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DEPARTMENT OF HEALTH

DOH Health Facility Guidelines 2019

Part B – Health Facility Briefing & Design
30 - Birthing Unit

Executive Summary

The Functional Planning Unit (FPU) covers the requirements of a Birthing Unit. The purpose of the Birthing Unit is to provide facilities for the safe prenatal care, birthing and immediate postnatal care of mothers and their newborn babies. The number of birthing rooms and the size of the associated service areas shall be as required by the proposed obstetrical workload outlined in the Service Plan.

A Birthing Unit must be located within a Hospital at RDL 3 and above. DOH does not permit stand-alone facility. Birthing Unit is associated with the Maternity Unit and the two FPU's should be read in conjunction of each other.

The Functional Zones and Functional Relationship Diagrams indicate the ideal external relationships with other key departments and hospital services. For the Birthing Unit this includes a relationship with Maternity, General Baby Nursery and NICU Areas. Optimum Internal relationships are demonstrated in the diagram by the juxtaposition of rooms and areas, with arrows indicating the path of travel.

Design Considerations address a range of important issues including Accessibility, Acoustics, Safety and Security, Building Services Requirements and Infection Control. This FPU describes the minimum requirements for support spaces of a typical Birthing Unit at Role Delineation Levels 3 to 6.

The typical Schedule of Accommodation is provided using Standard Components (typical room templates) and quantities for quantities for these numbers.

Further reading material is suggested at the end of this FPU but none are mandatory.

Users who wish to propose minor deviations from these guidelines should use the Non-Compliance Report (Appendix 4 in Part A) to briefly describe and record their reasoning based on models of care and unique circumstances.

The details of this FPU follow overleaf.

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1. Birthing Unit

1.1 Introduction

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

The Birthing Unit is associated with the Maternity Unit (or obstetric unit) which incorporates the following areas:

- Inpatient unit for mothers experiencing antenatal complications
- Inpatient unit for postnatal care, normal or complicated
- Well Baby (General Care) Nursery for newborn babies requiring minimal care
- Special Care Baby Unit for newborn babies requiring care for complications arising from medium risk factors.
- Neonatal Intensive Care Unit (NICU) may be incorporated into Maternity Unit or with Critical Care Units according to the Operational Policy of the facility.

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, Well Baby Nursery and Special Care Baby Unit. Neonatal Intensive Care (NICU) will be the subject of a separate FPU.

1.2 Functional & Planning Considerations

1.2.1 Operational Model

Hours of Operation

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

Model of Care

Maternity care including antenatal care, birthing 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 a hospital
- 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
- Shared Care, which may include Midwives, Obstetrician and/or Consultants (such as Neonatal Specialists).

The actual care of expecting mothers may be varied by the facility to some extent to cater for cultural differences and preferences. This may include additional services such as aroma therapy (water based or oil based), or Birthing Balls.

A traditional Obstetrical model of care is based on the patient being moved between areas dedicated to the individual processes. The preferred design for a Birthing Unit however, particularly for smaller units, includes a number of self-contained rooms fitted out to perform several of the processes, without the patient having to move. Design that enhances the ability of caregivers to collaborate

should be considered. It should be noted that in Abu Dhabi, birthing must be managed by an Obstetrician. 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 birthing process from labour through birthing and recovery of mother and baby within the one room. The room is equipped to handle minor complications. The patient is only moved from this room for complications requiring surgery (e.g. to the Caesarean section birthing room) or after recovery, to an in-patient room. LDR rooms are for single occupancy.

Labour, Delivery, Recovery, Postpartum Model (LDRP)

This occurs when a mother is not transferred to a maternity ward after birthing. room design and capability to handle emergencies 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.

The model of care selected may depend on the risk factors of the pregnancy or other factors such as the size of the birthing unit. Larger birthing centres may adopt a more traditional model where a separate Birthing Suite is provided along with dedicated maternity inpatient beds.

General Practice Shared Care Model (GPSC)

GPSC is a collaborative model that combines the skills of midwives and Obstetricians to varying degrees. It is generally only applicable to low risk pregnancies, as women with moderate to high risk pregnancy require more tailored care (note: pregnancy risk can alter during the course of the pregnancy.

1.3 Unit Planning Models

The Birthing Unit may be provided as a separate unit within a Maternity Unit in a Hospital facility utilising one of the two following models:

Model 1: Back to Back with Main Operating Room, or within 3 minutes of transport At 3m per second, +45 seconds for any lift waiting time +3m per second lift travel time

Model 2: Within the Birthing Unit, but with no shortcuts. As a minimum, follow the guidelines provided for the Day Surgery Unit

Regardless of which model is followed, the recovery area to the number of operating theatre is at a minimum ratio of 1:1.

The Birthing Unit will require rapid access to an operating unit for emergency Caesarean Section deliveries and this may be achieved by incorporation of an Operating Room within the Unit. Inclusion of operating facilities within the Unit will be determined by the Service Plan and Operational Policy.

The Birthing Unit shall be located and designed to prohibit non-related traffic through the unit. When Operating Rooms for Caesarean Section are located within the Birthing Unit, the location must prevent staff or patients travelling through the operating area to access other areas or units. Access to an outdoor area is also desirable for patient recreation; this may be provided as a courtyard in a multi-storey facility.

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, such as cemeteries and mortuaries.

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 design should enable staff to observe and assist each other. Staff should not have to travel through unoccupied areas at night.

It is highly recommended that the planning of the facility directs expected mothers as quickly as possible to the Birthing Unit for assessment, even though the unit may not be located on the ground floor. Alternatively, dedicated assessment rooms may be provided as part of the Emergency Unit on the ground floor, with the ability to deal with emergency deliveries.

Functional Zone

The Birthing Unit consists of the following functional Zones:

- Entry/ Reception area including:
  - Waiting areas for families and provisions for children
  - Public amenities including parenting facilities and play area
  - Consult/ Interview room for discussions with patients and family members
  - Storage for wheelchairs
- Birthing Suite with:
  - A dual-purpose room for assessment/ examination and recovery (dual purpose)
  - Birthing 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
  - Cleaner's room
  - Clean Utility/ Medication Room
  - Dirty Utility
  - 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
- Operating Rooms (optional) area for emergency Caesarean sections with:
  - Operating Room
  - Baby resuscitation; may be in the same room or situated at 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 Suite, according to Operational Policy. Good access from Reception to the nursing administration offices and education areas is beneficial.

Patients, their supporters and members of the public will need to have good access to amenities including separate male/female toilet facilities, prayer rooms (a minimum of 1 prayer room per sex, per floor) 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.

Birthing Suite

The Birthing Suite caters for all the processes surrounding the birth of a newborn: assessment, labour, birthing (with/ without intervention), bonding between mother and baby (and the greater family), resting and recovery and transfer to a maternity inpatient unit or discharge in case of a community midwifery programme. Most of these processes will take place in one dedicated room in the LDRP model of care.

A Birthing Suite shall include:

- Birthing rooms, typically LDR type, each with an Ensuite containing assisted shower and toilet facilities, provision of a bath is not permitted. Birthing units require acoustic privacy from other parts of the unit.
- An Examination/ Assessment Room; a multi-purpose room for consultations, examinations and if required, for birthing
- Family/supporters facilities, allowing them to take part in the entire birthing process, including provision for partners to stay overnight; this may be provided within the LDR Birthing Rooms
- Staff and support areas including Beverage Bay, Storage, Utilities, Staff Change areas and Staff Rooms.

Birthing Rooms and Ensuites 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, Ensuite – Birthing Room and Bathroom for details. The Birthing Suite and emergency operating room must have facilities for multiple birthing, including medical gases.

Water Birthing

If water birthing is included in the Operational Policy, the Birthing Room will require direct access to a water pool area; this may be integrated within the Birthing Room. Water 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 including nitrous oxide and oxygen used for pain relief to 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
- A body lifter is to be provided
- The pool or bath is to be above ground level, allowing for safe entry and exit. It should be large enough for the safe operation of a lifter and allow for the possibility of midwives to enter the water. An integrated seat may also be considered.

Note: These Guidelines DO NOT suggest or recommend water birthing as a safe or appropriate birthing option.

Support and Staff Areas

Support Areas will include Bays for linen, resuscitation trolley, mobile equipment, Cleaners Room, Clean and Dirty Utilities, Disposal Room, Staff Station and Storerooms for consumable stock, sterile stock and equipment.

Like elsewhere in the facility, sharing 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 and shower facilities, prayer rooms 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 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
- One patient bed bays for recovery for each Operating Room, to comply with Standard Components Patient Bay, Recovery Stage 1.

These guidelines recommend that baby resuscitation facilities are to be provided within the Operating Room. However, if a separate resuscitation bay or room is preferred, it must be exclusive to each operating room and allow for viewing by the mother upon request.

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.

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

1.4 Functional Relationships

The Birthing Unit is an important component of the hospital connected with many critical, clinical and operational support units. Correct functional relationships will promote the delivery of services that are efficient in terms of management, cost and human resources.

1.4.1 External Relationships

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
- NICU
- Emergency Unit (for urgent admissions from 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 Units
- Inpatient antenatal and postnatal Units
- Well Baby Nursery (WBN)
- Special Care Baby Unit (SCBU)

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

1.4.2 Internal Relationships

Optimum internal relationships include:

The Reception area at the entrance to the Unit should provide access control for all visitors to the Birthing Unit.

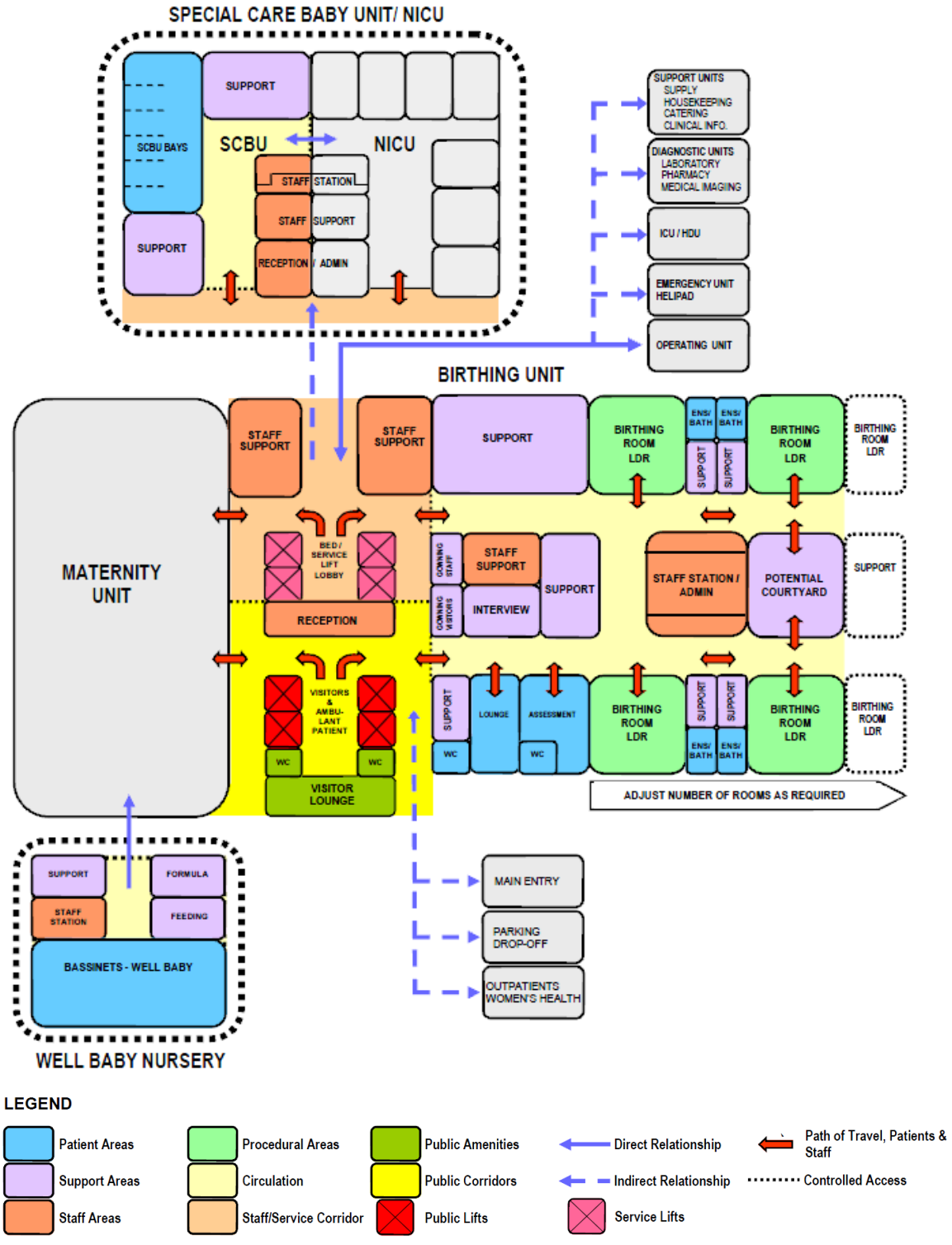
Separate waiting areas adjacent to reception may be provided for females and families.

From the Reception, direct access to assessment/ consultation/ examination, and birthing rooms shall be provided.

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

These relationships are demonstrated in the Functional Relationship Diagram below

1.4.3 Functional Relationship Diagram



Important external relationships identified in the diagram above include:

Clear Patient Entrance and access to/from other Units

- External access and entry for arriving patients, directly from a public access corridor or via a lift
- Close access for emergency patients from a helipad or Emergency Unit from a service corridor
- Close access to Operating Unit via a service corridor
- Ready access to NICU/ Special Care Baby Unit and Maternity Units via a service corridor.

Clear Goods/ Service / Staff Entrance

- Access to service units via a service corridor

Clear Public Entrance

- Entry for ambulant patients and visitors directly from dedicated lift and public corridor
- Access to / from key public areas, such as the main entrance, parking and drop off areas from the public corridor and lift

Important and desirable 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 Suite, Nurseries and Maternity Units
- Separate entrances to the Unit for staff and visitors
- Staff Station located centrally to Birthing Rooms
- Support areas decentralised, located close to treatment areas for staff convenience.

1.5 Design Considerations

1.5.1 Patient Treatment Areas

Birthing Unit design involves recognizing 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 and conveniently located.

Birthing Rooms (LDR & LDRP)

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

The trend in Birthing 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
- Provisions within the room to support a variety of pain relief methods such as bean bags, alternative seating areas and shelves for patients to lean on at standing and sitting heights

- Provision of soothing music or aromas.

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.

For 3 or more LDR rooms, one room shall have the provision for multiple birthings, including multiple sets of medical gases for newborns.

Birthing Rooms (LDR & LDRP) fittings, furniture, fixtures, equipment and services must comply with Standard Components Birthing Room.

Ensuite Bathrooms and Showers

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

For Birthing units with 6 or more LDR or LDPR rooms, one must be designed as a negative pressure Isolation room with an ante room.

1.5.2 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
- Loud speakers, paging systems and music in common areas
- Interview areas with patients where confidential information is discussed must not be overheard in adjacent areas

Refer to Part G – Acoustics of these Guidelines for more information.

Natural Light/ Lighting

Natural light and views through a window are essential and shall be available in all Birthing Rooms and is desirable in-patient lounge areas and staff rooms. Windows are an important aspect of sensory orientation and psychological well-being of patients.

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

Privacy

Privacy is essential for both the Assessment and Birthing Rooms. Each Birthing Room shall be provided with bed screens to ensure privacy of patients. Other factors for consideration include:

No door viewing panels

The location of sanitary facilities to provide privacy for patients while not preventing observation by staff

The location of external, courtyard or atriums facing Birthing Room windows to prevent observation from outside.

1.5.3 Space Standards and Components

Accessibility

Design should provide ease of access for wheelchair bound patients in all patient areas including Assessment Rooms, Birthing 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 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.

Size of the Unit

The number of Birthing Rooms required will be dependent on:

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

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

- 3 Birthing Rooms with 1 Assessment room for up to 1,000 births
- 4 Birthing Rooms with 1 Assessment room for up to 1,500 births
- 5 Birthing Rooms with 1 Assessment room for up to 2,000 births
- 8 Birthing Rooms with 1 to 2 Assessment rooms for up to 3,000 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 Schedule of Accommodation of this FPU.

1.5.4 Safety and Security

The Birthing Unit shall provide a safe and secure environment for patients, staff and visitors, while remaining a non-threatening and supportive atmosphere. 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 Suite. As a minimum, this entry point should be fitted out with 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 strikes/ magnetic locks and card readers. Card readers should be provided

on both sides of with deactivation only 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 must 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.

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

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

1.5.5 Drug Storage

Finishes including fabrics, floor, wall and ceiling finishes, should be calming and non-institutional as far as possible. The following additional factors should be considered in the selection of finishes:

- Acoustic properties
- Durability
- Ease of cleaning
- Infection control
- Fire safety
- Movement of equipment.

In areas where clinical observation is critical such as Assessment, Birthing Rooms, treatment and neonatal resuscitation areas, lighting and colours selected must not impede the accurate assessment of skin tones.

A homely, non-clinical ambience is preferred for Birthing Rooms and Lounge areas. Medical equipment and services should be easily accessible but concealed behind built in joinery or screens.

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; walls should be painted with lead free paint
- Ceilings that are sealed and easily cleaned.

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

1.5.6 Curtains / Blinds

Each Birthing Room shall have partial blackout facilities (blinds or lined curtains) to allow patients to rest during daylight hours.

Privacy bed screens must be washable, fireproof and cleanly maintained at all times. Disposable bed screens may also be considered.

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

Vertical blinds and Holland 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

1.5.7 Fixtures, Fittings and Equipment

Patient and foetal monitoring such as cardiotocograph (CTG) monitors should be located 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).

1.5.8 Building Services Requirements

This section identifies unit specific services briefing requirements only and must be read in conjunction with Part E - Engineering Services for the detailed parameters and standards applicable.

Information and Communication Technology

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

Staff/ Emergency Call

Hospitals must provide an electronic call system next to each bed space to allow for patients to alert staff in a discrete manner at all times. Patient call, staff assist, and emergency call facilities shall be provided in all patient areas including Assessment rooms, Birthing rooms, Lounges, Toilets, Ensuites and Bathrooms for patients and staff to request urgent assistance.

Patient calls are to be registered at the Staff Stations and must be audible within the service areas of the Unit including Clean Utilities and Dirty Utilities. Annunciator panels should also be located in strategic points within the circulation area. If calls are not answered the call system should escalate the alert accordingly. The Nurse Call system may also use mobile paging systems or SMS to notify staff of a call.

Patient Entertainment Systems

Patients may be provided with the following entertainment/ communications systems according to the Operational Policy of the facility:

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

Heating Ventilation and Air Conditioning (HVAC)

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

The Birthing and Assessment Rooms temperature should be maintained between 200 to 23 0 C and should be individually adjustable allowing the temperature to be raised quickly to 25-270 Celsius when a baby is born. The temperature control devices should be located within the room and 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 exposure to medical analgesic gases, used in birthing and recovery rooms.

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

Medical Gases

Oxygen and suction will be required to each Assessment and Birthing Room for mother and baby resuscitation. Consideration should be given to provision of additional medical gases in Birthing Rooms for twin deliveries, as explained above. Oxygen/ nitrous oxide used in the Birthing Suite for pain management will require scavenging suction. Refer to Part E - Engineering Services for relevant standards related to medical gas installations.

Pneumatic Tube Systems

The Birthing Unit may include a pneumatic tube station, as determined by the facility Operational Policy. If provided the station should be located in close proximity to the Staff Station or under direct staff supervision.

Hydraulics

Warm water supplied to all areas accessed by patients within the Birthing Unit must not exceed 43 degrees Celsius. This This requirement includes all staff handwash basins and sinks located within patient accessible areas.

1.5.9 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.

Hand Basins

Each Assessment and Birthing Room will include a clinical scrub basin. Handwashing basins will be required at the Unit entry and exit, Staff Stations and in corridors. Hand-washing facilities shall not impact on minimum clear corridor widths. At least one handwashing bay is to be conveniently accessible to the Staff Station. Hand basins are to comply with Standard Components - Bay - Hand-washing and Part D - Infection Prevention and Control in these Guidelines.

Antiseptic Hand Rubs

Antiseptic hand rubs should be located so they are readily available for use at points of care, at the end of patient beds and in high traffic areas.

The placement of antiseptic hand rubs should be consistent and reliable throughout facilities. Antiseptic hand rubs are to comply with Part D - Infection Prevention and Control , in these guidelines.

Antiseptic Hand Rubs, although very useful and welcome, cannot fully replace Hand Wash Bays.

Isolation Rooms

The need for Negative Pressure Birthing Isolation rooms is to be evaluated by an infection control risk assessment and will reflect the requirements of the Service Plan. For every 6 Birthing Rooms, there must be one Negative Pressure Birthing Room provided.

1.6 Standard Components of the Unit

Standard Components are typical rooms within a health facility, each represented by a Room Data Sheet (RDS) and a Room Layout Sheet (RLS).

The Room Data Sheets are written descriptions representing the minimum briefing requirements of each room type, described under various categories:

Room Primary Information; includes Briefed Area, Occupancy, Room Description and relationships, and special room requirements)

Building Fabric and Finishes; identifies the fabric and finish required for the room 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
2	Provided by the Client and installed by the builder
3	Provided and installed by the Client

Fixtures and Equipment; includes all the serviced equipment typically located in the room along with the services required such as power, data and hydraulics; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision

Building Services; indicates the requirement for communications, power, Heating, Ventilation and Air conditioning (HVAC), 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 (RLS's) are indicative plan layouts and elevations illustrating an example of good design. The RLS indicated are deemed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided that the following criteria are met:

- Compliance with the text of 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

The Birthing Unit contains Standard Components to comply with details in the Standard Components described in these Guidelines. Refer to Standard Components Room Data Sheets and Room Layout Sheets

1.6.1 Non-Standard Rooms

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, ventilator.
- Isolated power must be provided.

1.7 Schedule of Accommodation

The Schedule of Accommodation (SOA) provided below 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 as the Net Area. The Total area is the Sub Total plus the circulation percentage. The circulation percentage represents the minimum recommended target area for corridors within the Unit in an efficient and appropriate design.

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

The Schedule of Accommodation are developed for particular levels of services known as Role Delineation Level (RDL) and numbered from 1 to 6. Refer to the full Role Delineation Framework (Part A - Appendix 6) in these guidelines for a full description of RDL's.

The table below show various SOA's for a typical Birthing Unit from RDL 3 - 6 with the options of 2, 4, 8 & 12 Birthing Rooms.

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed and record in the Non-Compliance Report (refer to Part A - Appendix 4) with any departure from the Guidelines for consideration by the DOH for approval

1.7.1 Birthing Unit

ROOM/ SPACE	Standard Component Room Codes	RDL 3 Qty x m²	RDL 4 Qty x m²	RDL 5 Qty x m²	RDL 6 Qty x m²	Remarks
		2 Rooms	4 Rooms	8 Rooms	12 Rooms	
Entry / Reception						
Reception/ Clerical	recl-10-d similar		1 x 10	1 x 12	1 x 12	Provides access control to the unit
Waiting	wait-15-d wait-20-d wait-30-d		1 x 15	1 x 20	1 x 30	Divided into male/ female/ family areas
Waiting - Family	wait-15-d wait-20-d wait-30-d	1 x 15	1 x 15	1 x 20	1 x 30	Area may be enlarged for increased seating capacity
Play Area	plap-10-d	1 x 10	1 x 10	1 x 10	1 x 10	Adjacent to family waiting
Parenting Room	par-d		1 x 6	1 x 6	1 x 6	May share with another collocated unit
Bay - Wheelchair Park	bwc-d similar	1 x 2	1 x 4	1 x 4	1 x 4	May share with another collocated unit
Consult/ Exam Room	cons-d similar		1 x 13	1 x 13	1 x 13	Optional
Store - Files	stsf-10-d similar		1 x 8	1 x 10	1 x 10	For clinical records; optional if electronic records used
Toilet - Accessible	wcac-d			2 x 6	2 x 6	May share with another collocated unit

ROOM/ SPACE	Standard Component Room Codes	RDL 3 Qty x m²	RDL 4 Qty x m²	RDL 5 Qty x m²	RDL 6 Qty x m²	Remarks
		2 Rooms	4 Rooms	8 Rooms	12 Rooms	
Toilet - Public	wcpu-3-d		2 x 3	2 x 3	2 x 3	Male/ Female; May share with another collocated unit
Patient Areas		2 Rooms	4 Rooms	8 Rooms	12 Rooms	
Examination/ Assessment (Birthing LDR Room)	exas-b-d		1 x 23	1 x 23	2 x 23	Includes an optional 2.5m² store within the room; could also be used as a Birthing room.
Birthing Room – LDR or LDRP	birm-d	2 x 30	4 x 30	8 x 30	12 x 30	Includes scrub basin and 2.5m² store within the room
Ensuite - Shower, Birthing Room	ens-br-b-d	1 x 5	3 x 5	5 x 5	7 x 5	Double SH & WC only; may provide ensuites with bath
Ensuite - Bathroom, Birthing Room	ens-br-b-d	1 x 10	2 x 10	4 x 10	6 x 10	Bath, SH & WC; may provide ensuites with SH/WC only
Waiting	wait-10-d wait-15-d wait-20-d similar		1 x 10	1 x 15	1 x 25	Within Birthing Suite, for support persons
Support Areas						
Bay - Beverage	bbev-op-d or bbev-enc-d	1 x 5	1 x 5	1 x 5	1 x 5	For Visitors
Bay - Blanket/ Fluid Warmer	bbw-1-d	1 x 1	1 x 1	1 x 1	1 x 1	Optional
Bay - Handwashing, Type B	bhws-b-d	1 x 1	1 x 1	2 x 1	3 x 1	At entry to the Suite and in Corridors
Bay - Linen	blin-d	1 x 2	1 x 2	2 x 2	2 x 2	
Bay - Mobile Equipment	bmeq-4-d	1 x 4	1 x 4	2 x 4	2 x 4	
Bay - Resuscitation Trolley	bres-d	1 x 1.5	1 x 1.5	1 x 1.5	1 x 1.5	Adult resuscitation trolley
Cleaners Room	clrm-6-d	1 x 6	1 x 6	1 x 6	1 x 6	
Clean Utility	clur-8-d clur-12-d similar	1 x 8	1 x 8	1 x 12	1 x 14	
Dirty Utility	dtur-12-d similar	1 x 10	1 x 10	1 x 12	1 x 12	May be integrated with Disposal room
Disposal Room	disp-8-d similar		1 x 8	1 x 10	1 x 10	
Medication Room	medr similar		1 x 10	1 x 12	1 x 14	Can be interconnected with CU
Clean Utility/ Medication	clum-14-d		1 x 14*	1 x 14*	1 x 14*	*Optional if Clean Utility and Medication Room provided.
Staff Station	sstn-14-d similar sstn-20-d	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-10-d similar steq-14-d	1 x 6	1 x 10	1 x 14	2 x 14	May be subdivided and located near Birthing rooms
Store - General	stgn-8-d similar stgn-14-d	1 x 6	1 x 10	1 x 10	2 x 14	
Store - Sterile Stock	stss-12-d similar	1 x 6	1 x 12	1 x 12	2 x 12	
Staff Areas						

ROOM/ SPACE	Standard Component Room Codes	RDL 3 Qty x m²	RDL 4 Qty x m²	RDL 5 Qty x m²	RDL 6 Qty x m²	Remarks
		2 Rooms	4 Rooms	8 Rooms	12 Rooms	
Change - Staff (Male/Female)	chst-12-d similar chst-20-d	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-d meet-l-30-d similar	shared	1 x 15	1 x 15	1 x 25	May be shared
Office - Clinical/ Handover	off-cln-d		1 x 15	1 x 15	1 x 15	Locate near staff station
Office - Single Person	off-s12-d		1 x 12	1 x 12	1 x 12	Note 1; Service Manager
Office - Single Person	off-s9-d	1 x 9	1 x 9	1 x 9	2 x 9	Note 1; Unit Manager
Office - 2 Person, Shared	off-2p-d			1 x 12	1 x 12	Note 1; Nurse Educators, Specialists, Clinicians
Overnight Stay - Bedroom	ovbr-10-d	1 x 10	1 x 10	1 x 10	1 x 10	Optional
Overnight Stay - Ensuite	oves-4-d	1 x 4	1 x 4	1 x 4	1 x 4	Optional
Staff Room	srm-15-d similar srm-25-d	shared	1 x 15	1 x 20	1 x 25	May divide into Male & Female areas
Sub Total		**211.5**	**491.5**	**718.5**	**1012.5**	
Circulation %		**35**	**35**	**35**	**35**	**35 minimum, 40% recommended**
Area Total		**285.5**	**633.5**	**970**	**1366.9**	

Note 1: Offices to be provided according to the number of approved full-time positions within the Unit

1.7.2 Integrated Operating Rooms Area – Emergency C -Section (Optional)

ROOM/ SPACE	Standard Component Room Codes				1 OR Room Qty x m²	Optional – Dependent on Service Plan
Air Lock	AIRL-6-D				1 x 6	Entry to Operating Room area
Operating Room	ORGN-D				1 x 42	
Anaesthetic Induction Room	ANIN-D				1 x 15	Optional
Bay - Neonatal Resuscitation	NS				1 x 6	Optional
Scrub-up/ Gowning	SCRB-6-D				1 x 6	
Patient Bay – Stage 1 Recovery / Holding	PBTR-RS1-D similar				1 x 9	1 Beds per Operating Room
Bay - Handwashing, Type A	BHWS-A-D				1 x 1	
Clean-up	CLUP-7-D				1 x 7	
Change - Staff	chst-12-d similar				2 x 6	Toilet and shower are optional.

Staff Station/ Clean Utility	SSCU-D										1	x	9	
Store - Sterile Stock	STSS-12-D										1	x	12	
Sub Total													**125**	
Circulation %													**35**	**35 minimum, 40% recommended**
Area Total													**168.7**	

Note 1: Offices to be provided according to the number of approved full-time positions within the Unit.

Please also note the following:

Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU.

Rooms indicated in the schedule reflect the typical arrangement according to the RDL and birthing room numbers

All the areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines

Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the service plan and the 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

1.8 Further Reading

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

- ACOG, American Congress of Obstetricians and Gynecologists Clinical Guidelines 2017; refer to website, http://www.acog.org/Resources-And-Publications
- AHIA, Australasian Health Facility Guidelines, Part B Health Facility Briefing and Planning, HPU 510 - Maternity Unit, 2016 refer to https://healthfacilityguidelines.com.au/health-planning-units
- D0H (Department of Health), Scope of Practice and Clinical Responsibilities, Obstetrics/Gynecology, 2016, refer to website https://doh.gov.ae
- 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. http://www.midwiferyjournal.com/article/S0266-6138(10)00090-2/abstract
- Gov.UK DH (Department of Health) Children young people and maternity services. Health Building Note 09-02: Maternity care facilities, 2008, refer https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147876/HBN_09-02_Final.pdf
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, Freestanding Birth Centres, 2014 Edition http://www.fgiguidelines.org/
- International Health Facility Guidelines (Part B) – 20, refer to website, www.healthdesign.com.au/ihfg
- Nurse/Midwife: Patient Ratios, ANMF, Australian Nursing and Midwifery Federation, 2016; http://www.anmfvic.asn.au/~/media/f06f12244fbb4522af619e1d5304d71d.ashx
- 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
- Stenglin, M. and Foureur, M. (2013). Designing out the Fear Cascade to increase the likelihood of normal birth (Journal article). Midwifery. http://www.midwiferyjournal.com/article/S0266-6138(13)00123-X/abstract