

Part B – Health Facility Briefing & Design

20 Birthing Unit



*i*HFG

International Health Facility Guidelines
2025

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20 Birthing Unit

1 Executive Summary

This Functional Planning Unit (FPU) outlines the requirements of the Birthing Unit which caters for the patient experiencing the different stages of childbirth, from labour through to delivery and postpartum care. Several potential Birthing Unit models are described including a traditional Birthing Suite, suitable for larger facilities, where the patient is moved between dedicated areas depending on their stage of labour and is separate and adjacent to the Maternity Unit or, the LDR/P (Labour, Delivery, Recovery +/- Postpartum) model, meaning a self-contained room which addresses all the patients' needs within the one room.

Several environmental design elements that can be implemented to create an optimal experience for the patient include temperature adjustment, dimmable lighting, music systems and aromatherapy diffusers. The LDR/P room design should create a warm and relaxing ambience and a comfortable patient environment, while also being fitted with the necessary medical gases and emergency equipment. These may be concealed to optimise patient comfort but remain easily accessible for staff in case of emergency.

In cases where the Operational Policy includes water birthing, there are provisions for a birthing pool to be integrated within the LDR/P room. In this case, there are additional structural and safety requirements that must be applied to ensure the safety of patients and staff.

The Functional Relationship Diagrams demonstrate the ideal internal and external relationships between key rooms such as the Inpatient Maternity Unit and Nurseries, and other departments within the hospital. Design Considerations such as acoustics, privacy and finishes are addressed and important guidelines relating to safety and security, building services and infection control are also outlined.

The typical Schedule of Accommodation (SOA) is provided using Standard Components (typical room templates) and quantities for the rooms. The SOA is presented for facilities of all RDLs for 2, 4, 8, and 12 rooms within the Birthing Unit of a healthcare facility.

Refer to the further reading materials at the end of this FPU for supporting documentation.

2 Introduction

The Birthing Unit provides facilities for the safe prenatal care, delivery and immediate Postnatal care of mothers and their newborn babies. The number of LDR rooms and the size of the associated service areas shall be as required by the proposed obstetrical workload outlined in the Facility's Service Plan.

The Birthing Unit is associated with and is commonly located adjacent to the Maternity Unit (or Obstetric Unit).

This FPU will address Birthing Unit facilities and requirements specifically. Refer to the Maternity Unit FPU in these Guidelines for Antenatal and Postnatal Inpatient Unit, General Care Nursery and Special Care Nursery. Neonatal Intensive Care (NICU) is outlined in a separate FPU.

3 Functional and Planning Considerations

Operational Models

Hours of Operation

The Unit will operate on a 24 hour basis, with admissions at any time of the day or night.

Models of Care

Patient care including Antenatal care, delivery and Postnatal care may be provided in a number of different ways that will impact on the organisation and provision of facilities including:

- Midwife-managed or midwife case load care, where care is delivered by a single midwife or by a group/ team of midwives, from both hospital and community settings
- Obstetrician-led care, where an Obstetrician is the main provider of Antenatal care and is present for the birth. Nurses provide Postnatal and sometimes intrapartum care
- General practitioner-led care, where a GP provides the majority of the Antenatal care with referral to specialist obstetric care as needed. Obstetric nurses or midwives perform intrapartum and immediate Postnatal care
- Shared Care, which may include General Practitioners, Midwives, Obstetrician and/ or Consultants (such as Neonatal Specialists)
- Woman Centred Care where women have the choice of delivery method, practitioner and location, whether in a hospital, Birthing Centre or at home.

The specific care of expecting mothers may involve a variety of techniques to cater to patient preferences. This may include additional services such as aromatherapy (water based or oil based), Birthing Balls/ Mediballs or the use of Support bars.

The models chosen could change depending on the patients' pregnancy risk factors. The size of the Birthing unit is another element influencing the care delivery strategies. A more traditional arrangement, which includes a separate Birthing Suite and maternity in-patient beds, may be used in larger Birthing facilities. The LDR and LDRP models' numerous self-contained rooms are included in the layout that smaller Birthing centres require.

Traditional model (Birthing Suite)

A traditional Obstetrical model of care is based on the patient being moved between areas dedicated to the individual processes such as assessment and examination, delivery and recovery. Facilities enabling the successful collaboration between caregivers should be considered.

The preferred design for a Birthing Unit however, particularly for smaller birthing centres, includes a number of self-contained rooms equipped to perform several of the processes, without the patient having to move.

These models are explained in greater detail below.

Labour, Delivery, Recovery Model (LDR)

It is highly recommended that the LDR model is adopted. LDR design model accommodates the delivery process from labour through to delivery and recovery of the mother and baby within the one

room. The room is equipped to handle minor complications, however the patient is only moved from this room in the case of complications requiring surgery (e.g. to the Operating Room for Caesarean section surgery) or after recovery, to an inpatient room. LDR rooms are single occupancy. LDR is the default model within these Guidelines.

Labour, Delivery, Recovery, Postpartum Model (LDRP)

The Room design and capability to handle emergencies in the LDRP model are similar to LDR rooms. The LDRP model eliminates an additional move to postpartum care. Equipment is moved to the room as needed, rather than moving the patient to an alternative room. This model is particularly relevant in the increasing demand for early discharge, within 24 hours.

General Practice Shared Care Model (GPSC)

With varied degrees, midwives, general practitioners, and obstetricians collaborate in the GPSC paradigm. It usually only applies to low-risk pregnancies since women who are pregnant with higher risk levels need more specialised treatment (note: pregnancy risk can alter during the course of the pregnancy). The majority of Prenatal and Postnatal care is delivered by a general practitioner, while nursing/ midwifery staff provide inpatient and outpatient obstetric care.

If the Birthing Unit does not provide a stand-alone Special Care Nursery or Neonatal Intensive Care Unit, a General Care nursery may be provided.

Planning Models

The Birthing Unit may be provided as a:

- Unit within the Maternity Unit in a Hospital facility
- Stand-alone facility in a community setting, which may also be referred to as a Birth Centre (or names such as Mothercraft)

For ease of access for patients in labour, a ground floor location for the Birthing Unit is recommended, however, ready access via lifts is acceptable. The Unit will require easy 24-hour access for patients arriving by private vehicles, taxi cabs and ambulances.

The Birthing Unit will require rapid access to an operating unit for Emergency Caesarean Section deliveries. This may be achieved by incorporating an Operating Room within the Birthing Unit otherwise, convenient and rapid access to the main Operating Unit within a hospital is essential. Inclusion of Operating Room facilities within the Unit will be determined by the Clinical Service Plan and Operational Policy.

Rapid and convenient access can be defined as the following:

- 180 metres must be able to be horizontally travelled in 3 minutes at 1 metre per second or;
- A combination of horizontal and vertical travel. This can be achieved with vertical travel at 3 metres per second, plus 45 seconds waiting for the lift as well as horizontal travel at 1 metre per second to a maximum of 3 minutes total travel time.

The Birthing Unit shall be located and designed to prohibit non-related traffic through the unit. When the LDR Room and Operating Room are in proximity, access and service arrangements shall be such that neither staff nor patients need to travel through one area to reach the other. Access to an outdoor area is also desirable for patient recreation. This may be provided as a courtyard in a multi-storey facility. Patients often benefit from walking as a pain management technique.

If the main Operating Units are utilised for Emergency Caesarean sections, one Operating Room should be assigned as an Emergency Caesarean section Room. This Operating Room must not be booked for other types of surgery including Elective Caesarean sections.

The functional needs of the unit should take priority over location requirements. However, some consideration should be given to reducing disturbing sounds (from on-site and off-site) such as sirens and traffic, and avoiding disturbing views.

The hours of operation of other units should be considered when planning the location of the Birthing Unit. Staff should not be working in an isolated area, and the spatial organisation should enable staff to observe and assist each other. Staff should not be required to travel through unoccupied areas at night.

The placement of the Birthing Unit within the spatial plan may also consider the accessibility of women and their support people to food and retail amenities that may be offered within a hospital setting.

Functional Areas

The Birthing Unit consists of the following functional areas:

- Entry/ Reception area including:
 - Waiting areas for families and provisions for children
 - Public amenities including parenting facilities and a play area
 - Consult/ Interview room for discussions with patients and family members
 - Storage for wheelchairs
- Birthing Suite or LDR/P rooms with (the following may be separate or combined depending on which model is adopted):
 - A dual-purpose room for assessment/ examination and recovery
 - LDR/P rooms
 - Associated Ensuites and Bathrooms
 - Waiting areas within the Birthing Unit for support persons and families
- Support Areas including:
 - Beverage making facilities
 - Bays for storage, Linen, blanket warmer as required, Resuscitation Trolley and mobile equipment
 - Cleaners' room
 - Clean Utility/ Medication Room
 - Dirty Utility Room
 - Disposal Room
 - Handwashing facilities at entries and exits
 - Staff Station
 - Storerooms for sterile stock, equipment and general supplies
- Staff Areas including:
 - Change Rooms with lockers, toilets and showers
 - Meeting Rooms
 - Offices and write-up/ handover rooms
 - Overnight On-call rooms
 - Staff Room including beverage making facilities and refrigerators
- Optional Operating Rooms for emergency caesarean sections with
 - Operating Room
 - Baby resuscitation. May be in the same room or situated in a separate but immediately adjacent location. Reasonable privacy is required between the mother's area and baby's area
 - Scrub room
 - Holding and Recovery bays
 - Support areas including clean-up and sterile stock room

Entry/ Reception Area

The Reception is the receiving hub of the unit and should therefore ensure the security of the entire Unit through access control. The Reception may be used for the registration of expectant mothers. Alternatively, this can occur at the Staff Station within the Birthing Unit, according to the Operational Policy. Clear access from Reception to the nursing administration offices and education areas is beneficial.

Patients, their support people and members of the public will need to have good access to amenities including separate male/ female toilet facilities and waiting areas. A separate waiting area for families should be provided, preferably with a small play area for children.

A Consult/ Interview room may be included for private discussions with patients and families.

LDR Room

The LDR room caters for all the processes surrounding the birth of a newborn such as assessment, labour, delivery (with/ without intervention), promotion of rooming-in for bonding between mother and baby (and the greater family), resting and recovery and finally, the transfer to a maternity inpatient unit or discharge in case of a community midwifery programme. Most or all of these processes will take place in one dedicated room in the LDRP model of care. This FPU focuses on the LDR model described previously.

An LDR room shall include:

- An Ensuite containing shower and toilet facilities, provision of a bath is optional. Birthing units require acoustic privacy from other parts of the unit
- An Examination/ Assessment area within the LDR, used for consultations, examinations and if required, for delivery
- Family/ support people facilities, allowing them to take part in the entire delivery process, including provision for partners/ support person to stay overnight

LDR rooms and Ensuities are to comply with Standard Components particularly for essential inclusions which contain provisions for maternal and baby resuscitation equipment and services. Refer to Standard Components; Birthing Room - LDR and Ensuite – Birthing Room, for details.

Water Birthing

If water birthing is included in the Operational Policy, the LDR room will require direct access to an indoor birthing pool area. This may be integrated within the LDR room. Birthing pools may be a fixed item or removable and will need to be installed to manufacturer's specifications. Additional considerations include:

- Provision of non-slip surfaces to the area
- Provision of grab rails for patients
- Provision of conveniently located emergency call and patient/ nurse call buttons
- Provision of medical gases that may be used for pain relief, in the pool area
- Provision of sufficient space to enable a patient lifter and staff to access the pool in the event of a patient needing to be lifted out of the pool
- Ongoing cleaning and disinfection of the pool
- Disposable covers may be considered for birthing pools

Note: These Guidelines do not suggest or recommend water birthing as a safe or appropriate birthing option. Operators should take full responsibility for the choice of Water Birthing.

Support and Staff Areas

Support Areas will include Bays for linen, resuscitation trolley, mobile equipment, Cleaners' Room, Clean and Dirty Utility rooms, Disposal Room, Staff Station and Store Rooms for consumable stock, sterile stock and equipment.

Like elsewhere in the facility, the sharing of space, equipment and staffing should be promoted both within the Unit and with other Units. Within the Unit, sharing of staff stations, support and waiting

areas may be possible between the different zones. Toilet facilities and educational spaces could be shared with other units. Where spaces are shared, the size should be modified proportionally to suit the number of occupants.

Operating Room/s and Support Facilities

If provided within the Birthing/ Obstetric Unit, emergency Operating Rooms shall have:

- Operating Room to comply with Standard Components – Operating Room, General; provision should be made for twin baby resuscitation areas within the Operating Room
- Scrub-up/ Gowning Bay to comply with Standard Components Scrub-up/ Gowning
- Clean-up Room
- Two patient bed bays for recovery for each Operating Room, to comply with Standard Components Patient Bay, Recovery Stage 1.

An Anaesthetic Room is optional as anaesthetics are generally administered in the Operating Room in urgent cases, however the room may be used for patient preparation and administration of spinal/ epidural anaesthetics, particularly when the Operating Room is in use.

The time taken to travel to the Operating Room from the LDR room ideally should not exceed three minutes. An assessment of the distance between the LDR room and the Operating Rooms should be done taking into consideration the average speed of travel and whether lifts are involved including any potential delays associated with lift travel.

Functional Relationships

External

Obstetric emergencies can rapidly result in life threatening situations for the mother or neonate.

The Birthing Unit requires rapid access to:

- Operating Unit
- Anaesthetic Services
- Intensive Care Unit – General Adult and Neonatal
- Emergency Unit
- Ambulance transport parking bay
- Helipad

The Birthing Unit should be in close proximity to:

- Short term parking/ drop off bay for dropping off expectant mothers
- Hospital car parking and public transport access points
- Outpatients/ Women's Health Units
- Inpatient Antenatal and Postnatal Units
- General Care Nursery
- Special Care/ Neonatal Intensive Care Nursery
- Delivery drop off and parking bay

Other departments that may relate to the Birthing Unit include Community Maternity services, Day Only Units, Medical Imaging (particularly for obstetric ultrasound), Pathology and Pharmacy services.

Internal

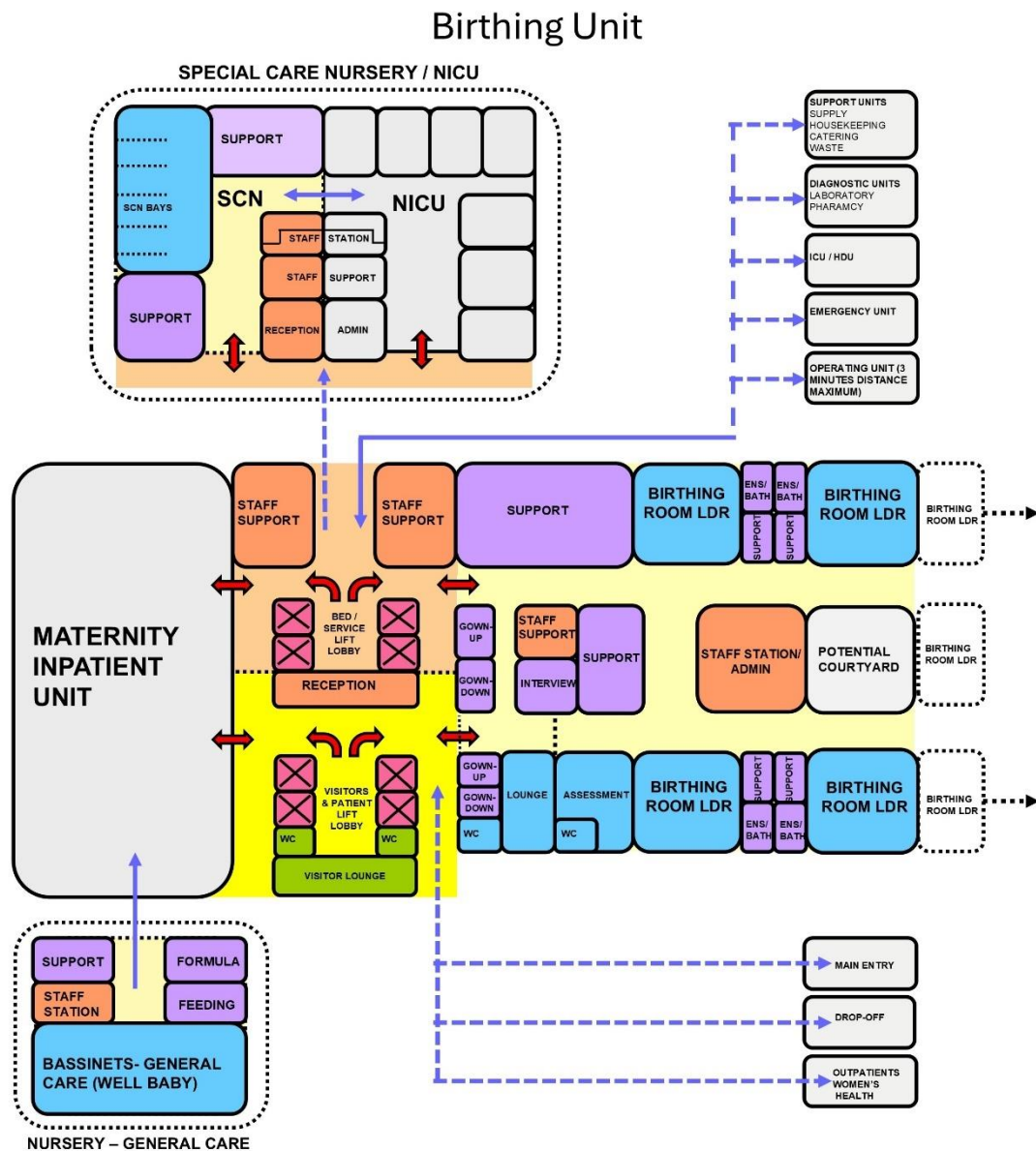
The Reception area at the entrance to the Unit should provide access control for all visitors to the Birthing Unit. Adjacent to Reception, separate Waiting areas may be provided for patients and their families. From the Reception, direct access to assessment/ consultation/ examination and LDR rooms shall be provided.

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Direct access to a climate controlled internal garden or courtyard for mothers and their support people would be beneficial.

Functional Relationship Diagrams

The functional relationships of the Birthing Unit are demonstrated in the Functional Relationship Diagram below.



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Birthing Unit

Important external Relationships identified in the diagram above include:

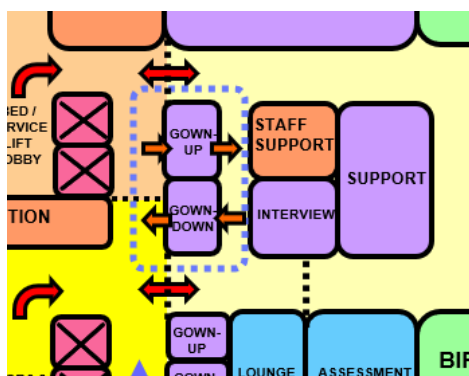
- External access and entry for arriving patients, directly from an access corridor or via a lift
- Close access for emergency patients from a helipad or Emergency Unit
- Close access to Operating Unit
- Access to service Units via a service corridor
- Ready access to Neonatal ICU/ Special Care Nursery and Maternity Inpatient Units

The optimal internal relationships are demonstrated in the diagram above:

- Reception located with control of access for visitors
- Waiting area at the Unit entry and within the Unit for families
- Ready access between Birthing Unit, Nurseries and Maternity Inpatient Units
- Separate entrances to the Unit for staff and visitors
- Staff Station located centrally to LDR rooms
- Support areas decentralised, located close to treatment areas for staff convenience

Optional PPE Entrance Module

In cases where the Unit is to be isolated due to an infectious disease outbreak such as a pandemic, there may be a requirement to include Gown-Up and Gown-Down rooms for visitors to access upon entry to and exit from the Unit.



4 Design Considerations

General

Patient Treatment Areas

Birthing Unit design involves recognising and respecting the diverse needs, values and circumstances of each patient.

As 24-hour access is required to the Unit, a dedicated drop off zone and entry with rapid access to the Birthing Unit or lifts that transport patients directly to the Birthing Unit is required. After-hours access requires careful consideration, it should be well sign-posted, well-lit and conveniently located.

LDR & LDRP rooms

Each LDR or LDRP room should be single occupancy and include a neonatal resuscitation space and equipment storage within the room.

The trend in LDR room design is to provide a home-like environment with concealed services and procedural lighting. Additional considerations include:

- Privacy screening from the corridor
- Temperature control within the room for mother and baby
- Space for patients to walk around the room with sufficient supports

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- Provisions within the room to support a variety of pain relief methods such as bean bags, alternative seating areas and supports for patients to lean on at standing and sitting heights
- Provision of soothing music or aromas
- Operating theatre should be equipped to cater to multiple births. Spatial allowance should be provided for two baby positions in the emergency Operating room for this purpose

Current research indicates the bed should not be the focal point in the room, indicating to the patient that the bed is the centre of attention. Consideration should be given to location of comfortable seating as the focal point and the Ensuite and bathing areas within the room to create privacy.

LDR & LDRP room fittings, furniture, fixtures, equipment and services must comply with Standard Component Birthing Room - LDR.

Ensuite Bathrooms and Showers

The LDR room will require an Ensuite Bathroom or Ensuite Shower with toilet. The shower should have dual shower sprays in opposing directions.

If a Bathroom is provided, it will require an island bath with access around the bath for patient lifting, as well as steps and rails for safe patient access.

Environmental Considerations

Acoustics

The Unit in general should be isolated from disturbing sounds of traffic and sirens of ambulances, either through its strategic location or through applying sound absorption and insulation techniques.

The following areas require careful consideration of acoustic privacy:

- Noisy spaces such as Waiting and play areas shall be located further away from the treatment spaces and staff areas
- Loudspeakers, paging systems and music in common areas
- Interview areas where confidential information is discussed, must not be overheard in adjacent areas
- Delivery sounds must not be audible outside confines of space

Natural Light

Natural light and pleasant views through a window are essential and shall be available in all LDR rooms and are desirable in patient lounge areas and staff rooms. Windows are an important aspect of sensory orientation and the psychological wellbeing of patients.

All high acuity care areas such as LDR rooms (including Bathrooms/ Ensuities), assessment rooms, baby examination/ resuscitation areas require colour-corrected lighting to allow staff to observe natural skin colour. Lighting in LDR rooms should be dimmable for patient comfort.

Privacy

Privacy is essential for both the Assessment and LDR rooms. Avoid direct views into the room from the outside, through the windows and through the door – i.e. do not provide door viewing panels. A privacy curtain should be provided. Furthermore, the foot end of the bed should be facing away from the door or the access point.

Interior Décor

Interior décor includes colour, textures, surface finishes, fixtures, fittings, furnishings, artworks and atmosphere. It is desirable that these elements are designed and selected to create a calming, non-threatening environment that meets the expectations of patients, staff and visitors.

LDR rooms, lounges, treatment, and reception areas should be open and inviting, of a home-like appearance rather than institutional. Access to outdoor areas is desirable.

Colours should be carefully considered in combination with lighting to ensure that they do not mask skin colours particularly in rooms where clinical observation takes place.

Space Standards and Components

Accessibility

Design should provide ease of access for wheelchair dependent patients in all patient areas including Assessment Rooms, LDR rooms and Lounges. Waiting areas should include spaces for wheelchairs (with power outlets for charging electric mobility equipment) and suitable seating for patients or their visitors with disabilities or mobility aids. The Unit may require provision for bariatric patients.

Doors

Doors used for emergency bed transfer within the Birthing Unit or to Operating Units must be appropriately positioned and sized. A minimum of 1400mm clear opening is recommended for doors requiring bed/ trolley access.

Also refer to Part C - Access, Mobility and OH&S of these Guidelines.

Ergonomics/ OH&S

Design of clinical spaces including LDR rooms and Nurseries must consider Ergonomics and OH&S issues for the patient, visitors and staff to ensure their safety and welfare.

Refer to Part C - Access, Mobility and OH&S of these Guidelines for further information.

Size of the Unit

The number of LDR rooms required will be dependent on:

- The size of the population served by the Unit and demographic trends
- The average length of stay
- The average number of elective Caesarean section deliveries
- Early discharge programmes
- Transfers from other units or hospitals

Assuming an LDR model where rooms may be occupied for 24 hours after admission, the following can be used as a guide:

- 3 LDR Rooms with 1 Assessment room for up to 1000 births
- 4 LDR Rooms with 1 Assessment room for up to 1500 births
- 5 LDR Rooms with 1 Assessment room for up to 2000 births
- 8 LDR Rooms with 1 to 2 Assessment rooms for up to 3000 births

Schedules of Accommodation have been provided for typical Birthing Units located within a hospital with 2, 4, 8 and 12 rooms.

Refer to Section 5 Schedules of Accommodation.

Bed Spacing / Clearance

All LDR rooms shall have sufficient clearance around the patient bed to allow for easy access to the patient and the baby resuscitaire, and for the movement of equipment. Appropriate clearances should be ensured to account for emergency procedures to be performed if required.

Drug Storage

The Birthing Unit will include lockable drug storage within the Clean Utility or Medication room/s. Refer to Standard Components Clean Utility/ Medication and Store-Drugs Data Sheets and Room Layout Sheets for further details.

Note: Storage for dangerous drugs must be in accordance with the relevant legislation.

Safety and Security

The number of access points to the unit should be minimised. All entries should be under direct control of staff, and daytime access is to be via the Reception area. After-hours access should

provide direct access to the Birthing Unit. As a minimum, this entry point should contain video intercom and remote access hardware, allowing for 24 hours access for expectant mothers, support persons of patients in the Unit or parents of neonates.

All entry points should also be controlled through an Access Control System – a combination of reed switches, electric strike/ magnetic locks and card readers. Card readers should be provided on both sides of these entry points and these should only be deactivated in case of an emergency. CCTV surveillance of entry/ exit points is also recommended and if provided, should be monitored at a central control point.

To increase the safety of newborns, the use of electronic tagging may be implemented immediately from birth. This involves a combination of the infant wearing a tag around the ankle and sensor panels located at every access and egress point to the unit and possibly the entire hospital or facility. Inclusion of this measure will be according to the Facility's Operational Policy.

All reception areas and staff stations are to have duress alarm buttons in obscure but easily accessible locations.

To promote OH&S of staff, where lifting devices are used for baths or pools within the LDR rooms, special attention should be given to the storage and handling of this equipment.

Finishes

A homely, non-clinical ambience is preferred for LDR rooms and lounge areas. Medical equipment and services should be easily accessible but concealed behind built in joinery or screens. The finishes including fabrics, floor, wall and ceiling finishes should create an environment that is relaxing and has a non-institutional appearance.

The Birthing Unit requires the following finishes:

- Floors that are smooth, impervious to moisture and easily cleaned
- Walls that are seamless, protected from trolley damage and easily cleaned
- Ceilings that are sealed and easily cleaned

Colours should be chosen carefully to avoid an adverse impact on the skin colour of patients and neonates.

Refer to Part C - Access, Mobility and OH&S of these of these Guidelines for more information on wall protection, floor finishes and ceiling finishes.

Fixtures, Fittings and Equipment

Patient and foetal monitoring such as cardiotocograph (CTG) monitors should be located in close proximity to provide ready access to the patient and the monitor.

For specific information on fittings, fixtures and equipment typically included in the Unit refer to Part C - Access, Mobility and OH&S in these Guidelines, the Room Layout Sheets (RLS) and Room Data Sheets (RDS).

Window Treatments

Window curtains or blinds must be washable, fireproof and cleanly maintained at all times in compliance with the Infection Control Policy of the facility.

If blinds are to be used instead of curtains, the following will apply:

- Blinds must not have loose cords or strings that can cause children to become entangled
- Vertical or roller blinds are preferred over horizontal blinds as they do not provide numerous surfaces for collecting dust
- Horizontal blinds may be used within a double-glazed window assembly with a knob control on the bedroom side.

For specific information on fittings, fixtures and equipment typically included in the Unit refer to Part C - Access, Mobility and OH&S of these Guidelines, the Room Layout Sheets (RLS) and Room Data Sheets (RDS).

Patient Entertainment systems

LDR rooms and lounge/ waiting areas may be provided with the following entertainment/ communications systems according to the Operational Policy of the facility:

- Television
- Telephone
- Internet through (Wi-Fi)

A single patient handset may combine the entertainment system, nurse call system and lighting control all in one unit.

Building Service Requirements

Mechanical Services (HVAC)

The Birthing Unit area should be maintained with positive pressure relative to adjacent areas.

The LDR and Assessment Rooms should be between 20° C to 23° C and should be individually adjustable allowing the temperature to be raised quickly to 25°-27° C when a baby is born. The temperature control devices should be located within the room and should only be accessible to the staff.

To ensure confidentiality and reduce noise the ventilation ductwork should minimise transmission of sounds throughout the Unit.

Ventilation and proprietary scavenging systems should be designed to control occupational exposures to medical analgesic gases, used in LDR and recovery rooms.

Refer to Part E - Engineering Services for relevant HVAC standards applicable to LDR Rooms.

Medical Gases

Oxygen, medical air and suction will be required to each Assessment and LDR room for mother and baby resuscitation. Consideration should be given to provision of additional medical gases in LDR rooms for twin deliveries. Oxygen/ nitrous oxide used in the Birthing Unit will require scavenging suction. For stand-alone Birthing Units a gas bottle store and manifold room will be required and located within an external enclosure, adjacent to road access.

Refer to Part E - Engineering Services for relevant standards related to medical gas installations.

Hydraulics/ Water Treatment

Warm water supplied to all areas accessed by patients within the Inpatient Unit should be maintained at 38°C and shall not exceed 43°C. This requirement applies to all staff handwash basins and sinks in patient accessible areas.

Refer to Part E - Engineering Services for details.

Information Technology (IT) and Communications

The Birthing Unit will require efficient and reliable IT/ Communications services for effective operation of the Unit.

The following items relating to IT/ Communication shall be addressed in the design of the Unit:

- Electronic patient records and patient information systems
- Electronic forms and requests for investigations, pharmacy, catering, supplies
- Picture archiving communications systems (PACS)
- Telephones including cordless and mobile phones/ DECT
- Computers, laptops and tablets
- Patient call, nurse assist call, emergency call systems
- Paging for staff and emergencies
- Duress systems, personal mobile duress systems may be considered

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- Supply and records management systems including bar coding for supplies
- Wireless network requirements
- Videoconferencing requirements
- Communications rooms and server requirements.

Nurse Call / Emergency Call / Staff Call

Patient call, staff assist and emergency call facilities shall be provided in all patient areas including Assessment rooms, LDR rooms, Lounges, Toilets, Ensuites and Bathrooms for patients and staff to use in case of urgent assistance requirements.

Individual call buttons will alert to an annunciator system. The circulation area should include annunciator panels strategically placed, especially in staff stations, staff rooms, and meeting rooms. These panels should be "non-scrolling" in nature so that all calls may be seen at once. In order to ensure that patients are not disturbed at night, these call systems' audible signal should be able to be controlled. At all instances, a discreet approach must be taken when alerting staff members.

Infection Control

General

The placenta is considered contaminated/ clinical waste and should be disposed of according to the hospital waste management policy. Disposal using placental macerators is not appropriate and should be avoided. Freezer storage should be provided within the unit to allow for collection by the family, for cultural reasons. Placenta disposal using cultural methods should also be accommodated as required.

Hand Basins

Each Assessment and LDR room will include a clinical handwash basin. Handwash basins will be required at the Unit entry and exit, Staff Stations and in corridors.

Hand basins are to comply with Standard Components - Bay - Handwashing and Part D - Infection Control in these Guidelines.

Antiseptic Hand Rubs

Antiseptic hand rubs should be provided in areas where they can be used frequently, such as at points of care, near patient beds and in high-traffic areas. The placement of antiseptic hand rubs should be consistent and reliable throughout facilities.

Antiseptic hand rubs are necessary and essential for safe patient care delivery, however they should be provided in addition to Handwash Bays and not as a substitute.

Antiseptic hand rubs are to comply with Part D in these Guidelines.

Isolation Rooms

The need for Negative Pressure LDR Isolation rooms is to be evaluated by an infection control risk assessment and will reflect the requirements of the Service Plan. Where an isolation room is included in the service plan, entry to the room must be via an airlock/ anteroom which contains handwash facilities, gown and mask storage and waste disposal.

The pressurisation of the isolation room and the airlock must be monitored and displayed on a device on the corridor side. The monitor must have an audible and visible alarm. An Ensuite - Special, directly accessible from the Isolation Room, shall be provided for every isolation room, negative or positive.

Refer to Parts D & E in these Guidelines.

5 Components of the Unit

Standard Components

Standard Components are typical rooms in a health facility, each represented by a Room Data Sheet (RDS) and Room Layout Sheet (RLS). Sometimes, there is more than one configuration possible therefore, more than one room layout sheet can be found in the Standard Components for a room with the same function. They may differ in room size and/or the requirement of FF&FE items.

The Room Data Sheets are presented in a written format, describing the minimum briefing requirements of each room type divided into the following categories:

- Room Primary Information; includes briefed areas, occupancy, room description, relationships and special room requirements
- Building Fabric and Finishes; describes fabric and finishes for the room's ceiling, floor, walls, doors and glazing requirements
- Furniture and Fittings; lists all the fittings and furniture typically located in the room; Furniture and Fittings are identified with a group number indicating who is responsible for providing the item according to a widely accepted description as follows:

Group	Description
1	Provided and installed by the Builder/ Contractor
2	Provided by the Client and installed by the Builder/Contractor
3	Provided and installed by the Client

- Fixtures and Equipment; includes all the serviced equipment commonly located in the room along with the services required such as power, data, water supply and drainage; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for the provision of these items
- Building Services - indicates the requirement for communications, power, HVAC (Heating, Ventilation and Air Conditioning), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory.

The Room Layout Sheets (RLSs) are indicative plan layouts and elevations illustrating an example of a good design. The RLS indicated are designed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided by the following criteria are met:

- Compliance with these Guidelines
- Minimum floor areas as shown in the schedule of accommodation
- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS.

Standard Components have considered the required design parameters described in these Guidelines. Each FPU should be designed with compliance to Standard Components - Room Data Sheets and Room Layout Sheets, nominated in the Schedules of Accommodation in Appendices of this FPU.

Non-Standard Components

Non-standard rooms are rooms are those which have not yet been standardised within these Guidelines. As such there are very few Non-standard Rooms. These are identified in the Schedules of Accommodation as NS.

Bay - Neonatal Resuscitation

A Bay for assessment, resuscitation, treatment and transfer preparation of Neonates with critical conditions.

A handwash bay (type A) must be located in close proximity. Resuscitation diagnostic equipment such as infant resuscitation trolley, and ventilator must be provided. Isolated power (IPS) must be provided.

6 Schedule of Equipment (SOE)

This Schedule of Equipment (SOE) below lists the major equipment required for the key rooms in this FPU.

Room Name		
Examination/ Assessment Room - Birthing, Room Code (exas-b-i)		
Diagnostic set (optional)	Monitor: physiologic, antepartum, foetal (CTG)	Suction adapter
Doppler: foetal	Oxygen flowmeter	Ultrasound scanning unit: OB/ GYN
Light: examination	Stretcher: OB/ GYN (or Birthing bed)	
Birthing Room - LDR, Room Code (birm-i)		
Air flowmeter	Infusion pump: epidural	Oxygen flowmeter
Bassinet	Infusion pump: syringe	Suction adapter
Bed: birthing, electric	Light: examination/ procedure	Table: overbed
Chair: recliner, electric	Locker: bedside	Warmer unit: neonatal, with resuscitation
Infusion pump: double channel	Monitor: physiologic, intrapartum, maternal/ foetal	
Procedure Room, Room Code (proc-25-i)		
Air flowmeter	Monitor: physiologic, acute care	Stretcher: procedure/ recovery
Infusion pump: single channel	Oxygen flowmeter	Suction adapter
Light: procedure	Refrigerator: drugs (optional)	

7 Schedule of Accommodation

The Schedule of Accommodation (SOA) provided in the Appendices of this FPU represents generic requirements for this Unit. It identifies the rooms required along with the room quantities and the recommended room areas. The sum of the room areas is shown as the sub-total of the Net Area. The total area comprises of the sub-total areas of these rooms plus an additional percentage of the sub-total applied as the circulation (corridors within the Unit). Circulation is represented as a percentage and is the minimum recommended target area. Any external areas and optional rooms/spaces are not included in the total areas in the SOA.

Within the SOA, room sizes are indicated for typical units and are organised into functional zones. Not all rooms identified are mandatory, therefore, some rooms are found as optional in the corresponding remarks. These Guidelines do not dictate the size of the facilities, and the SOA provided represents a limited sample based on assumed unit sizes. The actual size of the facilities is determined by the Service Planning or Feasibility Studies. Quantities of rooms need to be proportionally adjusted to suit the desired unit size and service needs.

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed within the departure forms included in Part A of these guidelines for consideration by the health authority for approval.

The table below shows a typical SOA for a 2, 4, 8, and 12 rooms for the Birthing Unit within a healthcare facility.

Birthing unit located within a health facility

Room/ Space	Standard Component Room Codes	RDL ALL Qty x m2 2 Rooms			RDL ALL Qty x m2 4 Rooms			RDL ALL Qty x m2 8 Rooms			RDL ALL Qty x m2 12 Rooms			Remarks
Entry / Reception														
Reception/ Clerical	recl-10-i similar				1	x	10	1	x	12	1	x	12	Provides access control to the unit
Waiting (Male / Female)	wait-sub-i wait-10-i wait-20-i				2	x	5	2	x	10	2	x	20	Divided into male/ female/ family areas
Play Area	plap-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Adjacent to family waiting
Parenting Room	par-i				1	x	6	1	x	6	1	x	6	May share with another co-located unit
Bay - Wheelchair Park	bwc-i similar	1	x	2	1	x	4	1	x	4	1	x	4	May share with another co-located unit
Consult/ Exam Room	cons-i				1	x	14	1	x	14	1	x	14	Optional
Store - Files	stfs-8-i stfs-10-i				1	x	8	1	x	10	1	x	10	For clinical records, optional if electronic records used
Toilet - Accessible	wcac-i							2	x	6	2	x	6	May share with another co-located unit
Toilet - Public	wcpu-3-i				2	x	3	2	x	3	2	x	3	Male/ Female; May share with another co-located unit
Patient Areas		2 Rooms			4 Rooms			8 Rooms			12 Rooms			
Examination/ Assessment (LDR Room)	exas-b-i				1	x	23	1	x	23	2	x	23	In addition to LDR Rooms; includes 2.5m ² store within the room; also used as a LDR room.
LDR Room	birm-i	2	x	30	4	x	30	8	x	30	12	x	30	Includes scrub basin and 3 m ² store within the room
Ensuite - LDR Room	ens-br-a-i or ens-br-b-i	1	x	6	3	x	6	5	x	6	7	x	6	Two options provided, they are either with or without bath, but both have showers. Minimum requirement is to provide a shower. A larger ensuite is recommended.
	maj-30-i										1	x	30	Optional; Qty to be determined by the Service Plan of the Hospital
Waiting (Male/ Female)	wait-10-i wait-15-i wait-25-i				2	x	10	2	x	15	2	x	25	Within Birthing Unit, for support persons
Procedure Room	proc-20-i	1	x	20	1	x	20	1	x	20	1	x	20	Optional; with resuscitation facilities, separate from resus in LDR Room
Support Areas														

Part B: Health Facility Briefing & Design
Birth Unit

Room/ Space	Standard Component Room Codes	RDL ALL Qty x m2 2 Rooms			RDL ALL Qty x m2 4 Rooms			RDL ALL Qty x m2 8 Rooms			RDL ALL Qty x m2 12 Rooms			Remarks
Bay - Beverage	bbev-op-i bbev-enc-i	1	x	5	1	x	5	1	x	5	1	x	5	
Bay - Blanket/ Fluid Warmer	bbw-1-i	1	x	1	1	x	1	1	x	1	1	x	1	Optional
Bay - Handwashing, Type B	bhws-b-i	1	x	1	1	x	1	2	x	1	3	x	1	At entry to the Unit and in Corridors
Bay - Linen	blin-i	1	x	2	1	x	2	2	x	2	2	x	2	
Bay - Mobile Equipment	bmeq-4-i	1	x	4	1	x	4	2	x	4	2	x	4	
Bay - Resuscitation Trolley	bres-i	1	x	1.5	1	x	1.5	1	x	1.5	1	x	1.5	Adult resuscitation trolley
Cleaners' Room	clrm-6-i	1	x	6	1	x	6	1	x	6	1	x	6	
Clean Utility	clur-8-i clur-12-i similar	1	x	8	1	x	8	1	x	12	1	x	14	
Dirty Utility	dtur-10-i dtur-12-i	1	x	10	1	x	10	1	x	12	1	x	12	
Disposal Room	disp-8-i disp-10-i				1	x	8	1	x	10	1	x	10	
Medication Room	medr-10-i similar				1	x	10	1	x	12	1	x	14	
Clean Utility/ Medication	clum-14-i				1	x	14	1	x	14	1	x	14	*Optional if Clean Utility and Medication Room provided.
Staff Station	sstn-10-i sstn-14-i sstn-20-i	1	x	10	1	x	10	1	x	14	1	x	20	May be provided as small sub stations to a group of rooms
Store - Equipment	steq-6-i steq-10-i steq-14-i	1	x	6	1	x	10	1	x	14	1	x	14	May be subdivided and located near LDR rooms
Store - General	stgn-8-i similar stgn-10-i stgn-14-i	1	x	6	1	x	10	1	x	10	1	x	14	
Store - Sterile Stock	stss-12-i similar	1	x	6	1	x	12	1	x	12	1	x	12	
Staff Areas														
Bay - Beverage	bbev-op-i bbev-enc-i				1	x	5	1	x	5	1	x	5	Optional, near Meeting Room
Change - Staff (Male/Female)	chst-10-i chst-12-i chst-14-i chst-20-i	2	x	10	2	x	12	2	x	14	2	x	20	Toilets, Shower & Lockers; size depends on staff numbers
Meeting Room	meet-l-15-i meet-l-25-i	shared			1	x	15	1	x	15	1	x	25	May be shared
Office - Clinical Handover	off-cln-i				1	x	15	1	x	15	1	x	15	Locate near staff station
Office - Single Person, 12 m ²	off-s12-i				1	x	12	1	x	12	1	x	12	Note 1; Service Manager
Office - Single Person, 9 m ²	off-s9-i	1	x	9	1	x	9	1	x	9	2	x	9	Note 1; Unit Manager

Part B: Health Facility Briefing & Design
Birth Unit

Room/ Space	Standard Component Room Codes	RDL ALL Qty x m2 2 Rooms			RDL ALL Qty x m2 4 Rooms			RDL ALL Qty x m2 8 Rooms			RDL ALL Qty x m2 12 Rooms			Remarks
Office - 2 Person, Shared	off-2p-i							1	x	12	1	x	12	Note 1; Nurse Educators, Specialists, Clinicians
Overnight Stay - Bedroom	ovbr-10-i	1	x	10	1	x	10	1	x	10	1	x	10	Optional
Overnight Stay - Ensuite	oves-4-i	1	x	4	1	x	4	1	x	4	1	x	4	Optional
Staff Lounge (Male / Female)	srn-15-i similar				2	x	15	2	x	15	2	x	15	May divide into Male & Female areas
Sub Total		172.5			437			646.5			887.5			
Circulation %		35			35			35			35			
Area Total		233			591			873			1198			

Operating Rooms Area (Optional)

Operating Rooms Area (Emergency C-Sections)		1 OR Room Qty x m2			Optional - Dependent on Service Plan
Air Lock	airl-6-i	1	x	6	Entry to Operating Room area
Operating Room	or-gn-i	1	x	42	
Anaesthetic Induction Room	anin-i	1	x	15	Optional
Bay - Neonatal Resuscitation	nb-r-i	1	x	10	Optional
Scrub-up/ Gowning	scrub-6-i	1	x	6	
Patient Bay – Stage 1 Recovery / Holding	pbtr-rs1-9-i	2	x	9	Optional. 2 Beds per Operating Room. Recovery may be shared with Assessment Room
Bay - Handwashing, Type A	bhws-a-i	1	x	1	
Clean-up	clup-7-i	1	x	7	
Change - Staff	chst-10-i similar	1	x	6	A second change room maybe required depending on operational policy; Toilet and shower are optional.
Staff Station/ Clean Utility	sscu-i	1	x	9	
Store - Sterile Stock	stss-12-i	1	x	12	
Sub Total		89			
Circulation %		40			
Area Total		124.5			

Please also note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components.
- Rooms indicated in the schedule reflect the typical arrangement according to the sample bed numbers.
- All the areas shown in the SOA follow the '4 Floor Area Measurement Methodology, Definitions and Diagrams' as described in these Guidelines. Refer to Part B, Complete Part.
- Exact requirements for room quantities and sizes will reflect Key Planning Units (KPU) identified in the Clinical Service Plan and the Operational Policies of the Unit.
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.
- Offices to be provided according to the number of approved full-time positions within the Unit.

8 Future Trends

When planning for future developments the following trends should be considered:

- Increased prevalence of obesity in teenage and adult women
- Steep rise in caesarean births
- Demand for midwife led care throughout the pregnancy, birth, and Postnatal period
- Recognition that the physical and sensory surroundings, including access to the outdoors, significantly impacts patients and their carers during the birthing process
- Recognition that flexible LDR rooms, where medical equipment is discreetly stored and the patient bed is not the focal point, enhances birthing experiences
- Demand for deep tubs/ baths to facilitate immersion in all positions, enhanced by ledges for support persons. Showerheads with pulsing features, fixed support rails, hammocks and resting ledges improve patient experience
- Expectation by families/ carers that live-in accommodation can be provided
- Strong preferences for one patient room to facilitate birthing and Postnatal period
- Patient demand for control over heating, lighting, and visitor access
- Early discharge into community support programs
- Ongoing development in support, monitoring, diagnostic, security, and treatment technology
- Ongoing development in electronic medical records and information technology
- Infant and facility security systems developments
- Recognition that midwives and birth attendants require a retreat space within the LDR room to complete documentation and provide separation from the patient and carers

9 Further Reading

In addition to Sections referenced in this FPU, i.e. Part C- Access, Mobility, OH&S, Part D - Infection Control, and Part E - Engineering Services, readers may find the following helpful:

- Annabelle, S., Maralyn, F., Christine, C. and Caroline, H. (2010). Examining the content validity of the Birthing Unit Design Spatial Evaluation Tool (BUDSET) within a woman-centred framework. Elsevier Inc. <https://pubmed.ncbi.nlm.nih.gov/23181648/>
- Australia and New Zealand College of Anaesthetists (ANZCA) Recommendations for Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations. <http://www.anzca.edu.au/resources/professional-documents/pdfs/ps55-2012-recommendations-on-minimum-facilities-for-safe-administration-of-anaesthesia-in-operating-suites-and-other-anaesthetising-locations.pdf>
- Australasian Health Facility Guidelines, Part B Health Facility Briefing and Planning, 0510 - Maternity Unit, 2023 Rev 8 https://aushfg-prod-com-au.s3.amazonaws.com/HPU_B.0510_8_update%20nitrous%20oxide.pdf
- Davis, D., Homer, C., Leap, N., Forbes, I. and Foureur, M. (2011). Testing the birth unit design spatial evaluation tool (BUDSET) in Australia: a Pilot Study. Vendome Group, LLC. https://www.researchgate.net/publication/51000564_Testing_the_Birth_Unit_Design_Spatial_Evaluation_Tool_BUDSET_in_Australia_a_pilot_study
- Gov.UK DH (Department of Health) Children young people and maternity services. Health Building Note 09-02: Maternity care facilities, 2013, refer https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147876/HBN_09-02_Final.pdf
- Foureur, M., Davis, D., Fenwick, J., Leap, N., Iedema, R., Forbes, I. and Homer, C. (2010). The relationship between birth unit design and safe, satisfying birth: Developing a hypothetical model. Midwifery, 26(5), pp.520--525. <https://www.sciencedirect.com/science/article/abs/pii/S0266613810000902>
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, Freestanding Birth Centres, 2022 Edition <http://www.fgiguideelines.org/>
- Sandall, J., Soltani, H., Gates, S., Shennan, A. and Devane, D. (2013). Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database of Systematic Reviews, 8. http://www.cochrane.org/CD004667/PREG_midwife-led-continuity-models-versus-other-models-care-childbearing-women
- University of Technology Sydney (AUS). Birth Unit Design. Retrieved from: <https://www.uts.edu.au/about/faculties/health/nursing-and-midwifery/collective-midwifery-child-and-family-health/research/past-projects/birth-unit-design>