National Health Plan 2021 - 2030

Volume 1B
Key Interventions

Government of Papua New Guinea

JULY 2021

BUILDING THE HEALTH OF OUR PEOPLE
LEAVING NO-ONE BEHIND IS EVERYBODY'S BUSINESS

Contents

ACRONYMS

AIP	Annual Implementation Plan
CACC	Central Agency Coordination Committee
CDC	Center of Disease Control
CoE	Center of Excellence
CHP	Community Health Post
CHW	Community Health Worker
CPHL	Central Public Health Laboratory
DDA	District Development Authority
DNPM	Department of National Planning and Monitoring
DoT	Department of Treasury
E-NHIS	Electronic National Health Information System
EHIP	Essential Health Intervention Package
HIE	Health Information Exchange
HP	Health Post
HIC	Healthy Island Concept
HIV and AIDS	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
HRH	Human Resource for Health
HRIS	Human Resource Information System
ICT	Information, Communication and technology
IHR	International Health Regulations
KRA	Key Result Areas
MBC	Ministerial Budget Committee
MQCL	Medicines Quality Control Laboratory
NEC	National Executive Council
NHP	National Health Plan
NHSS	National Health Service Standards
NIPH	National Institute for Public Health
NO	Nursing Officers
NRL	National Reference Laboratory
PFM	Public Finance Management
PFM Act	Public Finance Management Act
PHA	Provincial Health Authorities
PHC	Primary Health Care
SGBV	Sexual and Gene=der-Base Violence
SWAP	Sector Wide Approach
SWF	Sovereign Wealth Fund
SOP	Standard Operational Procedure
SOE	State Owned Enterprise
SPAR	Sector Performance Annual Review
SWF	Sovereign Wealth Fund
TB	Tuberculosis
TCS	Tax Credit Scheme
VHA	Village Health Assistant
UHC	Universal Health Coverage
YAH	Youth and Adolescent Health

INTRODUCTION

Strengthening primary healthcare and improving access to the rural majority will remain the focus for new National Health Plan 2021-2030 but with more emphasis to increase specialist care and community participation. It is a time to harness the technology, knowledge and skills within the health sector and transition to a new era. It is both a time where technology enables a reach to the village level and administrative structures recognise the importance of sub-national service delivery, with an emphasis on promoting good health and providing quality healthcare services. Epidemiological transitions, where disease prevention and promotion is given greater urgency, is coupled with a community-based approach.

The efforts towards implementing the "back to basics" is well captured with a focus on engaging communities, health promotion and prevention, and rationalising a targeted approach to service provision. Key strategies include addressing disease burdens through a range of recognised health priorities in a complete and integrated manner by," packaging essential service of care at different levels". This approach will require a system that is structured to deliver these services, with adequate resources, including finance, a skilled health workforce, an efficient medical supply chain, and appropriate facilities managed by good governance and leadership informed by data and research.

The focus to improve Universal Health Coverage (UHC) is articulated across the plan and will be implemented through the five Key Result Areas (KRA) and strategies in Volume 1A. UHC is defined as ensuring that all people have access to needed health services (including prevention, promotion, treatment, rehabilitation, and palliation) of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.[1]

Volume 1b (this volume) details key interventions and the implementation framework that will help agencies align their sub-plans to the overall objectives and policy directions set in Volume 1a. Volume 1b outlines greater accountability by establishing sub-strategies at the national, provincial and local level by the different health programs and supporting disciplines that will set the basis for implementation.

Volume 1b covers three main areas:

a) KEY INTERVENTIONS: Health sector's key interventions that will implement and build a health system that is responsive to demand;
b) HEALTH PROGRAM STRATEGIES: Overview and goals for each health program for the next 10 years and the roles and functions at national, provincial and district levels
c) IMPLEMENTATION LOGFRAME: Aligns each KRA to specific strategies and interventions with performance indicators and targets set for the medium term (2025) and the long term (2030). This framework will provide a clear planning outline for agencies to further align their goals and strategies to implement the interventions of the National Health Plan 2021-2030.

[1] WHO, June 2021, who.int/healthsystems/universal_health_coverage/en/

BUILDING THE HEALTH OF THE NATION

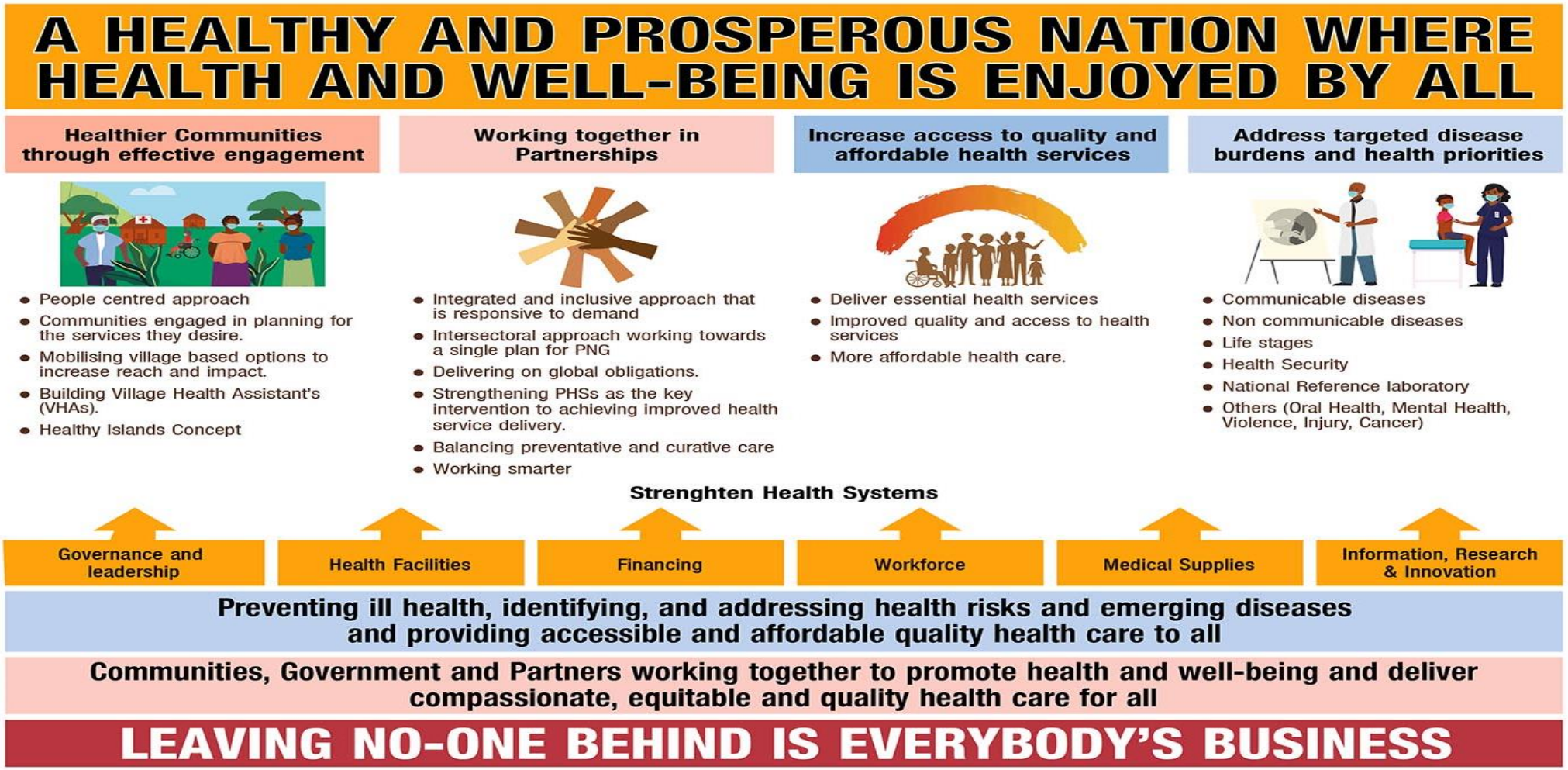

Fig.1. Illustrates the systems strengthening approach

CHAPTER 1: KEY INTERVENTIONS

There are ten interventions that form the major deliverables for the NHP over the next 10 years. They can be assessed as key outcomes to achieve the five KRAs of the National Health Plan 2021-2030:

1. **Build Village Health Assistance**
2. **Revitalise Health Promotion—Healthy Island Concept**
3. **Build Stronger Partnerships with all stakeholders**
4. **Develop Essential Health Intervention Packages**
5. **Establish a National Reference Laboratory**
6. **Strengthen the Medical Supplies Pull-System**
7. **Explore Revenue Generating Options**
8. **Strengthen Health Regulatory Systems**
9. **Develop e-Health**
10. **Advance the National Referral, Research and Teaching Hospital**

A vision for the health and wellbeing of the people of Papua New Guinea acknowledges that:

- family and village are at its core
- service should reach all people, with particular effort for those where disadvantage is most evident
- public, church, community, and private institutions need to work together with governance, administrative, and service approaches and structures that are responsive to need and distinguished by excellence
- health services are fit-for-purpose with interventions based on evidence, and prepared for innovation to meet challenges.

The development and strengthening of the health system to enable better service delivery will;

a) package services in a way that addresses the complexity of the interface between the community and services
b) place patients and their communities at the centre of care models with integrated approaches to health prevention and care
c) respond to the dual disease burden, of both communicable and non-communicable diseases
d) rejuvenate a focus on primary prevention through inter-sectoral approaches, policy levers and community and social mobilisation for health, finding a balance between primary prevention, primary and tertiary level care.
e) provide cohesive national governance in the transition to a district- and provincial-led health system.

INTERVENTION 1: BUILDVILLAGE HEALTH ASSISTANCE

Access to Primary Health Care is one major challenge in the Papua New Guinea with low coverage and utilization of services.

Re-focus on community engagement provides an opportunity for development of suitable service models appropriate for the new decade. This includes the development of a new cadre of "Village Health Assistant" as a means to improve village/community health service and other attributes that make a healthy village.

The aim of this intervention is to increase community participation to improve health, social and economic statuses within a community. This will bring a greater focus on people and their home environments where individuals are involved in assessing their own health needs and strategizing to meet those needs.

Community participation in the development of rural health services has resulted in more accessible, relevant, and acceptable service provision and higher community satisfaction with better health outcomes.[2]

PNG is steeped in tradition that honours culture and family. Attaining and maintaining health is determined by environment and lifestyle and is guided by people and culture.

The concept of Village Health Assistants (VHAs) is similar to Village Health Workers (VHW) which stems from situations where professional healthcare providers are scarce, whether for economic, geographic, or cultural reasons. Ideally, VHAs are people within a village who can provide verified holistic care, coupled with community education to help prevent illness and disability.[3]

VHAs will be recruited from communities to be a link between the Health Post (Level 1 Health facility) and the local community. VHAs will be the advocates to strengthen primary healthcare services, reduce inequities and increase access to care. Much of their tasks will be devoted to conducting preventive and promotive health activities. They will be trained through a standardised curriculum with options for career progression to Community Health Workers (CHWs) and Nursing Officers (NOs).

Goal

- **Ensure sustainable community-based options for delivering health promotion, awareness and prevention activities.**

Objectives

- **Establish sustainable incentive packages for VHAs that focus on health promotion and disease prevention and are responsive to individual settings.**
- **Greater recognition of the primary health role played by Village Health Assistance, supported by Community Health Workers.**

Strategies

- **Develop VHA Policy and implementation guideline**
- **Develop a framework for VHA course curriculum development and delivery.**
- **Create sustainable incentives packages for VHAs that focus on health promotion and disease prevention, responsive to individual settings.**
- **Provide program guides and training materials for program managers and trainers to train and supervise VHAs in line with NHSS**

[2] The benefits of community participation in rural health service development: where is the evidence? Robyn Preston ,2009, https://researchonline.jcu.edu.au/

[3] A Concept Development of the Village Health Worker, Linda Benskin, July 2012

INTERVENTION 2: REVITALISE HEALTH PROMOTION AND PREVENTION – HEALTHY ISLANDS CONCEPT

Health promotion in PNG is relatively new with many people lacking knowledge, skills, and ideas on ways to improving their own health. It is still undervalued by many decision makers and over the years has been inadequately supported to fully implement health promotion programs throughout the country.

National Policies and Plans for Health Promotion are well established, however, effective delivery of the policies and community engagement is very limited.

The Healthy Island Concept (HIC) is a participatory approach developed and used in the Pacific Islands, through which communities work together to recognize linkages between their behaviour, their living environment, and health outcomes.[4] The approach covers a wide range of health and social issues, such as water, sanitation and waste management, hygiene promotion, leadership training, as well as gender and social inclusion in decision making.

HIC has been adopted in PNG but implementation has been slow with limited resources to roll out the program in the communities. The small number of communities that have successfully implemented the Healthy Island concept with assistance from partners and NGOs have shown a significant change in their living conditions and settings. If HIC is effectively implemented, it will drive and strengthen primary healthcare in PNG.

HIC involves continuously identifying and resolving priority issues related to individuals' health, development, and wellbeing by advocating and enabling these issues to be addressed in partnerships among communities, organisations, and agencies at national, provincial, and local levels.

Communities that adopt HIC create an health committee that sets goals for a range of settings like Healthy School, Healthy Village, Healthy Market, Healthy Family, etc.

Goal

- **Increase health promotion and prevention awareness in the communities through effective implementation of the Healthy Island Concept.**

Objectives

- **Communities take ownership of their own health and practice healthy living.**
- **Healthy Island Concept is incorporate into health promotion interventions and training manuals for primary health care workers**
- **Community leaders are able to assess and manage health risks affecting their environment and their well-being.**

Strategies

- **Develop Health Promotion and Prevention Policy and implementation guidelines.**
- **Develop Healthy Island Concept interventions that is suitable to implement in PNG and that is sustainable through community engagement.**
- **Collaborate with key stakeholders to improve environmental and socials determinants of health.**
- **Support in the implementation of the WASH Policy and incorporate strategies in the Healthy Island Concept Guidelines.**

[4]Yeung, S., and Selep, J. Healthy Islands Concept in Papua New Guinea.

INTERVENTION 3: BUILD STRONGER PARTNERSHIPS WITH ALL STAKEHOLDERS

Efforts to maximise health and prevent ill-health should be exercised by everyone, and especially by those who play an integral role to ensure good health is maintained. Partners include the community, social institutions, governments at all levels, service agencies, the academic sector, development partners, non-government organisations (NGOs), faith-based organisations (FBO) and business entities.

The health sector alone is not sufficiently equipped with the technical, managerial and financial capacity to respond effectively to the growing demand for quality health care. To addressing the general decline in health service delivery and to sustain any positive health outcomes for the people of Papua New Guinea, effective partnerships is essential[5]. In the implementation of the Health Partnership policy, the Health Sector Agencies have entered into partnership "agreements" with a range of partners. These partnership agreements are either contractual or non-contractual, depending on the needs of the partnership, its objectives, and the context in which the partners are working together. The specific agreements ensure that partners benefit from and have specific roles and responsibilities in implementation of services.

Over the years, the Health Sector have developed strong partnerships with key stakeholders, especially with the increase support from development partners and new and potential engagement with corporate business entities through the public-private partnership arrangement. However the coordination mechanism and resource management capacity is still a challenge in the sector, and requires adequate support for improvement.

There are three key elements that requires strengthening: (a) 'Health in all Policies' to improve engagement with the Government Agencies; (b) 'Sector Wide Approach (SWAP) Mechanism' for better coordination of development partners; (c) 'Implementation Accountability' improve integration and monitoring of programs at service delivery level with different stakeholders.

Goal

- **Increase partner support for effective health service delivery in the country.**

Objectives

- **Government agencies recognize the demand for health service improvement and prioritize health agenda in their sectoral polices and plans.**
- **Development partner's support are coordinated and directed to health needs**
- **Implementing partners support are integrated and monitored to complement service delivery gaps.**

Strategies

- **Review and implement Health Partnership Policy**
- **Increase advocacy in 'health in all policies' with the Central Agencies**
- **Revitalize the SWAP mechanism to effectively coordinate external donor resources.**
- **Increase the engagement of implementing agencies in health planning and decision-making processes.**

[5] The national policy on partnerships in the health sector for Papua New Guinea / Ministry of Health 2003

INTERVENTION 4: DEVELOP ESSENTIAL HEALTH INTERVENTION PACKAGES

Universal Health Coverage (UHC) is based on the principles of efficiency and health service integration for people-centred care to reduce inequities and ensure that quality essential services are accessible by all. PNG is fully committed towards achieving UHC.

The National Health Service Standards (NHSS) have been updated to reflect the UHC principles in improving quality of care. It is focused on identifying issues of critical importance at the different levels of services that impedes the provision of safe and quality health care. It provides an opportunity for health agencies and other partners delivering health services to undertake and present additional activities that respond to the criterions within each standard of care with emphasis on quality rather than a checklist of compliance.[6]

The NHSS promotes the adoption and integration of evidence-based practices into routine health care and public health settings. It encourages public health managers and clinical managers to plan and implement within a multidisciplinary approach based on community health needs, responding to diverse population needs, planning public health programs and evaluating the effectiveness of clinical services delivery in the community. There is more focus in solving community-health problems with integrating population health into clinical program curriculum and competencies, increasing clinician understanding of public health problems and bridging the gaps of the current silo practice in the PNG healthcare system.

Through this approach public health managers and clinicians are able to develop essential health intervention packages (EHIP) at the different level of care specific to community needs. A EHIP can be defined as a minimum collection of essential health services that the population need to have readily available and accessible, which if not provided, will result in the most negative impact on the health status of the population.[7]

The establishment of a minimum set of essential health services will improve primary health care and allows effective allocations of resources to services that will have maximum gain in health outcomes over the money spent.

Goal

- **Strengthen integration of clinical services, public health interventions primary healthcare at all levels of services.**

Objectives

- **The Essential Health Intervention Package guides the minimum set of priority public health and clinical services delivered at different levels of health facilities and in the community.**

Strategies

- **Develop EHIP Standards and guidelines for each level of services**
- **Identify priority health problems for vulnerable and targeted population to improve equity and accessibility**
- **Prioritise resources by promoting better allocation of the health budget between primary and secondary care;**

[6] NHSS: National Quality Standards for health services accreditation in Papua New Guinea – FUNCTION.3: STANDARDS 18 to 21, 2021

[7] A Basic Health Services Package for Iraq, Ministry of Health, 2009

- **Enhance clinical effectiveness and quality of care to improve health outcomes and consumer satisfaction.**

INTERVENTION 5: ESTABLISH A NATIONAL REFERENCE LABORATORY

As an island nation in the tropical region of the pacific, PNG is susceptible to natural disasters and impacts of climate change. Strengthening of emergency response and disease surveillance has been prominent in the last 10 years with the focus to 'Improve Preparedness for Diseases Outbreaks and Emerging Population Health Issues' and the goal to establish the National Institute of Public Health (NIPH).[8]

It was envisioned in the last plan that the NIPH will incorporate a Center for Disease Control and Health Policy management, providing guidance in policy development and planning for the sector. While this was a priority, inadequate support at the national level has delayed the progress of establishing the NIPH[9].

Typical core functions of NPHIs include surveillance for diseases and injuries, as well as risk factors; epidemiologic investigations of health problems; public health research; and response to public health emergencies.[10] It will play a critical role in strengthening public health systems and to accelerate and achieve implementation of the International Health Regulations (IHR 2005).

As specified in KRA 4, strategy 4.7.1 the NIPH must incorporate a National Reference Laboratory (NRL). The NRL is a public health laboratory and surveillance systems that will be responsible for supporting health service delivery through surveillance, prevention, diagnosis, and management of diseases by ensuring the provision of quality laboratory services at all levels of healthcare.[11]

Capacity of surveillance systems to identify disease clusters and urgent events is still underdeveloped, leaving PNG susceptibility to the intrusion of new disease risk. In light of the COVID-19 pandemic, revamping the disease control and surveillance system is urgent. It is a priority to build public health capacity to prevent, detect, and respond to threats.

Goal

- **Build public health capacity to prevent, detect, and respond to threats.**

Objectives

- **Establish the National Institute of Public Health Institute encompassing the National Reference Laboratory.**
- **Increase preparedness and capacity of the health sector to identify, respond to, monitor, and report on emerging and re-emerging health threats.**

Strategies

- **To strengthen a national medical laboratory service that supports diagnosis, treatment, monitoring and prevention of diseases, and surveillance and control of diseases of public health importance, appropriate for each level of the healthcare system.**
- **To ensure the quality of laboratory tests performed meet accepted health service standards.**
- **To ensure coordination of laboratory services across all disease control initiatives for rational use of laboratory resources.**

[8] National Health Plan 2011-2020, KRA 8, strategy 8.1.1, pg. 29

[9] The Mid Term Review and Joint Assessment of the Papua New Guinea National Health Plan 2011-2020, 2015

[10] Binder, S., Adigun, L., Dusenbury, C., Greenspan, A., & Tanhuanpaa, P. (2008). National public health institutes: contributing to the public good. *Journal of Public Health Policy, 29*, 3-21.

[11] Functions and Minimum Standards for National Reference Laboratories in the SADC Region, 2009

- **To encourage research and collaboration to inform and improve the quality of laboratory services.**

INTERVENTION 6: STRENGTHEN THE MEDICAL SUPPLIES PULL SYSTEM

Procurement and distribution of medical supplies and vaccines to health facilities in PNG remains a major challenge for the health sector.[12] Health facilities have experienced consistent shortages and low availability of vital medicines throughout the country. To address these challenges, KRA 5, objective 5.5 reiterated the need to improve the supply chain management system and good quality medicines to be available at all times.

Currently there are two ways of procuring and distributing drugs to the health facilities. The first is the Routine Supply or the "Pull" system that requires either manual ordering processes or electronic ordering via mSupply from hospitals, health facilities and Area Medical Stores.[13] The other option is through medical supply kits, the 'push system', where medical kits are delivered directly to health facilities. The medical supply kits contain standardized basic drugs and medical supplies.[14]

Recent reviews and assessments of the medical supply system have identified gaps within the supply chain management system. Provincial transit stores lack adequate facilities and space to store and distribute medicines and vaccines. Poor storage facilities at rural health centers and Aid Posts are a major concern for safe keeping of drugs, vaccines, and intravenous fluids. Health managers lack skills in management of drugs and supplies.[15]

The reviews have led to some structural reforms in supply and quality assessment of medications and show promise for avoiding drug shortages can be achieved.

Goal

- **Improve the medical supply chain to ensure adequate, affordable, and continuous availability of safe and good-quality medicines that can be used rationally at all times.**

Objectives

- **Implement the medical supplies reforms agendas in a phased manner to achieve an effective pull system.**
- **Build capacity of pharmaceutical standards to monitor and ensure safe, efficacious, and high-quality medicines are available at all levels.**

Strategies

- **Develop Medical Supplies and Procurement Master Plan and guidelines for implementation.**
- **Upgrade and develop Medical Stores and storage facilities in all provinces.**
- **Implement mSupply systems for a more efficient and effective need-based demand and quantification process.**
- **Ensure contract management of medical supplies is monitored on performance outcomes for clear accountability and efficiency.**

[12] NHP 2011-2020, Chapter 3, pg. 14
[13] Agility Ltd Baseline Assessment Report – April 2020 – HSSDP # 51035-001, pg 16
[14] Papua New Guinea's Primary Health Care System: Views from The Front Line, Colin Wiltshire et. al, 2020
[15] Master Plan for Medical Supply Chain Management in PNG (2020- 2030)

- **Develop a monitoring and evaluation framework to reduce drug shortage at facility level.**

INTEVENTION 7: EXPLORE REVENUE-GENERATING OPTIONS

The current health system is financed mostly by government general revenue and contributions from development partners. Government revenues are raised through taxation, grants from development partners, and income from the export of primary commodities, mainly mining and petroleum products.[16]

Because PNG's health sector is financed largely from general revenue, the availability of government funding for health is a critical factor.

Fiscal space for health refers to the ability of GoPNG to increase spending in the sector, without jeopardising the government's long-term solvency or crowding out expenditure in other sectors to achieve other development objectives. Options to increase general revenue financing for health is critical. This includes the following:

1. **Government revenue** - Depends mainly on the country's economic growth.
2. **Mobilising additional finance through efficiency savings -** Most feasible and sustainable option to increase financial resources.
3. **Revenue-generating initiatives -** Implementation of the Public Finance Management (PFM) Roadmap and new revenue-generating initiatives could also generate additional resources.
4. **Social health insurance -** In the current context, the introduction of social health insurance is not feasible or sustainable.
5. **Health endowment fund -** Raise additional funding and pool donations, contributions from private sector entities.
6. **Tax infrastructure credit schemes -** allows agricultural, mining, petroleum, gas and certain tourism companies operating in PNG to invest in specific infrastructure developments projects including health rather than paying a certain percentage of tax directly to government.
7. **"Sin" taxes and a health promotion trust fund -** Generating revenue from earmarked taxation on the consumption of tobacco, alcohol, and sugary drinks/ food products. [17]
8. **Internal revenue generation** – charging user fees on specific health services.

Goal

- **Improve financial management and resource mobilisation for health.**

Objectives

- **Identify options for self-financing, including the establishment of a health endowment fund.**
- **Better management of financial resources by health agencies to improve effectiveness of health service delivery.**

[16]World Bank. 2014. *Assessment of Health Financing Options: Papua New Guinea.* Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/21118 License: CC BY 3.0 IGO.
[17] Hou,Xiaohui 2015, *Tobacco consumption in Papua New Guinea (English).* Health, nutrition and population global practice knowledge brief Washington, D.C. : World Bank Group..

Strategies

- **Implement the PFM Roadmap and explore new revenue-generating initiatives for additional resources for the health sector.**
- **Improve resource management through better planning and effective monitoring of financial resources.**
- **Increase resource mobilisation through strong partnerships and governance reform arrangements.**

INTERVENTION 8: STRENGTHEN HEALTH REGULATORY SYSTEMS

Regulatory System means the body of legal requirements for Good Manufacturing Practices, inspections, and enforcements that ensure public health protection and legal authority to assure adherence to these requirements.[18] Under KRA5, strategy 5.1.5, emphasizes the need to strengthen the roles and functions of regulatory bodies in the country to effectively ensure compliance and monitoring of good practice for health measures is implemented.

PNG Health System is governed by many different laws. There are administrative legislations like; *Public Services (Management) Act, 1995; National Health Administration Act of 1997; Provincial Health Authorities Act, 2007*; as well as legislations to implement programs and standards like; the *Medical Registration Act, 1980*; *Medical Registration By-laws and Nursing Registration By-laws, 1984; Medicines Cosmetic Act, 1999; and Public Health Act 1973.* Regulations are implemented through these legislations with the establishment of regulatory bodies to govern the functions and implementation of these laws, under guided policies and legal framework.

Ensuring effective compliance with rules and regulations is important in creating a well-functioning society and trust in government. It is a key element in safeguarding the health and safety of citizens, as well as delivering other essential public goals. The challenge for governments is to develop and apply enforcement strategies that achieve the best outcomes, while keeping the costs and burden as low as possible.

Optimal results can best be achieved by combining compliance–promotion efforts with well-targeted controls, and deterrent sanctions for serious violations. Effective compliance can only be achieved if regulations are realistic and adequate for PNG, and well resourced.

Goal

- **Strengthen Regulatory Authorities' roles and functions to align with national, international standards and legislation.**

Objectives

- **Establish appropriate regulatory frameworks to implement and enforce health standards and compliance in the country**

Strategies

- **Review and develop health sector legislations to improve service delivery and implementation processes**
- **Ensure compliance officers are properly resourced so that they can ensure compliance with relevant standards and regulations relating to health facilities and food safety.**

[18] Regulatory System Definition. Law insider. https://www.lawinsider.com/dictionary/regulatory-system

- **Reform the Medical Board into the Health Practitioner Board.**
- **Review the regulatory framework for health regulations and establish a suitable entity to oversee and implement the different health regulations in the country.**

INTEVENTION 9: DEVELOP E-HEALTH

PNG has a strong foundation of information to support the development of its health programs. However, data collection and information systems are healthcare lagging.

PNG's ICT for the health sector, which is at the forefront of e-health related activities, has existing problems as determined by a series of site surveys. There is limited sharing of information and resources among hospitals, provincial health authorities and national health agencies and other healthcare organisations because there is no united information sharing platform.

To address these challenges, the health sector is employing new solutions such as e-health, where electronic technologies are used to complement and advance healthcare practices. In 2005, WHO recognised "eHealth has cost-effective and secure use of information communication technologies (ICT) in support of health and health related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research." E-health technologies are changing healthcare in a number of fundamental ways and these changes are altering how health services are delivered.

New data technology and digital communication provides an opportunity to use information in powerful new ways that support performance and shape decision making. These technologies provide the prospect of enhancing clinical support even in the most remote settings.

Modernising health facilities through technology and e-health has been shown to improve the quality, access, and equity of health services. ICT is an integral component of health services, and the use of e-health technologies allows a mutually beneficial collaboration and involvement of patients and medical professionals in the prevention and treatment of diseases.

The introduction and improvement of medical technologies combined with e-health technologies such as tele-health, hospital management information system, clinical boot, and medical laboratories, both diagnostic and research, are all necessary.

The NDoH may need to establish a National Health Information Exchange (HIE) center, a robust cloud-based information technology data center and telecommunication network linking provincial remote users to a centralised data center for accessing ICT centralized hosting systems and services that will require all hospitals to monitor levels of drug supplies and patient tracking and information management.

Goal

- **Strengthen information capacity for data management and utilisation at all levels of service delivery.**

Objectives

- **Ensure all health sector data and information are secured using a reliable system.**
- **Integrate all e-health systems and establish tele-medicine to a single information management and reporting hub at the national level.**

Strategies

- **Build a national health information exchange (HIE) centre or hub for teleconferencing, cloud hosting, data visualisation and reporting.**

- **Develop standard operating manuals for data standardisation, transfer, and integration into an aggregate eNHIS system.**
- **Develop dashboards, reports, queries, events, and alerts from the aggregate eNHIS.**
- **Identify and develop new systems to assist health sector programs with data collection digital technologies.**

INTERVENTION 10: ADVANCE NATIONAL REFERRAL, RESEARCH AND TEACHING HOSPITAL

The NHSS (2nd edition) envisions a six-level hierarchical structure in line with a revised role delineation at the different levels of service delivery. The focus is to rationalise levels of health services to address the limitations of service delivery by establishing an evidenced-based essential health service, public health interventions, primary health, and clinical care that are integrated and responsive to health needs for each province.

The former category of "regional hospital" ceases to exist with sub-specialist referrals managed by the Level 6 national referral, research and teaching hospital (PMGH,) and health sub- being incorporated into community health posts. This restructuring provides an opportunity for PHAs to develop specialist care capabilities and create center of excellence in the provincial settings. The role delineations of the six levels of care are:

- Level 6: National referral, research and teaching hospital —offering complex tertiary level clinical services and supporting primary healthcare and public health programs and a formalised patient referral arrangement.
- Level5: PHA provincial hospitals, health services and public health programs—offering secondary level and specialist clinical care services, supporting primary healthcare and integrating public health programs and patient referrals.
- Level 4: District hospitals and rural health services—offering primary and secondary level clinical services and district wide public health programs.
- Level 3: Health centres and 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 2: Community health posts (CHPs) and health services —offering primary health, ambulatory care, and short-stay inpatient and maternity care at the local rural and remote community level, with a minimum of six health workers to ensure safe 24-hour care and treatment.
- Level 1: Health posts (HPs)—offering basic-level primary healthcare, including health promotion, health improvement, and health protection.

PMGH is governed under the *Public Hospitals Act 1994* and is expected to perform the functions of a tertiary referral hospital. As the national referral, research and teaching hospital it is responsible for providing tertiary and specialist services with referrals from primary healthcare and secondary care. PMGH is also required to provide a full complement of services including "high end'" specialist services such as paediatrics, obstetrics, surgery, medicine, gynaecology, surgery for major operations, consultations with sub-specialists and have intensive care facilities and dedicated sub-specialty care such as essential services for oncology.

Goal

- **Strengthen level 6 hospital as the national referral, research and teaching hospital for the country.**

Objectives

- **Build capacity of Port Moresby General Hospital to fully functions as the national referral, research and teaching hospital.**

Strategies

- **Review and amend *Public Hospital Act* to enable PMGH to perform the function of a national referral, research and teaching hospital**
- **Develop and equip PMGH to provide a full complement of services including "high end" specialist services such as paediatrics, obstetrics, surgery, medicine, and gynaecology,**
- **Develop sub-specialist care that meets international standards dedicated to a wide range of services defined under the NHHS (2nd edition).**

CHAPTER 2: HEALTH PROGRAM STRATEGIES

This chapter aligns the NHP strategies from volume 1 A into respective health programs for implementation and includes specific program strategies categorized into National, Provincial and District level. It also aligns the interventions to their specific health programs for implementation. The health programs are categorised into 3 main areas, Public Health, Medical Standards and Health System Strengthening Programs.

PUBLIC HEALTH:
Public Health focuses on improving and protecting community health and well-being, with an emphasis on prevention and protection of community health through child wellness, disease prevention, education, disaster relief, clean water, access to healthcare, and much more.

MEDICAL STANDARDS:
The main aim of Medical Standards is to promote and support good clinical practice with clinical guidelines at primary, secondary and tertiary level. Each medical care or service is guided by a minimum standard of requirements to practiced safely and efficiently.

HEALTH SYSTEM STRENGTHENING:

Health system strengthening is "about making the systems function better ". In health, WHO identified 6 building blocks; this covers 1) service delivery, 2) health workforce, 3) health information systems, 4) access to essential medicines, 5) financing, and 6) leadership/governance.

PUBLIC HEALTH

There are significant public health challenges that the primary health care system should address. PNG has a triple burden of disease[19]. Firstly, is the high burden of communicable diseases such as tuberculosis, sexually transmitted infections, mosquito-borne illnesses including malaria, dengue fever, water-borne diseases like typhoid and the re-emergence of polio and measles. This also includes maternal and child health illnesses. The second aspect is the burden of non-communicable diseases such as diabetes, stroke, hypertension and cancer. They are often chronic, life-long diseases that requires complex and expensive means of diagnosis and treatment. The third burden of disease is the public health threats due to climate change and pandemics as well injuries, substance abuse, and mental illness.

Program strategies are developed to control and reduce the burden of disease in the country.

PUBLIC HEALTH	
Health Program	**Health Sub-Program**
DISEASE CONTROL	TUBERCULOSIS
	HIV/AID AND SEXUAL TRANSMITTED DISEASE
	MALARIA
	LEPROSY AND NEGLECTED TROPICAL DISEASES
	DISEASE SURVEILLANCE AND EMERGENCY
	CANCER
	LIFESTYLE DISEASES
	CENTRAL PUBLIC HEALTH LABORATORY
	ORAL PUBLIC HEALTH SERVICES
	MENTAL HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES	ENVIRONMENTAL HEALTH MANAGEMENT
	SUSTAINABLE ENVIRONMENT, CLIMATE CHANGE AND HEALTH
	WATER SUPPLY, SANITATION AND HYGIENE
	FOOD SAFETY
	HEALTH QUARANTINE
POPULATION AND FAMILY	NUTRITION
	CHILD HEALTH

[19] Papua New Guinea's Primary Health Care System: Views from The Front Line, Colin Wiltshire et. al, 2020, pg. 5

HEALTH SERVICES	MEN'S HEALTH
	GENDER HEALTH
	YOUTH & ADOLESCENT HEALTH
	EXPANDED PROGRAM ON IMMUNISATION
	WOMEN'S HEALTH
HEALTH PROMOTION	HEALTH PROMOTION AND EDUCATION
	HEALTHY ISLAND CONCEPT

PUBLIC HEALTH DIVISION

DISEASE CONTROL

TUBERCULOSIS

NATIONAL STRATEGIES:

- Build capacity of the National TB Program to coordinate and support the PHAs to deliver quality TB treatment and diagnosis services.
- Develop national policies and TB Strategic Plans that is applicable and adoptable in the PNG setting.
- Provide supervision and training to TB program officers at the sub-national level to increase access to quality diagnosis and treatment services.
- Develop, treatment guidelines, standard operating procedures, and training materials for all forms of TB.
- Develop health promotion programs to increase community awareness on TB prevention measures.
- Strengthen the management of childhood TB and Drug-resistant TB.

- Improve TB program information system for reporting and monitoring at national and subnational levels.
- Ensure the provision of quality assured anti-TB drugs and active drug safety monitoring.
- Increase and coordinate partner support to priority TB interventions.

PROVINCIAL STRATEGIES:

- Increase and maintain effective operations of TB treatment centres in the province that is accessible to the communities.
- Coordinate and implement the provincial response TB Program.
- Conduct supervisory visits to level 1–4 facilities and ensure quality assessment and audits are followed.
- Establish and provide child-friendly TB treatment services at all health facilities.
- Improve and increase capacity for TB drug stock and supply chain management.
- Increase capacity to screen, diagnose and treat to drug resistant TB.
- Establish provincial TB data base and ensure appropriate reporting and monitoring systems is maintained at all health facilities for TB data collection.
- Improve commitment and allocation of resources for effective TB program implementation.
- Increase health promotion and community awareness on TB prevention and treatment guides.
- Improve hospital laboratory capacity for TB laboratory diagnoses and quality assurance.

LOCAL STRATEGIES:

- Support and implement cost-effective interventions to reduce patients cost on TB treatment.
- Conduct community-based contact tracing and intensified case-finding for TB and TB/HIV patients.
- Conduct community-based TB care and treatment management.
- Establish community-based organisations and networks for TB.
- Conduct community-based advocacy, communication, and social mobilisation for TB.
- Record, report, and monitor community TB activities.

DISEASE CONTROL

HIV/AIDS and SEXUAL TRANSMITTED DISEASES

NATIONAL STRATEGIES

- Build efficient and effective structures and mechanisms to manage the STI and AIDS/HIV response.
- Ensure a supportive legal and policy framework is in place for STI and HIV program and establish, plans and standard guidelines for implementation.
- Secure resources to sustain STI and HIV responses at all levels.
- Develop and pilot tools for coordinated STI, HIV and TB integrated service planning at the provincial level.
- Develop health promotion programs to increase community awareness on STI/HIV prevention measures.
- Provide supervision, training and staff development and update training packages for use at all levels.
- Ensure quality medical supplies, STI and HIV drugs, equipment, test kits and reagents are available at all levels when needed.
- Strengthen surveillance, monitoring and evaluation (M&E) and research for HIV and STIs.

PROVINCIAL STRATEGIES

- Ensure equitable access to STI and HIV prevention, treatment, care and support services.
- Target interventions to reduce transmission of STIs and HIV/AIDS in the general population.
- Conduct supervisory visits to level 1–4 facilities and ensure quality assessments and audits are completed and maintained.
- Provide training to enhance knowledge of HIV status among people living with HIV.
- Increase services to people living with HIV to improve their health and wellbeing.
- Create an environment that is safe and supportive for people living with STIs and HIV/AIDS.
- Increase health promotion and community awareness on STI and HIV/AIDS prevention.
- Improve hospital laboratory capacity for STI and HIV/AIDs laboratory diagnoses and quality assurance.

LOCAL STRATEGIES

- Collaborate with communities and local partners to reduce transmission of STIs and HIV/AIDS in communities.
- Conduct STI and HIV/AIDS awareness campaign to empower individuals to take ownership of their own health and wellbeing.
- Ensure facilities have the capacity to provide treatment services according to the type of standard required at each level (1–4).
- Increase the health and wellbeing of people living with HIV.
- Disseminate information and distribute free male and female condoms and lubricants.
- Increase engagement with local level governments and key agencies to support service delivery.

DISEASE CONTROL

MALARIA

NATIONAL STRATEGIES

- Build capacity at the national level to coordinate and support PHAs in delivering effective programs for malaria control and elimination.
- Develop policies, strategic plans and guidelines for malaria control and elimination.
- Implement robust procurement and supply management for malaria commodities.
- Develop and enhance multisectoral partnerships for action.
- Develop health promotion programs to increase community awareness on malaria and vector borne diseases prevention measures.
- Support continued active coordination between the NDoH and malaria stakeholders in PNG.
- Provide technical support, training and develop staff capacity to provide quality malaria diagnosis and treatment services at national and provincial levels.
- Establish an effective surveillance system for dengue and other vector-borne diseases.
- Conductive mass drug administration and elimination of Lymphatic Filariasis.
- Strengthen surveillance, monitoring and evaluation (M&E) and research for malaria and vector borne diseases.

PROVINCIAL STRATEGIES

- Build capacity of health facilities to provide effective malaria diagnosis and treatment services across the province.
- Implement and maintain distribution of Long-Lasting Insecticidal Net (LLIN) for better coverage among vulnerable and high risk populations, including pregnant women through ante-natal care services, malnourished children through maternal and child health, to People Living with HIV/AIDS (PLWH), prisoners, students at boarding institutions, police, and military.
- Re-introduce high-quality Indoor Residual Spraying (IRS) with non-pyrethroid insecticide to rapidly reduce incidence in high-incidence areas or to maintain malaria control in areas where LLIN use is low.
- Support multisectoral involvement in the provision of vector-control activities, including personal protection measures.
- Conduct supervisory visits to level 1–4 facilities to ensure quality assessments and audits are completed and maintained.
- Implement focal-responsive vector control interventions in response to outbreaks, in burden reduction settings, and confirmed transmission foci in elimination settings.
- Improve hospital laboratory capacity for malaria and vector borne diseases laboratory diagnoses and quality assurance.

LOCAL STRATEGIES

- Engage with key partners to ensure an effective malaria program is delivered at health facilities and at the community level.
- Implement health promotion activities to support malaria control and elimination, to strengthen knowledge, attitudes, and practices among populations at risk, and promote community-led engagement.
- Establish case-based surveillance and response for areas targeted for malaria elimination.
- Maintain sentinel site surveillance.
- Conduct health facility surveys, periodic school surveys and malaria indicator surveys.
- Monitor vector bionomics and insecticide resistance.
- Increase engagement with local level governments and key agencies to support community-based interventions and improve care and treatment at facility level for malaria and vector borne diseases.

DISEASE CONTROL

LEPROSY and NEGLECTED TROPICAL DISEASES

NATIONAL STRATEGIES:

- Increase quality diagnosis and case management for leprosy elimination and neglected tropical diseases.
- Engage with key partners and government agencies to increase support and resources for leprosy and neglected tropical disease programs.
- Strengthen reporting and monitoring system for improved data management for leprosy and neglected tropical diseases at all levels.
- Develop policies and strategic plans (based on the strategic focus) aligned with the NDoH National Health Agenda, National Objectives for Health, WHO Global Strategy 2020–2030 and SDG 3, with specific targets.
- Ensure standards and guidelines for quality program implementation are developed and used at all levels of care.
- Undertake capacity building of health workers in quality diagnosis and case management of leprosy cases, including the prevention and management of impairments and disabilities and psychosocial support.
- Provide technical supervision, training and develop staff capacity at national and provincial levels.

PROVINCIAL STRATEGIES:

- Ensure early case detection, accurate diagnosis and prompt treatment for leprosy and neglected tropical diseases across the province.
- Strengthen collaboration with other stakeholders in the provision of health services and for social mobilisation and advocacy activities.
- Improve integrated active case-finding in targeted populations.
- Improve access to comprehensive, well-organised referral facilities.
- Ensuring high cure rate through a flexible and patient-friendly delivery system.
- Conduct supervisory visits to level 1–4 facilities and ensure quality assessments and audits are completed and maintained.
- Establish effective surveillance and improved data management systems.
- Improve the referral system for lower-level services to suspect or recognise leprosy signs and symptoms and refer accordingly.

LOCAL STRATEGIES:

- Ensure all health facilities from levels 1–4 are equipped to provide early detection, diagnosis and treatment for leprosy and neglected tropical diseases.
- Ensure multiple drug therapy is available and accessible to patients at health facilities.
- Strengthen partnership with churches, schools, tribes, and NGOs to support community-based interventions.
- Improve geographical coverage of multiple drug therapy services especially in identified leprosy “hot spots”.
- Strengthen intervention on prevention of impairment and disabilities and rehabilitation.
- Strengthen integration of leprosy-control activities into the routine health services delivery system.
- Strengthen case detection and other leprosy activities with people affected by leprosy.
- Increase engagement with local level governments and key agencies to support community-based interventions and improve care and treatment at facility level.

DISEASE CONTROL

DISEASE SURVEILLANCE and EMERGENCY

NATIONAL STRATEGIES:

- Strengthen the system to effectively manage disease outbreaks and emergency response in the country.
- Develop and review policies and plans guided by evidence base information.
- Secure resources to improve management of public health emergencies.
- Strengthen the coordination process for emergency preparedness planning, training, management, and response.
- Strengthen the after-action review and risk assessment function to guide informed decision-making for public health preparedness and response.
- Build the capacity of health workers to carry out surveillance, risk assessment and response.
- Support building the capacity of the public health laboratory for research, surveillance, and risk assessment purposes.
- Provide appropriate support, through supervision, to ensure quality and the effective operation of the laboratory services.
- Improve monitoring and surveillance for health events that are potential to cause high mortality, morbidity and disability.

PROVINCIAL STRATEGIES:

- Coordinate and implement national policies guidelines and strategies.
- Implement mechanism to improve better coordination and response before, during and after public health events, including natural disasters.
- Develop and implement community base surveillance and reporting systems for early detection and response to public health events.
- Formalise a mechanism that routinely assesses the effectiveness of risk communication.
- Develop effective measures at point of entries.
- Build capacities for provincial and district laboratories to meet required standards.
- Strengthen lab infrastructure, including biosafety, focusing on priority health facilities.
- Monitor and conduct surveillance, after action reviews, risk assessments and responses.
- Provide supervision and support staff development in provinces.

LOCAL STRATEGIES:

- Establish a mechanism for community engagement and integrate risk perception assessments into risk assessment procedures.
- Enhance use of new media, including social media and social networks, to communicate risk.
- Rapidly identify, report, and manage emerging infectious diseases to minimise mortality and morbidity among patients, visitors, healthcare workers and the community.
- Implement community base surveillance and reporting systems for early detection and response to public health events.

DISEASE CONTROL

CANCER

NATIONAL STRATEGIES:

- Establish and coordinate the National Cancer Control Program.
- Develop polices, plan and standards to guide implementation of a National Cancer Control Program.
- Provide leadership, supervision, and technical support to the provinces to improve quality of cancer services.
- Strengthen reporting, monitoring and evaluation system for better data management process.
- Engage in partnerships with relevant stakeholders and formalize arrangements.
- Develop screening and diagnosis guidelines and standard operating procedures for early detection of common cancers.
- Improve the human capacity for cancer screening, treatment and diagnosis services.
- Strengthen the infrastructure for cancer screening, treatment, and accurate diagnosis.
- Establish hospital-based cancer registry and roll out to provinces.

PROVINCIAL STRATEGIES:

- Implement policies, guidelines and plans on relevant cancer programs.
- Coordinate education and awareness programs on cancer and referral for immunisation as required.
- Ensure regular maintenance, calibration and upgrading of diagnostic equipment.
- Provide screening and early detection services, where feasible.
- Strengthen referral system to ensure that cancer patients receive the specialist care required.
- Expand services to include palliative care, nutrition, physical therapy, and counselling.
- Coordinate data collection including partners and provide cancer data to the NHIS.

LOCAL STRATEGIES:

- Provide information and education to the community about early signs and symptoms of cancer.
- Collaborate with key stakeholders to promote community-based palliative care.
- Work with community-based organisations and facilitate family support and homecare for cancer patients and their families.

DISEASE CONTROL

LIFESTYLE DISEASES

NATIONAL STRATEGIES:

- Collaborate with development partners and key stakeholders to develop policies, legislation, and guidelines on lifestyle diseases and on prevention and control of injuries, trauma and violence.
- Develop human resource and training for NCD-specialised personnel.
- Develop clinical guidelines for alcohol and substance abuse rehabilitation, treatment, palliative care and management.
- Work with key stakeholders to establish and provide technical support to ensure the Package of Essential NCD Interventions (PEN) program is delivered.
- Review and enforce *Liquor Licensing Act 1973* and other related Legislation to control the sale and consumption of alcohol and other harmful substance.
- Develop clinical guidelines for alcohol and substance abuse rehabilitation, treatment, palliative care and management.
- Strengthen monitoring and evaluation of NCDs by establishing a surveillance system.
- Collaborate with development partners and relevant stakeholders to roll out tobacco cessation programs at all levels.

PROVINCIAL STRATEGIES:

- Develop awareness programs on lifestyle issues and their relationship to NCDs.
- Educate communities on the dangers of tobacco smoking through mass media campaigns and community participation.
- Integrate and strengthen PEN programs at all levels.
- Ensure basic medicines and diagnostic facilities are available at all levels.
- Train staff in NCD identification and management.
- Implement government policies and guidelines on prevention and control of injuries, trauma, and violence.
- Implement lifestyle programs in schools.
- Coordinate with relevant stakeholders to advocate on NCD policies, legislation, and guidelines.
- Coordinate with relevant stakeholders to implement awareness programs about NCDs.

LOCAL STRATEGIES:

- Adapt feasible screening and early detection programs for NCDs.
- Increase advocacy on trauma and injury prevention measures.
- Integrate NCD interventions into routine clinical services.
- Improve engagement with local level government agencies and community-based organisations to increase community awareness and prevention on NCDs.

DISEASE CONTROL

CENTRAL PUBLCI HEALTH LOBORATORY

NATIONAL STRATEGIES:

- Develop and implement a national health laboratory policy and a National Laboratory Strategic Plan.
- Strengthen national coordination and supervision of laboratory services.
- Establish national reference laboratory to house public health functions, clinical laboratories and the national blood service.
- Establish a public health institute.
- Strengthen the organisation and management of the national laboratory systems to improve quality laboratory services.
- Establish sustainable, sufficient, and competent human resources for laboratory service delivery.
- Promote effective laboratory referral networking and enhance coordination to promote rational and evidence-based use of laboratory services.
- Conduct laboratory operational research and validation of new diagnostic kits or technology introduced into the country.
- Establish strong external quality assessment laboratory networks at national and provincial levels.
- Ensure training and supervision is provided to maintain standards for all laboratories.
- Establish a monitoring and evaluation mechanism for performance of health laboratory services.

PROVINCIAL STRATEGIES:

- Implement the national health laboratory policy and a national reference laboratory strategic implementation plan.
- Implement national quality standards for public health laboratories.
- Facilitate the roll out of Gen-Xpert, and capacity building in TB culture and drug susceptibility testing and LPA.
- Facilitate the rollout out of viral load testing.
- Support the capacity needs assessment and strengthen provincial and district laboratories.
- Up-skill the technical knowledge of laboratory services.
- Maintain an inventory and stock of supplies, equipment, and consumables.
- Ensure data monitoring and reporting of data and information is available to all users of health laboratory services.
- Conduct ongoing monitoring and evaluation of quality management implementation.

LOCAL STRATEGIES:

- Communicate or make available the results of monitoring and evaluation activities to communities.
- Provide laboratory support during an outbreak investigation to determine the source of the infection.
- Facilitate sample collection and communication of results.
- Establish means to communicate rapidly with national authorities in relation to potential public health emergencies.

ORAL PUBLCI HEALTH SERVICES

NATIONAL STRATEGIES:

- Develop policies and guidelines for oral health services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of new oral health specialists and oral health professionals.
- Maintain quality and standards of specialist medical equipment for oral health services.
- Integrate community health programs with community social programs to advocate oral/mouth cancer support services at the facility and community level.
- Ensure the integration of oral health into other cross-cutting initiatives from other clinical and public health service programs to deliver basic oral healthcare services Information.
- Improve and strengthen performances and surveillance data collection and collation for analysis and monitoring to create awareness and strengthen databases for the oral health status of the population by age and gender.

PROVINCIAL STRATEGIES:

- PHAs to create oral health positions in major referral hospitals in the provinces.
- Annually plan with key stakeholders for integrated programs to improve oral health services.
- Identify the need for training and development for specialist in oral health service to improve competency of health workers and dental specialists.
- Increase preventative oral health services in institutions mainly in community health posts and aid posts that are safe and easily accessible by people in their own communities.
- Introduce community-based outreach oral healthcare services and programs for education and health promotion to instill basic knowledge and skills for personal oral healthcare and hygiene.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require oral health services.
- Ensure that simple diagnostic services are provided and integrated into the routine clinical services at the different levels of facilities in line with the NHSS.
- Provide continuous awareness and advocacy programs for oral healthcare and hygiene to the general public.
- District health management to implement community-based approaches for oral healthcare services in all the wards in communities.

MENTAL HEALTH SERVICES

NATIONAL STRATEGIES:

- Strengthen and support the Directorate of Social Change & Mental Health Services to implement national policies on mental health, traditional medicine and alcohol.
- Support existing policies, plans, regulations, and legislation on mental health.
- Strengthen partnerships to collectively address mental health and improve utilisation of mental health promotion and care.
- Build staff capacity and promote equitable distribution of skilled human resources for mental health programs.
- Strengthen an information system and provide mechanisms for information sharing contributing to the NHIS.
- Strengthen and support mental health research.
- Monitor and evaluate the impact of mental health issues in the community.
- Strengthen partnership with relevant stakeholders to collectively address mental health issues.

PROVINCIAL STRATEGIES:

- Implement mental health policies, plans and legislation.
- Improve availability of adequately trained mental health human resources.
- Coordinate prevention of mental illness, reduction of suicide and attempted suicide.
- Provide links and mechanisms to access mental health promotion and care services.
- Implement programs for screening, early detection, and referral for mental health treatment.
- Reduce distress, disability, exclusion morbidity and premature mortality associated with mental health problems across the life span of individuals.
- Develop and sustain technical capacity and suitable mechanisms at mental health facilities or centres.
- Ensure reliable mental health information are easily available and accessible.
- Encourage research in mental health to for evidence-based policy development.

LOCAL STRATEGIES:

- Provide mental health services at primary healthcare levels.
- Train appropriate district healthcare workers and partners in the Mental Health Gap Action Program (mhGAP) to provide mental healthcare and suicide prevention.
- Strengthen community-based mental health programs to promote good mental health and prevent poor mental health.
- Strengthen existing inter-sectoral partnerships, including churches and NGOs, to support implementation of mental health programs at community levels.
- Monitor, evaluate and report on mental health program implementation at the district level.

ENVIRONMENTAL HEALTH SERVICES

ENVIRONMENTAL HEALTH MANAGEMENT

NATIONAL STRATEGIES:

- Develop policies and plans that support individual and community environmental health efforts.
- Support the development, review and enforcement of public health laws and regulations.
- Expand capacity to anticipate, recognise, and respond to environmental public health threats.
- Promote the development of a competent and effective environmental public health services workforce.
- Build partnership among agencies and organisations that influence environmental public health services.
- Strengthen international co-operation on issues affecting environmental health.
- Support environmental health research.
- Develop and strengthen environmental health information and database management system.
- Co-ordinate, monitor and evaluate implementation of national policies and strategies.

PROVINCIAL STRATEGIES:

- Ensure effective implementation of environmental health policies, strategies, and plans.
- Strengthen and support enforcement of laws and regulations that protect environmental health and ensure safety.
- Facilitate the prevention and reduction of health risks associated with environmental hazards.
- Support, empower and motivate communities to improve their living environment, working conditions and health status.
- Design appropriate environmental health information, education, and promotion activities.
- Ensure timely response to emergencies and management of epidemics relating to environmental health.
- Conduct research in collaboration with the Institute of Medical Research (IMR) to develop evidence-based prevention interventions.
- Monitor, diagnose and investigate environmental health problems and health hazards in the community.

LOCAL STRATEGIES:

- Ensure effective enforcement of all environmental health related public health laws and regulations.
- Mobilise community partnerships and actions to identify and solve environmental health problems.
- Create community awareness and promote community-based strategies to improve environmental public health services.
- Engage community based environmental health research.
- Conduct surveillance and monitoring and control environmentally induced illnesses in communities.

ENVIRONMENTAL HEALTH SERVICES

SUSTAINABLE ENVIRONMENT, CLIMATE CHANGE and HEALTH

NATIONAL STRATEGIES:

- Develop policies, plans and guidelines in relation to waste management, pollution control, climate change and workers health.
- Identify gaps and review relevant and related legislation in collaboration with concerned agencies and partners.
- Develop strategies to integrate management of industrial, hazardous and hospital wastes.
- Strengthen monitoring and development of chemical import and control system.
- Develop a climate change adaptation plan to reduce the impact of climate change in health.
- Create national database for chemicals and poisonous substances.
- Collaboration with relevant stakeholders in supporting sustainable environment, climate change and health programs.
- Build human resource capacity and training to strengthen and improve sustainable environment, climate change and health programs.
- Provide technical support on disaster risk management.

PROVINCIAL STRATEGIES:

- Identify public exposure to chemicals, radiation, pollutants, toxins, and contaminants that presents a threat to human health, and prevent, reduce, or eliminate such threats.
- Ensure specific and appropriate climate change and health mitigation and adaptation measures are provided to or used by communities and health facilities.
- Strengthen and ensure appropriate waste management systems or methods are provided to health facilities.
- Conduct environmental health impact assessments with affected communities and establish mechanisms to mitigate environmental risks.
- Conduct research to define effective approaches to enhance climate change and environmental public health services.
- Promote and introduce waste-free or low-waste technologies, waste recycle and use for energy production, as well as for other purposes.
- Facilitate and promote effective risk communication on environmental health risks.
- Monitor and evaluate implementation of policy and plans and provide reports.

LOCAL STRATEGIES:

- Identify, register and monitor climate change and health risks.
- Facilitate effective risk communication about climate change and its effect on health.
- Increase coverage for recollection and removal of solid waste in the communities.
- Ensure health and safety in workplaces in collaboration with relevant stakeholders.
- Monitor and conduct routine surveillance and provide report.
- Implement disaster risk management in health.

WATER SUPLLY, SANITATION and HYGIENE

NATIONAL STRATEGIES:

- Support and coordinate implementation of the WASH Policy 2014–2030.
- Develop and review water and sanitation policies and plans aligning with existing health plans.
- Strengthening inter-sectoral and cross-program collaboration in water supply projects.
- Develop a drinking water quality strategic plan for implementation of the WASH policy in the health sector.
- Develop and establish national WASH in healthcare facilities standards and guidelines.
- Establish a profile of safe drinking water coverage in consultation with relevant stakeholders.
- Integrate the Participatory Hygiene and Sanitation Transformation (PHAST) approach into community-based interventions.
- Coordinate and facilitate the Community Led-Total Sanitation (CLTS) Program.
- Develop cost effective and appropriate technologies for sanitation and safe distribution of drinking water.
- Provide technical support to provinces on water supply, sanitation, and hygiene.

PROVINCIAL STRATEGIES:

- Ensure all health facilities have readily available clean and safe water, sanitation, and hygiene facilities by 2030.
- Ensure that water-borne diseases are prevented through water quality monitoring and reporting.
- Increase coverage of low-cost water treatment technologies at community and household levels.
- Ensure hygiene and sanitation is promoted and practiced in institutions such as schools, hospitals, and prisons.
- Coordinate treatment of water from contaminated sources with cost-effective, appropriate technologies, safe distribution, and household hygiene.
- Intensify WASH advocacy for access to safe drinking water in collaboration with partners.

LOCAL STRATEGIES:

- Improve health through the safe management of water, sanitation, and hygiene services in all settings.
- Ensure continuous hygiene promotion leading to long-term behavioural change.
- Ensure WASH standards and guidelines are implemented in healthcare facilities.
- Intensify advocacy for access to safe drinking water in collaboration with partners.
- Implement national information system for reporting on drinking water quality.
- Promote and advocate for implementation of community-led total sanitation (CLTS) at the community level.
- Monitor water safety, availability and accessibility and safe management of effluent through the sanitation chain.

FOOD SAFETY

NATIONAL STRATEGIES:

- Review and develop the *Food Sanitation Act,* regulation and Food Safety Code to harmonise them with international standards.
- Develop a food safety policy, strategy and guidelines, including a food recall protocol.
- Support the work of National Codex Secretariat.
- Review and strengthen the Food Sanitation Council's remit to administer the *Food Sanitation Act.*
- Support the development and strengthening of risk-based food safety programs.
- Enforce food import/export standards ensuring public safety at all costs.
- Support research to define effective approaches to enhance food safety interventions.
- Increase capacity to manage food safety risks in emergency and non-emergency situations.
- Develop and maintain a national information system on food safety.
- Strengthen monitoring and development of the food import system.
- Collaborate with international and national agencies on food safety.
- Provide other support services to provincial and district food safety officers.

PROVINCIAL STRATEGIES:

- Implement food safety policies and plans and ensure effective food inspection and enforcement services.
- Develop specific messages and information to promote food safety along the farm-to-table continuum.
- Strengthen monitoring and development of the food import system.
- Enforce implementation of the Food Safety Management System by Food Industries.
- Ensure food markets and food outlets are operating in accordance with food safety standards and guidelines.
- Protect consumers from unhealthy, non-nutritious, poorly branded, or forged foods and focus on societal awareness and research.
- Create and strengthen data management system and information sharing on foodborne diseases.
- Conduct food consumption studies and research to determine the burden of foodborne diseases.
- Monitor, conduct and report on surveillance.

LOCAL STRATEGIES:

- Maintain a profile for food safety establishments and categorise them based on risk.
- Conduct food handler training and education.
- Promote greater public awareness of the importance of food handling and storage.
- Monitor food safety through checks and inspections.
- Improve household-level food hygiene in communities.
- Facilitate implementation of healthy marketplaces.

HEALTH QUARANTINE

NATIONAL STRATEGIES:

- Review and develop the *Health Quarantine Act 1973* and other relevant legislation.
- Develop policy, plan and guideline to facilitate implementation.
- Support the enforcement of regulatory requirements on the import of used clothing, food samples and cadavers for research and clearance of human remains.
- Strengthen surveillance capacity for the movement of persons, goods, and conveyances in all points of entry.
- Strengthening IHR 2005 core capacities at points of entry (sea/air/land).
- Assess and manage environmental health risks at ports of entry and contribute to international responses to major outbreaks of infectious diseases.
- Build staff capacity for inspection and provide field testing and sampling kits for food, water, and other risks to health.
- Collaboration with PHAs and relevant stakeholders in implementing quarantine functions.

PROVINCIAL STRATEGIES:

- Support implementation of environment health and quarantine policy, plans and legislation.
- Strengthen partnership to collectively address public health challenges crossing borders.
- Maintain an information system and profile on the movement of people, goods, and conveyances.
- Participate in international responses to major outbreaks of infectious diseases entering the country.
- Identify and improve key challenges undermining effective implementation at various border areas.

LOCAL STRATEGIES:

- Strengthen partnerships to collectively address public health challenges crossing borders.
- Collaborate in surveillance and monitoring of cross-border health risks.
- Report on unusual cases of local illness and of international concern.
- Monitor and carry out surveillance on the movement of people and goods.

POPULATION AND FAMILY HEALTH SERVICES

NUTIRTION

NATIONAL STRATEGIES:

- Review and develop a national nutrition policy, plans and legislation.
- Develop infant and young child feeding and food safety standards on enrichment and fortification.
- Strengthen nutrition governance, coordination, communication, partnerships, and research.
- Strengthen nutrition information, research, and nutrition advocacy systems.
- Promote interventions to prevent and reduce wasting and stunning in children under 5 years.
- Develop national pre-service training in nutrition and dietetics, including nutrition management.
- Ensure nutrition is incorporated into curriculums by all training institutions.
- Build nutrition capacity for pre-training and in-service training for all relevant sectors and institutions, with mentoring and supervision mechanisms.
- Scale-up effective interventions to improve infant and young child feeding practices.
- Develop mechanisms to effectively monitor and evaluate policy implementation at all levels.

PROVINCIAL STRATEGIES:

- Assess and manage lifestyle diseases relating to diet and nutrition.
- Develop interventions to promote positive choices to safeguard individual and community nutrition status and wellbeing.
- Strengthen the prevention and treatment of nutrition-related disorders in emergency and non-emergency situation.
- Strengthen interventions to prevent and control micronutrient deficiencies.
- Prevent, detect, and treat micronutrient deficiency disorders (MDDs).
- Promote research and partner with research institutions on the factors contributing to malnutrition among vulnerable groups.
- Improved and promote infant dietary intake to reduced chronic malnutrition and infant morbidity.
- Ensure that institutional feeding is carried out according to standards that promote healthy diets.
- Prevent and treat malnutrition among people with HIV, TB, malaria, mental illness, or disabilities.
- Carry out research into feasible community level approaches to prevent malnutrition based on consumption patterns.
- Monitor and evaluate nutrition interventions in districts and communities.

LOCAL STRATEGIES:

- Collaborate and work with key stakeholders to implement interventions on increasing intake of micronutrient rich foods at community level.
- Increased knowledge, awareness, and improved nutrition practice at community level.
- Implement interventions to prevent, control and treat under- and over-nutrition.
- Improve early detection and management of severe acute malnutrition in children at health facilities and in the community.
- Conduct research on malnutrition among vulnerable groups and institutionalised populations.

POPULATION AND FAMILY HEALTH SERVICES

CHILD HEALTH

NATIONAL STRATEGIES:

- Collaborate with PHAs and other key stakeholders to procure lifesaving equipment (for example oxygen concentrators/oxygen plant) for health facilities.
- Develop standards and guidelines to improve management of childhood diseases.
- Maintain an effective and efficient cold chain system.
- Secure and maintain adequate levels of medicines, vaccines, and other supplies.
- Roll out of life-saving equipment (oxygen concentrators/oxygen plant) to all provincial hospitals.
- Introduce and maintain haemophilus influenza B vaccine in the Expanded Program on Immunization.
- Develop guidelines and materials for staff training.
- Develop guidelines and materials for community awareness of and education about priority childhood diseases.
- Collaborate with the Department of Education to develop primary and secondary school health curricula.
- Advocate for, and collaborate with, other agencies to establish programs for the prevention of child abuse and treatment of victims.
- Maintain information on IMCI and newborn care programs through M&E and operational research.

PROVINCIAL STRATEGIES:

- Plan and co-ordinate routine and supplementary immunisation and monitor children's growth, nutrition and other school-based health activities and the prevention of child abuse.
- Integrate relevant components of clinical and public health services on the management of childhood illnesses at all facility levels.
- Co-ordinate and support the training and supervision of district health staff in collaboration with hospitals.
- Maintain and distribute medicines, vaccines and supplies regularly.
- Co-ordinate and maintain the cold chain.
- Secure inter-sectoral collaboration and support for the prevention of child abuse and treatment of victims.
- Expand and maintain school health promotion and awareness programs and immunisation (Tetox, HPV, vitamin A, deworming, CoVax, etc.) roll out.

LOCAL STRATEGIES:

- Plan and implement routine and supplementary immunisation and monitor children's growth, nutrition and other school-based health activities and prevention of child abuse.
- Participate in the School Health Promotion Program.
- Conduct community awareness and education programs about children's health and safety.
- Maintain regular inventory of medicines, vaccines, and other supplies.
- Establish and maintain an effective referral system.

MEN'S HEALTH

NATIONAL STRATEGIES:

- Develop standards and guidelines to improve management of diseases affecting the male population.
- Develop adequate user-friendly health information materials and resources and improve men's health programs and services.
- Advocate among development partners to support the men's health program through producing health information materials and resources.
- Increase positive parenting skills training to reduce harsh and abusive behavior in families and communities.
- Prevent and reduce the high prevalence of HIV infections through male circumcision in the sexually active population.
- Develop standardised guidelines for monitoring and evaluating health programs affecting the male population.
- Develop standardised and cost-effective men's health programs to be implemented in the provincial level in the districts and communities through Village Health System.

PROVINCIAL STRATEGIES:

- Plan and coordinate routine activities of the Men's Health Program.
- Provide staff and funding for the Men's Health Program.
- Plan and implement national men's health policies and strategies.
- Coordinate and facilitate training and supervision to district and facility staff from levels 1–4.
- Plan and co-ordinate effective men's health education and awareness programs in provinces.
- Develop user-friendly health information materials and resources and disseminate to the provinces.
- Plan and coordinate standardised and cost effective men's health programs to be implemented in the districts and communities through the Village Health system.

LOCAL STRATEGIES:

- Participate in promoting men's health by conducting health education and awareness in the communities.
- Plan and perform standardised vasectomy procedures for family planning methods for the male population.
- Plan and perform male circumcision procedures to reduce HIV infections in an hygienic environment.
- Plan and provide counselling for males to prevent and reduce increasing violence and injuries in communities.
- Plan and manage men's health problems.
- Implement standardized and cost-effective men's health programs through Village Health system.

GENDER HEALTH

NATIONAL STRATEGIES:

- Develop gender health policies and plans in line with the PNG National Strategy to Prevent and Response to Gender Based Violence.
- Develop standards and clinical guidelines to improve management of sexual and sender-based violence (SGBV) to survivors of SGBV with trauma, injuries and complications related to SGBV.
- Establishment of family support centers (FSC) and an SGBV emergency response unit in all provincial hospitals.
- Strengthen monthly reporting of SGBV indicators through the NHIS, with the inclusion of hospital-based FSC/SGBV emergency response unit data in the OPD data indicators.
- Develop an SGBV training manual for in-service training of healthcare professionals.
- Promote safety and SGBV prevention and roll-out education at the provincial and district levels.

PROVINCIAL STRATEGIES:

- Recruitment of provincial health SGBV coordinators in all provinces to coordinate implementation of gender health programming and SGBV prevention and response at the provincial level.
- Coordinate and support training and clinical attachment of district FSC staff to well-established FSCs in hospitals.
- Coordinate and integrate the management of survivors of SGBV across agencies.
- Maintain and distribute commodities, medicines, vaccines, supplies regularly and efficiently to strengthen SGBV prevention and response.
- Collaborate with provincial health education and health promotion to promote safety and SGBV prevention at the provincial and district levels.
- Establish structures at the provincial and local level for gender equity, disability, and social inclusion policies for implementation.

LOCAL STRATEGIES:

- Plan and implement routine responses to survivors of SGBV.
- Conduct community awareness and education programs on SGBV.
- Maintain regular inventory of medicines including (PEP and ECP), vaccines (Hep B and Tet Tox) and other supplies and commodities.
- Participate in health promoting school programs in child abuse and child protection.
- Maintain and conduct gender equity, disability, and social inclusion advocacy in the workforce.

YOUTH and ADOLESCNET HEALTH

NATIONAL STRATEGIES:

- Develop and review policies, operational guidelines, and standards on youth and adolescent health (YAH) services.
- Incorporate YAH reporting requirements into the NHIS, reflecting age-specific indicators.
- Coordinate implementation, monitoring and evaluation of the YAH policy and programs based on global, regional, and national standards.
- Advocate for and facilitate a review of existing training curricula on YAH for both in-service and pre-service health staff.
- Strengthen partnerships with all relevant stakeholders at all levels.
- Develop research agenda and coordinate research on YAH.
- Establish a database on YAH in PNG.
- Establish youth- and adolescent=friendly services within the existing health system.
- Establish and coordinate a national adolescent health advisory committee and working group.
- Advocate and recommend for provincial YAH officers in PHA structures.

PROVINCIAL STRATEGIES:

- Implement YAH policy and plans.
- Establish and provide YAH services in provincial hospitals, district hospitals and community health posts.
- Coordinate implementation of YAH policies at the provincial, district and hospital facilities.
- Provide technical support to district, local levels, NGOs, and other relevant partners.
- Support research activities on YAH.
- Support training of staff to provide YAH services.
- Establish a provincial adolescent health working group, specific to needs.
- Participate in activities organised by the national adolescent health working group.
- Monitor and report on program activities to a national level on a regular basis.
- Advocate for political and financial support for YAH activities from local leaders and stakeholders.

LOCAL STRATEGIES:

- Implement YAH services at the district hospitals and community health posts.
- Conduct awareness on YAH activities to local communities and organisations.
- Support training of staff to provide YAH services.
- Participate in research activities on YAH.
- Maintain effective collaboration and liaison with all relevant stakeholders at the district and local levels.
- Provide technical support to local level government, NGOs, and other relevant partners.
- Participate in YAH activities organised by national and provincial adolescent Health Working Groups.
- Monitor and report on program activities to provincial level on a regular basis.

POPULATION AND FAMILY HEALTH SERVICES

EXPANDED PROGRAM on IMMUNISATION (EPI)

NATIONAL STRATEGIES:

- Develop policies, plans and standard guidelines for the expanded program of immunisation (EPI) and management of the cold chain system.
- Strengthen management of cold chain equipment.
- Develop training materials for staff on cold chain and vaccine management, vaccine administration, injection safety and safe disposal of injection equipment.
- Provide technical advice and training for health staff in the provinces and districts.
- Monitor storage, quality, and handling of vaccines at the national and lower levels of health service delivery.
- Ensure efficacy, safety and quality of vaccines meet the required standards for usage.
- Increase surveillance and strengthen efforts into reducing vaccine-preventable diseases.
- Improve monitoring and data management for immunisation coverage for better reporting.
- Oversee the procurement of cold chain equipment from international suppliers and its distribution to the provinces and health facilities.
- Maintain an effective inventory of cold chain equipment and EPI consumables.

PROVINCIAL STRATEGIES:

- Ensuring that vaccines are collected on time from the airport and stored appropriately at the provincial store.
- Increase the number of immunisation outreach and mobile clinics in the province.
- Maintain safe storage of vaccines at the provincial vaccine store until they are required for the health facilities.
- Regular distribution of vaccines and vaccination equipment to health facilities within the province.
- Maintain cold chain within the province and coordinate replacement of cold chain equipment as required.
- Maintain an inventory of cold chain equipment within the province.

LOCAL STRATEGIES:

- Develop plans and programs as part of the overall district annual activity plan to carry out immunization.
- Establish a maintenance program for vaccine refrigerators and other cold chain equipment requirements for the district.
- Co-ordinate regular EPI/CCL training of district health staff including those from the faith-based health services in conjunction with the provincial health administration.
- Maintain and regularly update an inventory of cold chain equipment in all the health facilities in districts.
- Maintain an inventory of vaccine stocks of all health facilities in districts.
- Compile routine vaccination coverage information and data reporting.

WOMEN'S HEALTH

NATIONAL STRATEGIES:

- Develop a sexual reproductive health policy, program plans and strategy aligning with the NHP and public health policy.
- Develop national in-service standardized training curricula for women's health programs.
- Improve access pathways to sexual and reproductive health services, particularly in rural and remote areas.
- Develop guidelines for comprehensive women's cancer health services.
- Up-skill health professionals with current, best practice methods and approaches.
- Advocate for women's health at the subnational, national, and international levels.
- Strengthening monitoring and evaluation frameworks for women's health.
- Strengthen the collection, reporting and disaggregation of data and gender analysis and research relevant for women's health and wellbeing.
- Coordinate and strengthen collaboration with sector partners and cross-sectoral engagement to improve women's health and wellbeing outcomes.

PROVINCIAL STRATEGIES:

- Implement women's health policy and plans.
- Ensure all women and girls have access to health services and information.
- Deliver accessible and equitable free family planning services for all women of reproductive age at all levels of care.
- Promote equitable access to affordable reproductive health services responsive to each woman's individual needs and preferences.
- Promote safe and optimal preconception for women planning pregnancy and perinatal health, including evidence-based health education and services.
- Provide training for healthcare professionals to support the physical, emotional, and social healthcare needs of women and girls.
- Monitor and evaluate progress towards improved women's health and wellbeing through strengthening of data collection, reporting and strategic communication for awareness and education.

LOCAL STRATEGIES:

- Deliver timely, appropriate, and affordable care for women and girls in their own communities.
- Strengthen community understanding and awareness of gender-based violence.
- Empower, encourage, and support women to cultivate a better understanding of how to manage their own health-care needs.
- Establish delivery hubs in each district as centres of excellence.
- Continue to promote a culturally secure health screening and testing service.
- Create supportive and safe environments to encourage healthy behaviour among women through a settings-based approach.
- Engage individuals, community, and media platforms to create a culture that empowers all women to strive for better health and wellbeing.

HEALTH PROMOTION and EDUCATION

NATIONAL STRATEGIES:

- Review and develop health promotion policies, plans and regulations.
- Strengthen integration of health promotion in all public policies.
- Establish health promotion and healthy island committees at all levels.
- Revitalise the National Health Promotion Committee.
- Develop and disseminate appropriate key IEC messages and materials.
- Develop research-based health promotion tools and guidelines.
- Promote inter-sectoral collaboration among relevant stakeholders to develop integrated and comprehensive health promotion programs.
- Develop and build capacity of VHAs to improve health promotion at community level.
- Strengthen systems to monitor and evaluate health promotion interventions.
- Advocate for the creation of health promotion officer positions at the PHA or district level.

PROVINCIAL STRATEGIES:

- Implement policies and regulations and communicate health policies.
- Implement the Healthy Islands Concept through the settings approach in workplaces, institutions, and communities.
- Renumerate and incentivise VHAs.
- Create an enabling environment that promotes healthy behavioural practices.
- Strengthen partnerships with community structures and civil societies.
- Facilitate and support training and capacity development for provincial and district staff.
- Support and initiate special research projects.
- Empower local communities with health promotion programs.
- Monitor, evaluate and report performance and systems for health promotion programs.
- Coordinate community surveys and research.
- Establish provincial health promotion positions and facilitate recruitment.

LOCAL STRATEGIES:

- Facilitate collective and participative action to develop healthy settings.
- Conduct health awareness education at community hubs and institutions to encourage community participation and ownership.
- Support and monitor community-based health promotion activities.
- Implement community-based services within different Healthy Island settings.
- Intergrade health promotion and awareness activities with routine clinical services at all health facilities.
- Participate in community surveys and research.
- Facilitate and support training and capacity development for district and LLG staff.

HEALTHY ISLAND CONCEPT

NATIONAL STRATEGIES:

- Review and develop the Healthy Islands Concept's policies, plans and guidelines for suitability for implementation in PNG.
- Strengthen advocacy, and the Healthy Policy and Leadership program from in Healthy Islands program.
- Build support with partners to implement the Healthy Island Concept.
- Provide technical support, tools and assistance for strengthening national coordinating mechanisms and implementing actions for the Healthy Islands Concept.
- Improve Information for action to support the provision of evidence-based interventions and to guide Healthy Islands policy decisions.
- Strengthen capacity for health promotion and health protection through settings approaches.
- Monitor the progress of implementation of Healthy Islands Concept.

PROVINCIAL STRATEGIES:

- Implement policies and plans related to the Healthy Islands Concept settings approach.
- Provide technical support to other sectors implementing Healthy Islands Concept.
- Incorporate the Healthy Islands Concept's agenda and strategy into the provincial plans.
- Identification of gaps, and the redirection of effort through an integrated approach with capacity building.
- Establish a provincial Healthy Islands Concept committee.
- Support and encourage the rollout of Healthy Islands settings.
- Improve the information or evidence base for action critical to the Healthy Islands Concept's systems to ensure information generation and utility is maximised.
- Encourage social mobilisation and community action in implementing Healthy Islands settings.
- Set Healthy Islands targets with consistent monitoring and evaluation.

LOCAL STRATEGIES:

- Motivate and empower communities to adopt and achieve good health while creating a supportive and enabling environment.
- Assist the community to access and implement knowledge and skills in health promotion and protection.
- Establish community level Healthy Islands committees.
- Build on existing best practices and initiate community and healthy settings.
- Conduct public consultation on settings approach that is people-centred.
- Prioritise actions following community and sector wide consultations through CAP.

MEDICAL STANDARDS

The National Health Standards specify minimum requirements for provision of staff, equipment and facilities for the operation of health facilities and the delivery of health programmes consistent with the NHP.[20]

The revised National Health Service Standards are aligned with the National Health Plan (NHP) 2021-2030 and strengthened to enable the National Referral Specialist Tertiary and Teaching Hospital, all Provincial Health Authorities and other Health Service Organisations, to strive to achieve a continuous quality program and undertake an accreditation process.[21]

National Quality Standards Accreditation is intended to: ▪ Promote a uniformly high level of compliance with the National Quality Standards for Health Services in Papua New Guinea; ▪ Promote continuous improvement of the performance of the NRSTTH, all PHAs and other 'Health Service Organisations'; and ▪ Build a national consensus about what is good practice.

MEDICAL STANDARDS	
Health Program	**Health Sub-Program**
HEALTH STANDARDS & COMPLIANCE	HEALTH FACILITY STANDARDS AND COMPLIANCE
	PHARMACEUTICAL STANDARDS
	CURATIVE STANDARDS & AUDITS
	HEALTH WORKFORCE STANDARDS AND ACCREDITATION
CLINICAL STANDARDS	NATIONAL CANCER SERVICES
	NATIONAL BLOOD TRANSFUSION SERVICES
	AMBULANCE SERVICES & PRE-HOSPITAL CARE
CLINICAL STANDARDS – SPECIALIST PROGRAMS	ANAESTHESIA
	PATHOLOGY
	ONCOLOGY
	EAR, NOSE AND THROAT (OTORHINOLARYNGOLOGY)
	DERMATOLOGY
	OPHTHALMOLOGY
	EMERGENCY MEDICINE
	SURGERY
	OBSTETRICS AND GYNAECOLOGY
	RADIOLOGY
	PAEDIATRICS
	PSYCHIATRY
	DENTISTRY – ORAL HEALTH SERVICES
	INTERNAL MEDICINE

[20] Independent State of Papua New Guinea Health System Review. Health Systems in Transition Vol. 9 No. 1 2019

[21] National Health Service Standards 2nd Edition for Papua New Guinea Volume Two National Quality Standards and Accreditation Program for Health Services in Papua New Guinea 2021-2030, pg. 7.

HEALTH STANDARDS AND COMPLIANCE

HEALTH FACLITY STANDARDS & COMPLIANCE

NATIONAL STRATEGIES:

- Develop health facility standard designs and guides for infrastructure in line with the NHSS.
- Develop facility audit template for assessment of medical equipment and infrastructure from levels 1–6.
- Write infrastructure development plans.
- Ensure specialist services in level 5 and level 6 facilities meet the NHSS requirements.
- Ensure provincial health service plans are developed according to NHSS.
- Keep and update a registry of major medical equipment.
- Ensure all medical equipment meets the required standard.
- Ensure that all provincial hospitals are equipped with all the necessary medical equipment.

PROVINCIAL STRATEGIES:

- Ensure facility audits is carried out annually.
- Develop provincial health service plans in line with NHSS assessment.
- Upgrade and develop all rural health facilities to meet the required minimum standard for facilities from levels 1 to 6.
- Assess the feasibility of providing staff accommodation, where necessary and required, as an incentive to health workers.
- Maintain a registry of all health facilities and medical equipment.
- Assess and ensure all major specialist services in level 5 facilities are in line with standards.
- Ensure all hospital wards and rural health facilities are fully equipped with the medical equipment required.

LOCAL STRATEGIES:

- Assess and report on infrastructure upgrades from levels 1–4.
- Strategically upgrade deteriorated wards in hospital facilities and major rural health facilities.
- Provide basic medical equipment and repairs at levels 1–4 health facilities.

PHARMACEUTICAL STANDARDS

NATIONAL STRATEGIES:

- Review and improve policy, guidance and legal frameworks required to promote improved access to safe, effective and quality medical products.
- Develop and strengthen pharmaceutical regulatory capacity and systems at the national level to meet international standards.
- Build the capacity of qualified staff required to effectively perform the medicines control functions at all levels of care.
- Resource and equip the Medicines Quality Control Laboratory (MQCL) to meet international standards and perform its authorised functions.
- Facilitate national responses to counter emergence and spread of resistance to antimicrobials.
- Increase engagement with government agencies and international partners to improve efficacy and quality of medical drugs and consumables.

PROVINCIAL STRATEGIES:

- Create positions for clinical pharmacists to improve drug information and requirements for the national referral, research and teaching hospital (Level 6) and provincial specialist hospitals (Level 5).
- Recruit pharmaceutical inspectors to address illegal sales of medical drugs and consumables.
- Improve public education and communication activities to promote rational use of antibiotics and other medicines.
- PHA to create positions for pharmacy assistants to manage medicines at Levels 2–4 health facilities.
- Collate data on medicines usage for evidence-based analysis on morbidity and mortality.
- Establish the PHA's Medicines and Therapeutics Committee.

LOCAL STRATEGIES:

- Ensure pharmacist positions at lower-level facilities are fully occupied.
- Strengthen the "pull system'' by conducting training for pharmacists, pharmacy technicians and pharmacy assistants at the major lower-level facilities.
- Work with PHA management to conduct ongoing training for improving drug management at the facility levels.
- Appoint staff to manage and maintain the medicines record.
- Conduct training for lower-level facility staff on proper storage and handling of medicines.

CURATIVE STANDARDS and AUDITS

NATIONAL STRATEGIES:

- Facilitate NHSS assessment for all provinces—PHAs, public hospitals and rural health services.
- Monitor implementation of the NHSS and its quality standards by the different level of healthcare services throughout the country.
- Develop an essential health intervention package to implement the NHSS.
- Coordinate and facilitate accreditation surveys throughout the country to ensure all health facilities.
- Develop quality standard policies and guidelines, especially an infection control policy and a waste management policy.
- Ensure that all standard treatment manuals and guidelines for curative standards are updated and distribute to all facilities.
- Oversee implementation of effective clinical governance and quality of services within all health facilities.
- Support and coordinate administrative management and clinical governance processes in accordance with legislative protocol and standards.
- Develop pre-service curriculums and in-service training manuals.

PROVINCIAL STRATEGIES:

- Conduct an annual NHSS assessment for all health facilities and upgrade services to meet the NHSS requirements.
- Establish monitoring and reporting system for data management and better decision making.
- Establish an effective PHA governance structure to improve management and decision-making processes.
- Maintain and improve clinical governance processes with provincial and district hospitals.
- Conduct in-service training for accreditation surveyors, infection control and waste management.
- Creation of positions for infection control officers.
- Enforce reporting on the NHSS clinical audit toolkit.

LOCAL STRATEGIES:

- Ensure compliance to the NHSS requirements in all clinical setting from levels 1–4.
- Adhere to quality standards at all times.
- Participate in the health services accreditation surveys.
- Ensure clinical guidelines and treatment manuals are incorporated into daily workplans.
- Collaborate with key stakeholders and community representatives on standard service provisions required at different levels of care.
- Report on the NHSS clinical audit toolkit.

HEALTH STANDARDS AND COMPLIANCE

HEALTH WORKFORCE STANDARDS and ACCREDITATION

NATIONAL STRATEGIES:

- Coordinate compliance and monitoring of workforce standards and accreditation for the health sector as stipulated under the NHSS.
- Strengthen and improve coordination of the in-service training system.
- Strengthen and integrate human resource development, performance management, workforce standards and improve working environment.
- Conduct manpower audits and work value studies of different cadres of health workforce.
- Roll out of Workforce Indicators of Staffing Need (WiSN).
- Develop and pilot workforce surveys for Human Resource for Health (HRH) analysis against the NHSS.
- Develop an HRH data warehouse for the NHSS.
- Update the Standard Patient Care Manual and Standard Procedure Manual.
- Review and align all clinical job descriptions with the NHSS service functions.
- Provide support and accreditation for health training institutions and rural practice sites for training student community health workers, nurses, and midwives to increase and expand the production of qualified health workforce.
- Improve and strengthen human resources systems at all levels of health systems.

PROVINCIAL STRATEGIES:

- Conduct pre-service training for provincial staff in close consultation with Department of Higher Education Research Science and Technology and training institutions.
- Conduct HR audits and competency assessment exercises and identify training needs for all cadres of workers.
- Ensure an adequate and qualified workforce is placed at the different levels of care according to NHSS requirements.
- Provide a conducive working environment to motivate staff and encourage productivity.
- Improve human resource management and retention of skilled and qualified staff.
- Provide incentives for the remote health workforce to attract and retain staff at peripheral facilities.
- Establish a simple human resources information system to be used at the district and provincial levels to monitor availability of different cadre of health workforce, its distribution and retention.

LOCAL STRATEGIES:

- Prepare workforce intervention in districts to provide quality of care at lower-level facilities.
- Upskill and train rural health staff to improve competency and quality of work output.

NATIONAL CANCER SERVICES

NATIONAL STRATEGIES:

- Develop policies and guidelines for cancer prevention, diagnosis, and treatment services.
- Develop and review standard treatment guidelines for cancer.
- Review and re-structure the current cancer program structure to capture a comprehensive program that includes all components of cancer care from prevention to palliative care.
- Provide supervisory and clinical support for cancer services to lower-level facilities.
- Improve governance and stakeholder partnerships and coordination of cancer programs.
- Develop hospital-based cancer registries with a centralised registry for selected hospitals.
- Integrate health education and awareness programs with community social programs and advocate cancer support services at the facility and community level.
- Plan and coordinate an oncology human resource training and capacity building program for the cancer program.
- Plan and collaborate with PMGH and ANGAU hospitals and two other provincial hospitals to create four regional cancer centers.
- Plan and collaborate with PHAs to establish or strengthen satellite cancer clinics in all provincial hospitals.

PROVINCIAL STRATEGIES:

- Strengthen and develop comprehensive regional cancer centers in four selected provincial hospitals.
- PHAs to support and plan establishment of satellite cancer centers in all provincial hospitals.
- PHAs providing cancer services to create oncology positions for their cancer program.
- Advocate for the sourcing of cancer information and communication.
- Establish chemotherapy facilities in the provinces for cancer treatment.
- Subsidise cancer treatments for patients who are positively diagnosed.
- Advocate cancer in the provincial health outreach programs.
- Develop annual implementation plans for integrated programs with other sectors and partners to implement cancer awareness and support programs to avoid cancer risk factors.

LOCAL STRATEGIES:

- Establish cancer referral pathways for patients to receive the appropriate care that is required at all facilities in line with NHSS.
- Train individuals to conduct cancer screening programs and early detection of cancer-related cases.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as part of their daily clinics.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public on healthy lifestyle and to avoid exposure to cancer risk factors.

CLINCAL STANDARDS

NATIONAL BLOOD TRANFUSION SERVICES

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSS.
- Review and develop a national blood policy and blood guidelines for appropriate clinical use of blood in Levels 4–6 health facilities.
- Provide supervisory and clinical support to Levels 4–6.
- Ensure training and development of new cadres of workers for blood transfusion services.
- Maintain quality and standards of specialist laboratory equipment, reagents, and services in ensuring blood safety and donor safety.
- Coordinate and plan with PHAs to create relevant positions for the blood transfusion health workforce.
- Establish a quality management system to coordinate and monitor all blood transfusion service functions.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity for blood transfusion services and improve diagnosis and treatment of diseases in accordance with the NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve blood safety and quality management system.
- PHA to work with districts hospitals to ensure standard best practices is maintained in blood transfusion services.
- Identify the need for training and development for this specialist service to improve competency.
- PHAs to report on the NHSS clinical audit tool kit for blood transfusion services, quarterly.
- PHAs to promote blood collection from voluntary, non-remunerated blood donors
- Expand blood component production.
- Supervise, district hospital blood transfusion services training and other support as necessary.

LOCAL STRATEGIES:

- Ensure and availability and observance of standard operating procedures for blood transfusion services in facilities
- Promote blood collection from voluntary, non-remunerated blood donors.
- Ensure availability of basic blood screening and crossmatch services are available to clients.

CLINCAL STANDARDS

AMBULANCE SERVICES and PRE-HOSPITAL CARE

NATIONAL STRATEGIES:

- Develop national standards and policies and guidelines for ambulance services.
- Strengthen partnership with other service providers like St Johns Ambulance in the coordination of emergency ambulance services.
- Reinforce mechanisms for coordinating ambulance services in provinces through the 111-ambulance control center.
- Update the relevant legislation to better support the activities of professional ambulance officers to provide emergency ambulance services.
- Continue training and developing the ambulance workforce to provide safer and more efficient care.
- Introduce ambulance clinical practice protocols and procedures to achieve a higher standard of patient care and patient safety.
- Introduce mechanisms for professional ambulance officers to safely manage a severe emergency case in the prehospital care setting.
- Develop a proposal for coordinating nationwide public medical retrievals by air through the 111-ambulance control center to achieve timely, efficient and cost-effective retrieval of patients.
- Ensure PHAs develop pre-hospital care, provide training and development pathways.
- Improve access to accident and emergency services through an effective referral and retrieval process.
- Reduce mortality and death from unsafe pre-hospital patient care and transportation.

PROVINCIAL STRATEGIES:

- Strengthen engagement with St Johns Ambulance in the coordination of provincial emergency ambulance services.
- Support the provision of standardized and coordinated ambulance services to improve patient's access to emergency healthcare within provinces.
- Promote improved referral pathways for patients who require emergency ambulance transport between provincial, regional and national facilities.
- Provide tools and training for establishment of first aid volunteer system in districts of first responders.

LOCAL STRATEGIES:

- Promote appropriate use of ambulance services by the community through awareness programs that help community members know when to, and how to, access ambulance care in an emergency.
- Establish appropriate medical referral and retrieval pathways for patients who need emergency medical attention.
- Improve communication and coordination between health facilities and the ambulance service.
- Introduce rapid referral booking pathways between health facility and ambulance service.
- Introduce structure handover procedure between health facility and ambulance service.
- Ensure efficient integration between local health workers (including VHAs) and the ambulance service.

CLINCAL STANDARDS – SPECIALIST PROGRAMS

ANAESTHESIA

NATIONAL STRATEGIES:

- Advocate for the Implementation of NHSS.
- Develop and review policies and guidelines for anesthetic clinical services.
- Provide supervisory and clinical support for anesthetic services to provincial and district hospital and any health facility that requires this service.
- Train and develop anesthetist and technical workforce in anesthesia in the country.
- Maintain quality and standards of anesthetic medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial hospital and district hospitals.
- Coordinate professional activities, such as society and college meetings.
- Coordination and planning with PHAs to create anesthetic positions.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide anesthetic services in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist anesthetic services.
- Promote training and development for workforce in anesthesia to improve professional competency.
- PHAs to report on NHSS clinical audit tool kit for anesthesia, quarterly.
- Coordinate integrated clinical outreach programs and supervisory visits to district hospitals and lower-level facilities as required.
- Implement and improve the existing clinical referral pathway for patients to have access to anesthetic clinical services.
- Conduct clinical assessment and checklist to identify development needs in the province for anesthetic services.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist anesthetic services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Ensure clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as routine clinical service.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

PATHOLOGY

NATIONAL STRATEGIES:

- Advocate for the implementation of NHSS.
- Develop and review policies and guidelines for pathology clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Train and develop medical professionals and technical workforce in pathology.
- Maintain quality and standards of medical equipment and consumables for quality laboratory diagnosis and pathology services.
- Develop a national asset inventory for all health facilities.
- Establish a communication network with provinces and lower-level facilities.
- Coordinate professional activities, such as professional society and college meetings.
- Coordinate and plan with PHAs to build the capacity at provincial level to deliver and increase pathology services.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide pathology services and improve diagnosis of diseases in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist pathology services.
- Promote training and development for pathology and its sub-specialties to improve service and professional competency.
- PHAs to report on the NHSS clinical audit tool kit for pathology quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathways.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist pathology services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as routine clinical service.
- PHAs to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

ONCOLOGY

NATIONAL STRATEGIES:

- Advocate for the implementation of NHSS.
- Develop and review policies and guidelines for oncology clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Train and develop medical professionals and technical workforce in pathology.
- Maintain quality and standards of medical equipment and consumables for quality laboratory diagnosis and pathology services.
- Develop a national asset inventory for all health facilities.
- Establish a communication network with provinces and lower-level facilities.
- Coordinate professional activities, such as professional society and college meetings.
- Coordinate and plan with PHAs to build the capacity at provincial level to deliver and increase oncology services.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide pathology services and improve diagnosis of diseases in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist oncology services.
- Promote training and development for pathology and its sub-specialties to improve service and professional competency.
- PHAs to report on the NHSS clinical audit tool kit for oncology quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathways.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist oncology services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as routine clinical service.
- PHAs to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

CLINCAL STANDARDS – SPECIALIST PROGRAMS

EAR, NOSE and THROAT (OTORHINOLARYNGOLOGY)

NATIONAL STRATEGIES:

- Advocate for the implementation of the NHSS.
- Develop and review policies and guidelines for ear, nose and throat (ENT) clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Train and develop medical professionals and the technical workforce specialising in ENT services.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish a communication network with provincial and district hospitals.
- Coordinate professional activities, such as society and college meetings.
- Coordinate and plan with PHAs to create positions for ENT services.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide ENT specialist services and improve diagnosis of diseases in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist ENT services.
- Promote training and development for the workforce in ENT to improve professional competency.
- PHAs to report on the NHSS clinical audit tool kit for ENT services, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.
- Integrate community health programs with community social programs to advocate cancer support services at the facility and community level.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist ENT services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as part of their daily clinics.
- PHA to ensure that districts and health facilities continue provide awareness and advocacy programs to the general public.

DERMATOLOGY

NATIONAL STRATEGIES:

- Advocate for the implementation of NHSS.
- Develop and review policies and guidelines for dermatology clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Train and develop medical professionals and technical workforce specialising in dermatology services.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional activities, such as society and college meetings.
- Coordinate and plan with PHAs to create positions for professionals in dermatology.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide dermatological services and improve diagnosis of diseases in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist dermatology services.
- Promote training and development for workforce in dermatology to improve professional competency.
- PHAs to report on the NHSS clinical audit tool kit for dermatology, quarterly.
- Coordinate integrated clinical outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist dermatology services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- Promote training and development for workforce in dermatology to improve professional competency.
- District and health facilities to report on NHSS clinical audit tool kit for dermatology, quarterly.
- Coordinate integrated outreach programs.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided as part of their daily clinics.

OPTHALMOLOGY (EYE CARE)

NATIONAL STRATEGIES:

- Advocate for the implementation of the NHSS.
- Develop the PNG National Eye Healthcare Corporate Plan 2022–2024.
- Update the PNG National Eye Healthcare Program 2022–2026.
- Establish the Centre of Excellence in Eye Healthcare at PMGH
- Develop and review policies and guidelines for specialist clinical services.
- Develop and publish a manual for standard eye healthcare treatment.
- Provide supervisory and clinical support to lower levels of care.
- Advocate for the implementation of the monitoring e-toolkits for eye healthcare (including the NHSS Clinical Audit Tool Kit).
- Ensure training and development of new cadres of workers in eye healthcare.
- Develop appropriate training curricula for eye healthcare professionals.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop an electronic asset inventory for eye healthcare facilities.
- Coordinate eye healthcare virtual CPDs and professional society annual conferences.
- Develop standard operating procedures for eye health patient referrals.

PROVINCIAL STRATEGIES:

- PHAs to create positions to cater for specialist clinical areas in major referral hospitals in the provinces.
- PHAs to implement the PNG National Eye Healthcare Program.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist eye-care services.
- Identify the need for training and development for this specialist service to improve competency.
- PHAs to report on the NHSS clinical audit tool kit for ophthalmology and eye care, quarterly.
- Coordinate integrated outreach programs.
- Conduct rural mobile eye health clinics and surgical patrols.
- Implement the standard operating procedures for eye health patient referrals.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist eye-care services.
- Train eye healthcare professionals to comply with standard operating procedures for eye health patient referrals.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Equip and train eye healthcare professionals with digital devices for reporting and consultations.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- Equip and conduct eye health screening clinics and submit e-reports.
- Equip and train VHAs and eye healthcare professionals with advocacy materials in their respective communities.

EMERGECNY MECIDINE

NATIONAL STRATEGIES:

- Advocate for the implementation of the NHSS.
- Develop and review policies and guidelines for emergency medical services, pre-hospital settings and intensive care units.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of specialist emergency physician and technical workforce in emergency medicine for provincial specialist hospitals.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional events and conference, such as society meetings for professional developments.
- Coordinate and plan with PHAs to create emergency medicine positions.
- Coordination of pre-hospital care and disaster management.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide medical emergency services, pre-hospital settings and intensive care units, and improve diagnosis of diseases in accordance with the NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve medical emergency services.
- Promote training and development for workforce in emergency medicine to improve professional competency.
- PHAs to report on NHSS clinical audit tool kit for emergency medicine, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require emergency medical services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic medical emergency services are provided.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

CLINCAL STANDARDS – SPECIALIST PROGRAMS

SURGERY

NATIONAL STRATEGIES:

- Advocate for the implementation of NHSS.
- Development of standard treatment guidelines.
- Establish a renal transplant unit by 2025 at PMGH.
- Improve the capacity at national and provincial hospitals to provide specialised surgical services.
- Increase partnerships with overseas institutions to promote training and service.
- Provide specialised training for a sub-specialty in surgery.
- Support surgical care in all PHAs.
- Develop and review policies and guidelines for specialist surgical clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of new cadres of workers.
- Maintain quality and standards of specialist surgical medical equipment, products, and services.
- Coordinate professional activities, such as society of surgeons and college meetings.
- Provide (maintain) surgeons in all PHAs.
- Increase sub-speciality surgeons by all PHAs.

PROVINCIAL STRATEGIES:

- PHAs to create positions to cater for specialist surgeons in all provincial hospitals.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist surgical services.
- Identify the need for training and development for this specialist surgical service to improve competency.
- PHAs to provide surgical reports and reports on NHSS clinical audit tool kit, quarterly.
- Coordinate integrated surgical outreach programs and supervisory visits.
- Implement and improve the existing clinical referral pathway.
- All PHAs to upgrade facilities and equipment.
- All PHAs to support continuing medical education for surgical professionals.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist surgical services.
- All surgeons in each PHA to maintain training of candidates in surgery.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic and surgical services are provided as part of their daily clinics.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy on clinical surgical services to the general public.

OBSTETRICS and GYNAECOLOGY

NATIONAL STRATEGIES:

- Advocate for implementation of NHSS.
- Develop and review policies and guidelines for obstetrics and gynecology (O&G) clinical services.
- Increase access to early detection of O&G complications.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of O&G specialist and technical workforce in O&G for provincial specialist hospitals.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional activities, such as society and college meetings.
- Coordinate and plan with PHAs to create O&G positions.
- Increase access to emergency obstetric care at health facilities in line with the NHSS.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide O&G specialist services and improve diagnosis of diseases in accordance with the NHSS.
- Increase access to safe delivery facilities at all levels of care.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist O&G services.
- Promote training and development for workforce in O&G to improve professional competency.
- PHAs to report on NHSS clinical audit tool kit for O&G, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing referral pathways for women with complications.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist services in O&G.
- Establish delivery hubs and waiting houses for safe and effective deliveries.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic maternal services are provided.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

RADIOLOGY

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSS.
- Develop and review policies and guidelines for radiology clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of specialist radiologist and technical workforce in radiology for provincial specialist hospital.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish a communication network with provincial and district hospitals.
- Coordinate professional events and conferences, such as society and college meetings for professional development.
- Coordinate and plan with PHAs to create radiology positions.
- Coordinate radiology support services to pre-hospital care and disaster management.
- Ensure medical imaging service such as CT scans, X-rays, MRIs, and ultrasound scans are delivered in line with the NHSS.

PROVINCIAL STRATEGIES:

- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist radiology services.
- Promote training and development for workforce in radiology to improve professional competency.
- PHAs to report on NHSS clinical audit tool kit for radiology, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist services in radiology.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy about clinical and radiation safety measures to the general public.

PAEDIATRICS

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSS.
- Develop and review policies and guidelines for paediatric clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Train and develop medical professionals and technical workforce for pediatric services.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional activities, such as society and college meetings.
- Coordinate and plan with PHAs to create specialist paediatric positions.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide paediatric services and improve diagnosis of diseases in accordance with the NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist paediatric services.
- Promote training and development for the workforce in the paediatrics specialty and its sub-specialties to improve service and professional competency.
- PHAs to report on the NHSS clinical audit tool kit for paediatrics, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist pediatric services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs to the general public.

PSYCHIATRY

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSS.
- Develop and review policies and guidelines for mental health services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of specialist psychiatrist and technical workforce in psychiatry for provincial specialist hospital.
- Strengthen Laloki Hospital as the National Psychiatric Specialist Hospital.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a National Asset inventory for all Health facilities.
- Establish communication network with Provincial and District Hospitals.
- Coordinate professional events and conferences, such as society and college meetings for professional development.
- Coordinate and plan with PHAs to create specialist psychiatrist positions.

PROVINCIAL STRATEGIES:

- Build Provincial Hospital Capacity to provide psychiatric services and improve diagnosis of diseases in accordance with NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist psychiatric services.
- Promote training and development for workforce in psychiatry to improve professional competency.
- PHAs to report on the NHSS clinical audit tool kit for psychiatry, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist mental health services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic psychiatric services are provided.
- PHAs to ensure that districts and health facilities continue to provide awareness and advocacy programs for mental health issues to the general public.

DENTISTRY – ORAL HEALTH SERVICES

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSS.
- Develop and review policies and guidelines for oral health services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of specialist dental officers and technical workforce in dental health for provincial specialist hospital.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional events and conferences, such as society and college meetings for professional development.
- Coordinate and plan with PHAs to create dental health positions.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity to provide clinical oral health services and improve diagnosis of diseases in accordance with the NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist dental health services.
- Promote training and development for workforce in dental health to improve professional competency.
- PHAs to report on NHSS clinical audit tool kit for dental health services, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway for patients requiring specialist dental services.

LOCAL STRATEGIES:

- Improve referral pathways for patients with oral health issues from lower-level facilities.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic and oral health services are provided.
- PHA to ensure that districts and health facilities continue to provide awareness and advocacy programs on oral health to the general public.

INTERNAL MEDICINE

NATIONAL STRATEGIES:

- Advocate for implementation of the NHSSs.
- Develop and review policies and guidelines for internal medicine clinical services.
- Provide supervisory and clinical support to lower levels of care.
- Ensure training and development of specialist internal medicine physicians and technical workforce for provincial specialist hospital.
- Maintain quality and standards of specialist medical equipment, products, and services.
- Develop a national asset inventory for all health facilities.
- Establish communication network with provincial and district hospitals.
- Coordinate professional activities, such as society and college meetings for professional development.
- Coordinate and plan with PHAs to create internal medicine positions.

PROVINCIAL STRATEGIES:

- Build provincial hospital capacity for internal medicine and improve diagnosis and treatment of diseases in accordance with the NHSS.
- Develop annual implementation plans for integrated programs with key stakeholders to improve specialist internal medicine services.
- Promote training and development for workforce in internal medicine specialty and its sub-specialties to improve service and professional competency.
- PHAs to report on the NHSS clinical audit tool kit for internal medicine, quarterly.
- Coordinate integrated outreach programs.
- Implement and improve the existing clinical referral pathway.

LOCAL STRATEGIES:

- Improve referral pathways for patients who require specialist internal medicine services.
- Ensure clinical assessment and communication is maintained at all lower-level facilities.
- Conduct clinical integrated outreach patrols to the lower-level health facilities and communities.
- PHAs to work with districts and rural health facilities to ensure that basic diagnostic services are provided.

HEALTH SYSTEMS STRENGTHENING

The challenges facing PNG's health system is far more than the inadequate spending in health. Performance is also constrained by the structure of the system and by geographical and cultural factors. To achieve improvements in the health system, policy-makers and program implementers will need to reshape key elements of the system by drawing on policy instruments which are better suited to redressing the structural weaknesses and more compatible with contextual realities.[22]

The limited capacity to provide cost-effective and user-friendly quality health care services in PNG reflects many factors, including low morale and high absenteeism among health workers, poor maintenance of infrastructure and equipment, and unreliable drug supply.

Investments in the health system building blocks such as the health workforce, medical supplies, infrastructure, information technology etc are inadequate. As a result, limited observed improvements in outputs or outcomes have taken place.[23]

The sector aims to strengthen the health service with strong efficient system for the health workforce, financing, information systems, medical supplies, leadership and governance and upgrading of health facilities in accordance with population size and geographical requirements and to sustain them over the long term.[24]

Strategies developed under the health system strengthening programs is aimed to build a strong efficient system for health service delivery in the country.

HEALTH SYSTEM	
Health Program	**Health Sub-Program**
Health System Strengthening	FINANCIAL MANAGEMENT
	HUMAN RESOURCE
	MEDICAL SUPPLIES
	POLICY & PLANNING
	PARTNERSHIPS
	GOVERNANCE AND LEADERSHIP
	INFORMATION MANAGEMENT & RESEARCH
	AID-COORDINATION

[22] Health System Strengthening in Papua New Guinea: Exploring the Role of Demand-responsive Mechanisms, J. McKay, K. Lepani, 2010.
[23] Assessment of Health Financing Options — Papua New Guinea, the World Bank, 2014
[24] PNG Medium Term Development Plan 2018-2022, Department of National Planning and Monitoring

HEALTH SYSTEM

FINANCIAL MANAGEMENT

NATIONAL STRATEGIES:

- Develop a comprehensive and evidence-based health financing policy and a strategic plan based on the principles of NHP.
- Support the establishment of Integrated Financial Management System (IFMS) to all PHAs.
- Conduct health financing assessments and develop strategies to establish a revenue-generating process and resource mobilisation framework.
- Strengthen the health finance and planning committee to effectively monitor all health budgets ensuring they respect health department policies and priorities.
- Strengthen health sector stewardship, oversight, transparency, accountability, and mechanisms to prevent mismanagement of financial resources.
- Strengthen financial management skills, including competencies in accounting, auditing, budgeting, planning and monitoring at all levels in compliance with the PFM Act.
- Facilitate and manage Health Sector Improvement Program (HSIP) Trust Account and provide support to provinces to comply with financial guidelines.
- Establish and coordinate an effective procurement system and provide support to PHAs on procurement process in compliance with the *National Procurement Act.*
- Ensure effectiveness, efficiency and equity in resource allocation and utilisation.

PROVINCIAL STRATEGIES:

- Improve provincial integrated annual implementation plans and budgeting, monitoring, reporting and evaluation by partnering with existing donor-supported programs.
- Improve the effectiveness of use of funds and tracking of sub-national planning and resource allocation.
- Coordinate and improve the flow of funds to frontline service delivery at the facility level.
- Introduce a standard financial monitoring and reporting system to include all provincial and district level health expenditure.
- Conduct quarterly financial expenditure reviews.
- Train provincial and district level managers in implementation of the health budget.

LOCAL STRATEGIES:

- Develop applicable health budget for the districts and health facilities from levels 1–4.
- Conduct reviews and financial expenditure assessments against key deliverables and planned activities.
- Ensure health facilities are provided with adequate financing to deliver integrated outreach patrols and daily operations.
- Provide training for district staff in all aspects of financial management.

HUMAN RESOURCE

NATIONAL STRATEGIES:

- Develop health sector human resource plans, policies, and guidelines.
- Strengthen and integrate human resource development and performance management.
- Institutionalise a health workforce standards and monitoring system to estimate the number and type of health workers required at all levels of the health system to deliver essential services.
- Improve the quality and access to in-service training and continuing professional development for health professions at all levels of the health system.
- Upgrade and expand the capacity of existing health training institutions and rural practice sites for training student community health workers, nurses, and midwives to increase the number of graduates entering the workforce.
- Encourage and facilitate in-house training or on-the-job training in line with NDoH guidelines at all levels of the system.
- Consider development and deployment of VHAs to support services at the community level.
- Roll out national health sector occupational health, safety, and security guidelines.
- Ensure gender and equity policies are implemented for equal opportunities and affirmative action to support recruitment and retention of health workers from disadvantaged locations.
- Roll out the Human Resource Information System at the national and sub-national level as the data platform for HRH planning and management and build system capacities for obtaining and using HRH data.
- Institutionalise the package of incentives for attracting and retaining health workers employed within remote health facilities.
- Develop and design up-to-date job descriptions and job titles for all major positions to be used in conjunction with the annual performance management system.

PROVINCIAL STRATEGIES:

- Conduct pre-service training for provincial staff in close consultation with Department of Higher Education Research Science and Technology and training institutions.
- Provide adequate levels of staffing at all levels of care.
- Improve ways of attracting and retaining staff, particularly in remote areas.
- Establish a simple human resources information system to be used at the district and provincial levels to monitor availability of different cadre of health workforce, its distribution and retention.

LOCAL STRATEGIES:

- Prepare workforce assessment and interventions to district and lower-level facilities to provide quality of care.
- Create conducive working and living conditions for staff in remote health facilities
- Give priority to training rural health staff.

MEDICAL SUPPLIES

NATIONAL STRATEGIES:

- Implement the medical supplies reform agendas in a phased way to achieve an effective pull system.
- Strengthen processes for determining correct quantities of medicines for procurement based on consumption and morbidity trends.
- Maintain a continuous and adequate supply and inventory of drugs and basic medical equipment to sustain service demand for all levels of healthcare facilities.
- Establish M-supply throughout the country.
- Establish a quality assurance program.
- Expand and improve storage facilities, area medical stores and provincial transit medical stores.
- Develop and maintain a well-coordinated, reliable, and transparent procurement and supply system that is acceptable to all stakeholders.
- Develop and enforce procurement management regulations and guidelines at all levels, based on national procurement regulations and guidelines.
- Provide training and capacity building in procurement and supplies management at all levels.
- Support provinces and districts to develop distribution plans from the provincial level to remote health facilities, taking into account the specific conditions of each province.

PROVINCIAL STRATEGIES:

- Strengthen capacity of provincial transit stores in line with the medical supplies reform plan.
- Upgrade existing storage facilities to meet minimum requirements and establish additional storage facilities where no facilities are available.
- Build the capacity of provinces and districts to implement the pull system for medical supplies.
- Improve distribution of drugs and medical supplies from the provincial headquarters to health centers and aid posts.
- Ensure PHAs and provincial hospitals supervise and monitor the distribution and use of drugs and medical supplies as part of their support to rural health services.
- Ensure district and lower-level facilities have adequate medical supplies based on approved distribution plans.
- Promote the rational prescribing and dispensing of drugs by health personnel and the appropriate use of drugs by patients.
- Unify the pharmaceutical supply management system.

LOCAL STRATEGIES:

- Improve distribution of drugs and medical supplies to health centers and aid posts
- Ensure the continuous availability of essential drugs at the health centers and aid posts
- Establish and maintain regular inventory and reporting at facility levels to improve the supply chain.

POLICY & PLANNING

NATIONAL STRATEGIES:

- Review and develop health sector plans, including the NHP, the Health Medium-Term Development Plan, and the Health Sector Strategic Priorities.
- Support provinces and hospitals to develop health sub-plans, provincial health service plans, strategic implementation plans, and corporate plans.
- Support development of national program plans and policies that align with overall government policies and directions.
- Coordinate and monitor resourcing of capital investment projects across the sector.
- Develop a Medium-Term Expenditure Framework across the sector for effective resource coordination.
- Coordinate annual budget and planning processes and provide technical assistance to agencies to develop annual implementation plans.
- Provide support across the sector in policy development and reviews.
- Facilitate all health sector National Executive Council submissions.
- Collaborate with key stakeholders to review and develop strategies for the health sector to generate revenue and resource mobilisation.
- Review and develop strategies to establish a health endowment fund.
- Establish facility-based planning and budgeting to ensure improved flow of funds to front line health service delivery.
- Coordinate health sector resourcing from development partners and stakeholders.

PROVINCIAL STRATEGIES:

- Develop provincial strategy plans, implementation plans and corporate plans in line with NHP 2021–2030.
- Improve transparency, effectiveness of use, and tracking of sub-national planning and resource allocation.
- Improve management of capital investment projects and maintain project monitoring and reporting to relevant stakeholders.
- Conduct annual planning and budget processes in the provinces.
- Collaborate with government agencies and key partners to coordinate and improve resource mobilisation in the provinces.

LOCAL STRATEGIES:

- Coordinate planning and budget activities at lower-level facilities.
- Develop annual implementation plans for each facility based on function and service needs.
- Collaborate with DDAs and other stakeholders to improve resourcing of key health projects for health service deliveries.
- Develop routine and daily workplans for each facility to maintain functional priorities in line with annual implementation plans.
- Develop and explore appropriate strategies to effectively implement program activities that will yield productive results.

PARTNERSHIP

NATIONAL STRATEGIES:

- Ensure all partners and stakeholders plans and priorities are aligned to deliver the NHP 2021–2030.
- Develop policies, plans, partnership guidelines and agreement templates for effective partnership collaboration.
- Coordinate implementation of health partnerships policies.
- Establish a public–private partnership committee.
- Establish partnership database and undertake stakeholder mapping at a national level to oversee the various support and assistance provided to the sector.
- Develop partnership agreements (memorandums of agreement or memorandums of understanding) and monitor the performance of partners.
- Build partnership arrangements with international partners through bilateral and multi-lateral agreements.
- Strengthen capacity to coordinate and monitor health partnerships.

PROVINCIAL STRATEGIES:

- Develop partnership service agreements with key service providers like Christian Health Services (CHC), Catholic Church Health Services (CCHS), NGOs, faith-based organisations, and other sector partners.
- All PHAs to establish provincial partnership committees.
- Improve working relationships with provincial administration and DDAs through the establishment of agreements and committees.
- Establish relevant committees with government agencies involved in implementing health-related projects.
- Establish stakeholder mapping on different partners in the province.
- Develop a monitoring and reporting framework and improve communication with different stakeholders in the province.
- Establish subsidiary agreements with development partners on service delivery arrangements.

LOCAL STRATEGIES:

- Improve communication with community-based organisations in planning and delivering health services.
- Establish committees at the facility level with community leaders and local partners to effectively implement health interventions.
- Work closely with DDAs and local level government on health issues and developments.

GOVERNANCE and LEADERSHIP

NATIONAL STRATEGIES:

- Ensure all partners and stakeholders develop implementation plans in line with the NHP for their legislative compliance and reporting obligations.
- Create governance arrangements with adequate support and oversight for PHAs and other health agencies.
- Ensure appropriate governance structures are established to improve decision-making processes.
- Review laws affecting health system governance and service delivery.
- Strengthen capacity building and governance of hospital and PHA boards and executives.
- Coordinate and support leadership and management training at national and provincial level.
- Review and develop health sector legislation and regulations.
- Review the regulatory framework and establish a suitable entity to oversee and implement the different health regulations in the country.
- Build organisational excellence across the sector that encourages dedication and teamwork to improve productivity.
- Establish a national board as an oversight and coordination body for the health sector and consider how it is constituted for effective performance.
- Establish clear roles and responsibilities of key government agencies in health service delivery.

PROVINCIAL STRATEGIES:

- Increase advocacy and training for provincial representatives about the NHP and strategic priorities for the health sector.
- Ensure PHAs monitor their own progress against the NHP and health sector priorities.
- Strengthen capacity building and governance of PHA boards and executives.
- Use and analyse available information in decision making for policy development and effective planning.
- Establish PHA sub-committees, in conjunction with the national health board, to provide a forum to ensure alignment between provincial and national health plans.

LOCAL STRATEGIES:

- Improve capacity building for health managers in leadership training.
- Strengthen supervisory visits at district hospitals and health centers by provincial and district management teams.
- Establish administrative committees to oversee the management and decision-making processes at district and health facility level.
- Establish clear roles and responsibilities of different stakeholders especially the engagement of DDAs in health service delivery.

INFORMATION MANAGEMENT and RESEARCH

NATIONAL STRATEGIES:

- Promote access to information and improve the use of health information in decision making.
- Strengthening the human resources capacity of the Health Information System (HIS) at all levels.
- Develop guidelines for health facilities data collection analysis and reporting.
- Undertake an annual survey of all health facilities.
- Develop standards and level specific manuals for data management to improve the quality and consistencies of health information.
- Develop research approaches to study the major disease problems and health service delivery issues.
- Co-ordinate health systems research to support evidence-based policy formulation, planning and program implementation.
- Mobilise resources and establish a funding mechanism for operational health research.
- Strengthen the Medical Research Advisory Committee's responsibilities in the planning process and coordination of activities.

PROVINCIAL STRATEGIES:

- Ensure that all reports from each province have arrived and are completed on time each month.
- Collate the information for each province.
- Assess the provincial information for achievement of targets.
- Provide feedback to PHAs about program progress.
- Strengthen capacity for data collection, analysis and use of health information at provincial level.
- Train managers at the provincial and district management level on how to use health information in better decision making.
- Conduct training on relevant areas of research and research methodologies.
- Establish provincial research advisory committees.

LOCAL STRATEGIES:

- At the local level, the information is used to evaluate how the daily activities are operating, and if the activities are in line with those described in the activity plan.
- At the district level, activities in each facility are monitored to ensure that the district targets are being met.

AID COORDINATION

NATIONAL STRATEGIES:

- Increase engagement with all resource partners and stakeholders in planning aid disbursements.
- Strengthen the aid coordination mechanism to improve resource mobilisation for the health sector
- Revitalise the Sector Wide Approach (SWAP) mechanism to improve management of resources and support from development partners.
- Improve to the capturing and coordination activities at the national level.
- Develop a medium-term expenditure framework (MTEF) at the national level and provincial level.
- Increase accountability and transparency for relevant stakeholders to meet their funding requirements.
- Establish financial agreements with partners and stakeholders with clear roles and responsibilities established to meet desired goals and objectives.

PROVINCIAL STRATEGIES:

- Oversee and coordinate all support coming into the province for health service delivery.
- Build the capacity at provincial level to coordinate all internal and external support.

LOCAL STRATEGIES:

- Ensure that programs that are supported and funded by external partners are effectively implemented with the resources available.

CHAPTER 3: ANNUAL BUDGET AND PLANNING CYCLE

The annual planning and budgeting cycle, as shown in **Error! Reference source not found.** is a management system used to support a coordinated approach to implementation of the NHP. Stakeholders implementing the NHP are encouraged to apply this process and schedules to ensure resources are allocated efficiently to annual planned activities.
The GoPNG has a set annual planning and budgeting calendar runs from January to December. All agencies have to comply with this calendar to apply for resources.

While the practice of annual planning, budgeting, and monitoring is not new, it does represent a new responsibility for PHAs.

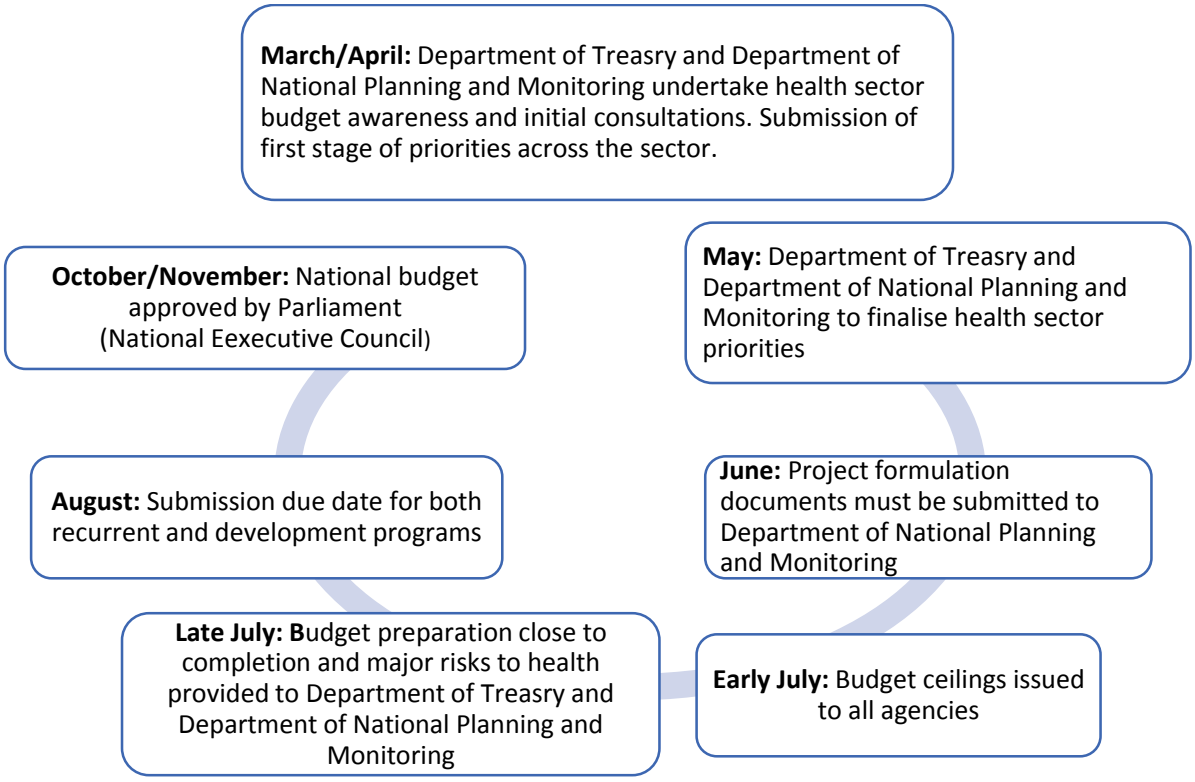

Figure 1: Annual planning and budget cycle

1. Pre-planning and budget preparation

The government has introduced a sector-wide approach for annual planning and budgeting. Every year, all agencies are required to develop an annual implementation plan and budget for the following financial year.

The National Department of Health (NDoH) as the lead agency in the sector is responsible for coordinating and compiling the health sector budget submission. This submission is submitted with the annual implementation plan (AIP) to the Department of Treasury.

2. Linking into the national budget process

By March every year, the Department of Treasury circulates a budget strategy and financial instructions for preparing the budget for the following financial year.

All agencies are required to adhere to the budget strategy and financial instructions. The planning and budget process begins with an evaluation of the performance in the previous years, setting of priorities, and identifying key activities. Priorities and activities must be aligned to the function of each agency.

3. Resourcing of Annual Implementation Plans

The health sector is mainly financed by the GoPNG with assistance from key development partners through partnership agreements.

Other key support in provinces is based on agreements with businesses, extractive industries and other partners within each province. Benefits from partnerships can range from infrastructure development through to grants and operational support.

The approved AIPs and budgets are then submitted to The Department of Treasury before the end of July of each year.

4. National budget approval process – From August to October

Between August and October, the Department of Treasury and the Department of National Planning and Monitoring (DNPM) makes presentations to the Ministerial Budget Committee (MBC) on the fiscal estimates, budget submissions and issues raised in the public budget submission processes. The MBC provides guidance for the Department of Treasury to advise the Budget Steering Committee on the broad parameters of budget for the next financial year. Department of Treasury prepares a draft budget for the Central Agency Coordination Committee (CACC) and the MBC The draft budget is then submitted to NEC for approval.

5. Budget finalisation process

The National Budget is presented to Parliament and passed in early November.

6. After the national budget is passed

In November and December, the Department of Treasury advises all agencies at the Heads of Agencies Budget Briefing about their approved budget in preparation for implementation in the new financial year.

Developing AIPs to enhance access and coverage at the district and provincial level healthcare should include:

- prioritising funding to front-line services, not just in terms of planned outreach and mobile clinics but through consistently reporting f patients seen and services provided and inputting results to the e-NHIS
- regular “trouble-shooting” and secured AIP-linked budget allocations for fuel, power, medicine, and surgery.

CHPATER 4: PROVINCIAL HEALTH AUTHORITIES

The health service delivery system in PNG is decentralized under the National Health Administration Act of 1997 and was intended to provide the legal framework for linking and consolidating the functions of all levels of government and other agencies involved in the delivery of health services[25]. Under this system, the National Department of Health (NDoH) manages the provincial hospitals, while provincial and local governments are responsible for all other services, which includes health centres, rural hospitals and aid posts. In an attempt to overcome perceived fragmentation of governance arrangements in the health system, the Provincial Health Authorities Act was passed in 2007. The act allows 'provincial government to establish Provincial Health Authorities (PHA) to be responsible for both primary and secondary health care (hospitals) in the province.[26]

ROLES and RESPONDIBLITIES of KEY AGENCIES		
National level	Minister for Health and HIV	• Set the agenda and key priorities for the health sector. • Overall responsibility for the performance of the health sector.
	National Department of Health	• Provide leadership, advocacy and coordination for the health sector. • Develop policies, plans and standards. • Oversee monitoring and evaluation of the health sector. • Provide technical assistance and support to provinces and other health agencies. • Oversee corporate governance in the health sector.
Provincial level	Provincial Health Authorities	• Provide all health services in the province, including financial management and implementation of rural health services and the provincial hospital. • Coordinate with provincial, district and local level governments through partnership arrangements to increase and maximise available resources for service delivery in the provinces.
	Provincial hospitals (non-PHAs)	• Deliver a higher level of care as outlined in the NHSS (depending on the level of the hospital). • Coordinate with the PHAs for tertiary and secondary hospital services in the provinces.
Local level	District health services	• Lead and oversee rural health service delivery in the district. This includes managing all health facilities, public health and outreach activities to all lower-level facilities (Levels 1–4). • Plan resource mobilisation with key stakeholders and DDAs for health service delivery in the district.

[25] Independent State of Papua New Guinea Health System Review. Health Systems in Transition Vol. 9 No. 1 2019

[26] Papua New Guinea's Primary Health Care System: Views from The Front Line, Wiltshire et al, 2020, pg. 6.

	Lower-level health services	• Responsible for outreach services, community-based public health interventions and primary healthcare services. • Coordinate with service delivery partners and local level governments to increase community involvement in health promotion, prevention, and protection activities.

Table 2: Roles and responsibilities of key agencies supporting service delivery

VEHICLE FOR SERVICE DELIVERY:

The Provincial Health Authorities (PHAs) are the main drivers of health service delivery in PNG. The PHAs are structured to build their systems based on cohesive approaches to national health priorities and improving the health outcomes in each province.

Health service delivery in PNG is challenging and complex, where decentralisation drives the implementation of government services to the rural majority. There are many weaknesses the system continues to encounter, including funding shortfalls, inadequate staffing and supervisory support, faltering outreach, and inconsistent medical supply chain.[27]

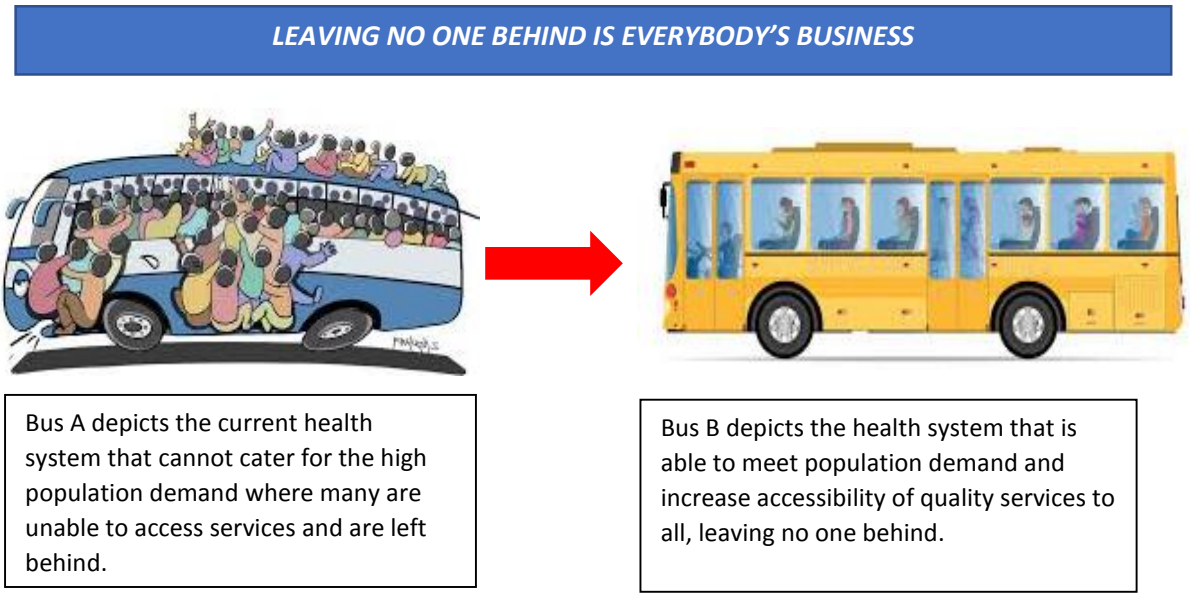

Figure 2: *Illustrates Provincial Health Authorities as a vehicle on a journey from a struggling system to a system that is responsive to demand and leaves no one behind..*

The delivery of health services requires the strengthening of PHA health systems so that they are able to provide their mandated functions.

Key Functions includes:

1. Managing all Health Resources in the provinces;
    - improving robust budgeting, financing, and accounting structures,
    - improving health infrastructure, associated health staff accommodation, including undertaking preventative maintenance,
    - improving the capacity and capabilities of all health staff and support workers to deliver safe, quality, people-centred and integrated health services,

2. Provision of quality health care services and public health interventions in accordance with NHSS;
    - improving the focus of health promotion and disease prevention at community-village level and at each level of health service delivery,

[27] The Mid Term Review and Joint Assessment of the Papua New Guinea National Health Plan 2011-2020 Carmichael et al, 2015.

- improving health service coverage and health outcomes for availability and accessibility,
- building the capacity of provincial hospitals to provide specialist base on service demand and burden of disease in the provinces,
- improving medical supply and distribution chain processes.

3. Build Partnership with all stakeholders in the provinces;
    - improve collaboration within provinces to capture health resourcing holistically,
    - establish governance and reporting framework with government agencies to improve service delivery within the province,
    - Develop partnership agreements with service providers and implementers to effectively coordinate support to health service provision and program implementation.

3.1 Manage all Health Resources in the provinces

PHAs have the authority to manage their own resources and fill in any resource gaps. Knowing what their resource requirements are against health service deliverables and being able to accurately quantify these needs as best as possible will be an important first step for PHAs.

Each PHA is accountable for managing its own resources and support. This financial responsibility also gives PHAs the option to generate internal revenues to support the operation of health services. All financial activities are subjected to *Public Finance Management Act 2016* (PFMA 2016) and additional Public Finance Management (PFM) legislation and guidelines.

Demonstrating effective use of funds to deliver health services and specialist services will increase stakeholder confidence for contributing to health services within provinces.

Integrating good PFM across all PHAs and improving alignment to best practice that best fits the circumstances and provincial context of each PHA will be significant. This approach will be guided by the PHA PFM Manual that will enhance processes for good financial management practices across the sector.

The purpose of the PHA PFM manual is to:

1. Empower PHAs and make them more confident to perform the mandated functions and responsibilities more effectively by using government funds and other sources of income to achieve health service delivery objectives
2. Improve PHAs financial management and planning capacities
3. Allow PHAs to develop good working relationships with central agencies such as the departments of Treasury, Finance and National Planning and Monitoring.
4. Enhance the financial management capacities of PHA staff so they can deliver health services within their provinces more efficiently and effectively, as well as assisting them to adapt to increasingly challenging and fiscally constrained environments in the medium term.

If health is to be ‘everybody’s business’, effective public financial management and use of funds must also be everybody’s business. Therefore, Accountability for use of funds and associated performance starts with District Health Managers and accountability is required at all levels from there.

3.2 Provision of Quality Health Care Services and Public Health Interventions in accordance with NHSS

All PHAs must develop a model of care that reflects the essential NHP principles and values, and supports a range of essential clinical, primary healthcare and public health interventions and services. The model

of care should focus on continuously improving patient care throughout the health system, ensuring that its coverage extends from self-care management and engaging with communities, disease and injury prevention and health promotion, early detection and intervention, to integration and continuity of healthcare.

The aim of a model of care is for all individuals and communities receive the health services they need without suffering financial hardship and includes the spectrum of essential, safe, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the course of individual's life.

Ethical practice, clinical governance, and quality improvement

Delivering healthcare in an ethical way means ensuring person-centred care is delivered to meet the health needs of every individual, their family, as well as the public health needs of the population. Ensuring health facilities are open and that nobody is turned away or refused care is fundamental to leaving no one behind.

Between PHAs, there will be significant variations in how health resources are used and delivered. PHAs should consider taking a more strategic approach to using and deploying resources. PHAs can identify and create more 'fiscal space' within their own budget allocations das resources from the national government continue to face challenges and both internal and external shocks.

A programmed response requires a reorientation of the management system to ensure clinicians are cognisant of the different needs of their catchment population, including marginalised or disadvantaged groups or individuals, and provide care when they present to a health facility or by taking services to the population. Poor health outcomes in the disadvantaged populations are not only due to lack of access, but also to poor delivery of care.

3.3 Build Partnership with all stakeholders in the provinces

The fiscal autonomy granted to PHAs is an opportunity to strengthen the mechanisms and processes by which PHAs access and use public resources from several pools at the national and provincial levels. This will also improve accountability for the delivery of health services at the provincial level.

PHAs are encouraged to engage with all partners in their province to consolidate all available resources to strengthen the health system and help the PHA deliver its objectives. The nature, value, source and expected results from partner support requires commitment from the PHA.

Merging urban and rural health services is intended to improve collaboration within provinces to capture health resourcing holistically.

Engaging with resource partners to capture all available resources, whether technical assistance and advisory services, the provision of equipment or medical supplies, direct financial direct support or other forms of assistance .

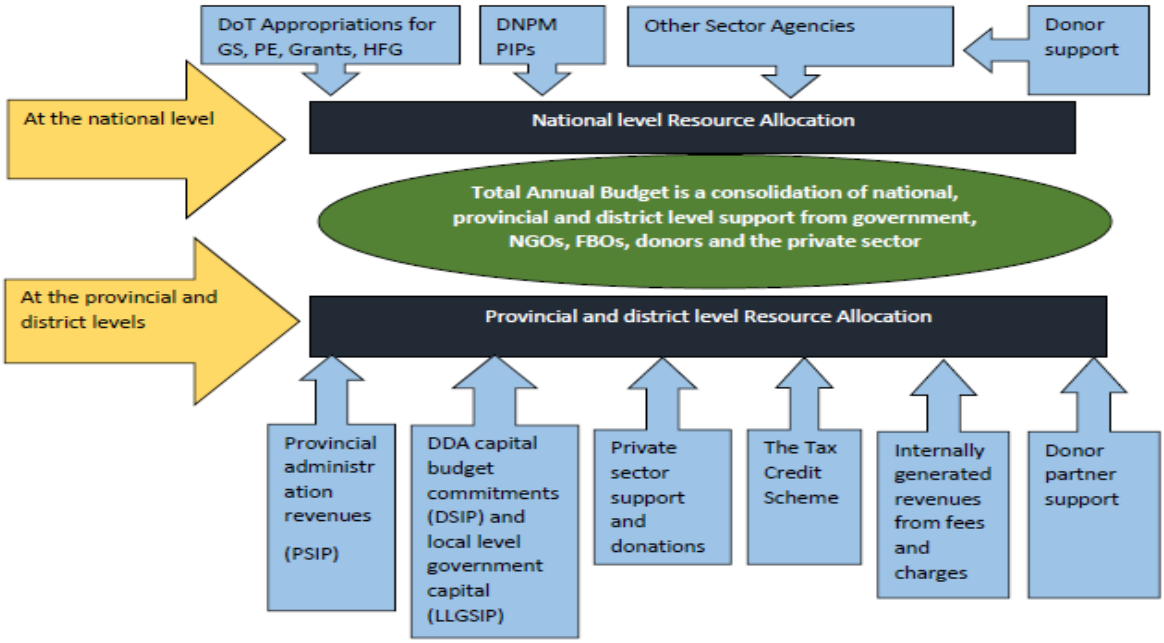

Figure 3: Mapping of health resources and financing options available to Provincial Health Authorities

CHAPTER 5: PROJECTED EXPENDITURE UNDER THE NATIONAL HEALTH PLAN 2021–2030

Expenditure outline

Expenditure estimates under the NHP 2021–2030 include new investments in the health sector (e.g. infrastructure, personnel) as well as ongoing activities to progress the five KRAs: create healthier communities through effective engagement, work together in partnerships, increase access to good quality and affordable health services, address targeted disease burdens and health priorities, and strengthen health systems.

The spending envisaged under NHP corresponds, in large part, to activities in strategic plans developed by individual teams within the NDoH over the period from 2021–2030. Additional recurrent spending—especially operational expenses, including maintenance—has been estimated for the NDoH, PHAs, , Christian Health Services and Catholic Church Health Services and other institutions in the health sector. Where strategic plans for the period 2021-2030 were unavailable, or only available for part of the plan period, expenditure were estimated under assumptions consistent with NHP goals.

In arriving at expenditure projections for NHP 2021–2030, the costing exercise mapped the proposed activities listed in the strategic plans (and recurrent expenditure) to the KRAs. Where this was not possible, it was assumed that the strategic plans formulated by different teams within NDoH over the period from 2021–2030 (or its sub-periods) are consistent with the components of the KRAs. Discussions with selected NDoH teams engaged with formulating strategic plans were clarified questions related to activities and methodology to limit the likelihood of double counting expenditure for infrastructure, supplies and human resources under different strategic plans.

The remainder of this chapter describes projected plan expenditure for NHP 20212030, under major expenditure classifications;

- human resources
- infrastructure
- operational expenses
- medicines and procurement
- church health services
- Expenses not elsewhere classified (including specific disease control programs, Central Public Health Laboratory, Institute for Medical Research, etc.).

The estimates do not include projected expenses for activities related to improvements in water supply, sanitation and other investments that are well known to affect health outcomes, but are traditionally treated as lying outside health sector funding.

Expenditure for human resources

Baseline estimates of government staff (by category of worker and province), and church and private sector and NGO staff in PNG were estimated. Individual-level data on government workers provided by the Department of Personnel Management (DPM) were used for this purpose, supplemented by data from the Human Resource Division of NDoH and by the Asian Development Bank (ADB) team.

Data from the DPM (updated to January 2021) was available for 12,699 health sector workers. From this number, 305 individuals who were reported as working for the church sector in the dataset were dropped. Based on their designations, these individuals were taken to be working in human resource training institutions operated by CHS and were accounted for separately under pre-service training costs of the

human resource strategy. This resulted in 12,394 government health staff from the DPM dataset. But this dataset did not include staff from Central Province and from NDoH. Data from the NDoH human resource team was used to fill in this data gap. This resulted in an additional 1,067 staff, resulting in a total of 13,461 government health workers nationally. This number was treated as the baseline.

The salaries and allowance estimates data provided by the WHO team that costed the Human Resource Strategic Plan for Health. Based on discussions with the HR branch at the NDOH, the salary and allowance estimates provided by the WHO team were then used to construct the preferred set of estimates for human resource costs under the NHP 2021–2030. The average staff costs by type of personnel are shown in Table 1.

Table 1: Annual base salaries and allowances for human resources for health in PNG (in PGK)

Personnel type	Base salary	Allowances	Total
Medical Officer/Doctor	35,648	89,750	125,398
Nurse	18,143	15,100	33,243
Health Extension Officer (HEO)	21,362	17,604	38,966
Community Health Worker (CHW)	12,142	5,020	17,162
Other staff	16,798	15,944	32,742

Table notes: Data on salaries and allowances for medical officers, nurses, HEOs and CHWs is from the draft Human Resources Strategic Plan 2021–2030, and further clarified by communication with a Technical Office from, WHO and members of the HR team at NDoH. These salaries are the averages at roughly the mid-point of salaries and allowances for each staff type. Salaries and allowances for other staff were assumed to be a weighted average of the salaries and allowances for doctors, nurses, CHWs and HEOs, weighted according to their respective percentages of government staff.

The costing was based on the personnel projections outlined in the NHP 2021–2030. In this most recent set of projections, it is estimated that overall staff requirements for all categories of Human Resource for Health would be 29,376 in 2030, including 19,126 frontline workers, i.e., doctors, nurses, CHWs and HEOs (with the rest 10,250 classified as "other"). Starting with the baseline set of estimates for each of these four categories of frontline workers, the net additional human resources required for each category from 2022 until 2030, to reach the 2030 targets for workers. As in the Human Resources for Health Strategic Plan 2021–2030, it was assumed that one-third of the gap in human resources between 2021 and 2030 would be made up between 2021 and 2025, and the remaining (two-thirds) between 2026 and 2030, implicitly assuming a ramping up of training capacities in the second half of the plan period.

Additions to human resources are required both to meet the targets for 2030 and for filling additional vacancies resulting from attrition, as noted in the Human Resource for Health Strategic Plan 2021–2030. It is estimated that between 1–1.5% of the health workforce is likely to retire annually, based on the existing age distribution. Mortality among healthcare workers could also lead to additional attrition. Moreover, health sector workers in PNG could emigrate or otherwise leave their roles. The Human Resources for Health Strategic Plan 2021–2030 assumed a 6–7% attrition rate among healthcare workers in PNG based on analysis of data for 2010–2018. For consistency, the methodology used for projecting staffing and training costs for the NHP assumed the same attrition rate and assumed to be the same for the government and non-government sectors.

The Human Resources for Health Strategic Plan 2021–2030 included health workers in all sectors (government, church, NGO and private). For projecting the costs of staff salaries and allowances, we focused only on government sector workers. Assuming the share of government and non-government health workers would remain unchanged throughout the plan period, baseline and 2030 numbers for government staff were estimated.

The Human Resources for Health Strategic Plan 2021–2030 also projects incentive payments for staff to work in the health sector, particularly in rural and remote areas, over and above existing salaries and

allowances. These incentive payments were estimated to be around K 490 million. Many PHAs are short-staffed and it is expected that the rising number of health sector workers projected under the Human Resources for Health Strategic Plan 2021–2030 will help to ameliorate these shortages. A key challenge will be ensuring that the added health sector workers are allocated in ways that are relatively equitable across provinces, and this may require incentivising workers to move to areas of greater need. Including additional expenditure to achieve other strategic objectives for human resources for health, creates an additional K 522 million of spending.

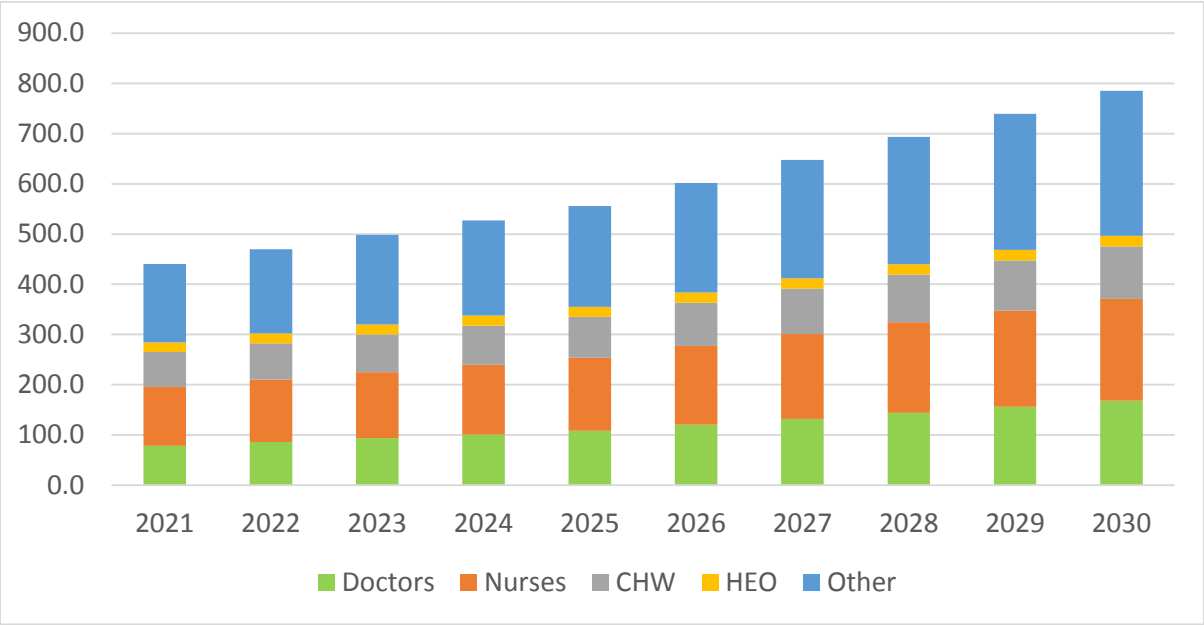

Figure 4: Projected staff salaries and allowances 2021-2030 (PGK millions)

Figure note: These are projected expenditure on salaries and allowances for government staff under existing rules, and do not include pre-service training costs, or incentive payments.

It should be noted that these estimates refer only to projected salaries (and allowances) expenses for government-managed health sector workers during the NHP period 2021–2030. If the salaries and allowances for CHWs and NGO/private workers are also accounted for, the expenditure estimates would be larger.

Projected expenditure for pre-service training during NHP 2021–2030

To estimate the annual number of graduates required under each category of health worker (doctors, nurses, CHW, HEO and other) as to achieve 2030 targets, replacements for worker attrition and net additions both needed to be considered in the government, church and other sectors. Figure 5 reports the projected number of new graduates required annually as doctors, nurses, CHWs and HEOs during the NHP 2021–2030 period.

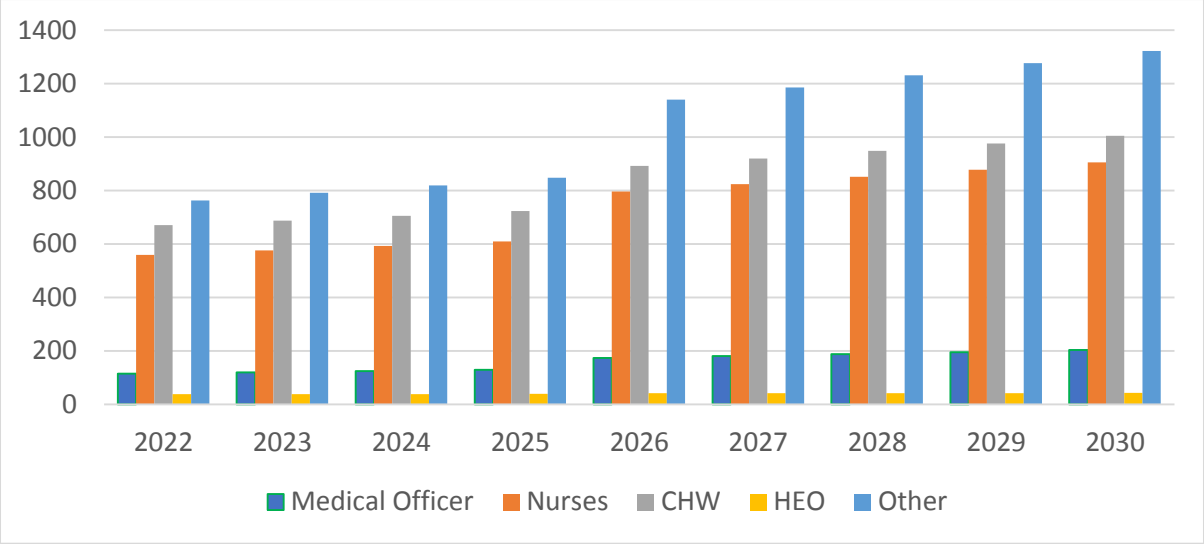

Figure 5: Requirements for new health graduates in PNG 2022–2030

Multiplying the per-person pre-service training costs by type of health worker by required number of graduates in each category over the plan period provided an estimate of K307 million in pre-service training costs to attain the goals of the Human Resources for Health Strategic Plan.

These estimates of pre-service training costs do not include any additional costs of capital investments in training institutions, which currently do not graduate the number of new health workers annually to meet the requirements projected in NHP 2021—2030. However, the Health Infrastructure Plan for 2021–2030 does project capital investments of K430 million for training institutions, and these will be considered separately under the infrastructure plan. The estimates of pre-service training costs also assume that new staff required to train the larger number of graduates will be readily available without any additional payment incentives.

Aggregate spending on human resources during NHP 2021–2030

Not including staff salaries and allowances expenses for health workers in CHS, the NGO and the private sectors, and (the relatively small) human resource costs for staff at the National Aids Council and the Institute for Medical Research, the overall human resource costs are estimated to be K6.79 million over the period 2021–2030, increasing from K483 million in 2021 to K880 million in 2030. Figure 6 presents this information by aggregating spending on salaries and employment for government staff, pre-service training for health sector graduates and incentive payments for staff.

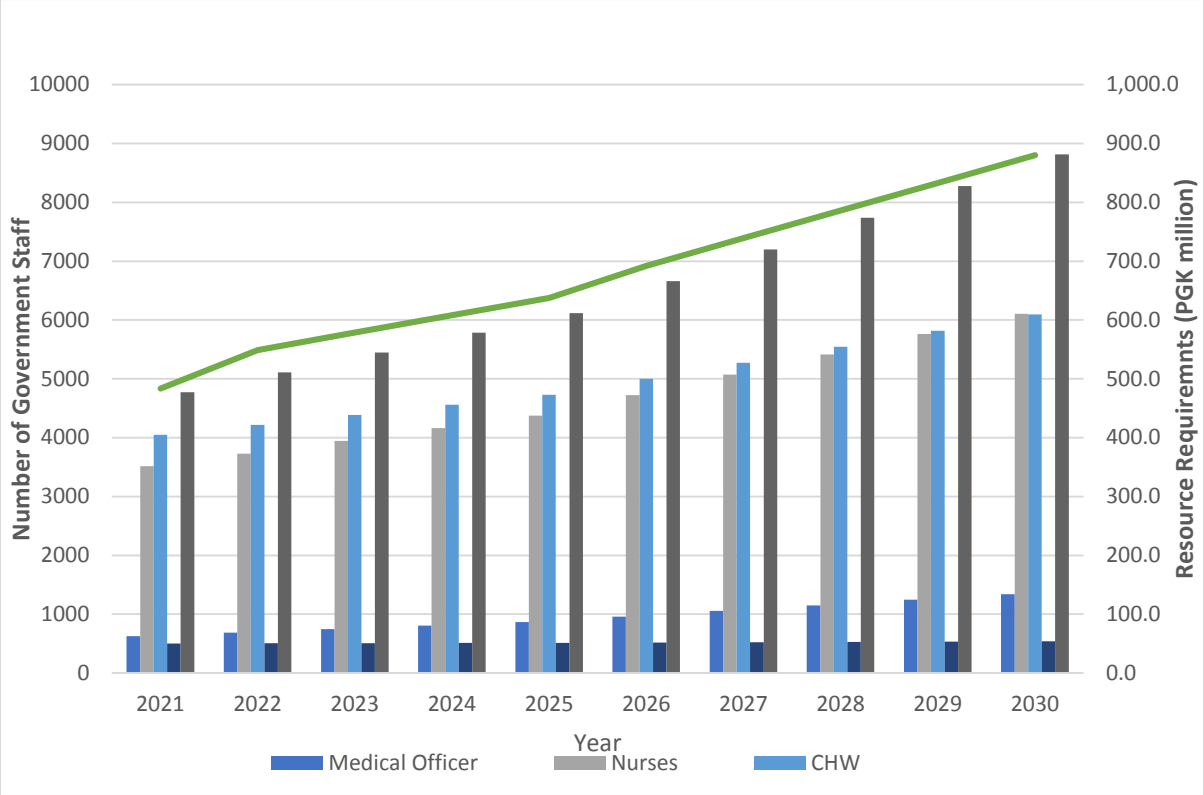

Figure 6: Projections and public spending on human resources for health in PNG, 2021–2030

Expenditure for Christian Health Services

CHS in rural PNG (including Catholic health services) receive funding from the government. In 2019 the GoPNG provided K121 million to CHS, of which almost 80% was accounted for by staff salaries and allowances.

Given the goals set out in the Human Resources for Health Strategic Plan 2021–2030 and the assumption that the share of CHS (including Catholic Church Health Services) and other non-government personnel will remain unchanged over time, a reasonable assumption is that the rate of growth of total spending on salaries and allowances in the church sector (although not the levels) will be the same as in the government sector. With this assumption, projected salaries and allowances expenditure for CHS were derived for the period 2021-2030. These projections rest on one additional assumption: that per person salaries and allowances paid to CHS workers do not change from levels observed in 2020. If they do (for example, if salaries and allowances were raised to equal working conditions with those of government workers) then projected expenditure would be higher.

The expenditure projections for the CHS (including Catholic health services) sector during the plan period are shown in Figure 7. The projected expenditure for the period 2021 and beyond exceed the projected allocations from the Department of Treasury. This rate of increase would be required to achieve the strategic objectives of the Human Resources for Health Strategic Plan 2021–2030.

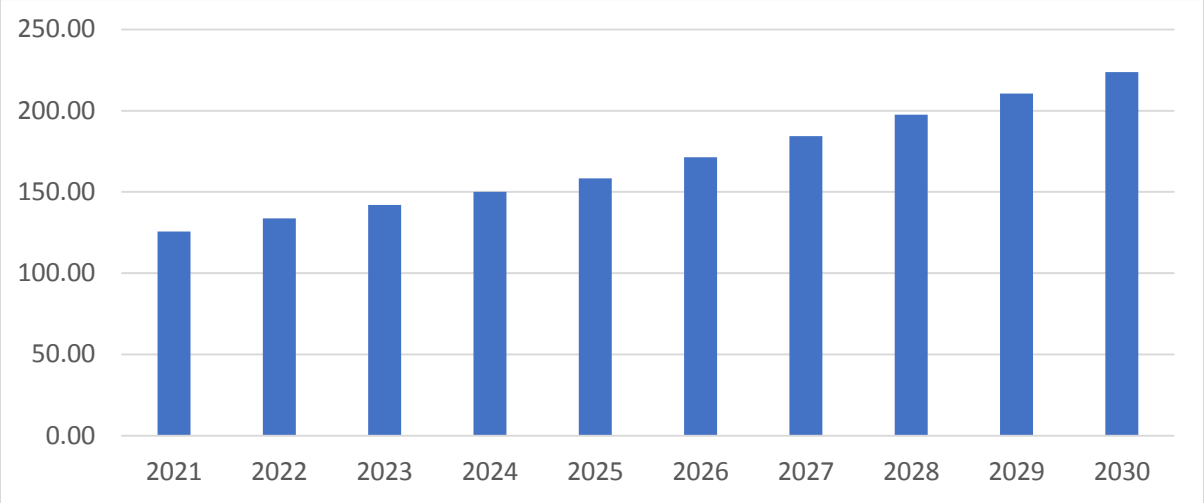

Figure 7: Projected expenditure for church health services, 2021–30 (PGK millions)

Over the NHP period, the projected allocations to CHS are estimated at approximately K1.7 billion, with about K1.3 billion for staff salaries and allowances, and the remainder for operational expenses.

Infrastructure investments under the National Health Plan 2021–2030

During the period of the NHP, an ambitious set of infrastructure investments are planned, as reported in the National Health Infrastructure Plan for 2021–2030. The investments in the infrastructure plan provide the basis for the expenditure estimates in this sub-section.

The proposed infrastructure investments for the NHP include:

- redeveloping Port Moresby General Hospital (PMGH) to be a fully functional referral and teaching hospital
- upgrading the specialist Laloki Psychiatric hospital
- developing a national reference laboratory in Port Moresby
- developing a dental hospital in Port Moresby
- redeveloping and upgrading existing provincial/regional hospitals and developing new provincial hospitals
- upgrading existing health centres to district levels, where needed and developing new district hospitals in line with PHA priorities
- rehabilitating or upgrading existing health centres, sub-centres, and community aid posts or construct new ones, as determined by PHA priorities
- rehabilitate existing regional medical stores and construction of transit medical stores
- upgrading or rehabilitating training institutions for health sector workforce (e.g., MBBS, nursing, training, HEO, etc.)

The infrastructure plan states the total scale of the investment between 2021 and 2030 to be around K20.91 billion.

Figure 8 shows the average annual magnitude and the composition of infrastructure spending during the period 2021–2030. Of the average annual infrastructure spending of PGK 2.09 billion estimated during the NHP, about 50% is intended for facility levels 1–4, 37% for provincial hospitals, and 10% for PMGH. About PGK 43 million annually (or PGK 430 million over 10 years) is intended for infrastructure for training institutions to provide for the growing health worker training needs in the plan period.

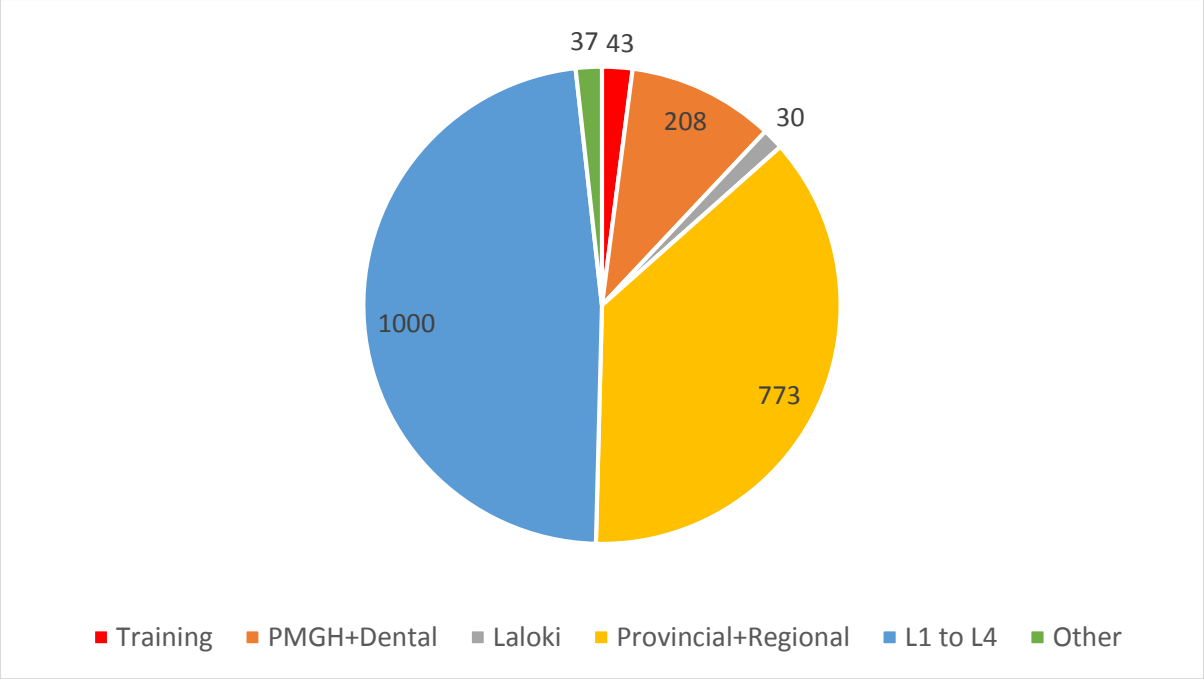

Figure 8: Annual infrastructure investments in NHP 2021–30 Average Spending Per Year: PGK 2,091 million

Medicines and procurement

Pharmaceutical expenditure worldwide depends on multiple factors, including the distribution and level of disease burden, the effective demand for health services by populations that are confronted with illness, policies and practices related to improved quality of care (including greater adherence to clinical guidelines), population growth, the economic and fiscal situation of the countries, and the potential for new drugs getting off-patent and obtaining market approval that might drive demand and consequently, additional expenditure.

As PNG seeks to improve the quality of healthcare services to its population, the demand for healthcare services in the government, church and private sectors can be expected to rise, along with increased health service spending, including on drugs and other medical supplies. Strategic plans for STI and HIV, the national malaria and tuberculosis programs, and the maternal and newborn health program, all propose major improvements in healthcare services, including access to drugs, vaccines, and other supplies in PNG during the NHP 2021–2030.

To predict expenditure on drugs and other supplies across the NHP 2021–2030, one strategy could be to predict changes in demand, not just due to population and income growth, but also due to the forecast pattern of disease burden, and increased demand for health services in response to improvements in the quality of care.

While income growth and other drivers of demand certainly matter, the major driver of drug spending in PNG in the short run is likely to be government budgetary resources. In 2020, almost K246.64 million was spent on drugs and consumables, the full amount budgeted for these expenditure. Because the budget was fully used (and there are well known reports of stockouts and local purchases at the facility level), it is concluded that budget constraints are a key driver of drug and consumables spending in PNG, notwithstanding concerns about logistics.

The primary source of data used for forecasting spending on drugs and supplies was the mSupply system of the NDoH, not inclusive of local purchases of drugs by healthcare facilities channeled outside the mSupply and the out-of-pocket spending. Not including these two categories of drug spending will bias

the projected spending on drugs and supplies downwards, although at least the local purchase component is likely to be small, given the tight budgetary constraints confronted by health facilities and provincial health authorities in PNG.

Using province-level population data for 2020, in combination with information on expenditure on drugs and supplies attributed to each province, per capita spending on drugs and supplies was calculated for each province. Excluding the National Capital District, the average per capita spending in the three provinces with the highest spending levels was approximately K54 per person (West Sepik, Manas and East New Britain) (see Figure 9) - with much lower numbers for other provinces, especially, in Northern Highlands (K7 per person), Southern Highlands and Eastern Highlands (about K12-13 per person).

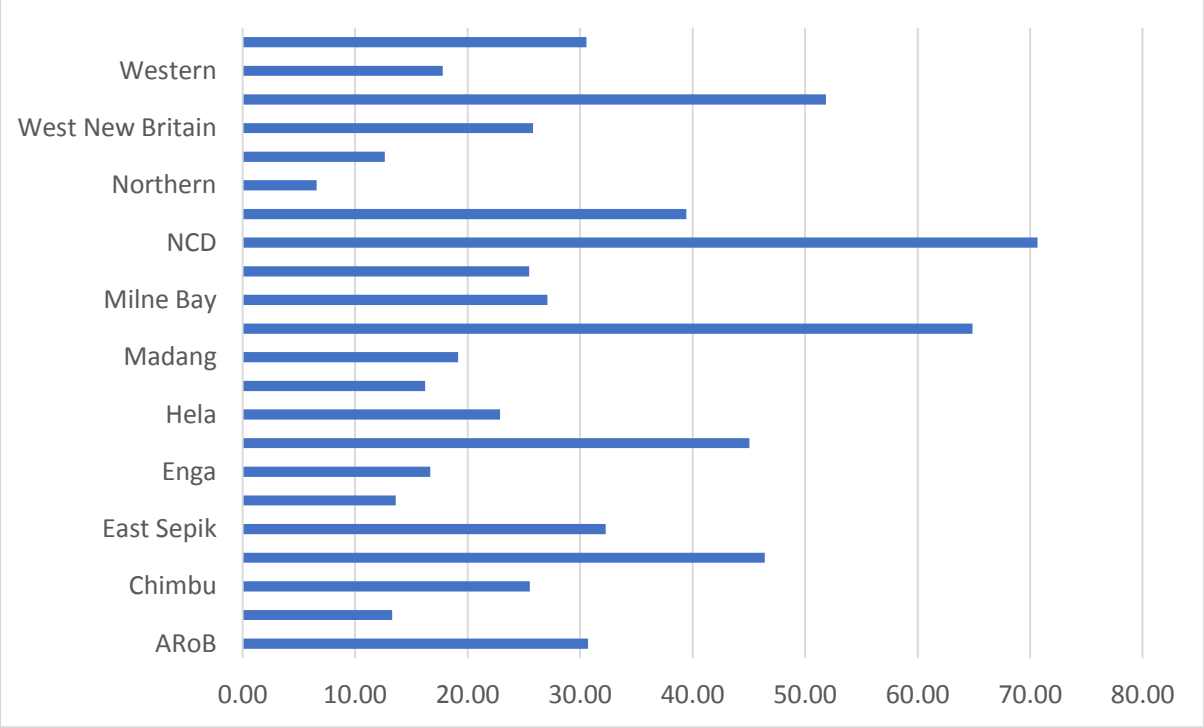

Figure 9: Per capita government expenditure on medicines and supplies by province in PNG, 2020 (in PGK)

For forecasting expenditure for the period 2021–2030, it was assumed that per capita expenditure on drugs and supplies in provinces below the threshold of K54 per person will increase over time to reach K54 per person in 2030. In making this projection, no changes in annual per capita availability were allowed for provinces above this threshold. This approach to forecasting drugs and medical supplies spending is consistent with equity goals, bringing provinces with lower availability to par with the high availability provinces, growth in demand over time (population growth at the provincial level) and also budgetary considerations (limit imposed by K54 per person). The results are shown in Figure 10, indicating that aggregate spending on medicines and supplies would increase to PGK 647 million by 2030.

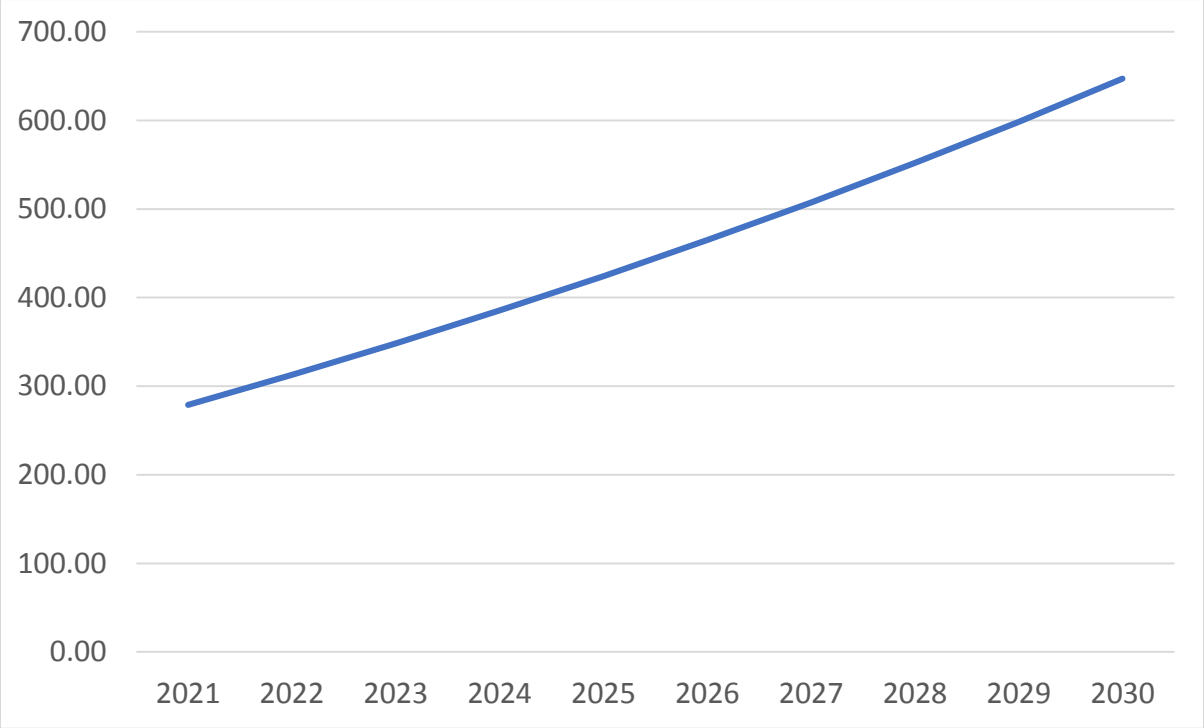

Figure 10: Projected drugs and supplies spending in NHP 2021–30 (PGK millions)

These projections critically depend on whether government budgets will respond to growing needs. In the four years from 2017–2020, expenditure on drugs and consumables averaged K240 million annually, with no clear trend. If this observed pattern of spending on drugs continues, the projections in Figure 10 will significantly overestimate actual spending during the plan period. With the limited availability of information, the projections do not consider growth in prices of medicines and supplies or changing patterns in disease burden in PNG that may influence the composition of drugs used (and demand for budgetary allocations). If mSupply disproportionately underreports data from some provinces the projections could be biased, although a rapid assessment of the province-level data suggests that any resulting bias is likely to be small.

The NDoH is also partially (or fully) responsible for drugs and medical supplies for programs such as malaria, tuberculosis, STI & HIV, and immunisation; as well as reagents to the Central Public Health Laboratory. Expenditure on many of these items are reported as separate line items in budgetary documents and are not included in the projections reported in Figure 10. Expenditure for projections on medicines and consumables for program commodities are captured by the costed strategic plans for various disease control programs and immunisation for the period 2021–30, or for a sub-period of the NHP.

Given an indicative share of almost 10–15% of all drugs and consumables spending expenditure under disease-control programs, immunisation and labs, it was important to account for these expenditure as projected under NHP. Unfortunately, it was not easy to separate the spending on drugs and supplies from other components of spending in these plans. For instance, the National Malaria Strategic Plan 2021-2025 projects expenditure of US$34 million (K122 million) under its Strategy Objective 2: Effective Case Management, out of its overall projected expenditure of US$114.4 million (K 407 million). Under Objective 2 the National Malaria Strategic Plan intends to promote improved malarial diagnostics and treatment, including providing antimalarials and diagnostic kits. It proved difficult, however, to disentangle the costs of drugs and test kits components from other elements of effective case management, which included expenses for training programs for health workers. Because of this, and to avoid double counting, expenditure on medicines and supplies under program-specific strategic plans were considered in a separate section and not included in this sub-section.

Expenditure under program-specific strategic plans

This section discusses projected spending for:

- National STI and HIV Strategy
- National Immunisation Strategy
- National Malaria Strategic Plan
- National Tuberculosis Strategy
- National Health Promotion Plan
- National Reference Lab Implementation Plan
- Medicines Quality Control Laboratory Strategic Plan
- National Health Information System.

In undertaking these projections, human resource expenditure indicated in the individual strategic plans were mostly left out, as these are assumed to be included in the expenditure forecast under the Human Resources for Health Strategic Plan 2021–2030.

Resource implications for NHP 2021-2030 of the PNG National STI and HIV Strategy

The expenditure under the STI and HIV Strategy 2018–2022 was envisaged to increase by 3.6% annually over the period 2018-2022, with an overall spending of K888 million over this period. The estimated expenses for HIV & STI combined for the NHP are shown in Figure 11.

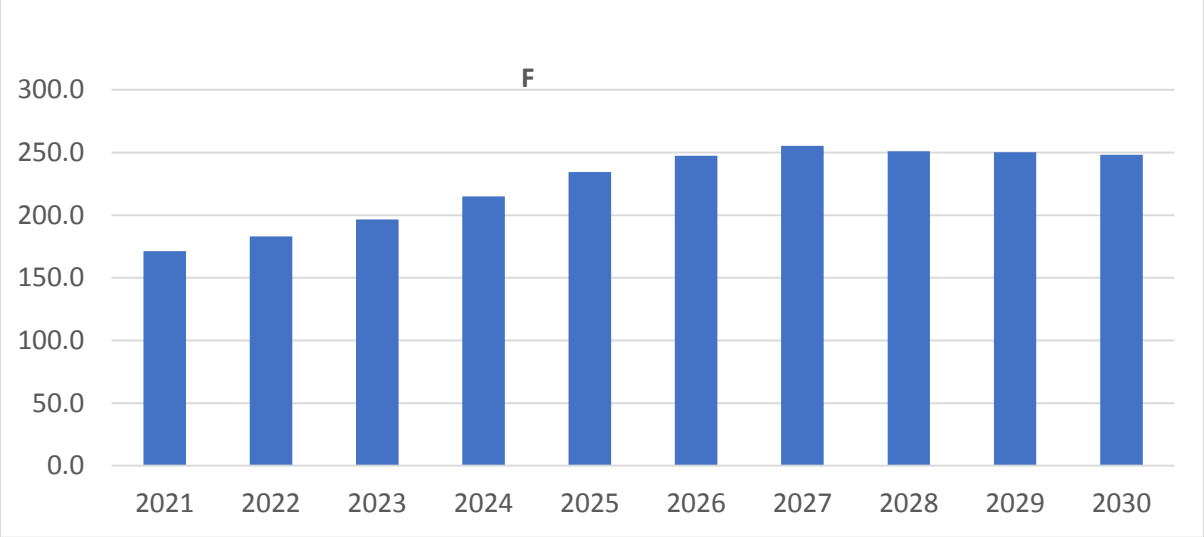

Figure 11: Projected HIV & STI spending 2021–30 (PGK millions)

Figure note: Estimates are based on discussions with the STI & HIV team at NDoH and the PNG National STI and HIV Strategy 2018–22. Expenditure on human resources is excluded from these projections as it is assumed to be in the overall human resources for health strategic plan.

Resource Implications for NHP 2021–2030 of the PNG National Immunisation Strategy

Estimates of resource implications of the National Immunisation Strategy (NIS) for NHP 2021-2030 are based on the immunisation strategy document (7 May 2021). The NIS strategy noted the low immunisation coverage in the country. The strategy therefore called fora high-effort or resuscitation phase of the immunization program during 2021–2022, which would involved significant efforts at improved coordination, setting up an essential team to support the strategy, including filling key vacant posts within NDoH and PHAs, intensifying efforts to improve reach and quality of immunisation services, and ensuring adequate funds. The strategy also outlined a rehabilitation phase for the immunisation program with

improved governance, logistics, monitoring and evaluation, continuing efforts to improve coverage, demand for vaccines within the community, and better coordination and resources of funding sources. After that, the program would move into a sustaining phase over the longer run. COVID-19 vaccinations will also be relevant, at least for the first half (until 2025) of the NHP period. The (indicative) cost estimates in the NIS document included annual information for 2021–2025.

For projecting NIS spending for each year during the period 2026–2030, a constant rate of growth from 2025 was assumed so that the total of annual amounts over the five years equaled the 5-year total reported in the strategy document. Cost estimates were adjusted to exclude funding for filling in vacancies as these are assumed to be included in the projected costs of the human resources for Human Resources for Health Strategic Plan 2021–2030. All estimates were converted from US$ to PGK using an exchange rate of US$1=PGK 3.56.

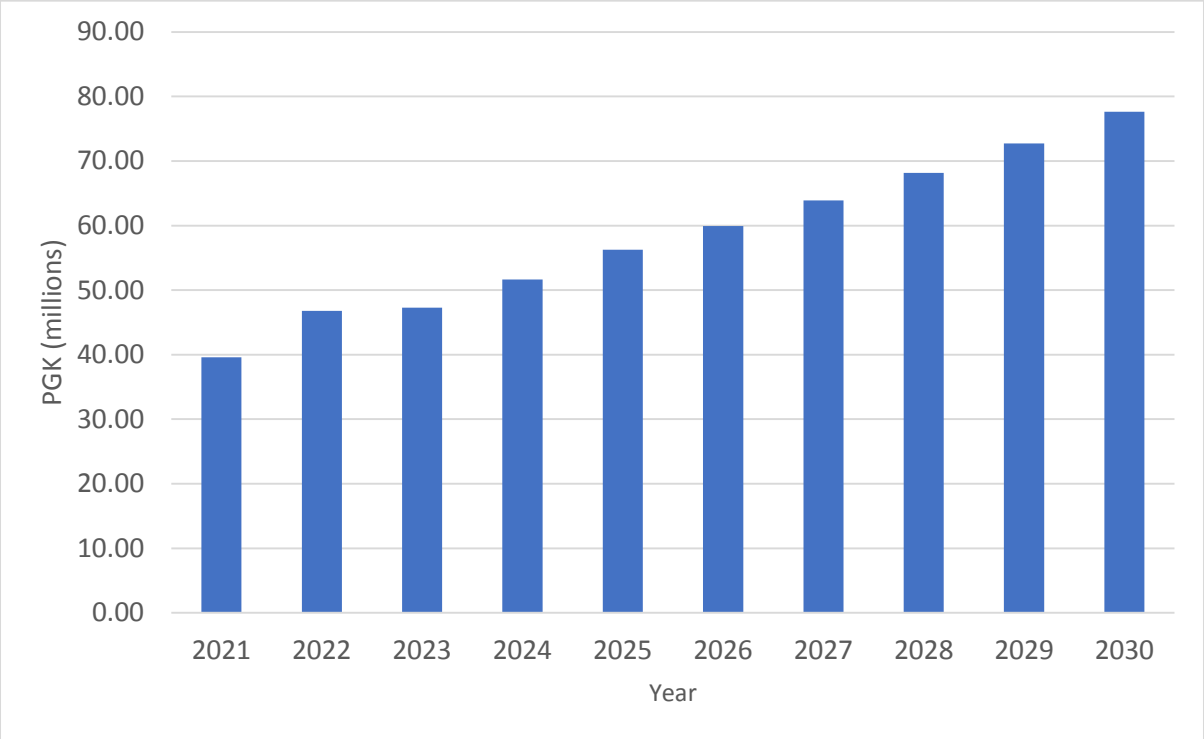

Figure 12: Projected expenditure for National Immunisation Strategy 2021–30 (PGK millions)

Resource implications for NHP 2021–2030 of the National Malaria Strategic Plan

The National Malaria Strategic Plan aims for a malaria-free PNG by 2030. For the period 2021–2025, the strategic plan intends to lower malaria mortality by 63% by 2025 and by 90% by 2025.

Because of the plan's focus on lowering mortality and morbidity from malaria, it is possible that some of the expenditure projected for case management (30%) may decline after 2026. On the other hand, the focus on elimination by 2030 may necessitate increased expenditure to access the hardest to reach population and more intensified prevention and control efforts in the years 2026 and beyond.

Allocations targeted at strengthening the Central Public Health Laboratory and Public Financial Management related to the NMSP are also included in the projections. It is possible that this expenditure is also accounted for elsewhere (e.g., CPHL strategic plan), but these figures are not easy to disentangle. Some double counting in spending is possible, although any associated projection errors will be small owing to the amounts involved.

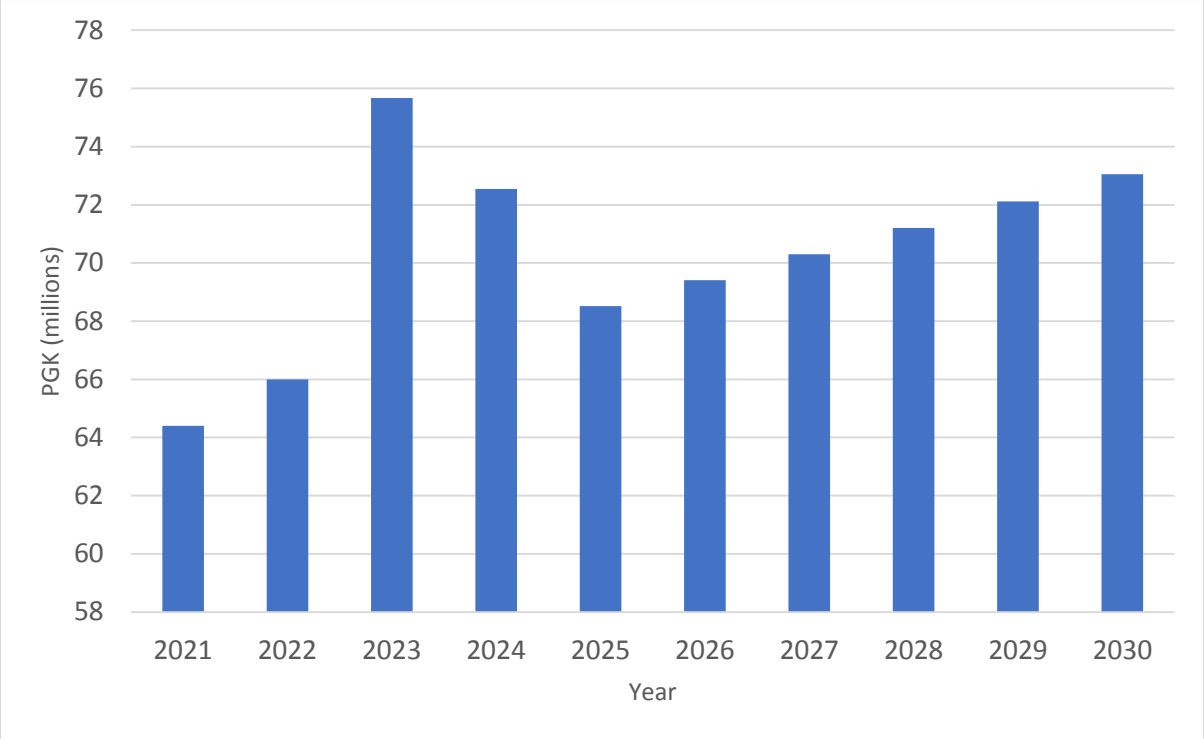

Figure 13: Projected expenditure under NMSP, 2021–30 (PGK millions)

Resource implications for NHP 2021–2030 of the National TB Strategy

The existing National TB Strategy covers the period 2021–2025. It has been assumed that annual expenditure beyond 2025 (in nominal terms) will remain the same as the annual average growth projected for 2021–2025. This growth is reflective of the projections for 2025, which are roughly the same as the projected 2021 levels of spending on the TB program. It has been assumed that these costs are already accounted for in the Human Resources for Health Strategic Plan 2021–2030, and, therefore, human resource expenses are excluded from the expenditure projections for the National TB Strategy to avoid double counting when accounting for the costs of TB-program specific human resources for health.

The drug supply needs of the TB program for 2021 was estimated at K17.945 million, which is less than the average of PGK 41 million estimated in the National TB strategy for that year. The difference in the two sets of estimates is likely to be due to reagents and other consumables.

The projected expenditure (net of human resource spending) for the National TB Strategy during 2021-2030 is shown in Figure 14.

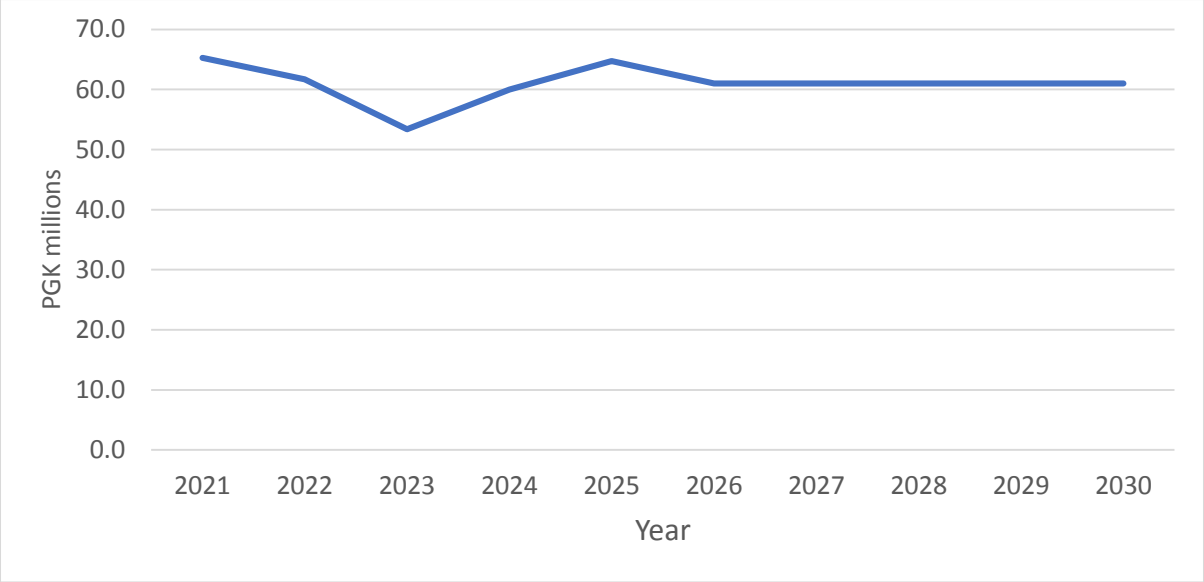

Figure 14: Annual spending on the tuberculosis program, 2021–2030 (PGK millions)

Resource implications for NHP 2021–2030 of the National Maternal and Newborn Health Strategy

Estimating annual costs over the National Maternal and Newborn Health Strategy (MHP) period was difficult because only one year of information was available. The draft cost estimates were K186 million annually, but there was a risk of double counting because (a) these costs include infrastructure spending (which is likely to be already included under the Health Infrastructure Plan; (b) some human resource costs are likely to be included in the Human Resources for Health Strategic Plan 2021–2030; and (c) some patient referral costs are likely to be covered under the operational costs of health function grants. Therefore, the NHP aggregate costs do not include the annual spending estimates for maternal and newborn health, although it would be fairly straightforward to include them.

Resource implications for NHP 2021–2030 of the National Health Promotion Plan

The cost implications of the National Health Promotion Plan for the NHP 2021–2030 are based on the strategic plan for the previous plan period (2016-2020). However the two plans are well aligned, therefore, assuming the same strategies into the future may be appropriate. The only change was in annualised costs.

Estimates were based on data from the Healthy Islands Concept and a multimedia strategic investment plan. The total of the two estimates, averaged over the five years from 2015–2019 (adjusting for inflation) was used to project annual health promotion requirements during 2021– 2030 of PGK 5.6 million annually.

Resource implications for NHP 2021–2030 of National Reference Lab Implementation Plan

The estimates for the NHP 2021–2030 are based on the National Reference Lab Implementation Plan developed for the period 2016-2020. Two-thirds of the 2016–2020 plan spending was allocated for the design and construction of the National Reference Lab building. This construction did not progress and the same allocation is now part of the Health Infrastructure Plan 2021–2030. The infrastructure component is excluded in the cost projections under the National Reference Lab in the NHP.

Excluding expenditure that is likely to overlap with those listed in other strategic plans, and adjusting for inflation an estimate of K1.79 million annually has been allocated for the National Reference Lab in the NHP 2021–2030. It is assumed that additional human resources that might be needed for the new or

larger National Reference Lab are already included in the human resource budgeting in the Human Resources for Health Strategic Plan 2021–2030.

Resource implications for NHP 2021-2030 of Medicines Quality Control Laboratory Strategic Plan

The Medicines Quality Control Laboratory (MQCL) (established in 2017) operates under the auspices of the Pharmaceutical Services and Standards Branch of NDOH and is responsible for testing and verifying whether medical products meet quality and safety standards.

The Medicines Quality Control Laboratory Strategic Plan was not directly costed by the Pharmaceutical Services and Standards Branch. Instead, the NHP costing team access the Pharmaceutical Services and Standards Branch proposed annual budget. Closer examination of the budget categories suggest that some of the components of the budget can be taken as proposed allocations to address the elements of the strategic plan (e.g., equipment purchases, training of staff, set up of a lab information system, staff training as a step to obtain WHO pre-qualification, etc.)

Two categories of proposed expenditure was budgeted, based on the information available: "one-time expendtiure" (e.g. equipment, vehicle, and a laboratory information system), and recurrent spending (e.g., maintenance, reagents, etc.). However, equipment does depreciate over time (and needs maintenance), and the lab information system may need updating from time to time. The lab equipment that is being purchased can have a long lifespan with best practice usage, but it is possible that new technology may emerge over time. Maintenance costs of 10% of the value of equipment has been assumed. For forecasting for 2021–2030, it was assumed that the equipment comprised a one-time purchases. The budget also shows the purchase of a vehicle, and an assumed five-year has been included and a replacement vehicle purchased in 2025. Maintenance and running costs of the vehicle were assumed to be the same those listed in the National Reference Lab Implementation Plan.

Recurrent costs, including vehicle operation and maintenance were assumed to be the same each year. In general, if the workload of the lab grew over time, as envisaged in the strategic vision, these recurrent costs and equipment expenses would increase; but these costs were not included in the projections. Some lab equipment also has high energy usage and this would raise utility costs, but this expense is not listed in the recurrent budget expenses a. Any new staff costs were assumed to be included in the Human Resources for Health Strategic Plan 2021–2030. Estimated annual costs of K1.71 million per year have been allocated, with higher costs of K2.71 million in 2021, owing to a purchase of the lab information system and a planned workshop.

Resource implications for NHP 2021–2030 of the e-NHIS

The impact of the eNHIS on the NHP was based on information provided by ADB for the years 2025-2029. Specifically, the annual rate of growth for 2025–2029 was assumed to project spending forwards (to 2030) and backwards (2021–2024). The estimates for 2021–2030, ranging from K2.2 million to K2.8 million annually over the plan period, do not include costs of establishing a data center, or any additional personnel. Even allowing for human resource costs to be included as part of the Human Resources for Health Strategic Plan 2021–2030 projections, the resulting estimates are potentially a lower bound of the true costs of operating and enhancing e-NHIS during the plan period.

National AIDS Council Secretariat

It was assumed that human resource and operational costs for the National AIDS Council Secretariat would increase at an annual rate of 8% based on past trends, increasing from K6.1 million in 2021 to K11.9 million in 2030. Capital works budgeted by National AIDS Council Secretariat were excluded from the projections for the plan period.

Institute for Medical Research

During 2021–2023, the Institute for Medical Research allocated 24 million for the construction of a malaria reference laboratory (not included in the Health Infrastructure Plan). Once constructed, the lab is likely to incur maintenance costs not currently accounted for. Additional maintenance costs of about 1% of the cost of new construction and equipment (or K240,000 per year) have been assumed from 2025 onwards.

As Institute for Medical Research personnel are not part of the NDOH/PHA budgeting process, the human resource costs for IMR were in addition to those allocated in the Human Resources for Health Strategic Plan 2021–2030. Including human resource and the added maintenance spending, an estimated total of K325 million is expected to be spent on Institute for Medical Research activities during the period 2021–2030,increasing from 24 million annually during 2021–2023 to K41.8 million by 2030.

Operational expenditure

Three categories of operational spending were considered: PHAs, PMGHs, and NDoH.

Operational spending for Provincial Health Authorities

Operational spending estimates for PHAs includes spending for hospitals (at the provincial level and below), health facilities at levels 1–4, and administrative operations of the PHA themselves. These estimates are based on: (a) information on expenditure and appropriations related to PHA operations, as published in Treasury documents; and (b) information on actuals, appropriations and projections in selected individual hospitals (e.g., Kundiawa and Arawa hospitals) under the Hospital Management Services in Treasury documents.

The estimated expenditure associated with PHA operations was complicated because the transfer of authority and spending (and accounting) responsibilities for provincial hospitals from GoPNG to provinces is still in process; and within provinces, not all expenditure is reported under the PHA head. In some cases expenditure for provincial hospitals and the PHA administrative functions are intertwined. Because responsibilities and budgets for provincial and regional hospitals are still in the process of being transferred to some PHAs, the budgets of PHAs for 2020 were compared to individual hospital budgets for previous years (2019 or earlier) to check if these changed responsibilities and expenditure were reflected in the PHA budgets. Broadly, these figures were comparable, but this was not always the case. Expenditure under curative health was often much lower than expected (e.g. Western Highlands Province, where Mr. Hagen hospital is located). In some instances, the executive management and corporative services budget was closely mixed with the hospital budget.

For the 20 provinces (i.e. not including Jiwaka and Central Province) with reasonably complete data on PHA level appropriations, the estimated operational spending was approximately K225 million in 2020. The specific categories of spending defined as “operational” included expenditure under the “goods and services” head (line item 22), utilities, rentals and property costs (line item 23), grants, subsidies and transfers that include the health function grant (line item 25) and office equipment and furniture (line item 271), but excluding any capital investments that were sometimes included under line item 22. The Jiwaka PHA did not provide a breakdown of its costs into wages and allowances and operations. These were imputed using actual data for Jiwaka Hospital for a previous year from Treasury documents and added to allocations of the health function grant allocations to the Jiwaka PHA. In addition, expenditure for Laloki hospital as added to those of the National Capital District PHA.

For forecasting, it was assumed that PHA operational expenditure increases at the same rate as the human resource expenditure under the Human Resources for Health Strategic Plan 2021–2030 (i.e. at an annual average rate of 6%). This assumption captures the expected rise in operational expenditure

as the scale of health service delivery expands in PNG during the NHP and helps account for increased maintenance spending as the health sector infrastructure expands under NHP. Under these assumptions, operational spending under PHAs is forecast to increase from 238 million in 2021 to K403 million 2030 (totaling about K3.14 billion over the 10 years). If current operational spending (inclusive of the Health Function Grants (HFG) is below minimum required levels, then these forecasts will be below levels necessary to maintain service quality.

Operational expenditure of Provincial Hospitals and Port Moresby General Hospital

Data for PMGH was directly available from Treasury budget documents. This data was used to break down PMGH allocations to wages and allowances and operations costs. This required some care as Treasury documents for 2019 indicate about K15 million allocated for drugs and supplies, which may already have been reported by the Medicines and Supplies procurement in the NDoH. Because of this uncertainty, baseline annual operational expenses were estimated (and projected) with and without this number: K16.38 million (without) and K31.38 million (with).

With considerable redevelopment envisaged for PMGH in the future (dental hospital and other units) it was assumed that operational expenses for PMGH would also rise. The rate of increase in PMGH operational expenses has been assumed to be the same as PHA operational expenses—6% per year. This resulted in aggregate operational expenses, over the 10-year plan period, ranging from a low of K215.9 million (if the baseline is 16.38 million) to a high of K413.6 million (if the baseline is 31.38 million).

Operational expenditure of the National Department of Health

A detailed examination of Treasury documents for 2021 (Volume 2b) was undertaken to estimate operational spending (and other overheads) for NDoH, for the financial year 2020. For this calculation, the following categories of expenditure were excluded: (a) all major construction projects and vehicles purchases; (b) all emoluments expenditure; (c) drug expenditure and equipment purchases under the Medical Supplies and Equipment head; (d) any grants or transfers to other entities; (e) operational spending for pre-service training institutions, as this is already accounted for in the expenditure projections of the Human Resources for Health Strategic Plan 2021–2030; and (f) operational expenditure for health promotion, HIV, TB, Malaria and CPHL as these are assumed to be included in the expenditure projections for their respective strategic plans.

Note: Minor purchases of furniture were included because they are essential to operations and form of recurrent expenditure.

With these adjustments, operational spending was estimated to be approximately K43.2 million during 2020. With increased transfers of responsibilities to PHAs, NDoH operations expenditure may not rise (in nominal terms) and may even decline. On the other hand, NDoH roles will likely expand in various areas: planning and coordination, regulation, capacity building and the like. For these reasons, operations expenditure has been assumed to remain broadly unchanged going into the future at K45 million annually.

Aggregate expenditure under the NHP 2021–2030

Figure 15 shows the projected aggregate expenditure for activities under the NHP 2021–2030. Specifically, expenditure is expected to rise from K3.664 billion in 2021 to K4.84 billion in 2030, or about K42.4 billion in the aggregate for the entire period.

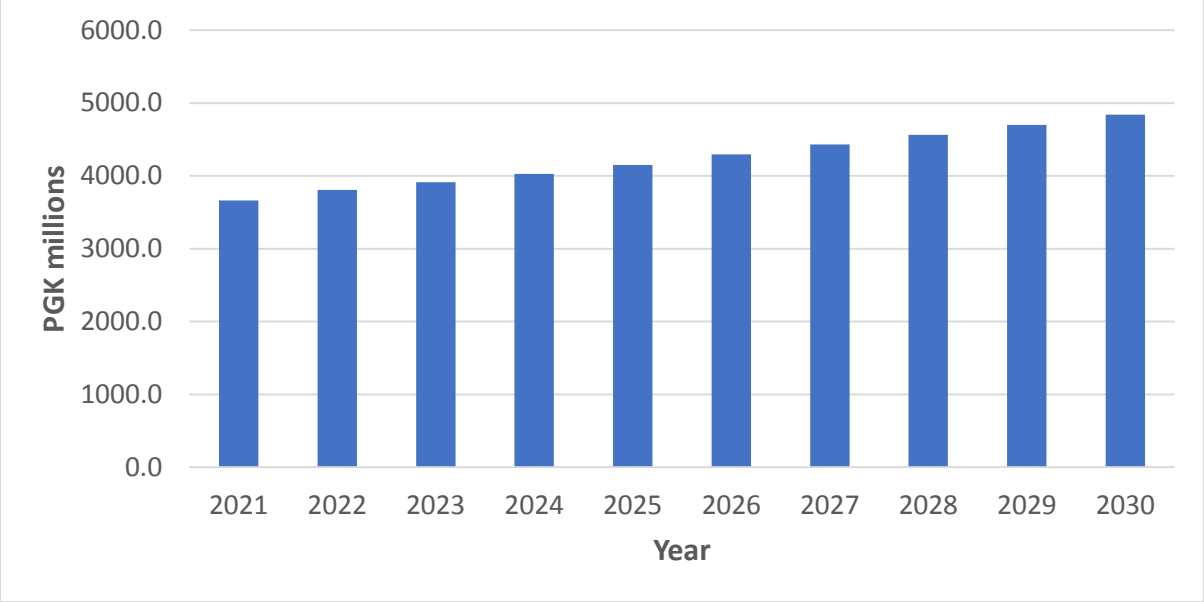

Figure 15: Projected spending under the NHP 2021–30 (PGK millions)

CHAPTER 5: MONITORING AND EVALUATION FRAMEWORK

The NHP 2021-2030 requires a robust monitoring, evaluation and learning framework to provide direction for measuring progress towards agreed targets. The framework is imperative because it will set out what will be measured, when it will be measured, through what system and at what level of government an indicator will be measured. The framework's development was guided by the four components of implementing a successful NHP, including:

a) an understanding of the information required to guide the health sector to achieve the NHP's vision (indicators specifying the targets and results)
b) ensuring there is capacity to gather and manage data to guide in decision making
c) detailed analysis and reflection of the performance and progress, dependent on the information produced
d) decision making based on analysis and the strategies required to ensure that the objectives of the NHP are realised.

The monitoring and evaluation framework for the NHP 2021–2030 acts as the tool for guiding and promoting the efficiency, effectiveness, accountability, and transparency of achieving the objectives, goals, and targets of the plan. As illustrated in **Error! Reference source not found.**), the inputs will be translated into outputs, outcomes, and impacts. and the sources of data, analysis, communication, and the use of data for action:

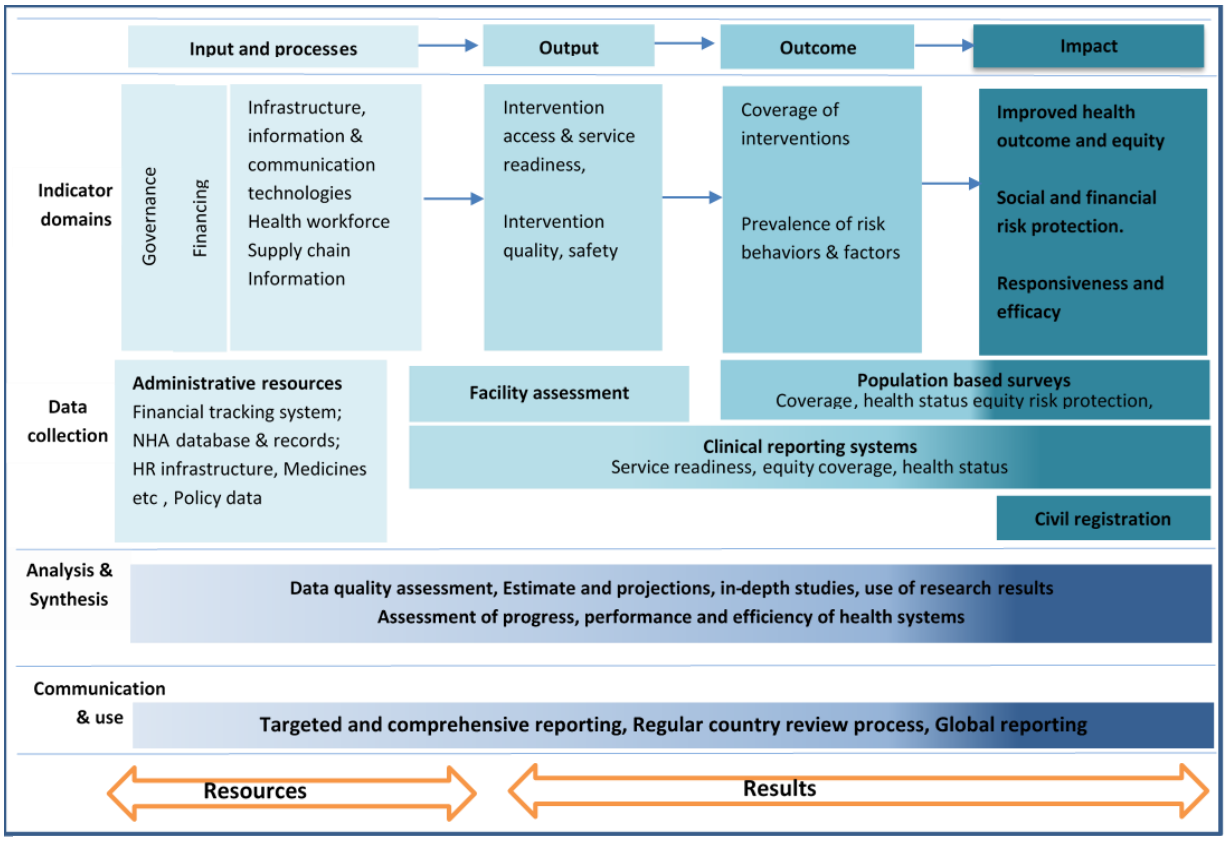

Figure 16: Monitoring and evaluation framework of the NHP 2021–2030*

*Source: Adapted from *Strategizing national health in the 21st century: a handbook. Geneva: World Health Organization; 2016.*

The implementation of the M&E framework will adhere to the guidelines on the existing NHIS/M&E system. However, the existing NHIS/M&E system will be transformed and strengthened to ensure it is practical and functional over the next ten years. The details of the transformation will be elaborated on the NHIS/M&E strategy. The following steps will be implemented during the NHP period to transform the M&E system:

1. Strengthening the National Health Information System (NHIS/eNHIS)
2. Development of an integrated data warehouse
3. Enhancing and upgrading of ICT infrastructure
4. Establishment of Provincial Health Information and Intelligence Units
5. Capacity building for a better skilled workforce in health information systems
6. Strengthening of hospital networking and reporting
7. Enhancing leadership and governance.
8. Research will be undertaken on healthcare, including assessment of health facilities and regular population-based surveys will be undertaken.

MONITORING AND MEASURING HEALTH SECTOR PERFORMANCE

The rationale for measuring the progress of the NHP will be directed to five KRAs. A core set of indicators were developed through a consultative process involving the key stakeholders, program managers, and monitoring and evaluation experts (NDoH, WHO, HSSDP). The indicators and their baseline targets in the NHP are in the Performance Assessment Framework (PAF) (Annex 1 on the M&E strategic plan). The PAF is critical for guiding the progress of the set targets, outcomes to be measured, and the time for conducting the activity. The input indicators will measure resources mobilisation, distribution, and utilisation of resources. On the other hand, the output indicators will measure the usage of capabilities, coverage, and access to services. Outcome and impact indicators will measure the end result of interventions within or outside the health sector. A total of 205 indicators and their targets have been selected based on the national and global commitments and targets to be achieved by or before 2030. NHP measurements will use the 205 indicators. Provincial and district health authorities, medical facilities, and hospitals will use specific and detailed markers to explore program implementation in their own facilities.

Monitoring and measuring performance of the health sector will focus more on UHC and equity. The inputs and outputs will be used to assess the healthcare system's capacity, while performance will be evaluated by exploring the outcome and impact. UHC monitoring will be conducted using 16 tracer indicators that determine the coverage of services and financial protection. Monitoring of equity will be made by disaggregating the data based on a range of demographics (age and sex), geographic (urban, rural, and regional) and socioeconomic (wealth and education) stratifiers, in addition to national and provincial level averages and percentages.

DATA SOURCES, MANAGEMENT AND REPORTING

Data sources

Performance monitoring indicators for measuring the inputs and results from implementing the NHP will be collected from the following primary sources:

1. Facility and service data will be gathered from the National Information System (NHIS) and m-Supply to provide information about activities and morbidity.
2. Program specific surveillance systems and program reports, such as for disease surveillance (outbreaks, tuberculosis or HIV);
3. Administrative and management records and reports will provide statistics about sector inputs such as financial and human resources and supervision.
4. Health facility assessment data will provides information on availability and readiness of services.
5. Household surveys, census and operational research will provide data about coverage, health determinants, and mortality.
6. Civil registration and vital statistics (CVRS) will provide information about birth and deaths.

These sources will provide the required statistics for performance and improvements in the delivery of healthcare and highlight reasons any lack of progress. Data on expenditure and service provision will be considered. Data will also be collected from different sectors, including education, infrastructure, water, and sanitation, and incorporated into monitoring and evaluation procedures. Moreover, the NDoH and

National Statistics Office (NSO) will identify the data gaps that can be addressed from the population-based surveys.

Data management

The NDoH will conduct data management and coordination of the issues that may arise when gathering information. NDoH will also improve the current operating procedures for storage, cleaning, and accessing data files. Additionally, NDoH will set up an integrated data repository (data warehouse) at the national level to enhance data triangulation and access for stakeholders at the national, provincial, and district levels and at healthcare facilities. As depicted in the NHIS implementation framework in Figure 17 an integrated NHIS will be implemented to pull together data from various sources and the data warehouse will be the repository of all health-related statistics from potential sources, including facility-based reports (private and public), assessments of health facilities, household surveys, census, disease surveillance, financial information, human resources data and other health-related data. The data management will adhere to data sharing standards, including secrecy and confidentiality that will be implemented in different components of the NHIS to enhance interoperability among systems.

The process of gathering information will be supported by providing training and supervision and independent assessment of the quality of the data and capacity systems. Data Quality Assurance (DQA) will be introduced in the M&E framework to increase the quality of data and improve it before submission of reports. The introduction of DQA is imperative because it will enhance the reliability and credibility of the reporting system. The M&E and Performance, Monitoring, and Research Branch (PMRB) teams will identify the selected indicators and conduct regular Data Quality assessments (DQA).

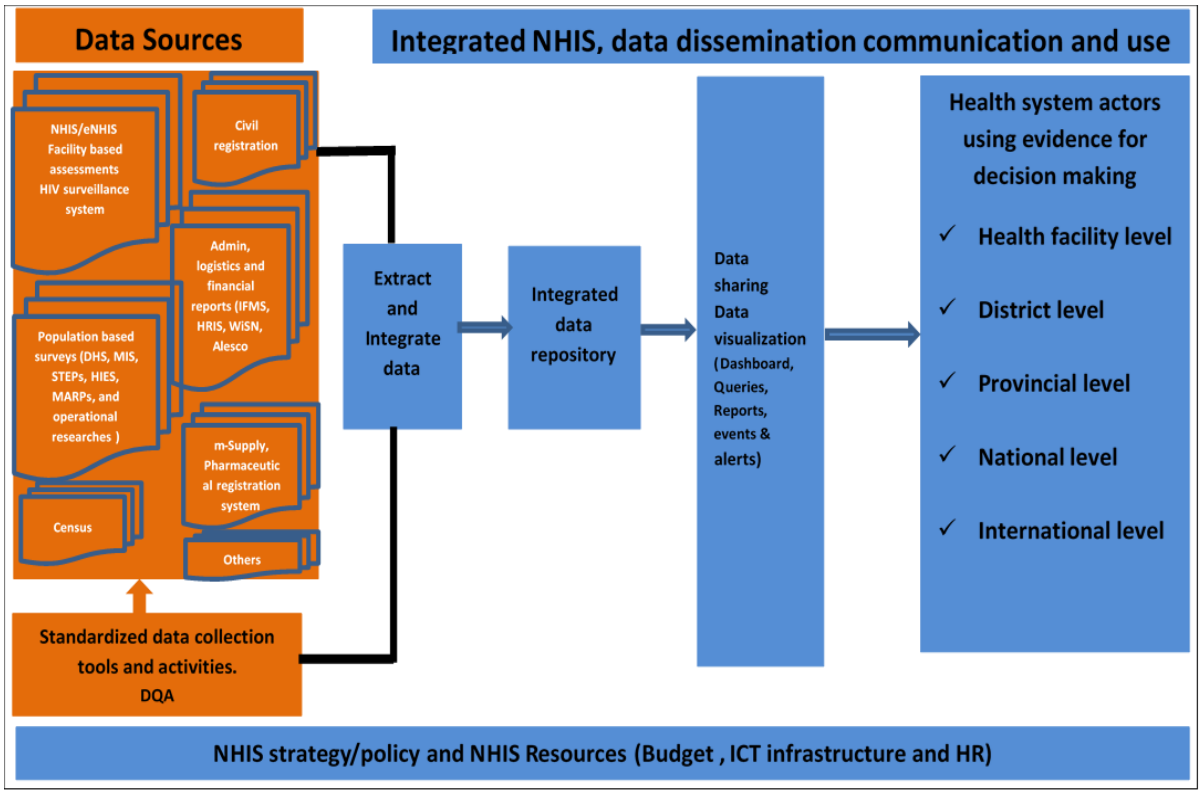

Figure 17: Integrated NHIS implementation framework

Data reporting

The NHIS/M&E system requires reporting to one system or an integrated approach to avoid burden and duplication of efforts. Development partners will be involved in revising the NHIS to ensure that all the

required indicators are captured and avoid providing replicated information. The NDoH will ensure that the government reporting system captures reports from private facilities during the implementation of the NHP. Furthermore, the health information system will be integrated into the existing provincial accountability mechanisms, facilitated through the Department of Provincial and Local Government Affairs and the Provincial and Local Level Services Monitoring Authority. The process will succeed by incorporating the PAF indicators into section 119 of the health sector reporting. Consequently, it will enable the health sector to engage the provincial administration in comprehending and appreciating the health sector's issues in reporting its performance.

DATA DISSEMINATION, COMMUNICATION AND USE

Dissemination and use of M&E results is essential to improve the intervention of the NHP, to strengthen institutional agendas, and to advocate for additional resources. The information will be disseminated through Sector Performance Annual Reviews (SPARs) and quarterly reviews, and regular feedback regarding performance will be offered to the provincial administration. The revised SPAR indicators and the number increased from 31 to 37 indicators (see SPAR indicators presented in Table 2). Capacity building training strengthen the analytical competence of national and provincial M&E staff to strengthen their, disseminate information and data use to make decisions. The procedure will be enhanced by using data visualisation platforms to build a dashboard using the integrated repository statistics. Dissemination and communication to support evidence-based decision-making will be improved.

REPORTING OBLIGATIONS AND PERFORMANCE REVIEWS

According to *The National Administration Act 1997*, monitoring of the NHP should be conducted by the National and Provincial Health Boards and District Health Committees. The National Health Board is mandated to report to the Minister for Health and HIV and AIDS, who makes an annual statement to the parliament. Central agencies also require the sector to describe their progress and commitment towards implementing the SDGs and the Papua New Guinea Development Strategic Plan 2010–2030. Additionally, the implementation of the National Health Plan should be regularly documented in collaboration with development partners as required by the Health Sector Development Program (HSSDP). The PAF contains the NHP's reporting requirements.

A regular and transparent performance review will be conducted with broad involvement of stakeholders to periodically track the implementation and monitoring of the NHP. The review will assess progress towards meeting the NHP objectives and the SDGs. Additionally, it will check whether implementation is on the right path and if the strategies applied are enough to achieve the desired results. The plan is imperative for assessing further actions to address any barriers to implementation.. The performance review results are essential because they will guide the decision-making processes for resource allocation and disbursement of budgets.

A detailed national level performance assessment will be undertaken quarterly to use as a feedback mechanism for informing the sub-national stakeholders. A comprehensive review will be undertaken annually to track the NHP's progress against the set targets (refer to M&E Strategy for the NHP). PHAs will also be required to conduct quarterly performance reviews to track the progress of the NHP targets in their provinces. Reporting requirements and performance appraisals will be incorporated into the existing accountability mechanisms such as the Provincial and Local Level Services Monitoring Authority (PLLSMA) to allow provincial administrators to make informed responses to health issues.

SPAR reports will be published annually to offer a sector-wide snapshot of advancement towards the "core" indicators and targets of the NHP. This comprehensive statement will show performance-based information by province to understand the steps needed to meet any gaps. The NHP also proposes the establishment of a National Public Health Institute (NPHI) to monitor the health sector's objectives and

promote dialogue on emerging health challenges. Mid-term and final performance reviews to measure the progress of implementation of the NHP against the goals and targets will also be conducted.

EVALUATION

A broad accountability framework of health services delivery will be based on the NHP 2021–2030 and its validation process. The partners in health will participate in the development, review, approval, and use of the PAF. All the partners in the sector will participate in the joint annual and midterm assessments and appraisal of the NHP. NHP evaluation will be done in 2024 (mid-term) and 2029 (final) to obtain information on the program's progress through an independent, periodic review that meets the requirements of the government and development partners. The assessment will examine the data obtained through the PAF and by assessing frontline and service delivery staff's achievements and problems.

Table 2: *Sector Performance Annual Review (SPAR)*

Indicator #	SPAR indicator name
1	Proportion (%) of pneumonia death in children under five years at health centre
2	Number of children 0-59 months who are underweight with the Z-score of <-2 weight for age
3	Underweight (<2,500 gm birth as a proportion of total births) (Proportion of low birth weight among newborns)
4	Incidence of malaria case per 1,000 population
5	HIV-confirmed prevalence in pregnancy (age 15–24)
6	Incidence of diarrhoeal disease in children <5 years per 1,000 children under 5 years
7	Injury presentations by type (Road traffic accident and others) per 1,000 population
8	Outreach clinics per 1,000 population <5 years
9a	Measles (MCV1) immunisation coverage
9b	Pentavalent 3 immunisation coverage
10a	Deliveries attended by skilled health professionals (proportion (%) of supervised birth at health facilities)
10b	Proportion (%) of total provincial hospital births that are referred from rural centres per 1,000 births
11	Proportion (%) of pregnant women having at least 4th ANC visit
12	Family planning use (CYP)
13	Proportion (%) of children under 5 years diagnosed with fever who are treated with appropriate anti-malaria drugs
14	Proportion (%) of children sleeping under insecticide treated bed net
15	Proportion (%) of pregnant women who received ARV medicines to reduce the risk of mother to child transmission
16	TB case detection/notification rate for all forms of TB
17	TB treatment success rate (%)
18	Proportion (%) of government (functional grants) and development partner contributions that are expended
19	Provincial health expenditure (government and development partner contributions) as a proportion (%) of estimated minimum health expenditure required
20	Proportion (%) of health facilities that received at least one supervisory visit during the year
21	Outpatient service utilisation per capita (Average number of outpatient visit to hospitals and health centres per person per year)
22	Proportion (%) of AID posts open
23	Proportion (%) of outbreaks/urgent events identified and assessed by NDoH within 48 hours of receiving report
24	Total budget allocation (HSIP and GoPNG) per capita
25	Proportion (%) of health facilities that have running water and sanitation
26	Proportion (%) of health centres and hospitals with functioning radio, telephone or mobile
27	Proportion (%) of months that health facilities do not have stock out of all selected medical supplies for more than a week in the month
28	Proportion of general hospitals and provincial hospitals which have all 14 specialties
29	Number of health workers per 10,000 population (stratified by cadre)
30	Number of village health assistants per 1,000 population
31	Proportion of provincial hospital, district hospital and health center labs quality assured as per the national standards (%)
32	Universal Health Coverage (UHC) index of service coverage
33	Percentage of PHAs and NDoH with a partner's forum established at the provincial and national levels
34	Inpatient admissions per capita
35	Percentage of product batches tested that met quality control standards

CHAPTER 6. IMPLEMENTATION LOGFRAME

Summary projected costs by KRAs, 2021-2030 in Kina Million											
KRA's	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
KRA 1: Healthier communities through effective Engagement	2.2	2.2	2.2	2.3	2.6	2.5	2.4	2.6	2.7	2.8	24.5
Health Promotion and Prevention activities											
Healthy Island Concept Rollout											
Village Health Assistants											
KRA 2: Working together in Partnership	125.6	133.7	141.9	150.1	158.3	171.4	184.4	197.5	210.6	223.7	1697.2
Grants for CHS											
Grants for NGOs											
Grants for implementing Partners that deliver and compliment service delivery											
KRA 3: Increase access to quality and affordable Health services	302.6	343.7	361.7	380.8	400.8	430.1	452.8	47	502.8	530	3752.3
Operational costs for government and Church Health Facilities (level 1-6)											
Costs of Specialist services											
Cost of Ambulance service, prehospital care and referral systems (including MediVac, Emergency Retrievals etc)											
Strengthening Medicine Quality Control Laboratory											
KRA 4: Address Disease Burden and Targeted Health Priorities	348	637.8	380.3	406.4	431.3	445.3	458	458.9	463.6	467.2	4496.8
Operational Costs for Public Health Programs (TB, Malaria, HIV/AIS)											
Cost of integrated Outreach programs – immunization, Family Planning, antenatal care											
Cost of Emergency preparedness and outbreak (including COVID interventions)											
Establishing National Reference Laboratory and Public Health Institute											
Strengthening Central Public Health Laboratory											
KRA 5: Strengthen Health System	2880	2957.9	3023.3	3083.3	3153	3242	3332.8	3425.1	3520.2	3617.8	32235.4
Cost of Human Resource development and training											
Cost of Infrastructure development and rehabilitation including Medical Equipment requirements											
Cost of Medical drugs and consumables											
Cost of ICT infrastructure and strengthening of Health Information System including the establishment of E-Health and tele-medicine											
Cost of Monitoring and research including IMR											
	Grand TOTAL										**42206.2**

Summary projected costs (K'Million) and Tragets with Key Deliverables - NHP 2021-2030											
KRA's	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
KRA 1: Healthier Communities through effective Engagement	**2,762,000**	**2,762,000**	**2,762,000**	**10,715,400**	**10,715,400**	**10,715,400**	**10,715,400**	**10,715,400**	**10,715,400**	**10,715,400**	**83,293,800**
Health Promotion and Prevention activities	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	**5,000,000**
Healthy Island Concept Rollout	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	2,262,000	**22,620,000**
Village Health Assistants	-	-	-	7,953,400	7,953,400	7,953,400	7,953,400	7,953,400	7,953,400	7,953,400	**55,673,800**

Indicators and Targets	**Indicator**	**Baseline**	**Target 2025**	**Target 2030**	**Comments**
Health Promotion and Prevention activities	Mortality Rate attributed to unsafe water, unsafe sanitation and lack of hygiene for all wash services per 100,000 population	16.3	12	10	Reduce the mortality rate by 0.6% annually
Healthy Island Concept Rollout	Life Expectancy at birth	65.3		70.0	Increase life expectancy by 0.5% per year
Village Health Assistants	Number of VHAs present in vulnerable communities	0.0	100.0	500.0	An average of 80 VHAs graduates per year from 2024-2030

Narations:

- Health promotion and prevention activities are mainly awareness .....

- The expected number of VHA for a year from 2024 is 874. The total annual wage for all the VHA across the country will be K8 million, totalling K55.7 million by 2030.
- THe K55.7 million is the wages for a total of 6, 118 Village Health Assistants (VHAs) who would have been absorbed into the health system btw 2024 and 2030

Summary Projected Costs (K'Million) and Tragets with Key Deliverables - NHP 2021-2030											
KRA's	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
KRA 2: Working together in Partnership	**133,238,000**	**141,338,000**	**149,538,000**	**157,738,000**	**165,938,000**	**179,038,000**	**192,038,000**	**205,138,000**	**378,188,000**	**391,288,000**	**2,093,480,000**
Grants for CHS	125,600,000	133,700,000	141,900,000	150,100,000	158,300,000	171,400,000	184,400,000	197,500,000	370,550,000	383,650,000	**2,017,100,000**
Grants for other implementing Partners that deliver and compliment service delivery (inc. St. JohAmbulance, etc.)	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	7,638,000	**76,380,000**
CHS including Catholic Health Services ??	125,600,000	133,700,000	141,900,000	150,100,000	158,300,000	171,400,000	184,400,000	197,500,000	210,600	223,700,000	

Indicators and Targets	**Indicator**	**Baseline**	**Target 2025**	**Target 2030**	**Comments**	
Grants for CHS	Increase average coverage of service delivery	43.8	61	80	Increase service coverage by 4% each year	
Grants for other implementing Partners that deliver and compliment service delivery (inc. St. JohAmbulance, etc.)	Proportion of Districts with established integrated community focused health services	NA	50	100	Ensure 9 districts per year has established community based interventions for health services	
CHS including Catholic Health Services						

Narations:

- The partners as shown in this KRA 2 table are partners other than CHS and Catholic Health Services like St. John Ambulance, Susu Mammas, Chesire Homes, Red Cross etc

Summary Projected Costs (K'Million) and Tragets with Key Deliverables - NHP 2021-2030											
KRA's	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
KRA 3: Increase Access to Quality and Affordable Health Services	**247,400,000**	**272,800,000**	**284,900,000**	**308,200,000**	**317,523,300**	**338,073,300**	**359,423,300**	**381,973,300**	**405,973,300**	**431,473,300**	**3,347,739,800**
Operational costs for government Facilities (level 1-6) per standards	244,700,000	271,100,000	283,200,000	306,500,000	315,823,300	336,173,300	357,723,300	380,273,300	404,273,300	429,773,300	**3,329,539,800**
Strengthening Medicine Quality Control Laboratory	2,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,900,000	1,700,000	1,700,000	1,700,000	1,700,000	**18,200,000**
Indicators and Target	Indicator			Baseline	Target 2025	Target 2030					
Operational costs for government Facilities (level 1-6) per standards	Increase UHC Service Capapcity and Access (basic hospital access, health worker density, health security)			24	54	80	Increase coverage by 5.5 % per year (Increase hospital beds)				
Strengthening Medicine Quality Control Laboratory	Increase quality testing services for medical products						Laboratory was set up in 2017. Needs to be resurced annually to fully perform its functional.				
Cost of providing specialist services in provinical hospitals	Proportion of general hospitals and public hospitals which have atleast 5/14 specialist services			41	60	100	Increase specialist services in at least 1 public hospitals per year				

Narations:

- Cost of s pecialised services are also captured and its all part of the operational cost of level 5-level 6 facilities. It also captured the cost of ambulance services or prehospital cares, etc. by the governemnt run facilities.

Summary Projected Costs (K'Million) and Tragetswith Key Deliverables - NHP 2021-2030

KRA's	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
KRA 4: Address Disease Burden and Targeted Health Priorities	**353,400,000**	**369,600,000**	**380,600,000**	**402,473,300**	**426,823,300**	**440,673,300**	**453,323,300**	**453,773,300**	**458,173,300**	**461,473,300**	**4,200,313,100**
Operational Costs for Public Health Programs (Disease Control, Family Health)	346,200,000	362,400,000	373,400,000	395,273,300	419,623,300	433,473,300	446,123,300	446,573,300	450,973,300	454,273,300	**4,128,313,100**
Establishing National Reference Laboratory and Public Health Institute	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	**18,000,000**
Strengthening Central Public Health Laboratory	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	5,400,000	**54,000,000**

Indicators and Targets	Indicator	Baseline	Target 2025	Target 2030	Comments	
Cost of Public Health Programs (Disease Control, Family Health)	1a) Immunisation Coverage (Measles)	42	80	100	Increase immunisation coverage from 42% to 80% in 2025 and 100% in 2030	
	1b) TB incidence rate per 100,000 population	432	350	250	Reduce the number of new TB case by 20% in 2030	
	1c) Mortality between 30 and 70 years (premature death) from Non-Communicable diseases)	30.0	24	20	Reduce the mortality rate for life-style diseases by 10% in 2030	
Establishing National Reference Laboratory and Public Health Institute	Improve disease surveillance outbreak investigations				Establish one functioning National Reference Laboratory in 2030	
Strengthening Central Public Health Laboratory	Improve disease surveillance outbreak investigations				Establish one functioning National Reference Laboratory in 2031	

Narations:

- Cost of integrated Outreach programs – immunization, Family Planning, antenatal care, etc. are part of cost of public health programs provided by facilities level 1 - level 5 (L1-L5).

- Cost of Emergency preparedness and outbreak (including COVID interventions) are captured under the different tiers of the health system, ie. NDoH, PHAs through the national ERP and PHAs ERP.

Summary Projected Costs (K'Million) and Tragets with Key Deliverables - NHP 2021-2030

KRAs	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
KRA 5: Strengthen Health System	**2,927,200,000**	**3,021,500,000**	**3,097,200,000**	**3,148,873,300**	**3,229,000,000**	**3,326,500,000**	**3,418,500,000**	**3,512,400,000**	**3,608,900,000**	**3,708,000,000**	**32,998,073,300**
Cost of Human Resource development and training (Pre services training)	-	25,900,000	26,700,000	27,600,000	28,400,000	37,000,000	38,300,000	39,700,000	41,000,000	42,400,000	**307,000,000**
Cost of Human Resources (Salaries) exluding churches	483,400,000	513,600,000	551,800,000	571,173,300	609,200,000	655,200,000	701,100,000	746,300,000	792,000,000	837,900,000	**6,461,673,300**
Cost of Infrastructure development and rehabilitation including Medical Equipment requirements	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	2,091,000,000	**20,910,000,000**
Cost of Medical drugs and consumables	279,000,000	312,800,000	348,300,000	385,400,000	424,300,000	465,000,000	507,500,000	552,000,000	598,500,000	647,100,000	**4,519,900,000**
Cost of Monitoring and research including IMR	26,600,000	31,000,000	32,200,000	26,400,000	28,500,000	30,800,000	33,200,000	35,800,000	38,700,000	41,800,000	**325,000,000**
Operational Cost of NDoH	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	45,000,000	**450,000,000**
National Health Information System (NHIS)	2,200,000	2,200,000	2,200,000	2,300,000	2,600,000	2,500,000	2,400,000	2,600,000	2,700,000	2,800,000	**24,500,000**

Indicators and Targets	Indicators	Baseline	Target 2025	Target 2030	Comments	
Cost of Human Resource development and training (Pre services training)	Number Health Workers per 10,000 population (stratified by cadre)	11	16	22		
Cost of Human Resources (Salaries) exluding churches	Number Health Workers per 10,000 population (stratified by cadre)	11	16	22		
Cost of Infrastructure development and rehabilitation including Medical Equipment requirements	3a) Health Facility density and distribution per 10,000	2.80	3.50	5.00		
	3b) Proportion of health facilities that have running water and	49	75	100		
	3c) Proportion of provicial hospitals which have at least 5/14 of	41	60	100		
Cost of Medical drugs and consumables	Number of Health Facilities that have full stock of all selected medical supplies for more than a week in a month	53	75	90		
National Health Information System (NHIS)	Proportion of health facilities implementing eNHIS	54	100	100		

Narations:

- Cost of Human Resource development and training (pre-service training) including churches

- Cost of Infrastructure development and rehabilitation including Medical Equipment requirements are same from year 1 to year 10 because the National Infrustructure Development Plan does not break up the cost in details by year. It only provides the aggregate for the all 10 years period. That is why the aggregate cost for the entire peioed was divided by 10 for each of the different infrusture. For example, construction of hopsitals, redevelopment of existing hopsitals, redevelopment of static plant, medical equipment, etc.

- Cost of ICT infrastructure and strengthening of Health Information System including the establishment of E-Health and tele-medicine are also part of the Cost of Infrastructure development and rehabilitation including Medical Equipment requirements.

- Operational cost of NDoH is assumed to be the same from year 1 to year 10 because it will slightly decl;ine over the 10 year peiod compared to the current operational cost. The cost is expected to be declined but will maintained over the 10 year period in terms of man power requirements in the next 10 years.

Cost Summary by KRAs for the NHP2021-2030											
Key Results Areas (KRAs)	**2021**	**2022**	**2023**		**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**TOTAL**
KRA 1: Healthier Communities through effective Engagement	2,762,000	2,762,000	2,762,000	10,715,400	10,715,400	10,715,400	10,715,400	10,715,400	10,715,400	10,715,400	**83,293,800**
KRA 2: Working together in Partnership	133,238,000	141,338,000	149,538,000	157,738,000	165,938,000	179,038,000	192,038,000	205,138,000	378,188,000	391,288,000	**2,093,480,000**
KRA 3: Increase Access to Quality and Affordable Health Services	247,400,000	272,800,000	284,900,000	308,200,000	317,523,300	338,073,300	359,423,300	381,973,300	405,973,300	431,473,300	**3,347,739,800**
KRA 4: Address Disease Burden and Targeted Health Priorities	353,400,000	369,600,000	380,600,000	402,473,300	426,823,300	440,673,300	453,323,300	453,773,300	458,173,300	461,473,300	**4,200,313,100**
KRA 5: Strengthen Health System	2,927,200,000	3,021,500,000	3,097,200,000	3,148,873,300	3,229,000,000	3,326,500,000	3,418,500,000	3,512,400,000	3,608,900,000	3,708,000,000	**32,998,073,300**
TOTAL	**3,664,000,000**	**3,808,000,000**	**3,915,000,000**	**4,028,000,000**	**4,150,000,000**	**4,295,000,000**	**4,434,000,000**	**4,564,000,000**	**4,861,950,000**	**5,002,950,000**	**42,722,900,000**