

**Data Collection Survey on
Improving Maternal, Newborn and Child
Health and Community Health in
the Pacific Region**

Final Report

June 2021

Japan International Cooperation Agency (JICA)

**Koei Research & Consulting Inc.
Fujita Planning Co., Ltd.**

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This report was prepared based on the information collected in Japan from December 2019 to May 2021. The recommendations are suggested by the Survey Team and do not represent JICA's official cooperation strategy for the particular sector or country.

List of Abbreviations

ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ASTHO	Association of State and Territorial Health Officials
AUD	Australian Dollar
AUS	Australia
AusHFG	Australasian Health Facility Guidelines
AVR	automatic voltage regulator
BEmOC	Basic Emergency Obstetric Care
BEmONC	Basic Emergency Obstetric and Newborn Care
BOR	Bed Occupancy Rate
CDC	Center for Disease Control and Prevention
CEmOC	Comprehensive Emergency Obstetric Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHE	Current Health Expenditure
CHP	Community Health Post
CHW	Community Health Worker
COVID-19	Coronavirus Disease 2019
CPD	Continuous Professional Development
CSSB	Commercial Support Service Branch
CSSD	Central Sterile Services Department
CSTB	Central Supplies and Tenders Board
DFAT	Australian Department of Foreign Affairs and Trade
DHS	Demographic and Health Survey
DPS	Division of Pacific Technical Support of WPRO
DSP	Development Strategic Plan 2010-2030
DTP	Diphtheria-Tetanus-Pertussis
ECHO	Commission on Ending Childhood Obesity
EENC	Early Essential Newborn Care
EPI	Expanded Programme on Immunization
EmOC	Emergency Obstetric Care
EmONC	Emergency Obstetric and Newborn Care
FRA	Fiscal Responsibility Act
FS/R	Field Survey Report of the Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region
GCU	Growth Care Unit
GDP	Gross Domestic Product
HDI	Human Development Index
HEO	Health Extension Officer
HEOC	Health Emergency Operations Center
HepB	Hepatitis B
HFG -PNG	Papua New Guinea Health Facility Guidelines
HFSB	Health Facilities Standard Branch
HIV	Human Immunodeficiency Virus
Hib	Hemophilus Influenza Type B
HSIP	Health Sector Improvement Program
IC/R	Inception Report of the Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region
ICT	Information and Communication Technology
IFRC	International Federation of Red Cross and Red Crescent Societies
IMCI	Integrated Management of Childhood Illness
IMR	Infant Mortality Rate
IMT	Incident Management Team
IOM	International Organization for Migration
IPD	Inpatient Department
JICA	Japan International Cooperation Agency
JIMT	COVID-19 Pacific Joint Incident Management Team
JOCV	Japan Overseas Cooperation Volunteer
KCCP	Knowledge Co-Creation Program (training in Japan)

LF	Lymphatic Filariasis
MANA	Pacific Monitoring Alliance for NCD Action
MCH	Maternal and Child Health
MCHI	Maternal and Child Health Initiative
MCV	Measles-containing Vaccine
MDA	Mass Drug Administration (for lymphatic filariasis)
MDG(s)	Millennium Development Goal(s)
MDR	Multidrug-Resistant
MFAT	Ministry of Foreign Affairs and Trade, New Zealand
MFICU	Maternal-fetal intensive care unit
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn and Child Health
MO	Medical Officer
MTDP III	Mid-Term Development Plan III, 2018-2022
NCDs	Non-Communicable Diseases
NDoH	National Department of Health, Independent State of Papua New Guinea
NGO	Non-Governmental Organization
NHP 2011-2020	National Health Plan 2011-2020
NHSP	The Solomon Islands National Health Strategic Plan for 2016–2020 (Solomon Islands)
NICU	Neonatal Intensive Care Unit
NSDP	The National Sustainable Development Plan 2016-2020 (Cook Islands)
NSDP	the National Sustainable Development Plan 2016–2030 (Vanuatu)
NSHP	The National Strategic Health Plan 2016–2020 (Fiji)
NTDs	Neglected Tropical Diseases
OMRS	Overseas Medical Referral Schemes
OOP	Out-of-pocket
OPD	Outpatient Department
PALM	The Pacific Islands Leaders Meeting
PEN	WHO Package of Essential NCD Interventions for Primary Health Care
PEOC	Provincial Emergency Operation Centre
PGK	Papua New Guinea Kina
PHA	Provincial Health Authority
PHC	Primary Health Care
PHEIC	Public Health Emergency of International Concern
PICs	Pacific Island Countries
PICTs	Pacific Island Countries and Territories
PIF	Pacific Islands Forum
PIHOA	Pacific Islands Health Officers' Association
PIPS	Pacific Immunization Programme Strengthening
PMC	Perinatal Medical Center
PMGH	Port Moresby General Hospital
PNG	Independent State of Papua New Guinea
PNMR	Perinatal Mortality Rate
POHLN	Pacific Open Health Learning Network
PPHSN	Pacific Public Health Surveillance Network
PSSB	Pharmaceutical Services Standard Branch
Pacific ECHO	The Pacific Commission on Ending Childhood Obesity
PMC	Perinatal Medical Centre
RC	Reinforced Concrete
RCCE	Risk communication and community engagement
RDS	Room Data Sheet
RLS	Room Layout Sheet
SBA	Skilled Birth Attendant
SDGs	Sustainable Development Goals
SDS	Strategy for the Development of Samoa
SHSP	Samoa Health Sector Plan 2008–2018
SIA	Supplemental Immunization Activity (in Fiji)
SOMHS	School of Medicine and Health Sciences
SOP	Standard Operating Procedure
SPC	The Pacific Community
STEPS	STEPwise Approach to Surveillance of NCD Risk Factors
STIs	Sexually Transmitted Infections

TB	Tuberculosis
TBD	To be determined
U5MR	Under-five Mortality Rate
UNCG	United Nations Communications Group
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNOCHA	United Nations Office for Coordination of Humanitarian Affairs
UNRCO	United Nations Resident Coordinator Office
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UPNG	The University of Papua New Guinea
UPS	Uninterruptible power supply
USAID	United States Agency for International Development
USD	United States Dollar
VPDs	Vaccine Preventable Diseases
VSMT	Visiting Specialist Medical Teams
WASH	Water, Sanitation and Hygiene
WB	The World Bank
WHO	World Health Organization
WPRO	Western Pacific Regional Office, WHO
The Survey	The Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region
The Survey Team	A Consultant Team for the Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region

Executive Summary

Overview of the survey

Most of the Pacific Island Countries and Territories (PICTs) have successfully improve maternal and child health and communicable diseases. However, triple health burden is one of the major concerns, which are unfinished communicable disease agenda, noncommunicable diseases (NCDs), and the health impact of climate change. Also, geographical condition such as remote islands hiders people's access to quality health services and appropriate distribution of human resource for health. On the other hand, the Independent States of Papua New Guinea (PNG) has been struggling to improve maternal, newborn and child health (MNCH) through increase access to quality health services. Then, the Government of PNG requested the Japanese development cooperation for redevelopment of the Maternal and Child Health Center of the Port Moresby General Hospital.

The Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region (the Survey) consists of two components: (1) the survey to be conducted in PNG focuses on MNCH improvement; and (2) the scope of the survey on the 13 Pacific Island Countries (PICs) under the purview of the Japan International Cooperation Agency (JICA) that includes Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia (Micronesia), Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu, which is the prevention and control of non-communicable diseases (NCDs) and MNCH (especially Expanded Programme on Immunization (EPI) and home-based records).

The Survey aimed:

1. To collect relevant information on MNCH and community health in PNG and PICs for situation analysis, needs assessment; and
2. To formulate the conceptual framework and suggest some possible projects to improve identified priority issues in MNCH and community health.

The Survey was conducted from December 2019 to May 2021. Due to COVID-19 pandemic, the original plan which included three field surveys was changed to combination of a desktop survey and virtual interviews.

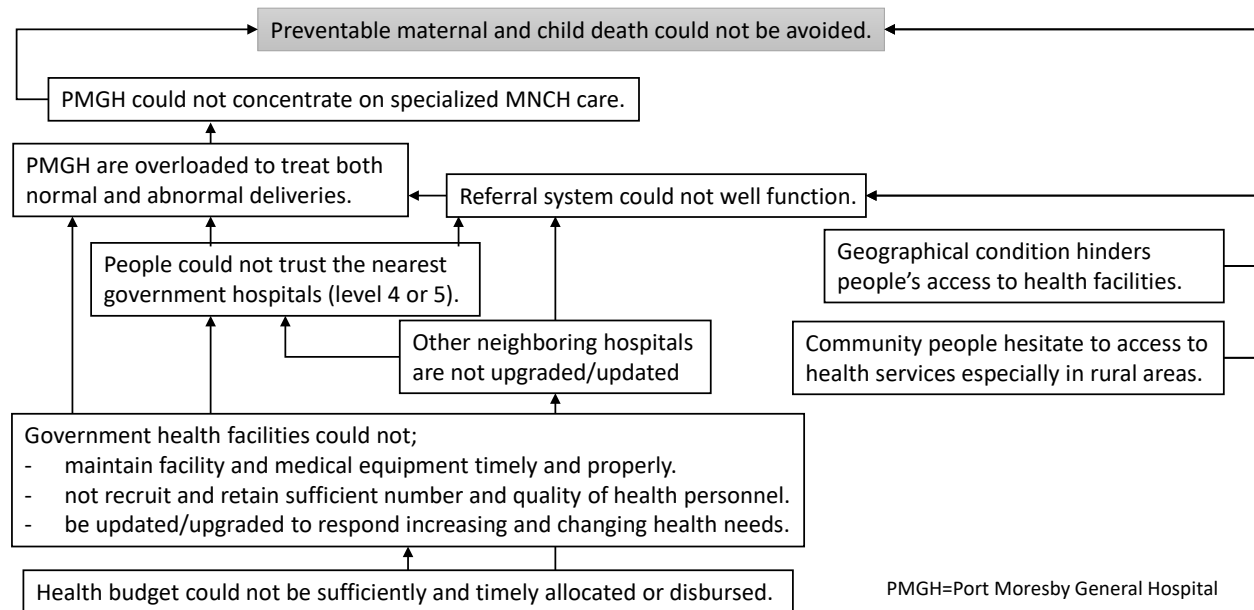
Situation Analysis and Recommendations on PNG

In PNG, population is widely spread into nationwide and around 80% lives in rural areas. It makes difficult to provide health services equally to all the nationals. Especially for mothers including expecting, geographical condition, distance, and hesitation could be barrier to access to essential health services to save lives of their children and themselves. Although infant and under-five mortality rates have been decreasing for these two decades, MCNH-related Millennium Development Goals (MDGs 4 and5) were not achieved by 2015.

Situation of health services in PNG was getting worse by COVID-19, particularly human resources and finance. Resources for MNCH services were allocated to the COVID-19 response. In addition, even health

workforces have been infected under the shortage of human resources. Inadequate triage capabilities have led to confusion in rural hospitals.

Based on the results of situation analysis, the Survey Team illustrated challenged in MNCH of PNG as the following figure. Currently, preventable maternal and child death could not be avoided because of insufficient quality and quantity of resources due to weakness of health system, as well as challenges in access to health services by community people, especially in the rural areas.



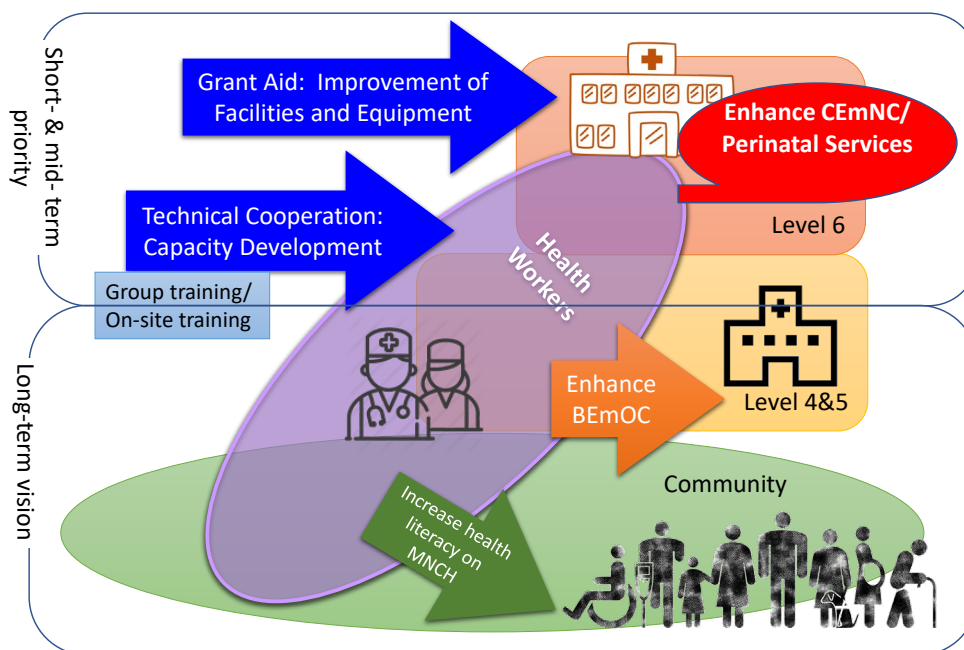
Source: The Survey Team

Challenges in MNCH in PNG

The Port Moresby General Hospital (PMGH), as a national referral hospital, treats lots of normal deliveries in addition to high-risk pregnancy and complication cases from surrounding provinces where capacity of public hospitals is limited. For instance, the Central Provincial Hospital currently can handle only normal deliveries. In PMGH, the total number of deliveries per year for these years was around 15,000, with a maximum of 45 deliveries per day. However, due to the aging and malfunctioning of the facilities and equipment, as well as the lack of human resources, PMGH seems to be in difficult situation to provide adequate care. Perinatal mortality has improved with the increase in the cesarean section rate, but there has been no significant improvement in maternal mortality. As for newborns, 70% of deaths within the first week of life occur in low birth weight, and some preventable deaths could be avoided if appropriate warmer and care were provided.

Considering MNCH issues in PNG as a whole, there are many challenges at the community level, such as psychological and physical barriers to access to health services and delays in decision-making, transport, and treatment. However, it is also important to avoid preventable maternal and child deaths in hospitals in order to improve MNCH. In particular, PMGH should be able to provide sufficient comprehensive emergency obstetric and newborn care (CEmONC), so that they can serve as models for future training at lower level hospitals in provinces and districts.

To improve the above situation, the following conceptual framework were proposed for future JICA's cooperation. The comprehensive approach from community to tertiary hospitals could be preferable, with consideration to women in rural hard-reach areas. However, the Survey Team recommended improving the national referral MNCH care in PMGH as a short- and mid-term priority based on the available information during the Survey.



Source: The Survey Team

Proposed Conceptual Framework of Cooperation for MNCH in PNG

Then, the Survey Team proposed the following program for the short- and mid-term priority with combination of three projects to be implemented for next three to five years:

Capacity Development Program to Reduce Preventable Maternal and Child Death in Papua New Guinea

Goal: Health service providers in PNG can avoid preventable maternal and child death with sufficient facility and medical equipment, as well as technical capability.		
Strengthening of capacity of emergency obstetric and newborn care (EmONC) in hospitals	Improvement of facility and medical equipment for perinatal medical care	Grant aid
	Capacity development for appropriate use and maintenance of medical equipment	Technical cooperation
	Capacity development for EmONC	Technical cooperation
Increase quantity and quality of human resource for health on EmONC	Strengthening of leadership of PMGH as a teaching hospital for other hospitals in provinces and districts	UNICEF
	Promotion of kangaroo care	ADB/DFAT (HSSDP)
Enhancement of health service providing system at primary and secondary levels		World Bank (IMPACT Health)
Empowerment of community on primary health care (PHC) and access to health services		

Source: The Survey Team

A grant aid project to strengthen perinatal care at Level 6, PMGH through improvement of facility and medical equipment, could be implemented in combination with two technical cooperation projects for 1) capacity development of Emergency Obstetric and Newborn Care (EmONC) of Levels 4 to 6, as well as 2)

capacity development for proper use and maintenance of medical equipment. Also, the program will collaborate with other relevant activities to improvement of MNCH, as well as community health.

The following three tables summarize the proposed cooperation projects; a grant aid for development of the Perinatal Medical Center (PMC) in PMGH, as well as technical cooperation for capacity development on EmONC and medical equipment maintenance.

**Proposed Project Outline:
Upgrading Facility and Medical Equipment for MNCH Care in PMGH (Grant Aid)**

Title	Project for Development of Perinatal Medical Center (PMC) in Port Moresby General Hospital	
Goal	The PMC will be expanded and renovated to provide hospital facilities and medical equipment that can safely handle a maximum of 45 deliveries per day and about 15,000 deliveries per year at PMGH. Due to the average length of stay in the Obstetrics Department, the utilization rate of hospital beds, and the premature birth rate, it is estimated that approximately 200 beds will be needed.	
Project Site	Port Moresby General Hospital	
Facility Overview	Outpatient Obstetrics	Examination Room, Obstetrics Examination Room, Emergency Room, etc.
	Labor and Delivery Department:	Labor Room, Delivery Room, Operating Room (Cesarean Section), etc.
	Maternity Ward	Antenatal Ward, Postnatal Ward (General/Mother-Child Room), Maternal-Fetal Intensive Care Unit (MFICU), etc.
	Neonatology Ward	Special Care, Neonatal Intensive Care Unit (NICU), Growing Care Unit (GCU), etc.
	Examination and Diagnosis:	Clinical Laboratory, Diagnostic Imaging Room, Mechanical Engineer (ME) Room, etc.
	Goods and Logistics	Material Sterilization Room, Material Management Room, Storage, etc.
	Management and Training	Office, Training/Seminar Room, Library, Data Storage Room, Library, Staff Room, Laboratory, Dressing Room, etc.

Source: The Survey Team

Proposed Project Outline: Capacity Development of EmONC (Technical Cooperation)

Title	Project for Enhancement of Hospital Care for Maternal, Newborn and Child Health
Period	Three years
Implementing Agencies	National Department of Health (NDoH), Port Moresby General Hospital (PMGH)
Overall Goal	The target hospitals avoid preventable death during perinatal period.
Project Goal	Target hospitals improve quality of perinatal care under the leadership of National Department of Health (NDoH).
Outputs	1. Health personnel related to perinatal care in PMGH use the equipment properly and maintain the equipment are maintained in good condition.
	2. Health personnel related to perinatal care in PMGH have skills on emergency obstetric and neonatal care.
	3. Target provincial hospitals strengthen comprehensive obstetric and neonatal care (CEmONC).
	4. Primary level health facilities in the target area strengthen capacity of basic emergency obstetric and neonatal care (BEmONC).

Source: The Survey Team

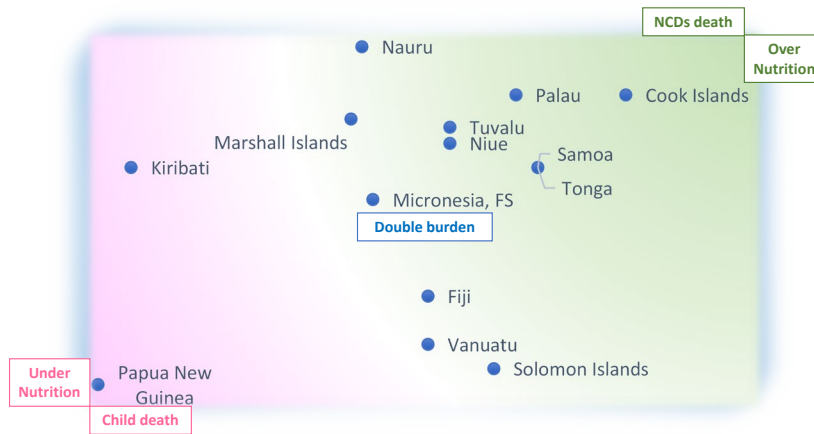
Proposed Project Outline: Capacity Development of Medical Equipment Maintenance (Technical Cooperation)

Title	Capacity Building Project for Maintenance and Management of Medical Equipment in Papua New Guinea
Period	Three years
Implementing Agencies	National Department of Health (NDoH), Levels 4, 5 and 6 hospitals
Overall Goal	The quality of medical services in major hospitals is improved.
Project Goal	Target hospitals strengthen capacity for maintenance and management of medical equipment under the leadership of National Department of Health (NDoH).
Outputs	1. NDoH strengthens mechanism to support and supervise government hospitals for management of medical equipment.
	2. Target hospitals establish a system for medical equipment management and maintenance.
	3. Biomedical workshops of the target hospitals strengthen their capacity of management and maintenance of medical equipment.

Source: The Survey Team

Situation Analysis and Recommendations on PICs

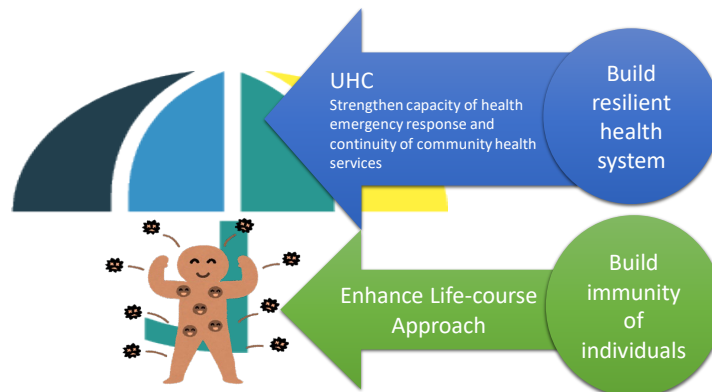
The Survey Team found the health challenges in PICs vary as shown in the following figure although most of those seem to be in epidemiological transition and facing over nutrition. It means risks of diet-related non-communicable diseases (NCDs) such as diabetes and hypertension are high, then burden of NCDs will increase in the future. In addition, public health emergency brought by COVID-19 revealed the vulnerability of the health system in PICs. Health services were disrupted due to concentration of resources to COVID-19 preparedness and response in most of the countries.



Source: The Survey Team

Conceptual Diagram of Health Issues in the Target Countries

As this inexperienced health emergency revealed vulnerability of its existing social system, both health system and the individual need to be resilient to future unpredictable health emergency. The Survey Team proposed the region-wide cooperation concept to build resiliency of both health system and strengthen immunity including capacity to maintain and promote own health by appropriate knowledge and behavior of individuals as presented in the following figure.



Note: The term of “immunity of individuals” embraces not only a function of immunity, but also the ability to acquire appropriate knowledge and take action to maintain and promote own health.

Source: The Survey Team

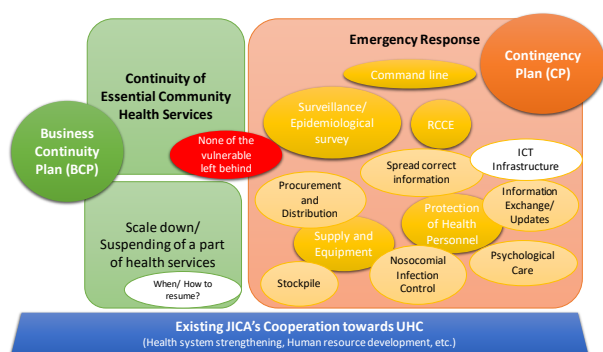
Concept of Cooperation for Health Sector Build Back Better

JICA could mobilize accumulated cooperation resources to achieve the resilient health system and individual against health emergency. Japan accumulated experiences to tackle with similar health challenges such as MNCH, NCDs, and health emergency, as well as lessons learned. Among those

experiences and knowledge, the following cooperation resources could be effectively utilized to respond to the abovementioned priority issues:

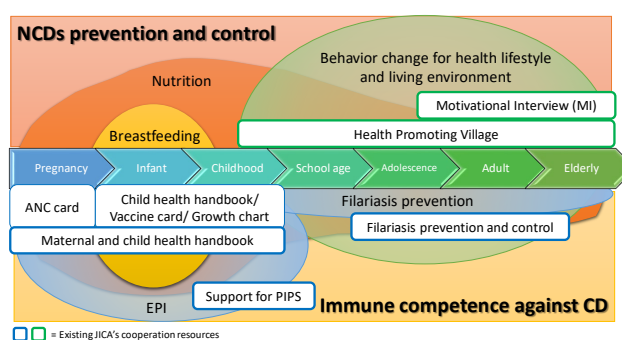
- Continuum of MNCH care including life-course approach to reduce NCDs risk factors and increase Expanded Programme for Immunization (EPI) coverage;
- NCDs prevention with behavior change communication; and
- Preparedness and response to health emergency.

Based on the above concept, the following figures show the conceptual frameworks of support for health system resilience and strong immunity of individuals, respectively, by utilizing Japan's cooperation resources.



Source: The Survey Team

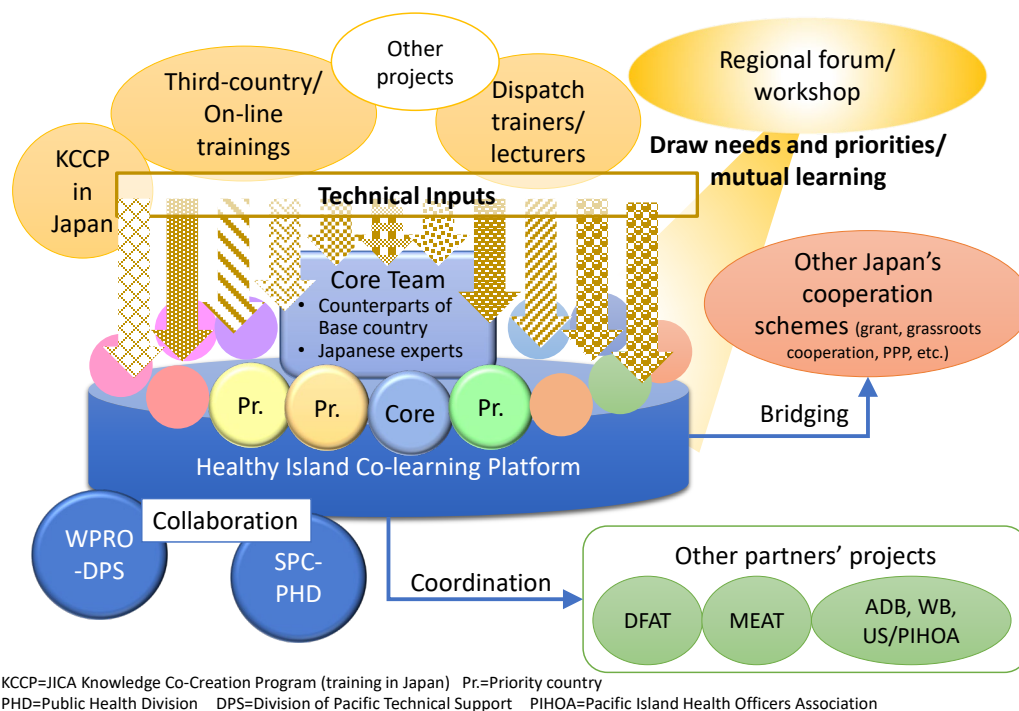
Conceptual Image of Technical Cooperation for Resilient Health System



Source: The Survey Team

Conceptual Image of Technical Cooperation for Strong Immunity of Individuals

In order to respond flexibly to the wide range of needs of PICs and to contribute to the improvement of the region's capacity to respond to health emergency, the Survey Team proposed to implement the project to be implemented under a flexible platform as shown in the figure below. The project will be led by a base country, which will be selected in consideration of cooperation with concerned regional organizations, and priority countries, which will be selected based on the experience of cooperation with Japan and the severity of the issues, to respect the characteristics of each participating country and promote peer learning. The activities are expected to provide various opportunities such as training, peer visits, and regional forums to share Japan's experience and knowledge and to contribute to the capacity building of the participating countries.



Source: The Survey Team

Conceptual Image of Co-learning under the Proposed Project

The following table outlines the projects to be implemented.

Outline the Proposed Project for the Pacific Region

Title	The Project for Pacific Co-learning towards Resilient Health System and the Beyond, Healthy Islands
Period	Five years
Implementing Agencies	Ministries of Health of 14 target countries: Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia FS, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu
Implementing Mechanism	<ol style="list-style-type: none"> (1) Base country (Fiji): Core project team consisting of counterparts and Japanese experts engaged in facilitating regional co-learning forum. (2) Priority countries (Kiribati, Micronesia FS, and Tonga): Counterparts from implementing agencies are expected to lead project activities. (3) Member countries (Cook Islands, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tuvalu, and Vanuatu): Counterparts from implementing agencies are involved in project activities.
Overall Goal	Some countries implement the action plan developed under the project to introduce some tools/ models or establish community health emergency response system.
Project Goal	Target countries effectively utilize the Healthy Island Co-learning Forum to share and exchange knowledge and experiences toward resilient health system.
Outputs	<ol style="list-style-type: none"> 1. Each target country sorts out challenges on community health and life-course approach, and experiences in COVID-19 preparedness and response. 2. Target countries share the results of Output 1 in the regional forum. 3. Each target country develops an action plan to overcome the priority challenges on community health and life-course approach. 4. The project team implements the technical inputs plans. 5. The regional forum discusses on feasibility of some tools and models learned under the project.

Source: The Survey Team

Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region

Final Report

Part I: Independent State of Papua New Guinea

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PART I OVERVIEW OF THE SURVEY

The Data Collection Survey on Improving Maternal, Newborn and Child Health and Community Health in Pacific Region (the Survey) consists of two components: (1) the survey to be conducted in the Independent State of Papua New Guinea (PNG) focuses on maternal, newborn and child health (MNCH) improvement; and (2) the scope of the survey on the 13 Pacific Island Countries (PICs) under the purview of the Japan International Cooperation Agency (JICA) that includes Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia (Micronesia), Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu, which is the prevention and control of non-communicable diseases (NCDs) and MNCH (especially expanded programme on immunization (EPI) and home-based records). The overall survey flow is presented in Figure I-1.

Background of the Survey

Aiming for Human Development Index (HDI) to be in the top 50 in the world by 2050, PNG has been implementing the national development under the “Papua New Guinea Vision 2050” published in 2009. The “National Health Plan 2011-2020” (NHP 2011-2020) presents the health sector development plan under the national vision and “Development Strategic Plan (DSP) 2010-2030”. The NHP 2011-2020 aims to strengthen the primary health care (PHC) to cover all the people, especially the residents in rural areas and the vulnerable in urban areas. Also, the latest five-year development plan, the “Mid-Term Development Plan III, 2018-2022” (MTDP III) states to enhance quality health care towards comprehensive and sustainable economic development.

Among the health sector challenges, MNCH requires huge efforts to improve outcome indicators such as infant mortality rate (IMR), under-five mortality rate (U5MR), and maternal mortality ratio (MMR). Low coverage of community health services is one of the major factors of such situation, such as antenatal care (ANC), birth attended by skilled birth attendants (SBA), and EPI. Also, enhancing integrated management of childhood illness (IMCI) could contribute to protect children from preventable death due to infectious diseases such as malaria, tuberculosis (TB), pneumonia, and diarrhea.

To tackle these challenges, the National Department of Health of PNG (NDoH) requested the Japanese development cooperation for redevelopment of the Maternal and Child Health Center of the Port Moresby General Hospital and relevant hospital services in the rural areas. Then, JICA conducted a brief assessment in September 2018 and decided to carry out the Survey to collect basic information and assess detailed development needs to improve MNCH in PNG.

On the other hand, most of the Pacific Island Countries and Territories (PICTs) have successfully improve MNCH and communicable diseases. However, triple health burden is one of the major concerns, which are unfinished communicable disease agenda, NCDs, and the health impact of climate change. The Pacific Community (SPC) has been implementing an integrated approach for health protection and health promotion under the Healthy Islands Vision adopted in the first Pacific Health Ministers’ Meeting in 1995. It aims to foster healthy minds and bodies of children and to live a dignified life in harmony with the environment and ecosystems through life-course and holistic approach.

Regarding communicable diseases, some countries are still struggling to increase coverage of the EPI. NCDs are leading cause of deaths of most of the countries. The Thirteenth Health Ministers Meeting in 2019 reached consensus to promote the Healthy Island initiatives to enhance primary health care (PHC), prevention of child obesity as one of the strong strategies of NCDs prevention and strengthen EPI. As a part of health development partners, JICA has been providing cooperation to improve health status of the people especially EPI, health promotion, and disease prevention.

Since early 2020, the coronavirus disease 2019 (COVID-19) pandemic brought disruption on health services including MNCH and community health. As health resources (human, finance, equipment, etc.) were allocated to COVID-19 response, access to essential health services worsened. Also, people hesitate to access health services due to fear of infection, or incorrect information (info-demic).

Objectives of the Survey

The Survey is conducted with the following objectives:

1. To collect relevant information on MNCH and community health in PNG and PICs for situation analysis, needs assessment; and
2. To formulate the conceptual framework and suggest some possible projects to improve identified priority issues in MNCH and community health.

Methodology

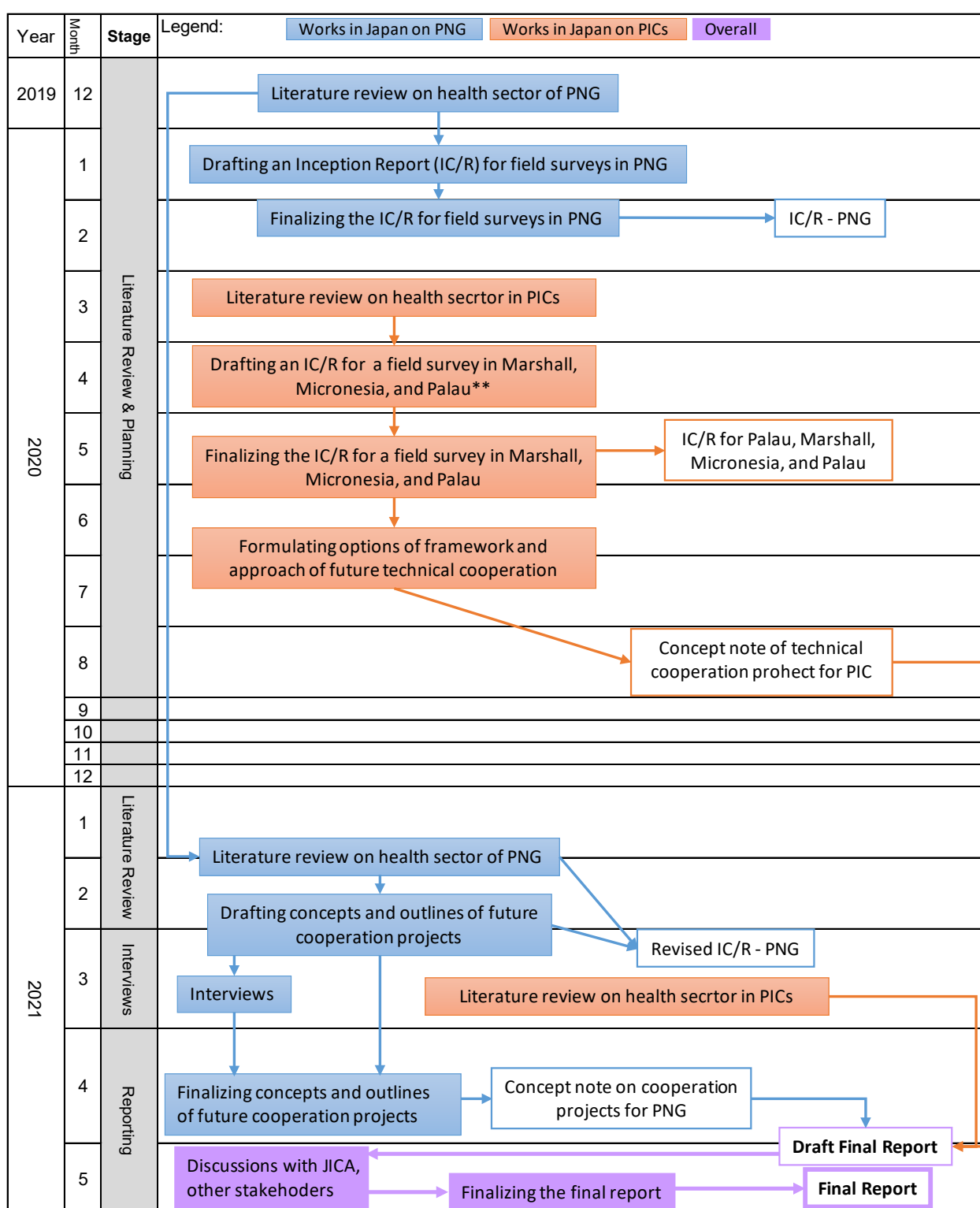
The Survey was originally planned to do both literature review, field survey including key informant interviews, and observation of health facilities. However, due to the COVID-19 pandemic, most of the information collection had to be done through literature review and virtual interviews.

Health statistics, analytical works, policy documents, and other relevant information were collected from the websites, JICA, and through e-mail communications with concerned organizations. Also, virtual interviews were conducted with some stakeholders.

Based on the results of the literature review, interviews and discussions, the Survey Team developed conceptual framework of future cooperation in the health sector in PNG and PICs.

Composition of this Report

Part I describes the background and overview of the survey. Part II consists of situational analysis of MNCH in PNG and a recommendation on future JICA's cooperation to improve MNCH in PNG. Current situation and health issues in PICs are described in Part III including future region-wide cooperation framework to strengthen community health in PICs.

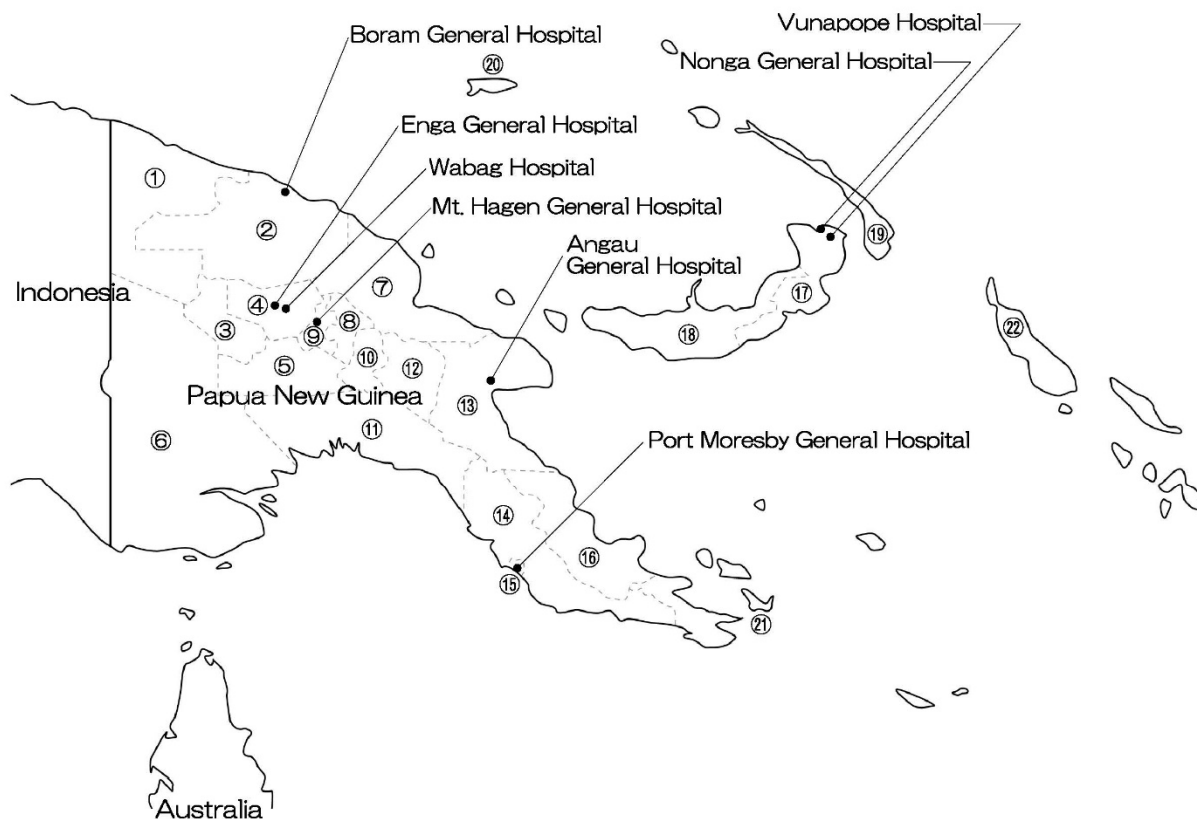


* 13 Pacific Countries: Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu

Source: The Survey Team

Figure I-1 Overall Flow of the Survey

PART II INDEPENDENT STATE OF PAPUA NEW GUINEA



PROVINCE

- | | | |
|--|----------------------|-----------------------------|
| ① Sandaun | ② East Sepik | ③ Hela |
| ④ Enga | ⑤ Southern Highlands | ⑥ Western |
| ⑦ Madang | ⑧ Jiwaka | ⑨ Western Highlands |
| ⑩ Simbu (Chimbu) | ⑪ Gulf | ⑫ Eastern Highlands |
| ⑬ Morobe | ⑭ Central | ⑮ National Capital District |
| ⑯ Oro (Northern) | ⑰ East New Britain | ⑱ West New Britain |
| ⑲ New Ireland | ⑳ Manus | ㉑ Milne Bay |
| ㉒ Autonomous Region of Bougainville (North Solomons) | | |

Source: The Survey Team

Map of Papua New Guinea

Chapter 1 Health Status Overview

1.1 Demography

The Independent State of Papua New Guinea (PNG) has a population of over 7 million (Census 2011), which is largely rural based (80%). According to the population projection in 2020 (Table II-1), around 40% live in the Highlands Region. Although the population is not concentrated in the National Capital District (NCD), growth rate is higher than the other provinces.

Table II-1 Projected Population in 2020 by Province

Provinces	Projected 2020 Population		Growth Rate 2017–2022
PNG	9,013,200	100%	2.8
Highlands Region		39.2%	
Enga	522,600	5.8%	3.1
Western Highlands	721,000	8.0%	1.0
Jiwaka			3.0
Eastern Highlands	669,100	7.4%	2.4
Southern Highlands	1,243,800	13.8%	2.5
Hela			3.0
Chimbu (Simbu)	378,400	4.2%	2.4
New Guinea Islands Region		13.0%	
East New Britain	360,700	4.0%	2.9
West New Britain	374,300	4.2%	3.5
New Ireland	197,800	2.2%	3.5
Bougainville	235,900	2.6%	2.1
Momase Region		27.3%	
East Sepik	530,300	5.9%	2.3
West Sepik (Sandaun)	298,500	3.3%	2.5
Manus	72,500	0.8%	2.7
Madang	622,100	6.9%	2.8
Morobe	937,100	10.4%	2.5
Southern Region		20.5%	
Central	289,900	3.2%	2.7
Western	293,500	3.3%	3.0
Gulf	178,600	2.0%	2.9
Milne Bay	344,800	3.8%	2.5
National Capital District	515,600	5.7%	3.5
Oro	226,700	2.5%	2.8

Source: [Estimating the Population of Papua New Guinea in 2020, 2021]

Mortality rates for both women and men have been dropping over the past 25 years, and as a result, overall life expectancy since 1990 has increased by five years as shown in Table II-2. Despite this progress, overall life expectancy is shorter than the majority of the Pacific Islands Countries (PICs).

Table II-2 Changes of Life Expectancy in PNG

Year	1990	2000	2005	2010	2015
Life Expectancy (year)	58.0	58.9	60.4	61.8	62.9

Source: [World Bank, 2019]

1.2 Maternal, Newborn and Child Health Status

The country remains beset with morbidity and mortality challenges linked to MNCH and communicable disease conditions, particularly for the rural and remotely located populations. In PNG, little is known about the distribution of cause of death because the civil registration system does not accurately record death data. Estimated cause-specific mortality fractions for both sexes, under-five mortality by sex, and life expectancy

by provinces are shown in Table II-3 [Urarang Kitur et al. , 2019]. In Highlands Regions and National Capital District, burden of noncommunicable diseases (NCDs) seems to be increasing. While Momase Region and Gulf Province seem to be still suffering from high under-five mortality and infectious diseases especially Malaria, Dysentery and Pneumonia.

Table II-3 Estimated Cause-specific Mortality Fractions for Both Sexes, Under 5 Mortality by Sex, and Life Expectancy by Sex by Provinces, 2011

Provinces	Cause-specific Mortality Fractions (%)					Under 5 Mortality Rate (per 1,000 livebirths)		Life Expectancy (years)	
	Endemic Infections ¹	Emerging Infections ²	Endemic NCDs ³	Emerging NCDs ⁴	Injuries	Male	Female	Male	Female
PNG	32.7	11.7	28.1	15.6	10.8	68	58	62.0	64.3
Highlands Region									
Enga	25.0	13.6	29.1	14.8	17.4	69	66	60.7	62.0
Western Highlands	23.6	10.6	35.2	18.6	12.4	40	33	65.9	68.7
Eastern Highlands	28.4	11.9	30.6	15.6	14.1	53	45	64.9	64.4
Southern Highlands	34.8	12.4	28.6	13.0	10.9	70	59	59.6	65.4
Simbu	25.0	15.4	31.0	17.0	11.0	40	35	67.2	64.2
New Guinea Islands Region									
East New Britain	34.9	10.4	27.6	16.9	9.6	65	56	62.2	63.9
West New Britain	37.3	12.3	22.6	14.0	13.3	54	45	63.4	65.2
Bougainville	35.8	9.8	27.4	14.4	11.5	54	43	62.4	67.2
Momase Region									
East Sepik	38.3	9.8	25.4	13.0	13.9	100	79	58.8	62.6
West Sepik (Sandaun)	43.4	12.4	23.5	10.1	10.7	131	119	54.4	56.8
Manus	35.5	6.8	31.5	17.5	8.1	83	75	62.6	64.4
Madang	37.2	13.3	25.6	12.7	10.8	78	69	60.2	62.4
Morobe	36.9	13.9	26.6	13.0	10.1	84	71	59.7	61.0
Southern Region									
Central	28.8	8.3	29.0	17.1	16.8	55	44	62.4	63.8
Western	36.2	9.4	29.4	13.6	11.3	64	57	61.8	67.2
Gulf	41.4	13.5	22.5	10.0	12.1	109	97	56.2	57.4
Milne Bay	40.4	8.8	28.0	14.0	8.7	78	64	61.5	65.4
National Capital District	25.2	12.8	30.0	23.0	9.4	34	23	67.0	70.3
Oro	35.7	11.9	29.7	14.6	8.7	69	64	62.0	64.6

NOTE: 1- Endemic Infections: Malaria, Diarrhea/Dysentery, Pneumonia; 2- Emerging Infections: TB, HIV, Cervical cancer;
3- Endemic NCDs: Chronic respiratory diseases, Leukemia/Lymphoma, Cirrhosis, Renal failure, Breast cancer, Stomach cancer, Esophageal cancer, Colorectal cancer, Prostate cancer, Other NCDs, Other cardiovascular diseases;
4- Emerging NCDs: Diabetes, Stroke, Ischemic heart diseases, Lung cancer

Source: [Urarang Kitur et al. , 2019]

Infant and under-five mortalities have been steadily decreasing since 1990; however, estimates in 2011 indicated that the country made insufficient progress to meet its Millennium Development Goals (MDGs) 4 and 5. As of 2013, infant mortality rate (IMR) was 45 per 1,000 livebirths (the 2015 target was 22 per 1000 livebirths) and under-five mortality rate (U5MR) was 57 per 1,000 livebirths (the 2015 target was 30 per 1000 livebirths) [WPRO, 2016]. The prevalence of stunting is high, 48.2% in 2010, and is much higher in the rural areas (50%) compared with the urban areas (35%).

Since civil registration and vital statistics in PNG has poor coverage of birth and death registration (less than 5%), most of the mortality statistics are based on estimates, and models are indirectly obtained. The national censuses and the demographic and health surveys (DHS) are the primary data collection tools for mortality data, which are based on a mother's information on birth and death of children. Table II-4 shows the changes of MNCH indicators.

Table II-4 Changes of MNCH Indicators in PNG

	1980	1990	2000	2010	2015
Fertility rate (births per 1,000 women aged 15–19 years)	100.2	73.0	66.3	58.6	54.4
Neonatal mortality rate (per 1,000 livebirths)	36.7	31.1	29.6	26.5	24.0
Infant mortality rate (per 1,000 livebirths)	76.6	64.4	57.5	49.8	43.8
Under-five mortality rate (per 1000 livebirths)	107.3	88.0	77.2	65.2	56.2
Maternal mortality rate (per 100 000 livebirths)	-	470	342	238	215
Prevalence of HIV, total (% of population aged 15-49)	-	0.1	0.7	0.9	0.9
Measles immunization (% children aged 12–23 months)	-	67	69	74	79
Prevalence of stunting, height for age (% of children under-five)	50.2	-	-	49.5	-
Prevalence of underweight, weight for age (% of children under-five)	24.6	-	-	27.9	-

Source: [World Bank, 2018]

MCH indicators by provinces vary as shown in Table II-5. In general, facility delivery rate and ANC coverage in Momase and Southern Regions are lower than the others, and IMR tends to be higher, especially in East Sepik and Gulf provinces.

Table II-5 Major MCH Indicators by Provinces, 2010

Provinces	IMR/1,000 Livebirths	Delivery at Facility (%)	Antenatal Care One Time Received (%)	Antenatal Care Four Times Received (%)
PNG	64	36	61	29
Highlands Region				
Enga	68	30	66	22
Western Highlands	48	40	72	25
Eastern Highlands	52	35	65	33
Southern Highlands	64	15	38	17
Simbu	52	46	80	38
New Guinea Islands Region				
East New Britain	56	70	81	45
West New Britain	60	43	86	47
New Ireland	54	55	73	44
Bougainville	46	48	76	33
Momase Region				
East Sepik	80	22	52	19
West Sepik (Sandaun)	104	15	36	17
Manus	46	46	74	34
Madang	80	27	57	23
Morobe	82	28	54	21
Southern Region				
Central	46	18	45	19
Western	64	38	55	23
Gulf	102	20	40	18
Milne Bay	88	39	70	41
National Capital District	20	100	95	57
Oro	62	27	55	22

Source: [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019]

Although MDGs target on maternal mortality ratio (MMR) was 98 per 100,000 livebirths, estimated maternal mortality ratio (MMR) was still 215 per 100,000 livebirths in 2015. Obstetric hemorrhage, sepsis and eclampsia are the main proximate causes of maternal death, compounded by severe anemia often associated with malaria [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019]. It is indicated that low rate of facility-based delivery (37% in 2015) and low percentage of pregnant women who received at least one antenatal care (ANC) (54% in 2016) are possible factors of high MMR. On the other hand,

according to the United Nation Children’s Fund (UNICEF), maternal mortality ratio in 2017 decreased to 145 per 100,000 livebirths [UNICEF, 2019].

1.3 Non-Communicable Diseases

The World Health Organization (WHO) conducted the STEPwise Approach to Surveillance of NCD Risk Factors (STEPS) survey to determine the risk factors to non-communicable diseases (NCDs), and it was confirmed that overweight (total 32.1%, male 30.3%, female 33.9%), smoking (total 44.0%, male 60.3%, female 27.0%), and raised cholesterol (total 36.8%) were the main factors in PNG in increasing of NCDs. The main results of the STEPS survey are shown in Table II-6.

Table II-6 Major Results of STEPS Survey (2007 – 2008)

	Male	Female	Total
Obesity rate over 20 years of age (%)	5.1	8.7	6.8
Consumption less than 5 servings of fruits and vegetable per day (%)	99.1	98.6	98.9
Low physical activity (%)	9.0	10.9	9.9
Prevalence of raised fasting blood glucose among aged 25 years and over (%)	14.7	14.0	14.4
Prevalence of elevated blood pressure among aged 25 years and over (%)	10.2	7.2	8.8

Source: [WHO, 2008]

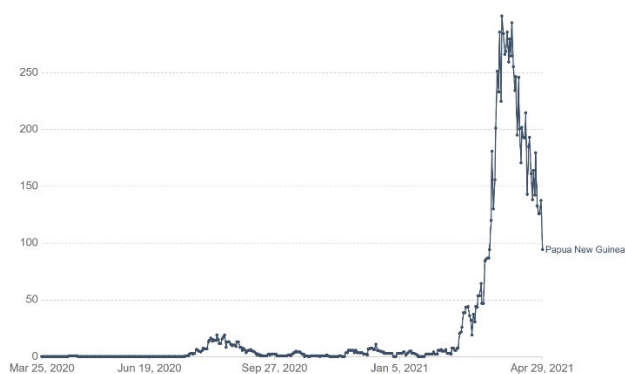
1.4 Communicable Diseases

Although malaria incidence has declined markedly during the 2008–2012 period (18.2% to 1.6% population parasite prevalence), it is still a burden of health in PNG. The National Department of Health (NDoH) confirmed that malaria is in the top ten leading causes of hospital and health center admissions and the second-leading cause of death [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

PNG is one of the 30 high burden countries of tuberculosis (TB). The incidence was estimated at 432 (range 352–521) per 100,000 populations with an estimated mortality rate of 52 per 100,000 populations (excluding HIV). Multidrug-resistant TB (MDR-TB) was estimated to be present in 3.4% (1.7–5.0%) of new cases in 2015 [WHO, 2019].

Vaccine coverage has declined, for instance, the third dose of diphtheria-tetanus-pertussis (DTP3) the official estimate was 61% in 2016, down from 68% in 2013, although national coverage target was 72%. Estimated coverage with measles-containing vaccine (MCV) continues to stagnate at 70% since 2013 and stayed at 70% in 2016 [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

New confirmed COVID-19 cases by the rolling seven-day average are shown in Figure II-1. The number of confirmed cases is lower than the number of actual cases due to limited testing. Figure II-2 shows cumulative confirmed COVID-19 deaths. The number of deaths from COVID-19 may not be accurate as same reason as the limited testing above.



Source: [JHU, 2021]

Figure II-1 New Confirmed COVID-19 Cases by the Rolling 7-day Average in PNG



Source: [JHU, 2021]

Figure II-2 Cumulative Confirmed COVID-19 Deaths in PNG

According to the interviews conducted by the Survey Team, health status in PNG might have been suffering from COVID-19. Situation of health services in PNG is getting worse by COVID-19, particularly human resources and finance. Resources for MNCH services in Port Moresby General Hospital (PMGH) were allocated to the COVID-19 response. In addition, some of the staffs have been infected under the shortage of human resources. Inadequate triage capabilities have led to confusion in rural hospitals.

Health services in rural areas, where 80% of the population lives, were originally inadequate due to lack of human resources and equipment, however, they are even more inadequate since the decision makers' attention was shifted to COVID-19. Human resources have been diverted to infection prevention; on the contrary, MNCH services have been less provided. It has become an additional burden in the field of rural areas.

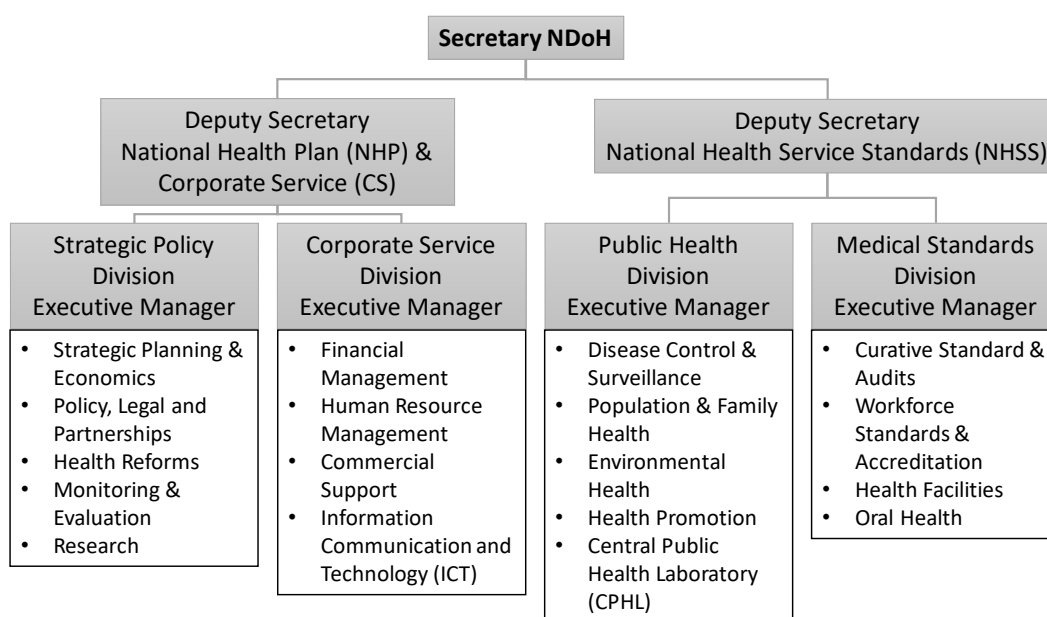
Routine immunization coverage has considerably dropped as mobile and outreach sessions have been reduced. Many activities including Cold Chain Equipment Optimization Platform (CCEOP) implementation, integrated supply chain management (iSCM) strengthening activities, high-level advocacy for routine immunization, and community engagement are delayed. Vaccine delivery is also affected due to shortfall and delay in financing and international flight disruption and less oversight of the national vaccine store due to repurposed staff [WHO, 2020].

Access to health services, not only MNCH, has been reduced. ANC and facility-based deliveries are also declining. The paper published in the Lancet analyzes the worst-case scenario, that if health interventions are reduced by around 45%, there could be as much as 44.7% increase in under-five child deaths and 38.6% increase in maternal deaths per month [Timothy Roberton, et al., 2020]. According to the local news in PNG, many mothers hesitate to access health services due to fears of COVID-19 infection and vaccine hesitancy [interpreter, 2021].

Chapter 2 Health System

2.1 Organization Structure of National Department of Health

Figure II-3 shows the organization chart of the National Department of Health (NDoH) as of 2013. However, the corporate plan 2013-2015 mentions to review the governance structure and organization chart to improve management and administration.



Source: [NDoH, 2013]

Figure II-3 Organization Chart of NDoH, as of 2013

The decentralization policies, which have been promoted since the 1980s, particularly the “Organic Law on Provincial and Local Level Government” (commonly known as NOL) of 1995, played a big role in the collapse of the health sector. The policy-implementation link was broken, and the management of public expenditure was transferred to provincial levels without a system to control and balance the budget to implement national policies. Hospitals have become autonomous organizations run by steering committees and the network between primary health care (PHC) service and hospital service has not been functioning sufficiently [JICA, 2012].

2.2 Relevant Policies and Development Plans

2.2.1 Health Sector Targets in the National Policies

The Government of Papua New Guinea (PNG) announced its “Papua New Guinea Vision 2050” in November 2009, in which it stated to strive to be among the top 50 countries in the Human Development Index by 2050. Based on that framework, a long-term development strategy called “Development Strategic Plan 2010-2030 (DSP)” was developed. The goal of DSP in terms of the health sector is “to achieve an efficient health system which can deliver an internationally acceptable standard of health services”, and strategy for achieving the targets under this goal is a complete transformation of the health system [JICA, 2012].

Improvement of quality of health care is one of the five priorities¹ of the “Medium-Term Development Plan III 2018-2022” (MTDP III). MTDP III focuses on the development of rural areas and ensure equal access to quality health services especially in rural districts. Towards the goal 2.3 “Improve the Health Services and Outcomes”, under Key Result Area 3 “Sustainable Social Development”, the following strategies are indicated in MTDP III:

- Upgrade district health center to district hospitals (Level 4), provincial hospitals to Level 5, four regional hospitals to Level 6, and referral hospital (Angau and Port Moresby General Hospitals) to Level 7 status.
- Upgrade all health training institutions to increase the number of health professionals.
- Roll out of Provincial Health Authorities (PHAs) and strengthen Community Health Posts (CHPs) throughout the country.
- Improve the procurement and management of medical supplies.

Source: [Gov of PNG, 2017]

The “National Health Plan (NHP) 2011-2020” emphasizes strengthening primary health care services delivery and aligns its objectives with the Millennium Development Goals (MDGs). Under NHP 2011-2020, the health outcome priorities as outlined in its 2012-2018 strategic objectives are as follows:

- Fully immunize every child under one-year old;
- Reduce maternal mortality in districts with high MMR;
- Reduce malaria prevalence in high malaria endemic districts;
- Reduce rate of increase in human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS) and sexually transmitted diseases (STIs);
- Reduce incidence of tuberculosis (TB) in high-risk districts;
- Increase access to health services for the urban poor; and
- In order for us to move forward, we focus on three key result areas which are healthier communities, improved support for service delivery, and better management.

Source: [NDoH, 2019]

According to the Key Result Areas in the National Health Plan listed in Table II-7, it is obvious that access to health service, health system and governance, child health and maternal health are the main emphases on the policy and plan.

Furthermore, in MNCH, which is one of the main focuses of the health policy and plan, immunization, nutrition, pneumonia case management, neonatal health, safe motherhood and family planning are the key programs.

¹ Others are: inclusive economic growth with renewed focus in agriculture, continuing with infrastructure development, improvement of quality of education and skills development, and improvement of law and order.

**Table II-7 Key Result Areas, Programs, and Indicators of the National Health Plan
2011-2020**

Indicator Number	Key Result Areas	Programs	Indicators
1a	Service delivery	Access to services	Proportion of rural outreach clinics per populations of children under-five
1b			Proportion of functioning aid posts
1c			Proportion of districts with community health posts (after the development)
2		Facility supervision and support	Proportion of health centers that have received at least one supervisory support visit from district and/or provincial management staff during the year
3		Curative services	Proportion of general hospitals (PMGH and the provincial hospitals) that have at least three of the five key specialties
4		Service infrastructure	Proportion of health centers/hospitals with functioning radio/telephone
5a	Partnership and coordination	Service agreements	Proportion of provinces that have established service level agreements with church and non-governmental organizations (NGOs)
5b			Number of national service level agreements with church and NGOs
6	Health systems and governance	Provincial financing	General expenditure (health functional grants and Health Sector Improvement Programme (HSIP)) at the district/facility level as a percentage of total provincial expenditure on health
7a		Health workforce	Density of pediatric-trained nurses (per 10,000 of population)
7b			Density of midwives (per 10,000 of population)
7c			Total number of pediatricians in clinical and public health settings
7d			Total number of obstetricians in clinical and public health settings
8	Medical supplies	Percentage of months in a year that facilities have all key medical supplies in the stocks	
9a	Child health	Immunization coverage	Proportion of one-year old children immunized against measles
9b			Proportion of one-year old children vaccinated with three doses of DPT-HepB-Hib pentavalent vaccine
10		Nutrition	Prevalence of underweight children under-five
11a		Case fatality	Case fatality rate for pneumonia in children under-five in hospitals
11b			Case fatality rate for pneumonia in children under-five in health centers
12		Neonatal health	Proportion of neonates that are classified as having low birth weight
13	Maternal health	Safe motherhood	Proportion of pregnant women who receive any antenatal care
14			Proportion of birth attended by skilled health personnel
15			Referral rate for emergency obstetric support
16a		Family planning	Years of protection
16b	Contraceptive acceptance rate		
17a	Disease control	Malaria prevention and treatment	Number of reported cases of malaria
17b			Proportion of children under-five sleeping under insecticide-treated bed nets

Source: [NDoH, 2011]

2.2.2 Maternal, Newborn and Child Health

Maternal and neonatal health is one of the priority health areas for the health system of PNG because of the high fertility rate and relatively high infant and maternal mortality. In the "National Health Plan 2011-2020" (NHP 2011-2020), MNCH is one of the priorities. Child immunization services have problems on shortage of vaccines and supply chain weakness due to undeveloped information system to identify locations with shortages. As for emergency obstetric care (EmOC), although all facilities at Level 3 or above should be able to provide EmOC, 40% of surveyed facilities at Levels 3 and 4 were not prepared to provide basic EmOC (BEmOC) [World Bank, 2017].

Providing PHC is challenging in the PNG as the lowest ratio of nurses/midwives-to-population in the region (0.532 per 1,000 populations) [WHO Health Observatory, 2017]. Health facilities in rural areas provide services including management of chronic and acute symptoms, basic surgical care and deliveries and

pediatric care. Aid posts deliver basic health care including MCH and health promotion. In the areas beyond the aid post, outreach services are conducted.

In response to service delivery gaps among areas, the NHP 2011-2020 is proposing the following strategies to expand access [Gov of PNG, 2010]:

- Increasing the number of outreach services;
- Improving the reliability of supply of medicines;
- Improving the availability of operational funding through facility-based planning and budgeting;
- Improving skills and skills mix of PHC providers;
- Establishing community health posts;
- Integrating hospitals and rural health centers into a single provincial health authority; and
- Ensuring that specialists are available at all provincial hospitals by 2030.

However, the Joint Health Sector Review in 2015 concluded that inequities are in fact worsening, with most of the health investment and service utilization taking place in provinces or in locations closer to provincial capitals [Health Systems in Transition , 2019].

2.2.3 Health Facility Development

The Commercial Support Services Branch (CSSB) and the Health Facilities Standard Branch (HFSB) of NDoH seem to be responsible for health facility development [Commercial Support Service Branch, NoDH, 2015].

Although DSP states to upgrade the four regional hospitals, i.e., Mt. Hagen, Angau, Nonga, and Port Moresby general hospitals to specialized hospitals and existing health facilities are to be recapitalized upgraded, MDTP III mentions to upgrade only two of these, namely: Angau and Port Moresby general hospitals (Section2.2.1).

2.2.4 Medical Equipment, Medicines, and Medical Supplies

The National Drug Policy (1998) aims at effective procurement, distribution, utilization and administration of medicines and other medical supplies and equipment. The National Policy on Medical Equipment for PNG states that the introduction of medical equipment or new medical technologies will continue to be based on appropriateness and affordability [Gov of PNG, 2004].

The Pharmaceutical Services Standards Branch (PSSB) of NDoH is responsible for procurement and management of medical equipment [NDoH]. While the Medicine Quality Control Laboratory is responsible for testing of medicines quality to ensure medicines and administration of medicines and medical supplies [NDoH]. The outline of three relevant units under PSSB is listed in Table II-8

Table II-8 Relevant Units for Medical Equipment under PSSB

Units	Outlines
Product Registration Unit	<ul style="list-style-type: none"> • Responsible for medicinal product registration as per the Guidelines for Medicines in Papua New Guinea developed. • The registration process ensures that medicinal products or medical devices brought into the country are safe, effective, and of good quality.
Compliance Licensing and Inspecting Unit	<ul style="list-style-type: none"> • Responsible for facilitating inspection of prospective pharmaceutical establishments for issuance of valid licenses for pharmacy outlets, importers, wholesalers, exporters, and issuance of licenses for pharmacy technicians and pharmacists. (Only registered pharmaceutical establishments and persons can deal with medicinal products or medical devices.) • On average, PGK 200,000 is collected in license fees and goes into government consolidated revenue.
Pharmaceutical Care Unit	<ul style="list-style-type: none"> • Responsible for reviewing and updating medicinal product specification in the Medical and Dental Catalogue. • Provides secretariat duties for the Pharmacy Board of Papua New Guinea and Pharmaceutical Advisory Committee. • Provides training in hospitals to establish Medicines Therapeutic Committees to monitor adverse drug reactions.

Source: [NDoH]

Regarding medicines, there are policies covering the selection of essential medicines, financing, pricing, procurement, distribution and regulation, and rational use of medicines. There are no licensed pharmaceutical manufactures in PNG. Also, no multinational pharmaceutical companies currently manufacture medicines locally [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

2.2.5 Emergency Response to COVID-19

The National Control Center (NCC) consisting of NDoH, Department of Police, Department of Defense, and a range of other government agencies and involvement of key partners for the implementation, management and monitoring of the response continues to coordinate national preparedness and response measures guided by the emergency preparedness and response plan for COVID-19.

The “COVID-19 Emergency Response Plan” was introduced two weeks after the State of Emergency. The plan articulates the process of moving forward into the Containment Phase and subsequently into the Mitigation Phase (of community transmission) anticipating and planning for the model of the "worst case " scenario and into the Recovery Phase. The intervention is implemented in a time of two years from March 2020 to February 2022, including six months for immediate or containment response and 18 months for mitigation activities. The overall cost of the intervention is PGK 1.388 billion, based on modeling scenario of the ‘worst case’ 1:5 Papua New Guineans infected in this COVID-19 pandemic.

The strategic and technical areas of the plan are shown in Table II-9.

Table II-9 Strategic and Technical Areas of the COVID-19 Emergency Response Plan

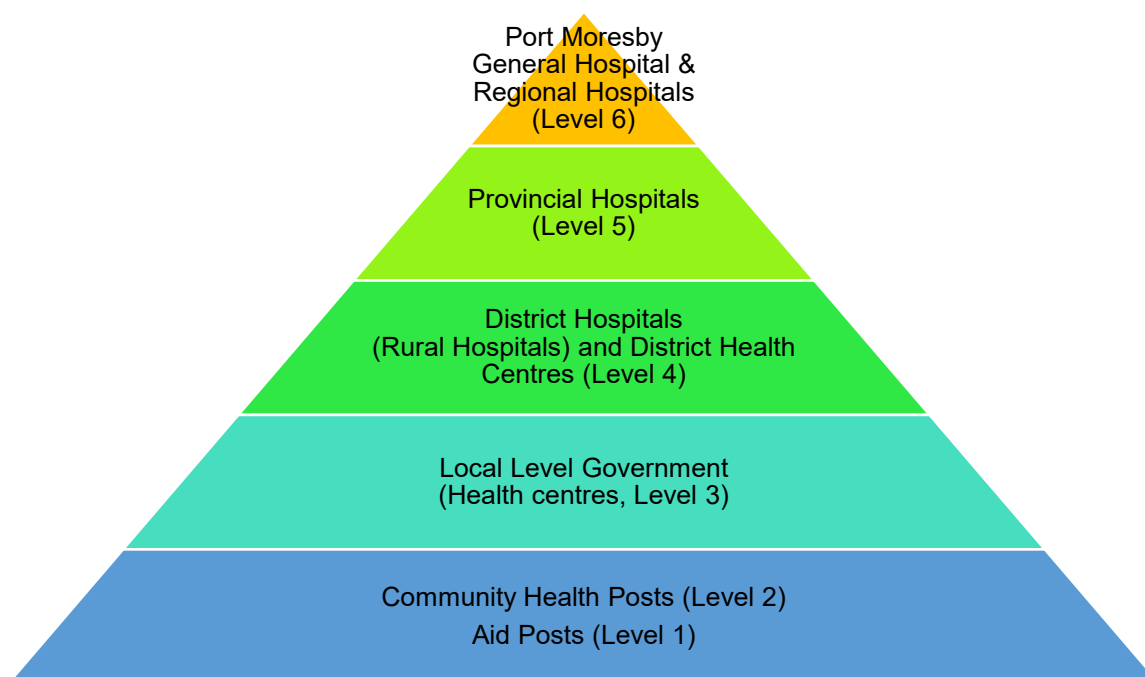
Focus Areas	Priorities
Incident management and planning	Provincial Emergency Operation Centers (PEOCs) activated with command center
	Convened regular meetings
	Emergency Response Plan (ERP) with costing
Surveillance, risk assessment and rapid response	Trained surveillance person
	Trained Rapid Response Team (RRT)
Laboratory	Sample collection, packing and transportation
	Trained International Air Transport Association (IATA) officer
	Materials available to conduct proper sample collection (test kit), packing, and transportation
	Company/courier to transport samples to the designated
Clinical management and health care services	Pre-triage
	Quarantine area identified
	Isolation ward
	Intensive Care Unit (no. of beds/no. of ventilators)
	Identified an ambulance/boat provider
Infection prevention and control (IPC)	Training on personal protection equipment (PPE)
	Waste Management Plan
	Training on IPC
	Materials and equipment for waste management
Non-pharmaceutical public health measures	Public health and social measures in place
Risk communication and community engagement	IEC material available
	Communications Plan
	Trained spokesman
	Social mobilization and awareness campaigns on prevention
Ports of entry	Sea ports/airports
	International land crossing border
	Referral system for suspected cases at the points of entry
	IEC materials at the points of entry
	Gazetted quarantine officer
Operational logistics	Supplies Plan for COVID-19
	Security Plan
	Availability of PPE
Partner coordination	Inter-sectoral taskforce/committee

Source: [WHO, 2020]

2.3 Service Delivery System

2.3.1 General

Health service delivery system is divided as shown in Figure II-4, the national and teaching hospital and regional hospitals (Level 6), followed by provincial hospitals (Level 5), and district hospitals (Level 4). On the other hand, based on a PHC approach, community health service consists of a network of health centers (Level 3), community health posts, and (Level 2) aid posts (Level 1). The provinces and local level government are mandated by law to provide PHC services through the rural health service network of district hospitals, health centers, community health posts, aid posts, and outreach services (Figure II-4).



Source: The Survey Team

Figure II-4 Health Service Delivery Structure in PNG

There are many geographical, cultural, and institutional barriers to the smooth functioning of the health referral system. Strengthening of health service is one of the key points of the NHP 2011-2020. Especially on PHC level, improving health service delivery is highly dependent on improved performance of human resource management, financing, and logistics support.

NHP 2011-2020 emphasized the health service delivery systems need to ensure accountability and transparency in implementing the policies at subnational management level, local health authorities, to extend sufficient health services with no one left behind. The classification of a provincial health authority management framework provides a more streamlined approach for decentralized management of PHC, hospitals and the referral system [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

2.3.2 MNCH Service Delivery

MNCH service delivery, particularly needed in the period from pre-pregnancy to the neonatal period when the child is most at risk of death, consists of the following; family planning, antenatal care, facility-based delivery, and neonatal care.

According to the document “The Story of Maternal Mortality in Papua New Guinea”, developed by the Ministerial Task Force on Maternal and Newborn Health Situational Analysis in 2019, which was provided by the World Health Organization (WHO) during the survey, MNCH service delivery in PNG is in poor level as described below [NDoH, 2019].

(1) Family Planning

According to the document, 70% of women do not use a modern method of contraception, which includes injectables, implants, female sterilization, condoms, pills, and intrauterine contraceptive device. Reasons

for low use of contraceptives include fear of side effects, decision-making process is solely made by male, and wrong belief that contraceptives are used only by sex workers.

(2) Antenatal care

Forty percent of women are not accessing antenatal care (ANC). The reasons are distance to the facility and lack of transportation to get there, poor performance of the health personnel, which may make women feel ashamed, and difficulty of communication due to different language. In addition, it is stressed that husband makes the decision at the household level and women have to get permission from them to visit ANC.

The document also mentioned that of all 122 maternal deaths that were reviewed by the Task Force, 38% of women who died after delivery either from health facility or in the community had not received any ANC.

(3) Facility-based delivery

Half of the women who died had not delivered at a health facility. The document points four major reasons for not delivering at health facilities. First, village women are reluctant to be examined at health facilities. Second, staff were often reported to be unfriendly, critical or abusive. Third, women reported poor facility support including limited washing and toilet facilities. Fourth, women reported having problems getting to the facilities.

Risk of home delivery showed in the document that 30% of women who died had not received care when they developed a problem at home. Twelve percent did not seek care, 11% sought care but did not reach a facility and 3% reached a facility but did not receive care. In addition, of the 70% of women who received care at a facility, case reports indicated that many women arrived late.

(4) Newborn Care

The neonatal mortality rate – estimated to be 24 deaths per 1,000 live births – is the highest in the Western Pacific Region [UNICEF, WHO, World Bank, 2017]. The leading causes of mortality are prematurity (30%), birth asphyxia (28%), sepsis (16%), and congenital anomalies (11%) [WHO, 2016].

Early Essential Newborn Care (EENC) has been rolled out in Papua New Guinea since 2015, and by mid-2018, EENC had been introduced in 192 health facilities in 15 provinces, corresponding to 26% of health facilities providing childbirth services.

Ensuring appropriate and timely care for preterm babies is critical, given that prematurity is the leading cause of neonatal deaths in PNG. Assessments of care showed that 71% of preterm and low birth weight babies weighing less than 2,000 grams received kangaroo care, as recommended globally.

Hygiene practices by birth attendants are essential for preventing infections for newborns and their mothers. Data from observations of deliveries in five hospitals implementing EENC in 2018 showed that birth attendants appropriately washed their hands in 75% of deliveries and wore sterile gloves to handle the umbilical cord in 82% of deliveries. These are improvements from 2016, when the same figures were 7% and 64%, respectively, in the same hospitals.

In addition, according to the World Bank [World Bank, 2017], situation of poor status of equipment and supplies related to MNCH care is as shown in Table II-22. It is revealed that many of the Levels 3 and 4 hospitals are suffering from shortages of basic essential equipment such as stethoscope, partograph, delivery light, resuscitation bag, and cord supplies for newborn.

(5) Perinatal Care at the Port Moresby General Hospital

PMGH is supposed to function as the national top referral and teaching hospital, but due to the lack of progress in the development of regional and provincial hospitals in the surrounding areas, it actually functions as the provincial hospital for Central Province, and patients who should normally be treated at lower level hospitals come to PMGH. According to the interviewees, the facilities and functions of an existing public hospital in Central Province are at the level of district hospitals, and only normal deliveries can be handled in the obstetrics department. Therefore, normal deliveries and low-risk pregnant women from Central and Gulf provinces are coming to PMGH, and the situation of overcapacity has not been improved.

There were 15 maternal deaths out of 14,282 live birth in 2019 in PMGH. The MMR was 105/100,000 live births which was similar to 2018, 106.1/100,000 live births. Each death has been reviewed and written up in detail to give readers a chance to understand the circumstances of the deaths.

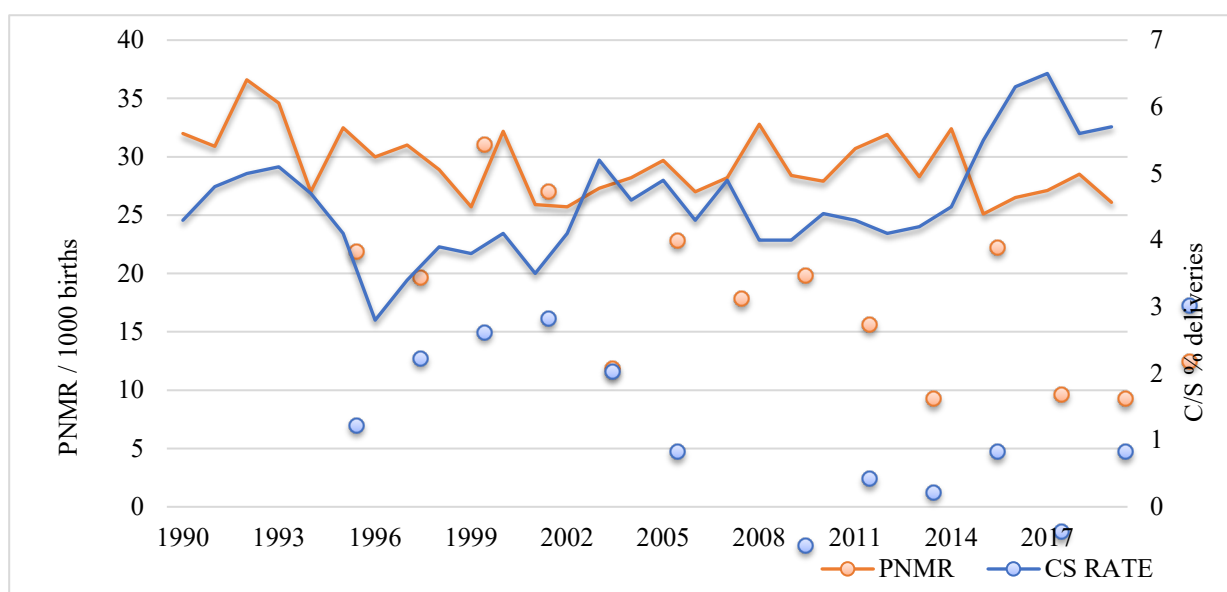
Table II-10 shows the changes in MMR for PMGH from 2010 to 2019, with no clear trend showing an increase or decrease over the 10-year period, although there appears to be a decrease in 2013 and 2014.

Table II-10 Maternal Mortality Ratio in PMGH per 100,00 Livebirths, 2010-2019

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MMR	141	100.3	96	82.8	87.6	95.3	120.8	149	106.1	105.0

Source: [PMGH, 2019]

Figure II-5 shows the rate of cesarean sections and perinatal mortality rate (PNMR) in PMGH between 1990 and 2019. The cesarean section rate has increased since 2014 (5.7% in 2019, 90% of them were emergency cesarean sections), and the perinatal mortality rate has decreased accordingly, suggesting that the implementation of cesarean sections may contribute to the prevention of perinatal maternal and child deaths.



Source: [PMGH, 2019]

Figure II-5 Perinatal Mortality Rate (PNMR) and Caesarean Section (CS) Rate in PMGH, 1990-2019

The perinatal mortality rate (PNMR) was 26.1/1000 births in 2019 compared to 28.5/1000 in 2018. The number of births in 2019 was 14,282 and the number of stillbirths was 227 (125 macerated stillbirths, and 105 fresh). The stillbirth rate was 15.6/1000 births compared to 18.2/1000 births in 2018. The neonatal mortality rate was 10.7/1,000 births, 70% of which were low birth weight. The total number of low birth weight babies was 1,325, of which 1,082 were between 1,500g and 2,499g and 144 were deaths [PMGH, 2019]. According to interviews with pediatricians, some lives could have been saved if they had been kept warm and managed properly. The Pediatric Division is working to strengthen kangaroo care with the cooperation of UNICEF.

(6) Major Challenges in MNCH in PNG

According to the report of the National Task Force on Maternal and Newborn Health Situational Analysis in 2019, problems are identified as follows in terms of health service for mothers and newborn in PNG:

a. Inadequate supply of life-saving medicines and equipment at the facilities

- Half of the facilities where women deliver do not have adequate supply of life-saving medicines (e.g., oxytocin and misoprostol).
- Essential ANC equipment such as fetal stethoscopes and blood pressure cuffs are available in only one-third of the facilities, and less than half of Level 2–4 facilities had syphilis or HIV tests for screening pregnant women.
- Resuscitation bags and masks for saving non-breathing babies are unavailable in one-third of the facilities.

b. Low quality of performance of health service at the facilities

- In some lower-level facilities, staff did not know how to use life-saving medicines or perform simple procedures that could prevent postpartum hemorrhage.

c. Low quality of infrastructure at the facilities

- Poor hygiene around delivery contributes significantly to the risk of infection and death of both mothers and their babies.
- Only 8% of the facilities have functional hand hygiene facilities (sinks with soap, water, and towels) in the delivery room and only 13% have alcohol hand gel.
- Almost half of facilities have no functional sterilizers and therefore cannot sterilize instruments for routine procedures including cord cutting.

d. Shortage of human resource

- An adequate number of human resources are required to deliver skilled delivery care. No province meets the global standard of 23 doctors, nurses, or midwives per 10,000 population, necessary to achieve 80% of proportion of birth attended by skilled birth attendants (SBA).

2.4 Health Facilities

Table II-11 summarizes public health facilities in each level according to Figure II-4. NDoH is responsible for Levels 5 and 6, which provide secondary services, as well as Level 6 for tertiary medical services. Health facilities providing primary services (Levels 1 to 4) are under local administrations. Christianity missions contribute to cover the rural areas. However, due to shortage of health personnel, appropriate services could not be provided, especially in the rural areas. Therefore, people access to health facilities only 1.4 times/year in average and patients seek care directly to higher level hospitals in the urban areas.

According to the sample survey in 2015 (n=73) [World Bank, 2017], around 70% of the facilities expect Level 6 needed major building repairs, and emphasized the lack of adequate toilets, stable supply of electricity, and consistent water supply. Regarding basic infrastructure, Levels 3 and 4 facilities connected to water supply line were less than 10%, and to electric supply line were around 30%.

Another survey in 2012 with targeted 142 facilities found that around 70% needed repairs of consultation rooms and staff quarters. Also, about 50% of facilities did not have proper water and electricity supply and therefore refrigerators were not functioning [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

In line with MTDP III (Section 2.2.1), the development of Mt. Hagen General Hospital, Angau General Hospital, and a cancer centre in PMGH seems to have started, but according to the interviews in the Survey, it is stagnant due to financial difficulties.

Table II-11 Health Facilities in PNG

LV	Facilities	Designated Numbers of Health Personnel	Public	Church Service	Private/ NGO/ n.a. ¹	Closed	Pop. Coverage	Admini- stration
1	Aid Post	Community Health Worker (CHW) 1	496	163	1,646	798	500-2,000	Village/ Ward
2	Community Health Post	CHW 2	13	3	2			
	Health Sub Center/ Urban Clinic	Nurse 1, CHW 3	156	268	29	6	Rural 2,000-5,000 Urban <10,000	Ward/ Urban Council
3	Health Center	Nurse 2, CHW 5	39	10	11	1	5,000-10,000	
4	District Health Center	Health Extension Officer (HEO) 1, Nurse 6, CHW 7	142	53	6		<70,000	District
	District Hospital	Medical Officer (MO) 1, HEO 3, Nurse 9, CHW 22	4	5	-	-	≥ 70,000	
5	Provincial Hospital	MO 2, HEO 1, Nurse 25-35, CHW 25-30 MO 10-20, HEO 5-10, Nurse 30-80, CHW 50-90	19	-	-	-		Province
6	Regional Hospital ²	MO 25, HEO ≥ 5, Nurse 100-200, CHW 70-120	4	-	-	-		NDoH
	National General Hospital ³	MO 30, HEO ≥ 5, Nurse ≥ 100-200, CHW ≥ 70-120	1**	-	-	-		

Note: 1- Ownership information of one facility was not provided [NDoH, 2018]

2- Provincial Hospitals in Morobe, Enga, and East New Britain are mandated as regional hospitals.

3- National General Hospital is mandated as a provincial hospital for Central Province.

Source: JICA, [NDoH, 2018], and [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019], compiled by the Survey Team

2.4.1 Port Moresby General Hospital

Port Moresby General Hospital (PMGH) was launched at its present location in 1957 as a hospital with a total of 360 beds (Walter Strong Building). Later, between 1961 and 1982, the hospital was extended mainly with the aid of international organizations. In 1974, the old main building, which included four operating rooms, an intensive care unit (ICU), and a laboratory, was completed, and the hospital became a 700-bed general hospital. The total number of staff as of 2021 was 1,636 [RNZ News, 2021], but updated information on the breakdown was not available during the Survey.

Table II-12 provides an overview of PMGH. Fulfillment rate of doctors and nurses were 67% and 70%, respectively, in 2013. The main source of income for the hospital was the grants from the national government, but according to the interviewees, the amount of budget allocated has been decreasing in the past few years. According to the available annual reports for 2013 and 2014, the budget allocated for 2014 was about 60% of the 2013 budget

Table II-12 Outline of PMGH

Divisions (2014)	Obstetrics & Gynaecology, Ophthalmology, Otolaryngology (ENT), Physiotherapy, Internal Medicine, Paediatric, Surgery, Accident Emergency/COPD, Dermatology, Anaesthesia, Psychiatry, Dentistry Clinical Support Services includes: Medical Information (Records), Medical Imaging (Radiology), Medical Social Work, Biomedical Engineering, Pathology Services, Dietetic		
Number of Staff (2013)	Cadres	Approved	Filled
	Senior Executives and Office of CEO	11	6
	Cooperate Services	28	28
	Medical Services	232	155
	Nursing Services	873	616
Statistics		2013	2014
	Available Beds	650	947
	Outpatient Visits	66,775	77,555
	Admissions	23,305	24,751
	Average Length of Stay	20 days	16 days
	Death Rate	4.7%	5.1%

Source: [PMGH, 2014], [PMGH, 2014]

However, a comprehensive long-term plan for the extension of these facilities and the associated renovation and relocation had not been prepared. As a result, the facility layout was significantly lacking in functionality. Therefore, the "Port Moresby General Hospital Renovation Project" (Japanese Grant Aid, 1988) involved a survey of existing facilities and prioritization of renovation requests to consolidate and streamline the hospital functions scattered throughout the site. At the same time, additional hospital beds were added (150 pediatric, 160 surgical, 230 internal medicine, and 40 psychiatric beds, for a total of 580 beds), bringing the total number of hospital beds to 911.

As presented in Figure II-4, PMGH is the national top referral hospital with teaching function. However, PMGH also serves for people in the National Capital District (NCD) and surrounding provinces. According to the interviews, patients seek MNCH care from NCD, Gulf, and Central provinces due to delay of development of other provincial hospitals.

In 2014, Thomson Adsett, a private Australian company, prepared a master plan report (70,000 m², about PGK 500 million in total), proposing an extension of the hospital with additional beds and expanded hospital functions, including pediatrics, but there has been no progress since then. According to a master plan report, the number of beds was reported to be 762, as of 2013.

Subsequently, three buildings not included in the master plan report were constructed on the proposed extension site. In addition, the west side of the old main building (1974) has been demolished and a "Cancer Center" was under construction. However, the construction seemed to be currently suspended. The remaining eastern part of the building is used as an intensive care unit. In addition, the number of pediatric beds has decreased to about 80-98 beds, indicating a change in the management of each department in the ward. The obstetrics and gynecology wing, built in 1957, is now 64 years old and is expected to need renewal.

(1) Outline of Division of Obstetrics and Gynecology

The current obstetrics and gynecology building (McGregor Building) was constructed in 1957 including inpatient ward and outpatient clinic. In 1974, the McGregor Building was dedicated to the Division of Obstetrics and Gynecology.

Under the Japanese Grant Aid project in 1988, the obstetrics and gynecology operation theatre building is located in the north of the site, the new main building and the machine building are located in the south, and “the mortuary building” has been extended at the south end (Total area: 15,000 m², three stories above ground in reinforced concrete (RC)), those buildings by the Japanese Grant Aid are in close proximity to the functional layout of the existing building (total area: 18,000 m²). In the development plan prepared in 1988, the pediatric zone was established by combining the existing children’s outpatient clinic with the pediatric ward in the southwest of the new main building [JICA, 1988].

Outline of facilities of the Division is shown in Table II-13. Minor renovations were made in labour, gynecology and antenatal wards in 2013. According to PMGH, major renovations are required to optimize a layout for effective use of space in wards and a clinic area. For social distancing, outdoor seating for patients is also necessary.

Table II-13 Outline of Facilities of the Division of Obstetrics and Gynecology, PMGH

Wards	Major rooms (room name, number & floor space)	No. of Beds*	BOR** (%)
Labour	24 cubicles, 1 neonatal resuscitation room, staff tearoom and change room, 1 examination room with 2 cubicles, sluice room, patient shower/toilets, reception area, unit manager’s office	24 (23)	100
Labour, extension	Open area with 10 beds, 1 examination room with toilet/shower, patients’ toilet/showers, 1 storeroom, 4 private rooms/offices	10	
Operating theatre	3 operating rooms, 1 recovery bay, sluice room, packing room containing non-functioning sterilizer unit, staff toilets/shower/change rooms, staff tearoom, unit manager’s office/reception office, small waiting area	-	-
Ward 9: Gynecology	7 cubicles, nursing station, sluice room, patient’s toilet/shower facilities, staff toilets/shower, clerk’s office, chemotherapy room, staff change and tearoom, several room spaces	46 (36)	85
Ward 10: Antenatal	6 cubicles and verandah, seminar room, library, unit manager’s office, clerk’s office, sluice and laundry rooms, patient toilets/shower, kitchen, staff toilets/shower	36	75
Ward 11: Postnatal	Old special care nursery; patient toilets/shower/laundry (2 blocks), immunization room, examination room, unit manager and clerks’ offices, cashier office	110	100
Ward 12: Gynecology	Used as an isolation ward for COVID-19 patients as of 2021, but not in use as of the end of May 2021 due to inadequate water facilities.		
Clinics situated beneath wards 10 and 11			

Note: *figure in () means actually functioning beds if the beds are not fully functioning.

Source: PMGH

According to the 2019 annual report of the Division, number of staff (Table II-14) is seriously insufficient to provide quality services to increasing number of patients year by year. The total number of deliveries in 2019 was 14,509 (Table II-15), which translates to approximately 2,400 deliveries per full-time doctor and 220 deliveries per midwife per year. Also, they are responsible for human resource development in PMGH, other hospitals, and education institutions. The annual report states the division needs not only doctors, but also midwives especially in labour ward and outpatient clinic.

Table II-14 Number of Staff of the Division of Obstetrics and Gynecology, PMGH

Occupation	Number
Obstetricians/Gynecologists	6
Registrants	16
Midwives	66
Nurses	54
Medical interns (approx. in a year)	24
Community Health Workers (CHWs)	47

Source: PMGH

Table II-15 presents major services provided in the Division for the last three years. In addition, 3,219 major operations and 2,199 minor operations were performed in 2020. The number of visits is around 14,000, with an increasing number of visits without appointments or by referral. Around 15,000 deliveries were undertaken in a year and more than 85% were normal delivery. It could be one of the causes to make BOR 100% in labour and postnatal wards, and make the Division congested.

Table II-15 Major Services Provided in the Division of Obstetrics and Gynecology, PMGH

Service provided	2020	2019	2018***
Total Number of Patients	13,979	14,323	13,495
• Booked	12,351	13,034	12,293
• Un-booked	1,144	942	934
• Referred	484	347	268
Antenatal care	10,524 revisits	14,129 revisits	16,182 revisits
Postnatal care	2,961	3,901	3,435
Normal delivery	12,430 (87.8%)	12,679 (87.4%)	12,504 (86.8%)
Abnormal delivery (vacuum, forceps etc.)	1,735 (12.2%)	1,830 (12.6%)	1,897 (13.2%)
Cesarian section	806 (5.6%)	826 (5.7%)	813 (5.6%)
Still birth	251 (17.7*)	227 (15.6*)	262 (18.2*)
Low birth weight (< 2,500g)	1,406 (9.9%)	1,325 (9.1%)	1130 (8.9%)
Hospital maternal death	18 (129.4**)	15 (105**)	15 (106.1**)

*Per 1000 livebirths

**Per 100,000 livebirths

***Total Number of Patients in 2017

Source: PMGH

(2) Outline of the Division of Paediatrics

The Division of Paediatrics consists of four wards; main children ward, special care nursery, children's day ward, and children cancer ward. The special care nursery was installed in a new building in 2012. The Division experiences constant sewage blockage and flooding during rainy season especially in the main wards and children's outpatient department.

Table II-16 shows number of beds of the Division of Pediatrics. There is no Neonatal Intensive Care Unit (NICU). Beds in High Dependency Unit (HUD) was functioning only 30% and some other beds were not appropriate to quality care. According to interview, some equipment such as infant incubators had been removed due to insufficient space.

Table II-16 Outline of Facilities of the Division of Paediatrics, PMGH

Major Functions	No. of Beds	Functioning	BOR
High Dependency Unit (HDU)	12	30%	100%
General	98	75%	90%
Special care nursery	40 cots and 5 twin cots 16 for mothers*	-	80-90%
Children's day ward	20	80%**	80-90%

*Beds for mothers are not appropriate for Kangaroo Care. **Resuscitation beds are not appropriate and need to be replaced.

Source: PMGH

Table II-17 presents number of staff of the Division of Paediatrics. Fulfillment rates of paediatricians was 62%, and nurses was 66%. According to the interviewees, due to the shortage of doctors and nurses, they are not able to resuscitate newborns or provide adequate post-operative care, and thus are not able to save lives that could have been saved.

Table II-17 Number of Staff of the Division of Paediatrics, PMGH

Occupation	Filled	Approved
Paediatricians	8	13
Nurses (paediatric)	87	132
Medical interns (approx. in a year)*	24*	-
Nutritionist	1	-

*These interns rotate through 4 disciplines (average 6 per rotation) throughout the year.

Source: PMGH

Table II-18 shows major services provided in the Division for the last three years, as well as number of hospital deaths. Decrease in outpatients might be caused by COVID-19 response of PMGH and hesitation of families to access to hospitals due to fear of infection. Comparing with 2018 and 2019, numbers of outpatients and resuscitations were increased.

**Table II-18 Major Services Provided and Number of Deaths
in the Division of Paediatrics, PMGH**

Service provided	2020	2019	2018
Number of outpatients*	36,583	41,757	40,719
Newborn resuscitations	684	689	518
Neonatal surgeries	9	10	10
Hospital Deaths			
Newborn	220	210	202
Infant	71	91	74
Under-5	141	180	118

*Number of attendees in children's outpatient and the consultation clinic.

Source: PMGH

2.4.2 Legislations and Standards

(1) Papua New Guinea Health Facility Guidelines

The Papua New Guinea Health Facility Guidelines (HFG -PNG) were published in 2011 (Table II-19). Its preface states that "PNG will use the Australasian Health Facility Guidelines (AusHFG) referenced here" And the Chapters from A to F of this volume has been adopted.

Table II-19 Outline of the Papua New Guinea Health Facility Guidelines (HFG-PNG)

Part	Title	Contents
A (AUS)	Administrative Provisions	Background, the purpose, the structure of the AusHFG. Information relating to the review of all resources
B (AUS)	Health Facility Briefing and Planning	General requirements, standard components, health planning units, wayfinding, and signage
C (AUS)	Design for Access, Mobility, OHS (Occupational Health and Safety and Welfare) and Security	Physical planning models, approaches to designing facilities, occupational health and safety issues, safety and security considerations.
D (AUS)	Infection Prevention and Control	This has now been replaced with: National Health and Medical Research Council, 2019, Australian Guidelines for the Prevention and Control of Infection in Healthcare, Australian Government, Canberra. (2019)
E (AUS)	Building Services and Environmental Design	Part E has been retired due to variations in the delivery of engineering services across jurisdictions. (June 25, 2020)
F (AUS)	Project Implementation	Furniture, fittings and equipment (FFE), operational commissioning
RDS PNG	Standard Components Room Data Sheet (RDS)	Room details, room fabric, fittings and furniture, fixture, equipment with associated services and services.
RLS PNG	Standard Components Room Layout Sheet (RLS)	1-,2-,4-,6-bed room, Assembly/ Preparation (Pharmacy), Testing Room, Bathroom, Bay - Handwashing, PPE, Birthing Room – LDR, Consult Room, Dirty Utility, Birthing Room, Film Processing, General X-Ray, Gymnasium, Interview Room, Meeting Room, Neonatal Bay, Operating Room, Procedure Room, etc., all 122 rooms.

Note: PNG in the part notation indicates the original standard, and (AUS) indicates the common standard with AusHFG.

Source: [NDoH, 2011]

However, the "HFG-PNG Standard Components" referred to in the architectural design is a proprietary standard and is not common to the AusHFG. In the HFG-PNG Standard Components, a list of interior finishes, medical equipment and fixtures (RDS: Room Data Sheet) and layout drawings (RLS: Room Layout Sheet) are provided for 122 different rooms. The RDS allows for the use of alternative materials with similar properties. The RLS shows the floor plan and development of the main rooms of the hospital, and lays out the medical equipment and supplies; if a different layout is planned, it must conform to the seven criteria (compliance with the text of the guidelines, minimum floor area, number of fixtures, heights and dimensions, clean/dirty separations, accessibility, relative location, and empirical dimensions).

(2) Building Acts and Regulations

The Building Act and Building Regulation were enacted in 1971. The central government has established the Central Building Tribunal, and each province has its own Building Board to administer building.

In the Building Regulations, under Part 3 "Building Classification", "Hospital" is classified as institutional building Class IXA(i) in a public building. Part 10 "Design and Construction" states that "buildings and parts of buildings shall be designed and constructed so as to minimize all hazards to public health and safety, and to protect the safety of their occupants and adjacent property.

Then, in Part 7 "Health and Amenity", drainage, weatherproofing, damp-proofing, provision of bathrooms, closets, kitchens and laundries, sizes of rooms and habitable areas, lighting, ventilation, air handling systems, noise transmission, etc., are specified.

In terms of disaster prevention, there are definitions for measures against fire, earthquake, and heavy wind. The “seismic load” definitions are specified by dividing the country into four regions. The “wind load” definitions provide the design wind speed and regional classification. Standards referenced in the Building Regulations include PNG, Australian, and British standards. There are also a number of acts related to the Building Acts and Regulations (Table II-20).

Table II-20 Outline of the Building Acts, Regulations, and Related Acts

Building Acts 1971		Building Regulations 1994			
1	Preliminary	1	Preliminary (Seismic Zoning, Prescribed Wind Velocities)		
2	Application of Act	2	Administration		
3	Administration	3	Building Classification		
4	Approvals	4	Site Requirements		
5	Requirements by Building Boards	5	Projections Beyond Street Alignment		
6	Appeals, etc.	6	Building Height Limitations		
7	Legal Provisions	7	Health and Amenity		
8	Miscellaneous	8	Provisions for Fire		
List of Related Acts		9	Hazardous Occupancies		
<ul style="list-style-type: none"> • Land Act 1996 • Fire Service Act 1962 • National Water Supply and Sewerage Act 1986 • Industrial Safety (Lifts) Order • Environmental Contaminants Act 1978 • Professional Engineers (Registration) Act 1986 • Industrial Safety, Health and Welfare Act 1961 • Public Health Act 1973 • Employment Act 1978 • Physical Planning Act 1989 • Worker’s Compensation Act 1978 • Water Resources Act 1982 		10	Design and Construction		
		11	Building Services		
		12	Special Class Requirements		
		13	Declared Area Buildings		
		14	Miscellaneous Provisions		
		15	Access for Persons with Disabilities		
		16	Repeal		
		17	Savings and Transitional Provisions		
				Schedule 1: Seismic Zones in Papua New Guinea	
				Schedule 2: Application for approval, permit, certificate of completion, notice of appeal	
				Schedule 3: Fees	

Source: [Gov of PNG, 1971], [Gov of PNG, 1994], The Survey Team

2.4.3 Process from Planning to Construction

In the National Capital District (NCD), an application for a development permit is required prior to applying for a building permit, and applications for permits a-d in the table below are required (Figure II-6, Table II-21).



Source: The Survey Team

Figure II-6 Process from Planning to Construction

Table II-21 Development and Permit Application

Title	Jurisdiction	Application Content
Development Permit Application	a	NCD Building Board
		NCD Physical Planning Board
	b	EDA RANU
Building Permit Application	c	Fire Service
	d	Department of Works

Source: The Survey Team

2.4.4 Maintenance System

The engineers responsible for hospital maintenance belong to the core hospital and there are regulations governing the facilities under their jurisdiction. Regular inspections are conducted. On the other hand, there is the basic issue of lack of progress in the necessary maintenance and renovation.

2.5 Medical Equipment

Table II-22 illustrates the availability of maternal health-related equipment and supplies as a result of the survey in 2012. Most of the items are basic and should be available in all the health facilities for MNCH services. However, some were not available in secondary facilities and lower. BEmOC was provided by around 60% of primary facilities and 89% in secondary and tertiary facilities. Comprehensive EmOC (CEmOC) was provided in 83% of secondary and tertiary facilities. Regarding newborn care, only 14% of the facilities had resuscitation bag for the newborn even at primary facilities, proportion of existing essential equipment is low at the community level health facilities [World Bank, 2017].

Table II-22 Availability of Maternal Health-Related Equipment and Supplies

ANC, Delivery and Neonatal Equipment and Supplies	Primary				Secondary		Tertiary	
	Public, %	Church, %	Public, %	Church, %	Public, %	Church, %	Public, %	Church, %
Fetal stethoscope (or monitor)	27	93	25	100	14	78	1	100
Stethoscope and blood pressure cuff	22	76	25	100	16	89	1	100
Tape measure	23	79	22	88	16	89	1	100
Scale	28	97	25	100	16	89	1	100
Ultrasound machine (and gel)	28	97	25	100	17	94	1	100
Facility has at least two skilled birth attendants covering 24 hours a day	21	72	19	76	18	100	1	100
Delivery kit (instruments, supplies)	25	86	25	100	18	100	1	100
Stethoscope	10	34	11	44	15	83	1	100
Partograph	11	38	13	52	14	78	1	100
Pelvic procedure instruments such as speculum	18	62	22	88	16	89	1	100
Delivery light	24	83	24	96	18	100	1	100
Sterilizer	15	52	16	64	13	72	1	100
Vacuum extractor	14	48	21	84	18	100	1	100
Forceps	25	86	25	100	18	100	1	100
Manual vacuum aspirator/suction bulb	27	93	25	100	17	94	1	100
Resuscitation bag, newborn	4	14	4	16	15	83	1	100
Eye drops or ointment for newborn	27	93	25	100	18	100	1	100
Needles and syringes	28	97	25	100	18	100	1	100
Sterile C-section instrument kits	28	97	25	100	18	100	1	100
Cord supplies for newborn: clamps, ties, scissors	2	7	5	20	12	67	1	100
IV sets, including sterilized needle and tube	27	93	25	100	17	94	1	100
IV fluids, including normal saline and ringer lactate	29	100	25	100	18	100	1	100

Source: [World Bank, 2017]

2.5.1 Medical Equipment and its Management Status in PMGH

An inventory survey of medical equipment was conducted in 2018, but the inventory has not been updated since then, and some equipment was donated without the involvement of the hospital's Biomedical Engineering Division, making it difficult to obtain a complete picture in the Survey.

According to the photos of the hospital and medical equipment in Attachment 2, overall, the equipment has been in use for a long time and many of them have broken down. Broken equipment seems to be stored scattered in a corner of the examination area or in an empty room. It suggests that one of the 5S principle of "Structurise - eliminate unnecessary items" has not been achieved. In addition, the equipment seems to be placed in the aisles or halls, it is considered that "Systemise - placing equipment in proper place" has not

been thoroughly implemented. "Standardise - keeping one's surroundings and workplace clean" seems to be done at a certain level, but there might be rooms for further improvement.

2.5.2 Maintenance System

The Administration Department of PMGH has a budget for maintenance of medical equipment of major government hospitals, while the Medical Engineering Department of PMGH provides repairing. When the Medical Engineering Department receives the application for repair, the department investigates the status of the equipment and fixes it with spare parts procured by the Administration Department, or outsources to a manufacturer if the condition cannot be handled by PMGH. The Medical Engineering Department also provides periodic inspection in accordance with the guidance of NDoH. According to the interviews of the survey, due to insufficient budget and human resources, timely repair could be sometimes difficult.

2.6 Human Resource for Health

The World Bank issued a warning that woefully inadequate data on the size, characteristics, and deployment of the current publicly financed workforce.

As it is shown in Table II-23 although the data on the numbers of health workforce such as medical doctors and nurses were not accurate, estimated numbers per 10,000 populations were 0.5 in medical doctors and 5.3 in nurses in 2012. According to the interviews with PMGH, even in the national top referral hospital has vacancies of specialized doctors and nurses.

Table II-23 Numbers of Health Workforce

Title	2000	2008	2010	2012
Medical doctor	275	333	376	No data
Nurse and midwife	2,841	2,844	3,643	No data
Dentist	90	121	No data	No data
Laboratory technician	No data	No data	No data	No data
Pharmacist	No data	No data	No data	354
Other health specialists	No data	2,261	4,880	No data
Health management and support	No data	1,821	No data	No data
Community and traditional health	No data	3,883	No data	No data

Source: [WHO, 2017]

Comparing with other countries in the Pacific Region, PNG has the lowest ratio of medical doctors per 1,000 populations of 0.055, which is significantly lower than Solomon Islands (0.191) and Vanuatu (0.186). Similar findings are also demonstrated in the case of the ratio of nurses and midwives per 1,000 populations of 0.532 in PNG, compared with Fiji (2.938), Vanuatu (2.218), and the Solomon Islands (1.78).

Furthermore, when these professional categories are integrated, PNG has 0.587 per 1,000 populations, which the density is below the recommended WHO international standard of 2.3 per 1,000.

Table II-24 summarizes preservice educations for health workers.

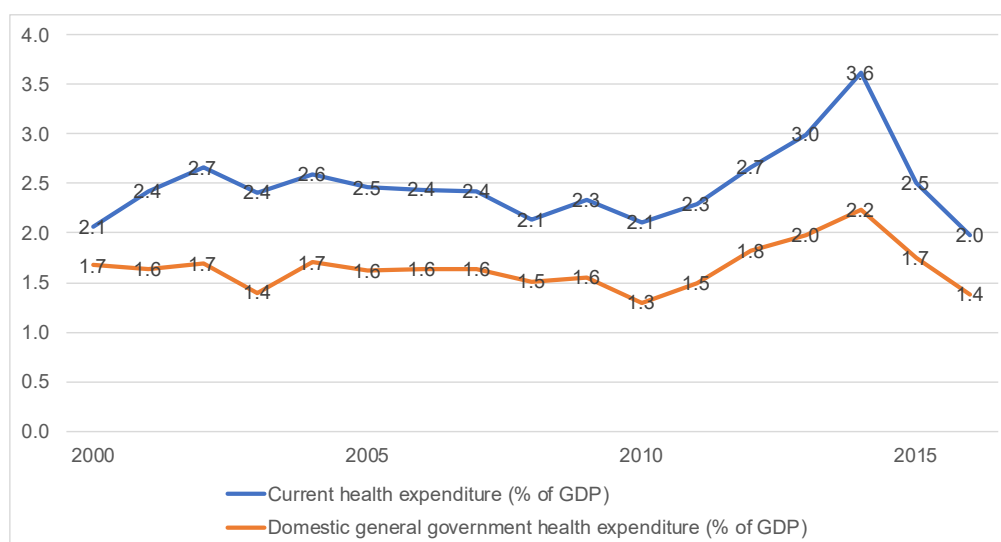
Table II-24 Preservice Educations for Health Workforce

Category	Entry Year	Duration (Years)	Level	Provider	No. of Schools
Community Health Worker (CHW)	10	2	Certificate	Churches and provincial government	12
Nursing	12	3	Diploma in General Nursing	Churches and provincial government	7
Bachelor of Nursing	12	4	Degree	School of Health Sciences, Pacific Adventist University	1
Physical Therapist	12	4	Degree	Divine Word University	1
Bachelor of Rural Health					
Environmental Health Officer					
Bachelor of Health Management					
Bachelor of Oral Health	12	4	Degree	School of Medicine and Health Sciences (SOMHS), University of PNG (UPNG)	1
Bachelor of Dental Surgery					
Bachelor of Pharmacy					
Bachelor of Medical Laboratory Science					
Bachelor of Medical Imaging	12	5	Degree	Taurama Campus, UPNG-SOMHS	1
Bachelor of Medicine and Bachelor of Surgery					

Source: [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M., 2019]

2.7 Health Finance

The health expenditure by government has not shown significant growth over the medium term. As shown in Figure II-7, the current health expenditure against the gross domestic product (GDP) has been significantly low compared with the WHO recommended value (5% or more) [WHO, 2016].



Source: [World Bank, 2019]

Figure II-7 Trends in Health Expenditure (as % of GDP), 2000-2016

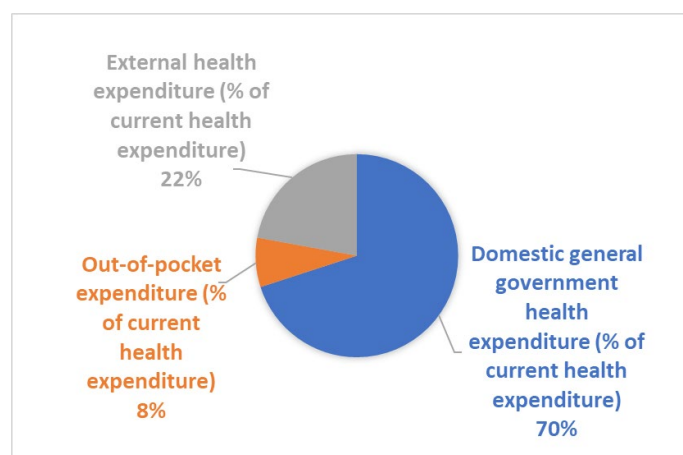
Despite current steady growth of health expenditure per capita, current health expenditure as a proportion of GDP has been stagnating as presented in Table II-25. This fact implies that priority of health sector is still low even though the economy has been growing to some extent.

Table II-25 Major Indicators of Health Finance, 2000-2016

	2000	2005	2010	2016
Current health expenditure per capita (current USD)	19.5	28.5	42.3	55.2
Domestic general government health expenditure (% of general government expenditure)	8.3	7.8	7.1	7.2

Source: [World Bank]

The government’s main financing is tax-based. Sources of health insurance and private sector in health care are significantly low. The total out-of-pocket (OOP) expenditure on health care is only 8% of the current health expenditure. However, external assistance by the development partners still makes up a certain share of the current health expenditure (22%) (Figure II-8).



Source: [World Bank, 2019]

Figure II-8 Current Health Expenditure by Source of Revenue, 2016

There are some issues related to health finance to be solved such as low expenditure rate of disbursed funds at the provincial level and below, and inequities of resource allocation across the country, delays in financial warrant releases from the Department of Treasury, and lack of credibility of many of the budgets developed [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019]. Delay in financial warrant releases causes delay of the delivery of health function grants for operations up to six months, which means underutilization of services for the first half of the year.

A policy of “Free Primary Health Care and Subsidized Specialist Services” by NDoH is not functionally well because of the persistent delay of distribution of funds at the provincial level. In the end, the facilities force to receive user fees to compensate for lack of funds [NDoH, 2013].

To address health system fragmentation, the 2007 Provincial Health Authority (PHA) Act enabled provincial governments to establish a PHA to be responsible for both primary and secondary health care in their province. However, under this legislation, it is not mandatory for provincial governments to establish a PHA. Fund flows in PHA provinces differ from non-PHA provinces. As a result, Corporate Plan 2013-2015 by NDoH said that “this dual health system at the provincial level have caused much confusion and disagreements over the manner in which health services have been provided to the people.” And WHO strongly recommended to improve the efficiency in strengthening financial management system.

The rising budget deficits and associated increases in public debt confronting the government make it difficult for the government to comply with the legislated debt ceiling of 45% of GDP set out in the Fiscal Responsibility Act (FRA) as amended in 2019 within the foreseeable future. The debt ceilings in the FRA have already been raised twice, and more will be required following the COVID-19 crisis [Satish Chand, 2020].

The economy was already weakening in the lead up to the COVID-19 lockdowns. According to the interview with the United Nations Children’s Fund (UNICEF) in PNG, the health budget has been decreasing for the past few years, which has stopped the recruitment of health workers. MNCH services at Mt. Hagen General Hospital have been suspended due to financial difficulties.

In the interview with the World Bank, they have also been paying attention to PNG's financial difficulties in health, and they have been analyzing and considering solutions. Additional funding is being planned for response to COVID-19 such as supplies and medical services.

2.8 Drugs and Medical Supplies

The Central Supplies and Tenders Board (CSTB) is responsible for procuring all major essential medicines, equipment, and supplies.

The availability of common drugs and medical supplies has declined over the past decade. The availability of six essential drugs and supplies (paracetamol, sulfadoxine and pyrimethamine, chloroquine, TB blister packs, condoms, liniment) had declined from 82% in 2002 to 74% in 2012 [Howes S, Mako AA, Swan A, Walton G, Webster T, 2014]. One of the reasons above, two-thirds of the provincial authorities allocated little or no budget for drug and medical supply distribution within the provinces [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019], even though NDoH aims to strengthen internal procurement processes for timely and reliable delivery of drugs, equipment, and supplies to our health facilities. Critical weaknesses in the medical supply chain within the province was indicated such as stock out of medicines for months and closure of facilities [McNee, Andrew, 2011].

2.9 Health Management Information System

There are four core national data collection on integrated health and management information system as it is shown in Table II-26. NDOH has produced an annual performance report since 2001 [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019].

Table II-26 Four Core National Health Management Information System

Name of Information System	Data Collected
National Health Information System	Monthly data from every health center and public hospital in the country focusing on PHC
Discharge Health Information System	Data on every inpatient record, from health centers to tertiary hospitals
National Inventory of Health Facilities	Annual data on core medical supplies, water and sanitation, power sources, staffing levels, and status of the infrastructure
m-Supply System	Medical supply procurement, warehousing, and distribution functions. (Vaccines are distributed from the Port Moresby Badilli Medical Store directly to each of the provincial EPI chain officers.)

Source: [Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. , 2019]

According to Provincial and District Health Profiles 2018, health data collected through the national health information system are listed in Table II-27.

Table II-27 Major Indicators Collected through National Health Information System

Provinces	Population	Outpatient Visits ¹	Facility Births	Antenatal Care	Family Planning ²	Low Birth Weight ³	Wasting among U5 ⁴	Measles Vaccine ⁵	Outreach Clinics ⁶	Pneumonia Death of Children
National	-	1.3	40%	54%	81	-	22.6%	37%	29	-
Rigo District, Central Province (Kwikila)	67,316	0.8	26%	40%	61	6.1%	20.1%	21%	28	0%
Abau District, Central Province (Kuopiano)	66,196	0.6	18%	33%	40	5.3%	21.3%	34%	48	1.8%
Port Moresby, National Capital District	429,447	1.0	105%	98%	111	8.4%	10.0%	64%	2	1.9%
East New Britain	393,129	1.3	69%	71%	104	-	19.7%	48%	22	1.6%
Enga	514,672	1.0	25%	46%	40	-	25.2%	35%	12	3.1%
East Sepik	510,517	1.1	28%	46%	63	-	25.9%	25%	12	1.2%

NOTE: 1- Number of outpatient visits per person per year; 2- Couple-years protection provided per 1,000 women aged 15-44 years;
3- Less than 2,500 g; 4- Children under-five are underweight for their age; 5- Children under-five vaccinated against measles;
6- Number of outreach clinics per 1,000 children
Source: [NDoH]

Chapter 3 Development Partners

3.1 World Health Organization (WHO)

The Maternal and Child Health Initiative (MCHI) in Papua New Guinea (PNG) was a multi-stakeholder Initiative that commenced in 2012 and concluded its contract in 2015. It was led by the National Department of Health, Independent State of Papua New Guinea (NDoH) in collaboration with the WHO, University of Technology of Sydney, and funded by the Australian government. Through improvements to the standard of midwifery clinical teaching and practice in the five midwifery schools in PNG, and the quality of obstetric care in the two regions of PNG, the aim of the initiative was to create a positive impact on PNG's high rates of maternal and newborn death.

The summary of the key findings and lessons learned presented by the MCHI outcomes is found below. These have contributed to the future recommendations as follows:

- Effective implementation of strategy, processes and personnel for the delivery of the initiative.
- Establish working relationships with NDoH and other stakeholders.
- Increased learning opportunities for midwifery educators.
- Increased midwifery educators teaching capacity. (Support provided for the midwifery schools in terms of resources, and professional development opportunities, and having adequate numbers of midwifery educators.)
- Improved clinical education experience for students.
- Increased quantity and quality of midwifery graduates.
- Increased technical capacity of clinicians in participating sites.
- Improved quality of midwifery curricula.
- Progress toward the regulation of midwives.
- Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills.
- Ongoing supportive environment for clinical midwifery facilitators and MCHI obstetricians
- Conduct longitudinal research of PNG midwifery graduates. (Sandaun, Hela, Gulf, and Southern Highlands have low supervised birth rates and would benefit from additional midwives, and Northern, Central, East Sepik, Enga, and Madang provinces had minimal graduates despite large numbers of childbearing women.)

3.2 Asian Development Bank (ADB)

PNG is upgrading rural health facilities, training health workers, and rolling out an electronic health information system with ADB and the Government of Australia. ADB also provides cooperation to improve the health services in two districts in each of eight provinces² - Eastern Highlands, East Sepik, Enga, Milne Bay, Western Highlands, West New Britain, Morobe, and the Autonomous Region of Bougainville. This

² Alotau District, Bonga, Bougainville, Bubuleta, Central Bougainville District, East Sepik Province, Eastern Highlands Province, Enga Province, Gurney, Kandrian District, Kompian District, Lagaip-Porgera District, Milne Bay Province, Morobe Province, Mul-Baiyer District, South Bougainville District, Talasea District, Tambul-Nebilyer District, West New Britain Province, Western Highlands Province

Rural Primary Health Service Delivery Project started in 2013, has been contributing to formalize links between the state and health providers, upgrade health facilities, train community workers, and roll out a health and sanitation campaign.

The Health Sector Support Program (approved in June 2018) supports the fiscal policy, public financial management (PFM), and health sector reforms while providing critical financing during a period of sharp fiscal tightening that will enable the government to safeguard funding for essential health and other basic services. These two elements reinforce each other: (i) the policy-based actions supporting an improved operational context to gain more benefits from health sector investments and (ii) the health sector investments supporting the implementation of priority policies [ADB, 2018].

In November 2020, ADB approved COVID-19 Rapid Response program, a loan assistance in cooperation with JICA. The program covers wide-range of activities to stimulate economy and provide social protection. For health sector, the program aim to strengthen health system by building temporary isolation facilities for COVID-19 patients, training frontline health workers, rapidly procuring test kits and personal protective equipment, and improving the water supply for communities, schools, and clinics [ADB, 2020], [JICA, 2021].

3.3 United Nations Children’s Fund (UNICEF)

Mainly in the health area, UNICEF PNG focused on strengthening immunization system and services, and improving maternal and newborn care.

Strengthening the immunization system includes training of health workers, building their skills, improving vaccine storage and transportation systems, and strengthening social mobilization and communication. UNICEF procures all vaccines for routine and supplementary immunization activities.

Improved comprehensive package of maternal and early newborn care is also conducted in line with the government’s national newborn care policy that places emphasis on training and mentoring of health workers both at the hospital and PHC facilities on maternal and newborn care including prevention of mother to child transmission of HIV. The program focuses on improving the knowledge and practices of mothers and caregivers on life-saving practices such as kangaroo care.

3.4 The World Bank

According to the NDoH, IMPACT Health Project, which is under preparation will aim to increase quality health services through capacity development of the frontline health workers in the selected provinces. The World Bank provides a loan (USD 30 million) to the project. To enhance the health system, the project will consist of four components: 1) Increase service delivery readiness and community-based service delivery; 2) Improve frontline service delivery performance; 3) Project management; and 4) Contingent emergency response [NDoH, 2019].

Through the Fast-track COVID-19 Response Program, USD 20 million IDA credits was allocated for the COVID-19 Emergency Responses Project. The project aims to prevent, detect, and respond to the threat posed by COVID-19 and strengthen national systems for public health in PNG by improving emergency

preparedness and response, strengthening health systems, and managing implementation and monitoring and evaluation [World Bank, May 2020].

3.5 Australian Department of Foreign Affairs and Trade (DFAT)

Australia is the major donor to the health sector, providing about 20% of the Government of PNG's health expenditure.

DFAT considers that the issues of health system in PNG are inadequate infrastructure, poor access to facilities and medical supplies, and workforce shortages, therefore, DFAT puts high priority in three outcome areas: health security; rural health care; and family planning [DFAT, 2021].

The following activities have conducted in the health area assistance:

- PNG-Australia Transition to Health (PATH), 2020 - 2025
To provide financial and technical support to strengthen health systems through capacity building of provincial health departments in Western, Western Mountain, West Sepik, East New Britain, Morobe, and Bougainville provinces. A detailed action plan is currently being developed.
- Rehabilitation of Angau Hospital in Morobe Province is on track for completion in December 2020 to strengthen Morobe's broader health system, including integrating referral and specialist service delivery at Angau General Hospital with the primary health care services provided by lower-level facilities throughout the province. (2013 – 2021)
- To tackle Multidrug-Resistant-Tuberculosis (MDR-TB), improve malaria diagnosis capacity, and respond to disease outbreaks. In Daru, Western Province, treatment success rates increased from 81% to 87% for drug-resistant TB; contributed to innovative approaches to case detection and community-based treatment, and improved infrastructure and staff capacity at the Daru General Hospital.
- Malaria found accuracy in the diagnosis of malaria improved from less than 60% in 2013 to over 80% in 2018.
- Building essential health infrastructure, including 23 fully equipped community health posts and health centers (out of the proposed 32) in the rural and remote areas.
- Training of skilled birth attendants (midwives, nurses and doctors). During the reporting period, 75 midwifery and 20 nursing in-country scholarships were provided and 377 provincial health personnel (311 women and 66 men) were trained in integrated rural health and hospital service delivery.
- Support of taking forward major policy initiatives including roll out of Provincial Health Authority structures to new provinces.
- Strengthening of medical supply systems.
- Integrated HIV, Reproductive and Voluntary Family Planning Services (which were delivered through non-governmental organizations).

In response to COVID-19 and to support reconstruction, DFAT has announced a comprehensive support package in March 2021 summarized as follows:

- Provision of 8,000 doses of vaccine for frontline health workers and support for emergency response and vaccination by the Australian Medical Assistance Team (AUSMAT);

- Financial and technical support to the Provincial Health Authorities for emergency management response;
- Provision of emergency triage and temporary acute care facilities at PMGH and support for the existing 45-bed laboratory and isolation facility;
- Provision of funding to St. Johns PNG, an ambulance service provider, for the construction of an isolation facility for the reception of 120 moderately ill patients; and
- Provision of personal protective equipment and other medical supplies.

3.6 Japan

Table II-28 presents Japan’s cooperation projects for health sector development of PNG. After late-2000, community interventions were implemented to change behavior relevant to health care. Other than the listed projects, JICA has been dispatching volunteers in the fields of community health, communicable diseases, and drug supply management.

Table II-28 Japan’s Health Sector Cooperation for PNG

Period	Scheme	Project
1988 – 1989	Grant	Port Moresby General Hospital Improvement Project
1991 – 1993		Rural Hospitals Improvement Project (provincial hospitals in Morobe, Western Highlands, East Sepik, Chinbu, East New Britain, Wabag, Madang, Galf, Sandaun, and Western)
1999 – 2008, 2010		Provision of specific medical equipment for communicable diseases (EPI, measles/neonatal tetanus, mother and child health)
2003		Provision of specific medical equipment (support for rural major hospitals)
2004		Provision of specific medical equipment (measles)
2010 – 2015		Provision of specific medical equipment for Pacific Program to eliminate Lymphatic Filariasis
2009	Grassroots grant	Grassroots human security grant aid for “the project for expansion of Rumginae community health worker training school”
2009	Emergency	Cholera
2021	Loan	COVID-19 Crisis Response Emergency Support Loan
2006 - 2009	Grassroots technical cooperation	Project for rural community development support (water supply, primary health care and others) in the Gulf Province”
2009 - 2012		“Health improvement project by community people in East Sepic Province: Let’s protect lives and health of women and children by our hands
2011		Project for improvement of Tentenga rural health center
2018 – 2022		The Project for Empowerment of Women in Mountains Area

Source: [JICA, 2012], [MOFA, Japan, 2018], [JICA, 2016], [JICA, 2021]

3.7 Assistance for Responding to COVID-19 from Development Partners

The collected information on development partners’ assistance against COVID-19 is summarized in Table II-29. Major response and supports from development partners are summarized in Attachment 4.

Table II-29 Development Partners' Assistance against COVID-19

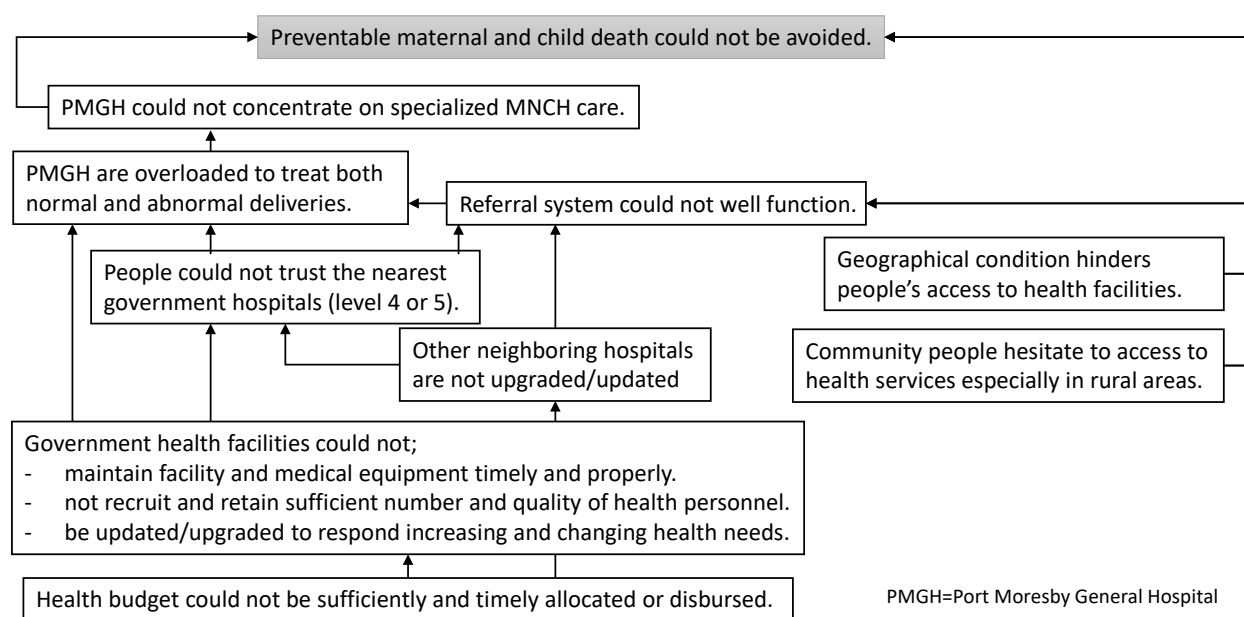
Clinical Services	Capacity of PCR test, case management	✓	DFAT, UN
	Nosocomial infection control	✓	MSF, WHO
	Procurement of personal protection equipment (PPE), PCR test kits, medical/isolation tents, etc.	✓	WHO, UNICEF, China, Australia, Private sectors
	Development of isolation wards, disinfection of health facilities and equipment	✓	UN
Public Health Services	Risk Communication and Community Engagement (RCCE)	✓	UNICEF, WHO, NGO
	Continuity of essential health services such as EPI, cancer screening, follow-up of chronic disease patients	✓	WHO, USAID
	Hygiene promotion (education material, sanitation facilities, behavior change, etc.)	✓	UNICEF, WHO, Japan
	Surveillance and contact tracking	✓	WHO, Australia
	Psychological care for health personnel and health volunteers		
Entire Health System	Preparedness and response to first introduction of COVID-19 for PICs not reporting cases to be addressed via simulation exercises	✓	WHO, UNICEF
	Business continuity planning and establishing the new normal for affected PICs as they consider easing of restrictions	✓	WHO
	Sharing experiences and lessons learned in preparedness and response	✓	WHO, DFAT
	Funding	✓	WB, UN

Source: The Survey Team

Chapter 4 Priority Issues in Maternal, Newborn and Child Health in Papua New Guinea

4.1 Overview

Through desktop research and virtual interviews, challenges in maternal, newborn and child health (MNCH) in Papua New Guinea (PNG) could be illustrated as shown in Figure II-9. Due to the limitation of the survey, which was conducted without field survey, other factors such as observations on skills, daily practices, actual conditions of facility and equipment, and in-depth discussions with concerned personnel could not be considered. However, the Survey Team suggested that preventable maternal and child death could not be avoided because of insufficient quality and quantity of resources due to weakness of health system, as well as challenges in access to health services by community people, especially in the rural areas.

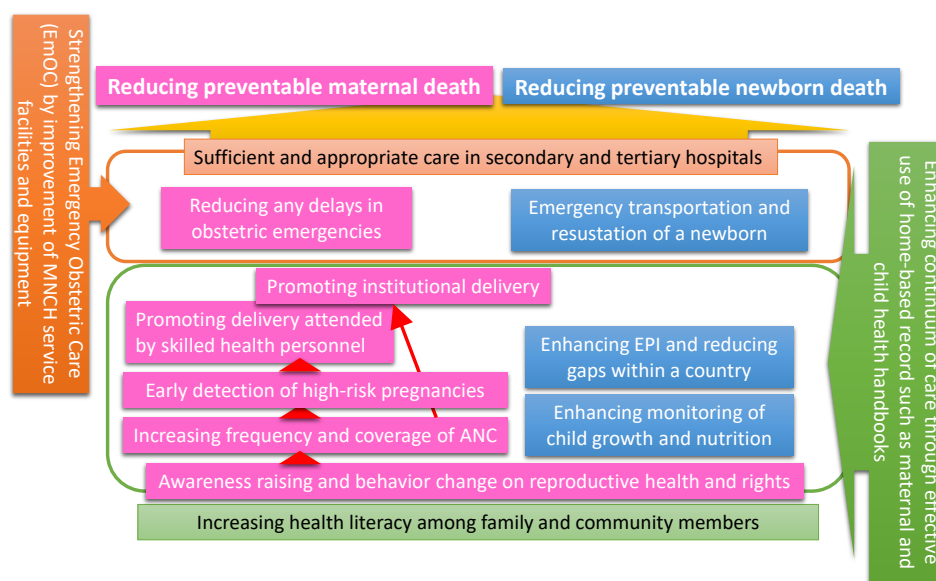


Source: The Survey Team

Figure II-9 Challenges in MNCH in PNG

Such problem structure should be approached holistically, from community, primary, secondary to tertiary as presented in Figure II-10. Community health approaches to increase health literacy of the people, not only women, to be well aware on the importance of monitoring of mothers and children's health to take appropriate action in emergency situation. At the same time, sufficient clinical care should be provided in secondary and tertiary hospitals. Through these approaches from community health and clinical care, preventable maternal and child death could be reduced.

Situation analysis and needs assessment at the community to secondary level should be done in the future. Then, challenges and priority issues could be identified to formulate further cooperation programs or projects targeting these levels.



Source: The Survey Team

Figure II-10 Concept of Holistic Approach to Reduce Preventable Maternal and Child Death

4.2 Challenged on MNCH in the Port Moresby General Hospital

Based on the information collected in the Survey, the issues related to MNCH care at the Port Moresby General Hospital (PNGH) are summarized as follows:

Due to the delay in the development of the Central Provincial Hospital and the inability to handle difficult deliveries, PMGH, which should focus on providing specialized or advanced medical services for difficult cases, effectively functions as the provincial hospital of Central Province. However, the facilities and equipment are deteriorating. However, due to the aging and malfunctioning of facilities and equipment, as well as the lack of human resources, the hospital is currently unable to provide adequate care.

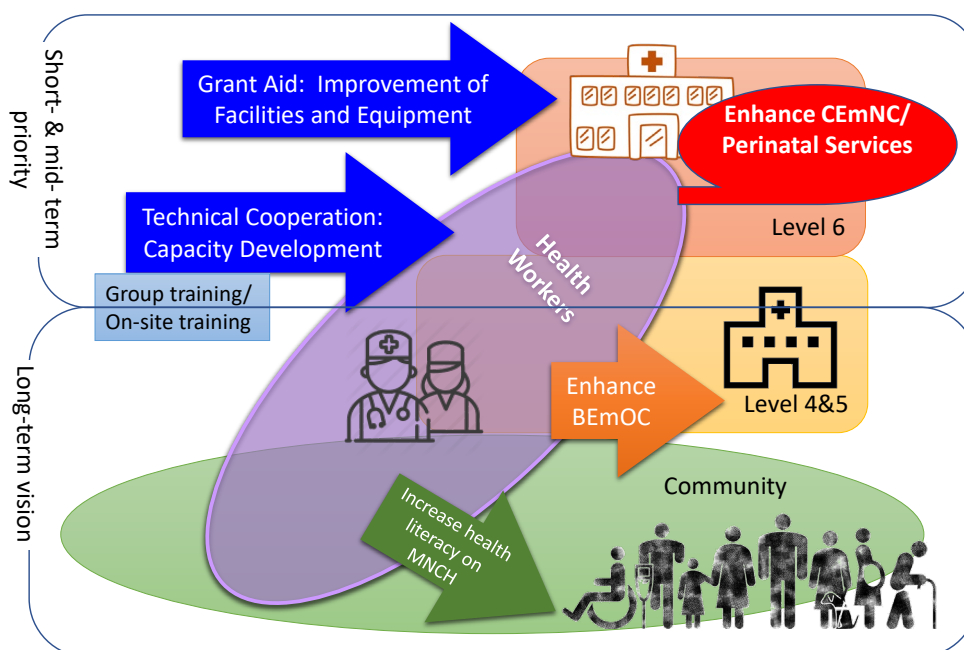
Since 2014, there has been a decreasing trend in perinatal deaths as the cesarean section rate shows an increasing trend (Figure II-5). However, there has been no significant improvement in maternal deaths (Table II-10), which can be attributed to factors beyond the control of hospitals alone, such as unrecognized diseases that may have contributed to the deaths of pregnant women, and delays in diagnosis and treatment. As for newborns, 70% of deaths within the first week of life occurred in low birth weight infants, and some of these deaths could have been prevented by proper warming and care.

In light of these facts, PMGH seems to be expected to continue to handle normal deliveries for the time being until the perinatal care facilities in the surrounding areas are established, but will also be able to handle emergencies (treatment of eclampsia and preeclampsia, handling abnormal bleeding during delivery, performing emergency cesarean sections, resuscitating newborns with resuscitation bags and masks, and using incubators to care for low birth weight babies). In particular, as the national referral and education hospital, PMGH should be able to provide high quality MNCH care, especially comprehensive emergency obstetric and newborn care (CEmONC) including neonatal resuscitation, so that they can serve as models for future training at regional, provincial and divisional hospitals to bottom-up quality of MNCH care of PNG.

Chapter 5 Recommendations on Future JICA's Cooperation

5.1 Conceptual Framework

Figure II-11 illustrates the overall picture of conceptual framework of future Japan International Cooperation Agency (JICA) cooperation for maternal, newborn and child health (MNCH) in Papua New Guinea (PNG). To increase effectiveness of facility and equipment improvement by grant aid scheme, technical cooperation should be combined to develop capacity for appropriate operation and maintenance of the improved facility and equipment.



Source: The Survey Team

Figure II-11 Proposed Conceptual Framework of Cooperation for MNCH in PNG

Although a recommendation in the Survey targets the Port Moresby General Hospital (PMGH), the other regional hospitals should be well considered for further improvement. Because, around 80% of population lives in the rural area and widely scattered in most of all provinces, not concentrated in the capital district. Although distance is one of detracting factors to access to health services, others such as education and socioeconomic status are related to care seeking behavior [Alice L Kassens and Yana M Rodgers, 2019]. According to key informant interviews, although a health facility is improved, rural people tend to hesitate to use it because they feel shy or timid toward the health workers, traditional belief, etc. Therefore, such psychological barriers to access to health facility among rural women should be removed.

As for the combination of grant aid and technical cooperation, geographical options could be considered; to cover same province from community to Level 5, to input to Level 6 hospital and cover some communities in other provinces for on-site technical assistance or conduct group trainings in the capital district to cover more health workers. The survey team recommends enhancing perinatal care in PMGH as a short- and mid-term priority in accordance with the analysis in Chapter 4.

For long term vision, the targets should be selected a regional hospital (level 6) and lower facilities in its coverage area. Table II-30 shows tentative criteria to consider candidate grant aid project. For technical cooperation project, leadership and commitment of local governments and community may also be considered.

Table II-30 Tentative Criteria for Candidate Site(s) Selection for Long-Term Vision

Common	<ul style="list-style-type: none"> • Consistency with the national health policy and development strategy • Higher burden in MNCH in the country • Referral system is somehow functioning • Basic infrastructure such as electricity, water supply, and road network are prepared. • Sufficient health workers and operation budget are/could be ensured. • Duplication with other similar external cooperation is not planned/implemented.
Hospitals	<ul style="list-style-type: none"> • Statistical information on demography, cause-specific morbidity/mortality, and coverage population are available for confirmation of existing needs and demand forecast. • Deterioration and damage of the existing facilities are considerable. • Geographical features are feasible and appropriate land space could be ensured for construction works. • Safety and security of material transportation access and construction site could be ensured.
Equipment	<ul style="list-style-type: none"> • It is essential to provide appropriate MNCH services. • It is highly prioritized for replace/renewal/newly installation. • Quantity is not enough against service demand/needs. • It could be appropriately operated by health workers in the facility. • The facility could ensure appropriate staff for maintenance works. • Spare parts and supplies could be purchased without serious difficulty.

Source: The Survey Team

5.2 Useful Cooperation Resources of Japan

Japan has accumulated experiences to develop health facilities and equipment for MNCH improvement with capacity development of health personnel for all the levels of referral system. Also, JICA has supported community engagement to promote collaboration among households, health volunteers, and health personnel at the primary level. In addition, JICA could mobilize experiences and knowledges on continuum of care for MNCH in Japan.

5.3 Proposed Program for the Short- and Mid-Term Priority

Based on the aforementioned concept and framework, the Survey Team proposes the cooperation program shown in Table II-31 as a means of addressing short- and mid-term priorities, in order to contribute to the improvement of the capacity of PMGH, the country's top referral hospital, in terms of both hardware and software to avoid preventable maternal and newborn deaths.

Table II-31 Capacity Development Program to Reduce Preventable Maternal and Child Death in Papua New Guinea

Goal: Health service providers in PNG can avoid preventable maternal and child death with sufficient facility and medical equipment, as well as technical capability.		
Strengthening of capacity of emergency obstetric and newborn care (EmONC) in hospitals	Improvement of facility and medical equipment for perinatal medical care	Grant aid
	Capacity development for appropriate use and maintenance of medical equipment	Technical cooperation
	Capacity development for EmONC	Technical cooperation
Increase quantity and quality of human resource for health on EmONC	Strengthening of leadership of PMGH as a teaching hospital for other hospitals in provinces and districts	
	Promotion of kangaroo care	UNICEF
Enhancement of health service providing system at primary and secondary levels		ADB/DFAT (HSSDP)
Empowerment of community on primary health care (PHC) and access to health services		World Bank (IMPACT Health)

Source: The Survey Team

The proposed program focusses on strengthening the perinatal care function of PMGH, which is overcapacity to receive patients from the National Capital District (NCD) and surrounding provinces. First of all, through the grant aid, the Perinatal Medical Center (PMC) of PMGH will be established. And technical cooperation will be provided to strengthen the capacity for maintenance and proper use of medical equipment, which has become an issue. At the same time, a technical cooperation project will be implemented to improve the capacity of medical personnel in comprehensive obstetric and newborn care (CEmONC) in order to improve the quality of services by utilizing the introduced equipment and materials. Furthermore, in order to support the important role of the hospital as a teaching hospital and to improve the quality and quantity of human resources engaged in perinatal care, the project will support human resource development activities for subordinate medical facilities and surrounding areas in cooperation with existing education and training initiatives.

In addition, effective linkage with existing efforts by other development partners will be promoted. For example, UNICEF has been providing technical support for the promotion of kangaroo care in hospitals. The proposed project could collaborate with such activity to create synergistic effect. Also, linkage with other projects in communities, as well as primary and secondary levels, and villages, could be effective to achieve the long-term vision.

5.3.1 Improvement of Health Facility

To improve MNCH indicators especially maternal mortality ratio (MMR) and infant mortality rate (IMR), avoiding preventable deaths during perinatal period could be one of the effective measurements. Therefore, development of the Perinatal Medical Center (PMC) at PMGH could be expected to enhance perinatal care³, which is the intensive care of mothers and children during perinatal period. However, the following preconditions will be required to the Government of PNG; (1) securing a site for the expansion, (2) securing a sustainable budget for the maintenance of facilities and equipment, and (3) responding to the need for large-scale renovation of existing facilities as a result of the proposed project.

The number of deliveries in PMGH is about 13,000-15,000⁴ per year, which is more than 40-45 per day, but the lack of facilities and medical equipment, including only 22 delivery beds still exist. The Division of Obstetrics and Gynecology has about 200-224 beds, including about 30-36 beds in the Antenatal Care (ANC) Ward, about 94-100 beds in the Postnatal Care (PNC) Ward, 24 delivery beds and 10 assisted beds, and 36 beds and 12 assisted beds converted from other facilities in the Gynecology Department. The number of deliveries per month is 1,500 in some months, and the number of beds is insufficient.

The current obstetrics and gynecology building (McGregor Building) is located on the north side of the site and consists of a group of buildings including the Obstetrics and Gynecology Surgery Building (build in 1988 by Japanese Grant Aid). Among them, the McGregor Building was constructed in 1957 when PMGH

³ "Perinatal care" is included in "maternal and child health care," and the perinatal period focuses on the critical care of the mother and child (mother, fetus, and newborn) from 22 weeks of pregnancy to 7 days after birth.

⁴ Number of beds varied among the interviewees and collected documents.

was established, and although there are records that part of the building was renovated in 1984, it is expected that the facility needs to be updated and maintained after 64 years.

The outline of the proposed grant-aid project is summarized in Table II-32.

**Table II-32 Proposed Project Outline:
Upgrading Facility and Medical Equipment for MNCH Care in PMGH**

Title	Project for Development of Perinatal Medical Center (PMC) in Port Moresby General Hospital	
Goal	The PMC will be expanded and renovated to provide hospital facilities and medical equipment that can safely handle a maximum of 45 deliveries per day and about 15,000 deliveries per year at PMGH. Due to the average length of stay in the Obstetrics Department, the utilization rate of hospital beds, and the premature birth rate, it is estimated that approximately 200 beds will be needed.	
Project Site	Port Moresby General Hospital	
Facility Overview	Outpatient Obstetrics	Examination Room, Obstetrics Examination Room, Emergency Room, etc.
	Labor and Delivery Department:	Labour Room, Delivery Room, Operating Room (Cesarean Section), etc.
	Maternity Ward	Antenatal Ward, Postnatal Ward (General/ Mother-Child Room), Maternal-Fetal Intensive Care Unit (MFICU), etc.
	Neonatology Ward	Special Care, Neonatal Intensive Care Unit (NICU), Growing Care Unit (GCU), etc.
	Examination and Diagnosis:	Clinical Laboratory, Diagnostic Imaging Room, Mechanical Engineer (ME) Room, etc.
	Goods and Logistics	Material Sterilization Room, Material Management Room, Storage, etc.
	Management and Training	Office, Training/Seminar Room, Library, Data Storage Room, Library, Staff Room, Laboratory, Dressing Room, etc.

Source: The Survey Team

(1) Scale Options

The existing buildings are 64 years old, approaching the end of their durable life and are deteriorating, which is considered to be a hindrance to efficient care. The expansion of PMC is expected to improve working environment by providing necessary facility, utility and equipment, then to increase safety of both patient and staff.

According to the information obtained in the Survey, the antenatal ward seems to have a sufficient beds capacity. On the other hand, there is a shortage of beds in the postnatal ward. Considering the fact that the bed occupancy rate (BOR) is currently 100% with 110 beds, the number of beds should be increased to 130 beds to make BOR 85%. In addition, the 12 beds in the advanced care unit are deteriorating and need to be upgraded.

As for the Special Care Nursery, the old building has been demolished and a new one has been built in recent years. However, due to the malfunction of medical equipment, it is necessary to meet the standards of Neonatal Bay-Special Care (NICU) and General Care (GCU) of the Papua New Guinea Health Facility Guidelines (HFG-PNG). Therefore, the number of beds will be the same as the current 50 beds as per HFG-PNG standards.

The Labor and Delivery Ward is in the oldest building and the maximum number of deliveries per day is 45. Currently, 24 beds plus auxiliary beds are used for a total of 40 beds, which is still 100% BOR. A total of 40 beds will be set up in the delivery room and labor room, and auxiliary beds will be available in case of shortage.

Currently, there is no emergency outpatient clinic for maternity unit. In case of emergency, the gynecology facility is used. As shown in Table II-15, the number of patients without appointments and referrals is increasing, including emergency cases, and assuming that this trend will continue, the number of beds will be expanded to 15 and placed on the first floor of the PMC, adjacent to the examination and screening rooms.

Since the three operation rooms in the existing Operation Theatre Building are used for about 4,000 cases per year, two new operation theatres will be built in the PMC for cesarean sections, and the existing three rooms will be used exclusively by gynecology.

A sterilization room will be established close to the operating room, and logistics functions such as material management room, storage, and machine room will also be newly established exclusively for the PMC. In addition, regarding a laboratory, the Division's staff currently use those in the main building, which takes a lot of time to go back and forth and hinders efficiency. Therefore, medical examination and diagnostic functions, as well as a medical engineering management (ME) room for timely and flexible maintenance will be established in PMC. Furthermore, in order to enhance a function as a teaching hospital, the training/seminar rooms and the library, which is reportedly deteriorating, will be upgraded.

It is necessary to separate the Obstetrics unit and the Gynecology unit in order to secure the patients' privacy and ensure quality of patient care. The Gynecology unit will be expanded and operated together with the Family Planning clinic and other rooms, using the vacant rooms after the relocation of PMC.

In consideration of the above, it is necessary for the continuity of medical care to construct an independent building to fulfill all perinatal functions and transfer functions, as shown in proposal (1) in Table II-33. If the size of the building is not sufficient, renovation (repainting) of the existing antenatal ward and the postnatal ward may be considered, but the expansion of beds in the postnatal ward is an issue, and it is not advisable to operate in a building that is nearing the end of its durable life. For this reason, as shown in proposal (2), beds that require advanced medical care will be installed in the newly constructed PMC. In this case, after the transfer of existing functions, the vacant rooms will need to be renovated into a postnatal ward to supplement the functions. For proposal (3), only core perinatal medical facilities which is common in all three options will be newly developed with utilizing the existing beds.

Table II-33 Possible Options of the Number of Beds in Perinatal Medical Center (PMC)

Item	Wards											Common	Total	
		Gynecology	Obstetrics			Special Care Nursery				Total Beds		Floor	3,000m ² Refer the table below	Floor
		General	Antenatal	MCH	Advanced care	Mother and Infant	NICU			Existing	New	New		
					MFICU	Mother's care	Intensive Care (NICU)	General Care (GCU)						
Existing Beds		36	36	110	12	0	16	20	30	260*	/	/	3,000m ² Refer the table below	/
Current Condition	Need re-painting	BOR 75% /Sufficient	BOR 100% /Not sufficient	Aged	NA	Insufficient spec	HFG-PNG Standard							
(1)	250 new beds	Use existing beds (36)	35	130	15	2	18	20	30	36	250*	5,000m ²	8,000m ²	
(2)	85 new beds	Use existing beds (36)	Use existing beds (36)	Use existing beds (130)	15	2	18	20	30	202	85*	1,700m ²	4,700m ²	
(3)	None	Use existing beds (260)								260*	0	0	3,000m ²	

Note: *including 50 newborn cots

For the calculation of the number of beds, the number of beds for mother-infant rooms was defined as one bed including the mother and newborn. Neonatal isolation was defined as one bed, with an average of 20 m2 per bed. Contingency is not considered.

Common (3,000m ²)															
Outpatient (700m ²)		Delivery (500m ²)		Operating Room (Cesarean Section) (500m ²)		Laboratory (300m ²)			Logistics (500m ²)				Administration/ Training (500m ²)		
Emergency	Consultation	Delivery	Labour	Operation Theatre	Recovery	Clinical Lab	Diagnostic Imaging	Medical Engineering	Material Sterilization	Material Management	Storage	Machine	Training/Seminar	Library	Administration
(1 bed)	(1)	24 +16 beds		3	2	0	NA	NA	0	NA	NA	NA	(1)	(1)	NA
Use the Gynecology Clinic		BOR 100%		Japanese Grant Aid (1988)		Main Building	-	-	Main Building	-	-	-	Aged	Aged	-
15 beds	5+5 rooms	20 beds	20 beds + Auxiliary Beds	2 new	5 new	100m ²	100m ²	100m ²	100m ²	100m ²	100m ²	200m ²	200m ²	200m ²	100m ²
				The existing rooms for the Gynecology											

Source: The Survey Team

(2) Proposed Extension Site

Existing vacant lands could be compared for the possible project site. It should be a location to be used without removing the existing medical building and with minimal impact on the users and the surrounding environment. At the same time, it is of utmost importance to ensure both "medical safety" and "construction safety" during the extension, so the proposed site should be a vacant lot where these two areas can be planned separately.

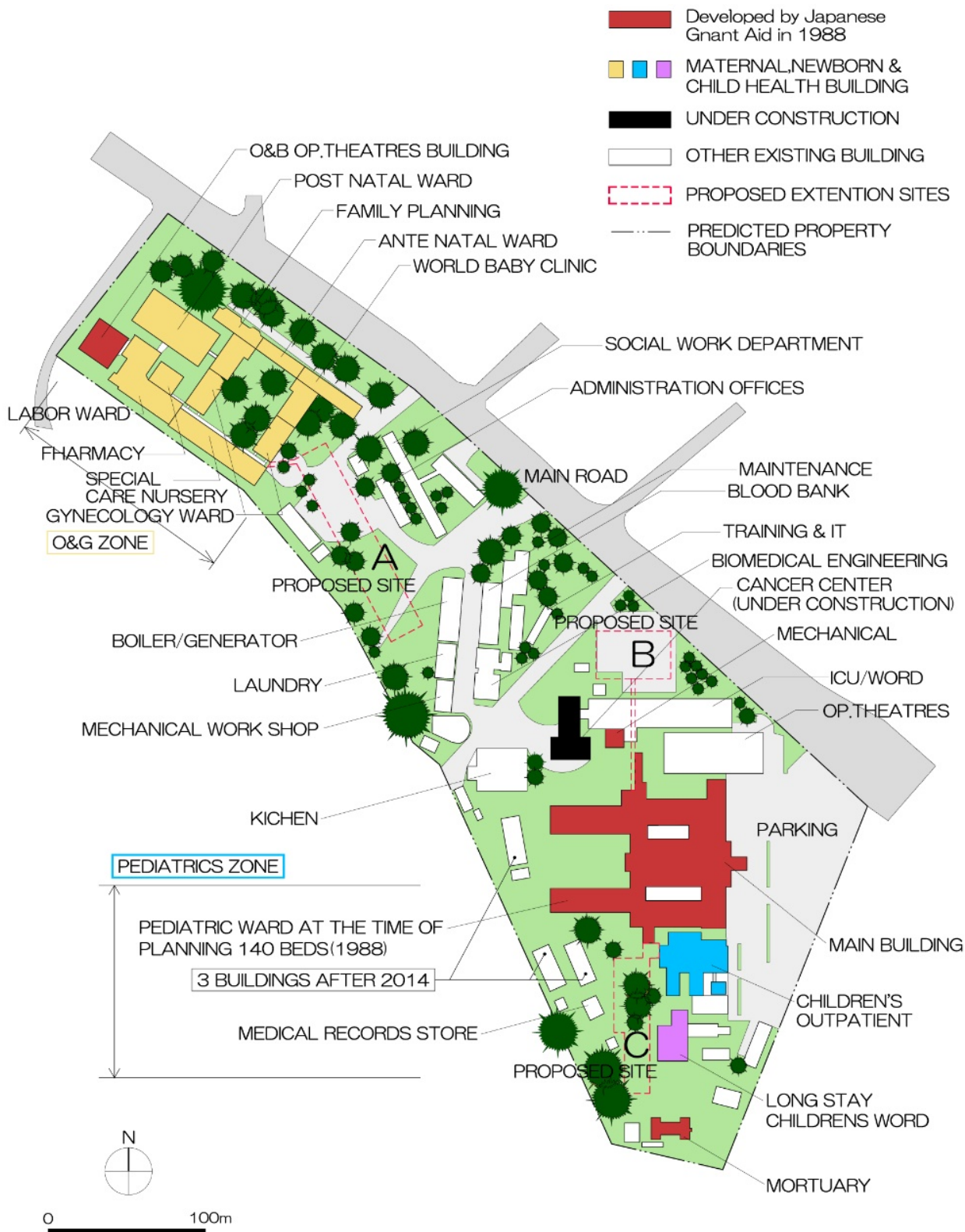
However, since it is not possible to completely prevent the generation of noise and vibration during construction, it is important to maintain the environment through communication between the two.

Based on the available information, three proposed sites were selected for further consideration (Figure II-12): "Proposed Site A" adjacent to the obstetrics and gynecology zone on the north side of the site, "Proposed Site B" near the intersection adjacent to the Intensive Care Unit Building on the north side of the main building, and "Proposed Site C" adjacent to the pediatrics zone on the south side of the main building (Table II-34).

Table II-34 Comparison of the Proposed Extension Sites

	Proposed Extension Site A	Proposed Extension Site B	Proposed Extension Site C
Location	Adjacent to the obstetrics and gynecology zone on the north side of the site.	Near the intersection adjacent to the Intensive Care Unit Building on the north side of the main building	Adjacent to the pediatrics zone on the south side of the main building.
Vacant Area	Approx. 3,000 m ²	Approx. 1,500- 2,000 m ²	Approx. 1,500- 2,000 m ²
Issues	It can be directly connected to the OB/GYN zone. There is a possibility that the building can be reconstructed by incorporating the site of the nearby Administration Building.	If the ICU Building can be renovated, it can be operated directly connected to the main building. It can be used directly at the intersection and near the parking lot. The current parking lot is expected to be used for staff and will need to be relocated.	There is a possibility to expand the facility in stages by planning an expansion and renovation of the building in conjunction with the nearby Pediatric Outpatient Building and Pediatric Care Building.
Connection to main building (supported by Japanese Grant Aid in 1988)	None	Direct connection, walkway	Direct connection
Expected Entrance	Exclusive use	main building, Dedicated entrance is possible.	main building, Dedicated entrance is possible.
Adjoining Building	OB/GYN Building and Administration Building	ICU Building	Pediatric Outpatient and Long-stay Children's Ward

Source: The Survey Team



Source: The Survey Team

Figure II-12 Port Moresby General Hospital Current Plan and Possible Options of Extension Sites

(3) Facility Size and Proposed Extension Sites

Table II-35 presents the combination of scale options (Table II-33) and site options (Table II-35). In the consideration of the scale of the facility, the extension Option 1, which secures "200 beds (and 50 newborn cots), the target for facility development," can be built in both proposed sites A, B, and C because all functions of the PMC will be developed.

In contrast, the extension options 2 and 3 do not meet the required number of hospital beds and the insufficient number of beds will need to be managed by converting other wards or renovating existing facilities. For this reason, it is expected that the construction of the extension options 2 and 3 will be limited to the proposed Site A, which is adjacent to the existing Obstetrics and Gynecology (O&G) Building.

Table II-35 PMC Facility Size and Proposed Extension Sites

PMC Extension Options		Proposed Extension Site A	Proposed Extension Site B	Proposed Extension Site C
1	250 Beds	<input type="radio"/> Possible 3 stories.	<input type="radio"/> Possible 4 stories.	<input type="radio"/> Possible 4 stories.
2	85 Beds	<input type="radio"/> Possible 3 stories Collaborate with existing O&G Building.	<input type="checkbox"/> Not possible if vacant rooms, etc., in the Intensive Care Unit Building cannot be renovated into a PMC ward.	<input checked="" type="checkbox"/> Not possible because it is predicted that the wards in the main building will not be able to be changed to PMC functions.
3	0 Beds	<input type="radio"/> Possible 2-3 stories Collaborate with existing O&G Building.		

Source: The Survey Team

For proposed site B, the west side of the old main building in the neighboring area has been demolished and PNG is now constructing the Cancer Center, which can be utilized as an appropriate site for the development of the intensive care unit and other surrounding buildings. Proposed site C is located in the pediatric zone and is also an appropriate site for the extension of the pediatric ward.

(4) Enhancement of Functionality

After extension of the PMC building and relocating some of the hospital's functions, the vacant rooms could be appropriately renovated to strengthen necessary functions such as "MNCH ward", "gynecology clinic/ward" and "family planning clinic".

The required field survey items are as follows:

- Survey on the usage of the Obstetrics and Gynecology Building in the north and the Pediatrics Building in the south.
- Survey on the current use and sufficiency of the pediatric ward in the old main building.
- A survey of the layout, roles, functions, and usage of each ward.
- Survey of future plans for the intensive care unit and whether or not it can be renovated.
- Survey of the operational status and daily inspection of medical equipment used in the existing maternity ward and other wards.

In addition, based on the proposed building plan for the implementation of the main building (Japanese Grant Aid, 1988), it is necessary to identify changes in medical demand and trends in medical care development and priorities based on the differences from the current usage, and to investigate the actual hospital facilities and medical equipment needed to develop in future plans.

5.3.2 Medical Equipment Improvement

In both the Obstetrics & Gynecology, and Pediatrics divisions, there are some equipment that have broken down and cannot be repaired due to the inability to procure parts or that have exceeded their durable life, and it is presumed that the medical equipment is not functioning as originally required in each department. Therefore, the missing functions will be restored by updating the equipment, and medical equipment will be introduced in line with the expansion of the facility. Such renewal and introduction of new equipment is expected to improve the efficiency of medical treatment and technology.

In the medium and long term, the proposed project aims to ensure that the medical equipment will be used appropriately and effectively for years and that effective medical treatment activities will be steadily carried out by implementing the soft component, which is to provide guidance on daily inspection, maintenance management, and proper operation of the equipment.

(1) Basic policy on the selection of medical equipment

Basic policies on the selection of medical equipment are as follows: First, procure medical equipment with performance and specifications equivalent to those currently in use, based on guidance provided by the Medical Standards Division, Health Facilities Branch of the National Department of Health (NDoH). Secondly, as for replacement parts and consumables, equipment that can be procured locally shall be selected so as not to impose an excessive burden on maintenance and management. And lastly, for medical equipment that may be damaged due to power supply fluctuations, consider attaching an voltage stabilizer (AVR) or uninterruptible power supply (UPS) to the equipment, depending on the occurrence of abnormal voltages such as power supply voltage fluctuations or surges supplied to the PMGH. Also, to ensure a certain level of water quality, consider attaching a water softener to high-pressure steam sterilizers, distilled water production equipment, and things like that.

(2) Basic policy on procurement of medical equipment

In this project, most of the medical equipment are basic equipment, or the equipment that are relatively easy to maintain and manage. Therefore, in principle, they all should be procured in Japan or locally.

For some of the medical equipment used in the diagnostic imaging department, clinical laboratories, and operating rooms, manufacturers that have local agents with maintenance management capabilities will be selected, as the Survey Team is planning to instruct PMC to conclude maintenance management contracts. In addition, in order to ensure fair competition in the bidding process, not only Japanese products but also products from third countries could be included in the procurement.

And moreover, as a measure to exclude inferior products, the Survey Team will consider requiring the specifications of medical equipment to comply with the European, American or Japanese safety standards.

(3) Basic policy for dealing with operation and maintenance capacity

The maintenance and management of medical equipment procured under this plan will also be carried out within the existing system described in Section 2.5.2. However, this system itself does not seem to be functioning properly at the moment. The main causes of this are considered as follows: 1) the procurement of replacement parts for currently-used medical equipment is troubled for some reasons, 2) there is a lack

of budget for maintenance and management, 3) the technical level of biomedical engineers is not sufficient, and 4) there is a lack of personnel to conduct periodic inspections.

In order to solve these problems, this project will suggest reinforcing the number of adequate personnel in charge of the maintenance and management of medical equipment, and also, provide diverse kinds of cooperation by implementing the plans of soft component. In soft component, PMGH will be instructed to conclude maintenance contracts with the agents of medical equipment manufacturers after one-year warranty period. Items requiring such contracts should include precision equipment such as radiography equipment, diagnostic ultrasound equipment, analytical equipment, and anesthesia equipment.

Meanwhile, Medical Standards Division, Health Facilities Branch of NDoH is currently responsible for the commissioning of medical equipment upon delivery and the periodic surveys/checks on the operational status of medical equipment, however, is not capable of operating equipment maintenance and is only capable of providing information on necessary repairs.

(4) Basic plan for medical equipment to be installed in the PMC

The selection criteria for planning medical equipment for the PMC are presented in Table II-36.

Table II-36 Selection Criteria for Medical Equipment Planning

Department	Basic Plan for Medical Equipment
Outpatient Obstetrics	Number of examination rooms, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Delivery	Number of delivery beds, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Labor	Number of patient beds, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Operation Theater	Number of operation theater, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Maternity Ward (MFICU)	Number of patient beds, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Neonatology Ward (NICU, GCU)	Number of treatment table/baby cots/infant incubators/phototherapy, possibility of use of existing medical equipment and consideration of newly introduced medical equipment
Diagnostic Imaging	Data transfer of images for mobile x-ray unit and ultrasound machine
Clinical Laboratory	Satellite clinical laboratory at PMC to improve patient movement and operational efficiency
Central Sterile Services Department (CSSD)	Individual CSSD at PMC to improve operational efficiency

* The basic plan is to be established in accordance with the information obtained from the field survey and the facility plan.

Source: The Survey Team

(5) Analysis of medical equipment and refinement of the plan

The medical equipment plan will be prepared in accordance with a guidance of PMGH and the Medical Standards Division, Health Facilities Branch of the NDoH with basic principle of renewal of the existing equipment. A tentative list of major medical equipment is presented in Table II-37.

As the Medical Equipment Inventory obtained from the PMGH has not been updated since 2018, the latest status of the existing equipment should be confirmed through a field investigation. In addition, it is necessary to select equipment in light of the following priorities and criteria after interviewing relevant persons, investigating the number of medical staffs, technical level, etc.

Priorities

The following priorities shall be set for each piece of equipment:

- | | |
|------------------------------|---|
| Priority A (high priority) | The plan will be considered with high priority. |
| Priority B (medium priority) | Consider the plan with the next priority. |
| Priority C (Low priority) | Consider the plan with the lowest priority. |

Criteria

(1) Renewal of existing equipment

- Renewal of existing equipment, upgrading due to aging or replacement of broken equipment.

(2) Equipment to be added or new equipment to be introduced

- There must be demand for the equipment.
- There must be medical staff at PMGH who can use the equipment.
- Availability of budget for operation (personnel and consumables) and maintenance (periodic inspection and repair)

Table II-37 Major Medical Equipment for PMC

Department	Major Medical Equipment
Outpatient Obstetrics	Examination table, Examination lamp, Ultrasound machine, High scale, Weighing scale
Delivery	Delivery table, Examination lamp, Vacuum extractor, Weighing scale for infant
Labor	Fetal doppler, Examination lamp
Operation Theater	Operation light, Operation table, Anesthesia, Patient monitor, Diathermy, Defibrillator, Suction unit
Maternity Ward (MFICU)	Patient bed, Baby cot, Examination table, Examination lamp, cardiocography, Weighing scale for adult
Neonatology Ward (NICU,GCU)	Infant incubator, Phototherapy unit, Infant warmer, Treatment table for infant, Baby cot, Weighing scale for infant, Patient monitor, Ventilator
Diagnostic Imaging	Ultrasound machine, Mobile X-ray unit
Clinical Laboratory	Biochemistry analyzer, Blood cell counter, Blood gas analyzer, Microscope, Centrifuge, Drying oven, Refrigerator
CSSD	High pressure steam sterilizer, Low temperature sterilizer, Drying oven

Source: The Survey Team

(6) Initial operation guidance and soft component plan

1) Initial operation guidance

Guidance on the basic operation of the equipment shall be provided to medical personnel by engineers dispatched by the equipment supplier at the time of delivery and installation of the procured equipment. The content of the guidance shall include initial operation guidance, explanations of maintenance and management precautions and daily inspection methods, and simple troubleshooting explanations for medical personnel at the facility where the equipment needs to be installed.

2) Soft component plan

In this plan, guidance on operation and maintenance management of equipment is provided to the personnel, mainly maintenance personnel of the facility to be planned, using the soft component. The contents of the guidance will include holding seminars on the importance of equipment maintenance management and training on equipment operation and inspection.

- Guidance on operation and maintenance management of major medical equipment (operation methods and daily inspections of each piece of equipment);
- Guidance on periodic inspection methods for technicians in charge of medical equipment; and
- Guidance to medical equipment managers and technicians on maintenance management, maintenance contracts, and repair request methods.

(7) Specifications of medical equipment

The major specifications of the medical equipment planned for the PMC are listed in Table II-38.

Table II-38 Major Specifications of Medical Equipment for PMC

No.	Equipment	Major Specifications
1	Anesthesia	Flow meter : Oxygen, N ₂ O and air or more Anesthesia ventilator : Equipped Vaporizer : Halothane and isoflurane or more
2	High pressure steam sterilizer	Capacity : 200 L or more Temperature range : 120-132°C or wider Internal boiler : Equipped Water softener : Equipped Water filter : Equipped Cast set : Round type : ϕ 200 mm x H150 mm 4 sets, Square type : 300x120x75 mm 8 sets (approx.)
3	Autoclave, vertical	Type : Vertical type autoclave Capacity : 50 L or more Temperature range : 120-132°C or wider Material basket : Equipped
4	Biochemistry analyzer	Type : Table top Parameters : Liver set test, kidney set test, Glucose, Cholesterol and electrolyte or more Test speed : 250 tests/hr or more
5	Centrifuge	Type : Table top centrifuge Revolution speed : 0-3,500 rpm or wider Rotor : Equipped Rotor speed : 0-3,500 or wider Rotor capacity : 14 ml x 20 pcs. and 50 ml x 8 pcs. or more
6	Defibrillator	Type : Bi-phasic Output : 5 – 270 J or wider Synchro mode : Equipped Monitor : 6 inches or more Paddle : Adult and pediatric Cart : Equipped
7	Delivery table	Section : 3 (back side, seat and foot section) Height adjustment : 65-90 cm or wider by manual adjustment Back section tilting : 0-35 degree by manual adjustment Frame and main part : Steel with powder coating or stronger Size : W60 x D120 x H85 cm or more Auxiliary table or leg section : W80 x D60 cm or more
8	Electrosurgical unit	Mode and output : Cutting-300 W, Coagulation-200, Mixing-100, Bipolar-40 W or more Isolation : RF floating type or more Electric protection : CF type or more
9	Examination lamp	Light intensity : 8,000 lux or more, Stand with caster : Equipped
10	Fetal heart detector	Type : Doppler, Fetal heart detection Doppler transducer: Separate, equipped Power source : Rechargeable battery with AC adapter
11	Gynecological examination table	Section : 3 (back side, seat and foot section) Back section tilting : 0-35 degree by manual adjustment Frame and main part : Steel with powder coating or stronger Size : W60 x D120 x H85 cm or more Foot section : W60 x D69 cm or more, Folding type is acceptable Accessories : Examination unit, Leg holder, Mattress, Fluid funnel, Waste receptacle and foot stool

No.	Equipment	Major Specifications
12	Blood cell counter	Type : Table top hematology analyzer Measuring item : RBC, WBC, Hgb, HCT, Platelet or more Leukocyte differential count : 5 or more Counting speed : 60 samples/hr or more
13	Infant incubator	Type : Manual and servo temperature control Temperature setting range : Baby bed with tilting function : Equipped Oxygen inhalation set : Equipped
14	Infusion pump	Type : Flow rate : 1–500 ml/hour Safety function : equipped
15	Operation lamp, Ceiling	Type : Ceiling type LED operation light Lighting intensity : 140,000 lux or more Lighting head : 2 Control : Side of lighting head
16	Operation lamp, Mobile	Type : Stand type LED operation light Lighting intensity : 100,000 lux or more Lighting head : 1 Control : Side of lighting head
17	Microscope	Type : Binocular microscope Light source : LED Eye piece : x10 Objective lens : x4, x10, x40, x100 or more Observation method : Bright and dark field
18	Operation table	Section : 3 (back side, seat and foot section) or more Size : W500 x D2,000 or more Height : 700-1,000 mm or wider Function: Table top rotation, Flex and reflex, Sitting position, Leg section remove and split or more Accessories : Body support, Arm board, Shoulder support, Leg support, Mattress or more
19	Patient monitor	Measuring parameter : ECG (3 leads), NIBP, SPO ₂ , Ventilation, Temperature or more Trolley with caster : Equipped
20	Suction unit	Type : Floor type with caster Capacity of suction bottle : 2,500 ml x 1 bottle or more Overflow prevention device : Equipped
21	Ultrasound machine	Display : Color 15 inch or more Scanning mode : B, M, Color doppler and pulse doppler or more Probe : Linear, Convex, Transvaginal multi frequency Black and white printer : Equipped Caster : Equipped
22	Ultrasound machine, mobile	Display : Color 12 inch or more Scanning mode : B and M mode or more Probe : Convex Image storage function : Equipped
23	Ventilator	Type : Adult, Infant Patient circuit : More than 3 sets Accessories : Air compressor, Humidifier
24	Water distiller	Distillation type : Single distillation Production speed : 3 L /hr or more Water filter and softener : Equipped

Source: The Survey Team

5.3.3 Capacity Development for Quality MNCH Care

Considering the high MMR in PNG, the first measure that must be taken is to focus on increasing the institutional delivery rate and the availability of appropriate care in health facilities. Therefore, the following two components should be included in the technical cooperation project: 1) promotion of institutional delivery through capacity development of the midwives at the community level and 2) strengthening the capacity of maternal and newborn care in the health facilities, making the most effective use of the facilities and equipment improved through the grant aid project proposed in the previous section.

As for 1), it is necessary to provide basic equipment for Basic Emergency Obstetric Care (BEmONC) and ANC with necessary trainings for primary level health facilities. Next, it is essential to provide necessary training on BEmONC and ANC. At the same time, it is also important to include the activities on promoting institutional delivery at the community level.

As for 2), main target will be the health personnel in PMGH. Once equipment is provided for effective treatment of perinatal care, several kinds of trainings such as CEmONC should be provided through the technical cooperation. In addition, not only clinical training, but also training in equipment maintenance is an important training topic that should be one of them.

Table II-39 and Table II-40 present the proposed project outlines for capacity development on EmONC from the primary to tertiary levels, and medical equipment maintenance for health personnel. These activities are essential to maximize the effectiveness of the above grant-aid project for facility and equipment improvement, as well as improve the sustainability.

Table II-39 Proposed Project Outline: Capacity Development of EmONC

Title	Project for Enhancement of Hospital Care for Maternal, Newborn and Child Health	
Period	Three years	
Implementing Agencies	National Department of Health (NDoH), Port Moresby General Hospital (PMGH)	
	Objectives	Measurements
Overall Goal	The target hospitals avoid preventable death during perinatal period.	<ul style="list-style-type: none"> • Decrease in hospital death rate or number during perinatal period • Increase in treatment rate of complication pregnancy
Project Goal	Target hospitals improve quality of perinatal care under the leadership of National Department of Health (NDoH).	<ul style="list-style-type: none"> • Decrease in the breakdown of major medical equipment for perinatal care due to inappropriate use or daily maintenance • Increase in number of confident medical personnel in order to avoid preventable maternal and newborn death
Outputs	1. Health personnel related to perinatal care in PMGH use the equipment properly and maintain the equipment are maintained in good condition.	<ul style="list-style-type: none"> • Number of medical personnel participated to trainings on appropriate use and daily maintenance of medical equipment • Number and contents of improvement suggestions based on regular monitoring
	2. Health personnel related to perinatal care in PMGH have skills on emergency obstetric and neonatal care.	<ul style="list-style-type: none"> • Number of medical personnel participated to trainings on EmONC • Proportion of high score (>70%) on comprehension test among training participants
	3. Target provincial hospitals strengthen comprehensive obstetric and neonatal care (CEmONC).	<ul style="list-style-type: none"> • Number of medical personnel participated to trainings on CEmONC • Proportion of high score (>70%) on comprehension test among training participants
	4. Primary level health facilities in the target area strengthen capacity of basic emergency obstetric and neonatal care (BEmONC).	<ul style="list-style-type: none"> • Proportion of primary level health facilities with sufficient basic equipment in the target area. • Number of health workers participated to trainings on BEmONC

Activities	<p>1-1 NDoH develops standard operating procedures (SOPs) of major equipment for CEmONC.</p> <p>1-2 NDoH develops equipment maintenance sheets.</p> <p>1-3 NDoH conducts training for PMGH on utilization and daily maintenance of the major equipment.</p> <p>1-4 NDoH conducts regular monitoring on utilization and daily maintenance of the major equipment in PMGH.</p> <p>2-1 NDoH and PMGH conduct gap assessment on skills of medical personnel of PMGH on EmONC.</p> <p>2-2 NDoH and PMGH develop training plans based on the result of gap assessment.</p> <p>2-3 NDoH and PMGH conduct trainings on EmONC, assess the effectiveness, and improve the training plans.</p> <p>3-1 NDoH or provincial health authority and provincial hospitals conduct gap assessment of medical personnel of provincial hospitals on perinatal care.</p> <p>3-2 NDoH develops training plans based on the results of gap assessment.</p> <p>3-3 NDoH and PMGH support the target provincial hospitals to conduct trainings on perinatal care, assess the effectiveness, and improve the training plans.</p> <p>4-1 NDoH conducts gap assessment on equipment and skills for perinatal care at primary level facilities in the target area.</p> <p>4-2 The project team provides necessary basic equipment for perinatal care/BEmONC based on the results of gap assessment.</p> <p>4-3 NDoH develops training plans based on the results of gap assessment.</p> <p>4-3 NDoH and PMGH support provincial health authorities to conduct trainings on perinatal care, assess the effectiveness, and improve the training plans.</p>
Inputs from Japan	<ul style="list-style-type: none"> • Trainings; Knowledge Co-Creation Program (KCCP) (training in Japan) and/or third-country trainings • Japanese experts; a chief advisor, technical experts on biomedical engineering, budget planning for medical equipment maintenance, etc.

Source: The Survey Team

Table II-40 Proposed Project Outline: Capacity Development of Medical Equipment Maintenance

Title	Capacity Building Project for Maintenance and Management of Medical Equipment in Papua New Guinea	
Period	Three years	
Implementing Agencies	National Department of Health (NDoH), Levels 6 and 7 hospitals	
	Objectives	Measurements
Overall Goal	The quality of medical services in major hospitals is improved.	<ul style="list-style-type: none"> • Level of patient satisfaction • Improvement of waiting time for diagnosis, examination, consultation, and prescription • Reduction of medical equipment costs
Project Goal	Target hospitals strengthen capacity for maintenance and management of medical equipment under the leadership of National Department of Health (NDoH).	<ul style="list-style-type: none"> • Increase of proportion of “in use/in good condition (A)” in the inventory
Outputs	1. NDoH strengthens mechanism to support and supervise government hospitals for management of medical equipment.	<ul style="list-style-type: none"> • PDCA records on medical equipment management of major hospitals prepared by NDoH • Number of supervisions on medical equipment management • Number of training sessions on medical equipment management
	2. Target hospitals establish a system for medical equipment management and maintenance.	<ul style="list-style-type: none"> • Number of target hospitals established a medical equipment management team • Level of understanding on User Training (UT) among participants in the target hospitals
	3. Biomedical workshops of the target hospitals strengthen their capacity of management and maintenance of medical equipment.	<ul style="list-style-type: none"> • Level of understanding among participants in medical equipment management (MEM) training • Decrease in proportion of “broken but repairable” (grade E) in the inventory
Activities	<p>1-1 NDoH establishes a Technical Working Group (TWG) with clear Terms of Reference (TOR) and an action plan.</p> <p>1-2 NDoH appoints/assign UT & MEM focal points in the MOH.</p> <p>1-3 TWG conducts a baseline survey on medical equipment management in target hospitals.</p> <p>1-4 TWG reviews the existing manuals, handbooks, guidelines, and monitoring tools, then prepare and distribute the revised versions, if necessary.</p> <p>1-5 TWG reviews the existing supervision system of medical equipment management and maintenance and introduce UT & ME focal points into the revised system.</p>	

	<p>1-6 TWG implements the action in accordance with PDCA cycle.</p> <p>1-7 TWG conducts supervision activities under the revised supervision system.</p> <p>1-8 TWG has regular meetings with the project team to review effectiveness and efficiency of the supervision system.</p> <p>1-9 TWG reflects recommendations to improve the supervision system raised in the regular meetings.</p> <p>1-10 TWG conducts an end-line survey.</p> <p>2-1 TWG and the target hospitals conduct trainings for senior managers of the hospitals on leadership to improve medical equipment management.</p> <p>2-2 TWG conducts training of trainers for UT in the target hospitals.</p> <p>2-3 UT trainers carry out UT related activities aiming to appropriate use of medical equipment in the target hospitals.</p> <p>2-4 UT trainers conduct on-the-job trainings (OJT) on appropriate use of medical equipment to staff of the target hospitals.</p> <p>3-1 TWG conducts trainings on leadership and medical equipment management including inventory data analysis for managers of biomedical workshops in the target hospitals.</p> <p>3-2 TWG conducts trainings on maintenance and management of medical equipment for biomedical workshop staff of the target hospitals.</p> <p>3-3 TWG provides trainings aiming to improve basic knowledge of some medical equipment requiring specialized skills and knowledge for biomedical workshop staff of the target hospitals.</p> <p>3-4 TWG in cooperation with the target hospitals develops a mechanism to accumulate and share knowledge and techniques on medical equipment management and maintenance.</p>
<p>Inputs from Japan</p>	<ul style="list-style-type: none"> • Trainings; Knowledge Co-Creation Program (KCCP) (training in Japan) and/or third-country trainings • Japanese experts; a chief advisor, technical experts on biomedical engineering, budget planning for medical equipment maintenance, etc.

Source: The Survey Team

Chapter 1 Health Status Overview

1.1 Demography

Generally, the Pacific Island Countries and Territories (PICTs) have successfully improved their health indicators such as MNCH and infectious diseases. As a result, life expectancy has been extended in all the countries as shown in Table III-1. However, due to change of lifestyle such as eating habit, physical activities, and geographic mobility including international and domestic migration, most of PICTs have been facing double or triple health burden.

Table III-1 Major Demographic Indicators of Target Pacific Island Countries

Year	Population (Thousands)	Annual Population Growth (%)	Urban Population (%)	Total Fertility Rate	Life Expectancy at Birth	
	2018	2000-2018	2018	2018	1970	2018
Cook Islands	18	-0.1	75	NA	NA	NA
Fiji	883	0.5	56	2.8	62	67
Kiribati	116	1.8	54	3.6	52	68
Marshall Islands	58	0.8	77	NA	NA	NA
Micronesia	113	0.3	23	3.1	59	68
Nauru	11	NA	100	NA	NA	NA
Niue	2	-0.9	45	NA	NA	NA
Palau	18	-0.4	80	NA	NA	NA
Papua New Guinea	8,606	2.1	13	3.6	46	64
Samoa	196	0.7	18	3.9	60	73
Solomon Islands	653	2.5	24	4.4	56	73
Tonga	103	0.3	23	3.6	64	71
Tuvalu	12	1.1	62	NA	NA	NA
Vanuatu	293	2.5	25	3.8	54	70

Source: [UNICEF, 2019]

1.2 Maternal, Newborn and Child Health

The main MNCH indicators in the target countries are shown in Table III-2 and Table III-3. All mortalities are worst in Kiribati among the target countries. In Niue, child mortalities were higher in 2018 than in 1990. More than 80% of deliveries were attended by skilled birth attendants (SBAs) and in health facilities, as a result, maternal mortality ratio (MMR) was generally low except in Kiribati and Papua New Guinea (PNG).

Table III-2 Child Health Related Indicators

Year	Under-five Mortality Rate (per 1,000 births)			Infant Mortality Rate (per 1,000 births)		Neonatal Mortality Rate (per 1,000 births)		
	1990	2000	2018	1990	2018	1990	2000	2018
Cook Islands	24	18	8	20	7	13	10	4
Fiji	29	23	26	24	22	12	9	11
Kiribati	95	71	53	69	41	36	29	23
Marshall Islands	49	41	33	39	27	20	18	15
Micronesia	55	54	31	43	26	26	25	16
Nauru	60	42	32	46	26	29	25	20
Niue	13	24	24	12	20	7	13	12
Palau	35	29	18	30	17	19	15	9
Samoa	30	21	16	25	14	16	11	8
Solomon	39	30	20	31	17	15	13	8
Tonga	22	18	16	19	13	10	8	7
Tuvalu	53	41	24	42	21	28	25	16
Vanuatu	36	29	26	29	22	17	13	12

Source: [UNICEF, 2019]

Table III-3 Maternal Health Related Indicators

Indicators	Antenatal Care (%)		Delivery by SBA (%)	Facility-based Delivery (%)	Postnatal Care (%)	Number of Maternal Deaths	MMR (per 100,000 live births)
	≥1	≥4 times					
Year	2013-2018					2017	
Cook Islands	100	NA	100	100	NA	NA	NA
Fiji	100	94	100	99	NA	6	34
Kiribati	88	71	98	66	NA	3	92
Marshall Islands	81	77	90	85	NA	NA	NA
Micronesia	80	NA	100	87	NA	2	88
Nauru	95	40	97	99	NA	NA	NA
Niue	100	NA	100	NA	NA	NA	NA
Palau	90	81	100	100	NA	NA	NA
PNG	76	49	53	55	46	340	145
Samoa	93	73	83	82	63	2	43
Solomon	89	69	86	85	69	22	104
Tonga	99	70	96	98	NA	1	52
Tuvalu	97	67	93	93	NA	NA	NA
Vanuatu	76	52	89	89	NA	6	72

Source: [UNICEF, 2019]

1.3 Immunization and Vaccine Preventable Diseases

As a result of the efforts of each PICT and international cooperation for strengthening of the immunization service provision capacity, nine countries for Bacillus Calmette–Guérin (BCG) and four countries for diphtheria-tetanus-pertussis (DTP) and polio achieved the World Health Organization (WHO) target (over 95% coverage), respectively. However, of the major immunizations in the target countries shown in Table III-4, only two countries, namely, Cook Islands and Tonga, have achieved 95% of all types of the immunization coverage targeted. Moreover, Micronesia, Samoa, and PNG have low immunization coverage.

Table III-4 Immunization Coverage in the Target Countries

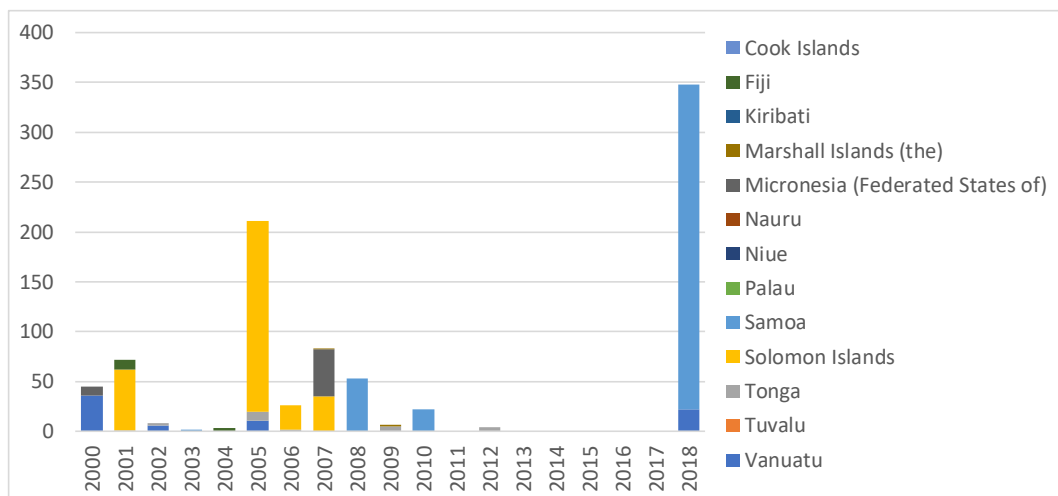
Vaccines	BCG	DPT3	Polio3	HepB 3	MCV 1
Cook Islands	100	100	100	100	100
Fiji	76	85	86	85	81
Kiribati	100	95	98	Not done	73
Marshall Islands	98	81	80	84	83
Micronesia	80	75	75	83	73
Nauru	100	90	90	90	96
Niue	100	88	88	88	100
Palau	NA	95	98	98	98
PNG	47	45	51	45	37
Samoa	100	44	44	44	40
Solomon	83	85	85	85	93
Tonga	100	100	100	100	99
Tuvalu	100	89	89	89	88
Vanuatu	95	87	87	87	100

Note: Red<50%<Yellow<95%

Source: [Dr Angela Merianos, 2019]

According to the latest report of WHO/United Nations Children’s Fund (UNICEF) Joint Reporting Process [WHO/UNICEF, 2019], from 2000 to 2018, the number of reported vaccine-preventable diseases (VPDs) cases were zero or a few in 13 countries. However, countries of lower immunization coverage tend to experience outbreak of VPDs. PNG reports more numbers of VPD cases, especially diphtheria and pertussis.

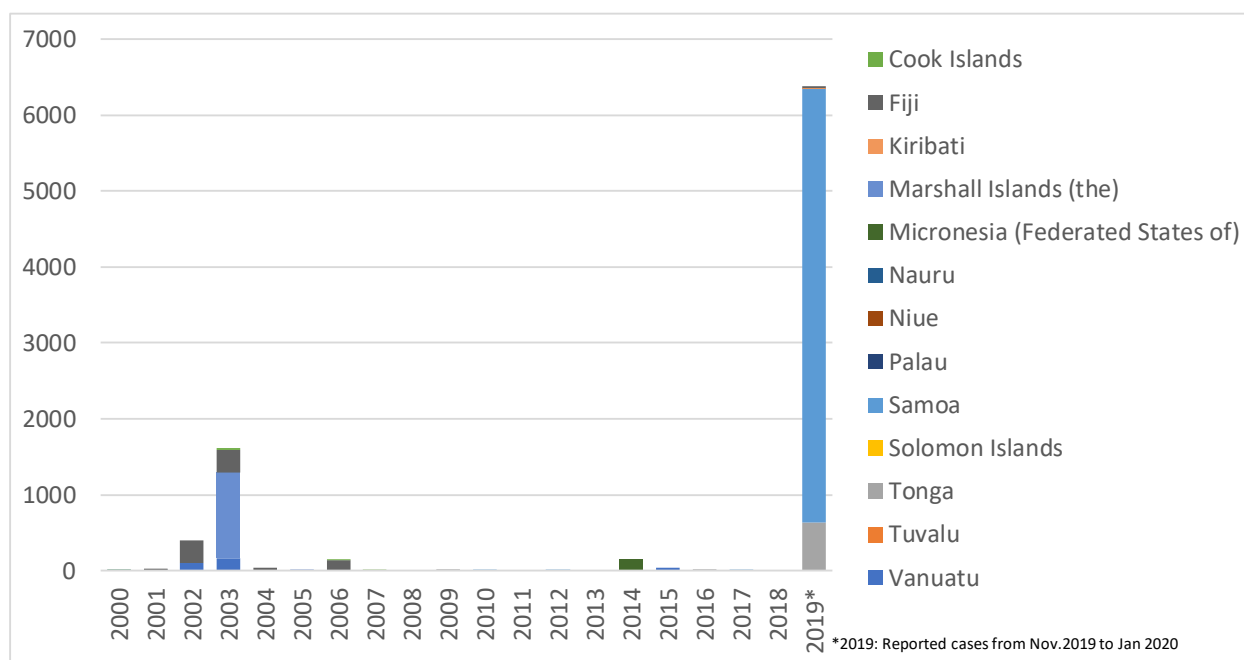
In 2018, around 200 pertussis cases are reported in Samoa in 2018 and in Solomon Islands in 2005 (Figure III-1).



Source: [WHO/UNICEF, 2019]

Figure III-1 Reported Cases of Pertussis (2000-2018)

The Pacific Region experienced measles outbreaks from 2000 to 2018 (Figure III-2). Also, in 2019, Fiji, Samoa, and Tonga declared an outbreak of measles. According to WHO, measles-containing vaccine (MCV) 1 and 2 coverages in Samoa were low in 2018, at 31% and 13%, accordingly. In Tonga, the first cluster of cases were teenagers that traveled back from a foreign country, although the MCV coverages were over 95% in 2018. In response to the outbreak, target age groups of MCV were expanded from 6 month to 60 years old and dosed almost 40% of population in Samoa. In Tonga, MCV was administered to high-risk population and covered 15% as an emergency response. Supplemental Immunization Activity (SIA) was implemented in Fiji and covered over 100,000 people under the first round [WHO, 2019].



*2019: Reported cases from Nov.2019 to Jan 2020

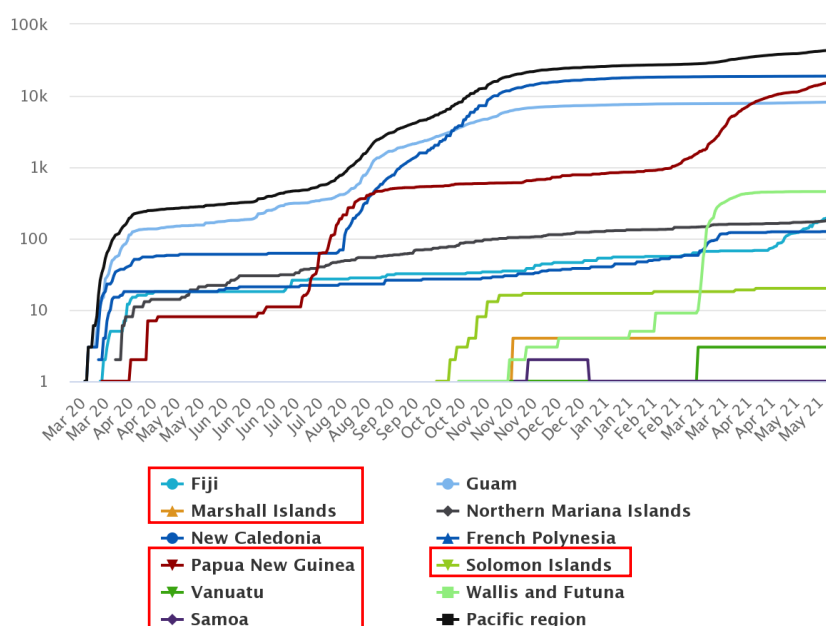
Source: 2000-2018 - [WHO/UNICEF, 2019], 2019 - [WHO, 2020]

Figure III-2 Reported Cases of Measles (2000-2018)

1.4 Other Communicable Diseases

Neglected tropical diseases (NTDs) are still one of public health problems in the Pacific Region. Regarding Lymphatic Filariasis (LF), five countries (Fiji, Micronesia, PNG, Samoa, and Tuvalu) are still ongoing Mass Drug Administration (MDA) in 2019 although six countries (Kiribati, Marshall Islands, Niue, Palau, Tonga, and Vanuatu) have eliminated as a public health problem by 2019. Solomon Islands was classified as non-epidemic in 2019 [WHO, 2019].

With regard to the new coronavirus infection (COVID-19), community-acquired infections and deaths have been confirmed only in Fiji and PNG, as well as imported cases have been confirmed in the Marshall Islands, Samoa, Solomon Islands, and Vanuatu. [SPC, 2021] (Figure III-3). In light of the current situation where access to advanced medical care is limited and tests must be ordered abroad, each country is strengthening its border control measures, such as strengthening border closures and quarantine, and restricting the return of its own citizens from abroad [SPC, 2020]. Major response and supports from development partners are summarized in Attachment 4.

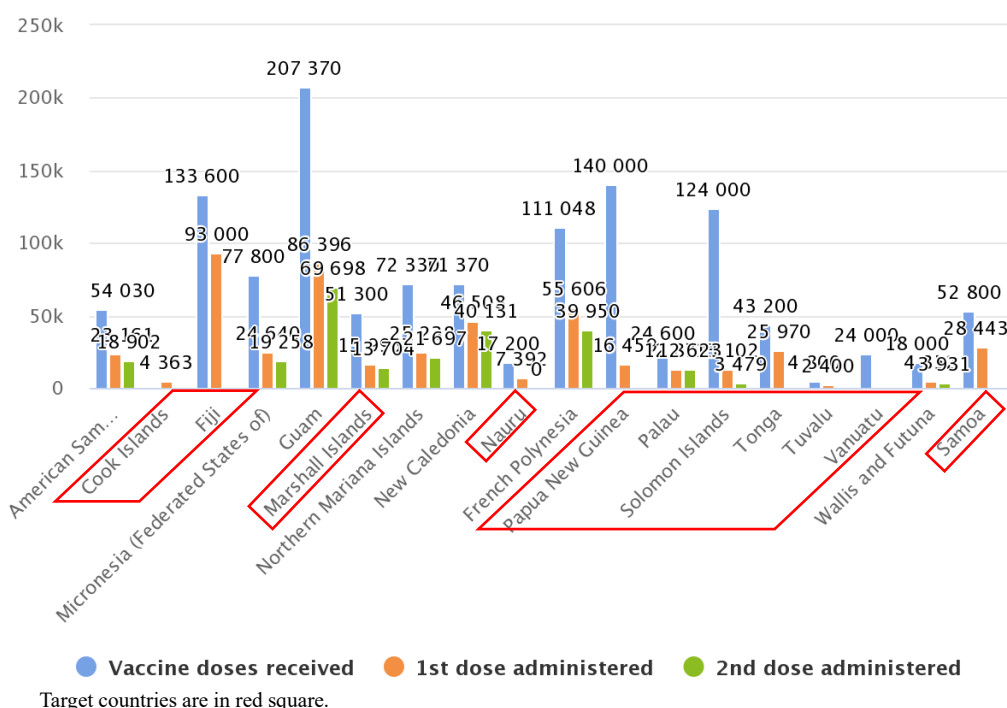


Target countries are in red square.

Source: [SPC, 2021]

Figure III-3 Cumulative Confirmed Cases of COVID-19 (as of 26 May 2021)

The Heads of Health (HoH) Virtual Meeting was held on 2 December 2020 to discuss COVID-19 vaccine introduction accessed through the COVID-19 Vaccines Global Access (COVAX) Facility. PICTs confirmed the coordination and collaboration such as regulation, procurement, the supply chain, etc., to introduce COVID-19 vaccines. Vaccine availability is good in Fiji, Papua New Guinea, and Solomon Islands, and the first dose of vaccine is relatively advanced in Fiji, but overall progress has not been encouraging (Figure III-4).



Source: [SPC, 2021]

Figure III-4 COVID-19 Vaccination Status (as of 26 May 2021)

1.5 Non-Communicable Diseases

NCDs are the leading causes of death and disability in the Pacific Region, responsible for 80% of all deaths. Most of the PICTs have a very high prevalence of obesity. Table III-5 shows NCDs related indicators in the target Pacific Island Countries (PICs). Obesity of adult and adolescents in Cook Islands, Nauru, and Palau is relatively higher than that of other countries. On the other hand, undernutrition among children is still concerned especially in Marshall Islands, Nauru, PNG, Solomon Islands, and Vanuatu.

Table III-5 NCDs Related Indicators

Year	Causes of Death by NCDs (%) ¹	Obesity Adults aged 18+ (%) ¹	Obesity Adolescents aged 10-19 (%) ¹	Overweight Children Under 5 (%) ²	Stunted Children Under 5 (%) ²
	2016			2013-2018	
Cook Islands	NA	55	30	NA	NA
Fiji	84	30	19	5	8
Kiribati	64	46	21	NA	NA
Marshall Islands	NA	52	24	4	35
Micronesia	75	42	19	NA	NA
Nauru	NA	61	32	3	24
Niue	NA	49	28	NA	NA
Palau	NA	55	29	NA	NA
PNG	56	19	9	14	49
Samoa	81	46	20	5	5
Solomon Islands	69	21	4	5	32
Tonga	83	46	25	17	8
Tuvalu	NA	51	25	6	10
Vanuatu	74	24	7	5	29

Source: 1 [WHO, 2018], 2 [UNICEF, 2019]

Table III-6 summarizes health status and major challenges on NCDs of the target countries other than PNG. In the target countries, health services are provided free of charge or at quite low cost. However, specialized or advanced medical services rely on overseas referrals and visiting medical doctors from overseas. In addition, it is difficult to secure human resources for community health in remote areas and islands, and the aging of human resources is increasing, especially those who are working in the health facilities closest to the residents.

Table III-6 Summary of Health Situation and NCDs Challenges in the Target Countries

Country	Situation and Challenges
Cook Islands	<ul style="list-style-type: none"> Cardiovascular disease is the most prevalent NCD, with an average of over 200 cases each year from 2009 to 2015, followed by diabetes with an average of 100 new cases a year. In the adult population aged 25–64 years, the prevalence of obesity was 61.4%, hypertension was 33.2%, diabetes was 23.6%, and elevated blood cholesterol was 75.2% by STEPS survey in 2004.
Fiji	<ul style="list-style-type: none"> The National Strategic Health Plan 2016–2020 has two pillars: 1) preventive, curative and rehabilitative services and 2) health systems strengthening. The priority areas of the first pillar are: NCDs including nutrition, mental health and injuries; maternal, infant, child and adolescent health; communicable diseases; environmental health; as well as health emergency preparedness, response and resilience. In 2015, the leading causes of death in Fiji were diabetes (19.7%), ischemic diseases (16.6%) and hypertensive diseases (4.8%). The leading causes of morbidity were diseases of the circulatory system and respiratory system and certain infectious and parasitic diseases. Approximately 40% of tertiary health care costs were attributed to NCD treatment in 2011, while 18.5% were attributed to the treatment of communicable diseases.
Kiribati	<ul style="list-style-type: none"> In 2016, key NCD risk factors remain, and the burden of disability from NCDs is increasing. Mental illness, suicides, domestic violence, and injuries are also inadequately addressed.
Marshall Islands	<ul style="list-style-type: none"> Diabetes-related diseases and cancer are the leading causes of death. The high consumption of imported canned and instant food, lack of physical exercise and use of tobacco products are all associated with the high prevalence of NCDs and obesity. In addition to NCDs, TB is also a leading cause of death, and the country has reported multidrug-resistant TB.
Micronesia	<ul style="list-style-type: none"> NCDs such as diabetes, cardiovascular diseases and cancers are major health problems. The overconsumption of imported packaged food, lack of physical activity and use of tobacco products are contributing to the high prevalence of NCDs and obesity in the country. Intentional (violence) injury and suicide are other issues, whose contributing factors are likely to be the burden of cultural and economic dislocation, particularly among young adult males. Alcohol use often leads to violent incidents.
Nauru	<ul style="list-style-type: none"> NCDs are the main cause of premature mortality and morbidity, contributing to a shorter life expectancy compared with other Pacific Island Countries. The four key risk factors are: tobacco use, alcohol use, unhealthy diets and lack of physical activity, which are contributing to high rates of obesity, diabetes, and raised blood pressure. In addition to NCDs, TB and leprosy programs continue to report new cases. Also, outbreaks of diarrheal illness or typhoid fever still occur.
Niue	<ul style="list-style-type: none"> Experiencing increase in the incidence of NCDs, including diabetes, stroke and cancers, in conjunction with high rates of obesity (61%), hypertension (33.5%) and hyperglycemia (38.4%).
Palau	<ul style="list-style-type: none"> The burden of diabetes, heart disease, obesity, and kidney failure is increasing. Cost evaluations are needed for off-island medical referrals, hemodialysis and intensive care services, and for the financial sustainability of a secondary health care facility.
Samoa	<ul style="list-style-type: none"> NCDs are the main cause of premature mortality and morbidity, linked to a high prevalence of key risk factors. In 2013, half of the adult population between the ages of 18 and 64 years were at high risk of developing an NCD. Dietary risk factors are a major contributor to NCDs in Samoa; close to 85% of adults are overweight or obese, and around 62% of adults regularly consume processed foods high in salt. A unique community-led approach has been introduced to NCD prevention, detection and management through the WHO Package of Essential Noncommunicable Disease Interventions (PEN) Recent evaluations have shown a need to increase measles, mumps and rubella (MMR) coverage and reduce dropouts from immunization services.
Solomon	<ul style="list-style-type: none"> Sedentary lifestyles and dietary changes have contributed to a steady increase in obesity, diabetes, hypertension and other associated complications. Communicable diseases, particularly malaria and dengue, continue to be a challenge.

Country	Situation and Challenges
Tonga	<ul style="list-style-type: none"> • NCDs are the main causes of premature illness and death. Access to medicines, screening, referral and monitoring for NCDs management serve as a challenge. • There is high prevalence of NCDs risk factors such as tobacco, harmful use of alcohol, unhealthy diets, and physical inactivity.
Tuvalu	<ul style="list-style-type: none"> • A STEPS survey conducted in 2015 shows a high rate of obesity (≥ 30 kg/m²) among adults aged 18–69 years, with 55.2% in males and 70.7% in females.
Vanuatu	<ul style="list-style-type: none"> • NCDs, in particular diseases of the circulatory system, diabetes, cancers, and chronic respiratory disease, are among the most common causes of adult morbidity and premature mortality. • Among children, respiratory infections, diarrheal disease and neonatal conditions continue to account for most childhood illnesses and under-five deaths. • Undernutrition and stunting remain a concern.

Source: [WHO, 2018], [SPC, Since 2014], [JICA, 2013]

Chapter 2 Regional Health Strategy

In the Pacific Community Strategic Plan 2016–2020, the health sector is highlighted in Development Objectives 7 (improving multi-sectoral responses to non-communicable diseases and food security) and 8 (strengthening regional public health surveillance and response). The Pacific Community Transition Plan 2021, which aims to recover from the coronavirus disease 2019 (COVID-19) crisis with holistic approach, includes a goal to achieve healthy lives of the Pacific people (Goal 3). The following sections focus on health sector strategy of the region:

2.1 Regional Health Development Framework

Under the Healthy Islands Vision adopted at the first Health Ministers' Meeting in 1995, PICTs have been promoting a comprehensive approach to community building where humans and the environment can be healthy throughout their lives.

At the 13th Pacific Health Ministers Meeting in August 2019, priority issues and their efforts to address non-communicable diseases (NCDs), health emergency response, and building health systems for climate change was confirmed. Table III-7 summarizes meeting outcome related to MNCH and community health.

Table III-7 Summary of Outcome at the 13th Pacific Health Ministers Meeting

Key Items	Recognition and Endorsement
Universal Health Coverage (UHC) and PHC	<ul style="list-style-type: none"> • Strengthening primary health care. • Raising awareness of and increasing the health literacy. • Active reporting against Healthy Islands Monitoring Framework (established in 2017). • Strengthening regional and country level coordination mechanisms for overseas medical referral schemes (OMRS) and visiting specialist medical teams (VSMT).
NCDs	<ul style="list-style-type: none"> • High burden of obesity and the ongoing NCD crisis in the Pacific. • Innovative actions, particularly those led by the community and targeting school children, which help to combat NCDs and childhood obesity. • Support among the countries to strengthen NCD-related policy and legislation. • Ensuring that each country has an up-to-date, multisectoral national strategic plan for NCDs, with clearly defined priorities, indicators and timelines. • Improving cancer surveillance, screening, diagnostic, treatment and palliative care capacity.
Health Workforce	<ul style="list-style-type: none"> • Development of health workforce information and data. • Support for health workers working on remote islands and remote areas. • Strengthening the quality and quantity of undergraduate education.
Immunization	<ul style="list-style-type: none"> • Harmonizing childhood immunization schedules across the Pacific. • Achieving the regional coverage target of 95% for all vaccines.

Source: [WHO, Ministry of Health of French Polynesia, SPC, 2019]

In the Pacific Region, NCDs are in a serious situation and have brought social, community, and family crises [WPRO, 2013]. In the Joint Forum Economic and Pacific Health Ministers Meeting held in Solomon Islands in July 2014, the Pacific NCD Roadmap was set for a multi-sectoral approach for a country and regional response to the NCD crisis. Table III-8 shows the key strategies of the NCD roadmap.

Table III-8 Key Strategies of the Pacific NCD Roadmap

1.	Strengthened tobacco control (including raising the excise duty on tobacco products to at least 70% of their retail price).
2.	Policies on reducing consumption of food and drink products directly linked to obesity, heart disease, and diabetes in the Pacific, especially salt and sugary drinks.
3.	Improved efficiency and impact from the existing health dollar by reallocating resources to targeted primary and secondary prevention of NCDs including scaling up of Package of Essential NCD (PEN) and better drug prices.
4.	Strengthening the evidence base for better investment planning and program effectiveness.

Source: [PIF, SPC, 2014]

Recognizing that the NCD prevention should be started in early stage of life, the Commission on Ending Childhood Obesity (ECHO) recommended the approach shown in Table III-9 as an intervention from pregnancy to adolescence to address the life course approach. In the Pacific Region, the establishment of the Pacific Ending Childhood Obesity Network (Pacific ECHO) was also endorsed and confirmed to tackle childhood obesity.

Table III-9 Approach for Ending Childhood Obesity

1.	Implement comprehensive programs that promote the intake of healthy foods and reduce the intake of unhealthy foods and sugar-sweetened beverages by children and adolescents.
2.	Implement comprehensive programs that promote physical activity and reduce sedentary behaviors in children and adolescents.
3.	Integrate and strengthen guidance for noncommunicable disease prevention with current guidance for preconception and antenatal care, to reduce the risk of childhood obesity.
4.	Provide guidance on, and support for, healthy diet, sleep, and physical activity in early childhood to ensure children grow appropriately and develop healthy habits.
5.	Implement comprehensive programs that promote healthy school environments, health and nutrition literacy, and physical activity among school-age children and adolescents.
6.	Provide family-based, multicomponent, lifestyle weight management services for children and young people who are obese.

Source: [WHO, 2017]

2.2 Regional Monitoring Mechanism

2.2.1 NCDs

At the Twelfth Pacific Health Ministers Meeting held in August 2017, the Pacific Monitoring Alliance for NCD Action (MANA) was established to strengthen the ability to objectively grasp and explain the progress of NCD status. With SPC's support, PICTs have completed dashboard reports on their progress towards NCD targets. The Pacific MANA dashboard (Figure III-5), produced under MANA, will be updated regularly to enable PICTs to make informed decisions based on current strengths and areas requiring more action.

Most countries have made good progress in NCDs strategies; increasing taxes on unhealthy products, strengthening NCDs management, and monitoring progress through NCDs risk factor surveys and the Pacific NCD Dashboard. Despite some achievements, there are several challenges and gaps such as strengthening leadership and governance, further raise taxes in line with global recommendations, sufficient resources (medicines, equipment and staffing) to ensure that the World Health Organization (WHO) Package of Essential NCD (PEN) interventions for primary health care, strengthening mechanisms for monitoring child growth, and publishing monitoring data to monitor trends in child overweight and underweight.

Description Pacific Island Countries and Territories (N=14)	Cook Islands	Federated States of Micronesia	Fiji	Kiribati	Nauru	Niue	Palau	PNG	Marshall Islands	Samoa	Solomon Islands	Tonga	Tuvalu	Vanuatu
Leadership and governance														
L1. Multi-sectoral NCD taskforce							***					***	**	
L2. National strategy addressing NCDs and risk factors	**		**			**		**				***	**	**
L3. Explicit NCD indicators and targets	**	**	**	*			**	**				***	*	**
Preventive policies														
Tobacco														
T1. Tobacco excise taxes	**	*	*	*	*	*	**			*		***	*	*
T2. Smoke-free environments	**		*	**	**		*	**	*	*	*	**	**	**
T3. Tobacco health warnings	**		**				*	*	*	*	*	**	**	**
T4. Tobacco advertising, promotion and sponsorship				**	**		**	**	*	*	*	**	**	**
T5. Tobacco sales and licencing	*	N/A	**	*	*		**	**			**	*	*	**
T6. Tobacco industry interference														
Alcohol														
A1. Alcohol licencing to restrict sales	**	N/A	**	**	**	**	**	**	*	*	**	**	**	*
A2. Alcohol advertising		N/A												
A3. Alcohol taxation			**		**						**			
A4. Drink driving		N/A	**	*	**	*	*		*		**	**		
Food														
F1. Reducing salt consumption	**	**	**	**	*		*	*		*				
F2. Trans-fats														
F3. Unhealthy food marketing to children				**										
F4. Food fiscal policies	*	*	*	**	**	*			*	*		**	**	*
F5. Healthy food policies in schools	*	N/A	*	*	*	*			*	*				
F6. Food-based dietary guidelines	**		*	**		**			*	**	**	**		
Physical Activity														
P1. Compulsory physical education in school curriculum	**			**	**	**		*		*	*	*		
Enforcement														
E1. Enforcement of laws and regulations related to NCD risk factor		N/A		*							*	*		
Health system response programmes														
H1. National guidelines for care of main NCDs	*		*	*	*	**		*		*	**	**	**	*
H2. Essential drugs		N/A	*	**	*	*				*	**	**	**	*
H3. Smoking cessation	**	N/A	**	*	*	**	*		*	*	**	**	**	*
H4. Marketing of breast milk substitutes			**			**	**							
H5. Baby friendly hospitals			*											
H6. Maternity leave and breastfeeding			*	*										
Monitoring														
M1. Population risk factor prevalence surveys - adults	**	**	*	**	*		*	*		*	*	**	**	*
M2. Population risk factor prevalence surveys - youth	**	**	*				**	*	*			**	*	**
M3. Child growth monitoring	**				**	**	**	**	*					
M4. Routine cause-specific mortality	**	*	*	**	**	**	**	*	*	**		*	*	*

Rating	Description	Strength of action/implementation (star rating only assigned if 'Present')
N/A	Not applicable	
	Not present	☆
	Under development	☆☆
	Present	☆☆☆

Source: [SPC, Since 2014]

Figure III-5 MANA Dashboard (Summary of Status of Indicators Across the PICTs)

2.2.2 Sustainable Development Goals (SDGs)

The SDG Dashboard is the regional dissemination platform for the 22 PICTs and will enable monitoring of progress against the 2030 Agenda for Sustainable Development. The SDGs Progress Wheels, which have been designed by the Pacific Community (SPC) and the United Nations Development Programme (UNDP), illustrate progress of SDGs. The progress of “SDG 3 - Good Health and Well-Being” in the Pacific Region except Australia and New Zealand is shown in Table III-10. The value of target 3.4 of SDGs “By 2030, reduce by one-third premature mortality from NCDs” is lower than those of other targets of SDGs 3. Value of target 3.A (tobacco control) is also low.

Table III-10 Progress of SDGs 3 in the Pacific Region

Target of SDGs 3		Value*
Target 3.1	By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	Good progress (4)
Target 3.2	By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births	Good progress (4)
Target 3.4	By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Minimal achievement (1)
Target 3.5	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	Good progress (4)
Target 3.8	Achieve universal health coverage, including financial risk protection, access to quality essential health care services and access to safe, effective, quality, and affordable essential medicines and vaccines for all	No established methodology
Target 3.A	Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	Minimal achievement (1)
Target 3.B	Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines	Some achievement (3)

*0-No achievement, 1-Minimal achievement, 2-Some achievement, 3-Average progress, 4-Good progress, 5-Goal is fully achieved

Source: [SPC, Since 2015]

2.2.3 Pacific Public Health Surveillance Network

The Pacific Public Health Surveillance Network (PPHSN) is a voluntary network of countries, areas, and organizations. Core members are ministries of health of 22 countries and territories including 14 target PICs of the survey. Created jointly by WHO and SPC in 1996, PPHSN is dedicated to the promotion of public health and improving public health surveillance and response to health emergencies in the Pacific. Its main priority is communicable diseases, especially the ones prone to outbreak. Target diseases include: dengue, measles, rubella, influenza, leptospirosis, typhoid fever, severe acute respiratory syndrome (SARS) and human immunodeficiency virus (HIV)/sexually transmitted infections (STIs) [WHO], as well as COVID-19.

Chapter 3 Health Systems in PICs

3.1 Responsible Agencies for the Health Sector

Table III-11 summarizes the responsible agencies⁵ and roles of the health sector in the target countries. Most health programs in the target countries are supervised by the ministries of health. In Micronesia, each state system is autonomous so that each state government has a key role to implement health programs.

Table III-11 Responsible Agencies for Health Sector

Country	Main Provider	Roles and Current Situation
Cook Islands	Ministry of Health	<ul style="list-style-type: none"> Secondary care which includes surgery, medicine, anesthesia, obstetrics, gynecology, ophthalmology, and pediatrics are supplemented by visiting specialists, and access to tertiary services is through referral to overseas providers.
Fiji	Ministry of Health and Medical Services	<ul style="list-style-type: none"> The Minister for Health and Medical Services has oversight of the ministry, supported by an Assistant Minister for Health and Medical Services. A Permanent Secretary and two Deputy Secretaries for Public Health and Hospital Services provide oversight of operational functions.
Kiribati	Ministry of Health and Medical Services	<ul style="list-style-type: none"> Provision health-care services to all citizens.
Marshall Islands	Ministry of Health	<ul style="list-style-type: none"> The Ministry of Health works collaboratively with the Community Health Councils to provide health-care services. Direct aid provided by the United States Government to the Marshall Islands is the mainstay of the economy. The shortage of funds to implement programs contributes to the fragmentation of health service delivery. This is despite the fact that, during annual government program reviews at the national level, the health sector is often found to have a low spending rate.
Micronesia	1) National Department of Health and Social Affairs 2) Department of Health Services in each state	<ul style="list-style-type: none"> The National Department of Health and Social Affairs oversees health programs and ensures compliance with all laws and executive directives. The Department of Health Services in each state provides medical and public health services through a hospital, community health centers, and dispensaries. The Division of Health in the Department of Health and Social Affairs conducts health planning, donor coordination, and technical and training assistance. It is also responsible for public health programs funded by the United States Department of Health and Human Services. Access to and provision of quality health services greatly depend on governance and management of the Division of Health.
Nauru	Ministry of Health and Medical Service	<ul style="list-style-type: none"> The Government of Nauru provides health-care services to all citizens.
Niue	Department of Health	<ul style="list-style-type: none"> Department of Health provides health services under the Ministry of Social Services.
Palau	Ministry of Health (Non-Communicable Diseases Unit)	<ul style="list-style-type: none"> MOH consists of three bureaus (Bureau of Hospital and Clinical Services, Bureau of Public Health Services, Bureau of Nursing Services) and Hospital Administration and Support Services. Non-Communicable Diseases Unit (NCD Program) has a role to cope with the NCD crisis in Palau.
Samoa	Ministry of Health	<ul style="list-style-type: none"> In 2017, the Cabinet took a decision to merge the National Health Services and the Ministry of Health to improve coordination of the health sector. It also aims at strengthening the provision of public health and primary health care in the rural areas.
Solomon	Ministry of Health and Medical Service	<ul style="list-style-type: none"> The Ministry of Health and Medical Services is responsible for most of the health-care services in the country. Non-governmental and faith-based organizations partnered with the ministry in service delivery and financing. The private sector has a minimum role in health delivery.
Tonga	Ministry of Health	<ul style="list-style-type: none"> Ministry of Health consists of five divisions which are Corporate Services, Dental, Medical, Nursing, and Public Health. The vision of MOH is to be the highest health care provider in the Pacific as judged by international standard in 2020.

⁵ Websites of the ministries of health and statistical offices of 14 countries are listed in Attachment 3.

Country	Main Provider	Roles and Current Situation
Tuvalu	Ministry of Health	<ul style="list-style-type: none"> Most health services are provided by the public health services, but family planning services are jointly provided by the public health services and the Tuvalu Family Planning Association.
Vanuatu	Ministry of Health	<ul style="list-style-type: none"> The government is the main service provider of health services. There is a small private sector that contributes to health care, principally in the two main urban centers. Support from non-governmental organizations, faith-based organizations and community-based services supplement government services.

Source: [WHO, 2018]

3.2 Health Policies

3.2.1 Health Sector Targets in National Policies

(1) Cook Islands

The “National Sustainable Development Plan 2016–2020” (NSDP) aims “to enjoy the highest quality of life consistent with the aspirations of our people, and in harmony with our culture and environment”. The NSDP has 16 development goals that outline individual, community, business and government partnerships for a sustainable quality of life for all Cook Islanders. Goal 7 relates to health care and translates to six objectives in the Ministry of Health: 1) reduce NCDs; 2) increase investment in health care; 3) promote sexual health; 4) promote healthier lifestyles through exercise and sports; 5) achieve healthier, longer lives; as well as 6) improve mental health care.

The Ministry of Health has a new health strategy, “Cook Islands National Health Strategic Plan 2017–2021”, with the following five policy goals under key result areas:

1. To strengthen administrative and management capacity and capability to meet the health systems and health service needs, demands, and expectations for the Ministry of Health;
2. To strengthen and improve public health and community health care services under the principles of primary health care and the Healthy Islands vision;
3. To provide high-quality clinical care and services to meet the needs and expectations of patients, in line with the policies and resources of the Ministry of Health;
4. To provide high-quality pharmaceutical services, diagnostics, and support services to meet clinical care patients and the communities, in line with the policies and resources of the ministry; and
5. To work collaboratively to complement and support health partners in the implementation of agreed health-related interventions and activities.

(2) Fiji

The “National Strategic Health Plan 2016–2020” (NSHP) aims to help people achieve full health, the Ministry of Health and Medical Services provides quality preventive, curative, and rehabilitative services through its health system. There is a drive towards “wellness”, which entails a more holistic approach to health than the mere reduction of disease or infirmity.

NSHP has two pillars: 1) preventive, curative and rehabilitative services and 2) health systems strengthening. The priority areas of the first pillar are: (a) NCDs, including nutrition, mental health and injuries; maternal, infant, child and adolescent health; (b) communicable diseases; (c) environmental

health; and (d) health emergency preparedness, response and resilience. The second pillar, health systems strengthening, focuses on: (a) primary health care; (b) a productive, motivated health workforce; evidence-based policy, planning, implementation and assessment; (c) medical products; (d) equipment and infrastructure; and (e) sustainable financing of the health system. The overall mission is to empower people to take ownership of their health. The implementation and outputs are regularly monitored through its indicators and targets, including assessment of underperforming areas and required remedial actions.

(3) Kiribati

The government's commitment to the "2030 Agenda for Sustainable Development" is reflected in the strategic actions and core indicators of the "Kiribati Development Plan 2016–2019". The Goal 3 is to improve population health and health equity through reductions in morbidity and mortalities from common diseases including NCDs and improved population coverage and access to quality care.

The vision of the "Kiribati Health Strategic Plan 2016–2019" is "Akea Tokin Te Tamaroa towards healthy population that is well supported by quality health services". The mission is to deliver safe, quality health services through hospital, public health and nursing facilities. The primary goal is to improve population health and health equity through continuous improvement in the quality and responsiveness of health services, and by making the most effective and efficient use of available resources. The six strategic key result areas and goals are as follows:

1. To strengthen initiatives to reduce the prevalence of risk factors for NCDs, and to reduce morbidity, disability and mortality from NCDs;
2. To increase access to and use of high-quality, comprehensive family planning services, particularly for vulnerable populations including women whose health and well-being will be at risk if they become pregnant;
3. To improve maternal, newborn, and child health;
4. To prevent the introduction and spread of communicable diseases, strengthen existing control programs and ensure that Kiribati is prepared for any future outbreaks;
5. To address gaps in health service delivery and strengthen the pillars of the health system; and
6. To improve access to high-quality and appropriate health care services for victims of gender-based violence, and services that specifically address the needs of young people.

(4) Marshall Islands

The Ministry of Health has introduced a dynamic three-year rolling plan, the "Three-year Rolling Strategic Plan 2017–2019" under the theme of "Kumiti Ejmour" or "Health is a shared responsibility". The vision is to reaffirm the commitment to facilitate the concept of the Healthy Islands Vision. The missions are: 1) to strengthen the commitment to healthy islands concept in implementing health promotion to protect and promote healthy lifestyles to improve the lives of the people through primary health care services, and 2) to build the capacity of the Ministry of Health, communities, families and partners to actively participate and coordinate preventive services programs and activities as the core resources in primary health care services.

The eight health priorities are to: (a) secure high-quality health care in the outer islands; (b) achieve universal access to high-quality care for all people with communicable diseases; (c) provide integrated NCD services along with the tools and support that people need to manage their health; (d) strengthen national capacity to deliver high-quality maternal, infant, child and adolescent health and community-based interventions for family resource management; (e) increase access to community-based care and supports for adults and children with mental illness and/or substance use disorders through a network of service providers that are committed to a person-centered and recovery-oriented system of care; (f) increase immunization rates and reduce preventable infectious diseases; (g) promote and educate the public on healthy lifestyle changes; and (h) provide efficient and effective administrative and coordinated functions of preventive and public health care services.

(5) Federated States of Micronesia

In 2014, the Health Summit was held to unify national and state-level policies, directives, initiatives, commitments and programs to improve, guide and sustain health development. The summit recommendations were translated into the “Framework for Sustainable Health Development in the Federated States of Micronesia: 2014–2024”. The vision of the strategic framework is to ensure that people and communities are healthy and enjoy universal access to quality health services. The strategic framework sets out six goals: 1) to ensure accountability, sustainability and quality of health service delivery; 2) to achieve universal access to an essential package of health care services; 3) to increase financial sustainability and ensure universal access to essential health services; 4) to improve availability, accessibility, quality and use of health information for evidence-based decision-making across the health sector; 5) to reduce morbidity and mortality; and 6) to ensure supportive and sustainable social and physical environments to improve health.

(6) Nauru

The vision of the “Nauru National Health Strategic Plan for 2016–2020” is “a healthy and peaceful nation that values and supports human rights and dignity through the provision of quality health care and services”. The plan prioritizes four key result areas to provide quality health services that are accessible by all communities; 1) health systems strengthening, 2) primary health care and the Healthy Islands, 3) curative health, and 4) support services and networking.

(7) Niue

The “Niue National Strategic Plan (2009–2013)” identifies NCDs as a major threat. The vision of the “Niue Health Strategic Plan (2011–2021)” is “a healthy population, well supported by quality health services”. Strategic actions put forth in the plan are linked to a set of key objectives and based on the findings of the 2011 Niue Health Sector Needs Assessment. Aiming at reducing NCDs incidence by at least ten percent per annum, it calls for strengthening management and planning, clinical leadership, effective community outreach, and the implementation of a performance monitoring system.

The strategic plan includes a proposed sector coordination process to identify priorities, promote collaboration among health partners, identify common survey instruments, and encourage rationalized

reporting. Its monitoring and evaluation framework will be used to measure progress against 21 core indicators.

(8) Palau

The “Ministry of Health Strategic Plan 2014–2018” outlines the strategic priorities: 1) provide accessible and high quality patient-centered hospital services; 2) provide accessible and high quality primary and preventive services; 3) ensure effective partnerships are developed and maintained; 4) value the people and support their growth and development; and 5) ensure that the administrative and support services are accountable and sustainable. Under the vision of healthy communities with access to comprehensive health care services, the Ministry of Health aims to strengthen health systems to be able to provide holistic care and integrated services. Implementation and achievements of relevant programs are to be monitored according to annual operation plans of concerned bureaus.

(9) Samoa

The vision of the “Strategy for the Development of Samoa (SDS) 2016/17-2019/20” is “an improved quality of life for all: accelerating sustainable development and broadening opportunities”. Promoting health and well-being is a key outcome of the plan, which emphasizes prevention, health protection and inclusive people-centered health through increased focus on 1) primary health care; 2) revitalization of traditional roles in village health care; and 3) quality health service delivery. NCDs remains a priority in Samoa’s development plans, in addition to the health and well-being of women and children.

The vision of the “Samoa Health Sector Plan 2008–2018” (SHSP) is “A Healthy Samoa”. Key priorities in this plan include: 1) addressing rapidly increasing levels of NCDs and their impact on mortality and morbidity, on the health system and the economy; 2) improving reproductive and MNCH for the long-term health of the community; 3) reducing risks from emerging and re-emerging infectious diseases; and 4) reducing injury as a significant cause of death and disability.

Key strategies of SHSP are; (a) strengthening health systems and health governance, (b) facilitating improved collaboration, partnerships and donor coordination, (c) enhancing quality service delivery, and (d) strengthening primordial prevention. It has led to some important legislations including the National Health Service Act 2014, the “Health Promotion Foundation Act 2015”, the “Allied Health Professions Act 2014”, the “Food Act 2015”, the “Healthcare Professions Registration and Standards Act 2007”, and the “Tobacco Control Act 2008”. A new health sector plan is currently under development.

(10) Solomon Islands

The government has embarked on an ambitious reform agenda focused on devolving health services to the provinces and integration of health services. The “Solomon Islands National Health Strategic Plan for 2016–2020” (NHSP) looks at four key result areas: 1) improving service coverage; 2) improving service quality; 3) building strong partnerships; and 4) setting the foundations for the future. NHSP has also identified six priority interventions: (a) immunization; family planning; (b) water, sanitation and hygiene; (c) supervised hospital or facility-based deliveries and neonatal care; (d) malaria control; and (e) Tuberculosis (TB) control. It also identifies four underserved provinces (Malaita, Makira, Choiseul and Central Islands) and two priority population groups (people with disabilities and women exposed to

violence and abuse). The overarching goal is universal health coverage (UHC) and the main driver to achieve this is the Role Delineation Policy.

(11) Tonga

The vision of the “National Health Strategic Plan 2015–2020” is “to be the highest health care provider in the Pacific as judged by international standards in 2020”. The six strategic key result areas and goals are as follows:

1. Service delivery: to provide the best attainable quality health care services through the promotion of good health, reducing morbidity, disability and premature (death) mortality;
2. Health workforce: to provide the best attainable human resource services and workforce systems that can serve the best attainable quality health care services;
3. Infrastructure, medical products and technology: to provide the best attainable infrastructure, medical products and technology that are needed to deliver the entire minimum required health care services in Tonga;
4. Leadership and governance: to provide efficient and effective leadership and governance systems that would produce and deliver the best attainable health care services to the people of Tonga;
5. Information, research, policy and planning: to provide the best attainable policy and planning services that are guided by credible information and research to ensure the cost-effectiveness of health care services in relation to health needs and problems of Tonga; and
6. Health care finance: to continue to improve the standard of existing facilities and information and communications technology (ICT), and construct new facilities and introduce new health information and research initiatives where needed.

(12) Tuvalu

The “National Health Reform Strategy 2016–2019” has six objectives:

1. To strengthen administrative and management capability of the Ministry of Health to effectively support the strategies and commitments towards the further improvement of health service delivery and preventive health particularly at the clinical and primary care levels;
2. To strengthen and improve community preventive and health care services under the principles and concepts of primary health care (PHC), universal health coverage (UHC) and the Healthy Islands Vision;
3. To provide high quality clinical care and services to meet the needs and expectations of patients that are in line with the policies and resources of the ministry;
4. To ensure quality, timely, and accessible patient care support services in therapeutics, diagnostic and rehabilitative services that support and meet clinical service requirements;
5. To provide administrative and management support to the Ministry of Health in meeting its goals on, at least, policy and planning, human resources, legal aid, clinical care, public health, infrastructure and medical equipment needs; and
6. To foster a mutually beneficial and effective partnership that supports the health mandates of each partner and the health interest of the population.

(13) Vanuatu

The health sector development is guided by an overarching the “National Sustainable Development Plan 2016–2030” (NSDP), which outlines the overall national development priorities. The Goal 3 addresses quality health care and aims for “a healthy population that enjoys a high quality of physical, mental, spiritual and social well-being”. Its four health policy objectives are to: 1) ensure that the population of Vanuatu has equitable access to affordable, quality health care through the fair distribution of facilities that are suitably resourced and equipped; 2) reduce the incidence of communicable and non-communicable diseases; 3) promote healthy lifestyle choices and health-seeking behavior to improve population health and well-being; and 4) build health sector management capacity and systems to ensure the effective and efficient delivery of quality services that are aligned with the national directives.

The “National Health Sector Strategy 2017–2020” is under development and will align closely with the policy objectives of the NSDP. It will provide the strategic directions for health interventions for improved services that are accessible to all without financial hardship. Primary health care and strengthening the core components of the health system are key elements of the strategy to build a system that is resilient to the health consequences of climate change, the increasing burden of NCDs and the ongoing impact of communicable diseases.

3.2.2 Non-Communicable Diseases (NCDs) Strategy

The Pacific Region is suffering from NCDs, particularly obesity and diabetes. In response to growing threat of NCDs, each Pacific Island Countries and Territories (PICT) has been developing an NCD strategy to prevent and control NCDs. Table III-12 shows the current progress of development of NCD strategy in the target countries.

Table III-12 Current Progress of NCD Strategy

Status (No. of Countries)	Existing Plan (8)	National Health Plan with NCD Strategies (2)	Developing (3)
Countries	Cook Islands, Fiji, Micronesia, Nauru, Palau, Tonga, Tuvalu, Vanuatu	Kiribati, Niue	Marshall Islands, Samoa, Solomon Islands

Source: Presentation material (NCD Roadmap) at the 13th Pacific Health Ministers Meeting (2019)

Summary of NCDs strategies by countries is as follows. Cook Islands, Tonga and Nauru focus on NCDs not only for adults but also for childhood.

(1) Cook Islands

The “National Strategy and Action Plan for Non-communicable Diseases 2015 – 2019” was set by the Ministry of Health in Cook Islands in 2015. The Global Goal for NCD is to reduce NCD related premature deaths by 25% by 2025 (25 by 25). To align with this, the Cook Islands’ goal is to reduce the incidence of NCD by 2% per year by 2019. As food and nutrition objectives are as follows:

1. Reduce dependency of imported food and increase availability, consumption and access to local nutritious food.
2. Increase the proportion of adults (≥ 18 years old) eating five or more servings of vegetables per day to 30%.

3. Reduce the proportion of overweight and obese children in the population by 10%.
4. Reduce the proportion of overweight and obese adults in the population by 10%.
5. To reduce salt intake in peoples' diet to the recommended daily standard of less than 5 grams per day (200 mgs of sodium).

(2) Fiji

The goal of the “Non-Communicable Diseases Strategic Plan 2015 -2019” are to: 1) contribute to the overall goal of a healthier Fiji and 2) specifically, to achieve a 25% reduction in premature mortality from the four key NCDs by 2025. To achieve these goals, all the stakeholders are required; (a) multisectoral approach, (b) improved service delivery with integration of prevention, (c) early diagnosis and treatment at all levels of primary health care, (d) improved monitoring and evaluation, and (e) building capacity to deliver these services.

(3) Micronesia

The “National Strategic Plan for the Prevention and Control of Non-Communicable Diseases in the Federated States of Micronesia 2013-2017” was published in 2013. Toward the vision of “A Healthy and Productive FSM People in a Healthy Environment”, all the stakeholders work collaboratively and collectively across government departments, non-governmental organizations (NGOs), private sectors, and other community sectors. The goals are set for each level of prevention: Decrease the number of people with NCD by reducing the risk factors at primary prevention; Decrease the impact of NCDs through improved “Primary Care Services and Hospital Care Services” by reducing and delaying NCD at secondary prevention; and Decrease the impact of NCDs by improving “Survivorship Support Services” at tertiary prevention. The plan has been implemented along with the Pacific NCD Framework as well as the following principles; comprehensive, multisectoral, multidisciplinary and participatory, evidence-based, prioritized, life-course perspective, and simple [Government of Federated States of Micronesia, 2012].

(4) Nauru

Under the “Nauru Non-Communicable Disease Strategic Action Plan 2015-2020”, NCDs and nutrition are to be addressed under Key Result Area 2. It aims to strengthen and improve community preventive and health care services under the principles and concepts of primary health care and healthy islands.

For nutrition, the Action Plan emphasizes on supporting and strengthening ongoing school feeding program; 1) introducing and supporting the Baby Friendly Hospital initiative and promotion of exclusive breast feeding and 2) advocating for good family nutrition through home gardening and healthy food preparation.

(5) Palau

The “Non-Communicable Diseases Prevention and Control Strategic Plan of Action 2015-2020” was formulated by Non-Communicable Diseases Unit (NCD Program) in 2015 to reduce the preventable burden of NCDs in Palau towards a vision of “healthy communities in a healthy Palau, with people living long, happy and purposeful lives.”

Palau's NCD stakeholders have elected to concentrate action across five areas that encompass behavioral and metabolic risk factors. It was based on the NCD profile of the population, with data indicating high prevalence rates of tobacco and harmful alcohol use, physical inactivity, poor nutrition, overweight/obesity, high blood pressure, and high blood glucose. Thus, the action plan is organized along a five-pronged approach that identifies goals, specific objectives, and strategic actions in the following areas:

1. Reduce tobacco consumption, both smoking and chewing tobacco with betel nut;
2. Reduce harmful alcohol use;
3. Reduce physical inactivity;
4. Improve nutritional intake; and,
5. Reduce prevalence of metabolic risk factors that precede the major NCDs.

(6) Tonga

The "Tongan National Non-Communicable Disease Strategy (NCD Strategy) 2015-2020" is a multi-year strategy funded by the Governments of Tonga and Australia, and other donor partners. The launch of the NCD Strategy in February 2016 coincided with the signing of a five-year agreement (AUD 2.1 million) with the Tonga Health Promotion Foundation to support the implementation of the strategy.

NCDs Strategy 2015-2020 will continue to focus on tobacco use, unhealthy eating, harmful use of alcohol and physical inactivity. The targets (outcomes) are shown below.

- Outcome 1: Tongan infants (age two and under) have a healthier start to life.
- Outcome 2: Tongans are leading healthier lifestyles (with a focus on children and adolescents).
- Outcome 3: Improved early detection, treatment and sustained management of people with or at high risk of NCDs.
- Outcome 4: Strengthened monitoring and surveillance supports evidence-based action.

(7) Tuvalu

The "Tuvalu National Strategic Plan for NCDs 2011-2015" was published by the Ministry of Health in Tuvalu. The main contents of the plan are shown below.

Goal: To reduce the current and future burden of NCD and nutrition related disorders in Tuvalu.

Targets: Through the implementation of the plan the following targets have been set to be achieved within the duration of the plan.

Core Targets:

- a. Improve physical activity level among the population by 25%.
- b. Improve proportion of population consuming at least three or more servings of fruits and vegetables per day on most days of the week by 15%.
- c. Reduce current tobacco smoking rates by 10%.
- d. Reduce binge drinking prevalence by 50%.

Optimal Targets:

- e. Reduce diabetes incidence by 10%.

- f. Reduce HTN prevalence by 10%.
- g. Reduce obesity rate by 5%.

(8) Vanuatu

The “Vanuatu NCD Policy and Strategic Plan 2016-2020” was published to address the impact of NCDs in Vanuatu. The guiding principles of this plan are as follows: 1) multisectoral collaboration, 2) community engagement, 3) equity, 4) preventative approach, 5) evidence-based practice, and 6) responsive programming.

3.3 Health Service Providing System

Table III-13 shows the overview of health service providing system and decentralization in health sectors. As small countries, most target countries rely on village/community health workers to provide health services. In addition, tertiary care is mostly referred to overseas. Private sector such as private hospital and private clinic has a big role as a health service provider.

Table III-13 Overview of Health Service Providing System and Decentralization in the Target Countries

Country	Organization Structure and Decentralization
Cook Islands	<ul style="list-style-type: none"> • Health facilities and services are classified into four levels, based on community populations, facility services, and available staff.
Fiji	<ul style="list-style-type: none"> • Health services are delivered through 98 nursing stations, 84 health centers, 17 subdivisional hospitals and three divisional hospitals. • There are two specialty hospitals, namely; Tamavua P. J. Twomey Hospital with TB, leprosy and medical rehabilitation units, and St. Giles Hospital, which provides mental health services. • A private hospital is also located in the capital city.
Kiribati	<ul style="list-style-type: none"> • Health services are delivered free of charge through a network of health facilities, including of four hospitals, 30 health centers staffed by medical assistants and 75 clinics staffed by public health nurses, with sustained high levels of essential services coverage.
Marshall Islands	<ul style="list-style-type: none"> • Two hospitals (one each in Majuro and Ebeye) and 56 health care centers are in the outer atolls and islands. • Both hospitals provide primary, secondary and limited tertiary care. Patients who need full tertiary care are referred overseas. • Health centers are staffed by full-time health assistants and provide health promotion, prevention and essential clinical care services.
Micronesia	<ul style="list-style-type: none"> • Each state system is autonomous. Health services are highly subsidized by the state governments, except in private clinics. • There are six private health clinics in the country and one private hospital.
Nauru	<ul style="list-style-type: none"> • Primary health care and public health services are managed by the Division of Public Health at the Naeoro Public Health Center, and curative services are provided by the Republic of Nauru Hospital. • Services include medical, surgical and dental specialties, alongside hemodialysis, laboratory, radiological, physiotherapy, and pharmaceutical services.
Niue	<ul style="list-style-type: none"> • The Niue Foou Hospital is the hub for most health services and public health programs, providing both primary and secondary medical care. • Tertiary care is provided via transfers to New Zealand and an emergency evacuation service, complemented with annual visits from New Zealand-based specialists. • As a small country, village-level community health workers can play a key role in the promotion of health and the prevention of diseases at the community level.
Palau	<ul style="list-style-type: none"> • Health services are available at Belau National Hospital, four community centers known as super dispensaries and four additional satellite dispensaries. Belau National Hospital is the main health facility in the country. • While it is not economically feasible to decentralize inpatient care, steps to build inpatient management capacity on the other islands may further be explored.

Country	Organization Structure and Decentralization
Samoa	<ul style="list-style-type: none"> Primary, secondary, and limited tertiary care services are provided through an extensive network of health service facilities comprising the Tupua Tamasese Meaole National Hospital in Apia, the Malietoa Tanumafili II Referral Hospital in Tuasivi, district hospitals and community health centers strategically located around the country. Community and primary health care services are also carried out in the community setting such as in schools, village and church facilities, and in people's homes. Tertiary health services unavailable in Samoa are referred overseas via the Overseas Treatment Scheme managed by the Service.
Solomon	<ul style="list-style-type: none"> Eight out of nine provinces have a public hospital; provincial services include a network of health centers, aid posts, and village health workers. NGOs and faith-based organizations (such as four private hospitals owned and operated by church organizations) provide less than 15% of outpatient and inpatient services. The Ministry of Health and Medical Service is made up of four primary units: Health Improvement, Health Care (including Hospital Services), Health Policy & Planning, and Administration & Management. Recent priorities have focused on completing a revision of the National Medicines Policy in order to deliver outcomes detailed in the National Health Strategic Plan.
Tonga	<ul style="list-style-type: none"> Tonga has one national hospital, three community hospitals, 14 health centers and 34 reproductive and child health clinics. About 90% of health services are provided at the hospitals. Overseas referral schemes and visits of specialized medical teams from abroad cater to the growing needs for specialized care as a result of the increasing NCDs burden.
Tuvalu	<ul style="list-style-type: none"> Princess Margaret Hospital located in the main island of Funafuti provides primary and secondary care for patients in Funafuti and those who are referred from outer islands. Two health clinics, one south and the other north of Funafuti, provide primary clinical services. Eight health centers covering outer islands provide primary health care and basic public health services. Those are staffed by nurses who mainly provide primary care and preventive services. Patients needing advanced clinical cares that exceed the hospital level are referred to overseas hospitals through the Tuvalu Medical Treatment Scheme.
Vanuatu	<ul style="list-style-type: none"> Health care and health programs are primarily delivered by the government with support from development partners, non-governmental organizations, faith-based organizations and a small private sector. Funding comes predominantly from the government and donors. Patients pay modest contributions for inpatient care and outpatient services in public facilities. There are four basic levels of publicly operated health care facility: hospitals, health centers, dispensaries and community-supported aid posts.

Source: [WHO, 2018]

3.4 Human Resource for Health

Table III-14 presents the density of medical doctors and nurses in the target countries. The World Health Organization (WHO) estimated the minimum required density of physicians, nurses, and midwives toward SDGs as 4.45 per 1000 population [WHO, 2016]. Among 13 countries, five countries, namely: Cook Islands, Niue, Nauru, Palau, and Tonga have enough number of skilled health personnel. According to WHO, 40% of the WHO member states have less than ten medical doctors per 10,000 population and 26% have less than three. Regarding nursing and midwifery personnel, over 55% reported to have less than 40 per 10,000 population and about 23% have less than ten [WHO]. Among 13 countries, only four have enough number of medical doctors. However, although the number is enough, distribution and retention of health workforces especially in remote islands and hard-reach areas seem to be common concerns. For instance, nurses could not retire even after the designated retirement age because no successor is appointed in a remote island; and some health posts could not be operated due to unavailability of health workers. Such situation might be one of factors that people rely on traditional healers and folk remedies. Although traditional health personnel are involved in community health activities in some countries, it sometimes may cause delay of appropriate treatment.

Table III-14 Density of Human Resource for Health in the Target Countries

Country	Medical Doctors (per 10,000)	Year	Nursing and Midwifery Personnel (per 10,000), 2018	Density per 1,000*
Cook Islands	14.12	2014	67.43	8.16
Fiji	8.6	2015	33.75	4.24
Kiribati	2.04	2013	38.34	4.04
Marshall Islands	4.23	2012	33.39	3.76
Micronesia	1.94	2009	20.43	2.24
Nauru	13.46	2015	76.64	9.01
Niue	18.75	2008	125.0	14.38
Palau	14.21	2014	72.63	8.68
Samoa	3.45	2016	24.89	2.83
Solomon Islands	1.94	2016	21.64	2.36
Tonga	5.4	2013	41.57	4.7
Tuvalu	n.a.		42.61	n.a.
Vanuatu	1.65	2016	14.25	1.59

Note: * Density per 1000 as reference value was calculated by the Survey Team: (Medical doctors per 10,000 + Nursing and midwifery personnel per 10,000) x 0.1
Blue fulfill the WHO recommendation, 10 medical doctors per 10,000; 40 nurses and midwives per 10,000, 4.45 health personnel (medical doctors, nurses and midwives) per 1,000.

Source: [WHO]

3.5 Health Finance

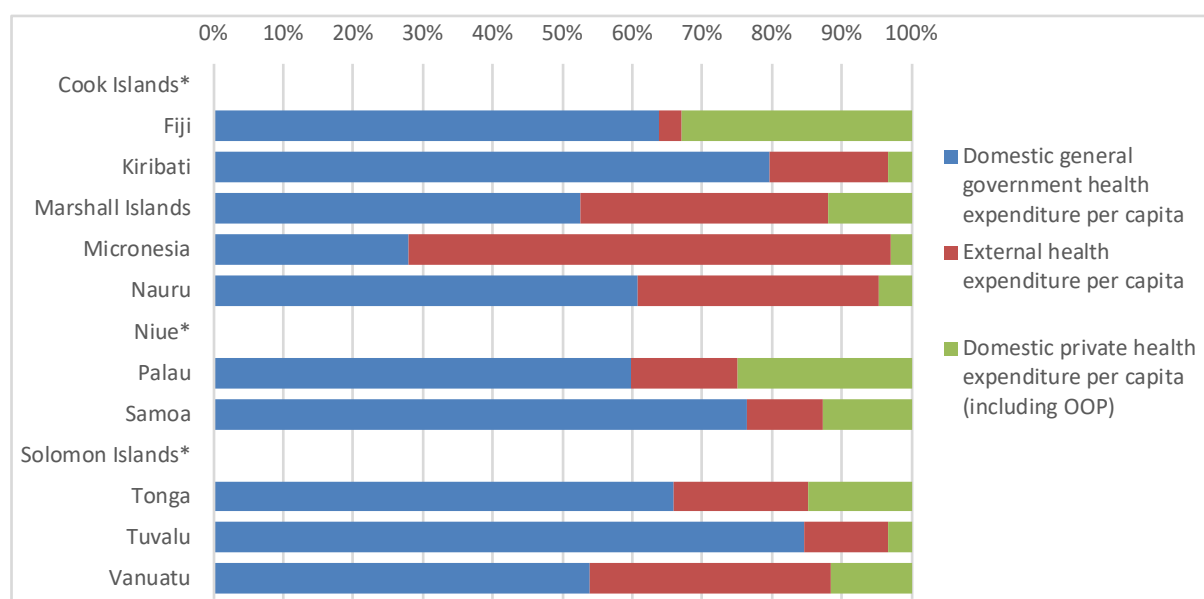
Table III-15 presents major indicators on health expenditures in 13 countries. Current health expenditure (CHE) has been doubled in 11 countries except for Marshall Islands and Tuvalu from 2000 to 2017. In Cook Island, Nauru, Niue and Tonga, CHE in 2017 increased more than three times from 2000. Regarding the level of CHE to gross domestic product (GDP), Di McIntyre et al., estimated at least five percent should be required to achieve UHC [Di McIntyre et al., 2017]. Among 13 countries, four were under five percent. In Marshall Islands, Micronesia and Palau, expenditure occupied around 20% of total government expenditure. Most of the countries provides health services free or low cost, out-of-pocket expenditure (OOP) is less than 20%, and less than 1% in Kiribati, Nauru, Niue, and Tuvalu.

Table III-15 Health Expenditures in the Target Countries

Country Name	CHE Per Capita (USD)		CHE as % of GDP	General Government Expenditure on Health as % of Total Government Expenditure	Out-of-pocket Expenditure as % of Current CHE
	2017	2000	2017	2014	2017
Cook Islands	588.7	162.7	3.31	6.12	6.65
Fiji	188.4	77.0	3.5	9.25	15.59
Kiribati	171.4	68.88	10.76	5.81	0.11
Marshall Islands	642.2	423.4	16.4	23.76	12.41
Micronesia	424.8	168.4	12.35	21.23	2.4
Nauru	1,107.0	292	11.02	5.24	0.92
Niue	1,259.0	332.7	8.63	5.9	0.89
Palau	1,596.0	675.7	11.96	18.11	15.46
Samoa	233.1	62.98	5.48	15.08	11.86
Solomon Islands	101.2	48.49	4.68	12.54	5.4
Tonga	222.0	58.21	5.27	13.5	10.63
Tuvalu	622.2	358.1	17.14	16.91	0.52
Vanuatu	105.7	48.69	3.32	17.94	8.96

Source: [WHO]

Figure III-6 shows the structure of CHE in ten countries. Marshall Islands, Micronesia, Nauru and Vanuatu rely on external financial sources more than 30%, especially proportion of external fund in Micronesia is nearly 70%.



* Data was not available.

Source: [World Bank, 2020]

Figure III-6 Structure of Current Health Expenditures Per Capita in the Target Countries (2016)

3.6 Health Management Information System

According to the HIS Hub Rapid Assessment conducted by the Western Pacific Regional Office, WHO (WPRO) in 2016⁶, most of the countries operate their health management information system consisting of routine reporting and regular surveys such as census, demographic and health survey (DHS), and the WHO STEPwise approach to Surveillance (STEPS). However, IT infrastructure, quality and quantity of human resources, feedback, utilization for review and planning, as well as data accuracy seem to be common challenges.

Regarding home-based records (HBR) for MNCH, five of 14 countries (Micronesia, Palau, Samoa, Solomon Islands, and Tonga) have responded to the questionnaire from the Survey Team and provided sample of the latest HBR. In addition, the Survey Team has collected from six countries (Fiji, Kiribati, Marshall Islands, PNG, Tuvalu, and Vanuatu). Most of HBR target child health which contents include vaccine schedule and/or records, a growth chart, as well as information on breast feeding, nutrition of early childhood feeding, and first aid. Chuuk State of Micronesia introduced a MNCH handbook covering from pregnancy stage up to early childhood in one booklet. The collected information on HBR is summarized in Table III-16.

⁶ Among 15 respondent countries, 11 counties of the survey targets were included; Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Samoa, Solomon Islands, Tonga, Vanuatu, and Papua New Guinea.

Table III-16 Home-based Records in the Target Countries

Country	Respondents	note	Sample Home-based Record				MCH Handbook				Life stage							Records						
			Title	Source	Publisher	Support	MCH Handbook	Distributed number	Coverage	Started	Recent revision	Adolescent	Pregnancy & delivery	Postnatal	Neonatal	U5/6	>5/6	Family Planning	ANC	Delivery	PNC	TT for a mother	EPI for a child	Growth Chart
Cook Islands	not yet		Child Health Record, Boy	HBR Rep (as of 2014)	Ministry of Health																			
Fiji	not yet		Under-5 Card	HBR Rep																				
Kiribati	not yet		Immunization Record Card/ Growth Card, Breastfeeding & Nutrition		Ministry of Health Services																			
Marshall Islands	not yet			JICA																				
Micronesia, FS, NDOH	Mr. Dionis Saimon, MCH Coordinator at the National Dept. of Health Services																							
Micronesia, FS, NDOH	NDOH	Seems to be kept in health facilities	Medical and Health Records	JICA	Department of Public Health Services																			
Micronesia, FS, Chuuk	Mrs. Pipiana Wichep, Chuuk MCH Services Coordinator		Child Birth, Growth and Development Chart	JICA	Department of Health Services																			
Micronesia, FS, Pohnpei	not yet		MCH Handbook	JICA	Chuuk Women's Council	The Asia-Pacific Ladies Friendship Society																		
Micronesia, FS, Yap	Yap DoHS		Community Antenatal Care Card	JICA	Division of Public Health State																			
Nauru	not yet		Your Child's Health Chart	JICA	Department of Health Services																			
Niue	not yet																							
Palau	MOH		ANC Appointment Card	JICA	MOH																			
Papua New Guinea	not yet		Child Health Card	JICA	MOH																			
Papua New Guinea	not yet		Child Health Book, Boy & Girl	HBR Rep (as of 2013)	Department of Health																			
Samoa	National Staff, JICA		Child Health Book	JICA (as of 2014)	National Health Services																			
Samoa			Child Health Chart	JICA	Department of Health																			
Solomon Islands	MOHMS		Child Health Book, Boy	JICA (as of 2013)	Ministry of Health and Medical Services																			
Tonga	MOH																							
Tuvalu	not yet	228 pages in total, many contents to read	My Health Book	HBR Rep (as of 2014)	Ministry of Health	Health Promotion Agency, New Zealand Government																		
Vanuatu	MOH		Child Health Book	JICA	Ministry of Health	JICA, AusAID, UNICEF																		

Table III-16 Home-based Records in the Target Countries

Country	Guidance					Responsible Agencies/ Organizations				Place where mothers can receive			Internet access					
	Nutrition during pregnancy	Danger signs during pregnancy	Exclusive breast feeding	Child feeding and nutrition	First aid for children	Others	Contents, revision, etc.	Printing	Distribution	Health posts/ Aid posts	Health centers	Nearest clinics/ hospitals	Urban hospitals	Local governments	Others	Internet availability	Population groups	Difficulty for women
Cook Islands																		
Fiji	✓		✓	✓	oral health													
Kiribati																		
Marshall Islands	✓		✓															
Micronesia, FS, NDoH					health check-up records													
	✓				treatment of diarrhea													
Micronesia, FS, Chuuk	✓	✓	✓	✓	early learning, child development	MOH	Local NGO (Chuuk Women Council)	MOH	MOH	MOH	MOH	MOH			Capital city and suburbs	Most of the people	no	
Micronesia, FS, Pohnpei																		
Micronesia, FS, Yap	✓	✓	✓	✓		MOH	MOH	Yap DHS-MCH and Immunization Programs	MOH	MOH	MOH	MOH	Yap DHS-MCH and Immunization Programs		Capital city and suburbs	Most of the people	no	
Nauru																		
Niue																		
Palau	✓	✓			Blood donor	MOH	MOH	Family Health Unit	MOH	MOH	MOH	MOH	Family Health Unit		Almost whole country	Most of the people	no	
Papua New Guinea	✓				checklist and illness & treatment records													
	✓		✓	✓	development milestone 1,6,10,14 weeks, 6&12 months	na			na						Urban areas	Wealthy, middle-class and slight poor population	no	
Samoa			✓	✓														
Solomon Islands	✓		✓	✓	development milestones, 4&6 months, 1&2 years & more; medical records													
Tonga		✓				MOH	MOH	Reproductive Health Section	MOH	MOH	MOH	MOH	Reproductive Health Section		Almost whole country	Most of the people	no	
Tuvalu	✓		✓	✓	child development, oral health, safety, parenting, returning work (mother), pre-school check, toilet training, etc.													
Vanuatu					child development, sleep, physical activity, safety	MOH, WHO	HIS, RMNCAH	MOH	MOH	MOH	MOH	MOH	RMNCAH		Urban areas	Most of the people	no	

Chapter 4 Change of Context by COVID-19

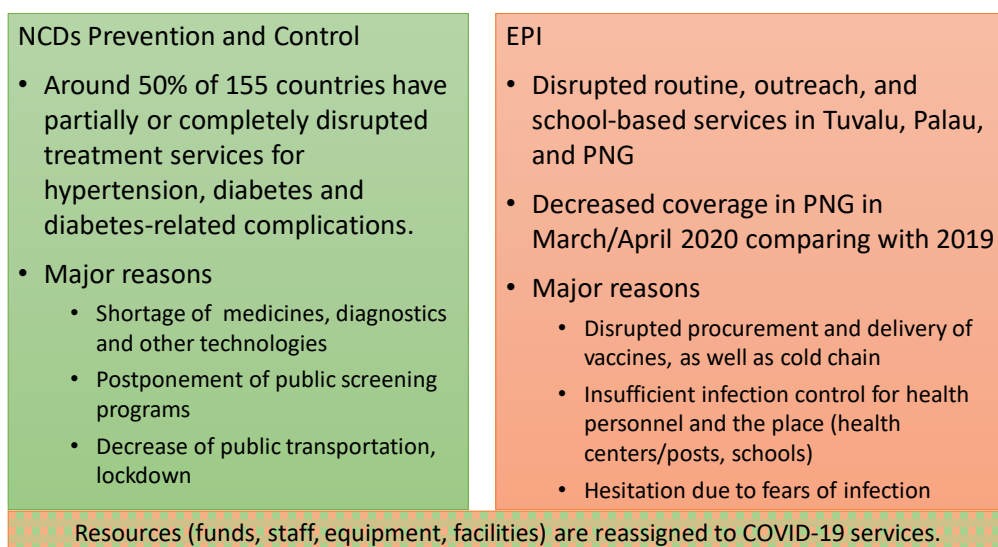
Drastic changes and challenges brought by the pandemic of coronavirus disease (COVID-19) have revealed inequity of access to health services and healthy environment and essential resources, as well as vulnerability of the entire health system. In the Pacific Region, additional challenges have been recognized due to dispersed and isolated communities such as information and communications technology (ICT) infrastructure, transportation network, logistics, and limitation of medical resources. Under such situation, health personnel in the Pacific Island Countries (PICs) have been struggling to reach out to health workforces and communities in remote islands, as well as secure necessary equipment and supplies to maintain essential health services and prepare for COVID-19.

As mentioned in Section 1.4, in many PICs, border protection related to COVID-19 have been largely successful. However, the resilience of public health systems is being questioned in case of the spread of community-acquired infections, and there is a need for collaboration within the referral system from the community level to higher medical care, strengthening at each level, and collaboration between clinical and public health services. At the individual level, a variety of approaches are needed, including promotion of hygiene behaviors such as hand washing and mask wearing, strengthening of immunity, and access to accurate information. In addition, the relationship between health status (nutritional status and underlying diseases), resistance, and risk of serious illness has also been pointed out [WHO, 2021].

Both in countries where community-acquired infections have occurred, as well as in countries where they have been contained, efforts are being made to further strengthen border protection and preparedness for the spread of infection. As more funds and human resources are invested in COVID-19 response, there are concerns that the situation related to maternal, newborn and child health (MNCH) and noncommunicable diseases (NCDs) could worsen, as regular essential health services have been disrupted. The United Nations Children's Fund (UNICEF) estimated an additional of 1.16 million child deaths and 56,700 maternal deaths would happen over six months under the worst scenario of disruption of MNCH services (coverage reductions of 39.3–51.9% and wasting increase of 50%) over six months in low- and middle-income countries [Timothy Roberton, et al., 2020].

Some of the priority needs raised by PICs seem to require routine or regular preparedness, such as hygiene promotion, nosocomial infection control, and surveillance capacity. In addition, some NCDs (diabetes and cardiovascular disease (CVD)) and the risk factors (obesity, hypertension, etc.) might be risk factors of infection and severity of COVID-19 [WHO NCD Department, 2020].

Due to hesitation to use health facilities, disruption of logistics and transportation, as well as resource allocation for COVID-19 response, essential health services have been suspended or declined, such as EPI, screening on NCDs and MNCH, management of chronic disease and high-risk patients. Such situation might cause additional deaths for coming decades (Figure III-7).



Sources: [WHO NCD Department, 2020] [WHO, 2020]

Figure III-7 Impacts of COVID-19 on Routine Health Services for NCDs and EPI

In particular, risk factors of child obesity and NCDs which have been challenges in the Pacific Region could be increased due to nonpharmaceutical measurements such as border close and lockdown. Because if curfew, physical activity may be decreased. As food supply chain is disrupted, people may have difficulty in access to healthy foods such as fresh vegetables. Then, consumption of processed foods may increase. People may increase tobacco and/or alcohol consumptions because of stress from psychological and/or physical isolation as well as worsening household economy [Si Thu Win Tin, et al., 2020].

According to the Joint Incident Management Team (JIMT) ⁷, the needs have been identified both for clinical and public health services as summarized in Table III-17 [WPRO, 2020].

Table III-17 Priority Needs Relevant to COVID-19 Preparedness and Response

Clinical Services	Public Health Services
<ul style="list-style-type: none"> • Capacity of PCR test, case management, and nosocomial infection control • Procurement of personal protection equipment (PPE), PCR test kits, medical/isolation tents, etc. • Development of isolation wards, disinfection of health facilities and equipment 	<ul style="list-style-type: none"> • Risk Communication and Community Engagement (RCCE) • Continuity of essential health services such as expanded programme on immunization (EPI), cancer screening, follow-up of chronic disease patients • Hygiene promotion (education material, sanitation facilities, behavior change, etc.) • Surveillance and contact tracking • Psychological care for health personnel and health volunteers
Entire Health System	
<ul style="list-style-type: none"> • Preparedness and response to first introduction of COVID-19 for PICs not reporting cases to be addressed via simulation exercises • Business continuity planning and establishing the new normal for affected PICs as they consider easing of restrictions • Sharing experiences and lessons learned in preparedness and response 	

Source: [WPRO, 2020], [SPC, 2020]

To respond to the above needs, JIMT conducts Phase I and Phase II Pacific Health Sector Support Plans. Phase I, from January to March 2020, aimed to strengthen coordination, preparedness, and response to minimize preventive morbidity and mortality. Objectives of Phase II, from April 2020, are to contain outbreaks by breaking

⁷ JIMT engages WPRO, SPC, UNFPA, UNICEF, UNCRO, UNDP, UNWOMEN, IOM, OCHA, WFP, ADB, World Bank, DFAT, MFAT, PIF, USAID, US-CDC, ES Embassy in Suva, PIHOA (Pacific Island Health Officers Association).

the chains of transmission, as well as to mitigate the negative health, social, and economic impacts, and facilitate early recovery. Major achievements are:

- Deployment of technical experts to support preparedness and response of Pacific Island Countries (PICs);
- Providing/Distributing PPE, PCR cartridges, and other medical supplies;
- Development and distribution of guidance, technical briefs, risk communication materials, and operational checklists; and
- Providing training webinars for health personnel⁸.

Among priority needs listed in Table III-17, existing issues are included, such as hygiene awareness, nosocomial infection prevention, disease surveillance, which require preparedness and capacity enhancement not only for COVID-19 but in normal times. In addition, NCDs particularly diabetes and cardiovascular diseases, as well as the risk factors such as obesity and hypertension could be risk factors for infection and worse of COVID-19. Those health issues are common and one of the most concerned challenges among PICs [WHO NCD Department, 2020]. However, it is difficult for each PIC to establish a complete system of testing and treatment to deal with COVID-19 or any other widespread health emergency that may occur in the future, considering the scale of population, finances, and health personnel.

Therefore, PICs need to build a resilient health system in collaboration and coordination among each other through close sharing and exchanging of knowledge and experiences as well as resources. At the same time, efforts on NCDs prevention and control should be upgraded to increase health literacy among the people, promote behavior change to healthy life style and maintain own health, as well as improve environment to prevent people from risk factors such as tobacco, alcohol, processed foods, etc.) physically and psychologically.

⁸ Pacific Head of Health Meeting, 22 July 2020

Chapter 5 Major Development Partners

5.1 The Pacific Community (SPC)

The mandate of the Pacific Community (SPC) on public health lies on four pillars: helping countries coordinating their public health strategies; using real-time information on epidemics and outbreaks; delivering high-quality clinical services to patients; and undertaking long-term work to fight non-communicable diseases (NCDs). SPC Public Health Division has four programs, i.e., NCDs Prevention and Control Program, Clinical Services, Governance, and Surveillance, Preparedness and Response [SPC].

To response to the coronavirus disease 2019 (COVID-19), SPC has been providing multisectoral supports such as public health surveillance, infection prevention and control, risk communication, disaster management, humanitarian response, statistics, educational assessment, data custodianship and geographic information system (GIS) mapping. As a part of the Pacific Humanitarian Pathway on COVID-19 (PHP-C)⁹, SPC is contributing to lead Pacific Island Countries and Territories (PICTs) and coordinate with relevant regional and international partners. Also, as a part of Multi-Agency Incident Management Team (IMT) led by the World Health Organization (WHO), SPC implements relevant preparedness activities to help members including in-country assessment and training on infection control on case identification, contact tracing, case investigation, and outbreak management, as well as financial support for laboratory sample shipment and testing. In addition, SPC plays the focal point of the Pacific Public Health Surveillance Network (PPHSN)¹⁰ [SPC, 2020].

5.2 WHO

The Division of Pacific Technical Support (DPS) was established and located in Fiji in 2010 aiming to coordinate and provide timely support for 21 PICTs¹¹. The country offices are in Samoa and Solomon Islands, and liaison offices in Kiribati, Micronesia, Tonga and Vanuatu. Since its establishment, DPS has been providing technical support for: development of health policy, strategy, and technical guidelines; human resource development tools such as Pacific Open Health Learning Network (POHLN), surveillance of communicable diseases and NCDs, as well as emergency responses. The Pacific Island Countries and Areas – WHO Cooperation Strategy 2018–2022 present the latest cooperation agenda for each PICT [WPRO].

Recently, WHO supported PICTs to overcome the measles outbreak since 2017. In collaboration with UNICEF, WHO has developed a Pacific Measles Preparedness and Response Communication Toolkit,

⁹ The Pacific Humanitarian Pathway on COVID-19 (PHP-C) was established under the Biketawa Declaration on 8 April 2020. It is the Region's mechanism that will provide the enabling political environment and commitment to expedite assistance and cooperation between member countries in preparing for and responding to COVID-19, by enabling the provision of medical and humanitarian assistance from regional, international and development partners in a timely, safe, effective and equitable manner [Pacific Islands Forum Secretariat, 2020].

¹⁰ PPHSN provides the following services; coordination of laboratory services, surveillance systems, infection control, alert and communication, knowledge exchange and capacity building.

¹¹ American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, the Federated States of Micronesia, Nauru, New Caledonia, Niue, the Commonwealth of the Northern Mariana Islands, Palau, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna

which is a regional resource that countries can use and adapt to their country's needs. It includes a range of communication products targeting three main audiences: general public, health workers, and travelers.

Since early January 2020, DPS has been working to ensure preparedness for response to COVID-19 in close coordination with the Ministries of Health. Through a COVID-19 Pacific Joint Incident Management Team (JIMT), WHO is coordinating with partners to bring together resources and assist Pacific Island Countries (PICs)' readiness to delay the spread of the virus and mitigate negative health and socioeconomic impacts of COVID-19. The activities include: 1) training and technical guidance on critical preparedness, readiness and response actions for COVID-19, including incident management and Health Emergency Operations Centers (HEOC); 2) clinical and public health system strengthening; 3) enhancing disease surveillance; 4) laboratory and response systems; 5) strengthening case and contact management and establishing case isolation and quarantine facilities; and 6) supporting infection prevention and control in health facilities and the community [WPROa].

5.3 Asian Development Bank (ADB)

ADB has been providing technical and financial assistance to 15 member countries¹² in the Pacific Region since 1976. In 2018, ten percent of grant and loan funds (USD 296 million) allocated to health sector with focus on improving primary health care in the rural areas, training health professionals, and expanding vaccination programs [ADB, 2019]. ADB implements the project in Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. The title of the projects and names of country of implementation of the projects are shown in Table III-18.

Table III-18 Major ADB Health Sector Projects in the Pacific Region

Title	Period/ Status	Samoa	Solomon	Tonga	Tuvalu	Vanuatu
Systems Strengthening for Effective Coverage of New Vaccines in the Pacific Project	2019-2024	✓		✓	✓	✓
Strengthening Urban Health Services	(Proposed)		✓			
Introducing eGovernment through Digital Health	2019-2027			✓		
Strengthening Developing Member Countries' Capacity in Elderly Care	2016-2020			✓		
Accelerating Universal Health Coverage in Asia and the Pacific for Strategy 2030	2018-2020	Region wide				
Supporting Improved Health Outcomes in Asia and the Pacific	2019-2020	Region wide				
Developing the Health Sector in the Pacific	2018-2023	Region wide				

Source: [ADB]

In April 2020, ADB announced USD 1.53 million in grants from its Asia Pacific Disaster Response Fund to help finance the response to COVID-19 pandemic in Marshall Islands, Micronesia, Nauru, and Tuvalu. It will help alleviate the immediate financial, logistical, and other constraints to meet each country's immediate response needs and deliver appropriate medical services where required [ADB, 2020].

¹² 14 countries of the survey targets and Timor-Leste

5.4 UNICEF

UNICEF's health and nutrition program in the Pacific is focused on young childhood survival and development since prematurity, pneumonia and diarrhea are the Pacific's top childhood killers with undernutrition acting as a catalyst. In collaboration with the Ministries of Health to strengthen these systems, UNICEF works to improve the quality of health and nutrition services through preventative, promotive, and curative means. Specifically, UNICEF works with the Ministries of Health to implement quality high impact nutrition interventions such as breastfeeding, complementary feeding, micronutrient supplementation, and deworming.

Other core elements of UNICEF are as follows; preventing childhood infections through immunization, early detection and treatment of infection, and improving newborn care including prevention and management of hypothermia, cord care, and resuscitation.

UNICEF has been providing medical equipment, training, etc. to PICTs for COVID-19 response. UNICEF is also a key role of COVAX facility. They manage the vaccination campaign through the COVAX mechanism.

5.5 The World Bank

In Marshall Islands, the Early Childhood Development Project has been invested in MNCH, with a focus on the first 1,000 days of life, since April 2019. The project will support areas such as reproductive, maternal, newborn and child health and nutrition services, with a focus on the first 1,000 days of life. The project also aims to promote primary school readiness by enhancing support to parents and increasing access to early learning services.

The World Bank is supporting Pacific countries' coronavirus response, with funding for health workers and essential supplies in addition to longer term public health system strengthening. Since March 2020, WB provided fund for COVID-19 emergency response operation to Marshall Islands, Vanuatu, Solomon Islands, Samoa, Fiji, Tonga and Kiribati [World Bank, 2021].

5.6 Australian Department of Foreign Affairs and Trade (DFAT)

Under the Pacific Step-up, Australia has been playing as the largest development partner in the Pacific Region. To enhance whole-of-government coordination and to drive implementation of development cooperation programs, the Office of the Pacific was established in 2019. In 2019-2020, Australia provides an estimated AUD 336.4 million in official development assistance (ODA) to the Pacific, following mutually reinforcing objectives as outlined in the Pacific Regional Aid Investment Plan.

Objective 1: Economic growth

Objective 2: Effective regional institutions

Objective 3: Healthy and resilient communities

Objective 4: Empowering women and girls

Linking with the Healthy Island Vision, the Pacific Regional Health Program aims to: 1) strengthening regional health governance and policy; and 2) delivering health services and training that cannot be

provided in individual countries due to limited capacities, or where economies of scale are achievable from regional or multi-country approaches [DFAT].

Since January 2020, Australia has been working to help the Pacific Island Countries to prepare for the pandemic of COVID-19. The aid program was adopted to provide immediate relief to help respond to the emerging health, economic, social and impacts from COVID-19. For health sector, Australia prepares to respond quickly to early requests for support, including medical supplies and health expertise. Also, funds have been provided to the regional COVID-19 response plan of WHO [DFAT].

5.7 New Zealand Ministry of Foreign Affairs and Trade (MFAT)

New Zealand provided development cooperation of NZD 406.5 million in 2018-2019 to the Pacific Region. MFAT is implementing health aid to the Pacific Islands on the following areas [MFAT].

- Preventing and controlling NCDs
 - Strengthen policy and legislation to address risk factors and environmental causes for chronic diseases;
 - Support non-discriminatory excise taxation on tobacco, smoke-free indoor workplaces and public spaces, health information and warnings on tobacco use;
 - Support access to essential medicines for ongoing management of chronic diseases;
 - Provide screening and treatment of pre-cancerous lesions to prevent cervical cancer;
 - Support health promotion and messaging for healthy lifestyles, including diet and physical activity;
 - Support key interventions for preventing and treating diabetes; and
 - Build and supplement medical, surgical, nursing, laboratory and pharmacist workforce capacity, where needed.
- Promoting sexual and reproductive health
 - Strengthen policy dialogue and legislation for better sexual and reproductive health;
 - Support access to modern contraceptive methods;
 - Support availability of comprehensive sexuality education for young people;
 - Support availability of confidential testing for STIs;
 - Prioritize critical and cost-effective maternal health interventions;
 - Support management of post-partum hemorrhage and sepsis; and
 - Enable access to emergency obstetric care.
- Improving child health and nutrition
 - Enable immunization coverage against a range of vaccine preventable childhood illnesses;
 - Enable introduction of new vaccines to protect against childhood illnesses like pneumonia, rotavirus and meningitis;
 - Provide critical interventions for addressing stunting in children under-five (management of parasitic infections, infection control, cord care etc.); and
 - Provide early interventions to address risks for childhood obesity.
- Preventing and controlling communicable diseases
 - Enable immunization against key communicable diseases;
 - Strengthen early detection and management of disease outbreaks through surveillance, risk

assessment and response, laboratory strengthening, infection prevention and control and risk communication;

- Strengthen vector control interventions; and
- Strengthen transnational and regional efforts to address spread of communicable diseases.

Since April 2020, New Zealand has provided a basic package of Personal Protective Equipment (PPE) to Cook Islands, Niue, Samoa, Tokelau and Tonga for COVID-19 response. New Zealand also supported WHO-led actions against COVID-19 such as procurement of essential laboratory supplies and deployment of a joint team [MFAT, 2021].

5.8 Japan

Japan has been promoting cooperation with the Pacific Islands Forum (PIF) to achieve political stability and self-sustainable economic development in PICs, and to overcome social and economic vulnerabilities and cooperate with the whole region.

The Pacific Islands Leaders Meeting (PALM) was first held in 1997 with the aim of strengthening Japan's relationship with these countries and has been held every three years since then. The Eighth Pacific Islands Leaders Meeting (PALM 8) in May 2018, leaders and representatives declared the strategic vision that “I. Maritime Order based on the Rule of Law, and Sustainability of Ocean Resources, II. Strengthening the Basis for Resilient and Sustainable Development, III. Connecting Pacific Citizens”. Based on the past achievements, Japan promised to implement capacity building and exchange for 5,000 people for the next three years to assist the PICTs to ensure sustainability of ocean resources in the region.

The Japan International Cooperation Agency (JICA) has provided technical and financial cooperation in various schemes. Major projects in the health sector are listed in Table III-19.

Table III-19 Major JICA Health Sector Projects in the Pacific Region

Country	Start	End	Name of Project
Grant Aid			
Fiji	Sep. 1998	Feb. 2000	The Project for Construction of the New Pediatric Unit at the Colonial War Memorial Hospital
Fiji	Jun. 2002	Mar. 2004	The Project for Construction of the New Fiji Pharmaceutical Services Center
Marshall Islands	Jul. 2003	Dec. 2005	The Project for Improvement of the Majuro Hospital
Tonga	Aug. 2004	Feb. 2006	The Project for Upgrading and Refurbishment of Vaiola Hospital
Solomon Islands	Jun. 2009	Mar. 2012	The Project for Reconstruction of Gizo Hospital
Tonga	May 2010	Mar. 2012	The Project for Upgrading and Refurbishment of Vaiola Hospital (Phase 2)
Vanuatu	Jun. 2012	Jun. 2014	The Project for the Redevelopment of Vila Central Hospital
Technical Cooperation			
13 Countries (except PNG)*	Feb. 2005	Feb. 2010	Project for Strengthening EPI in Pacific Region
Solomon Islands	Jan. 2007	Jan. 2010	Project for Strengthening of Malaria Control System
Fiji	Jan. 2010	Apr. 2014	The Project for Strengthening the Need-based In-service Training for Community Health Nurses
14 Countries*	Apr. 2010	Mar. 2015	The Pacific Program to Eliminate Lymphatic Filariasis (PacELF)
Kiribati, Micronesia, Samoa, Solomon Islands, Vanuatu	Feb. 2011	Feb. 2014	The Japanese Support to the Pacific Immunization Strengthen Programme (J-PIPS)
Solomon Islands	Feb. 2011	Feb. 2014	Project for Strengthening of Malaria Control System Phase 2
Fiji, Kiribati	May 2015	May 2020	The Project for Prevention and Control of Non-Communicable Diseases
Solomon Islands	Jun 2016	Oct. 2020	Health Promoting Village Project
Fiji, Kiribati, Micronesia, Palau, Papua New Guinea, Samoa, Tuvalu	Jan. 2018	Feb. 2020	Project for Elimination of Lymphatic Filariasis
Grass-roots Partnership (Partner Organization)			
Tonga	May 2006	May 2009	Project for Oral Health (Southern Pacific Ocean Medical Team)
Palau	Nov. 2005	Oct. 2008	Technical Cooperation Project for Medical Check-up at School (<i>Japan-Palau Association</i>)
Fiji	Jun. 2014	Feb. 2017	Fiji-Okinawa Rehab-Island Project (<i>Okinawa Physical Therapy Association</i>)
Tonga	Mar. 2017	Feb. 2022	Improving Financial Status and Health of the Population through Effective Use and New Product Development of Bread Fruits (<i>Tokyo University of Agriculture</i>)
Micronesia	Oct. 2017	Oct. 2020	Program Introduction on Reducing Body Weight and Prevention of Obese in Pompei Province (<i>Fukuoka Women's University</i>)
Fiji	2020 (tbd)		Fiji-Ryukyu Rehabilitation Medical Education Cooperation Project (<i>Ryukyu Rehabilitation Academy</i>)

*14 countries are the target countries of the survey.
Source: [JICA]

In April 2020, as a response of COVID-19, Government of Japan contributed \$2.04 million to support procurement of PPE for FSM, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu as well as interventions for WASH, health and nutrition, education and child protection, including risk communications and community engagements, in selected countries [WPRO, 2020]

5.8.1 JICA's Cooperation on EPI and Other Communicable Diseases

JICA has been cooperating to improve health in the Pacific Region for more than 20 years. It was started with a hospital development to enhance capacity of health service delivery. From 2005 to 2010¹³, JICA

¹³ The Project for Strengthening EPI in Pacific Region

supported the implementation of EPI, which started in 1977 while the Pacific Immunization Programme Strengthening (PIPS) was launched in 2004. The 13 target countries same as the survey have successfully improved vaccine cold chain and developed quality human resources to operate and maintain EPI and PIPS, and as a result, the EPI coverage has been improved. From 2011 to 2014, JICA cooperated with five priority countries, namely; Kiribati, Micronesia, Samoa, Solomon, and Vanuatu, for further strengthen of vaccine management and operation and maintenance of cold chain equipment¹⁴. However, due to vulnerability of the health system and difficulty in retention of human resource for health, some of the outcomes have not sustained and therefore, EPI coverage of some countries such as Micronesia, Marshall Islands, Fiji, Vanuatu, and Solomon could not achieve the target set by the World Health Organization (WHO), at 95%. PNG and Samoa have been struggling a lower coverage.

In addition to the above cooperation, a home-based record could be an effective tool to raise awareness on scheduled immunization of mothers. JICA has been providing technical cooper to introduce and extend an integrated home-based record for a mother and a child (Maternal and Child Health Handbook). It may help mothers to keep reminding necessary immunization to protect their children from vaccine preventable diseases (VPDs), and health service providers to know the history of health services received by a child.

Regarding lymphatic filariasis (LF), JICA has been collaborating with WHO for the elimination in 14 countries¹⁵ since 2000 through the Japan Overseas Cooperation Volunteer (JOCV) and technical cooperation projects. By 2017, seven countries¹⁶ have eliminated LF as a public health problem or been classified as non-endemic [JICA, 2018].

5.8.2 JICA's Cooperation on NCDs

Since 2015, responding to increasing concerns on NCDs in the Pacific Region, JICA has been conducting projects to develop effective models of NCDs prevention in the community level. The Project for Prevention and Control of Non-Communicable Diseases (2015-2020) targets Fiji and Kiribati aiming to develop evidence-based NCDs prevention and control programs in Fiji and enhancement of health system to make NCDs prevention and control activities more effective and efficient in Kiribati. Especially, the Motivational Interview introduced in Fiji could be one of the powerful tools to promote behavior change among people with high-risk eating habit and/or physical inactivity. In Solomon, through the Health Promoting Village Project (2016-2020), the Healthy Village Model has been developed. It aims to develop capacity of community for identification and solution of problems concerned to health including infectious diseases such as malaria, NCDs, water, sanitation and hygiene (WASH), as well as nutrition.

5.9 JIMT

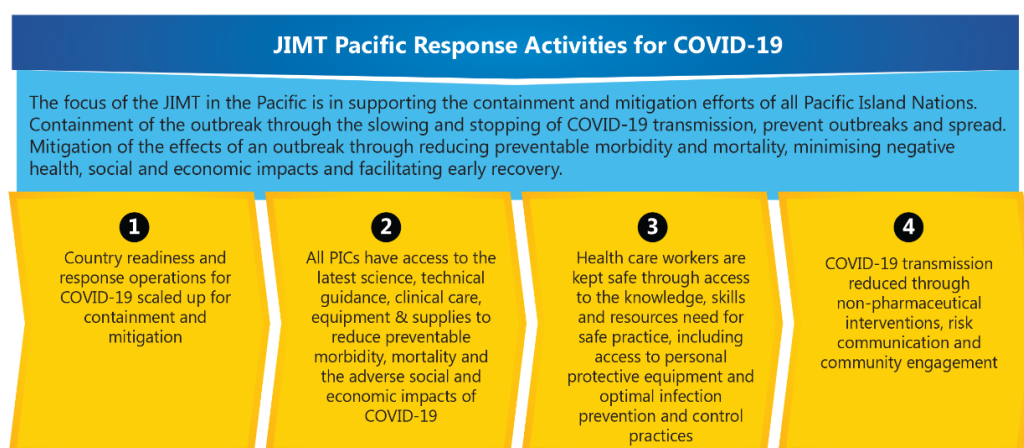
A Joint Incident Management Team (JIMT), comprising 20 development partners, was established led by WHO on 27th January 2020 to support Pacific COVID-19 preparedness and response efforts (Figure III-8 and Table III-20)¹⁷.

¹⁴ The Japanese Support to the Pacific Immunization Strengthen Programme (J-PIPS)

¹⁵ Same as the target countries of the survey

¹⁶ Cook Islands, Marshall Islands, Nauru, Niue, Solomon Islands, Tonga, and Vanuatu

¹⁷ Major COVID-19 responses of PICs and activities of development partners are summarized in Attachment 4.



Source: [WHO, 2020]

Figure III-8 JIMT Pacific Response Activities for COVID-19

Table III-20 Response Activities under the JIMT

Pillar	Technical Area	Responsible Organization
Vaccine Pillar	General	ADB, DFAT, MFAT, NZ MedSafe, PIHOA, SPC, UNICEF, US CDC, WB, WHO
Health Operations and Technical Expertise Pillar	Health Service Delivery (HSD)	IFRC, SPC, UNFPA, UNICEF, UN Women, WHO
	Mental Health and Psychosocial support (MHPSS)	IFRC, SPC, UNFPA, UNWOMEN, WHO
	Epidemiology and Surveillance	CDC, PIHOA, SPC, WHO
	Infection Prevention Control (IPC)	SPC, UNDP, UNICEF, WHO
	Case Management	DFAT, SPC, UNFPA, UNICEF, WHO
	Risk Communication and Community Engagement (RCCE)	ASTHO, IFRC, IOM, SPC, UNCG / UNRCO, UNFPA, UNICEF, WHO
	International Health Regulations (IHR)/Point of Entry (PoE)	WHO
	Training/ Emergency Operation Center (EOC)	SPC, WHO
Information and Planning Pillar	Deployments	WHO
	General	SPC, UNOCHA, WHO
Partner Coordination Pillar	General	ADB, DFAT, IFRC, IOM, MFAT, OCHA, PIFS, PIHOA, SPC, UNFPA, UNICEF, UNRCO, US EM SUVA, WB, WFP, WHO
Operational Support and Logistics Pillar	General	DFAT, PIHOA, UNICEF, UNOCHA, UNRCO, WFP, WHO

Source: [WHO, 2020]

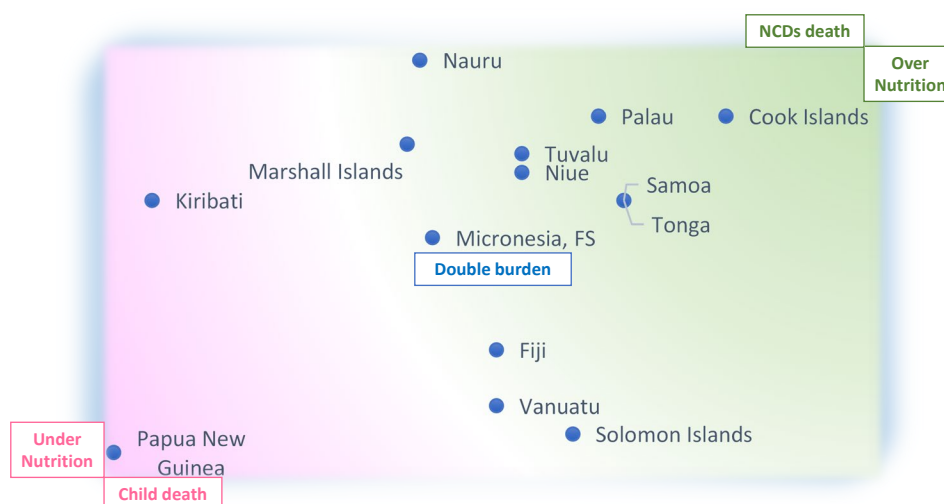
The JIMT Vaccine Pillar supports Pacific Island governments in their efforts to carry out the introduction of COVID-19 vaccines with the “Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines” in identifying their priorities for technical collaboration [PHoH, 2020].

As of 28th April 2021, 16 countries and areas in PICTs received COVID-19 vaccine through the COVAX. [SPC, 2021].

Chapter 6 Priority Issues and Challenges in Maternal, Newborn and Child Health in PICs

6.1 Priority Health Issues

Health challenges in the Pacific Island Countries (PICs) vary although most of those seem to be in epidemiological transition and facing over nutrition (Figure III-9). It means risks of diet-related non-communicable diseases (NCDs) such as diabetes and hypertension are high, then burden of NCDs will increase in the future.



Source: The Survey Team

Figure III-9 Conceptual Diagram of Health Issues in the Target Countries

The Pacific Region has been developing holistic approach to tackle with “triple burden” and life-long approach under “Healthy Island Initiative”. And each PIC sets its priorities to respond to each health challenge as summarized in Table III-21. Other than the key words in Table III-21, most of the PICs aim to strengthen the health system to improve access to quality health services.

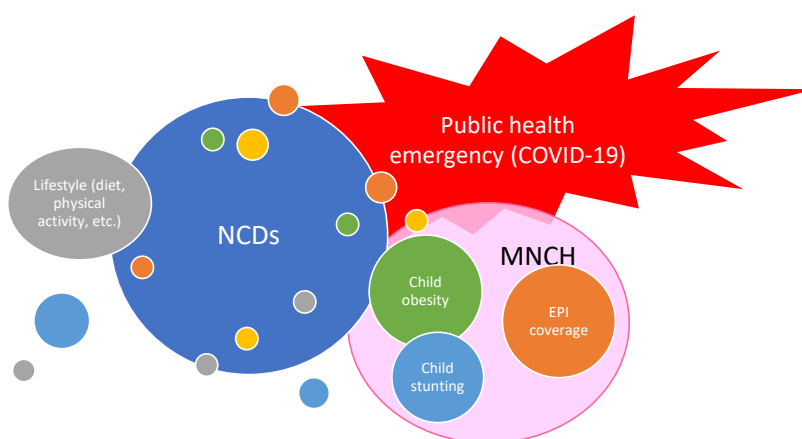
Table III-21 Priorities in National Health Strategies/Policies

	Health Issues			Service Level	
	MNCH	CDs	NCDs	PHC	Hospital
Cook Islands					
Fiji					
Kiribati					
Marshall Islands					
Micronesia, FS					
Nauru					
Niue					
Palau					
Papua New Guinea					
Samoa					
Solomon Islands					
Tonga					
Tuvalu					
Vanuatu					

Note: Light colors mean the policies rather mention holistic approach or overall health system without emphasizing particular issues.

Source: The Survey Team

In addition to the above health challenges, public health emergency brought by COVID-19 revealed the vulnerability of the health system in PICs (Figure III-10). As mentioned in Chapter 4, health services were disrupted due to concentration of resources to COVID-19 preparedness and response. Not only countries where community transmission have been confirmed, but in those with no cases/community transmission, human and financial resources have been shifted to preparedness and response to COVID-19. As a result, regular essential health services have been disrupted. At the same time, people hesitate to access health facilities for fear of infection. Then, both provision and use of health services have been decreased. As a result, existing health issues and relevant efforts could be negatively affected. This raises concerns about deterioration of health indicators in the future



Source: The Survey Team

Figure III-10 Health Challenges in PICs with and Post COVID-19

Considering the above common health challenges, the following issues could be prioritized:

- To decrease risks of diet-related non-communicable diseases through behavior change communication and life-course approach; and
- To enhance resilience of health system to recover from COVID-19 crisis and prepare future public health emergency.

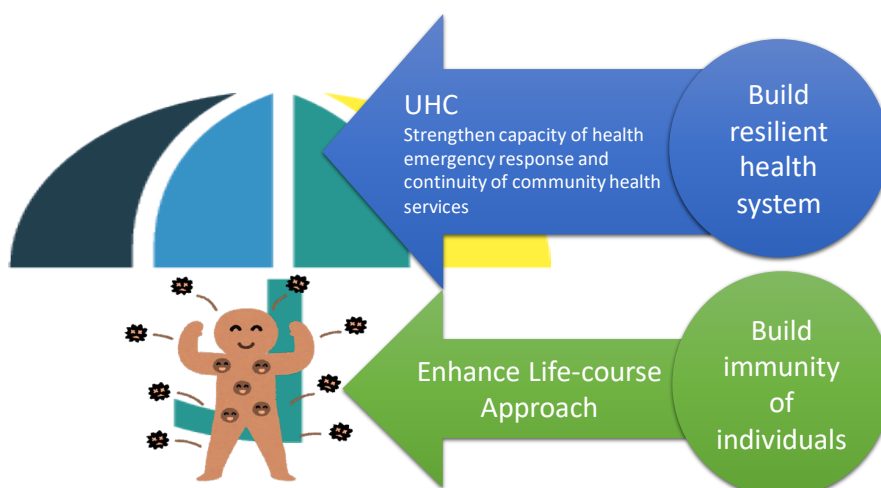
6.2 Useful Cooperation Resources of Japan

As described in Section 5.8, Japan has provided various cooperation in the health sector in the Pacific Region. Also, Japan accumulated experiences to tackle with similar health challenges such as maternal, newborn and child health (MNCH), NCDs, and health emergency, as well as lessons learned. Among those experiences and knowledge, the following cooperation resources could be effectively utilized to respond to the abovementioned priority issues:

- Continuum of MNCH care including life-course approach to reduce NCDs risk factors and increase Expanded Programme for Immunization (EPI) coverage;
- NCDs prevention with behavior change communication; and
- Preparedness and response to health emergency.

Chapter 7 Recommendations on Effective Approach for Future JICA's Cooperation

As this inexperienced health emergency revealed vulnerability of its existing social system, both health system and the individual need to be resilient to future unpredictable health emergency. As presented in Figure III-11, the proposed project would approach to build resiliency of both health system and strengthen immunity of individuals.



Note: The term of “immunity of individuals” embraces not only a function of immunity, but also the ability to acquire appropriate knowledge and take action to maintain and promote own health.

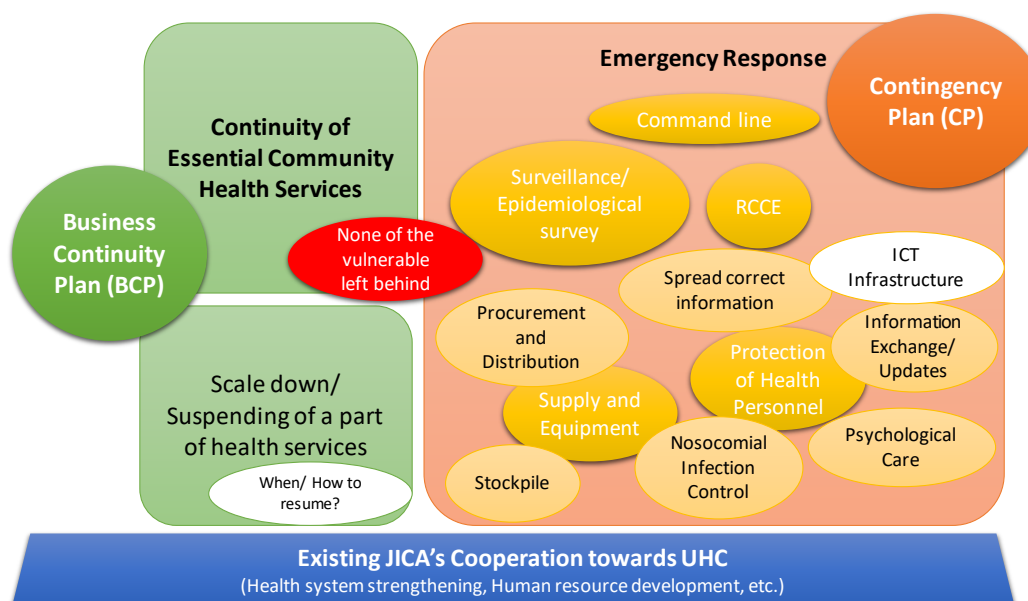
Source: The Survey Team

Figure III-11 Concept of Cooperation for Health Sector Build Back Better

7.1 Resilient Health System

As shown in Figure III-12, Based on the solid foundation of health system development and universal health coverage (UHC), cooperation for resilient health system consists of two major components, namely; capacity development for emergency response and continuity of essential health services. To avoid disruption of essential community health services, a business continuity plan (BCP) could be effective. The project will provide necessary resources from experiences in Japan and facilitate experience sharing among Pacific Island Countries (PICs) during and after the coronavirus disease 2019 (COVID-19).

The BCP for community health would include, for example: 1) criteria for prioritizing the routine health services and activities based on evidences and experiences; 2) list of minimum activities to be maintained; 3) protection of health workforce and patients; 4) consideration of vulnerable population; 5) efficient reallocation of human resources to emergency response and the prioritized health services provision; and 6) catch-up measures after resumption of services. A contingency plan (CP) for community health could enable health service providers and communities to respond to a health emergency in timely and flexible manner. Based on experiences during and after COVID-19 as well as other health emergency responses such as natural disasters and measles outbreak, CP could include Risk Communication and Community Engagement (RCCE), incident command system, surveillance and reporting, ensuring necessary human resources and materials, as well as physical and psychological protection of health workforces.

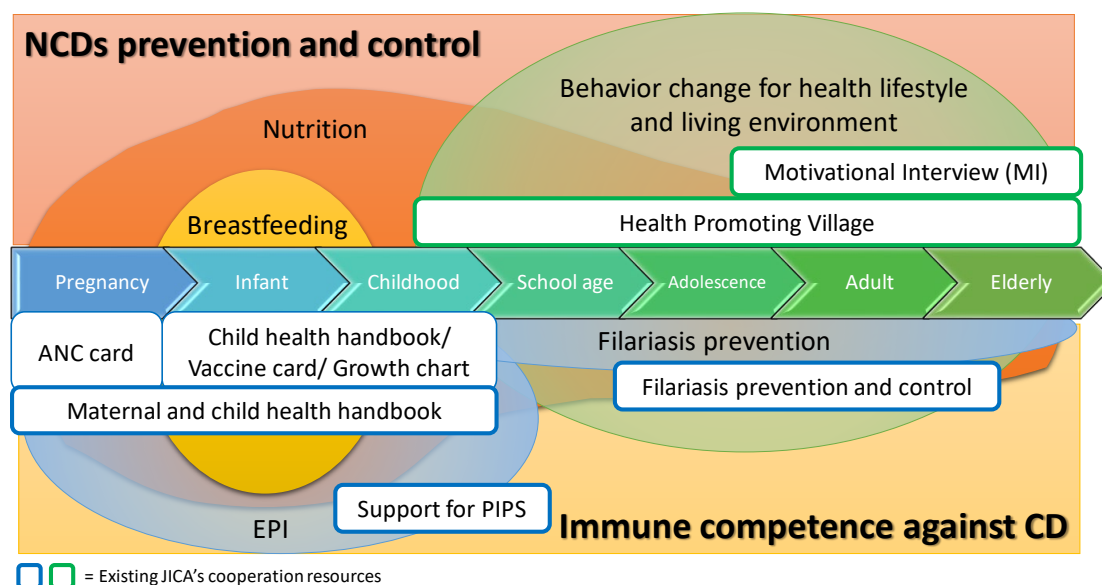


Source: The Survey Team

Figure III-12 Conceptual Image of Technical Cooperation for Resilient Health System

7.2 Strong Immunity of Individuals

To strengthen immunity of individuals, the project will introduce life-course approach with accumulated JICA's cooperation resources as presented in Figure III-13. It covers nutrition intervention and continuum of care from pregnancy period, communicable disease prevention for children, NCDs prevention and healthy environment for adult population.



Source: The Survey Team

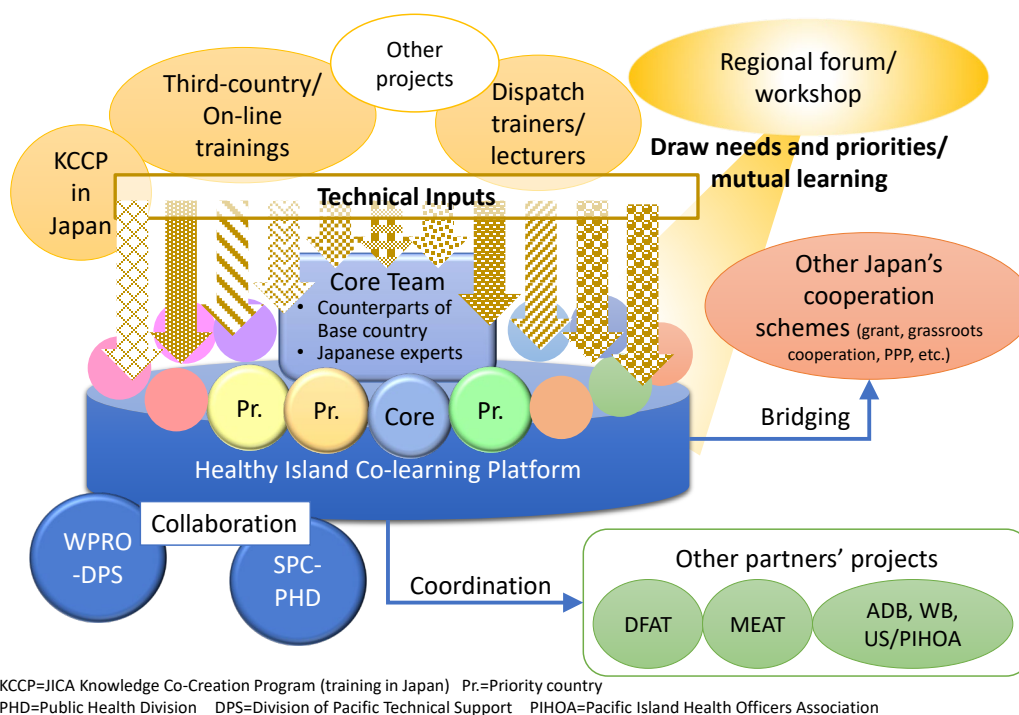
Figure III-13 Conceptual Image of Technical Cooperation for Strong Immunity of Individuals

7.3 Co-learning

As described above, the proposed project will cover a wide range of technical topics for build back better under New Normal for the Pacific Region. Respecting diversity among the target countries, the project

implementation framework should be more flexible than the previous technical cooperation projects under one big umbrella, the Healthy Islands. During the project, a co-learning forum or platform will facilitate situation analysis to identify priority needs of each country and sharing/exchanging experiences during COVID-19 response and other relevant issues. Technical inputs will be provided through existing training programs in Japan and the third country, regional workshops, and dispatch experts for in-country training and/or advisory visit.

Also, the project team could help to bridge to other cooperation schemes and coordinate with other relevant programs. In addition, the project should be closely coordinated with existing regional coordinating mechanisms such as the Pacific Community (SPC) and the World Health Organization (WHO) (Figure III-14).



Source: The Survey Team

Figure III-14 Conceptual Image of Co-learning under the Proposed Project

Table III-22 shows some examples of possible technical inputs for assumed priority challenges.

Table III-22 Examples of Possible Technical Inputs

Issues/ Challenges	Technical Inputs	Possible Resources
Behavior change for NCDs prevention	<ul style="list-style-type: none"> • Motivational Interview (MI) Training • Japan's experiences on NCDs prevention 	<ul style="list-style-type: none"> • Lecturers/ trainers from Fiji NCDs Project • MI course in Fiji National University (FNU) • Regional Training in Fiji
Child obesity prevention from pregnancy	<ul style="list-style-type: none"> • Trainings on: • The first 1000 days nutrition improvement; • Maternal and Child Health Handbook; • MNCH continuum of care 	<ul style="list-style-type: none"> • KCCP "Maternal and Child Nutrition" • Technical assistance by the Japanese experts • Regional Training in Fiji
Obesity prevention from school age	<ul style="list-style-type: none"> • Trainings on school-based nutrition improvement, healthy behavior (diet, physical activity, etc.) 	<ul style="list-style-type: none"> • KCCP "School Health" • Technical assistance by the Japanese experts • Regional Training in Fiji
Enhancement of community health system against disease outbreak	<ul style="list-style-type: none"> • Prevention of communicable disease transmission/ spread in a community • Community engagement • CP/BCP for community health 	<ul style="list-style-type: none"> • KCCP "Communicable Disease Control through Community Health System Strengthening" • Regional experience sharing workshop in Fiji • Technical assistance by the Japanese experts
Communicable disease prevention and health promotion	<ul style="list-style-type: none"> • "Healthy Village Initiative" Training 	<ul style="list-style-type: none"> • Lecturers/ trainers from Solomon Healthy Village Project • Regional Training in Fiji
Improve EPI coverage	<ul style="list-style-type: none"> • Home-based record • MNCH continuum of care • EPI Implementation and Management 	<ul style="list-style-type: none"> • KCCP "MNCH Enhancement through Public Health Activities" • Lecturers/ trainers from PIPS • Technical assistance by the Japanese experts

Note: *KCCP: Knowledge Co-Creation Program, sector-focused or region/country-focused training program in Japan

Source: The Survey Team

The target countries will be categorized into three groups according to the levels of engagement as summarized in Table III-23. Base country is to coordinate regional forum in cooperation with Japanese experts' team and regional agencies. Priority countries are to be selected based on major health indicators, in principle.

Table III-23 Three Categories of Target Countries

	Base Country	Priority Countries	Member Countries
Availability of Technical Inputs			
Knowledge Co-Creation Program (KCCP) (training in Japan):			
Country focused	✓	✓	
Theme focused:			
Add-on	✓	✓	
Within a fixed number			✓
Training/ Workshop			
Regional training/ Workshop	✓	✓	✓
Training/ Workshop in the base country	✓	✓	✓
Japanese experts			
Visit for training	✓	✓	
Advisory visit	✓	✓	✓
Roles (note: <input checked="" type="checkbox"/> = play as a facilitator)			
Promote regional framework in cooperation with SPC and WHO	<input checked="" type="checkbox"/>	✓	
Share/Expand experiences and lessons learned among the target countries	<input checked="" type="checkbox"/>	✓	✓
Integrating the outputs/fruits of the regional forum into relevant policy implementation	<input checked="" type="checkbox"/>	✓	
Prepare and submit application form	✓	✓	

Source: The Survey Team

Proposed criteria for base and priority countries are presented in Table III-24. A base country is expected to facilitate the member countries during the project implementation. Also, the project team should maintain close

coordination with the concerned organizations which lead regional health development such as Division of Pacific Technical Support of WPRO (DSP) and Public Health Department of SPC.

Table III-24 Proposed Criteria for Base and Priority Countries

Base Country	Priority Country
<ul style="list-style-type: none"> Cumulative experiences of JICA's technical cooperation projects in health sector Access to regional bodies for health partnership 	<ul style="list-style-type: none"> Challenges in maternal, newborn and child health, as well as diet-related non-communicable diseases Experience(s) of JICA's technical cooperation project in health sector

Source: The Survey Team

7.4 Proposed Project Outline

Table III-25 presents outline of the proposed project. For the base country, Fiji could be proposed because relevant regional agencies such as Public Health Department of SPC and DSP are in Suva, Fiji.

Table III-25 Outline of the Proposed Project for the Pacific Region

Title	The Project for Pacific Co-learning towards Resilient Health System and the Beyond, Healthy Islands	
Period	Five years	
Implementing Agencies	Ministries of Health of 14 target countries: Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia FS, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu	
Implementing Mechanism	<ol style="list-style-type: none"> Base country (Fiji): Core project team consisting of counterparts and Japanese experts engaged in facilitating regional co-learning forum. Priority countries (Kiribati, Micronesia FS, and Tonga): Counterparts from implementing agencies are expected to lead project activities. Member countries (Cook Islands, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tuvalu, and Vanuatu): Counterparts from implementing agencies are involved in project activities. 	
	Objectives	Measurements
Overall Goal	Some countries implement the action plan developed under the project to introduce some tools/ models or establish community health emergency response system.	<ul style="list-style-type: none"> Number of countries developed Contingency Plan (CP) and Business Continuity Plan (BCP) for community health setting Number of countries introduced the tools/models such as motivational interview (MI), health promoting village model, or home-based record which are shared during the project
Project Goal	Target countries effectively utilize the Healthy Island Co-learning Forum to share and exchange knowledge and experiences toward resilient health system.	<ul style="list-style-type: none"> Records of activities of the forum
Outputs	1. Each target country sorts out challenges on community health and life-course approach, and experiences in COVID-19 preparedness and response.	<ul style="list-style-type: none"> Situation and vulnerability analysis reports of member countries
	2. Target countries share the results of Output 1 in the regional forum.	<ul style="list-style-type: none"> Proceedings of regional meetings/ workshops Records of co-learning/ sharing on preparedness and response to inexperienced health emergency
	3. Each target country develops an action plan to overcome the priority challenges on community health and life-course approach.	<ul style="list-style-type: none"> Action plans of member countries Guidance to develop CP and BCP for community health setting
	4. The project team implements the technical inputs plans.	<ul style="list-style-type: none"> Records of technical input activities including Knowledge Co-Creation Program (KCCP) (training in Japan), third-country trainings, regional trainings/workshops, advisory visits Records of bridging/ coordinating activities with other cooperation schemes/ projects
	5. The regional forum discusses on feasibility of some tools and models learned under the project.	<ul style="list-style-type: none"> Assessment reports on shared tools/models during the project

<p>Activities</p>	<ol style="list-style-type: none"> 1-1. Core team develops a guidance and format of situation and vulnerability analysis, as well as experience sharing on COVID-19 preparedness and response. 1-2. All the target countries identify priority challenges on community health and life-course approach through situation and vulnerability analysis. 1-3. All the target countries sort out good practice, lessons learned, and future challenges relevant to preparedness and response to COVID-19 and New Normal. 2-1. Core team sets a regional co-learning framework and operational guidelines in close coordination with SPC, WHO and other relevant stakeholders. 2-2. Core team organizes regional workshop to share the results of 1-2 and 1-3 above. 2-3. Core team facilitates to further discussion and sharing among all the target countries through regular dispatch of information on project activities, and regional meetings. 3-1. Core team sorts out cooperation resources to prepare technical input menu to respond priority challenges of the target countries. 3-2. Core team develops a guidance and format of action planning. 3-3. Core team in cooperation with priority countries sorts out experiences and challenges on health emergency preparedness and response to develop a guidance on CP and BCP for community health setting. 3-4. All the target countries develop action plan through matching between the priority challenges identified in 1-2, and technical input menu prepared in 3-1, with reference to the concept of CP and BCP. 3-5. Core team develops technical input plan for each country, priority countries, and regional level in accordance with action plans (3-4) and the menu (3-1). 4-1. Core team implements the technical input plans; regional trainings/workshops, third-country trainings, and advisory visits, as well as necessary coordination with relevant project schemes/ projects. 4-2. All the target countries implement action plans. 4-3. Core team visits the target countries to monitor effectiveness of technical inputs, progress of the action plan, provide technical advices, and follow up the relevant activities. 5-1. All the target countries review effectiveness of technical inputs, as well as assess feasibility/ applicability of tools and models shared during the project. 5-2. All the target countries make recommendations for further utilization of the tools and models to make community health system resilience and strengthen immunity of individuals in each PIC. 5-3. All the target countries share the outputs of 5-1 and 5-2 at the regional forum. 5-4. Core team facilitates discussions on future co-learning framework for resilient health system as well as further health protection and promotion in the Pacific Region.
<p>Inputs from Japan</p>	<ul style="list-style-type: none"> • Various forms of trainings; KCCPs, third-country trainings, and regional trainings • Japanese experts; a chief advisor, technical experts of community health, health emergency preparedness and response, health promotion, disease prevention, life-course approach, nosocomial infection control, nutrition, behavior change communication, etc.) • Regional workshops and meetings • Advisory visits

Source: The Survey Team

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Attachments






- 1. List of Interviewees**
- 2. Photos of Obstetrics and Gynecology Division of Port Moresby General Hospital**
- 3. List of Ministries of Health and Statistics Offices**
- 4. Major COVID-19 Responses of PICs and Development Partners' Activities**

Annex 1: List of Interviewees

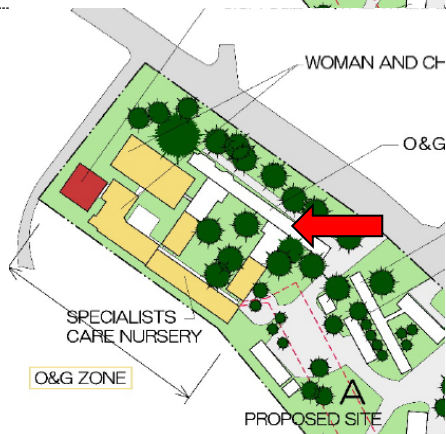
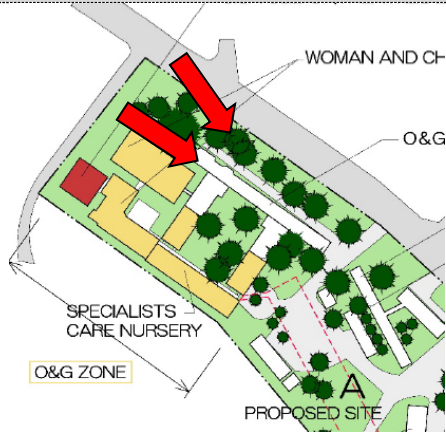
Organization	Title	Name
National Department of Health	Manager, Medical Standards Division, Health Facilities Branch	Mr. Ambrose Kwaramb
PMGH	Director, Medical Services	Dr. Koni Sobi
PMGH	Paediatrician	Dr. Roland Barnabas
PMGH	Paediatrician	Dr. Gamini Vali
PMGH	Paediatrician	Dr. Cornelia Kilalang
PMGH/O&G Society	Coordinator of O&G Division of PMGH/ President of PNG O&G Society	Dr. Mary Bagita
University of Papua New Guinea (UPNG)	Head of Obstetrics, Gynaecology and Reproductive Health at the School of Medicine and Health Sciences/ Consultant OBGY, PMGH	Prof. Glen Mola Franzcog
WHO	WHO Incident Manager COVID-19, Universal Health Coverage	MAALSEN, Anna Alexandra
WHO	MCH Officer	Dr. SALVA, Madeline Marucha Irene Solitario
WHO	Essential Medicines and Pharmaceuticals technical officer	Dr. YAIPUPU, Jessie Mara
WHO	Essential Medicines and Pharmaceuticals technical officer	SALENGA, Roderick
WHO	Technical Officer, Environmental Health, Health Security and Emergencies	Ms. Nola Ndrewei
UNICEF	Health Specialist, Health Systems Strengthening Health Section, Programme Division, UNICEF NYHQ	Ms. Rie Takesue
UNICEF	Health Specialist for Maternal & Child	Dr. Garba Safiyanu
UNICEF	National Officer for MCH	Mr. Paula Kongua
The World Bank	Senior Health Specialist	Dr. Edith Digwaleu-Kariko

Attachment 2: Photos of Obstetrics and Gynecology Division of Port Moresby General Hospital

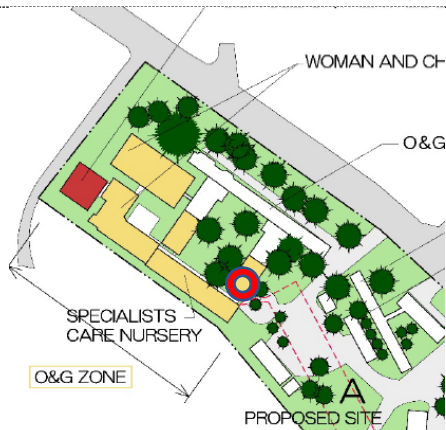
Source: JICA PNG Office, as of 28 May 2021

<p>Entrance</p> 		
		
<p>Postnatal Ward</p> 		

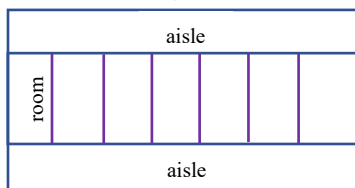
Cliniccs



Gynecology Ward



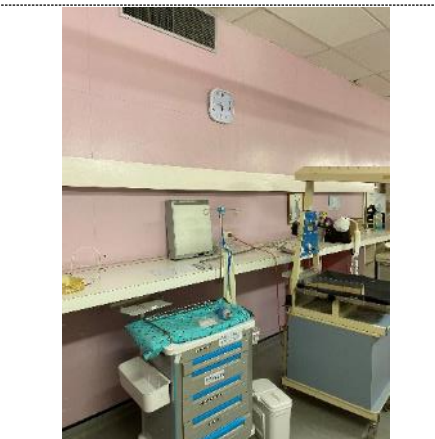
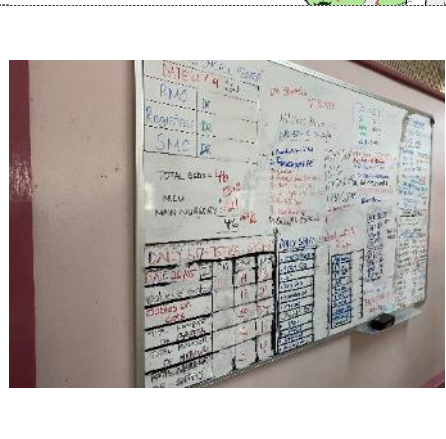
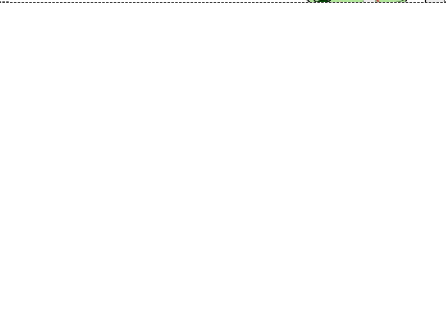
Layout



Gynecology Ward



Special Care Nursery



Special Care Nursery



Broken



Broken



Broken



Broken



Special Care Nursery



Delivery Ward



Only one is functioning.



Broken



Delivery Ward



Postnatal Ward



Antenatal Ward



Pharmacy



Operating Theatre



Broken

Operating Theatre



Option Site A		
		
		
		
		

Attachment 3: List of Ministries of Health and Statistics Offices

Name of Nation	MOH (URL)	Statistics (URL)
Cook Islands	Ministry of Health (MoH)	Cook Islands Statistics Office (CISO) in Ministry of Finance and Economic Management (MFEM).
Republic of Fiji	Ministry of Health and Medical Service (MHMS)	Bureau of Statistics
Republic of Kiribati	Ministry of Health and Medical Services (MHMS)	Ministry of Finance and Economic Development
Republic of the Marshall Islands	Ministry of Health and Human Services (MHHS)	Economic Policy Planning and Statistics Office (EPPSO)
Federated States of Micronesia	FSM Department of Health and Social Affairs	FSM Statistics
Republic of Nauru	Ministry of Health and Medical Service (MHMS)	Bureau of Statistics (Ministry of Finance)
Niue	Department of Health (DoH)	Niue Statistics Office
Republic of Palau	Ministry of Health (MoH)	Bureau of Budget and Planning
Independent State of Papua New Guinea	National Department of Health (NDoH)	National Statistical Office
Independent State of Samoa	Ministry of Health (MoH)	Samoa Bureau of Statistics (SBS)
Solomon Islands	Ministry of Health and Medical Services (MHMS)	Solomon Islands National Statistics Office (SINSO)
Kingdom of Tonga	Ministry of Health (MoH)	Tonga Statistics Department
Tuvalu	Ministry of Health (MoH)	Tuvalu Central Statistics Division (CSD)
Republic of Vanuatu	Ministry of Health (MoH)	Vanuatu National Statistics Office (VNSO)

Note: Names of agencies with underline include URL.

Attachment 4: Major COVID-19 Responses of PICs and Development Partners' Activities

	Measurements	Cook Islands	Fiji	Kiribati	Marshall Islands	FSM	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tonga	Tuvalu	Vanuatu
	Total cases (as of 30 April 2021)	0	103	0	4	0	0	0	0	10,835	1	20	0	0	3
	Total deaths (as of 30 April 2021)	0	2	0	0	0	0	0	0	105	0	0	0	0	0
	The first case		2020/3/18		2020/10/28		2021/1/7			2020/3/20	2020/12/1	2020/10/3			2020/11/10
Nonpharmaceutical measures	State of emergency	✓ 2020/3/17	✓ 2020/3/18	✓ 2020/3/26	✓ 2002/2/7	✓ 2020/1/31	✓ 2020/3/17	x	✓ 2020/3/42	✓ 2020/3/23	✓ 2020/3/20	✓ 2020/3/25	✓ 2020/3/20	✓ 2020/3/20	✓ 2020/3/26
	International flight restrictions	✓	around 4/2		✓	✓		✓ 2020/4/3		✓ 2020/3/22	✓ around 4/2	✓	✓		✓ around 4/2
	School closures					✓				✓ 2020/07/28		✓			
	Market closures											✓			
	Curfew		✓ around 4/2							✓ 2020/4/19		✓ 2020/4/6-5/18	✓ around 4/2		✓ around 4/2
Clinical	Strengthen PCR test capacity	✓ DFAT	✓ SPC	✓ DFAT, WHO	✓ IOM, WHO			✓ DFAT		✓ DFAT, UN	✓ SPC, JIMT	✓ DFAT	✓ DFAT	✓ DFAT	✓ WHO
	Nosocomial infection prevention and control		✓ SPC		✓ IFRC, WHO	✓ IOM				✓ MSF, WHO		✓			✓ WHO
	Procurement of PPE and other medical supplies	✓ NZ	✓ WHO, JAPAN, UNICEF	✓ UNICEF	✓ IOM		✓ WFP		✓ WHO	✓ WHO, UNICEF, CHINA, Australia, Private sectors	✓ IFRC, NZ	✓ JAPAN			✓ UNDP
	Development of isolation wards, disinfection facilities, etc.		✓ UNICEF	✓ WHO		✓ IOM				✓ UN	✓ IFRC	✓ UNICEF, WHO			✓ UNICEF, WHO
Public health	Risk communication and community engagement (RCCE)	✓ IFRC	✓ WHO, UNICEF, IFRC, SPC	✓ IFRC, SPC, WHO	✓ IOM, WHO	✓ WHO			✓ IFRC	✓ UNICEF, WHO, NGO	✓ JIMT	✓ IFRC, WHO, SPC			✓ WHO
	Continuing of essential health services including EPI, cancer screening, NCDs patients follow-up, etc.		✓ UNICEF	✓ UNICEF	✓ WHO, IFRC, WHO		✓ UNICEF			✓ WHO, USAID		✓ IFRC		✓ DFAT, UNICEF	✓ Australia
	WASH facility and behavior change communication	✓ IFRC	✓ WHO, UNICEF	✓ UNICEF	✓ IOM, IFRC	✓ IOM, WHO, IFRC			✓ IFRC	✓ UNICEF, WHO, JAPAN	✓ IFRC	✓ JAPAN, UNICEF, IFRC			✓ IFRC
	Surveillance and tracking capacity	✓ DFAT	✓ UNICEF	✓ DFAT	✓ IFRC, IOM	✓ IOM		✓ DFAT	✓ IFRC	✓ WHO, Australia	✓ FRC	✓ WHO			✓ WHO
	Psychological care for health workers and volunteers	✓ UNICEF	✓ IFRC								✓ JIMT		✓ UNICEF		
Others	Simulation exercises to treat COVID-19 patients			✓ WHO	✓ WHO	✓ WHO			✓ IFRC	✓ WHO, UNICEF	✓ JIMT	✓ WHO			✓ WHO
	Development of business continuity plan (BCP) and service standards under with-post-COVID-19 situation		✓ UN		✓ IOM		✓ DFAT			✓					✓ WHO
	Experience and knowledge sharing	✓	✓	✓	✓	✓	✓	✓	✓	✓ WHO, DFAT	✓	✓	✓	✓	✓
	Financial support	✓ ADB	✓ ADB, UNICEF	✓ ADB	✓ ADB, UNDP, WBG	✓ ADB	✓ ADB	✓ ADB	✓ ADB	✓ ADB, UNDP	✓ WB, UN	✓ ADB	✓ ADB	✓ ADB	✓ ADB, UNDP