items provided by the unit.

Depending on facility policies, breast milk fridges may be provided in each neonatal bay. These fridges will require a cleaning and maintenance protocol to ensure their safety.

Donor Human Milk

Donor human milk services (otherwise known as 'milk banks') provide a service that collects, screens, tracks, processes and dispenses human milk donated by nursing mothers. Planning teams should investigate local policies in relation to milk banking to assess if there are operational and facility impacts. Most units will require storage for donated breast milk, however given donor human milk services are usually provided as a statewide, specialised service, facility requirements relating to the processing and dispensing of donated breast milk have not been considered in this HPU.

2.2.8 Neonatal Follow-Up and Ambulatory Care Services

Neonatal Care Units routinely provide follow up outpatient services. Services may include reviews for ad-hoc attendances following discharge, growth and development clinics that incorporate multidisciplinary team reviews and other general outpatient clinics.

Multifunction consult room(s) located close to the Neonatal Care Unit entrance, but well away from the sights and sounds of the unit, may be useful for ad-hoc attendances to enable staff to remain in close proximity to the unit. Consider the location of the ambulatory care to prevent post-traumatic stress for parents returning for outpatient follow-up review after a long NICU journey, especially with multiple births loss.

The location of ambulatory care facilities required for other outpatient clinics will depend on the projected activity and the need to access other support services such as specimen collection, audiology, physiotherapy and developmental psychology assessments. Rooms should accommodate the family and members of the multidisciplinary team and are generally larger than general consultation spaces. Entry doors need to accommodate double prams.

In smaller Neonatal Care Units, a flexible consult/treatment room may be used for follow-up services. As such, consider the location of this room to avoid parents/family internally accessing the unit and allowing staff to access the room internally from the unit.

2.2.9 Pathology

Point-of-care testing is required with the most common equipment used being blood gas analysers and blood glucose testing.

A bay for a pneumatic tube station will routinely be provided.

2.2.10 Imaging Procedures, Processing and Viewing

Mobile x-ray and ultrasound machines will be accommodated in the unit in a dedicated bay. Standard power outlets will be required for recharge. Retinal imaging equipment are also becoming common and may need to be stored in the unit in a dedicated bay.

Digital medical imaging and Picture Archiving and Communication System (PACS) is assumed, and viewing may occur at the cot space, staff station and other areas as nominated.

2.2.11 Supplies and Consumable Storage

A range of storage is required to support a Neonatal Care Unit and will be related to the size and complexity of the service. Equipment and consumables should be located for ease of access by staff and located to support separation of clean and dirty flows. Access to the unit for delivery of supplies (‘back of house’ flows) should be separate from visitor flows to and from the unit.

Statewide policies for the storage of medication, fluids and vaccines must be adhered to.

Medications and IV fluids may be stored in the Clean Utility or in a dedicated Medication Room depending on local policies. A refrigerator will be required to store medication with a separate refrigerator for vaccines. Both units will be temperature monitored, linked to the building management system. Facility requirements relating to the preparation and storage of parenteral nutrition will require consideration.

Secure and accessible storage will be required for medical gases to support the management of therapy, transfers and evacuations.

The unit will also need to provide storage for clothing which includes bonnets, booties and many other clothing items.

A range of other storage bays and rooms will be required as noted in Appendix 5.1 Schedule of Accommodation.

2.2.12 Laundry

A laundry with washing machine, dryer and sorting area is often provided. A blanket-type warming system is also often provided to warm clothes prior to dressing the newborn. Parents’ access to this room depends on the unit’s operational policy.

Some units will have a separate laundry used by staff only which has specific requirements such as water temperature to process neonatal items that cannot be sent to hospital laundry.

2.2.13 Equipment Management, Storage, Recharging and Cleaning

The unit will usually clean and store its own equipment which may include:

- imaging equipment including general x-ray and ultrasound (also refer to 2.2.10 Imaging Procedures, Processing and Viewing)
- incubators, open care centres and bassinets

- cardiorespiratory support equipment including ventilators and CPAP devices; nitric oxide systems, cardiorespiratory monitors, electrocardiogram (ECG) machines, pulse oximeters, radiant heaters, cooling blankets and trolleys for airway equipment
- phototherapy units
- syringe pumps
- workstation on wheels (WOW)
- electroencephalogram (EEG) monitors
- transport equipment including incubator and medical gases
- neonatal evacuation equipment (may include newborn evacuation vests/apron, multiple newborn evacuation sled and portable cot harness)
- allied health equipment
- research equipment.

Unit storage may include centrally located open-plan equipment bays, to enable quick and convenient access to frequently used equipment.

All areas must be designed to:

- efficiently store and access equipment without causing damage
- consider work health and safety (WHS) practices with moving large and bulky equipment
- provide both floor parking space and off-floor shelving with adequate power outlets for recharging battery-operated equipment.

Careful attention must be given to ventilation and temperature control where multiple items of heat-generating equipment are being charged, particularly in an enclosed room.

Dirty to clean flows will be provided to ensure separation is achieved.

Equipment cleaning processes will require confirmation. Some services may use hydrogen peroxide vapour decontamination systems which may be considered in high-risk settings and during outbreaks when other disinfection options have been exhausted (NHMRC 2019). Design requirements will include the ability to seal rooms, appropriate ventilation systems and storage of equipment.

Depending on operational policies, optional inclusions within the store may include:

- a workstation for the nominated equipment nurse for inventory and ordering
- a work bench for a biomedical technician to undertake testing and minor repairs serviced with medical gases, power and voice/data outlets. This setup is intended for use in locations where equipment is not transported to a centralised Biomedical Room.

2.2.14 Staff Education, Training and Research

The scope of staff education, training, and research for both the broader hospital and the Neonatal Care Unit will determine the necessary facilities, both within the unit and externally, to effectively support these educational functions.

This may include:

- some education/staff training and meeting spaces provided locally to enable staff to stay in the department, ensuring close access to respond to a clinical emergency
- videoconferencing facilities
- simulation capability, depending on the size and role of the service
- staff work areas for those engaged in education and research
- support for trainees and students.

2.2.15 Volunteers

Volunteers are common in this type of unit and roles may include wayfinding, meet-and-greet, peer support, 'ward grandparents' and assistance with laundry. Suitable amenities should be provided to support volunteers, such as lockers and access to a shared staff room - either within the unit or in dedicated volunteer facilities located elsewhere in the hospital.

2.3 Planning Models

2.3.1 Location

The unit should be located and oriented to avoid direct sun into the unit to minimise the need for critical sun protection. Southern aspect should be considered for neonatal care units to minimise direct sun exposure and reduce the need for sun protection measures.

If the unit is located in a generalist hospital, the unit should ideally be located on the same floor as or by direct lift access from the birthing unit and obstetric operating rooms (refer to Section 2.5 Functional Relationships for further information).

If the unit is located in a children's hospital, a location adjacent to the Paediatric Intensive Care Unit may be desirable with ready access to the operating suite.

Care must be taken to avoid placing the inpatient areas adjacent to noise sources such as plant rooms, lifts and public lobbies.

2.3.2 Cot Numbers and Mix

The number and mix of cots required will be determined by the Clinical Services Plan with consideration of:

- the role delineation for the unit
- assumed occupancy rate
- the ability to flex up and down to meet demand including surges in activity
- support for multiple births and retrievals.

2.3.3 Configuration of Cots

The arrangement of cots will:

- provide a level of privacy for parents while facilitating opportunities to interact with other parents
- provide a sufficient number of single rooms to manage isolation for reasons of infection or immunosuppressed status, extremely unwell or dying newborns and specific congenital or medical conditions requiring extremely quiet environments
- group cots in bays or rooms of between two and four cots when shared approaches are adopted.

The appropriate mix of single enclosed rooms and open bays needs to be determined on a project-by-project bases depending on the role delineation and patient cohort to be accommodated. The advantages and disadvantages of single rooms and open bays are summarised below:

	Advantages	Disadvantages
Single Room	• increased privacy, both acoustic and visual • greater opportunity for parental involvement • better infection prevention and control • a more appropriate environment for the provision of palliative care • individual environmental control of noise, light and temperature	• diminished physical observation when staff is not in room • a lack of stimulation of newborns receiving limited time with parents such as when the mother is unwell or not yet discharged • may require more staff for coverage and observation during breaks

	Advantages	Disadvantages
		• staff may feel isolated with reduced line of sight to their colleagues • limited educational opportunities for staff such as when spontaneous learning session occurs in other cot area and are not easily accessible to all team members • potential impacts on staffing and recurrent costs • reduced flexibility to accommodate multiple births • lack of flexibility for overflow space when a high number of staff and family members need to be accommodated • limited opportunities for parents to socialise with other parents and obtain peer support thus creating a degree of isolation.
Open Plan or Shared Pods	• increased physical observation of newborn • more opportunities for stimulation of newborns receiving limited time with parents such as when the mother is unwell or not yet discharged • more opportunities for staff to communicate and collaborate with colleagues • more educational opportunities and supervision for junior staff • improved efficiency when pod layouts align with clinical team structure, enabling clinicians to oversee multiple cots in open spaces and allowing other staff to easily gain their attention when needed • better flexibility to accommodate multiple births • better overflow space when a high number of staff and family members need to be accommodated • more opportunities for parents to socialise with other parents and obtain peer support.	• less privacy, both acoustic and visual • potential for sensory overload and overstimulation of newborns and family • less opportunity for family involvement when preventing overflow to adjacent space • not suitable for newborns requiring isolation for infection prevention and control • not suitable for the provision of palliative care • limited environmental control of noise, light and temperature.

Provision of dividing doors between pairs of single rooms may facilitate management of multiple births, ease of parental access, staff support, and supervision and other advantages associated with open plan or shared pods. However, it will reduce advantages relating to infection prevention and control.

2.4 Functional Areas

2.4.1 Unit Functional Zones

Functional zones include the following:

- entry, waiting and public areas
- patient areas
- clinical support
- family areas, including accommodation
- staff areas.

2.4.2 Entry, Waiting and Public Areas

The main public access to the unit should create a welcoming and positive first impression

Controlled access to the unit is required and may be provided via a dedicated reception area or video/intercom system. The provision of a reception area will depend on the arrangement of the unit and workforce profile.

The visitor's waiting area, located external to the unit, will require access to public amenities and a locker bay for items such as overcoats and umbrellas. Access to hand hygiene facilities at the entry to the unit is essential.

There should be easy wayfinding from the main entry point to patient and family support areas.

Also refer to the following AusHFG resources:

- Part C: Design for Access, Mobility, Safety and Security
- Arts in Health Framework
- Culturally Sensitive Planning and Design

2.4.3 Patient Areas

Patient areas will be organised in groups of cot types, i.e. intensive care, high dependency and/or special care. Intensive care and high dependency care cots will be a standard size and contiguous to ensure that there can be some flexibility of use.

Comfortable, purpose-built space should also be considered to optimally meet palliative care requirements. Where provided, palliative care rooms should be provided in a quieter area of the unit with provision of comfortable, less clinical furnishings and appropriate artwork. Further guidance is in section 4.2.1 Patient Room – Neonatal, Palliative Care.

Staff stations will be located to ensure that most cot spaces can be observed with a range of clinical support spaces located for direct access by staff.

2.4.4 Clinical Support

Clinical support space will include a range of bays and rooms to support milk preparation and storage; storage of clinical supplies, medications and equipment; facilities to clean and manage equipment; and other general operational support areas.

Where possible, the location of clinical support areas, especially storage, should be arranged such that frequently used items are located close-by.

2.4.5 Family Areas

Parents and siblings will spend significant periods of time visiting the unit. In order to improve their comfort and provide opportunities for them to care for their newborn, a range of support spaces are required including the following:

- non-clinical and flexible family lounge/dining including a beverage bay for preparation of light meals and beverages, and which also provides opportunity for families to congregate and engage with each other
- play area for children including creative materials for participatory arts engagement
- easily accessible toilets and showers (including shower facilities for family members who arrives in unclean work clothes)
- multipurpose parent education facilities and access to educational, creative and other support materials
- hot desk space to enable parents to undertake some work or keep in contact with other family members
- lactation support including quiet space for breastfeeding and expressing, and facilities for cleaning associated equipment
- access to food and drinks out-of-hours, e.g. vending machines
- access to a domestic laundry which may be accessed by family. This is separate from machines used by staff only which may be incorporated into the equipment cleaning room based on unit policy.

- facilities to support early discharge programs including parent/newborn accommodation.

The family support zone should have access to shared meeting and interview rooms on the unit.

A variety of overnight rooms to support early discharge programs should be provided within the unit to enable parents looking after their newborn(s) to have direct access to staff support. A number of overnight rooms located in close proximity to the unit will also be required for mothers that are breastfeeding full time, parents that live a significant distance from the unit as well as quiet rest spaces for all families to take time away from the critical care environment. The number of overnight rooms provided will depend on access to other accommodation options on the site, e.g. Ronald McDonald House and the volume of families who live a significant distance away.

Consideration should be given to the location of prayer or multi-faith room to ensure easy access by family of newborns in the Neonatal Care Unit, critical care areas and inpatient units. Consider developing culturally inclusive, multifaith facilities that reflect and respond to the spiritual needs of the local community.

2.4.6 Staff Areas

A range of staff support areas will be required including:

- work areas for administrative and research activities
- telemedicine workroom for 'hub' services that will be used for discussions with colleagues, patient reviews and reviews of medical imaging, clinician performed ultrasound and other results
- staff amenities including a staff room, toilets, lockers and a shower based on building codes of Australia and New Zealand (NCC and NZBC) requirements
- education space
- an on-call room (depending on local policies).

While the nursing manager may be located within the clinical areas of the unit, other staff work areas should be located in a staff-only zone, clearly separated from family areas. If possible, this staff-only zone will have its own controlled access, separate from the main entry.

A seminar room may be provided, depending on the role of the unit. This room should be easily accessed by other staff without the need to travel though clinical areas. A simulation room or multifunctional skills lab can be invaluable for learning and practising simulated procedures. If provided, it should be equipped with a neonatal resuscitation device, incubator, ventilator, mannequin, a storage surface, and several chairs and medical gases. It may be separated from the seminar room by an operable wall. Alternatively, storage space may be located within the seminar room as the same room used for skills training.

2.5 Functional Relationships

2.5.1 External

Direct access is required from Neonatal Care Units to the birthing unit (not applicable to units in stand-alone children's hospitals) and the operating theatre complex performing obstetric emergency procedures. This needs to be via collocation of the units on the same floor or direct lift access, in the same building, to ensure optimal response times for time critical emergencies, e.g. attendance by staff to an emergency resuscitation; transport of a critically unwell newborn from the birthing unit or theatres to the Neonatal Care Unit and to minimise movement/transport of an extremely ill preterm newborn at risk of intraventricular haemorrhage (IVH).

Ready access to both postnatal and antenatal inpatient units is crucial for optimising patient safety, particularly given the high volume of movement between units by both patients and staff. Neonatal care staff frequently provide emergency care within postnatal units, and a significant number of newborns admitted to Neonatal Care Units originate from postnatal units. To ensure efficient and effective care, minimal transport distances are essential. This can be achieved through direct vertical connections, such as patient lifts, facilitating rapid and safe transfers.

Direct access is also required to the helicopter landing site and ambulance bays, and ready access is also required to emergency departments and medical imaging services.

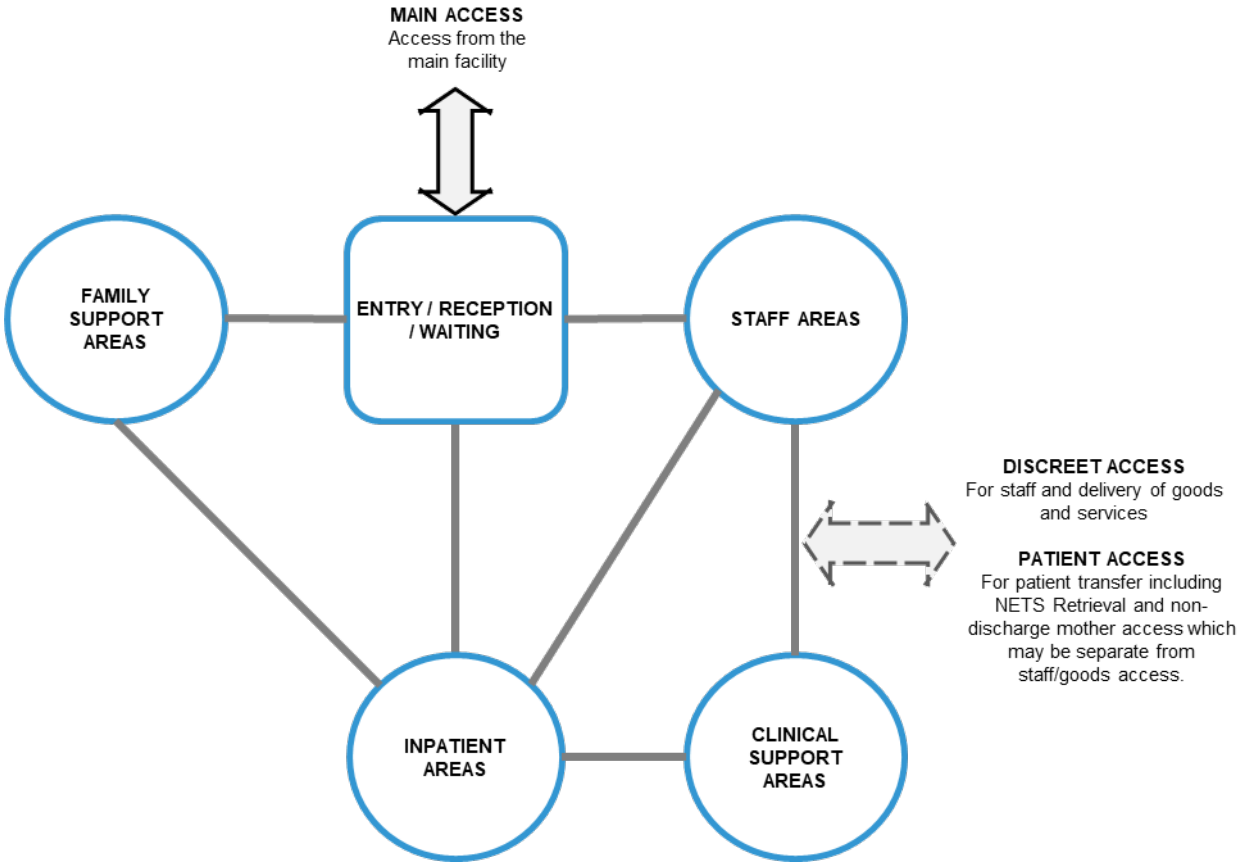
2.5.2 Internal

Planning of the Neonatal Care Unit is complex and requires the appropriate relationships to be achieved between the functional zones described previously.

Refer also to 3.3 Disaster Planning for additional internal relationship considerations and the functional relationship diagram included below.

2.5.3 Functional Relationships / Diagrams

The following diagram sets out the relationships between zones in a Neonatal Care Unit.



3 Design

3.1 Access

There will be a single public entry point to the unit. Separate access will be provided for patient transfers, staff and the movement of supplies and waste.

Consideration needs to be given to safe access for parents after hours.

Circulation routes through the unit will allow access and ease of movement for a mobile x-ray or ultrasound and a mother on a bed or trolley.

Refer to 2.2.8 Neonatal Follow-Up and Ambulatory Care Services for access to follow up outpatient services.

3.2 Parking

Parents may need access to on-site parking for prolonged periods.

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

3.3 Disaster Planning and Major Incident Management

Each unit will have operational plans and policies detailing the response to a range of internal and external emergency situations. This will require consideration of the placement of emergency alarms, and the need for uninterrupted power supply (UPS) to essential clinical equipment, services such as emergency lighting, telephones, and the emergency evacuation of patients. The design of the unit needs to ensure there are strategies available to manage internal evacuation requirements.

Duress alarm systems may assist with disaster planning as they activate a discreet security response to the site and provide immediate assistance. However, they should be considered as a supplement to - rather than a substitute for - the facility's comprehensive disaster response plan.

Consideration should be given to the location of the unit in the event of a full evacuation. A critically unwell newborn may be complex to evacuate as the transport incubator are heavy at approximately 125kg.

For further information refer to local jurisdiction disaster management plans and AusHFG resources below:

- Part C: Design for Access, Mobility, Safety and Security
- Part B: Section 80 General Requirements.

3.4 Infection Prevention and Control

3.4.1 General

Good infection control practices in the newborn environment are essential.

An infection control risk assessment should be undertaken prior to concept design planning. Refer to local jurisdictional policies and procedures and to AusHFG resources below:

- Part D: Infection Prevention and Control
- Pandemic Preparedness - Health Infrastructure Planning & Design Guidance
- Isolation Room - Engineering and Design Requirements.

3.4.2 Hand Hygiene

Clinical handwash basins should be provided in neonatal ICU/HDU zones and in special care spaces as per recommendations in Part D – Infection Prevention and Control Hand Hygiene Facilities Schedule and Placement.

The final handwash basin location is subject to the unit layout and ease of access from each bay. An alcohol based handrub (ABHR) are also to be provided at point of care in every cot space.

Hand basins should be located to ensure there is sufficient space to perform adequate decontamination without encroaching on the clinical patient zone.

Visitors and staff will have access to hand hygiene at the unit entry, in the family support areas and at each cot space.

ABHR dispensers should also be provided generally throughout the unit to supplement hand basins. In particular, these should be located in each cot space and at the unit entry.

3.4.3 Isolation Rooms

Isolation rooms will be provided for newborns with known infections and for newborns transferred into the unit until their infectious status is known. Both standard isolation (Class S) and negative pressure isolation (Class N) may be required.

Requirements for isolation rooms will need to be confirmed through a risk assessment process which will include consideration of the role delineation of the health service and patient profile.

Neonatal Care Units that have a high number of admissions from outside hospitals such as neonatal catchment paediatric or general hospitals may require more isolation rooms. Isolation rooms should have the ability to provide support to the most complex patients. At least one of these rooms must be Class N - negative pressure ventilation with adjoining anteroom.

Rooms may be used as standard rooms when not occupied by an infectious newborn. All rooms will have a dedicated Type A hand wash basin.

These rooms will be located on the periphery of the unit as newborns must not travel through Inpatient Areas to reach the cot space.

Soft furnishings such as fabric upholstery or window curtains are not to be used in this room.

Also refer to AusHFG resources:

- Part D – Infection Prevention and Control
- Isolation Room – Engineering and Design Requirements

3.5 Environmental Considerations

3.5.1 Acoustics

While noise is a normal part of newborn development, numerous studies identify excessive noise as a primary stressor for babies, with newborns particularly disoriented by noise because their hearing is still developing.

Ambient noise levels should be monitored and not exceed an hourly level (LAeq) of 40-45 dB(A).

Noise also plays a role in the distraction/stress of staff in health care facilities.

Noise control measures within a Neonatal Care Unit may include arranging cots in single rooms and in groups of two to four cots. Appropriate floor, wall and ceiling finishes should be selected to reduce or absorb noise while also considering IPC considerations. Other infrastructure to support the concept of ‘quiet ward’ may be applied such as sending nurse call alarms to devices held by specific clinicians who are dedicated to specific area of the unit to contribute to noise reduction.

Should parent accommodation be provided, the location will need to ensure that noise arising from other areas within the unit does not interrupt sleep of the mother/family. Should babies be rooming-in prior to discharge, additional acoustic treatment may be required between rooms.

Refer to Australian / New Zealand Standards, 2000, AS/NZS 2107:2000 Acoustics - Recommended design sound levels and reverberation times for building interiors.

3.5.2 Lighting

All clinical areas should have controlled natural lighting for the development of circadian rhythms in newborns.

Direct overhead ambient lighting in the newborn care space as well as direct lighting outside the area that may be in the newborn's line of sight must be avoided. This will minimise danger or damage to the developing retina, visual pathways and developing brain.

Lights should be angled or designed to reduce reflection off the incubator canopy.

The cot space should have three separate light sources and controls including:

- general room ambient lighting - controlled by dimmer
- individual workspace lighting - not directly on newborn with controls to allow immediate darkening of any cot position to permit transilluminance
- observation/procedure light for every cot space.

Lighting must be colour-corrected to natural lighting. Ambient lighting levels in cot bays should be adjustable, through a range of at least 100 to 600 lux as measured at each cot space.

Low level/height lighting should be considered to ensure sufficient visibility for parents/staff to move around if sleeping areas need to be dimmed.

Refer to Australian / New Zealand Standards, 2009, AS/NZS 1680.0:2009 Interior lighting - Safe movement.

3.5.3 Natural Light and Views

External windows are ideally provided throughout the unit, especially in patient areas, the family lounge and in parent rooms. In other areas where direct access to windows is not possible, access to natural light should be maximised through borrowed light or skylights as appropriate.

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

External views should be provided where possible, however where this is not possible, internal views to green walls and internal atriums may be provided instead. Positioning of staff workstations within rooms should maximise opportunities for access to views.

3.5.4 Privacy

Consideration of privacy, both acoustic and visual should be considered early in the planning stage of the project to achieve a balance of privacy with the need for staff observation.

Neonatal care areas should be designed and configured to give staff the greatest ability to observe newborns, however each cot space should have provision for visual privacy for the newborn and their parents. This is particularly relevant for families with an extremely ill or dying newborn and for breastfeeding or expressing mothers. In the cot space, mobile screening may be used rather than curtains.

In open or podded Neonatal Care Unit, alternative strategies such as the use of headphones by family in adjacent bed areas during ward rounds may assist with acoustic privacy.

Access to interview rooms and dedicated family areas will also support requirements for privacy.

3.5.5 Interior Considerations

Colour selection relative to newborns is largely inconsequential, because of their lack of visual perception. A neutral colour palette, or colours found in nature should be considered rather than saturated colours.

Biophilic design principles should be adopted for interior design as they may assist with family, visitor and staff well-being.

3.5.6 Arts Integration

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

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

3.5.7 Signage and Wayfinding

For information refer to:

- AusHFG Part C: Design for Access, Mobility, Safety and Security
- Jurisdictional wayfinding information such as NSW Health Wayfinding for Healthcare Facilities.

3.6 Space Standards and Components

3.6.1 Ergonomics

The layout of bed spaces will ensure staff and parents can easily access the medical service panels and/or pendants.

Selected equipment, such as incubators, are bulky and difficult to manoeuvre. These items must be easily retrieved and transferred to the bed space.

The design of the unit will ensure patients, staff, visitors and maintenance personnel are not exposed to avoidable risks of injury.

For more information refer to AusHFG Part C: Design for Access, Mobility, Safety and Security.

3.6.2 Doors and Corridors

All entry points, doors or openings, should be unobstructed to permit the manoeuvring of beds and other equipment. Larger openings and ceiling heights may be required for special equipment as determined by local requirements. Refer to AusHFG Part C: Design for Access, Mobility, Safety and Security for further guidance for clear door opening.

The size of incubators is often enlarged by the addition of monitors, other equipment 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 this equipment.

Corridors should be designed to enable non-discharged mothers, while on a patient bed, to access the neonatal care unit to visit their newborns without obstructing the unit's operations including during emergencies. Corridors throughout neonatal intensive/high dependency care units should be 2400mm minimum clear width. When these units are collocated with special care, the same corridor width should be retained to enable future flexibility of use.

Centre aisles between facing cots in open plan environments should be a minimum width of 2200mm. Double-loaded configurations - where two enclosed neonatal care rooms are positioned opposite each other - should be designed to enable smooth turning of large mobile equipment and minimise the risk of contact with walls.

Refer to AusHFG Part C: Design for Access, Mobility, Safety and Security for further information on circulation spaces and corridors clearances.

3.6.3 Windows

The location and design of windows in patient areas requires careful planning to provide maximum sun protection. Shading devices must be neutral in colour or opaque to minimise colour distortion from transmitted light.

3.7 Safety and Security

3.7.1 Safety

Planning and design of spaces should be guided by WHS principles to ensure a safe and supportive environment for newborns, family/visitors and staff.

Cot spaces must be designed to allow all monitoring equipment to be readily visible and within safe reach of staff. This may require special mounting devices for monitors (articulated arms), rails or shelving at appropriate height and position. The height of monitors and other equipment should be adjustable.

3.7.2 Security

The security system should protect the physical safety of newborns, families and staff in the unit and in particular minimise any risk of abduction.

There will be a single controlled entry for the public and visitors. Consideration may be given to the use of closed-circuit television (CCTV) with phone or video intercom for after-hours access. In some cases, parents may be issued with access control cards to facilitate access out of hours.

Emergency exits will be alarmed.

A newborn security tag system may be used if local policies and procedures require this level of security. Evaluate the capital, operational, and maintenance cost implications when considering new security system provisions or infrastructure.

Ready access to duress alarms for staff will be required especially at receptions and staff stations. Dual access to be provided in consult and interview rooms to avoid staff entrapment. Other considerations include operational policies for unit lockdown.

Refer to AusHFG Part C Design for Access, Mobility, Safety and Security and local jurisdictional resources such as NSW Health Protecting People and Property Manual.

3.8 Finishes

3.8.1 General

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

Ensure that all finishes, including adhesives, applied coatings, and sealants, have low volatile organic compound (VOC) content to minimise negative impacts on the development of newborns.

Refer to AusHFG Part C, the Standard Components for Neonatal Care specific rooms and local jurisdictional policies.

3.8.2 Floor Finishes

Refer to local jurisdictional policies and to AusHFG resources below:

- Part C Design for Access, Mobility, Safety and Security
- Part D Infection Prevention and Control

3.8.3 Wall Protection

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

3.8.4 Ceiling Finishes

Sound-absorbing, acoustic finishes are required in all clinical areas and main support areas. Engage with project engineers to identify and implement practical noise attenuation strategies tailored to the acoustic requirements of specific rooms.

Also refer to AusHFG Part C: Design for Access, Mobility, Safety and Security.

3.9 Fixtures, Fittings and Equipment

The Room Data and Room Layout Sheets in the AusHFG contain standard rooms as described in this HPU.

Refer to AusHFG resources:

- Part C: Design for Access, Mobility, Safety and Security
- Standard Components for Neonatal Care specific rooms.

3.10 Building Service Requirements

3.10.1 Information Communications and Technology (ICT) Systems

ICT is a key enabler for Neonatal Care Units to optimise patient care and service efficiencies. ICT systems, associated hardware and peripherals necessary to support clinical and operational requirements should be assessed during the planning and design process to ensure an appropriate level of capability is provided while also supporting future flexibility.

There will be facilities for x-ray viewing (using PACS); clinician performed ultrasound viewing; and a local Neonatal Information System which will be required to operate at each bed bay.

An electronic medical record can be expected within the life span of the unit. Design should anticipate this eventuality to ensure that its introduction does not cause major disruption to the environment or functioning of the unit. Consideration needs to be given as to the method and location of entering and retrieving patient information. This may occur at the bedside, mobile units/devices or at staff stations. Access at the patient bedside may be provided through wall mounted computers, workstations on wheels and/or other mobile devices.

Telemedicine is becoming increasingly common and important for clinical operations and education purposes. An allowance in the ICT strategy should be made to ensure connection of critical care telemedicine equipment in all treatment areas. A telemedicine strategy that is consistent with jurisdictional approaches and service networking arrangements will need to be considered in the early stages of planning.

There must be systems for optimal fail-safe communications between staff, and for parents to communicate by telephone with bed side staff. This will include an emergency call system and nurse assist system.

Reliable Wi-Fi connectivity for clinical use should be a consideration in new healthcare developments. Ensuring seamless integration will allow medical devices to access real-time data, support remote monitoring, and facilitate online meetings. Parents/family members should also have access to Wi-Fi and phone charging capability.

Increasingly, technology is provided as a means of connecting families with other friends and family, e.g. ‘streaming’ video of the newborn.

3.10.2 Telephones

Hospital telephones located in patient areas should have a light call indicator and low ringing tones to minimise noise; cordless phones are preferred.

The use of mobile phones at the bed side should similarly be either prohibited or ringing tones switched to silent.

Most hospital phone systems use IP based infrastructure. Data outlets should be allocated to each bed bay to align with the number and type of communication technology devices to be used within the space.

3.10.3 Clocks

A clock must be clearly visible from each bed space; this may be via read-out on the cardiac monitor. The reception, staff station and all treatment areas must have a synchronised clock system.

3.10.4 Arrangements for Medical Services

Medical services may be provided via a pendant or wall mounted.

Ceiling-suspended pendants may be horizontally or vertically arranged, with a single or double articulated arm.

There are advantages and disadvantages that should be considered when ceiling-mounted services pendant or wall-mounted medical services panels are being selected for Neonatal Care Units:

	Advantages	Disadvantages
Wall mounted Medical Services Panel	• less intrusive in the bed space • less intimidating • preserves all available natural light • less expensive • enhanced aesthetics may allow for easier integration to the décor of the room • lower capital costs.	• requires more floor space for equipment • may provide less flexibility regarding the location of services • potential for equipment overload on one side of the patient • potential for clutter behind the cot including cords from equipment.
Ceiling Mounted Services Pendant	• provides flexibility • various items of equipment can be accommodated on the pendant which frees up floor space • frees up space at the back of the incubator for ease of staff movement • more ergonomic as they are height adjustable and movable • easily adaptable to suit patient needs and procedural demands.	• occupies more space around the bed • may interrupt natural light • higher initial investment costs • potentially higher specialised and maintenance costs • require dedicated ceiling space for installation.

Regardless of which option or mix of options is selected, the arrangement of outlets must be identical at each cot to ensure that staff can be familiar with their work zone wherever they are.

Other medical services requirements are described in the AusHFG Standard Components.

3.10.5 Electrical Services

All electrical systems within the intensive care and high dependency care areas will be cardiac protected in cot bays, rooms and other treatment space used for patient care. Body protection is required in special care environments.

Uninterruptible power supply (UPS) must be available to provide continuous emergency power to intensive care equipment in accordance with local engineering services guidelines.

3.10.6 Provision of Medical Gases and Use of Nitric Oxide

Medical gases such as medical air, oxygen and suction shall be provided as required for patient care in the form of piped services with outlets installed into wall mounted medical service panels or ceiling mounted pendants.

Nitric oxide (a vasodilator) is being increasingly used in the treatment of very premature newborns. It is usually provided by portable cylinder if required. It may be reticulated from a local manifold; however, this is not recommended due to the associated environmental, capital and whole of life costs.

If inhaled nitric oxide is to be administered regularly for newborns in Neonatal Care Units, gas scavenging may be required to maintain the safety of patients, healthcare staff, and visitors. A thorough risk assessment should be conducted, particularly in areas where nitric oxide by-product concentrations cannot be effectively dispersed by adequate ventilation system.

Secure storage for nitric oxide cylinders will be required. Specialist advice should be obtained to ensure appropriate ventilation and safety provisions are implemented for storage facilities.

3.10.7 Mechanical Air Conditioning and Ventilation Services

Air conditioning shall be provided for the department from a centralised plant room. Class N and P isolation rooms shall be equipped with air conditioning supply and exhaust systems that comply with the AusHFG Isolation Room - Engineering and Design Requirements, as well as all applicable jurisdictional standards.

Also consider overhead air conditioning outlet position to minimise airflow on baby and parents when giving skin-to-skin care and temperature control in Procedure Room, Bathing and Examination Room to assist in maintaining newborn body temperature.

Refer to local jurisdictional policies and procedures and to AusHFG Part D: Infection Prevention and Control.

4 Components of the Unit

4.1 Standard Components

Rooms / spaces are defined as:

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

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

The current Standard Components can be found at:
www.healthfacilityguidelines.com.au/standardcomponents

4.2 Non-Standard Components

Provide the Non-Standard Components as described in this section, according to operational policy and service demand.

4.2.1 Patient Room – Neonatal, Palliative Care

Description and Function

One patient room may be designated as a purpose-built space for the palliative care of dying newborns. However, this room should be able to accommodate other newborns when not required for this purpose.

Location and Relationships

This room should be located in a quieter area of the unit with consideration of appropriate access for family members.

Considerations

The Patient Room – Neonatal, Palliative Care should be designed with comfortable, less clinical furnishings, and with appropriate décor and artwork.

Access to facilities for bathing and laying out the newborn is required.

There should be space for a parent to sleep overnight next to their newborn therefore a bed or sofa bed should be considered for this room.

Consideration of increased privacy and access for mothers who may still be recovering from childbirth or have limited mobility.

4.2.2 Family Bereavement Room

Description and Function

The Family Bereavement Room is provided to enable parents to stay with their newborn receiving palliative care.

Location and Relationships

The room should be collocated with the Patient Room – Neonatal, Palliative Care. Discreet access for additional family members may be considered.

Considerations

The Family Bereavement Room should be designed with comfortable non-clinical furnishings and including the amenity for parents to sleep overnight in the room with direct access to a collocated ensuite.

The design should be culturally appropriate and meet the spiritual needs of families. Consideration should be given to local cultural elements including requirements for the practice of rituals and ceremonies relating to life and death.

4.2.3 Bathing and Examination Area

Description and Function

The Bathing and Examination Area provides for assisted bathing of newborns with a collocated examination area. In addition, a range of parent education can occur in this space.

Facility requirements include:

- a baby bath which is usually a mobile height adjustable bath. A separate baby bath inset into a bench with a shower hose may also be considered.
- examination bench with over-head light
- storage
- oxygen and suction
- a hand wash basin.

Fixed baths should not be provided in patient care areas, i.e. in the rooms or bays, due to infection control risks associated with microorganisms found in water and drains.

In addition, hand wash basins in bathrooms should not be used as a baby bath.

Location and Relationships

This room should be located near the Staff Station.

This room is generally located only in Special Care Unit and not generally provided in Neonatal Intensive Care area unless these two pods are combined.

Considerations

The room should be maintained at a temperature that ensures that newborns are kept warm or be equipped with an adjustable heat source to ensure adequate warmth as needed.

Refer to Part D: Infection Prevention and Control for additional IPC guidance.

4.2.4 Procedure Room

Description and Function

The Procedure Room will be equipped for:

- resuscitation
- laser therapy for retinopathy of prematurity
- other procedures and/or neonatal surgery as required.

The Procedure Room may also double as a consult/treatment room for members of the multidisciplinary team. It may also be used for newborn retrieval if a 2-cot bay is not available.

Location and Relationships

This room should be centrally located - close to, yet distinct from, cot areas - to support trauma-informed design principles for other families and ensure privacy of the family of the newborn being retrieved.

Considerations

- Laser screening and in-use warning lights
- Radiant heater
- Pendant and gases as per a neonatal intensive care bay or wall mounted services panel, if preferred
- Large procedure or operating room light depending on anticipated procedures to be undertaken.

To ensure safety, functionality, and compliance with laser use standards, the following design elements should be considered in rooms where laser treatment will be undertaken:

- The room should be fully enclosed with non-reflective walls, floors, and ceilings to prevent laser beam reflection and exposure.
- Laser warning signs, compliant with standards, must be clearly visible at the room entrance during laser operation.
- Provide sufficient space for equipment, procedure cot, and staff, ensuring safe, unobstructed movement.
- Direct laser beams toward non-reflective surfaces; consider use of shutters or enclosures to control beam path.
- Ensure wavelength-specific laser eyewear is available and worn by all personnel and clients.
- Maintenance of proper ventilation for air quality and safety and use of smoke evacuators when needed.
- Install bright lighting for accuracy, with the option to darken the room for laser visibility.

4.2.5 Milk Preparation / Storage Room

Description and Function

The Milk Preparation / Storage Room provides a wet area to make up feeds including additives to breast milk and formula.

The storage of milk in refrigerators and freezers will also be provided in this area.

This is a staff only area and should be a lockable room. Requirements include:

- refrigerators (temperature monitored and linked to local unit monitoring system and/or building management system)
- freezers (temperature monitored and linked to local unit monitoring system and/or building management system)
- benchtop that can withstand hospital-grade disinfectants and rigorous cleaning protocols for preparation and to accommodate computer and barcoding equipment for human milk management systems
- a sink to dispose of unused milk products
- a hand wash basin, Type B
- storage.

Considerations

Furniture, Fittings and Equipment (FF&E) selection must ensure the refrigerator provides separation between bottles for individual patients to ensure each newborn receives the right feed. All feeds must be clearly labelled and identifiable.

If the room includes freezers, it requires adequate ventilation to prevent the equipment from overheating.

4.2.6 Milk Storage / Clean Up Room

Description and Function

The Milk Storage / Clean Up Room is a room accessed by mothers to store expressed breastmilk (EBM) and clean equipment associated with breastfeeding, e.g. breast pumps. It may also be used to store their EBM in the central refrigerators or freezers when decentralised milk refrigerators are not provided at the cot space.

The room will need a sink, storage and bench space for preparation.

Location and Relationships

This room should be located near the Milk Preparation / Storage Room.

Considerations

The space should only be used by the immediate family.

If the room includes freezers, it requires adequate ventilation to prevent the equipment from overheating.

Fridges and freezers for breastmilk storage should have temperature monitor and linked to local unit monitoring system and/or building management system.

Internet access may be considered for barcoding/milk labelling.

4.2.7 Family Lounge

Description and Function

The Family Lounge provides parents the opportunity to have a break from the clinical environment and engage and interact with other families.

Location and Relationships

This room should be located in the Family Area

Considerations

The family lounge needs to include a beverage bay for the preparation of light meals and beverages.

Holders for pamphlets or screens for electronic information for parents and visitors should be considered in this area to provide awareness and services information such as Neonatal Care Unit handbook, chaplain services, creche availability, social services information and other useful materials.

Access to amenities such toilets and showers is essential as is a children's play area.

Access to natural light/an external outlook is highly desirable.

4.2.8 Patient Resource Area

Description and Function

A quiet room to be used by parents to sit and read or use computers. Comfortable seating and a desk will be required.

Location and Relationships

This quiet room should be located in the Family Area providing appropriate provisions for the recharging of mobile devices.

Considerations

It is likely that many parents will want to connect laptops and other devices therefore recharging power points in multiple locations should be considered.

4.2.9 Multipurpose Family Lounge

Description and Function

The Multipurpose Family Lounge is generally provided for smaller units to provide parents the opportunity to have a break from the clinical environment by engaging and interacting with other families. This lounge should include a desk and chair for reading or computer use, along with a small, integrated kids' corner that allows parents or carers to maintain direct visual supervision.

Location and Relationships

The Multipurpose Family Lounge should be located in the Family Area.

Appropriate provision for recharging of mobile devices.

Considerations

The Multipurpose Family Lounge needs to include a beverage bay for the preparation of light meals and beverages.

Holders for pamphlets or screens for electronic information for parents and visitors should be considered in this area.

Access to toilets and showers is also essential.

Consider acoustic elements of this room to prevent noise reaching the clinical area.

Access to natural light/an external outlook is highly desirable.

4.2.10 Parent and Newborn Room

Description and Function

A limited number of overnight rooms will be required for activities such as care-by-parent prior to discharge (rooming in or transitional care). They are particularly beneficial for newborns with complex needs, including those born prematurely or with low birth weight, and provide a supportive environment where parents (including those with accessibility needs) can build confidence in caring for them.

The number of rooms provided will depend on the unit's practice pattern, the size of the region served and other available options.

The Parent and Newborn Room requirements will include:

- twin beds convertible to a double/queen bed plus space for a newborn bassinet(s)
- direct access to basin, toilet and shower facilities
- telephone and emergency call facilities
- a television (may be used for recreational and educational purposes)
- access to Wi-Fi and recharging outlets for mobile devices.

Location and Relationships

The newborns overnighting in these rooms will still be classified as inpatients, therefore the rooms must be within the secure area of the unit and adjacent to the other clinical areas.

Considerations

If newborns are rooming-in prior to discharge, it may be better to not equip the room with medical gases but instead simulate using equipment that will be used at home.

Consider space for maternal evacuation via adult transfer trolley if required in the event of obstetric emergency.

4.2.11 Staff Workroom - Telehealth

Description and Function

A private staff workroom with facilities for video conferencing patient consultations with specialist clinicians and to enable clinicians in remote locations to discuss cases. The room can be used for a variety of activities such as viewing medical images and discussions, for telehealth activities including liaison regarding transfers, virtual rounds etc. This room may also be used for consultations for staff education.

Inclusion of this room depends on operational guideline of unit.

In larger facilities such as tertiary hospitals, the telehealth workroom will be primarily used by staff providing clinical support or receiving newborn handover information via telehealth.

The receiver of clinical support via telehealth are typically located in smaller remote or rural facilities, which should be equipped with suitable ICT infrastructure - including a camera, workstation on wheels, microphone, and reliable internet connectivity.

Location and Relationships

This room should be located in staff only area, alongside other meeting rooms.

Considerations

Based on the jurisdiction, installation of Critical Care Overbed Network (CCON) cameras may be considered which can provide clinicians with access to specialists based at different hospitals.

Consideration should be made to the services requirements to supply power and voice/data to the ICT equipment.

This room may also be provided as proprietary single or multiple person soundproofed telehealth booth depending on project requirements. When considering these booths, service needs should be evaluated in alignment with manufacturer or supplier specifications.

5 Schedule of Accommodation

The application of the schedule of accommodation below will require confirmation of the total neonatal care cot capacity requirements through detailed clinical services planning.

The schedule of accommodation provided is based on the following indicatively sized Neonatal Care units/pods:

- 12 cot Special Care pod/unit
- 16 cot Neonatal Intensive Care/ High Dependency Care pod/unit
- 48 cot Neonatal Care Unit (3 pods).

A number of pods may be combined with shared access to entry/waiting, clinical support, family support and staff areas. The number and size of support areas will require adjustment to reflect the total cot numbers, the arrangement of cots and staffing profile, as noted in the schedule of accommodation below.

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

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

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

5.1 Entry, Waiting and Public Amenities

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
RECP-10	Reception	SC-D		10		10	1	12	**Shared for 12 & 16-cot scenarios.** Adjust to meet overall size of unit. Provision of reception at entry to unit depends on arrangement of unit and workforce profile. May also accommodate volunteers.
BMFD-3	Bay - Multifunction Device	SC		3		3	1	3	**Shared for 12 & 16-cot scenarios.**
WAIT-10 WAIT-20	Waiting	SC/ SC-D	1	8	1	10	1	20	Adjust to meet overall size of unit and local requirements. External to unit, visitors also encouraged to access centralised hospital visitor amenities. Dedicated parent support areas also located within unit.
BVM	Bay - Vending Machine	SC	1	2	1	2	1	2	**Optional for 12-cot scenario**. May be shared with adjacent services.
BWTR	Bay - Water Fountain	SC	1	1	1	1	1	1	**Optional for 12-cot scenario.** May be shared with adjacent services.
WCPU	Toilet - Public	SC	1	3	1	3	3	3	Number dependent on size of unit and collocation with other services.
WCAC	Toilet - Accessible	SC	1	6	1	6	1	6	**Optional for all scenarios.** Include if not located nearby.
PAR	Parenting Room	SC	1	9	1	9	1	9	**Optional for all scenarios.** Include if not located nearby.

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
BPROP	Bay - Property	SC-D	1	1	1	1	1	2	External to the unit for visitors' use for coats, bags etc. Locate adjacent to reception.
CONS	Consult Room	SC			1	14	3	14	Number dependent on local requirements. Multifunction assessment rooms. Will require heat table and scales.
MEET-20	Meeting Room	SC					1	20	**Optional**. Multifunctional meeting / education room for families. Culturally appropriate design to meet local requirements. Video/teleconference facilities required.
	Volunteer's Workroom						1	12	Includes storage for volunteers.
	Discounted Circulation		**25%**		**25%**		**25%**		

Visitors will have access to hand hygiene at the unit entry, in the family support areas and at each cot space.

5.2 Patient Areas

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
PTB-NEO-SC	Patient Bay - Neonatal, Special Care	SC	10	12.5			20	12.5	Area excludes basins. Consider larger bay(s) for neonates requiring long term non-invasive ventilation.
PTB-NEO-SC	Patient Bay - Neonatal, Special Care, Flex	SC-D		16.5				16.5	**Optional for 12 and 48-cot scenarios**. Qty as per project requirement depending on care complexity including provision of longer-term non-invasive ventilation. Locate in Special Care pod/unit within close observation by staff from within the bay or from a staff station.
PTB-NEO-SC	Patient Room - Neonatal, Special Care, Isolation, Standard	SC-D	1	17				17	**Optional for 48-cot scenario.** Use PTB-NEO-SC as starting point and include handwash basin. Number of S class rooms dependent on local infection control requirements.
PTB-NEO-SC	Patient Room - Neonatal, Special Care, Isolation, Negative Pressure	SC-D		17				17	**Optional for 12 and 48-cot scenarios.** Use PTT-NEO-SC as starting point and include handwash basin. Number of N class rooms dependent on local infection control requirements.
PTB-NEO-IC	Patient Bay - Neonatal, Intensive Care / High Dependency	SC			10	16.5	12	16.5	Area excludes basins. Number of NICU and HDU bays as per project requirement.

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
PTB-NEO-IC	Patient Room - Neonatal, Intensive Care / High Dependency, Isolation, Negative Pressure	SC-D			1	17	3	17	Use PTB-NEO-IC as starting point and include handwash basin. Number of N class rooms dependent on local infection control requirements.
PTB-NEO-IC	Patient Room - Neonatal, Intensive Care / High Dependency,	SC-D			4	17	12	17	Use PTB-NEO-IC as starting point and include handwash basin. Number of S class rooms dependent on local infection control requirements.
PTB-NEO-SC PTB-NEO-IC	Patient Room - Neonatal, Palliative Care		1	17	1	17	1	17	Designed appropriately for palliative care with collocation of family bereavement room. For flexibility, consider designing the room to accommodate other newborns when not required for palliative care.
BHWS-A	Bay - Handwashing, Type A	SC-D	3	1	5	1	11	1	Type A basins. Assigned at a rate of 1:2 to 1:4 in ICU/HDU and 1:4 to 1:6 in special care. Assume 1:2 and 1:4 respectively during early planning and assess opportunities for more efficient allocation during schematic design.
ANRM	Anteroom	SC			1	6	3	6	As required for Class N Isolation Rooms.
	Family Bereavement Room		1	15	1	15	1	15	Family bereavement/counselling/ multipurpose area. Recommend collocation with palliative care room.
OVES	Overnight Stay -	SC	1	5	1	5	1	5	Attached to multipurpose family room.
PROC	Procedure Room	SC-D			1	25	1	25	For resus, laser therapy, other. Room may be used as newborn retrieval area.
INTV	Interview Room	SC	1	12	1	12	1	12	
	Bathing / Examination Area		1	10	1	10	1	15	Shared bath area is associated with special care given that babies in intensive care are too unwell to be transferred.
SSTN-14	Staff Station	SC-D	1	12	1	16	3	16	Number dependent on layout. Recommend 20m^2 for Children's Hospitals given number of subspecialty teams.
OFF-CLN	Office - Clinical Workroom	SC/S C-D	1	15	1	20	3	15	Number dependent on layout or centralise where appropriate. Recommend 20m2 for Children's Hospitals given number of subspecialty teams.
BPATH	Bay - Pathology Point of Care Testing (POCT)	SC/ SC-D	1	2	1	2	1	2	Locate centrally. Quantity to be determined based on reasonable travel distances.
BPTS	Bay - Pneumatic Tube Station	SC	1	1	1	1	1	1	
BRES	Bay - Resuscitation Trolley	SC	1	1.5	1	1.5	3	1.5	1 per pod. For resus equipment. Locate in a non-public area with ease of access to resus trolley.
BMEQ	Bay - Mobile Equipment	SC	1	4	1	4	3	4	General mobile equipment storage e.g. trolleys & ophthalmic imaging.
BMEQ	Bay - Mobile	SC-D			1	6	1	6	X-Ray/Ultrasound.
BLIN	Bay - Linen	SC	1	2	1	2	1	2	
	Bay - Storage		1	1	1	1	1	1	Storage for baby clothes.
Discounted Circulation			**35%**		**35%**		**40%**		

5.3 Clinical Support

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
	Milk Preparation / Storage Room		1	8	1	10	1	14	Adjust to meet overall size of unit. Includes refrigerators and freezers. Staff only area. Bench space for preparation and computer and barcoding equipment for milk management systems. Includes formula preparation and storage.
	Milk Storage / Clean Up Room		1	8	1	8	1	8	Adjust to meet overall size of unit. Can be accessed by family. Used to sterilise expressing equipment and store milk.
MED-14	Medication Room	SC-D	1	10	1	12	1	14	Multiple Medication Rooms may be combined and centralised. Final area to consider automatic medication dispensing systems.
MED-14	Medication Room - Vaccines/TPN	SC-D					1	10	Include medications, vaccine and TPN fridges. Multiple Medication Rooms may be combined and centralised.
CLN-10	Clean Store	SC-D	1	12	1	16	1	48	Clean stock. Assumes compactus. HEPA filtration is not required.
STEQ-20	Store - Equipment	SC-D	1	18	1	32	1	96	
	Biomedical Workroom				1	8	1	20	For set up and servicing.
	Store - Gases				1	3	1	5	
STEQ-14	Store - Transport Equipment	SC-D	1	8	1	12	1	14	
STEQ-14	Store - Retrieval Equipment	SC-D	1	8	1	12	1	14	**Provision and final area requirements to be confirmed with neonatal retrieval services and will depend on the role of the retrieval service.**
DTUR-10 DTUR-12	Dirty Utility	SC/S C-D	1	8	1	10	1	12	Locate centrally. Qty to be determined based on reasonable travel distances.
ECL-10 ECL-14	Equipment Clean-Up	SC/S C-D	1	8	1	10	1	14	For cleaning cots, incubators, dismantling & cleaning respiratory equipment. Include area for leaving dirty equipment ready for cleaning with appropriate dirty to clean flows. May include staff use only washing machine based on unit policy.
CLRM	Cleaner's Room	SC	1	5	1	5	2	5	
DISP-10 DISP-15	Disposal Room	SC/S C-D	1	8	1	10	1	16	Area requirement and qty will depend on size of service. Size requirements for a Disposal Room will be dependent on a department's estimated waste output, the frequency of waste collection and local operational policies for waste management that may dictate the number of waste streams and minimum bin sizes.
Discounted Circulation			**35%**		**35%**		**40%**		

5.4 Family Support Areas

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
	Family Lounge				1	16	1	24	Include beverage bay.
PLAY	Play Area - Paediatric	SC/SC-D			1	6	1	10	For siblings.
	Parent Resource Area				1	9	1	9	Quiet room for use of laptop, literature or other resources.
	Multipurpose Family Lounge		1	12					A multipurpose family lounge with beverage bay, parent resource area and a kids' corner.
PAR	Feeding Room	SC-D	1	10	1	10	1	12	For expressing milk & breast feeding. Window to outside desirable.
LAUN-PT	Laundry - Domestic	SC/SC-D	1	4	1	6	1	6	Baby and parent clothing. Incorporate linen cupboard for small items.
	Parent / Newborn Room		1	15	2	15	6	15	Rooming in, to accommodate parent/s and newborns.
OVES	Overnight Stay - Ensuite	SC	1	5	2	5	6	5	1:1 for Parent / Newborn rooms. Provision of an accessible ensuite will be needed.
OVBR	Overnight Stay - Bedroom	SC		10		10		10	**Optional for all scenarios**. Other parent accommodation - number of rooms will be dependent on unit policy for overnight accommodation and access to other accommodation e.g. Ronald McDonald House.
OVES	Overnight Stay - Ensuite	SC		5		5		5	**Optional for all scenarios**. Provide if other overnight parent accommodation is provided. May be shared between 2 rooms for other overnight rooms.
WCPU	Toilet - Public	SC		3	2	3	2	3	**Optional for 12-cot scenario** as may be able to share nearby public amenities. Number dependent on size of unit. To be located in ready access to inpatient areas.
BPROP	Property Bay	SC			1	1	1	3	
	Discounted Circulation		**25%**		**25%**		**25%**		

5.5 Staff Areas

Room Code	Room Name	SC/ SC-D	Special Care Pod / Unit 12 cots		Neonatal Intensive Care / High Dependency Care Pod / Unit 16 cots		Neonatal Care Unit 48 cots (3 pods)		Comments
			Qty	m^2	Qty	m^2	Qty	m^2	
OFF-1P-12	Office - 1 Person, 12m2	SC		12		12		12	Allocation will be dependent on staff profile and jurisdictional policies relating to staff work areas.
OFF-1P-9	Office - 1 Person, 9m2	SC		9		9		9	Allocation will be dependent on staff profile and jurisdictional policies relating to staff work areas.
OFF-WS	Office - Workstation	SC-D		5.5		5.5		5.5	Allocation will be dependent on staff profile and jurisdictional policies relating to staff work areas.
OFF-WS	Office - Workstation	SC		4.5		4.5		4.5	Allocation will be dependent on staff profile and jurisdictional policies relating to staff work areas.
BMFD-3	Bay - Multifunction Device	SC	1	3	1	3	1	3	
MEET-30	Meeting Room, 30m2	SC					1	30	May be shared across a number of pods.
MEET-20	Meeting Room, 20m2	SC			1	20	1	20	May be used for simulation training. Provide medical gases.
MEET-15	Meeting Room, 15m2	SC	1	15					
SRM-15 SRM-35	Staff Room	SC/SC-D	1	15	1	20	1	40	
	Staff Workroom - Telehealth				1	9	1	12	
CHST-10 CHST-35	Change - Staff (Female / Male / All Gender)	SC-D	1	14	1	18	1	40	Indicative only; peak access periods need to be assessed; separate male and female and support for all gender/gender neutral facilities needed is in line with local policies. Includes toilets, showers, lockers; size depends on the staffing per shift.
WCAC	Toilet - Accessible	SC		6		6	1	6	**Shared for 12 & 16-cot scenarios.**
OVBR	Overnight Stay - Bedroom	SC			1	10	1	10	**Optional for 16 & 48-cot scenarios.** Requirement depends on staffing arrangements. Often provided centrally. Access to toilets required e.g. Staff Change Rooms.
Discounted Circulation			**25%**		**25%**		**25%**		

6 References and Further Reading

6.1 References

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