



National Health Service Standards for Papua New Guinea 2011-2020

Volume 1

Executive Summary

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Chapter 2: A Model of Care for Health Services in Papua New Guinea

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**A blueprint for providing safe, quality health services as required by the
National Health Plan 2011-2020 to transform our health system**

Government of Papua New Guinea,



June 2011

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Message from the Honourable Minister for Health and HIV/AIDS

It is my pleasure to introduce the National Department of Health's 'National Health Service Standards'. The development of the National Health Service Standards will have significant impact for health service planning and resourcing for all health services in Papua New Guinea.

The development of this set of Standards is timely given the Department's commitment, through its recently launched 'National Health Plan 2011-2020'. The National Health Service Standards for Papua New Guinea is a blueprint for providing safe, quality care; the standards reflect the National Health Plan 2011-2020 to transform our health system and the goal of 'strengthening primary health care for all and improved service delivery for the rural majority and urban disadvantaged'. To realise the key result areas requires clearly articulated health service standards which can be utilised for all health services.

The National Health Service Standards provide a direction and guidance for safe quality health care and informs clients, communities and stakeholders of the health services which they can expect to be available at each of the various levels of service delivery.


The Health Services Standards provides a strategic overview for the provision of health care services and enables localised health services planning. The standards are essential to ensure that health services are integrated and clearly articulated and can be planned in a strategic manner. The National Health Service Standards allows for service planning; informs financial and infrastructure planning, clarifies governance arrangements and evaluates care to ensure safe, quality health care to meet optimal outcomes.

The National Health Service Standards outlines the minimum support services, staffing, safety, quality and design standards and other requirement for health services to ensure safe and appropriate service delivery. The National Health Service Standards services three major purposes:

- To provide a standard set of capability requirement with a consistent language for health care providers and planners to use when describing and planning health services,
- To provide a quality improvement program with a set of quality standards and an accreditation process to guide health services through self assessment and periodic review to meet Papua New Guinea quality standards and
- To provide 'best practice' for health care facility designs for all capital projects to ensure clinically safe and efficient health facility for the delivery of health care.

It is expected that all health services will strive to achieve these National Health Service Standards.

I would like to acknowledge and express special thanks to the NDOH Medical Standards Division Executive Manager and his team, the numerous senior clinicians and the contribution of members of working groups, and department officers for their expert advice and guidance in the development of the National Health Service Standards. Your efforts and contributions are greatly appreciated and have made the publication of these Standards possible.



Hon. Sasa Zibe MP,
National Minister for Health and HIV/AIDS

Foreword from the Secretary for Health

The 'National Health Plan 2011-2020' set the scene to transform our health care system.

The National Health Administration Act 1997 requires the NDoH to also develop a set of National Health Standards. The Medical Standards Division through extensive consultation with clinicians and health service managers has developed the 'National Health Service Standards for Papua New Guinea'.

The 'National Health Service Standards' set out a structure for health service provision in Papua New Guinea for the next 10 years. These Standards are important tools for strategic planning and will assist health services to develop 5 year provincial health sector implementation plans. The 'National Health Service Standards' when applied to health service delivery will safeguard patient safety and improve health service quality and design. These Standards provide new levels of detail and enable a more comprehensive picture of health services across the country.

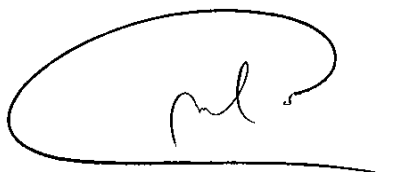
Considerable work has gone into developing these Standards, they take into account the key result areas of the National Health Plan, and this publication reinforces the National Department of Health's efforts to ensure openness and transparency in the Papua New Guinea health system. I acknowledge the Medical Standards Division Executive Manager /Chief Medical Officer Dr. Goa Tau in leading the development of the National Health Service Standards. It is part of our commitment to providing safe, quality health care services to our people.

We are committed to improving the quality and safety of our health care system. It is important that these 'National Health Service Standards' are applied throughout the length and breadth of our country. Political leaders and the bureaucracy must apply these Standards when making decisions on health services infrastructure, equipment, supplies and human resources.

We believe these Standards will provide the National Department of Health with the evidence to frame an evidence based budget for the health sector in Papua New Guinea. This will ensure that we are able to fund all health services based on their functional responsibilities.

I urge everyone in positions of decision making for the health sector to read and understand these 'National Health Service Standards'.

Let us all be guided by these Standards for now and into the future as we implement our 2011-2020 National Health Plan and contribution to the Government 2050 Vision.



Dr. Clement Malau
Secretary for Health

Executive Summary

The National Health Administration Act (NHAA) mandates the development of the National Health Plan, which sets out the goals and objectives to improve the standard of health of Papua New Guinea's people. Section 5 (1) of the NHAA says that the National Health Board can issue National Health Standards to implement the National Health Plan, on the recommendation of the Secretary of Health. On Thursday 3rd March 2011, the Secretary of Health approved the National Health Standards for Board consideration; this was later endorsed by the Board on 11th March 2011.

Following extensive consultation with key stakeholders the National Department of Health have developed the National Health Service Standards 2011 – 2020 which sets out a planned structure and process for health service provision in Papua New Guinea. The development of the National Health Service Standards was overseen by the National Department of Health Medical Standards Division Executive Manager / Chief Medical Officer. The Standards are an important tool for national, province and district planning and delivery of health services and will assist in developing provincial health sector implementation plans.

The National Health Service Standards for Papua New Guinea are a blueprint for providing safe, quality care; they reflect the National Health Plan 2011-2020's intention to transform our health system and the goal of *"strengthening primary health care for all and improved service delivery for the rural majority and urban disadvantaged"*.¹ The Standards will be updated periodically to ensure they remain responsive to the principles of the National Health Plan and reflect changes in the health care environment. They will apply to all health sector stakeholders including Churches and Private Sector organisations.

The Papua New Guinea National Health Plan 2011-2020 envisages a hierarchical structure for health services across the nation. This commences with Village Aid Posts / Community Health Posts providing primary health care services that include, health promotion, health improvement, health protection, primary health and maternity care at the local rural / remote community level; and through a referral arrangement, progresses to Health Centres, District Hospitals, Provincial Public Hospitals, Regional Referral Hospitals and ultimately to the National Referral Hospital offering secondary and complex tertiary level clinical services.

The different type of the facilities briefly elaborates on the range, capability and complexity of health services within the different hierarchical levels. Consequently the National Health Service Standards provide a rational set of standards for allocating scarce financial, physical and human resources between those various levels of the hierarchy to encourage the development of viable clinical and public health services in the most efficient and effective manner possible. The Standards provide direction and guidance for safe, quality health care and health facility design and inform clients, communities and stakeholders of the health services which they can expect to be available at each of the various levels of service delivery.

The National Health Services Standards provide a strategic overview for clinical and primary health services and enable localised health services planning. The standards are essential to ensure that health services are integrated and clearly articulated and can be planned in a strategic manner. They account for workforce planning; inform financial and infrastructure planning; clarify governance arrangements and evaluate care to ensure safe, quality health care to provide optimal outcomes.

The Standards can be utilised for health services planning across all health facilities including public, church health services, private and NGO provided health services to ensure safe and appropriately supported clinical and public health / primary health care delivery.

¹ Government of PNG, National Health Plan 2010-2011, Volume 1 p vii

Background

The NHAA 1997 requires the National Department of Health to develop a single health policy (the National Health Plan 2011-2020) and the National Health Standards. Within the Department the Medical Standards Division is responsible for the development, monitoring of health care standards in Papua New Guinea and reporting on governance reform programs to improve service delivery and health outcomes. To fulfil the NHAA 1997 mandate the 2011-2020 National Health Service Standards have been developed and outline:

- A model of care that supports innovative service delivery;
- Role delineation for each health service in Papua New Guinea Quality health care standards which can lead to a formal voluntary process for accreditation in Papua New Guinea; and
- Health facility design standards for Papua New Guinea.

National Health Service Standards for Papua New Guinea:

The Papua New Guinea National Health Plan 2011-2020 envisages a hierarchical structure for health services across the nation commencing with Village Aid Posts / Community Health Posts providing health promotion, health improvement, health protection, primary health and maternity care at the local rural / remote community level and through a referral arrangement this progresses to Health Centres, District Hospitals, Provincial Public Hospitals, Regional Referral Hospitals and ultimately to National Referral Hospitals offering complex tertiary level clinical services.

The different types of the facilities suggest the range, complexity and capability of health services increases with each level of the hierarchy. To standardise the delivery of care, the National Health Service Standards have integrated the existing standards - *Minimum Standards for District Health Services* and *Policies, Priorities & Standards for Curative Health Services* to provide a rational set of standards for allocating scarce financial, physical and human resources between those various levels of the hierarchy to encourage the development of efficient and effective clinical and public health services. Subsequently the purpose of the National Health Service Standards is to provide direction and guidance for the provision of safe and quality health care delivery and health facility design whilst informing clients, communities and stakeholders of the expected available health services at each of the various levels of service delivery.

The National Health Services Standards provide a strategic overview for clinical and primary health services and enable localised health services planning. The standards are essential to ensure that health services are integrated and clearly articulated and can be planned in a strategic manner. They account for workforce planning; inform financial and infrastructure planning; clarify governance arrangements and evaluate care to ensure safe, quality health care to provide optimal outcomes.

To enable safe and appropriate clinical and public health care delivery, the Standards can be utilised for health services planning across all health facilities including public, church, private and Non-Government Organisation (NGO) health services.

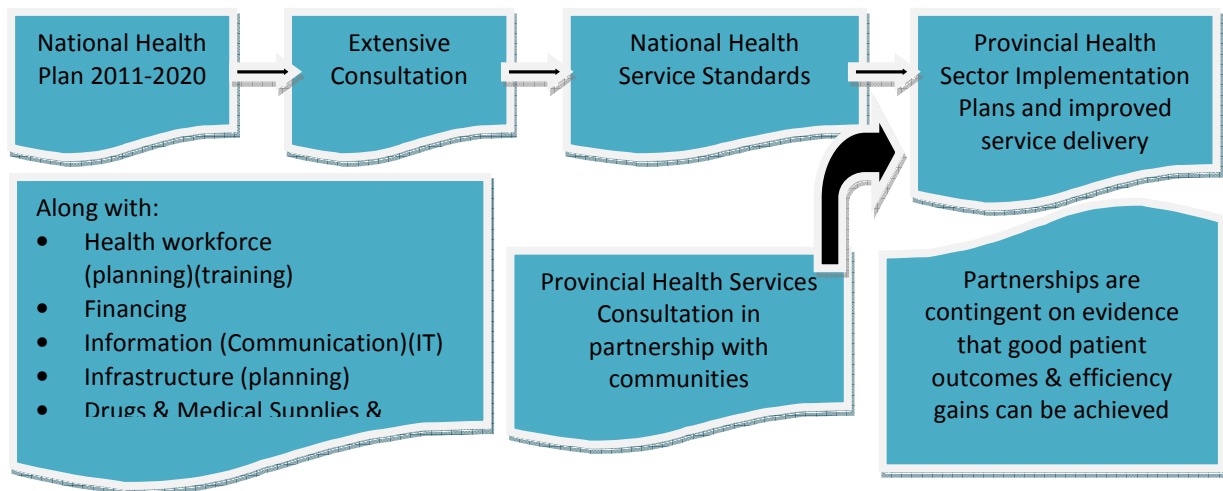
Health care services and health facilities need to make a statement about patient care and create health services that invest in the population's wellbeing and enables timely access to appropriate health services. This should essentially focus on utilising primary health services as the initial point of access. To facilitate this health promotion, health improvement, and health protection services need to be an integral component of patient and community care.

The development of the Standards was overseen by the National Department of Health Medical Standards Division Executive Manager / Chief Medical Officer. Through extensive consultation this document details the approved service definition, role delineation and significant parameters. The benefits of the National Health Service Standards include:

- Improved balance of preventive, primary and acute (curative) care;
- The development of a model of care with greater emphasis on client/patient focus and a strengthening of primary health care for all;
- Comprehensive definitions of role delineation for each health service (acute / curative care, public and primary health care) and relationships between health services;
- Health services with capacity planning for geographical areas and catchment populations;
- Ability to plan and invest in health service infrastructure and equipment to support that delineated role;
- Ability to identify the health workforce and skill sets required to deliver services in accordance with that delineated role;
- Ability to identify health professional education and staff development requirements which support maintenance of a skilled and dedicated health workforce for each level of health service delivery;
- Encourage service planning and consider risk management procedures when services do not meet minimum requirements for patient safety;
- Improve access to appropriate health care services;
- Utilise national standards, as a formal quality improvement process to ensure the delivery of safe, quality health care; and
- Invest in a continuous improvement program where health care managers, providers and health departments can ask 'are we doing things right' and 'are we doing the right things' to improve safety and quality of patient care as well as identify key areas of risk and adverse events which are managed, monitored and reported.

Consultation on National Health Service Standards:

Stakeholder alignment will be critical to successful implementation of the standards and in order to account for this, the National Health Service Standards were developed through an extensive consultation process. Consultation with Health Service Managers, Clinicians, National Department of Health Divisions and other Stakeholders was an important stage in the development of these Standards and the immense wealth of information, recommendations and suggestions gathered to inform the standards.

Figure 1 National Health Service Standards Consultation Process

Chapter One: Setting the Scene - National Health Service Standards

A Model of Care for Health Services for Papua New Guinea Overview

The 2011-2020 National Health Plan's vision, goal and mission offers a new direction for a model of care within health service delivery; one that invests in strengthening primary health care for all and improved patient care and services delivery.

A model of care is needed to support a range of clinical, primary health care and public health key objectives and related principles which complement the National Health Plan 2011-2020 vision. The model of care is focused on improving patient care throughout the health system. Its coverage extends from self care management, prevention and promotion, early detection and intervention, to integration and continuity of care.

Role Delineation of Health Services in Papua New Guinea Overview

The National Health Service Standards include a detailed Role Delineation Matrix which identifies the role delineation of health services and service level definitions. This has been developed in collaboration with Health Managers, clinical experts, and NDoH Program, Policy officers and Planners.

The Role Delineation Matrix is a strategic role statement, focusing on clinical groups, clinical services, hospital and primary health care / public health service capabilities. The process defines various services and the level at which these are to be provided. Its definitions should be interpreted with some degree of flexibility, and should take into consideration the functional level of health service delivery. It must be acknowledged that not all health services and facilities will provide all groups of services and certain specialty groups will only be available in some higher level facilities. Additionally at some sites, a service may not satisfy all the stated criteria to achieve a particular level, but may exceed the criteria required for the lower level. These sites are assigned a combination of levels.

The role delineation of health services provides a consistent language to describe health services and acts as a tool for planning service developments. Through the National Health Service Standards the role delineation of health services can be redesigned with the aim to improve the management of demand for health care services. This is achieved through measuring services inside and outside a hospital setting and utilising the assessments to improve patient flow and availability of beds and ultimately free up acute (curative) care capacity. Health service delivery networks and networking

need to be considered together with patient referral patterns and patient flows, population clusters and transport infrastructure (road, sea and air). A service network or district health service may be required to achieve a functional health service across a set of health facilities.

Essential Medical Equipment and Non Medical Equipment Minimum Standard for Health Services Overview

The Pharmaceutical Services Branch has *“responsibility for the development and review of policy, legislation, inspections and registration of medical products”*. As a component of the National Health Service Standards, medical equipment and non medical equipment are included as a sub set within the Role Delineation Matrix for health services in Papua New Guinea. Essential medical and non medical equipment is necessary for diagnosis and treatment of patients at all levels of health care. Medical equipment is both a capital investment and expensive asset and it is important to link medical and non medical equipment with delineated roles of health services to ensure the right level of service can be provided. Each level of health service requires essential and basic medical equipment, cold chain equipment, non medical equipment, essential drugs, vaccines and supplies. There needs to be a planned approach for procurement, planning, management, inventory, maintenance and preventative maintenance and budgeting.

Health Workforce Minimum Standard for Health Services Overview

The Government of Papua New Guinea proposes to build new or rehabilitate existing health facilities and services inline with its Vision 2050 policy, the Medium Term Development Strategy and the National Health Plan 2011-2020. There will be a concerted effort to improve access to health services as this is one of the key result areas (deliverables) of the National Health Plan. There is an expectation that rural health services, many of which have been effectively closed for some time due to staff shortages and the collapse of infrastructure, will be reopened.

Human resources are the most important asset within health service delivery. Without appropriately trained, skilled, motivated and adequate health workforce, health services cannot be delivered effectively. Currently the Papua New Guinea health workforce is inadequately managed and supervised, with a large percent of aging health workers, a poor mix of skills and demographic imbalances.

The National Health Service Standards attempt to determine health service workforce requirements based on the volume of health services to be delivered at particular facilities inline with their delineated roles. Listed below are core indicators established by the World Health Organisation that assisted this process:²

- The number of health workers per 10,000 population (by cadre): This is the health workforce indicator that internationally, is most commonly reported and represents a critical starting point for understanding the health system resource situation in a country
- The distribution of health workers by occupation/specialisation, region, place of work and gender: Globally there is increasing interest in equity in health and the pathways by which inequities arise and are perpetuated. Imbalance or misdistribution in the supply, deployment and composition of human resources for health, leads to inequities in the effective provision of health services.
- Annual number of graduates of health professional educational institutions per 100 000 population by level and field of education: This is the annual output of health professional educational institutions relative to the population. This is actually not one measures but the

² WHO, Human Resources for Health, May 2009.

aggregate of multiple pieces of information, depending on the number of cadres in the health system.

The reality of the declining health care professional numbers per 1,000 population and the increasing service demand are irreconcilable unless ways are found to significantly increase the retention and productivity of existing staff. When compiling the National Health Services Standards – Role Delineation of Health Service, the following strategies were explored.

Increased Productivity

Productivity is a measure of the effectiveness of the human resource devoted to a particular task and is measured by outputs per unit of labour. In the provision of direct health care, labour inputs are generally measured in terms of ‘client contacts per health care professional/hour’ for ambulatory (primary) care and ‘available health care professional hours per patient day’ for inpatient activity. In order to measure and manage productivity it is essential to understand the amount of human resource and the discipline necessary to provide safe clinical care for a given volume of outputs.

Health services already measure outputs in quantitative terms. Raw numbers such as consultations per clinic, numbers of images, pathology tests and prescriptions filled per day, occupied bed days, numbers of births and surgical procedures performed are routinely recorded. The use of qualitative measures to assess the ‘outcomes’ of health care is embryonic in the Papua New Guinea Public Sector but interest in this as a measure of effectiveness is building amongst the health care professionals.

Productivity in health care, as in most industries, is able to be increased through:

- Elimination of unnecessary work practices;
- Re-engineering systems to eliminate ‘time lost’;
- Increased use of technology and labour saving devices;
- Reduction of absenteeism; and
- Assignment of non clinical duties to other categories of staff.

Reviews of current work practices in health services often identify opportunities to eliminate some long held processes which have been supplanted by technology.

Changes to Retirement Provisions

Papua New Guinea may also no longer be able to encourage retirement from the Public Service for health professionals after 55 years of age and to insist upon retirement at age 60 years. Many health professionals are at the ‘peak of their powers’ at this time of life and with good health, support mechanisms and encouragement some individuals may be able to continue to contribute beyond the present retirement age.

Improved Retention Rates

Retention rates may be improved for medical and nursing graduates by enhancing remuneration packages overall and by providing allowances which encourage the health care professional to remain in clinical practice. The present salary grading system of the Public Service Award effectively caps the earning capacity of specialist medical officers in full time clinical practice at the equivalent of Salary Grade 16 and nurses at Salary Grade 12. To advance beyond this level of earning individuals are compelled to move into management or to abandon the Public Service for private practice, other business activities or to migrate to other countries where remuneration packages for clinical practice are more rewarding. ‘Poaching’ has contributed to the loss to Papua New Guinea of some of its most highly trained and competent health care professionals in recent years.

Workload Distribution:

Excessive workload is also a factor contributing to the rate of attrition amongst health professionals in PNG. Many earnest and hardworking health professionals experience 'burn out' and there is no doubt that some work sites demand a higher degree of personal effort and commitment than others to cope with the local level demand for health care. There are already considerable inconsistencies in the approved staff structures for the Public Hospitals when contrasted to reported activity levels. There are some service areas where staffing levels are dangerously low. For this to be addressed within the constraints of a nationwide shortage of clinical staff there must be a sincere attempt to realign the numbers of staff assigned to particular health services with actual workload for valued staff to be enticed to remain in the health workforce.

Alignment of Workforce to Workload Trial:

It is now appropriate and timely for the National Department of Health to provide guidance to these restructuring opportunities by establishing and distributing workload related 'Staffing Standards' for the Public Sector. A controlled trial of staffing levels aligned to actual workload across all levels of health service (1 to 7) with a view to establishing evidence based national 'Staffing Standards' was agreed and actioned. It was envisaged that the trials would reveal the most appropriate skill mixes (Nursing Officers/Community Health Workers) to provide safe levels of care in critical care areas of health service delivery. The results of the trial have been incorporated into the Papua New Guinea's role delineation of health services.

Clinical Guidelines:

Clinical guidelines are designed to support the decision-making processes in patient care. Although not within the National Health Service Standards they are important links to improve safe, quality patient care. The content of a guideline is based on a systematic review of clinical evidence - the main source for evidence-based care. The movement towards evidence-based healthcare has been gaining ground quickly over the past few years, motivated by clinicians, and management concerned about quality, consistency and costs. Clinical guidelines based on standardised best practice have been shown to be capable of supporting improvements in quality and consistency in healthcare. Many have been developed and disseminated in Papua New Guinea, though the process is time and resource consuming.

The purpose of the clinical guidelines is to:

- Describe appropriate care based on the best available scientific evidence and broad consensus;
- Reduce inappropriate variation in practice;
- Provide a more rational basis for referral;
- Provide a focus for continuing education;
- Promote efficient use of resources; and
- Focus on quality control, including audit.

Clinical protocols can be seen as more specific than guidelines. Protocols provide "*a comprehensive set of rigid criteria outlining the management steps for a single clinical condition or aspects of organisation*".³ Currently Papua New Guinea has many outdated treatment manuals /clinical guidelines, and a small number of up to date guidelines i.e. Infection Prevention Guideline. Furthermore many manuals or guidelines are not endorsed and some require further editing. Over time, the National Department of Health via the Medical Standards Division and clinical leaders will

³ Medical Guideline; Wikipedia Encyclopaedia, 2001.

review, update and ensure broad dissemination and monitoring of relevant clinical guidelines /treatment manuals. Annex Two outlines the list of the National Department of Health guidelines, and manuals.

Quality Standards for Health Service in Papua New Guinea – Health Service Accreditation Program Overview:

The Quality Standards for Health Services and the Health Service Accreditation Program is an important component of the National Health Services Standards and a tool that can assist in strengthening health services including primary health care /rural health services to improve service delivery. The Quality Standards for Health Services and the Health Service Accreditation program provides healthcare services with an organisation-wide framework to deliver a consumer-centred service. They include quality standards, a self-assessment process and systematic voluntary external peer review survey to achieve health service accreditation. In Papua New Guinea the Quality Standards for Health Services have been expanded and are applicable to enable rural health services to progress through an accreditation process similar to public hospitals following these quality standards.

Effective use of the Quality Standards for Health Services within Papua New Guinea’s standards requires an integrated organisational approach to quality improvement. This approach will assist healthcare organisations to:

- Focus on customers,
- Develop strong leadership,
- Build effective systems through ongoing improvement,
- Measure and evaluate outcomes, and
- Strive for best practice.

Health Facility Design Standards in Papua New Guinea Overview:

The development of the Health Facility Design Standards (a sub set of the National Health Service Standards) is timely given the National Department of Health’s commitment, to “*Improve Service Delivery*” as part of the 2011-2020 National Health Plan’s Key Result Area. Objectives 1.2 and 1.4 for that Key Result Area both relate to the rehabilitation of health infrastructure and the National Health Plan envisages an ambitious program to restore rural health infrastructure and at least four major provincial hospitals. To realise these objectives requires clearly articulated design standards which can be utilised for all building projects to ensure that health facilities are culturally appropriate, modern and cost effective to support delivery of health services.

The Design Standards for Health Facilities in Papua New Guinea have been largely derived from the Australasian Health Facility Guidelines (AHFGs) developed collaboratively by various government departments responsible for health services in Australia and New Zealand and in association with the University of New South Wales. These guidelines are generally acknowledged as best practice for health care facility design in the Pacific Region and have been endorsed by the Papua New Guinea National Institute of Standards and Industrial Technology. Permission has been granted by Health Projects International, the owners of the intellectual property rights, to reproduce and use the AHFG’s as the basis of the Health Facility Design Standards for Papua New Guinea.

The Australasian Health Facility Guidelines have been reviewed and adapted for the Papua New Guinea environment. All new capital works should be informed by Health Facility Design Standards for Papua New Guinea, however it will not be possible to apply the design standards in all situations. Individual health projects that involve the reuse of existing assets are often compromised by existing space restrictions or other physical limitations. Similarly, other health projects that have lower

throughput will have to be designed on a case by case basis. The primary objective of this standard is to achieve a desired performance result or service. The main aims of the Health Facility Design Standards in Papua New Guinea are to:

- Provide general guidance to designers seeking information on the needs of typical healthcare facilities;
- Promote the design of healthcare facilities with due regard for safety;
- Provide bed number and support infrastructure appropriate to catchment population and its morbidity profile;
- Provide privacy and respect for the dignity of patients, staff and visitors;
- Maintain public confidence;
- Achieve affordable solutions for the planning and design of healthcare;
- Eliminate design features that result in unacceptable practices;
- Minimise recurrent costs; and
- Encourage operational efficiencies.

The prudent application of these design standards for all future capital projects will ensure that health providers create clinically safe and efficient facilities for the delivery of health care and that appropriate amenities are provided to support health care workers. This should contribute to improved health outcomes for clients and to improved training and working environments for the various cadres of health care workers upon whom the quality of health services will depend.

Implementation and Monitoring of National Health Service Standards:

The marketing of and roll out of the National Health Service Standards to major stakeholders is an essential component of implementation. The National Department of Health's Divisions and Provincial health services through Provincial Administrators play a key part in this implementation. The National Department of Health Medical Standards Division will take the lead role and is structured to monitor compliance with the National Health Service Standards. The monitoring of these standards will be achieved through:

- Role delineation of health services at each service and provincial level by health care managers;
- Health services accreditation surveys via the formal voluntary process;
- Operational review; and
- Medical board licensing processes.

Summary:

The 1997 NHAA requires the National Department of Health to develop a single health policy and National Health Standards. The National Department of Health has a mandate to establish policy, in this instance, the National Health Service Standards. These Standards promote the best possible quality of health care and continuous quality improvement of health services. The following documents: *"Policies, Priorities and Standards for Curative Health Services 2003"* and *"Minimum Standards for District Health Services in PNG 2001"* which have previously provided guidance in the past on various levels of curative and rural health services are now reference documents. The endorsed National Health Service Standards will guide health service delivery to achieve safe levels of quality health care in Papua New Guinea.

Chapter Two: A Model of Care for Papua New Guinea

Introduction:

A sub set of the National Health Service Standards is the Model of Care for Papua New Guinea. The delivery of health services is influenced by policy (National Health Plan 2012-2020), planning, and strategy, and resource parameters. These parameters describe the kind of health services we strive to deliver. Significant challenges must be met to ensure that health care in Papua New Guinea is provided and improved to enable safe and quality care. These challenges include increasing demands for health services; distinct cultural requirements; constraints on resources; population trends; workforce shortages; and increased patient, client and community expectations.

The “*Quality Standards for Health Services in Papua New Guinea*” provides direction and guidance for delivering safe, quality health care. This specifies key principles and practices necessary for effective monitoring, managing and improvements to health services; and is applicable to health services of all sizes and types. Its usefulness depends on the extent to which the health service and leaders adapt it to local environments and needs. The Papua New Guinea Health Service Accreditation Program, a formal voluntary process, is built on the foundation of strong health care and clinical governance defined as “*the system by which managers and clinicians share responsibility and are held accountable for patient care, minimise risk and strive for continuously monitoring and improving the quality of broad health cared and clinical care.*”⁴

The National Health Plan’s 2011-2020 vision, goal and mission offer a new direction for a model of care within health service delivery that invests in strengthening primary health care for all and improved patient care and services delivery. The Papua New Guinea model of care can support a range of specific clinical care, primary health care and public health strategies which complement the ‘National Health Plan’s vision. A model of care is focused on improving patient care throughout the health system and coverage needs to extend from self care management, prevention and promotion, early detection and intervention, to integration and continuity of care.

Together with an enabled workforce and strengthened systems, the health care system will ensure every effort is made to reduce the gap in accessibility for the rural majority and urban poor. The National Health Plan 2011 – 2020 is focused on “*back to basics; strengthening primary health care for all and improved service delivery for the rural majority and urban disadvantaged.*”⁵

Background:

The recent 2001-2008 Health Sector Review data and reflection on achievements against the 2001-2010 National Health Plan does not portray an overall system that is delivering outcomes to the rural majority and urban poor. Health indicators showed:

- A maternal mortality rate of 733 per 100,000 live births with four women die every day as a result of low rates of supervised deliveries and family planning coverage;
- An infant mortality rate of 57 per 1,000 live births as children die every day from preventable causes;
- 30% of Aid Posts were closed in 2008 with clinic and hospital infrastructure is run down;

⁴ Defined by ACHS, Australian Standards of Healthcare Standards.

⁵ National Health Plan: 2011-2020.

- A health worker to population ratio of 0.58 per 1000 compared to Fiji with 2.23 per 1000 and Samoa with 2.74 per 1000;
- Limited planning and training of future workforce needs;
- In 2008 only 50% of facilities at any one time had adequate stocks of medicines, vaccinations and intravenous fluids;
- Consultation with communities is limited and there is a perception of a lack of ownership of health by individuals and community;
- Hospital and rural services are not integrated and working together;
- Current service delivery structure is not responsive and;
- The capacity to respond to emergencies and epidemics is limited.

The National Health Plan 2011-2020 identifies three areas for improvement. These are:

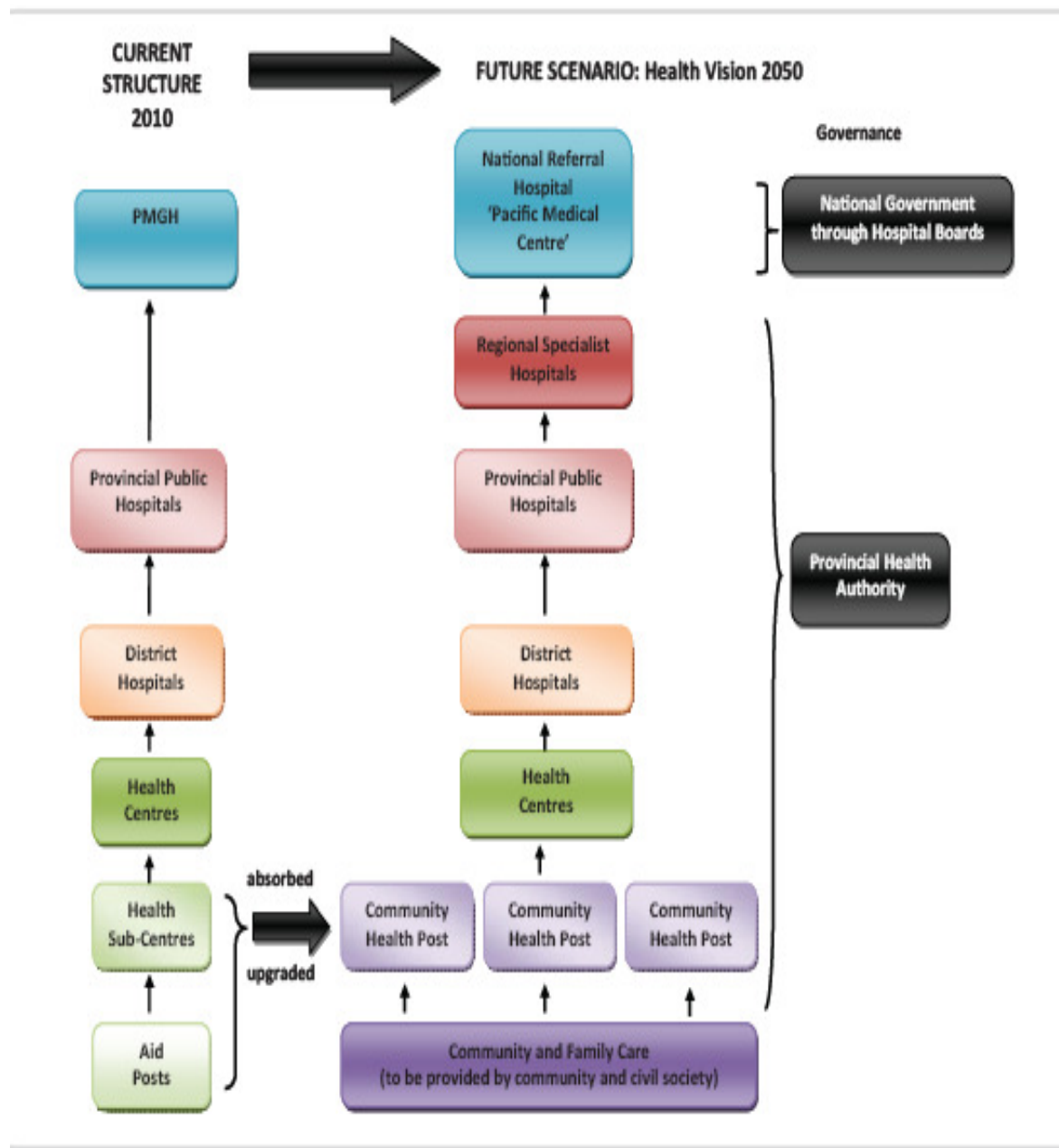
- Improving Service Delivery;
- Strengthening Partnerships & Coordination with Stakeholders; and
- Strengthening Health Systems.

To deliver better health outcomes the following is required:

- **Access:** Transform the service delivery system and referral model to maximize access and utilization of resources.
- **People and Systems:** Strengthen health systems that support service delivery including enabling a trained workforce and delivering key medical supplies and technologies.
- **Community Involvement:** Promote increased community participation and ownership of health services.
- **Partnerships:** Promote innovative partnerships with health stakeholders such as Churches and the Private Sector.

Health Vision 2050 acknowledges that service delivery improvement is required at all levels of the health care system. It acknowledges the need for greater integration between hospital and rural health services (both public and church managed) and seeks to maximize use of the workforce and resources available to the Sector. It acknowledges that first point of access to the health care system maybe at any level of the system including hospitals. Vision 2050 is a strategy that will transform the current health service delivery system in Papua New Guinea. It includes the progressive introduction of Community Health Posts and Specialist Regional Hospitals. Together this new referral model with strengthened health systems will create an enabling environment to address and reverse our deteriorating health indicators.

Figure 2: Health Vision 2050⁶



Aim of a Model of Care for Health Services for Papua New Guinea:

“A model of care is a population based method of planning and delivering care that relies on knowing which patients have the illnesses, assuring that they receive evidence based care and actively aiding them to participate in their own care. A good model of care leads towards improved health outcomes.”⁷

Effective care can be characterised by productive interaction between the health worker / clinician and the patients (clients) as well as their families, guardians/carers and their communities, and a motivated, skilled team of health professionals. The care takes place in a health care system that utilizes community resources.

⁶ Health Vision 2050 illustration as per the National Health Plan 2012- 2020

⁷ Adapted Model of Care, Western Australia Strategic Plan for Safety and Quality in Health Care, Department of Health, Government of Western Australia, 2008.

These interactions include:-

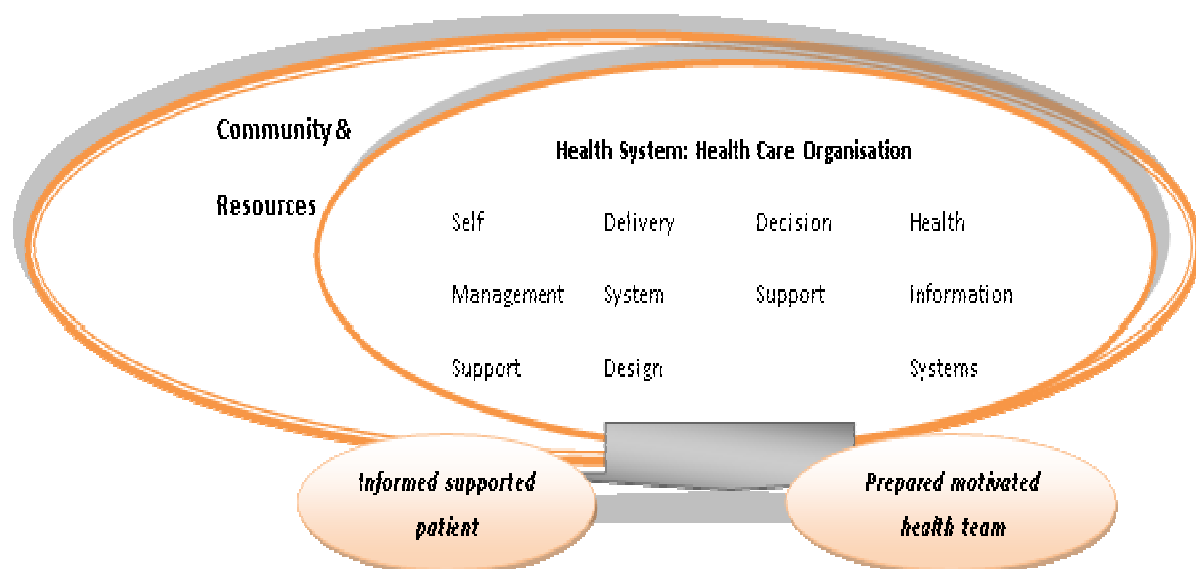
- self management support,
- delivery system design,
- decision support and
- health information systems.

The goal is to deliver care that is safe, effective, timely, patient centred, efficient and equitable. Monitoring how our health system changes and improves can be checked against the core principles of the care model.

Model of Care Elements & Principles for Redesigning Care

The main objectives of each element of the model of care are detailed below. Each bullet item is a principle for redesigning care. The interrelationships between the elements of the model and the principles are the successful interventions.

Figure 3: Model of Care Elements



- I. **Self management support:** Empower and prepare the patients/clients and their communities to manage their health and health care. This should:
 - a. Emphasise the patient's and community's role in managing individual health and wellbeing (each interrelated).
 - b. Use effective self management support strategies that include self assessment, goal setting, action planning, problem solving and follow up.
 - c. Organize internal health systems and community resources to provide ongoing self management support to patients.
- II. **Delivery system design:** Assure the delivery of effective, efficient clinical care, public health programs and self management support. This should:
 - a. Define roles and distribute tasks among health professionals (health professionals should work as a team to focus on the patient or relevant community).
 - b. Use planned interactions to support evidenced based care.
 - c. Provide health prevention and promotion programs.

- d. Ensure early detection and interventions.
 - e. Provide clinical case management of complex patients.
 - f. Ensure regular follow up by health care professionals.
 - g. Conduct regular integrated public health outreach and patrols.
 - h. Give care that patients understand and that fits with their cultural background.
- III. **Decision support:** Promote care that is consistent with scientific evidence and patient preferences. This should
- a. Embed evidence based guidelines into daily clinical practice.
 - b. Integrate acute (curative) care and primary health care to enable continuity of care.
 - c. Use proven provider education methods.
 - d. Share evidence based information with patients to encourage their participation.
- IV. **Health information systems:** Organize patient and population data to facilitate efficient and effective care. This should:
- a. Provide timely reminder to health professionals to report monthly or as required.
 - b. Based on information analyses, identify relevant target groups for proactive care and/or public health programs.
 - c. Facilitate individual patient care planning.
 - d. Share information with patients and other relevant health professionals to coordinate care.
 - e. Monitor performance of practice of health professionals and the health care system.
- V. **Health care organization:** Create a culture, organization and mechanisms that promote safe and quality care
- a. Promote effective improvement strategies aimed to change care and improve health outcomes.
 - b. Visibly support improvements at all levels of the health care system beginning with senior managers and leaders.
 - c. Encourage open and systematic handling of errors and quality processes to improve care.
 - d. Provide incentives based on quality of care.
 - e. Develop agreements that facilitate better coordination within and across health care system.
- VI. **Community:** Mobilize community resources to meet needs of patients and target groups. This should:
- a. Encourage patients to participate in effective community / public health programs.
 - b. Form partnerships with communities / community organizations to support and develop public health interventions.
 - c. Encourage, advocate and feedback to improve patient care.

Summary:

In summary, this model of care for Papua New Guinea is focused on improving patient care throughout its health care system. The model of care coverage is extended from self care management, prevention and promotion, early detection and intervention, to integration and continuity of care.

Chapter Three: Role Delineation of Health Services in Papua New Guinea:

Introduction:

The role delineation of Health Services in Papua New Guinea' outlines the minimum support required for providing health services. It provides a standard set of capability requirements for health service delivery and will assist in the planning process for all health services including acute/curative healthcare, rural health services and public and primary health care. The intent of role delineation is to guide services planning across the health services continuum; it is a tool that outlines what health services aim to achieve over the short, medium and long term.

Coordinated system wide planning, encourages balance between the overall system performance and individual health service performance. Developing such an approach to managing services entails delineation of the functional roles of particular health services.

The Role delineation for Health Services in Papua New Guinea will replace the current out of date the 2001 Minimum Standards for District Health Services in Papua New Guinea and the 2003 Priorities, Policies and Standards for Curative Health Services.

What is Role Delineation?

The Role delineation of health services is a process that determines the services, support, staff profile, minimum safety and other requirements (medical and non medical minimum level of equipment) that ensure health services are safely provided and appropriately supported. A key part of the role delineation of health services is the Role Delineation Matrix which is a strategic role statement, focusing on clinical groups / clinical services / hospital and primary health care service capabilities. By defining capability as *"a service capacity to provide a health care service based on skills and knowledge"*; the capability of services is recognised as an important dimension to patients' quality of care and safety.

Delineation of health services is required as it is neither appropriate nor feasible for every health facility to be resourced to a super specialty level. Not all health services and facilities will have all groups of services and certain sub specialty groups will only be available in some higher level facilities. Role delineation definitions should be interpreted with some degree of flexibility, combined with consideration for the functional level of health service delivery. Alternatively, at some sites, a service may not satisfy all the stated criteria to achieve a particular level, but may exceed the criteria required for the lower level. These sites are assigned a combination of levels as indicated in the Role Delineation Matrix.

Role delineation is based on a number of underlying principles of which include:

- Provision and improvement of safe quality clinical care / hospital and primary health care services which is accessible across all health care services / settings / facilities including

national, regional and provincial public hospitals, district hospitals, health centres, community health posts and community aid posts & its community.

- For optimal patient outcomes, our people / our clients need to receive the right care at the right time in the right place.
- The right care is services that bring appropriate resources and skills for management of the patients / community specific health needs.
- Right time is having access to services in a timeframe that will minimise adverse physiological consequences and potential complications and
- Right place is health facility/service that has the capability to provide services of the complexity required to meet patients' health needs.
- Patients are treated by a service that is appropriate to the level of care needed.
- All the inter related elements of service delivery are captured and
- All the component parts add to a unified whole picture.

In summary, role delineation provides a consistent language to describe health services and acts as a tool for planning service developments.

Role Delineation in Papua New Guinea:

The National Health Service Standards for Papua New Guinea include role delineation of health services and service level definitions; these have been developed in collaboration with Health Managers, Planners, Clinical Experts, and National Department of Health Program and Policy Officers and Planners. The role delineation process starts with the identification of health service groups' in all Papua New Guinea health settings / services. Each group is determined in terms of treatment or services provided; the staff required to provide treatment and/or services; and often the type of facilities and or equipment that are needed. Role delineation does not document the patient journey that a patient takes to receive care. Instead role delineation processes defines various services and the level at which these are to be provided at different sites.

The definitions and Role Delineation Matrix describe the range of service complexity covered for each service group, classifying these as level 1 through to 7. Level 1 service is the least complex and level 7 services are the most complex. This standardised set of definition allows for the categorisation of service groups across different sites. Within role delineation are definitions provided for inpatient (acute care) services, ambulatory care (i.e. outpatient) services, primary health care, prevention and promotion, diagnostic services, allied health and support services. The matrix shows the complexity level of service groups that are available, not all health facilities have all levels of service groups. For example, the high level tertiary hospital will be the site to deliver highly sub specialised level of care.

The Role Delineation Matrix does not attempt to describe all the service groups which are provided by all health care facilities, but confines itself to those which are widely considered to be the core services. The matrix includes only brief descriptions of the capabilities and requirements of the service groups including staff profiles and medical and non medical equipment. Role delineation definitions should be interpreted with some degree of flexibility, combined with consideration for the functional level of service delivery. Health service planner, clinical and public health leaders can also consider a group of services across sites that could be within a district catchment based structure or a network of services rather than a facility focus.

Templates are provided for recording the service capacity levels of health service for each health facility or service and for a province.

Essential Medical Equipment and Non Medical Equipment Minimum Standards:

The Role Delineation Matrix identifies minimum equipment for each level of service group. Senior Clinicians and Managers were able to provide minimum standards for medical and non medical equipment for the Role Delineation Matrix. Role delineation, essential medical and non medical equipment does not identify the preferred brand, model number or amount of individual equipment items necessary for procurement.

Health Workforce Minimum Standards:

The health workforce minimum standard is based on health services to be delivered inline with the delineated role of each service / group. Productive measures are utilised as a measure of the effectiveness of the health workforce devote to a particular task and is measured by outputs per unit of labour.

For direct health care, labour inputs are measured in terms of:

- Client / patient contacts per health professional per hour' for ambulatory care / primary health care; and
- 'Available health care professional hours per patient day' for inpatient care activity.

Targeted health workforce staffing levels were agreed and trialled. Staffing levels also include the most appropriate skill mix to provide for levels of health care. The results are incorporated into the Role Delineation of Health Services matrix.

Role Delineation of Health Services Matrix

The Role Delineation of Health Services Matrix (refer to Annex 1) is used to determine health service role delineation in relation to a health service's everyday activity.

The service group role delineation matrix should be used to:

- Match the services provided in/or across a health facility;
- Provide consistent and comparable information on the level of service delivery including the type of service;
- Identify the relationship between the service groups;
- Enable strategic and operational planning based on consistent service description;
- Encourage service planners to review service profiles on a comprehensive scale, with consideration of a district wide or network of health services in a province; and
- Review services in response to demands and changes.

Information is listed in the following format:

- Core Health Services.
- Speciality and Sub Speciality Services.
- Supporting Services (supporting services enhance the delivery of core services – this includes both diagnostic and allied health services/rehabilitation services).
- Public Health Services.
- Management Support.

Core services fall into the following core areas:

- Medical services and related public health services (including sexual health).
- Surgical services and related public health services (including oral health).
- Maternity services (including obstetrics & gynaecology and reproductive health).
- Child health services (including paediatrics and neonatal care and youth, adolescent and school health).
- Psychiatry/Mental Health and Addiction services.

Supporting services include the following:

- Critical care (high dependency, intensive care and coronary care and emergency / retrieval services).
- Anaesthetic (including recovery care).
- Operating theatre (including central sterilising area).
- Diagnostic services – medical imaging and pathology (including mortuary and blood bank).
- Pharmacy services.
- Allied health (rehabilitation services including orthotics / prosthetics).
- Biomedical engineering and engineering.
- Infection control.
- Public health, environmental health, waste management, occupational health and safety, sustainable development and healthy environment.
- Food services and Security.

Management support includes:

- Management and leadership support
- Teaching and training and research
- Disaster preparedness (including epidemic and disease outbreak)
- Health information (including population and bed capacity).

Sub speciality services include:

- Sub specialties of medicine
 - Cardiology, Endocrine (lifestyle diseases), Gastroenterology, Respiratory Medicine, Cancer services, Geriatrics/Aged care, Haematology, Medical Oncology/Palliative care, Neurology, Radiation Oncology, Renal medicine, Haematology.
 - Sub speciality of surgery.
 - Cardiothoracic, Ear Nose Throat surgery, Ophthalmology, Orthopaedics, Neurosurgery, Urology, Burns, Head and Neck, Plastics.
 - Some specialities and anaesthetics; the general term ‘good, moderate & high risk’ is used rather than more specific definitions, to allow scope of varying circumstances and appropriate clinical judgement.
 - Complexity of procedures can be described as ‘minor’, ‘common’, ‘complex’ again clinical judgement is appropriate.

Workforce staffing levels are identified within the matrix for generic and specific service level groups. Annex 1.4 outlines the details for core and support services.

Minimum medical (clinical) and non medical (health facility) equipment is aligned to each core and support service within the matrix.

How to Determine the Service Level

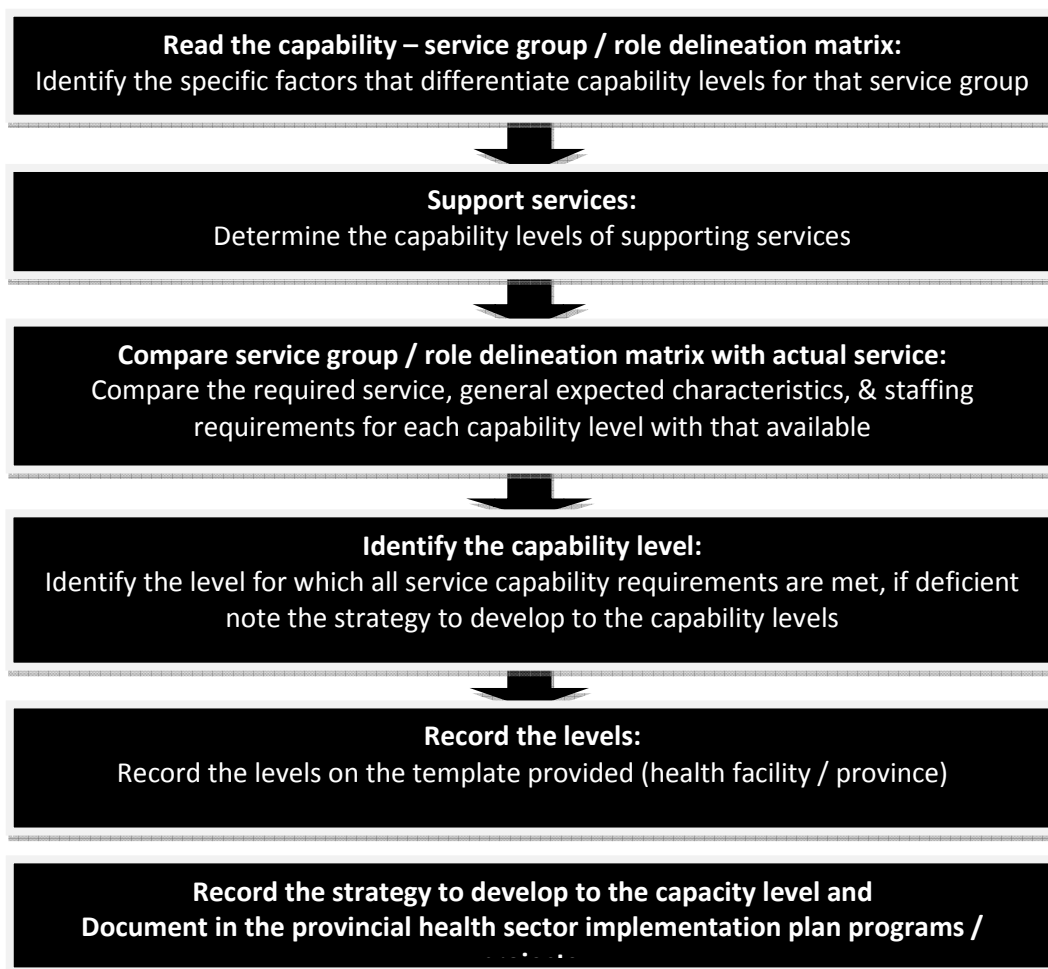
A health facility or health service capacity to deliver a particular level of core health service depends on the presence of medical, nursing, allied health and ancillary health care personnel who have the qualifications, skills and experience compatible with the defined level of care in the defined service group and has also the appropriate level of support services. It also depends on the availability of medical equipment e.g. ventilators, CT scanners, and non medical equipment, e.g. supplies.

The specific factors determining service capability level differs according to the service group but generally is a combination of:

- Service complexity;
- Patient characteristics; and
- Support services availability and capability.

An example of the factors determining service capability level is provided below.

Figure 4: Factors Determining Service Capability Level



The 4 Steps involved with determining service level include:

Step 1: Core services should be assessed, service by service for each facility and ranked (i.e. level 1 –7)

Step 2: Each of the clinical support services (clinical support, teaching, leadership, etc) should than be assessed (ie critical care, infection control, diagnostic services)

Step 3: Record geographical catchment population as well as bed capacity (including local analyses, catchment population and total beds in a ‘health service’)

Step 4: Record and maintain capacity of each health facility.

Summary sheets: Two excel spreadsheet (attached to the role delineation matrix – Annex 1.1) are provided for the convenience of those undertaking the role delineation of health services. There is one for individual health facility (Annex 1.2) and one for the province (Annex 1.3).

Summary:

Role delineation can be the planning tool that will assist in the development of the five year provincial health sector implementation plan and contribute to provincial development plans. This can be achieved by comparing existing and required services (both clinical, primary health care and support services); identifying necessary changes to meet requirements and reflecting on either programs or projects in the implementation plan 2012-2016.

All health services should have in place quality assurance/continuous quality improvement programs. Role delineation is linked to and supports ‘*Quality Standards for Health Services in Papua New Guinea*’ and ‘*Papua New Guinea Health Service Accreditation Program*’. Level 1, 2, 3 should, where possible, be partners and participate in district and provincial quality management and monitoring processes working together towards meeting the Quality standards.

Health services should be utilising current best practice clinical techniques and public health interventions, the effectiveness of the service is monitoring outcome indicators. Papua New Guinea has in place:

- Local and provincial quality assurance mechanisms including peer review mechanisms;
- External review including health service accreditation set against quality standards;
- Continuous improvement approach to service and practice change;
- Continual staff development; and
- An emphasis on obtaining and using feedback from patient care to improve the quality of care of health services for the people of Papua New Guinea.

Acknowledgements

Role Delineation of Health Services in Papua New Guinea

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Abraham Apasai	PHA Central Province
Ambrose Kwaramb	Project Officer, Health facilities
Barnabas Matanu	DMS, Buka General hospital
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Enoch Posanai	Executive Director, Public Health
Evelyn Lavu	Manger, CPHL, Public Health
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Goiba Tienang	Psychiatricist, POM
Gregory Mainao	Manager, Oral Health
James Amini	Paediatrician PMGH
James Naipa	ENT Specialist PMGH
Jimmy Ravao	DHM, Kwikila HC
Job Hawap	Child Health, Public Health
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John Tonar	DMS Kundiawa General Hospital
John Warai	DMS, Enga General Hospital
Joseph Apa	CEO, Goroka General Hospital
Joseph Turian	CEO, Mendi General Hospital
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Leo Makita	Malaria VBD, Public Health
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Lloyd Ipai	Physician, PMGH
Magea Pole	Anaesthetist, PMGH
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Nakapi Tefuarani	Representative, Training Institutions
Noel Yaubihi	DMS, Alotau General Hospital
Onne Rageau	Representative, Private Sector
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Peniel Boas	STI/HIV/AIDS Technical Officer, Public Health
Robert Wat	CEO, Kavieng General Hospital
Rose Kavanamur	Environmental Health, Public Health
Samir R Dutta	Director, Pathology, PMGH
Stella Jimmy	DMS, Vanimo General Hospital
Terry Daniel	Environmental Health, Public Health
Timothy Pyakayka	Manager, Port Moresby Urban Health Services
Varage J Laka	Manager, Clinical Standards
William Paya	Project Officer, Hospital Management Services
Wilma Saweri	Nutritionist, Level 3, Public Health.

Health services that participated in the National Health Service Standards – Workforce Minimum Standard Trial

Health Service Name	Service or Component
Alotau General Hospital – Milne Bay Province	Specialist Clinics, Maternal, Child Health & F.P. Clinic
ANGAU Memorial General Hospital – Morobe Province	NICU/Special Care Nursery, Paediatric Ward Children’s Outpatient Department
Kokoda Health Centre – Oro Province	Government Health Centre
Papa Health Centre – Central Province	Government Health Centre– Entire Service
Modilon General Hospital -Madang	Emergency Department
Popondetta General Hospital – Oro Province	Delivery Ward, Postnatal Wards
Port Moresby General Hospital	Intensive Care Unit, General Medical Ward, Pharmacy
Vanimo General Hospital - WSP	Surgical Ward, Adult Outpatient Department
Veifa’a Health Service – Central province	Church Health Centre – Entire Service

Eastern Highlands Provincial Health Authority

The Eastern Highlands Provincial Health Authority Clinical Service Plan under the leadership of Dr K Kendaura is based on the contents and format of the New South Wales Health Clinical Service Framework documentation. This plan provided a foundation for the development of 'Role Delineation of Health Services in Papua New Guinea'.

Adviser Support for the National Health Service Standards for Papua New Guinea

Rob Akers	Adviser, CBSC
Vicki Assenheim	Adviser, CBSC
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Design Standards for Health Facilities in Papua New Guinea:

The 'Design Standards for Health Facilities in Papua New Guinea' have been compiled by a Working Party consisting of:

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Mr. Peter Toalbert – Architect, Health Services Improvement Project, National Department of Health

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Dr. Dora Lenturut-Katal, Director of Medical Imaging, Port Moresby General Hospital

Dr. S Dutta, Acting Director of Pathology, Port Moresby General Hospital.

Annex 1.1 Role Delineation of Health Services in Papua New Guinea Matrix

Annex 1.2 Role Delineation of Individual Health Services in a Province Template

ROLE DELINEATION		HEALTH FACILITY																			OVERALL RANKING 6 OR 6/8	Key Data	
		Levels of Clinical Support Services provided on site											Level of Allied Health & Ancillary Services				Levels of Management Support						
SERVICES	Core Service Level /Specialty	Pharmacy	Radiology	Pathology / laboratory	Anaesthesia	Operating Theatre / Recovery	CSSD	Critical care / HDU / ICU /	Infection control	Waste management	Allied Health /Rehabilitation	Orthotics / Prosthetics	Mortuary	Biomedical engineering / Engineering	Nutrition / Food Services	Teaching, Training & Research	Leadership/ Management /Health Information	Disaster /Outbreak / Preparedness	Geographical Catchment Population	Bed Capacity			
<i>Core Health Services inc Public health component</i>	Medical Services																						
	General Medicine																						
	Surgical Services																						
	General Surgery																						
	Maternity Services																						
	Obstetric care																						
	Child Services																						
	Neonatal care Paediatric care																						
<i>Level of Sub speciality Services</i>	Medical Services																						
	Adolescent Health / Youth																						
	Cardiology																						
	Dermatology																						
	Emergency Medicine / Retrieval																						
	Endocrinology / Lifestyle Diseases																						
	Gastroenterology																						
	Geriatric / Aged Care																						
	Medical Oncology / Haematology/ Palliative Care																						
	Mental Health & Addiction Services																						
	Neurology																						
	Radiation Oncology																						
	Renal Medicine																						
	Respiratory Medicine																						
	School Health																						
	Sexual Health																						
	Surgical Services																						
	Cardiothoracic																						
	Gynaecology																						
	Burns																						
	ENT																						
	Head & Neck Surgery																						
	Neurosurgery																						
Ophthalmology																							
Oral / Dental health																							
Orthopaedics																							
Plastic surgery																							
Urology																							

Annex 1.4 Staffing Levels for Health Services

Productivity:

Assumptions:

Rotating Shift Workers 43 productive weeks @ 40 hrs = 1720 available hours (Requires 1.20 Officers to provide 52 wks coverage p.a.)

Day Workers 45 productive weeks @ 40 hrs = 1800 available hours (Requires 1.15 Officers to provide 52 wks coverage p.a.)

Clinical Unit Managers may devote up to 10% of time to administration functions (approximately 1 hour per shift) and remainder to provision of clinical care.

Health Extension Officer hours will be included in the calculations of hours per patient day for inpatient care, and OPD /A&E of triaged patients 15 minutes per attendance.

Managers of Levels 5-7 Laboratories, Pharmacies, Medical Imaging and Oral Health Services may devote 20% of their shift to administration functions.

'Guardian' support may be used in General Wards, some High Dependency & Special Care Units but not 'infectious' or 'Intensive' Care environments

Minimum Staffing Levels:

Level 1 1 CHW working 5 shifts/week with after-hours on-call arrangement and relief for annual leave and other extended absences.

Level 2 3 CHWs (1 with Post Certificate Midwifery Training) covering shifts as required with shared after hours on-call arrangement. Leave relief provided from within existing staff numbers.

Level 3 Urban Clinic staffing numbers and skills mix based upon actual caseload (see calculation methodology below) and 5 day shifts per week.

Health Centre staffing numbers and skills mix based upon actual caseload (see calculation methodology below) and 21 shifts per week with after hours on- call arrangements to supplement when required. Leave relief for annual leave and other extended absences provided from within existing numbers.

Levels 4 - 7 Hospital staffing numbers and skills mix based upon actual caseload of each Unit/Ward (see calculation methodology below) and 21 shifts per week. Leave relief for annual leave and other extended absences provided from within existing numbers. Essential overtime may be compensated by remuneration or grant of 'time off in lieu of overtime' at Management's discretion.

Medical Officer and Allied Health Professional numbers are expected to be at minimum levels in most facilities for the foreseeable future due to nationwide shortages in most specialties, sub- specialties and disciplines.

Actual Staff Requirements Calculation Methodology

Outpatient Care:

Service Level 1	General outpatients (adult & paediatric) 15 minutes per attendance 1 day per week for Integrated Outreach/Public Health/Health Promotion Patrolling by the sole Officer
Service Levels 2 - 4	Inclusive General outpatients (Adult & Paediatric) 15 minutes per attendance 1 day per week for Integrated Outreach/Public Health/Health Promotion Patrolling per Officer (FTE) Maternal, Family Planning & Child Health Clinics 15 minutes per attendance (Ratio of 1 N.O. /1 CHW)(with midwifery experience)
Service Levels 5-7	Inclusive General Outpatients (Adult & Paediatric) 15 minutes per attendance (Ratio of 1 N.O. / 1 CHW) Specialist Clinics - 15 minutes per attendance for SMO + Nursing Officer support of 10 minutes average per attendance Maternal, Family Planning & Child Health Clinics – 15 minutes per attendance (Ratio of 1 N.O. / 1 CHW) (with midwifery experience) Emergency Department staffing calculated for actual caseload and based upon acceptable waiting times for triage categories from the National Department of Health's Accident & Emergency Department Manual. Allowance of 45 minutes of Nursing Officer input per attendance for triage categories 1 and 2 patients must be provided (Ratio of 2 N.O. / 1 CHW)

General Inpatient Care:

All Levels	30 minutes per patient for Admission process including documenting of full history/current symptoms/observations and condition 1.6 hours/patient day for 'Self Care' patients in all settings (Ratio of 1 N.O. / 8 CHWs)
Level 3	2.0 hours/patient day & 'Guardian' Support (Ratio of 1 N.O. / 4 CHWs)
Level 4	2.4 hours/patient day & 'Guardian' Support (Ratio of 1 N.O. / 2 CHWs)
Level 5 – 7	3.0 hours/patient day & 'Guardian' Support (Ratio of 3 N.O. / 2 CHWs)

Higher Acuity Inpatient Care:

Adult and Paediatrics:

Levels 5 - 7	High Dependency Unit with Full Nursing Care	4.8 hrs/patient day (Ratio of 4 N.O. / 1 CHW)
	High Dependency Care with 'Guardian' Support	4.0 hrs/patient day (Ratio of 4 N.O. /1 CHW)
	Intensive Care Unit with Full Nursing Care	24.0 hrs/patient day (Ratio of 9 N.O. /1 CHW)

Neonatal Care:

Levels 5 – 7	Moderate Care with 'Guardian' Support	4.0 hrs/patient day (Ratio of 2 N.O. / 3 CHW)
	Special Care with 'Guardian' Support	6.0 hrs/patient day (Ratio of 3 N.O./ 2 CHW)
	Neonatal Intensive Care without 'Guardian' Support	8.0 hrs/patient day (Ratio of 9 N.O. / 1 CHW)

Nursing Support for Procedures:

Delivery Ward	All Levels 3 Deliveries/Midwife/Shift (with midwifery experience)(Ratio of 2 N.O. / 1 CHW)
Operating Theatre	Level 4 & 5 3 support staff/procedure with average of 5 elective procedures/shift (Ratio of 2 N.O. / 1 CHW)
Level 6 & 7	3 support staff/procedure with average of 2 major and 2 minor elective procedures/shift
All levels	3 support staff/procedure for emergency procedures (No minimum activity prescribed)

Clinical Support Services:

Central Sterile Supply Service	4 Officers for 100 beds and 1 additional officer for each additional 40 beds, Managed by Nursing Officer.
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Allied Health:

Pharmacy:	All Levels	15 prescriptions filled per hour/Dispenser or Pharmacist.
	Ward Imprest Replenishment	1 Officer required for 30 minutes per week for each Ward/Department/Unit (Technician).
	Bulk Orders	1 Officer required for 4 hours per (Pharmacist)
	Levels 5 - 7	Advice/support to SMOs 0-7 SMOs requires 1 Pharmacist 8-20 SMOs requires 2 Pharmacists 21+ SMOs requires at least 3 Pharmacists.
Pathology:	Levels 2 – 4	Requires 1 Technician per 50 basic tests per day
	Levels 5 – 7	Requires Haematology 8 minutes per test / Laboratory Technician/Laboratory Scientist Biochemistry 10 minutes per test/Laboratory Technician/ Laboratory Scientist Microbiology 15 minutes per test/Laboratory Technician/Laboratory Scientist VDRL 12 minutes per test/ Laboratory Scientist Advanced Tests up to 1 hour per test / Laboratory Scientist/Pathologist.
Radiology:	Levels 3 - 4	20 minutes per patient including exposure and developing/Radiographer
	Levels 5 – 7	15 minutes per patient for radiographic exposure/ Radiographer 5 minutes per patient for developing manually/ X-Ray Assistant 3 minutes per patient for developing with processor/ X-Ray Assistant 20 minutes per patient for Ultrasound scanning/ Radiologist/Ultrasonographer 1 hour per patient for fluoroscopic/CT exposure including developing and reporting/Radiologist/Radiographer.

Oral Health: Levels 1-2	No Oral Health staff – examination , pain relief & referral by N.O.s or CHWs only
Level 3	Dental Therapist/s & Dental Assistant /s with numbers dependent upon caseload
Level 4	Dental Officer, Dental Therapist/s and Dental Technicians with Assistant with numbers dependent upon caseload.
Levels 5-7	Oral surgeon/s, Dental Officer/s, Dental Therapists, Dental Technicians and Assistants with numbers dependent upon caseload.
All Levels	Extractions 15 minutes/extraction Fillings 30 minutes/filling Oral surgery, other services and manufacture of prosthetics as required.

Annex 2 List of National Department of Health Clinical Guidelines / Treatment Manuals

Area	Type	Name	Title
Adult	Treatment Standard	Standard of Patient Care Treatment for Adult	Standard Treatment for Common Illnesses of Adults in Papua New Guinea: A Manual for Nurses, Health Extension Officers and
Anaesthetics	Guideline	Anaesthetic Guide for PNG	Anaesthetic Guide for PNG
Emergency Medicine	Procedure Manual	Accident and Emergency Procedure Manual	Accident and Emergency Procedure and Practice Manual
ENT	Guideline		ENT Surgical Atlas
Family Planning	Training Manual	Violence and Gender Issues? - Training Manual	Gender Equity - Training Manual
Family Planning	Treatment Standard	Manual of Family Planning for Doctors, HEOs and Nurses in PNG	Manual of Family Planning for Doctors, HEOs and Nurses in PNG (2nd Edition)
Family Planning	Guideline	WHO Family Planning Manual	WHO Family Planning: A Global Handbook for Providers
Infection control	Guideline	Infection Prevention Policy Guidelines for Health Facilities	Infection Prevention Policy Guidelines for Health Facilities (2nd Edition)
Intensive Care	Procedure Manual	ICU Procedure Manual	ICU Procedure Manual
Mental Health	Information	Community Mental Health Information Packages	
Mental Health	Guideline	Mental Health Care for PNG	Mental Health Care for PNG
Nursing	Procedure manual	Nurses Standard Procedure Manual	Nurses Standard Procedure Manual
Nursing	Standard		Papua New Guinea Nursing Competency Standards
Nursing	Standard	Standard of Patient Care	Standards of Patient Care (2nd Edition)
Obstetrics and Gynaecology	Training manual	Emergency Obstetrics Care Training Manual	Emergency Obstetrics Care Training Manual
Obstetrics and Gynaecology	Treatment Standard	O&G Standard Treatment Manual	Manual of Standard Managements in Obstetrics and Gynaecology for Doctors, HEOs and Nurses in Papua New Guinea
Oncology	Guideline	Cancer Management Cancer Review Surgical	Cancer Management Cancer Review Surgical
Oncology	Guideline	Guidelines for the Treatment of Cancer in Papua New Guinea (3rd Edition)	Guidelines for the Treatment of Cancer in Papua New Guinea (3rd Edition)
Ophthalmology	Procedure Manual	Eye Care Standard Procedure Manual	Eye Care Standard Procedure Manual
Ophthalmology	Guideline	Primary Eye Care: A Simple Guide	Primary Eye Care: A Simple Guide
Oral Health	Procedure Manual	Oral Care Curative Health Procedure	Oral Health Services Procedure Manual: For The Oral and Other Health Workers in Papua New Guinea (1st Edition)
Oral Health	Treatment Standard	Oral Health Services: Minimum Standards Manual (1st Edition)	Oral Health Services: Minimum Standards Manual (1st Edition)
Paediatrics	Guideline	Paediatrics for Doctors in Papua New Guinea	Paediatrics for Doctors in Papua New Guinea (2nd Edition)
Paediatrics	Treatment Standard	Children Standard Treatment	Standard Treatment for Common Illnesses of Children in Papua New Guinea: A Manual for Nurses, Community Health Workers,
Pathology	Procedure Manual		General Laboratory Manual
Pathology	Procedure Manual		Media
Pathology	Procedure Manual		Laboratory Procedure Manual
Public Health	Guideline		Waste Management
Radiography	Procedure Manual	Radiographers Procedure Manual	Radiography Procedure and Practice Manual
Service Delivery	Standard		Minimum Standards for District Health Services in PNG
Service Delivery	Standard		Priorities, Policies, and Standards of Curative Health Services as per National Health Plan 2001-2010
STI	Standard	HIV Prophylaxis - WHO	Standard Management of Sexually Transmitted Infections and Genital Conditions in Papua New Guinea: A Manual for Health
STI	Standard		Standard Management of Sexually Transmitted Infections (STIs) and Genital Conditions in Papua New Guinea: A Manual for STI
STI	Standard	STI Clinic Standards?	Minimum Standards for STI Service Delivery in Papua New Guinea A reference manual for all health care providers in PNG
Surgery	Hand book	HEO and Nurses Surgical Hand Book	HEO and Nurses Surgical Hand Book
Surgery	Procedure Manual	Operating Theatre Management Procedure Manual	Operating Theatre Procedure and Practice Manual
Surgery	Guideline	Standard Tray for Operating Theatre	Standard Tray for Operating Theatre
Surgery	Guideline	Surgery: For Primary Health Care Workers in Papua New Guinea	Surgery: For Primary Health Care Workers in Papua New Guinea
Traditional Medicine	Policy	Traditional Medicine Policy Formulation Conference Proceedings	Traditional Medicine Policy

References:

Acts:

National Health Administrative Act, 1997

Organic Law, 10998

Provincial Health Authority Act, 2007

Public Hospitals Act, 1994

Reference Documents:

Clinical Service Role Delineation Guide for Eastern Highlands Provincial Health Authority, Volume 1, 2010

GoPNG, National Health Plan 2011-2020, June 2010

Infection Prevention Policy Guidelines for Health Facilities (2nd Edition)(2009)

Manual of Family Planning for Doctors, HEOs and Nurses in PNG (2nd Edition)2000

Manual of Standard Managements in Obstetrics and Gynaecology for Doctors, HEOs and Nurses in Papua New Guinea (5th Edition)

Minimum Standards for STI Service Delivery in Papua New Guinea A reference manual for all health care providers in PNG

NDoH, 'Minimum Standards for Delivery Oral Health Services from Public hospitals & Rural Health Centres' 2007.

NDoH, Minimum Standards for District Health Services in PNG, 2001

NDoH, Priorities, Policies, and Standards of Curative Health Services as per National Health Plan 2001-2010, 2003

Oral Health Services: Minimum Standards Manual (1st Edition)

Standard Treatment for Common Illnesses of Adults in Papua New Guinea: A Manual for Nurses, Health Extension Officers and Doctors (5th Edition)

Standard Treatment for Common Illnesses of Children in Papua New Guinea: A Manual for Nurses, Community Health Workers, Health Extension Officers and Doctors (8th Edition)

Survey of Standards for Health Services in Papua New Guinea – PNG Health Services Accreditation Program, 2010.