Paediatric Society of PNG Symposium 2022

"Towards Standardization in Child Health for Quality Improvement"

Paediatric Healthcare Facility Standards: Planning, Design & Delivery

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Outline of the Presentation

- The Legal Mandate of the Health Standards and the Right to Health
- The National Health Service Standards: The blueprint for safe, quality care
- The Healthcare Facilities Design Standards (Volume 3 NHSS 2021-2030)
- The Planning, Design & Delivery process of Paediatric Healthcare Facilities
- Project Delivery: Financing, Construction, Equipping, Commissioning & Handover
- Conclusion
- Acknowledgement

The Legal Mandate requiring Health Standards & the Right to Health

- Legal Mandate
- Health is a Fundamental Human Right

Legal Mandate

The Government of PNG has an obligation conferred by Part IV, Clause 18.1 of the National Health Administration Act (NHAA) 1997 to:

- a) Oversee the establishment, maintenance and development of a health care system in the country;
- b) Set policy and fix standards for the improvement of the health of the population;
- c) Provide technical advice and support for the operation of health facilities and the delivery of health services;
- d) Oversee the management of public hospitals in accordance with the Public Hospitals Act 1994; and
- e) Maintain a national health information system

To comply with some of these obligations, the National Department of Health is authorized to among other responsibilities:

- Promulgate service quality and resource Standards to be achieved by all public and private health care service providers throughout Papua New Guinea;
- Monitor compliance with those standards; and
- License premises for the delivery of health care

Health is a Fundamental Human Right (https://www.who.int)

"The right to health for all people means that everyone should have access to the health services they need, when and where they need them, without suffering financial hardship. No one should get sick and die just because they are poor, or because they cannot access the health services they need"

The National Health Service Standards: The Blueprint for Safe, Quality Care

National Health Services Standards 2021-2030

(The blueprint for safe, quality care)

Volume 1:

National Service Standards

- Health Services Standards
- Model of care for health services
- Clinical services
- Public health programs & services
- Levels of care and health services matrix
- Patient referral guidelines
- Treatment Guidelines
- Workforce standards & accreditation

Volume 2: National Quality Standards & Accreditation

- National Quality
 Standards
- HealthAccreditation

Volume 3:

Design Standards for Health Facilities in PNG

- Policy, planning, procurement and design process
- Building standards
- Room Data Sheets
- Room Layout Sheets
- Engineering standards
- Medical Equipment Standards
- Health Facility Registration

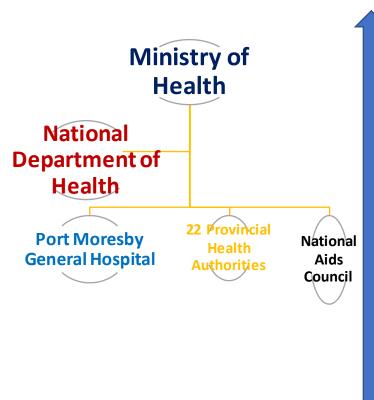
Health Sector Management & Governance Structure

Health Care Service Delivery Framework

(integrating Clinical Standards & Public Health)

Clinical Services complexities increases proportionately with levels of services and so as facility infrastructure and medical equipment/technology

Levels Care & Complexity of Healthcare **Facilities** Infrastructure & Biomedical Technology





NHSS Levels of Care & Health Services in PNG

- Level.1 (Village) Health Posts (HPs) basic-level providing primary health care including health promotion, health improvement, health protection.
- Level.2 Community Health Posts (CHPs) and Health Services primary health, ambulatory care and short stay inpatient and maternity care at the local rural / remote community level, with a minimum of six (6) health workers to ensure safe 24 hour care and treatment
- Level.3 Health Centres / Urban Clinics –
 offering primary health and ambulatory
 care in urban and rural settings and
 inpatient maternity and newborn care in
 major provincial urban communities

- Level.4 District Hospitals and Rural Health Services offering primary and secondary level clinical services and district wide public health programs
- Level.5 PHA Provincial Hospitals, Health Services and Public Health Programs offering secondary level & specialist clinical care services and supporting primary health care and integrating public health programs and patient referral
- Level.6 National Referral Specialist
 Tertiary and Teaching Hospital and Health
 Services offering complex tertiary level
 clinical services and supporting primary
 health care and public health programs
 and a formalised patient referral
 arrangement.

A Model of Care for Health Service for PNG: Essential Principles & Values

- People Centred: Services that are focused on people, family, environment and culture that are comprehensive, accessible and community-based that meet health needs of people throughout their life course.
- **Equity**: Services that are equitably distributed that reach all people regardless of their sex, age, disability, political affiliation, religion, culture, gender or ethnicity.
- Partnerships: Working with all partners across all levels of the health system.

- Health services adapted to community needs: Accessible to safe, quality and affordable health care that is responsive to specific needs.
- Integrated Approaches: Balanced interventions addressing primary, secondary and tertiary levels of health care and health programs within the PNG health system.
- Evidence-Based Innovation: Pursuing high quality and safe health outcomes through research, science and technology that meets international standards.

The National Health Services Standards: Design Standards for Healthcare Facilities in PNG

National Health Services Standards 2021-2030

(The blueprint for safe, quality care)

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National Health Service Standards 2021-2030 2nd Edition Volume 1: Levels of Care and Health Services Matrix

CORE SERVICE DEFINITIONS AND DESCRIPTIONS OF SIX LEVELS OF CARE

CORE SERVICE GROUP DEFINITIONS	Healthy Lifestyles, Life Stages: Maternal & Newborn Care Neonatal, Paediatric – Child- Adolescent Health	Infectious & Communicable Diseases: including Life Stages for Men, Women, the Elderly and Disabled	Non-Communicable Diseases: including Life Stages for Men, Women, the Elderly and Disabled	Surgical & Anaesthetic Services for Diseases & Conditions Requiring Operative Procedures — Across Spectrum of Care Diagnostic — Clinical Support Services	Integration across Spectrum of Care: PHC, Public Health Including Healthy Lifestyles, Health Promotion & Prevention	Health System Strengthening: Organizational Governance and Leadership, Workforce, Health Information, Infrastructure, Equipment & Commodities - Essential Medical Supplies & Health Financing
			DESCRIPTION OF LEVELS	-		
Level 1	Level 2	Level 3	Level 3	Level 4	Level 5	Level 6
(VILLAGE) HEALTH POST (HP), Preventative/Promotion Services (least complex)	COMMUNITY HEALTH POST (CHP) & Catchment Health Services	RURAL – URBAN HEALTH CENTRE & Health Services	URBAN CLINIC & Health Services	DISTRICT HOSPITAL & District wide Rural - Public Health Services	PROVINCIAL HOSPITAL & PUBLIC HEALTH SERVICES	NATIONAL REFERRAL SPECIALIST TERTIARY & TEACHING HOSPITAL (highest complexity)
Set within communities-villages to strengthen public health, primary health care and village level engaged communities; Ensuring greater recognition of the Primary Healthcare role of Village Health Assistants (VHAs); supported by Community Health Workers (CHWs); Matching Health (Aid) Posts within remote locations; Engaging more with Non-Government Organisations / Churches and LLG -DDAs for community-based programs; Supporting innovative roles of VHAs	The entry into the formal healthcare system; CHP is the 'Hub' for primary health care, a strong focus on health prevention and support of 'VHAs & existing Health Posts within villages'; public health activities including outreach patrols, awareness campaigns and health promotion activities are delivered. CHPs prioritising access to respectful maternity care, providing a significant role in 'initial point of care, stabilising and resuscitation of patients and patient referral; and aligning with PHA priorities for the provision of good governance, staffing, safe quality twenty-four (24) hour clinical and primary health care and supportive supervision.	Patients are the centre of care; clinical interventions are based on evidence: maintaining high standards of safety & quality; increasing patient awareness and public health interventions; improving early diagnosis and interventions with the aim of identifying proven efficiency and effectiveness; Minimum standards for providing medical, child healthpaediatric, maternal and minor surgical services, public and primary health care; inpatient care & some clinical support services; core clinical support services include outreach and supervision programs; Urban HC may provide inpatient maternal & newborn care including supervised delivery.	Minimum standard providing ambulatory care services: medical, child health-paediatric, maternal health & family planning, disease control (communicable & non communicable disease) and minor surgical services; 5 day 8 hour service with 24 hours on call; may provide extended hours of care; short stay day only patient care for observation and treatment, discharge or referral for further treatment.	Standards for a District hospital and Rural health services includes: defining populations across Districts i.e., catchment populations; identifying access & referral pathways (roads, rivers); prioritising local burden of diseases — evidenced based clinical practice & public health interventions; ensuring health service functions and standards including quality & safety; adequate workforce and training — continuing professional development; integrating clinical services, public health interventions & primary health care. Proving SMO in rural medicine / MO rural health.	Provides Specialised and Subspecialised health services: ensuring coordination and integration of clinical services, public health interventions and primary health care; patient people centred, evidence, safe based on a culture of continuous improvement, proven efficiency and effectiveness; accessing health information to support continuous quality improvements – Audits, Peer Review; Some sub speciality services; support to & as a provincial referral role.	Provides tertiary care, a level of health care obtained from Specialists after referral from primary health care and secondary care: ensuring a full complement of services including 'high end' Specialist Paediatrics, Obstetrics, Surgery, Medicine, Gynaecology, subspecialty Surgery for major operations, consultations with subspecialists and with sophisticated intensive care facilities and/or dedicated to Specific Sub-Specialty Care i.e. Essential services for Oncology as a Care Centre are defined at both National Referral and ANGAU hospitals; Psychiatric hospital remains at Loloki); complex treatment of patients from its individual PHAs by referral.

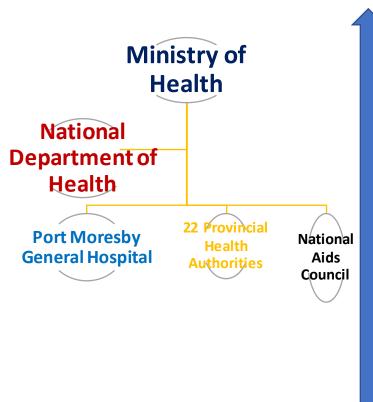
Health Sector Management & Governance Structure

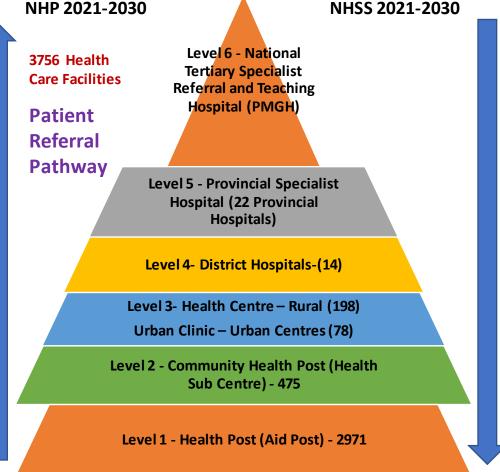
Health Care Service Delivery Framework

(integrating Clinical Standards & Public Health)

Clinical Services complexities increases proportionately with levels of services and so as facility infrastructure and medical equipment/technology

Levels & Complexity of Healthcare **Facilities** Infrastructure & Biomedical Technology





Standardisation of Health Facilities

- To maintain quality and standards of health service delivery across the country.
- To provide familiar environments for staffs moving across the sector.
- To ensure within reason, the equitable provision of amenities over time across the sector.
- To enable nation wide roll out of Health Facilities (L1-L4) within reasonable time and cost.



Design Consideration: NHSS- Volume:3

- Clinically Safe and Culturally Appropriate Physical Environment.
- Comfort, Privacy and Dignity of patients, guardians and staffs.
- Ensuring that all facilities are fully accessible for disabled clients.
- Flexible use of inpatient beds to allow separation of adult male and female patients, separation of infectious or distressed patients etc.
- Ensuring equity and standard of care for all patients to avoid any discrimination.



Design Consideration: NHSS- Volume:3

- Compliance with Standard Room Layout and Room Data Sheets from NHSS.
- Compliance with Building Code of PNG.
- Efficient and Compact Planning.
- Health Facilities are affordable in both capital and recurrent operating cost.
- "Fit for Purpose"



Room data sheet

Standard Project for PNG Milestone: Default

Room Data Sheets

Department Standard Components Room Tag: 1050 1 Bed Room - Mental Health Room Code: 1 BR-MH-PNG Room Name

Net Room Area Briefed No of Rooms Subtotal of Briefed Area Hours of Operation Occupancy

Also covers these Rooms Description/ Special Requirements

14.00 M2

14.0 M2

1 patient; 1-2 staff; 1-2 visitors

Single bed room for general mental health patients; natural light and outlook is essential; The room is to be internally lockable with a master keyed lock from the outside; All fittings are to have a breaking strain of not more than 15kg. All glazing (including external windows) is to be Grade A saftey glass to comply with AS/NZS 2208 and AS 1288, specifically, toughened laminated glass with a standard nominal thickness of 10.38mm, or equivalent approved.

The 1 Bed Room - Mental Health may vary in configuration to suit different Ensuite options including:

- 1 BR-MH-A Inboard Ensuite
- 1 BR-MH-B Shared Ensuite, access from corridor
- 1 BR-MH-C Back-to-Back Ensuites

Additional Design Considerations:

- Fittings and Furniture:
- removable drawers are not to be installed
- . if hooks are required, they must be collapsible with a breaking strain of not more than 15kg
- Door & Joinery Hardware
- . door hardware and joinery hardware must not provide ligature points

Acoustics: Acoustic privacy is required.

Body Protected Electrical Area

10.03.11, - First Draft

Room Fabric and outline specifications

Amendment

ID	Fabric	Material	Finish	Specification	Selection	Remarks
5010	Ceiling	Plasterboard	Paint, washable	Flush set, suspended		
6030	Cornice	Aluminium	Powdercoat	24mm shadow angle		
9006	Doors	Solid Core/ Safety glass	Paint	Single leaf, observation panel		1100mm clear inward & outward opening; lockable; anti-hang door hardware
1000	Floor finish	Vinyl	Standard slip resistant	Seamless, coved		

Provided by HPI for : H F B S P N G

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Standard Project for PNG Milestone: Default

Room Name

Standard Components Room Tag: 1050

ID	Fabric	Material	Finish	Specification	Selection	Remarks
7045	Observation	Safety glass	Powdercoat	Internal window		double glazed with integral Venetians, control to corridor side; glazing to be Grade A safety glass; window optional
2000	Skirting	Vinyl	Prefinished	Floor vinyl coved, 150mmH		
3000	Wall finish	Paint	Acrylic, washable			
3092	Wall protection	MDF	Laminate	Bed protection wall panel		
7001	Windows					Essential

1 Bed Room - Mental Health

Fittings and Furniture (FF)

ID	Description	Category	Group	Qty	Selection / Remarks
690	Bed: domestic, single	Furniture/ Fitting	3	1	
1260	Blind: holland	Metalwork	3	1	to external windows, curtains optional; no hanging cords or chains
1252	Blind: Venetian integral	Furniture/ Fitting	1	2	to observation window (ifprovided) and door glazing
2150	Chair: patient	Furniture/ Fitting	3	1	
2655	Chair: visitor	Furniture/ Fitting	3	1	
4330	Cupboard: wardrobe	Fumiture/ Fitting	1	1	with fixed shelves; anti-hang door hardware
1324	Curtain track: window, collapsible	Furniture/ Fitting	1	1	optional, if curtains installed
5910	Desk: built in	Furniture/ Fitting	1	1	laminate
13730	Mirror: acrylic	Metalwork	1	1	optional; may also use safety glass mirror
17360	Pinboard: fabric covered	Furniture/ Fitting	1	1	(velcro compatible) or artwork, optional
22690	Table: bedside	Furniture/ Fitting	3	1	heavy or fixed to wall; no removable drawers

Services

ID	Description	Service Category	Qty	Selection / Remarks
5000	Airconditioning	HVAC		optiional; with vandal proof outlet
5015	Ventilation	HVAC		
1086	General fluorescent: vandal proof	Lighting		
6065	Special: night lights	Lighting		
1087	Special: reading, vandal proof	Lighting		may be ceiling recessed
8000	Patient/ Staff call	Nurse Call	1	+ indicator button & light
8010	Staff/ Nurse assist call	Nurse Call	1	+ indicator button & light, Duress call (optional)
9040	Body protected	Power		
9015	GPO: Cleaner	Power	1	locate in corridor outside room
9000	GPO: Single	Power	2	
1088	RCD device	Power	1	may be located outside room - not on bedhead
				services panel



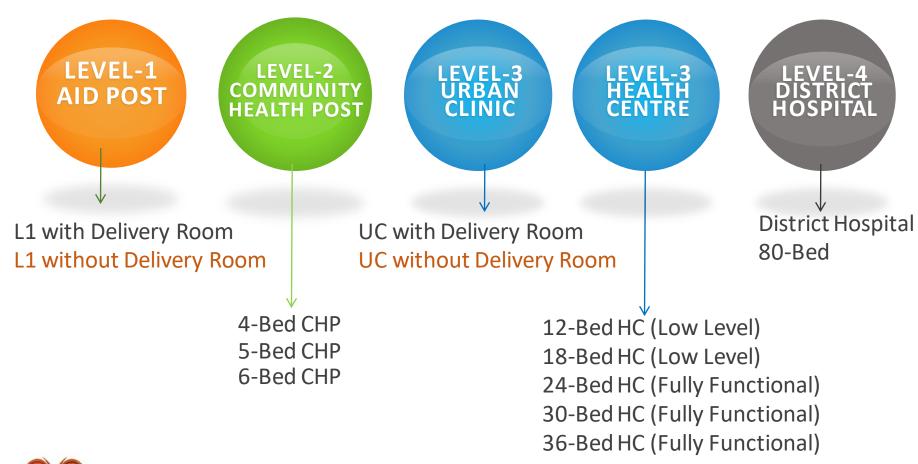
Room Data Sheets

Room Code: 1 BR-MH-PNG

Room layout sheet

PAPUA NEW GUINEA STANDARD COMPONENTS Room Layout Sheet RLS Room Code 1 BR-MH-C-PNG 1Bed Room - Back to Back Ensuites (Mental Health) Room Name RDS Room Code 1 BR-MH-C-PNG POXED SHELF PURPOSE OUTLET - SINGLE GENERAL PURPOSE OUTLET - CLEANER'S LIGHT SWITCH - ENSUITE LIGHT SWITCH - NIGHT LIGHT LIGHT LIGHT LIGHT FATTER - READING LIGHT OBSERVATION PANEL FLOOR VINYL COVED SKIRTING VINYL FLOOR STANDARD SLIP RESISTANT PATIENT ENSUITE ENS-MH-C 14M2 TABLE PLAN 2100 (CURTAINS OPTIONAL) 1500 **ELEVATION 1 ELEVATION 2** 2700 2700 BULKHEAD PAINT 2100 1659 1650 **ELEVATION 3 ELEVATION 4** PNG National Department of Health CAD FILE NAME 1 BR-MH-C-PNG 1 BR-MH-C-PNG This document is for advisory purpose only

Levels of Health Facilities:





Levels of Health Facilities:



L5 Provincial Hospitals

Bed numbers subject to PCSP & Design Brief



L6 National Specialist Referral & Teaching Hospital Bed numbers subject to NCSP& Design Brief



The Planning, Design & Delivery Process of Paediatric Healthcare Facilities

What are the Paediatric Healthcare Facilities

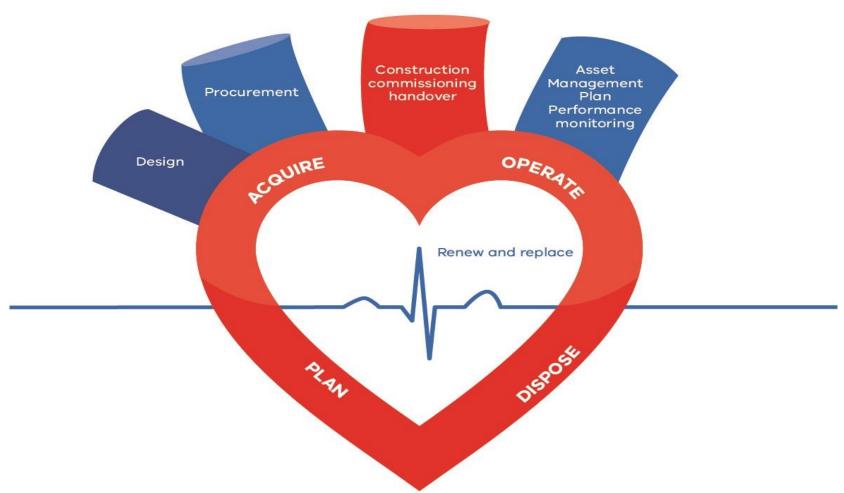
Core Paediatric healthcare facilities

- MCH Clinics
- Children Outpatient Department
- Birthing unit/ labour ward
- Special Care Nursery
- Neonatal Intensive Care Unit (NICU)
- Paediatric Accident & Emergency
- Paediatric Inpatient Unit/ Ward
- Paediatric Surgery

Healthcare facilities related to Paediatrics

- Birthing unit/ labor ward
- Accident & Emergency
- Operating Theatre/Surgery
- Radiology
- Pathology
- Pharmacy/dispensary

Healthcare Facility Infrastructure Planning, Design, Delivery & Sustainability Cycle



- Provincial Health Service
 Plan
- Clinical Service Plan
- Functional Service Plans
- Provincial Health Infrastructure Plan
- Workforce Plan
- Design Brief
- Master Plan
- Design
- Equipment
- Construction & Equipping
- Commissioning and Handover
- Defects Liability

Health Infrastructure Planning, Design & Delivery Process & the Rationale

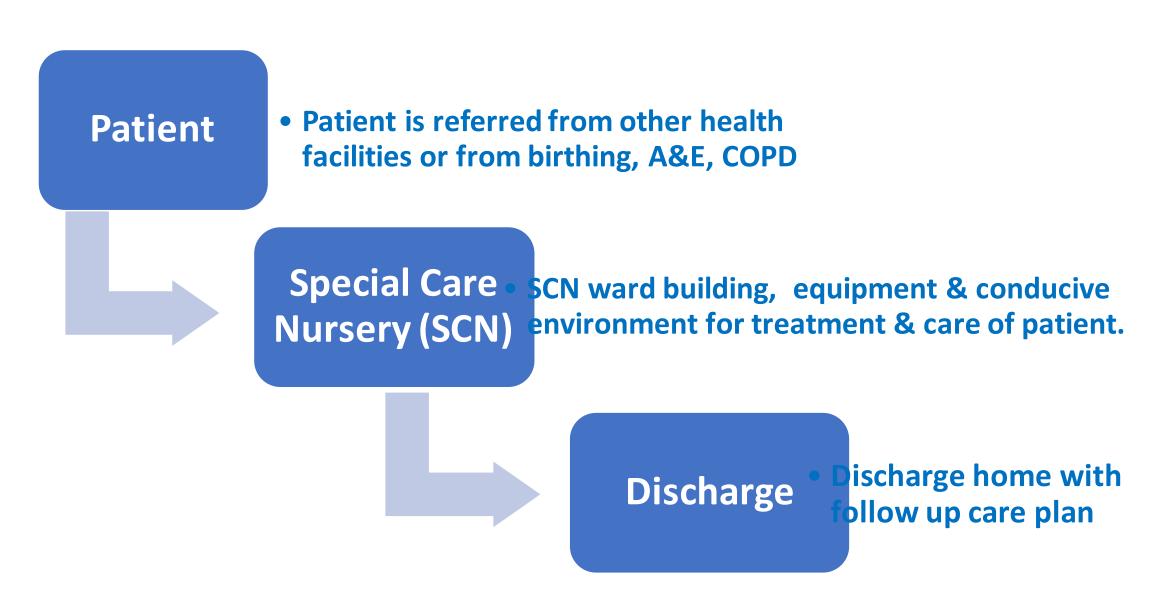
Business Process

- Facility Audit (Structural Condition & Functional/Service Audit)
- Planning
 - Provincial Health Services Plan
 - Clinical Services Plan
 - Design Brief
 - Master Plan
 - Functional Brief
- Design
 - Proof of Concept
 - Concept Design/Feasibility Study
 - Schematic Design
 - Detailed Design & Documentation
- Delivery/Acquisition
 - Procurement
 - Construction
 - Operational Commissioning
 - Operation
 - Defects Liability
- Operation & Maintenance
 - Asset Management Plan
 - Monitoring and Evaluation

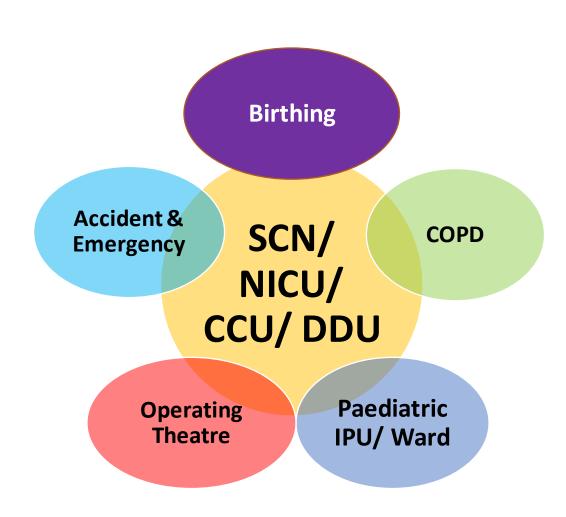
Rationale (Why)

- Identify current status & condition of health facility infrastructure and biomedical equipment
- Identify the clinical and public health services and gaps
- Planning for accessibility and equity of health services: no one is left behind
- Levels of services for the prescribed level of service is determined
- Planning for the right bed numbers with consideration for future growth
- Design meet health services and health facility design standards: fit for purpose and cost effective
- Projects delivered in compliance with all the regulatory requirements
- Workforce needs and operational costs are determined right at the planning stage and budgeted.
- Effective commissioning and handover of the facility.

Functional Relationship & Patient Flow of SCN facility



Functional Relationship of SCN



Special Care Nursery Functional Brief & Schedule of Accommodation

Schedule of Accommodation (Functional Areas)

- Area 1: Entry/Exit
- Area 2: Neonatal Bay (Open)
- Area 3: Enclosed Neonatal Bay for patient requiring isolation during treatment.
- Area 4: Consultation/Treatment Room:
- Area 5: Milk store and Preparation Room
- Area 6: Exam/Bathing Room
- Area 7: Staff Station
- Area 8: Mother's Lounge

Schedule of Accommodation (Functional Areas)

- Area 9: Mother's Amenities
- Area 10: Dirty Utility
- Area 11: Equipment Store
- Area 12: Staff Amenities
- Area 13: Staff Workroom, shared work space for SCN and paediatrics staff
- Area 14: Staffroom for SCN and Paediatrics, includes staff lockers and kitchenette.
- Area 15: Terrace

Special Care Nursery Functional Brief & Equipment Schedule

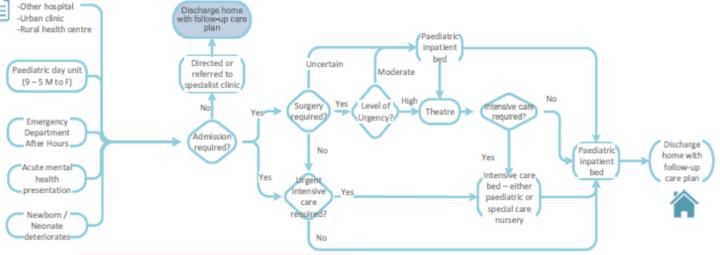
Schedule of Accommodation (Functional Areas)

- Open bassinets
- Infant Incubator humidicribs
- Electrocardiography (ECG) machine
- Baby scales
- Diagnostic Set (wall mounted)
- Microwave sterilizer
- Defibrillator

Schedule of Accommodation (Functional Areas)

- Suction twin-o-vac
- Neonatal resuscitation trolley
- Washer Sanitizer
- Medical recliners chairs
- X-ray viewer (wall mounted)
- Adjustable examination lights (wall mounted).





New Special Care Nursery - 510 sqm



- 13 Neonatal Bay
- 1 Enclosed neonatal bay
- 2 Mother's Amenities Mother's Lounge and Toilet/ Shower
- 1 Staff Station that includes Linen Bay, Clean Utility Bay and Mobile equipment bay
- Dirty Utility Room
- Consult Room & Treatment
- Room
- Equipment Storage Room Milk Store and Preparation
- Room Examination/ Bathing room

- Shared Staff Workroom
- Shared Staffroom
- Nurse Call System

Red Circles:

Shows access control (swipe card) points - Nine (9) doors

Unit Specific Equipment

- 11 open bassinets
- 2 Infant Incubator humidicribs
- 1 Resusitaire/ Infant Warmer
- 1 Electrocardiography (ECG) machine
- 2 Baby scales
- 3 Diagnostic Set (wall mounted)
- 1 Microwave sterilizer

- 1 Defibrillator
- 1 Suction twin-o-vac
- 1 Neonatal resuscitation trolley
- 1 Washer Sanitizer
- 6 medical recliners chairs
- 1 X-ray viewer (wall mounted)
- 2 Adjustable examination lights (wall mounted)

Explaining the new facility

Legend to lettering and numbering on the new Special Care Nursery:

P = Shared Patient amenities

S = Staff amenities

1 - 15 = Areas within the new facility

Patient Amenities:

There are two (2) distinct Mothers amenity areas: [a] 2 Toilets and showers within the building [b] Mother's lounge

Staff Amenities:

There are four (4) distinct staff amenity areas;

How the facility was designed to function and observed changes from current to new

Area 1: Entry/ Exit from the Public Walkway. Susu mamas, staff and patients access SCN building. New layout

Area 2: Thirteen (13) Neonatal Bay: Patient is assigned to bassinet. Configuration is changing from one large room to four separate patient bay areas.

Area 3: One (1) Enclosed Neonatal Bay: Facility design to accommodate patient requiring isolation during treatment. New inclusion. New layout

Area 4: Consultation/ Treatment Room: Room to be used by Medical Officer/ Doctor for consultation. New layout Area 5: Milk Store and Preparation Room: Separate room for milk preparation by staff and mothers. New inclusion. New

Area 6: Exam/ Bathing Room: Room includes examination lights and bathing tubs. New inclusions. New layout

Area 7: Staff Station: Officers have line of sight to neonatal bays. This includes the Clean Utility Bay, Mobile Equipment Bay and Linen Bay. New and improved layout.

Area 8: Mother's Lounge: Designated area for mothers to

lounge. New inclusion. New layout

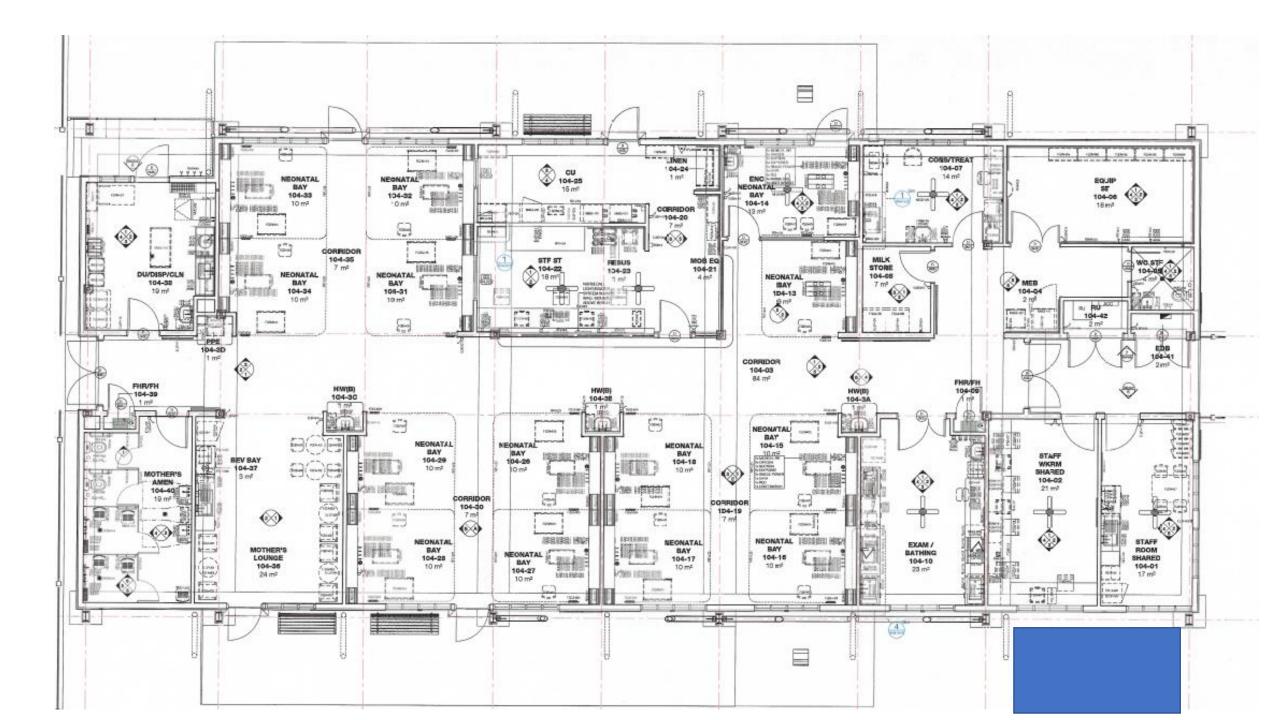
Area 9: Mother's Amenities: Two toilets and two shower rooms located within the building. Also includes Nurse Call buttons. Improved layout

Area 10: Dirty Utility: Room has a washer sanitizer and pan rack installed. Different layout to previous dirty utility room at SCN.

Area 11: Equipment Store: Storage shelving provided. New inclusion. New layout.

Area 12: Staff Amenity: Staff toilet located within the building.

Area 13: Staff Workroom: Shared work space for SCN and



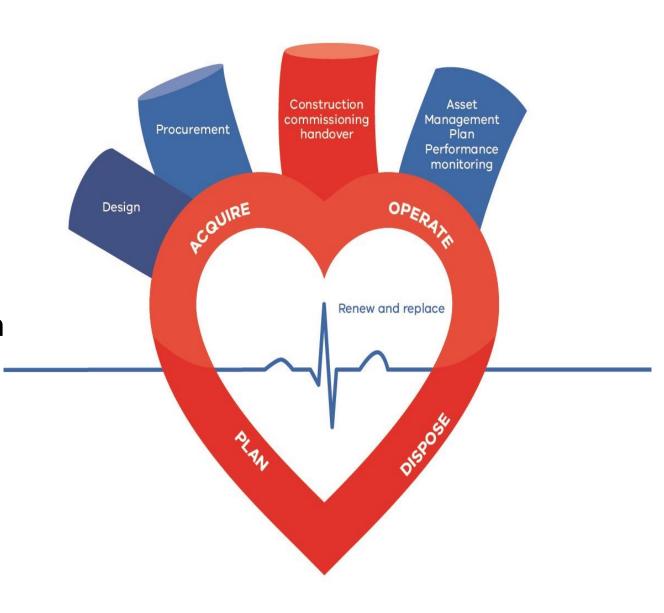
Project Delivery: Financing, Construction, Equipping, Commissioning & Handover

Project Delivery: Financing, Construction, Equipping, Commissioning & Handover

- Financing: Funding for the project is secured through the budget process or through donor funding support.
- Procurement & Contracting: Tendering, bid evaluation, tender and contract award.
- Construction
- Project Management/Contract Administration (PMCA)
- Equipping
- Commissioning, Training & defects liability.
- Operation & Maintenance

Conclusion

- The NHSS levels of care and health service matrix and the model of care form the basis for healthcare facility infrastructure planning, design and delivery.
- The health service standards is translated through the health facility design standards through an effective health service planning, design, construction, equipping & commissioning process in collaboration with key stakeholders.
- The NHSS Volume 3 (Health facility design standards) provides the guidelines for planning, design and delivery of healthcare facilities from level 1 to level 6.



Acknowledgement

- DFAT/JID ANGAU Hospital Redevelopment Project Design & PMCA team
- ADB RPHSDP/HSSDP
- NDOH Medical Standards Division
- NDOH Health Facilities Standards Branch
- Morobe Provincial Health Authority