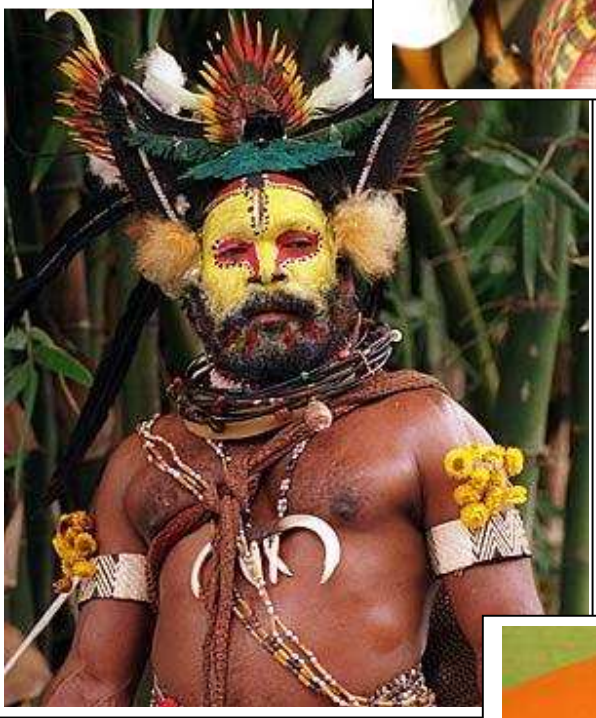

PAPUA NEW GUINEA

COMPREHENSIVE MULTI-YEAR PLAN

NATIONAL IMMUNIZATION PROGRAMME

2011-2015

PAPUA NEW GUINEA

COMPREHENSIVE MULTI-YEAR PLAN (cMYP)
FOR
NATIONAL IMMUNIZATION PROGRAMME

2011-2015

National Department of Health

Port Moresby
Papua New Guinea

May, 2010

CONTENTS

FORWARD

The government of Papua New Guinea is committed to improve the health of all Papua New Guineans, through the development of a health system that is responsive, effective, affordable, and accessible to the majority of people.

A well functioning Expanded Programme on Immunization (EPI) is an important component of child health services, and government of Papua New Guinea budgetary allocation towards financing majority of the traditional and new vaccines from domestic resources demonstrates its commitment to the child health.

Much of the success of EPI in Papua New Guinea can be attributed to the past comprehensive multi-year plan 2006-2010 and to the Child Health Plan 2009-2020.

Most of the vaccine preventable diseases - diphtheria, pertusis, and measles - have been effectively controlled. The country has been polio free since 2000. Efforts for Measles elimination were strengthened with setting up of case and lab-based surveillance for measles with periodic high quality SIAs. Hepatitis B vaccine and Haemophilus influenza b vaccine were successfully integrated in routine EPI with GAVI support.

However, there are more milestones and goals to be achieved in the next five years (2011-2015). Some of these goals include measles elimination by 2012, hepatitis B control by 2012, and evaluation of the scope of introduction of other new vaccines (rubella, pneumococcal and rotavirus), and establishment of an effective nationwide AEFI system. The training of staff needs to be strengthened and systematized at all levels to improve their skills and capacity for better service delivery and program management. This plan document outlines programmatic strategies and activities to be carried out towards achievement of these goals and also towards maintaining the quality of services.

The strategies and activities in this plan complement our overall National Health Plan and Medium Term Development Framework. The estimated total cost of EPI program in Papua New Guinea will vary from USD $33.7 million in 2011 to USD $42.7 million in 2015. Majority of these costs will be funded by Government budget.

I would also like to acknowledge the tremendous contribution of development partners; WHO, UNICEF, AusAID, NZAID and JICA that they have made towards the expanded program on immunization in Papua New Guinea.

I would like to express my special thanks to National EPI Unit of National Department of Health and WHO, UNICEF and JICA for their key roles in developing this comprehensive multi-year plan (2011-2015) for National Immunization Programme.

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DR CLEMENT MALAU
Secretary for Health

ACRONYMS

AD syringes	Auto-Disabled Syringes
AEFI	Adverse Events Following Immunization
BCG	Bacille-Calmette Guerin Vaccine
CBAW	Women of Child-Bearing Age Group
c-VDPV	Circulating-Vaccine derived polio virus
DPT	Diphtheria-Pertusis-Tetanus vaccine
DPT-3	DPT vaccine Third dose
EPI	Expanded Program on Immunization
GAVI	Global Alliance for Vaccines and Immunization
GoPNG	Government of Papua New Guinea
HEP B-3	Hepatitis B Vaccine Third Dose
HPV	Human papillomavirus
ICC	Interagency Coordination Committee
JE	Japanese Encephalitis
JICA	Japan International Cooperation Agency
LTDS	Long Term Development Strategy
MCV1	Measles Containing Vaccine First Dose
MCV2	Measles Containing Vaccine Second dose
MTDP	Medium Term Development Plans
NHP	National Health Plan
NIS	National Immunization Schedule
NSP	National Strategic Plan
OPV	Oral Polio Vaccine
OPV-3	Oral Polio Vaccine Third Dose
PNG	Papua New Guinea
SIA	Supplementary Immunization Activity
SNID	Sub-National Immunization Days
UNICEF	United Nations Children Fund
WHO	World Health Organization

1. INTRODUCTION

This document contains the 5-year comprehensive plan for the Expanded Programme on Immunization in Papua New Guinea. This plan developed in response to an extensive situation analysis, is oriented to improve EPI service delivery, improve advocacy and communication for immunization, maintain vaccine supply, quality and logistics at all service delivery level, strengthen surveillance of vaccine preventable diseases and its indicators and further improve programme management at all levels.

2. CONTEXT

1.1 Demographic profile

Figure 1: Map of Papua New Guinea

Papua New Guinea has an estimated population of around 6.5 million, 40% under the age of 15. It has more than 800 languages, over 1000 dialects and many ethnic groups, sub-ethnicities, clans and sub-clans spread across its 20 provinces. Each language group have a distinct culture, and there are large sociocultural differences between and within provinces. The official languages are English, Pidgin and Motu.

Access to widely scattered rural communities (86% of the country's population is living in rural areas) is often difficult, slow and expensive. Only 3% of the roads are paved and many villages can only be reached on foot. Most travel between provinces is by air. The capital, Port Moresby, is not linked by road with the rest of the country.

Papua New Guinea has made some progress in social development over the last 30 years. For example, literacy rates have risen from 32% to 56%. However, only half of all women aged 15 years and above and two-thirds of all men aged 15 years and older have ever attended school, and enrolment rates vary significantly across provinces. Women have a very high fertility rate of 4.4 births per woman. Life expectancy has risen from 49 to 54 years and, in 2000, the crude death rate was 12.0 per 1000 population. Papua New Guinea's Human Development Index has risen from 0.4 to 0.5. However, progress has slowed in recent years.

1.2 Recent history, economic situation and administration

Papua New Guinea is divided administratively into four regions: Southern Coastal (Papuan) Region, Northern Coastal (MoMaSe = Morobe, Madang and Sepik provinces) Region, Highlands Region, and New Guinea Islands Region. The governance system is a parliamentary democracy based on the Westminster model. As a member of the Commonwealth, the head of the Independent State of Papua New Guinea is Queen Elizabeth II of the United Kingdom of Great Britain and Northern Ireland, represented by the Governor-General, who is elected by the National Parliament for a five-year term.

The current single-chamber Parliament has 109 members, comprising one representative from each of the nineteen provinces and the National Capital District and one representative from each of the 89 open constituencies. Every five years, the political leaders are elected at the two tiers of government: national and local. Presently, there is only one woman representative in the national Parliament. There is a decentralized system of government. At the subnational level, there are three levels of administration: provincial, district and local (including several communes, with their villages).

During the 1990s, economic performance was mixed, although the economy benefited greatly from major mining and petroleum projects. While there was the potential for economic and social development, the period was largely characterized by negative economic growth and macroeconomic instability. As a result, the economy grew very little in real terms, with growth in the non-mining sector more sluggish than that in the mining sector. The reasons for the economic stagnation were complex. External contributing factors included the worldwide economic depression, the negative development in commodity prices, and unfavourable trade conditions, among others, while internal factors included a series of inappropriate policy regimes and fiscal failures, the catastrophic civil war in Bougainville from 1989 to 1999, and a series of devastating man-made regional disasters.

In recent years, the economic parameters have shown a more stable situation and a slightly more positive trend. However, this has been caused by the rising prices of mining products in the international markets rather than by improved internal performance.

Because of the economic situation, as well as the widespread evidence of deterioration in public services, especially in rural areas, it is a widely held view that living standards for a significant number of Papua New Guineans have declined since 1990. Furthermore, in spite of the increasing cost of living, salaries have changed very little over a long period, contributing to a static or possibly worsening poverty situation, particularly in the urban sector. In 2003, Papua New Guinea developed a poverty-reduction strategy that is intended to give an added focus to poverty in the national Medium-Term Development Strategy (MTDS).

The National Strategic Plan (NSP) 2010-2050 of Government of Papua New Guinea (GoPNG) promises to provide the next forty year vision and framework for long range planning. A Long Term Development Strategy (LTDS) 2010-2030 is being developed to link the principles and focus areas of the NSP and provide policy direction and sectoral interventions with clear objectives, quantitative targets and baseline indicators. To achieve the intended long term goal, the LTDS proposes five broad strategies which will be detailed in four Medium Term Development Plans (MTDP) over the next twenty years.

PNG is a signatory to the Millennium Development Declaration of the UN General Assembly which sets objectives for global development over the period 2000-2015.

The National Health Administration Act (1997) establishes the National Health Plan (NHP) as a national policy. It applies to the entire country including Provincial and Local-Level Governments. The Act provides for the NHP to be approved by the National Executive Council after considering recommendation by the National Health Board. A National Health Plan for 2011-2020 is currently under development and will layout the broad goals, strategies and interventions contained within the NSP and the LTDS for the health sector. The goal of the new NHP will be ‘Strengthened Primary Health Care to all and Service Delivery to the rural majority and urban poor'.

The Provincial Health Authority (PHA) reform is an initiative led by the NDOH Health Sector Reform Unit to combine provincial health management in a distinct entity, empowering provincial managers to improve service delivery. Within the PHA reform, the development of a Single Financing Framework at provincial level aims to offer provincial health authorities holistic and predictable management of financing sources and mechanisms.

1.3 Health situation and trend [1]

Health services in Papua New Guinea are provided by the Government and church medical services and are primarily financed by public funds. The poor road infrastructure and rugged terrain pose formidable challenges to the effective delivery of health services nationwide. In recent years, rural health services have deteriorated significantly because of the closing down of many rural health facilities. The present status of rural health service is compounded by shortage of medical doctors, nurses and community health workers in most rural areas. The persistent and serious law-and-order problem with marked regional differences affects access to health facilities and staff supervision.

The major health problems have remained largely unchanged in the past ten to fifteen years. The leading health problems continue to be communicable diseases, with malaria, tuberculosis, diarrhoeal diseases, and acute respiratory disease as major causes of morbidity and mortality. PNG has a generalized HIV epidemic, driven predominantly by heterosexual transmission.

The epidemiological profile of PNG with its heavy burden of communicable diseases indicates that huge improvement in health outcomes could be achieved with simple and effective interventions using a primary health care approach. While some hospital services (e.g., for maternal complications) are essential, most health problems can be addressed through effective delivery of primary care which is linked to appropriate referral services. The current poor health status of rural populations points to a weak primary health care system with a lack of essential services that reach rural communities for even basic needs, such as immunization and safe delivery. This can to a large extent be attributed to a flawed decentralization policy where the provinces and districts have been given the responsibility for running of rural health services without ensuring commensurate financial resources and managerial capacity. The increased size and mobility of populations, the growth of larger, denser populations in peri-urban communities, and the relative weakening of health services combine to increase the incidence of communicable diseases. Additionally, chronic life-style-related diseases such as diabetes, heart disease, and cancer are beginning to emerge as prominent problems in urban areas.

1.3.1 Communicable and noncommunicable diseases, health risk factors and transition

Communicable diseases remain the major causes of morbidity and mortality in all age groups. However, significant progress has been made in some areas. In 2000, the country was declared poliomyelitis-free. In addition, the national leprosy elimination target of less than one case per 10,000 population was reached.

Malaria is the leading cause of all outpatient visits and the third leading cause of hospital admissions and deaths. The disease is now endemic in every province, including those

[1] Country Health Information Profiles, 2009, WPRO, WHO

that were once malaria-free. An average of 1.5-1.8 million suspected cases of malaria are seen at health care facilities annually, and malaria mortality rates for 2007 were estimated to be 8.4 per 100,000. Together, malaria and pneumonia account for one-third of all recorded deaths.

According to WHO estimates (WHO Report 2009 Global Tuberculosis Control) in 2007, Papua New Guinea has an estimated tuberculosis prevalence rate of 430/100,000, a TB death rate of 60/100,000 per year, and a total of 15,002 cases for all types of TB. However, it is very likely that these are underestimates because the prevalence and incidence rates are based on case notifications, and cases are generally underreported. According to the same WHO report, it is estimated that the incidence rate for new smear-positive cases was 108/100,000 per year in 2007. Thus TB remains a major public health problem, particularly in view of the current HIV epidemic. The directly observed treatment, short-course (DOTS) programme is gradually expanding and is currently operational in eight provinces. Reasons for the slower-than-planned expansion of DOTS include a number of system constraints common to other disease control programmes: central-level staffing; weak infrastructure and support services; and delays in access to funds, limited training, supervision and other local-level support.

Papua New Guinea was declared to have a generalized HIV/AIDS epidemic in 2003. A consensus workshop, held in February 2006, estimated that there were 23,000 to 91,000 HIV-positive individuals in the sexually active population of 15-49 years. HIV prevalence among women attending antenatal clinics is between 0.6% and 3.7% (2005) and AIDS-related death is the leading cause of death in adult inpatients at the Port Moresby General Hospital. The main mode of HIV transmission is heterosexual. The incidence of other sexually transmitted infections (STI) is also rising, with the high incidence of sexual assaults on women contributing to their risk of contracting an STI.

Filariasis is endemic, although the size of the problem is unknown. Mass drug administration through the Elimination of Lymphatic Filariasis (ELF) programme is ongoing.

The incidence of noncommunicable diseases is rising, creating the double burden as observed in most developing countries. Cases of tobacco-related and alcohol-related illness appear to be increasing, while data from Port Moresby General Hospital suggest that diabetes and hypertension are also on the increase. The three leading cancers in Papua New Guinea - oral, hepatic and cervical - have largely preventable causes (beetle chewing and tobacco smoking).

Another ongoing health concern is related to injuries caused by road traffic accidents and all forms of violence (domestic, criminal and tribal).

1.3.2 Outbreaks of communicable diseases

Papua New Guinea still remains susceptible to outbreaks of vaccine-preventable diseases due to suboptimal immunization coverage. Efforts are also required to strengthen the EPI disease surveillance systems. Of 1083 suspected measles cases reported in 2009, only 82 were adequately investigated and tested for laboratory confirmation. While none of these investigated cases were confirmed as measles, the true status of measles virus circulation in the country is unclear.

Diarrhoeal diseases remain common. Intestinal infectious diseases, including diarrhoeal diseases and typhoid, are major causes of morbidity, with an estimated combined incidence of 434/100,000 year. Contaminated food and water are the major contributing factors. Only 40% of the population have an access to improved drinking water source, and poor hygiene conditions results in unsafe food-handling practices.

Malaria outbreaks in different parts of the country are yearly events. Papua New Guinea still seems to be free of the A(H5N1) avian influenza virus.

1.3.3 Leading causes of mortality and morbidity

Communicable diseases, including pneumonia, malaria, tuberculosis, diarrhoeal diseases, meningitis and, increasingly, HIV/AIDS, remain the leading cause of morbidity and account for around 50% of mortality. Information on the true impact of HIV on mortality and morbidity in Papua New Guinea is lacking, but AIDS-related death has been reported in adult in-patients at the Port Moresby General Hospital.

Perinatal conditions account for over 10% of all recorded deaths and maternal mortality estimates are high and have increased in past years, indicating a decrease in access to quality health services.

The noncommunicable diseases epidemic in Papua New Guinea is firmly established and increasing, but remains largely unrecognized in reported data. Tobacco-related and alcohol-related illnesses, diabetes and hypertension are on the increase, as are the three leading cancers (oral, hepatic and cervical), along with breast and lung cancers.

1.3.4 Maternal, child and infant diseases

Maternal and child morbidity and mortality are not improving in Papua New Guinea. Maternal mortality estimates vary widely, but all are high. The 2006 DHS established a maternal mortality ratio of 733 per 100 000 live births. The causes of maternal mortality include postpartum haemorrhage, puerperal sepsis, ante partum haemorrhage, eclampsia and anaemia. Almost 53% of pregnant women are cared for by trained health personnel and about 52% of births are in health facilities. About 24.3% of women are using modern family planning methods (2006).

Perinatal conditions account for over 10% of all recorded deaths. The infant mortality rate is estimated at 56.7 per 1000 live births (2006) compared with 82 in 1991 and 72 from the 1981 National Census. Overall, 30% of children are considered to be moderately to severely malnourished and 31% of children aged 0–5 is stunted, while wasting is comparatively low. Again, there are marked regional variations.

Child health problems are being addressed through improved immunization and the joint United Nations Children's Fund (UNICEF)/WHO child survival strategy, with a focus on the integrated management of childhood illness (IMCI) approach.

1.4 Health system

1.4.1 Ministry of Health's mission, vision and objectives [2]

The overall mission of the National Department of Health is to promote the physical, social, mental and spiritual well-being of people in their communities, and to promote and encourage the maintenance of community health at an acceptable level by planning and delivering preventive and curative medical and other health services.

The vision of the Department is a nation of healthy individuals, families and communities where self-reliance prepares all for healthy living in a healthy island environment, with the ultimate goal of improving the health of all Papua New Guineans through the development of a health system that is responsive, effective, affordable, acceptable and accessible to the majority of people.

The goal of the new National Health Plan of Papua New Guinea will be 'Strengthened Primary Health Care to All and Service Delivery to the rural majority and urban poor'.

The Government is focusing its efforts on improving child health and reducing malaria, tuberculosis and HIV/AIDS through specific programmes. To be a nation of healthy individuals, families and communities, and in the spirit of the National Goals and Directive Principles as enshrined in the National Constitution, Papua New Guineans strive for a future in which:

- fewer infants and children die before they have had a chance to experience life;
- fewer mothers die in childbirth from preventable causes;
- all Papua New Guineans have access to basic health care and good nutrition;
- fewer Papua New Guineans die from preventable and treatable diseases including malaria, pneumonia, tuberculosis, diarrhoea and HIV/AIDS;
- women and men live healthier, longer, productive lives and age with dignity;
- villages have safe drinking water and a clean environment; and
- individuals make informed choices as regards health behaviour.

1.4.2 Organization of health system and delivery services

Health services in Papua New Guinea are provided primarily by the Government and church medical services (both of which are financed primarily from public sector funds); enterprise-based services (e.g. the mines); a small, modern private sector; and traditional healers (undocumented number). Within the public sector, management responsibility for hospitals and rural health services within provinces is divided. The National Department of Health manages the provincial hospitals, while provincial and local governments are responsible for all other services (health centres and sub-centres, rural hospitals and aid posts), known collectively as 'rural health services'.

[2] Country Health Information Profiles, 2009, WPRO, WHO

The National Health Conference 2001 supported a proposal to create a unified provincial health system. The proposal envisaged a single provincial health authority responsible for both hospital and rural health services, headed by a Provincial Director of Health who would report to both the national and provincial governments. Thus far this system has only been implemented in four provinces.

Strategies to ease managerial difficulties include: amendment of selected public finance and management procedures; quarantining (earmarking) of health funds in provincial grants; delegation of powers over district health staff from the Provincial Administrator to the Provincial Health Adviser; and alignment of treasury warrants to provincial budgets. Stronger monitoring mechanisms are being developed. A review of functions has recommended that provincial health budgets should make provision for each rural health facility individually, which may have implications for the current budget structure if all resources going to facilities from several different programme heads are to be captured comprehensively. This too still needs to be actually put in place.

1.4.3 Health policy, planning and regulatory framework

The National Health Plan 2001-2010 and the Medium-Term Expenditure Framework 2005-2007, with its 2007-2009 update, identify some explicit priorities. These include maternal and child health, immunization, malaria control, TB DOTS, HIV/AIDS, and water and sanitation programmes. Development of the next National Health Plan 2011-2020 has started in Papua New Guinea.

1.4.4 Health care financing

Overall health spending is falling despite receiving a high share of government funds. Total health expenditure as a share of GDP rose steadily from 3.2% to 4.4% between 1997 and 2001. In 2007, however, it decreased back down to 3.2% and total health expenditure per capita fell to US$ 31.3 (from US$ 32 US dollars in 1997). Over 80% of recurrent provincial health budgets were allocated to salaries in 2006. Increased income from the mining sector in the same year provided for an additional US$ 60 million for the health sector, which allowed the undertaking of long-awaited renovation work in hospitals and the addressing of human resource issues, such as staff housing.

Papua New Guinea receives significant levels of official development assistance (ODA), estimated to have amounted to US$ 203 million, or 7.2% of GNP, in 2001. Over recent years, ODA for health has fluctuated, but has been around 24% (2004) of total health spending.

A major new source of funds for health was opened up in 2005 with the signing for a US$ 30 million grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) for the country's HIV/AIDS programme. In 2004, the Global Fund committed US$ 20 million for malaria over five years. A further proposal of US$ 21

million for TB was accepted in 2006 and, in 2008, a malaria proposal of over US$ 152.2 million.

Papua New Guinea does not have any form of private health insurance, although there is an initiative to have mandatory staff health insurance introduced in the formal sector. In principle, health services are free. In most provinces, however, a fee is charged for outpatient visits. It is not clear in how much this acts as a deterrent to people accessing health services.

1.4.5 Human resources for health

The nurse-to-population ratio is estimated at 1:2271 population. An additional 600 nurses, 600 community health workers and 100 midwives are estimated to be needed to fill vacant posts, but current production rates are insufficient to fill the gaps. The doctor-to-population ratio is estimated at 1:19,399 population, the majority of doctors being in Port Moresby.

Churches are important providers of care, especially in rural areas, where they provide up to 80% of health services. They share many of the problems of public facilities, but appear to perform better in a number of areas.

Papua New Guinea trains most of its health workforce and the churches run five of the seven nursing schools and all of the community health worker training schools.

2. EPI IN PAPUA NEW GUINEA: HISTORY AND SITUATION ANALYSIS

2.1 History of EPI in Papua New Guinea

EPI was launched in PNG in 1977. Initially, the program targeted 6 vaccine preventable diseases-- tuberculosis, polio, diphtheria, pertussis and tetanus. Measles vaccine was introduced in 1982 (infants 9 months of age) and 1992 (infants 6 months of age). Hepatitis B vaccine was introduced in 1989. DTP-Hep B vaccine was introduced in the country in 2008, while Haemophilus influenzae type b (Hib) vaccine was introduced as part of DTP-Hep B- Hib vaccine in 2009.

Supplemental immunization for polio eradication was done since 1996 and Measles supplementary immunization is being carried out since 2003-2005. The population group targeted under EPI include under 1 population, school entrants and leaving (age 6-13 years), and pregnant women. Additional age groups are targeted in Measles campaigns.

Administratively, EPI is under the Family Health Unit in the Health Improvement Branch of the National Department of Health. Provincial Cold Chain Logistics Officers (PCCLO) is responsible for the management of vaccines at provincial level with support from the Provincial Family Health Coordinator. At the district level, EPI is managed by the District Manager through the health facility Sister-In-Charge.

Immunization services are offered as part of public health services through a network of Maternal and Child Health (MCH) clinics, outreach services and through immunization sessions organized at health facilities. Monitoring and Evaluation of EPI is done by regular supervision and evaluation of data on reported coverage and disease incidence through the National Health Information System. EPI reporting systems are organized as part of National Health information systems in line with health sector reforms.

2.2 National Policies and Plans providing mandates for EPI in Papua New Guinea

The National Health Plan 2001-2010 address priority health concerns and cost effective interventions. Given the scarcity of available resources and the priority health concerns of the country, the NHP have identified control, elimination and eradication of vaccine preventable diseases as one of the priority. Routine EPI activity is being considered in NHP as a cost-effective comprehensive approach that will result in real and sustained improvements in health services for children.

The PNG Child Health Plan and Strategic Implementation Plan 2009-2020, details the child health component of the overall National Health Plan and sets out activities and programs that will result in the MDG goals being achieved. This Plan emphasizes the strong expanded program of immunization (EPI) that has been developed over years.

The Multi-year plan on EPI 2006-2010 provided a detailed plan of activities at National, provincial and health facilities and was budgeted to secure funds for the activities both at national and provincial level.

The National Policy and Technical Guidelines for EPI, last revised on 2004, provides the basis for all technical aspects of EPI in Papua New Guinea. This serves as an index document for EPI managers at all levels towards ensuring a quality immunization services in the country. Recognizing the recent changes in the field of immunization and with the introduction of new vaccines in the country beyond 2007, the need for reveing the present EPI Policy and Guidelines has been agreed and the process of revising and dissemination of EPI policy and working Manual has been already initiated by the National EPI unit.

2.3 Delivery of immunization services and vaccination schedule in Papua New Guinea

Immunization services in Papua New Guinea are offered as part of public health services through a network of 800 Maternal and Child Health (MCH) clinics, and approximately 30% of the children are reached through outreach services. The rest of the target population is covered through immunization sessions organized at health facilities. Approximately 63% of health facilities are government-owned and the remaining by non-governmental organizations, religious organizations and private practitioners.

The EPI through the following vaccination schedule in Papua New Guinea strives to complete vaccination of children before their first birth day to protect all infants against eight vaccine preventable diseases.

Table 1 National Routine Immunization Schedule in Papua New Guinea

Vaccine	Immunization to be given at:								
	Birth	1 Mo	2 Mo	3 Mo	6 Mo	9 Mo	12 Mo	7 yrs	13 yrs
BCG	✔								
Hepatitis B	✔								
Oral Polio (Sabin)		✔	✔	✔					
DTP-HepB-Hib		✔	✔	✔					
Measles					✔	✔			
Tetanus Toxoid								✔	✔
Vitamin A					✔		✔		

Table 2. Immunization Schedule for pregnant women in Papua New Guinea

Dose	When to give
TT-1 & TT-2	First contact with health service or any time during the 1st pregnancy– 2 doses (at least 4 weeks apart)
TT-3	At first contact during 2nd pregnancy or after birth (at least 6 months after TT 2)
TT-4	At first contact during 3rd pregnancy or after birth (at least 1 year after TT 3)
TT-5	At first contact during 4th pregnancy or after birth (at least 1 year after TT 4)

2.4 Recent progress and issues on priority areas

2.4.1. Routine immunization programme

Overall immunization coverage in Papua New Guinea has been fairly constant or has shown very little improvement over past 3 years. The outreach sessions conducted by the Health Centres did not show any major improvement over last few years. Reaching to the children of Papua New Guinea through outreach and mobile services holds an essential element towards achieving good immunization coverage.

Between 2008 and 2009, the programme started the rehabilitation of the cold chain in the provinces and health facilities resulting in an improvement of cold chain functionality in Health Centres from 44% in 2006 to 84% in 2008. The programme also completed the setting up of two new cold rooms at the National Vaccine Store.

Table 3. Situational analysis of routine EPI by major system components in Papua New Guinea, 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
DTP-HepB-Hib 3 national coverage	75	60	60
% Districts with DTPHepB-Hib3 coverage >80%	NIL	21	12
# Pertussis cases reported	256	413	373
% AEFIs reported which are investigated	-	0	100
% Provinces providing annual update of cold chain inventory	35	100	100
% Health centres with functional cold chain equipment for the routine immunization services	44	56	84
% Health facilities reporting vaccine or injection material stock-outs	0	0	3
(Total # Outreaches conducted) / (Total # Outreaches planned) (%)	58	54	58
% Outreach Clinics /1000 children under 5 years	26	22	23
# Districts provided with at least one supportive supervision in a year by either NDOH or Provincial Health Offices	39	31	28

The Routine Immunization Programme in Papua New Guinea is supported by an established surveillance system for Measles/Rubella, Polio, Meningitis-Encephalitis and Rotavirus. The country also has an inbuilt neonatal tetanus reporting system through the national health information system. The sensitivity of the existing surveillance systems needs to be reviewed and gaps identified for corrective measures.

The Routine Immunization programme has prioritized the districts and provinces for enhanced support based upon the DTP-3 coverage, surveillance and SIA performance indicators. It has been emphasized that these identified districts/provinces will be visited by the National/Provincial staffs for support and also to support these districts with outreach activities and sessions at difficult to reach areas. Supportive supervision by the National and Provincial Health Officers holds a key towards improvement of immunization services in the provinces and districts/health centres. The supervisory visits to districts over the years have however decreased.

2.4.2. Measles elimination

Measles and its complication is one of the most important causes of mortality from vaccine preventable diseases. The coverage of Measles Vaccine in Papua New Guinea has been around 50% over last few years. Estimating morbidity and mortality of measles in Papua New Guinea is challenging as most of the surveillance data are derived from patients admitted to health care facilities and do not reflect disease burden at community level. Although measles is the most commonly reported vaccine-preventable disease through National health Information system, there is still underreporting.

The GoPNG is committed towards the Measles Elimination Goal of 2012. The plan towards measles elimination includes strengthening of routine infant immunization coverage; provide second opportunity through supplementary immunization activities, strengthening of measles surveillance with access to an accredited laboratory, ensuring appropriate case management and Vitamin A administration.

Table 4. Situational analysis of Measles Elimination activities in Papua New Guinea, 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
MCV1 (MCV at 9 month) national coverage	55	47	54
% Districts with MCV1 coverage >90%	NA	5.6	13.5
MCV SIAs national coverage	NA	NA	84
% Districts with MCV SIAs coverage >95%	NA	NA	42
% Provinces reporting at least one suspected measles case / 100 000 population per year	-	-	11
# Suspected measles cases reported in NHIS	827	733	1005
% Measles cases with adequate serum samples collected and tested for detection of measles IgM	-	-	48

Note: NA = Not Available / Applicable

Considering the geographical diversity and existing health infrastructure in PNG, improving the coverage of measles vaccine through routine immunization and also having a high quality SIAs remains a challenge for Papua New Guinea, which is compounded by the existing surveillance system for measles.

2.4.3. Accelerated hepatitis B control

The Hepatitis B vaccine was introduced in the National EPI schedule of Papua New Guinea in 1989. Under the NIS, Hepatitis B vaccine is administered to all infants at birth followed by three doses by one year of age as a part of DTP-Hep B-Hib vaccine.

Table 5. Situational analysis of Accelerated Hepatitis B control in Papua New Guinea, 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
Timely HepB-birth (<24 hours) national coverage	32	29	27
HepB-birth dose ≥24 hours national coverage	75	80	82
% Districts with Timely HepB-birth (<24 hours) coverage >80%	-	54	53
HepB3 national coverage	70	59	56
% Districts with HepB3 coverage >80%	42	20	12

Administering birth dose of Hepatitis B to newborns involves a close linkage between presence of skilled attendants at delivery and presence of competent person to provide immunization. With about 52% of births happening in health facilities nationally, with wide regional and provincial difference, delivery of timely Hep B birth dose remains a challenge in Papua New Guinea, which is constant around 27% over past few years. However, emphasis has been laid to all hospitals in the country conducting deliveries to administer birth dose of Hepatitis B to all newborns within 24 hours of birth.

2.4.4. Maintaining polio-free status

In 2000, the country was declared poliomyelitis-free. A sensitive AFP surveillance system along with high OPV-3 coverage remains the backbone towards maintaining the polio-free status in the country.

The OPV -3 coverage in the country over past few years has been fairly constant around 60-65%, with wide regional and provincial variation. Considering only 20% of the districts recorded an OPV-3 coverage of more than 80% in 2008, this poses a high risk of any impending outbreak following importation from endemic countries in the light of the

increased industrialization and movement of people from different parts of world to Port Moresby and other industrial belt of Papua New Guinea.

The AFP surveillance system has been inconsistent over past few years, with surveillance indicator of adequate sample collection rate decreasing to 17% in 2008 from 72% in 2007.

Table 6. Situational analysis of Polio Free status in Papua New Guinea, 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
OPV3 national coverage	75	61	65
% Districts with OPV3 coverage >80%	NIL	22	20
Non-polio AFP rate	1.5	1.01	0.46
% AFP cases with adequate stool samples within 2 weeks after reporting	58	72	17

Involvement of Paediatricians and provincial disease control officers will be an important step in improvement of the existing AFP surveillance system in the country. Quarterly feedback to the provinces by the National Surveillance Team will be key to assessment of the performance of the provinces.

2.4.5. Maternal and neonatal tetanus elimination

More than 46% of women in Papua New Guinea deliver at home (DHS-2006) and with only 19% of districts having a TT + coverage of more than 80% and 60% DTP-3 national coverage, warrants a national policy being framed towards Maternal and Neonatal Tetanus elimination in the country.

Table 7 Situational analysis of Maternal and Neonatal tetanus elimination in Papua New Guinea**,** 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
DTP3 national coverage	75	60	60
% Districts with TT 2+ coverage >80%	18	19	19
# Districts with NT / 1000 live births > 1	NA	NA	15
% School-aged children receiving TT through the routine school health programme	-	-	28

The current emphasis on improving the routine DTP3 coverage and having a comprehensive strategy to reach women can be accessed through a deliberate phased approach based on high-risk selection criteria will help to identify areas of poor performance and offer protection to the women at vulnerable locations.

2.4.6. Introduce the vaccination against Streptococcus pneumoniae and human papillomavirus to the routine EPI schedule and surveillance of new Vaccine preventable diseases when available

Papua New Guinea has made significant contribution and improvement towards providing newer vaccines to all children of the country. The country introduced Haemophilus influenzae b (Hib) into the national EPI schedule in 2008. The country has established Meningitis-Encephalitis Surveillance to assess the impact of the vaccine introduction and also to plan for the introduction of pneumococcal vaccine in the country. The country has also established rotavirus surveillance at Institute of Medical Research, Goroka.

Table 8 Performance of New Vaccine preventable disease Surveillance in Papua New Guinea, 2006-2008

Indicators	National Trend & Status		
	2006	2007	2008
# Pneumococcal meningitis cases identified in the Paediatric Sentinel Surveillance System	-	-	19
# Cervical cancers	Data Not Collated	281	410
# Rotavirus confirmed cases	-	-	

The National EPI unit is working in close collaboration with the Obstetrics and Gynaecological Society and Maternal Health department of the National Department of Health towards assessment of cervical cancer screening and piloting of HPV vaccine in identified province.

2.4.7. Integration of EPI delivery with other health interventions

Delivery of EPI services to community at large provides an imminent ground to deliver other health interventions. The approach of the GoPNG during the Measles SIA 2008 integrating the routine EPI services and Vitamin A distribution has been a way forward for the country to maximize resource utilization through one point entry with similar interventions for the community.

The integration of other interventions as Malaria, Nutritional interventions and maternal care along with EPI will require a more collaborative performance from all concerned departments within the National department of Health and thereby improve the quality of services delivered by personnel at community level.

In order to succeed in integration of other services with EPI service delivery will require adequate planning for delivery of services and sustaining of the service deliveries from effective consultation with all major players at national/provincial/district level.

2.4.8. Supplemental immunization activities

Considering the EPI coverage in the country over past few years and to accelerate the country's progress towards the eradication and/or elimination of vaccine preventable diseases, the country has conducted Measles SIA as a catch up followed by follow up campaigns during last few years.

These supplementary activities in PNG have shown promise towards access to unreached population of routine EPI.

2.4.9. Vitamin A

Vitamin A supplementation has been introduced as part of the National EPI schedule to be given at 6 months and 12 months of age. Vitamin A was also planned for distribution during the measles catch-up campaigns.

2.4.10. Maintain the performance of the national measles/rubella laboratory under WHO accreditation standard and strengthening laboratory capacity for new vaccines

The Measles Laboratory system for strengthening of Measles Case Based surveillance as an essential parameter towards Measles elimination in PNG has been operational at Central Public Health Laboratory, Port Moresby.

Eight provincial hospitals has been identified as the sentinel sites for the Meningitis Encephalitis Surveillance in the country while the Institute of Medical Research, Goroka has been identified as the sentinel site for the rotavirus surveillance.

The performance of the sentinel sites and the laboratory has been improving over years on various laboratory performance indicators. With more number of staffs to be positioned following the restructuring planned in 2011, it is anticipated that the manpower resource structure in CPHL and with the provinces will lead to improvement of laboratory performance of Measles/Rubella and also towards other new vaccines.

The Central Public Health Laboratory, which is the reference laboratory for all public health surveillance laboratory activities in the country, has been planned to act as a reference laboratory for the quality assurance of the eight provincial hospitals and laboratory testing for Meningitis – Encephalitis for confirmation of test and also sub-typing of bacterial meningitis organisms and for invasive bacterial disease using real-time PCR.

3. COMPREHENSIVE MULTI-YEAR PLAN OF NATIONAL IMMUNIZATION PROGRAMME IN PAPUA NEW GUINEA 2011-2015 (cMYP 2011-2015)

3-1. Achieve high quality immunization services that reach every child and mother

The Government of Papua New Guinea is committed to reach every child and mother with quality immunization services over the next five years to reduce mortality and morbidity arising from vaccine preventable diseases. It is widely acknowledged that reaching with quality immunization services to all corners of the country will lead to betterment in health of the general population and mother and child in particular.

GoPNG will also focus on quality aspects of AEFI management, improved supportive supervision by National and Provincial staffs, increase in outreach services and better vaccine and logistic management at all levels towards attainment of the objectcive.

Indicators and Targets

- DTP-HepB-Hib 3 national coverage: **>90 %**
- % Districts with DTP-HepB-Hib3 coverage >80%: **>90%**
- # Pertussis cases reported: **<100**
- % AEFIs reported which are investigated: **100%**
- % Provinces providing annual update of cold chain inventory: **100%**
- % Health centres with functional cold chain equipment: **100%**
- % Health facilities reporting vaccine or injection material stock-outs: **0**
- (Total # Outreaches conducted) / (Total # Outreaches planned) %: **>80%**
- % Health facilities which conducted outreaches at least 4 times in a year: **>80%**
- # Districts provided with at least one supportive supervision in a year by either NDOH or Provincial Health Offices: **89**

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-1**.

Strategies

The following strategies enlisted will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-1**.

- Strengthen technical assistance to poorly performing districts and urban areas
- Enhance implementation of supportive supervision by national and provincial staffs
- Implement key components of National Communication Strategy for Routine EPI
- Develop a national routine AEFI management system
- Procurement and equitable distribution of WHO pre-qualified vaccines and injection safety materials
- Maintain and ensure operational system of cold chain equipment

- Strengthen EPI programme management capacity at national, provincial and district levels
- Secure financial and operational resources for routine EPI and monitor implementation by all functional levels
- Promote immunization safety

3-2. Make progress towards elimination of measles

The Government of PNG is committed towards the regional goal of elimination of measles by 2012 and in this regard emphasis on increasing the routine MCV coverage and conducting high quality Measles SIAs in 2010 and 2012 will be a priority. Based on the country situation on Measles coverage and measles case scenario, an additional SIA in 2014 will be considered.

In an effort to eliminate measles by 2012, emphasis has been also laid on surveillance and supported by quality laboratory support to substantiate the progress made.

Indicators and Targets

- MCV1 (MCV at 9 month) national coverage: **>90%**
- % Districts with MCV2 coverage >90%: **>95%**
- MCV SIAs national coverage: **>95%**
- % Districts with MCV SIAs coverage >95%: **>80%**
- National Non- Measles suspected case reporting rate**: ≥ 2 / 100,000**
- % Provinces reporting at least one suspected measles case / 100,000 population per year: **>80%**
- % Measles cases with adequate investigation* within 48 hours of report: **>80%**
- % Adequate serum samples (from suspected measles cases) with laboratory results within 7 days of receipt: ≥ **80%**

* Adequate investigation means: collection of core data including 1) Date of rash onset, 2) Date of notification, 3) Date of investigation, 4) Date of specimen collection, 5) vaccination status, 6) Date of last vaccination, 7) Date of birth or age, 8) Sex, 9) District of residence or infection, 10) Travel history and additional case finding and contact tracing should be conducted to identify any possible epidemiologically-linked cases.

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-2**.

Strategies

The following strategies enlisted will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-2**.

- Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district in developing and implementing its annual micro plan for measles elimination activities
- Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district
- Conduct high-quality MCV SIAs (ensuring all districts to achieve >95% coverage) every two year
- Use "PNG National Health Week" as opportunity for strengthening advocacy on National Measles Elimination
- Strengthen district's capacity in reporting and investigation of all suspected measles cases with collection of serum specimens
- Strengthen PHO's capacity in provision of technical support to the district manager in detecting, investigating and reporting suspected measles cases
- Improve the diagnostic capacity of Central Public Health Laboratory
- Enhance coordination capacity of NDOH and the Provincial Health Office towards national measles elimination activities
- Enhance coordination between surveillance unit of national department of health and central public health laboratory for measles surveillance activities
- Strengthen focused support to districts with weak capacity in implementation of measles elimination activities

Based on the results of the measles surveillance on the detection of rubella, the country will decide on evidence-based results on the introduction of rubella vaccine in the national EPI schedule. Also the child health advisory technical group in PNG will decide on the timings of introduction of rubella vaccine with technical assistance from WHO/UNICEF.

3-3. Make progress towards control of hepatitis B

Low institutional deliveries in the country poses a challenge for delivery of Hepatitis B birth dose to the newborns. Over the past few years, Hepatitis B doses are been increasingly administered to children beyond 24 hours after birth. With the more emphasis on improvement of rural health services in National Health plan, it is envisaged that the timely Hep B birth dose delivery will increase in the country in the next five years.

The EPI programme in the country is also looking forward towards community based delivery of Hepatitis B vaccine along with comprehensive postnatal care as a plot initiative. The progress made in the pilot province on community based delivery of HepB Birth Dose will be expanded, based on evidence base results and economic feasibility of using uniject to other poor performing provinces.

Indicators and Targets

- Timely HepB-birth (<24 hours) national coverage: **>80%**
- HepB-birth ≥24 hours national coverage: **>90%**
- % Districts with Timely HepB-birth (<24 hours) coverage >80%: **>90**
- HepB3 national coverage (DTP-HepB-Hib 3 national coverage) : **>90%**
- % Districts with HepB3 coverage >80% (% Districts with DTP-HepB-Hib 3 coverage >80%): **>90%**

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-3**.

Strategies

The following strategies enlisted will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-3**.

- Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district in developing and implementing its annual micro plan for accelerated hepatitis B control
- Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district
- Promote timely administration of HepB within 24 hrs. of birth
- Use "PNG National Health Week" as opportunity for strengthening advocacy on accelerated hepatitis B control with immunization
- Promote community and parents awareness on the importance of " institutional or supervised delivery"
- Plan and conduct hepatitis B surface antigen sero-survey
- Enhance coordination capacity of NDOH and the Provincial Health Office in national hepatitis B control programme
- Strengthen focused support to poor performing districts in implementation of hepatitis B vaccination

Hepatitis B vaccination of all health workers in the country either during the pre-service training, entry into the service or thereafter is also being planned in Papua New Guinea. The hepatitis B vaccination of health care workers and adoption of universal precaution will be made a part of national EPI policy and technical guidelines.

3-4. Maintain PNG's Polio-free status

In view of maintaining Polio Free status in the country, the national EPI programme is concerned on OPV coverage of all beneficiaries which has been declining over past few years. Another concern for the country is the sensitivity of the existing AFP surveillance system.

Over the next few years, the EPI programme will focus on improving the OPV coverage either through routine EPI or by identifying poor performing districts using a revised criteria matrix though identified mini-SIAs or in conjugation with other SIAs as Measles.

Indicators and Targets

- OPV 3 national coverage: **>80%**
- % Districts with OPV3 coverage >80%: **>90%**
- Non-polio AFP rate (/100 000 children under 15 years of age) : **>1**
- % AFP cases with adequate stool samples within 14 days of onset: **>80%**
- % AFP cases repoted within 14 days of onset: **> 80%**
- OPV in SIAs national coverage: 80%
- % Districts with OPV in SIAs coverage >90%: > 90%

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-4**.

Strategies

The following strategies enlisted will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-4**.

- Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district
- Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority districts
- Incorporate OPV into MCV SIAs which will be conduced in every two year
- Identify high risk districts based on coverage, surveillance and other associated criteria for targeted OPV mini-SIAs; includes regular data review and risk assessment exercise.
- Strengthen and sustain awareness on the importance of polio vaccination among the health staff and community people
- Strengthen District's capacity in reporting and investigation of all AFP cases
- Strengthen PHO's capacity in provision of technical support to the district manager in reporting all AFP cases with adequate stool samples
- Strengthen coordination and communication between National disease surveillance unit and WHO accredited regional laboratory
- Enhance coordination capacity of NDOH, Provincial Health Office and district in sustaining polio-free in PNG
- Strengthen focused support to districts with weak capacity in implementation of activities for sustaining polio free status in PNG
- Organize regular NCC and expert panel meetings

In view of the recent increased industrial activities and increase travel movement in and out of Papua New Guinea; with low OPV coverage in routine EPI, the country will

prepare and implement an importation response plan. The importation response plan will be updated and adapted to the local settings of the country in consultation with child health advisory committee.

3-5. Achieve elimination of maternal and neonatal tetanus

Acknowledging the present scenario of antenatal Care services in the country and with very low institutional delivery, the EPI programme along with the Maternal Health programme officers will develop a National Plan of action for Maternal and Tetanus elimination in PNG. This will also involve technical support form WHO and UNICEF during the process. The districts with poor indicators will be prioritized for focal SIAs towards maternal and neonatal tetanus elimination.

Indicators and Targets

- DTP3 national coverage (DTP-HepB-Hib 3 national coverage): **>90%**
- % Districts with TT 2+ coverage >80%: **>90%**
- # Districts with NT / 1000 live births ≥ 1: **0**
- # High-risk districts conducting SIAs with TT: **23** in 2014 and **40** in 2015
- % School-aged children receiving TT through the routine school health programme: **>80 (Denominator school enrolled children)**

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-5**.

Strategies

The following strategies will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-5**.

- Development of a National Plan of Action for MNTE in PNG
- Development of risk assessment profile and process of identification of high-risk districts
- Strengthen focused support to districts with weak capacity in implementation of MNTE
- Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district in developing and implementing the MNTE activities
- Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district for monitoring and accelerating implementation of MNTE
- Conduct TT campaign in high-risk districts
- Increase routine TT 2+ coverage for pregnant women and school children
- Use "PNG National Health Week" as opportunity for strengthening advocacy on MNTE in PNG

- Need to strengthen the national system for NT surveillance and monitoring
- Enhance coordination capacity of NDOH and the Provincial Health Office in MNTE activities

3-6. Introduce the vaccination against Streptococcus pneumoniae and human papillomavirus to the routine EPI schedule and surveillance of new Vaccine preventable diseases when available

The disease burden of pneumococcal disease in Papua New Guinea is widely researched and documented. EPI unit of National Department of Health endorses the concern expressed by the Paediatric Society of PNG and researchers in introduction of pneumococcal vaccine in the country by 2013.

Research on Human Papilloma Virus has been conducted in the country by the Gynecological Society of PNG. Introduction of HPV vaccine will be considered following assessment of the planned pilot initiative.

In order to substantiate the progress made towards the introduction of the new vaccine in the country and also to measure the progress made following introduction of Hib vaccine, it is been envisaged to strengthen the existing Meningitis Encephalitis Surveillance in the country.

Indicators and Targets

- # suspected meningitis cases identified in the Paediatric Sentinel Surveillance System
- Pneumococcal vaccine national coverage after its introduction in the routine immunization services: **>80**
- Formal process (e.g. consultation meeting) for approval of possible introduction of HPV vaccine: **To be started in 2013**
- # Rotavirus confirmed cases identified in Rotavirus Sentinel Surveillance System
- # severe diarrhoea cases tested for rotavirus isolation
- # provinces participating in AES surveillance
- # Acute Encephalitis cases evaluated in Acute Encephalitis syndrome Surveillance

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-6**.

Strategies

The following strategies will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-6**.

- Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district in developing and implementing its annual micro plan and

providing Supportive Supervision for Haemophilus influenzae b (Hib) (as a part of DTP-HepB-HiB vaccine)

- Develop a national system of vaccination, including standard and policy, introduction plan, performance and monitoring for Streptococcus pneumoniae
- Develop a national system of vaccination for human papillomavirus (HPV)
- Develop a national system of vaccination for other vaccine preventable diseases (supported by disease burden and characteristics identified through proposed surveillance system)
- Use "PNG National Health Week" as opportunity for strengthening advocacy on Hib in PNG
- Use "World Pneumonia Day" and other important occasions (National Health Week) as an opportunity for strengthening advocacy of pneumococcal vaccination in PNG
- Use "World Cancer Day" and other important occasions related to women issues as an opportunity for strengthening advocacy of HPV vaccination in PNG
- Strengthen capacity of major provincial hospitals to conduct bacterial meningitis Surveillance and laboratory testing
- Strengthen the existing Bacterial Meningitis Surveillance system
- Strengthen the capacity of O&G professionals to conduct cervical cancer screening (In collaboration with MCH Programme Officers)
- Procure and distribute sufficient Hib Vaccine as a part of DTP-HepB-Hib vaccine
- Procure and distribute sufficient pneumococcal vaccine starting in 2013
- Procure and distribute sufficient HPV vaccine after HPV is decided to be introduced
- Maintain cold chain equipment and ensure operational system for DTP-HepB-Hib vaccine
- Maintain cold chain capacity for Pneumococcal vaccine and HPV vaccine
- Enhance coordination capacity of NDOH and the Provincial Health Office in new and underutilized vaccines (Hib, Pneumococcal and HPV) activities

At present the rotavirus surveillance in the country is conducted in Institute of Medical Research, Goroka. In order to a get a better understanding of circulating rotavirus strain in the country for possible introduction of rotavirus vaccine in the country and looking into the diverse nature of patient load in Port Moresby general hospital, it has been decided to include Port Moresby General Hospital as one of the rotavirus surveillance centre with support from Central Public Health Laboratory.
In order to have basic understanding of the Japanese encephalitis load in the country, it has been planned to identify provincial hospitals based on the locations and possible case load through acute encephalitis syndrome surveillance.

3-7. Integrate EPI delivery with other health interventions

Expanded programme of Immunization in the country has been considered as an effective programme for delivery of the other health interventions as a composite package towards maternal and child health services. It has been widely recognized in the country that

availability and delivery of interlinked services to immunization and maternal and child health services will have a wide impact towards betterment of both the programmes.

The EPI programme will coordinate with concerned department of Maternal Health, Malaria and with other key stakeholders towards development of minimum pacake of services to maximize the output from each of the components of the deliveries.

Indicators and Targets

- National guidelines for minimum package of integrated services
- # Health facilities with "Outreach Patrol": **800**
- # Schools visited during EPI's out reach activities for school student health check-up
- # Mosquito bed nets delivered by EPI system / in SIAs
- # Pregnant mother checked during SIAs with TT2+
- # Children checked and reported on their general health condition

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-7**.

Strategies

The following strategies will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-7**.

- Strengthen provision of technical support in developing and implementing national plan for integration of other health interventions with EPI
- Use concerned department meetings and important occasions to strengthen the advocacy of integrated services and importance of EPI to the community
- Enhance coordination between different stakeholders and NDOH

3-8. Conduct supplemental immunization activities every 2 years to intensify the routine immunization

Supplementary immunization activities provide an opportunity to reach out to a wider population base and also to improve the population immunity. Keeping in view the measles elimination goal of 2012, two such SIAs will be conducted in the country in 2012 and 2014. Mini SIAs of OPV will also be planned in the next five years after situational analysis of the coverage of OPV. TT2+ focal SIAs will be planned in the country as highlighted in MNTE activities.

SIAs involving other antigen will be prioritized in the country with analysis of the existing scenario of the country.

Indicators and Targets

- Total # children vaccinated in SIAs
- Total # children receiving Vit. A in SIAs
- # Districts participating in SIAs: **89**
- # Districts with SIAs coverage >95%: **>80**

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-8**.

Strategies

The following strategies will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-8**.

- Conduct high-quality MCV SIAs (ensuring all districts to achieve >95% coverage) every two year
- Conduct high-quality OPV mini-SIAs
- Conduct high-quality focal TT SIAs
- Use "PNG National Health Week" as opportunity for strengthening advocacy on National Measles Elimination
- Procure and distribute sufficient measles vaccine and injection safety material
- Strengthen focused support to districts with weak capacity in implementation of measles SIAs

3-9. Ensure all children receive at least 2 doses of vitamin A at 6 and 12 months

Vitamin A supplementation has been a part of national immunization schedule with an emphasis that every infant receive 2 doses of vitamin A before 12 months of age. The delivery of first dose of vitamin A is operationally made feasible with administration of first dose of measles at 6 months of age. It has been planned to update the vitamin A component into the integrated communication strategy of EPI.

Indicators and Targets

- % Children receiving Vit. A- Second Dose before the 1st birthday: **>80**

Annual Milestone for reaching cMYP Target is shown in **ANNEX 2-9**.

Strategies

The following strategies will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-9**.

- Strengthen provision of technical support by NDOH and Provincial Health Office to all districts in developing and implementing its annual micro plan for vitamin A supplementation
- Delivery of Vitamin A and De-worming during SIAs
- Integrate Vitamin A into the EPI communication strategy and implement key components of National Communication strategy
- Procure and distribute sufficient vitamin A
- Strengthen EPI programme management capacity at national, provincial and district levels
- Secure financial resources and monitor implementation

3-10. Extend routine vaccine services to the community health (aid) post level

It has been widely recognized that the basic services as immunization be available at the community health post so that services can be offered to all beneficiaries at their village as envisaged in the National health plan.

Provision of immunization services is being considered as one of the effective way of strengthening the service delivery at this level. The EPI programme will be strengthened at the community health post level with functional cold chain equipments wherever feasible.

Indicators and Targets

- # Community health posts with functional cold chain equipment: **70**

Annual Milestone for reaching cMYP Target is shown in **ANNEX 2-10**.

Strategies
The following strategies enlisted will be carried out in 2011-2015 to achieve the above cMYP Target for each Indicator. Key Activities for implementation of each Strategy are outlined with their implementation timeline in **ANNEX 2-10**.

- Strengthen technical assistance to community health post for extending routine vaccine services
- Strengthen EPI programme management capacity at provincial and district levels
- Secure resources and monitor implementation
- Promote immunization safety

3-11. Maintain the performance of the national measles/rubella laboratory under WHO accreditation standard and strengthening laboratory capacity for new vaccines

Laboratory services have been recognized as an essential component of EPI and the Central Public Health Laboratory, a laboratory recognized as a public health laboratory in

the country, coordinates with national EPI unit towards improvement of quality of laboratory services in EPI surveillance. With new vaccines being introduced in EPI, it would be really essential that the laboratory services are also emphasized for better understanding of the impact of the new vaccines introduction and also to support the possible introduction of under-utilized vaccines in the country.

Indicators and Targets

- Test results are reported by the laboratory on measles IgM samples within 7 days of receipt: **>80%**
- Serological tests are performed on at least 50 specimens annually for Measles and Rubella: **>50**
- Accuracy of measles and rubella IgM detection: **>90%**
- Internal quality control (QC) procedures for IgM assays implemented
- Proficiency test score: >**90%**
- Completeness and timeliness of monthly laboratory data reporting: **> 80%**
- Results from virus detection and genotyping (if performed) are completed within 2 months of receipt of specimen AND data reported to WHO monthly: **> 80%**
- Score from the annual on-site review of laboratory operating procedures and practices: **>80%**
- Serological tests are performed on at least 100 specimens annually for Rotavirus: **>100**
- More than 100 samples are tested for rotavirus antigen detection by ELISA
- Testing results shared in a timely manner in standard format and interval: **>80%**
- % Stool specimen collected for Rotavirus testing within 2 days of hospital admission: **>90**

Annual Milestones for reaching cMYP Targets are shown in **ANNEX 2-11**.

Strategies

The strategies for implementation of activities to maintain and improve the performance of the National Measles/Rubella laboratory and strengthening laboratory capacity for new vaccines will be implemented in cognizance with the laboratory plan. The support of Surveillance unit of EPI along with Laboratory policy of PNG (Being drafted) will be incorporated within the EPI system to address the strategies and activities towards the laboratory activities of EPI.

4. COSTING AND FINANCING OF COMPREHENSIVE MULTI-YEAR PLAN OF NATIONAL IMMUNIZATION PROGRAMME IN PAPUA NEW GUINEA 2011-2015 (cMYP 2011-2015)

The costing includes the cost for vaccines, injection devices and supplies, cold chain and transportation equipment and operational costs. The costing is carried out with the annual routine vaccination coverage goals for 2011-2015 (**Table 9**), which were set based on the actual coverage and their trends in 2008-2009.

Table 9 Target Coverage by Antigen for the routine immunization programme in Papua New Guinea, 2011-2015

Year		2011	2012	2013	2014	2015
Estimated # Births		222,486	228,493	234,662	240,998	247,505
Estimated # Surviving Children		209,804	215,469	221,287	227,261	233,397
BCG	Coverage goal (%)	80%	85%	90%	90%	90%
	# to be vaccinated	177,989	194,219	211,196	216,898	222,755
OPV1	Coverage goal (%)	84%	88%	90%	92%	92%
	# to be vaccinated	176,236	189,613	199,158	209,080	214,726
OPV3	Coverage goal (%)	80%	84%	88%	90%	90%
	# to be vaccinated	167,843	180,994	194,732	204,535	210,058
HepB-birth (all)	Coverage goal (%)	60%	70%	80%	90%	90%
	# to be vaccinated	133,492	159,945	187,730	216,898	222,755
HepB-birth (<24 hours)	Coverage goal (%)	40%	50%	60%	70%	80%
	# to be vaccinated	88,994	114,246	140,797	168,699	198,004
DTPHepBHib 1	Coverage goal (%)	84%	86%	88%	90%	92%
	# to be vaccinated	176,236	185,303	194,732	204,535	214,726
DTPHepBHib 3	Coverage goal (%)	70%	75%	80%	85%	90%
	# to be vaccinated	146,863	161,602	177,029	193,172	210,058

Year		2011	2012	2013	2014	2015
MV at 9 month	Coverage goal (%)	65%	75%	80%	85%	90%
	# to be vaccinated	136,373	161,602	177,029	193,172	210,058
TT2+ Pregnant women	Coverage goal (%)	45%	55%	65%	75%	80%
	# to be vaccinated	110,131	138,238	167,784	198,823	217,805
Vitamin A at 6 month	Coverage goal (%)	60%	65%	70%	75%	80%
	# to be provided	125,883	140,055	154,901	170,446	186,718

Major plans and assumptions for costing include:

- Using the current vaccines and vaccination schedule till the end of 2012
- Introduction of Pneumococcal vaccine into the National EPI schedule in 2013
- Set annual routine vaccination coverage goals for 2011-2015 based on the actual coverage and their trends in 2008-2009
- Conduct measles SIAs (6 Months - 2 years 11 months) in 2012 and 2014
- Used estimated # births for BCG, HepB-birth, TT/Td for pregnant women and estimated # "surviving children" for OPV, MV, DTPHepBHib, TT/Td for school entry (x 0.9 = school entry rate), and pneumococcal vaccine
- For Pregnant women, 10% was added to the estimated # births
- Replace cold chain equipments in a planned and phased manner
- Provide one 4 WD vehicle and motorboats to each priority provinces and districts

Detailed excel worksheets accompany this description to provide the assumptions and basis of different calculations.

4.1 Vaccines

The total cost for the vaccines currently-used in the routine immunization programme in Papua New Guinea (BCG, OPV, Measles, HepB, DPTHepBHib and TT) as per the current vaccination schedule is estimated to be USD 3,168,696 - 5,516,872 during 2011-2015 (Table 10). The government finances all the cost of these vaccines except DPTHepBHib. The government will continue to co-finance USD 0.68 per dose for DPTHepBHib during the year 2011 - 2015.

The cost for Pneumococcal Vaccine is planned to be newly introduced in the routine immunization programme in Papua New Guinea from 2013 with estimated cost of USD 1,974,982 - 2,777,428 per year in 2013 through to 2015 (Table 10).

Table 10. Projected Cost of Vaccines currently used in and newly introduced into the routine immunization programme in Papua New Guinea, 2011-2015

Current Vaccines including DTPHepBHib	2011	2012	2013	2014	2015
BCG	$305,918	$303,467	$302,494	$286,765	$273,471
OPV 1-3	$174,473	$187,716	$192,357	$201,941	$202,456
Measles	$211,889	$239,132	$250,054	$266,792	$283,806
TT for Pregnant Women	$32,305	$40,550	$49,217	$54,676	$59,896
HepB-birth	$57,401	$64,478	$75,679	$82,294	$84,516
DTPHepBHib 1-3	$2,374,773	$2,403,537	$2,052,802	$1,903,029	$1,820,694
TT at School Entry & Leaving	$11,936	$12,564	$13,218	$13,898	$14,605
Subtotal	**$3,168,696**	**$3,251,445**	**$2,935,820**	**$2,809,396**	**$2,739,444**
Pneumococcal Vaccine to be introduced from 2013	**2011**	**2012**	**2013**	**2014**	**2015**
Pneumococcal Vaccine					
Subtotal			**$1,974,982**	**$2,366,358**	**$2,777,428**
GRAND TOTAL	**$3,168,696**	**$3,251,445**	**$4,910,803**	**$5,175,754**	**$5,516,872**

Table 11. Planned Financing for Vaccines currently used in and newly introduced into the routine immunization programme in Papua New Guinea, 2011-2015

Current Vaccines including DTPHepBHib	2011	2012	2013	2014	2015
Govt	$1,343,189	$1,425,436	$1,489,934	$1,543,834	$1,587,978
GAVI	$1,825,506	$1,826,009	$1,445,886	$1,265,561	$1,151,466
Total current (Govt + GAVI)	**$3,168,696**	**$3,251,445**	**$2,935,820**	**$2,809,396**	**$2,739,444**
Pneumococcal Vaccine to be introduced from 2014	**2011**	**2012**	**2013**	**2014**	**2015**
Govt			$169,284	$202,831	$238,065
GAVI			$1,805,698	$2,163,527	$2,539,363
Total new (Govt + GAVI)			**$1,974,982**	**$2,366,358**	**$2,777,428**
Grand Total (Current + New)	**2011**	**2012**	**2013**	**2014**	**2015**
Govt	$1,343,189	$1,425,436	$1,659,218	$1,746,665	$1,826,043
GAVI	$1,825,506	$1,826,009	$3,251,585	$3,429,089	$3,690,829
Total	**$3,168,696**	**$3,251,445**	**$4,910,803**	**$5,175,754**	**$5,516,872**

4.2 Injection equipment and supplies

Injection supplies for vaccinations are procured by national medical store along with other injection supplies needs for other injections including curative care. Funding for AD syringes and safety boxes in Papua New Guinea will be fully secured during this five-year plan period.

Table 12. Projected Cost of Injection Equipment Supplies (AD syringes and safety boxes) currently used in and newly introduced into the routine immunization programme in Papua New Guinea, 2011-2015

Current Vaccines including DTPHepBHib	2011	2012	2013	2014	2015
BCG	$18,932	$20,429	$21,871	$22,163	$22,498
Measles	$21,101	$25,121	$27,426	$29,880	$32,442
TT for Pregnant Women	$16,416	$20,785	$25,227	$29,814	$32,660
HepB-birth	$9,516	$11,506	$13,505	$15,603	$16,024
DTPHepBHib 1-3	$52,348	$55,042	$57,842	$60,754	$63,781
TT for School Entry	$9,935	$10,550	$11,099	$11,670	$12,264
Subtotal	**$128,249**	**$143,432**	**$156,970**	**$169,883**	**$179,670**
Pneumococcal Vaccine to be introduced from 2013	**2011**	**2012**	**2013**	**2014**	**2015**
Pneumococcal Vaccine			$39,438	$47,253	$55,462
Subtotal			**$39,438**	**$47,253**	**$55,462**
GRAND TOTAL	**$128,249**	**$143,432**	**$196,408**	**$217,137**	**$235,131**

The planned costing has been done assuming that only AD syringes will be used in the routine EPI and also during the proposed SIAs.

It is assumed that the present system of immunization waste disposal using safety boxes and then burying or burning of the waste will be followed in the planned year of 2011-15.

Table 13. Planned Financing for Injection Equipment Supplies (AD syringes and safety boxes) currently used in and newly introduced into the routine immunization programme in Papua New Guinea, 2011-2015

Current Vaccines including DTPHepBHib	2011	2012	2013	2014	2015
Govt	$75,901	$88,391	$99,128	$109,129	$115,889
GAVI	$52,348	$55,042	$57,842	$60,754	$63,781
Total current (Govt + GAVI)	**$128,249**	**$143,432**	**$156,970**	**$169,883**	**$179,670**
Pneumococcal Vaccine to be introduced from 2014	**2011**	**2012**	**2013**	**2014**	**2015**
Govt			$0	$0	$5,546
GAVI			$39,438	$47,253	$49,916
Total new (Govt + GAVI)			**$39,438**	**$47,253**	**$55,462**

Grand Total (Current + New)	2011	2012	2013	2014	2015
Govt	$75,901	$88,391	$99,128	$109,129	$121,435
GAVI	$52,348	$55,042	$97,280	$108,007	$113,697
Total	**$128,249**	**$143,432**	**$196,408**	**$217,137**	**$235,131**

4.3 Cold Chain equipment and maintenance

The critical cold chain need during this plan period is phased replacement of gas, solar and electric refrigerators, electric freezers and also cold boxes and vaccine carrier over the next five years in a planned manner after assessment of the needs of the individual district/health facility.

Table 14. Projected Cost of Cold Chain Equipment and Maintenance in Papua New Guinea, 2011-2015

Equipment	Model	Price / Cost	2011	2012	2013	2014	2015
Cold room (including generator, freight & installation)	Cold room, walk-in type, 40m^3	Estimated Unit Price	$42,000	$42,840	$43,697	$44,571	$45,462
		Needs	1	0	1	0	0
		Cost	$42,000	$0	$43,697	$0	$0
Gas refrigerator (including freight cost)	RCW 50EG or FCW 20EG	Estimated Unit Price	$2,954	$3,013	$3,073	$3,134	$3,197
		Needs	10	10	10	10	10
		Cost	$29,536	$30,127	$30,729	$31,344	$31,971
Gas cylinders	RCW 50EG / FCW 20EG	Estimated Unit Price	$500	$510	$520	$531	$541
		Needs	250	250	250	250	250
		Cost	$125,000	$127,500	$130,050	$132,651	$135,304

Equipment	Model	Price / Cost	2011	2012	2013	2014	2015
Electric refrigerator for Provincial Vac Store (including freight cost)	Compression, Refrig., Vestfrost MK 304	Estimated Unit Price	$1,391	$1,419	$1,447	$1,476	$1,506
		Needs	3	3	3	3	3
		Cost	$4,173	$4,256	$4,342	$4,428	$4,517
Electric refrigerator for Health Center (including freight cost)	Compression, Refrig., Vestfrost MK 074	Estimated Unit Price	$1,300	$1,326	$1,353	$1,380	$1,407
		Needs	10	10	10	10	10
		Cost	$13,000	$13,260	$13,525	$13,796	$14,072
Solar refrigerator (including freight cost, installation cost)	Solar refrig-freezer, >50 litres (Dullas VC85F)	Estimated Unit Price	$8,171	$8,171	$8,171	$8,171	$8,171
		Needs	10	10	10	10	10
		Cost	$81,705	$81,705	$81,705	$81,705	$81,705
Electric freezer (including freight cost)	Compression, Freezer., Vestfrost MF314	Estimated Unit Price	$988	$1,008	$1,028	$1,048	$1,069
		Needs	5	5	5	5	5
		Cost	$4,940	$5,039	$5,140	$5,242	$5,347
Cold box (including freight cost)	Cold Box, Cold Life >120 hrs., 15-27 litres	Estimated Unit Price	$260	$265	$271	$276	$281
		Needs	0	0	100	100	0
		Cost	$0	$0	$27,050	$27,591	$0
Vaccine Carrier (including freight cost)	Vaccine Carrier, Large, Cold Life >24 hrs., >2 litres	Estimated Unit Price	$39	$40	$41	$41	$42
		Needs	20	20	20	20	20
		Cost	$780	$796	$812	$828	$844
Thermometer		Estimated Unit Price	$5.0	$5.1	$5.2	$5.3	$5.4
		Needs	40	40	40	40	40
		Cost	$200	$204	$208	$212	$216

Equipment	Model	Price / Cost	2011	2012	2013	2014	2015
Ice pack (including freight cost)	Ice packs 0.4 l	Estimated Unit Price	$0.65	$0.66	$0.68	$0.69	$0.70
		Needs	0	0	1,000	1,000	1,000
		Cost	$0	$0	$676	$690	$704
Freeze indicator		Estimated Unit Price	$5.0	$5.1	$5.2	$5.3	$5.4
		Needs	150	150	150	150	150
		Cost	$750	$765	$780	$796	$812
Main spare parts		Estimated Unit Price	-	-	-	-	-
		Needs	-	-	-	-	-
		Cost	$10,000	$11,000	$12,100	$13,310	$14,641
Running cost of equipment at National Level		Estimated Unit Price	-	-	-	-	-
		Needs	-	-	-	-	-
		Cost	$30,000	$33,000	$36,300	$39,930	$43,923
Running cost of equipment continuing from past plan		Estimated Unit Price	$3,000	$3,060	$3,121	$3,184	$3,247
		Needs	400	440	484	532	586
		Cost	$1,200,000	$1,346,400	$1,510,661	$1,694,961	$1,901,747
Grand Total			**$1,542,084**	**$1,654,052**	**$1,897,775**	**$2,047,485**	**$2,235,802**

Table 15. Planned Financing and Financial Gap of Cold Chain Equipment and Maintenance in Papua New Guinea, 2011-2015

Agency	2011	2012	2013	2014	2015
National Government	$40,000	$44,000	$48,400	$53,240	$58,564
Provincial Governments	$1,325,000	$1,473,900	$1,640,711	$1,827,612	$2,037,051
WHO					
UNICEF					
AusAID					
JICA					
Grand Total	**$1,365,000**	**$1,517,900**	**$1,689,111**	**$1,880,852**	**$2,095,615**
	2011	**2012**	**2013**	**2014**	**2015**
Total Gap	**-$177,084**	**-$136,152**	**-$208,664**	**-$166,632**	**-$140,188**

4.4 Transportation

The transport equipment fleet is mainly planned to be increased to improve the outreach services by mobile team for the population living farther away from the clinics.

Government is fully committed to paying the maintenance and running cost of all the vehicles and boats and included in the government budget.

Table 16: Projected Cost of Transportation Equipment in Papua New Guinea, 2011-2015

Equipment	Model		2011	2012	2013	2014	2015
4WD vehicles	Toyota Land cruiser	Estimated Unit Price	$40,000	$40,800	$41,616	$42,448	$43,297
		Needs	2	2	2	2	2
		Cost	$80,000	$81,600	$83,232	$84,897	$86,595
Refrigerated Cold Chain Van pick-up and drop vaccine		Estimated Unit Price					
		Needs	1			1	
		Cost					
Boat 23 Foot Fiberglass		Estimated Unit Price	$7,000	$7,140	$7,283	$7,428	$7,577
		Needs	5	5	5	5	5
		Cost	$35,000	$35,700	$36,414	$37,142	$37,885
Outboard motor 40hp	Yamaha OBM	Estimated Unit Price	$15,000	$15,300	$15,606	$15,918	$16,236
		Needs	5	5	5	5	5
		Cost	$75,000	$76,500	$78,030	$79,591	$81,182
Grand Total			**$190,000**	**$193,800**	**$197,676**	**$201,630**	**$205,662**

Table 17: Planned Financing and Financial Gap of Transportation Equipment in Papua New Guinea, 2011-2015

Agency	2011	2012	2013	2014	2015
National Government	$110,000	$112,200	$114,444	$116,733	$119,068
Provincial Governments					
WHO					
UNICEF					
AusAID					
JICA					
Grand Total	**$110,000**	**$112,200**	**$114,444**	**$116,733**	**$119,068**
	2011	**2012**	**2013**	**2014**	**2015**
Total Gap	**-$80,000**	**-$81,600**	**-$83,232**	**-$84,897**	**-$86,595**

4.5 Personnel cost

The personnel costs are calculated based on total number of staff at all the levels (National, Provincial, District and Health Facilities) and percent of time devoted by each category of staff on immunization. The cost includes regular wages and any benefits paid. 100% of these costs will be financed through government of PNG funds.

Table 18: Projected Personnel Cost (Staff Salary) in Papua New Guinea, 2011-2015

Personnel cost (US$)	2011	2012	2013	2014	2015
National level	$66,829	$70,171	$73,679	$77,363	$81,232
Provincial level	$845,559	$887,837	$932,228	$978,840	$1,027,782
District level	$3,895,357	$4,090,125	$4,294,631	$4,509,362	$4,734,830
Health Facilities	$21,328,092	$22,394,496	$23,514,221	$24,689,932	$25,924,429
Total	**$26,135,836**	**$27,442,628**	**$28,814,760**	**$30,255,498**	**$31,768,273**

Table 19: Projected Personnel Cost (Outreach Activities + Monitoring and Supervision) in Papua New Guinea, 2011-2015

Per Diem cost (US$)	2011	2012	2013	2014	2015
National level	$25,649	$26,931	$28,278	$29,692	$31,176
Provincial level	$19,580	$20,559	$21,587	$22,666	$23,800
District level	$9,939	$10,436	$10,958	$11,506	$12,081
Health Facilities	$5,130	$5,386	$5,656	$5,938	$6,235
Total	**$60,298**	**$63,313**	**$66,478**	**$69,802**	**$73,292**

4.6 Vaccination Campaigns

Two SIAs for measles vaccine are planned for year 2012 and 2014. The total cost of the two measles SIAs will range from USD 2,641,000 in 2012 to 2,790,000 in 2015.

Table 20: Projected Cost of Measles Vaccination Campaign combined with OPV in Papua New Guinea, 2011-2015

	2011	2012	2013	2014	2015
Measles and OPV vaccine		$357,304		$376,858	
Injection supplies		$74,688		$78,776	
Operational costs (@ $3 child targeted)		$2,208,557		$2,329,425	
Total		**$2,640,549**		**$2,785,059**	

Vitamin A procured through the regular yearly budget will be used during the proposed campaign.

Table 21: Planned Financing and Financial Gap of Measles Vaccination Campaign combined with OPV in Papua New Guinea, 2011-2015

	2011	2012	2013	2014	2015
National Government		$600,000		$600,000	
Provincial Governments		$1,200,000		$1,200,000	
WHO					
UNICEF					
AusAID					
JICA					
Total		**$1,800,000**		**$1,800,000**	

Financial Gap in Measles Campaign

	2011	2012	2013	2014	2015
Total Gap		**-$840,549**		**-$985,059**	

4.7 Operational Cost for Implementation of NDOH Strategies and Key Activities, 2011-2015

Table 22: Projected Operational Cost for Implementation of NDOH Strategies and Key Activities (Annex 2-1 through 2-11), 2011-2015

Area of Strategies	2011	2012	2013	2014	2015
Service delivery	$1,435,000	$1,244,000	$1,605,300	$1,685,530	$1,676,383
Advocacy & Communications	$67,600	$178,560	$11,616	$70,778	$94,055
Surveillance	$321,500	$232,650	$171,215	$188,337	$303,170
Vaccine supply, quality and logistics	$92,000	$362,000	$1,087,000	$170,000	$92,000
Programme management	$463,000	$409,800	$397,180	$301,898	$484,088
Grand Total	**$2,379,100**	**$2,427,010**	**$3,272,311**	**$2,416,542**	**$2,649,696**

4.8 Summary cost and financing for Implementation of cMYP 2011-2015

Table 23: Summary Projected Cost for Implementation of cMYP 2011-2015

	2011	2012	2013	2014	2015
Routine Immunization Programme (including DTPHepBHib)					
Vaccines	$3,168,696	$3,251,445	$2,935,820	$2,809,396	$2,739,444
Injection Supplies	$128,249	$143,432	$156,970	$169,883	$179,670
Sub-total	$3,296,945	$3,394,878	$3,092,791	$2,979,279	$2,919,113
Measles Vaccination Campaign					
Vaccines		$357,304		$376,858	
Injection Supplies		$74,688		$78,776	
Operational Cost		$2,208,557		$2,329,425	
Sub-total		$2,640,549		$2,785,059	
Introduction of Pneumococcal Vaccine					
Vaccines			$1,974,982	$2,366,358	$2,777,428
Injection Supplies			$39,438	$47,253	$55,462
Sub-total			$2,014,420	$2,413,611	$2,832,890
Equipment					
Cold Chain	$1,542,084	$1,654,052	$1,897,775	$2,047,485	$2,235,802
Transportation	$190,000	$193,800	$197,676	$201,630	$205,662
Sub-total	$1,732,084	$1,847,852	$2,095,451	$2,249,114	$2,441,465
Personnel Cost					
Salary	$26,135,836	$27,442,628	$28,814,760	$30,255,498	$31,768,273
Per diem (supervision & outreach)	$60,298	$63,313	$66,478	$69,802	$73,292
Sub-total	$26,196,134	$27,505,941	$28,881,238	$30,325,300	$31,841,565
Operational Cost					
Service delivery	$1,435,000	$1,244,000	$1,605,300	$1,685,530	$1,676,383
Advocacy & Communications	$67,600	$178,560	$11,616	$70,778	$94,055
Surveillance	$321,500	$232,650	$171,215	$188,337	$303,170
Vaccine supply, quality and logistics	$92,000	$362,000	$1,087,000	$170,000	$92,000
Programme management	$463,000	$409,800	$397,180	$301,898	$484,088
Sub-total	$2,379,100	$2,427,010	$3,272,311	$2,416,542	$2,649,696
Grand Total	**$33,604,263**	**$37,816,229**	**$39,356,211**	**$43,168,905**	**$42,684,729**

Table 24: Planned Financing and Financial Gap for Implementation of cMYP 2011-2015

			2011	2012	2013	2014	2015
Routine Vaccination Programme (including DTPHepBHib)							
	Vaccines	Government	$1,343,189	$1,425,436	$1,489,934	$1,543,834	$1,587,978
		GAVI	$1,825,506	$1,826,009	$1,445,886	$1,265,561	$1,151,466
	Injection Supplies	Government	$75,901	$88,391	$99,128	$109,129	$115,889
		GAVI	$52,348	$55,042	$57,842	$60,754	$63,781
	Sub-total		**$3,296,945**	**$3,394,878**	**$3,092,791**	**$2,979,279**	**$2,919,113**
	Shortfall		**$0**	**$0**	**$0**	**$0**	**$0**
Measles Vaccination Campaign							
	Vaccines + Injection Supplies + Operational Cost	Government		$600,000		$600,000	
		WHO					
		UNICEF					
		AusAID					
		JICA					
		others					
	Sub-total			**$600,000**		**$600,000**	
	Shortfall			**-$2,040,549**		**-$2,185,059**	
Introduction of Pneumococcal Vaccine							
	Vaccines	Government			$169,284	$202,831	$238,065
		GAVI			$1,805,698	$2,163,527	$2,539,363
	Injection Supplies	Government			$0	$0	$5,546
		GAVI			$39,438	$47,253	$49,916
	Sub-total				**$2,014,420**	**$2,413,611**	**$2,832,890**
	Shortfall				**$0**	**$0**	**$0**
Equipment							
	Cold Chain	Government	$40,000	$44,000	$48,400	$53,240	$58,564
		WHO					
		UNICEF					
		AusAID					
		JICA					
		others					
	Sub-total		**$40,000**	**$44,000**	**$48,400**	**$53,240**	**$58,564**
	Shortfall		**-$1,502,084**	**-$1,610,052**	**-$1,849,375**	**-$1,994,245**	**-$2,177,238**
	Transportation	Government					
		WHO					
		UNICEF					
		AusAID					
		JICA					
		others					
	Sub-total		**$0**	**$0**	**$0**	**$0**	**$0**
	Shortfall		**-$190,000**	**-$193,800**	**-$197,676**	**-$201,630**	**-$205,662**

			2011	2012	2013	2014	2015
Personnel Cost							
	Salary	Government	$26,135,836	$27,442,628	$28,814,760	$30,255,498	$31,768,273
	Per diem (supervision & outreach)	Government	$60,298	$63,313	$66,478	$69,802	$73,292
	Sub-total		**$26,196,134**	**$27,505,941**	**$28,881,238**	**$30,325,300**	**$31,841,565**
	Shortfall		**$0**	**$0**	**$0**	**$0**	**$0**
Operational Cost							
	Service delivery + Advocacy & Communications + Surveillance + Vaccine supply, quality and logistics + Programme management	Government	$1,400,000	$1,600,000	$1,800,000	$2,000,000	$2,200,000
		WHO					
		UNICEF					
		AusAID					
		JICA					
		others					
	Sub-total		**$1,400,000**	**$1,600,000**	**$1,800,000**	**$2,000,000**	**$2,200,000**
	Shortfall		**-$979,100**	**-$827,010**	**-$1,472,311**	**-$416,542**	**-$449,696**
Grand Total			**$30,933,079**	**$30,933,079**	**$33,144,818**	**$35,836,849**	**$38,371,430**
Total Shortfall			**-$2,671,184**	**-$2,671,184**	**-$4,671,411**	**-$3,519,362**	**-$4,797,475**

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Annexure

Annex 1. "Situation analysis", "cMYP target" and "Milestones" by NDOH Strategic Objectives for EPI

NDOH Strategic Objectives for EPI (from PNG "Child Health Policy and Plan, 2009-2020")	**Indicators** for reviewing "National Trend & Status", setting "cMYP Target" and "Milestones", and monitoring the progress of implementation of "Strategies" and "Activities"	**National Trend & Status**			**cMYP Target**	**Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives**				
		2006	**2007**	**2008**		**2011**	**2012**	**2013**	**2014**	**2015**
1. Achieve high quality immunization services that reach every child and mother	DTP-HepB-Hib 3 national coverage	75‡	60§	60	>90	70		80		>90
	% Districts with DTPHepB-Hib3 coverage >80%	NIL	21	12	>90	20	40	60	80	>90
	# Pertussis cases reported	256	413	373	<100			<100		
	% AEFIs reported which are investigated	-	0	100	100	100				
	% Provinces providing annual update of cold chain inventory	35	100	100	100	100				
	% Health centres with functional cold chain equipment for the routine immunization services	44	56	84	100	90	95	100		
	% Health facilities reporting vaccine or injection material stock-outs	0	0	3	0			0		
	(Total # Outreaches conducted) / (Total # Outreaches planned) %	58	54	58	>80	70	>80			
	% Health facilities which conducted outreaches at least 4 times in a year (*new*)	-	-	-	>80	70	>80			
	% Outreach Clinics /1000 children under 5 years ∞	**26**	**22**	**23**	-	-	-	-	-	-
	# Districts provided with at least one supportive supervision in a year by either NDOH or Provincial Health Offices	39	31	28	89	40	50	60	70	89
2. Make progress towards elimination of measles	MCV2 (MCV at 9 month) national coverage	55	47	54	>90	65	75	80	85	90
	% Districts with MCV2 coverage >90%	NA	5.6	13.5	>95	20	40	60	80	> 95
	MCV SIAs national coverage	NA	NA	84	>95		>95			
	% Districts with MCV SIAs coverage >95%	NA	NA	42	>80		>80			
	% Districts reporting at least one suspected measles case / 100 000 population per year	-	-	11	>80	>80				
	# Suspected measles cases	827	733	1005						
	% Suspected measles cases with adequate serum samples collected for detection of measles IgM	-	-	48	>80	>80				
	% Suspected measles cases whose serum samples are tested	-	-	48	>80	>80				
	# Confirmed measles cases / 1 million population per year	-	-	0	<1		<1			

‡ 2006 & 2007 DTP3 data only, as Pentavalent vaccine was introduced in 2008. ∞ This indicator will be replaced by the NEW indicator

§ 2006 & 2007 DTP3 data only, as Pentavalent vaccine was introduced in 2008.

NDOH Strategic Objectives for EPI (from PNG "Child Health Policy and Plan, 2009-2020")	**Indicators** for reviewing "National Trend & Status", setting "cMYP Target" and "Milestones", and monitoring the progress of implementation of "Strategies" and "Activities"	**National Trend & Status**			**cMYP Target**	**Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives**				
		2006	**2007**	**2008**		**2011**	**2012**	**2013**	**2014**	**2015**
3. Make progress towards control of hepatitis B	Timely HepB-birth (HepB1 <24 hours) national coverage	32	29	27	>80	40	50	60	70	80
	HepB-birth (HepB1) ≥24 hours national coverage	75	80	82	>90	60	70	80	>90	
	% Districts with Timely HepB-birth (HepB1 <24 hours) coverage >80%	-	54	53	>90	70	80	>90		
	HepB3 national coverage (⇒DTP-HepB-Hib 3 national coverage)	70	59	56	>90	70		80		>90
	% Districts with HepB3 coverage >80% (⇒ % Districts with DTP-HepB-Hib 3 coverage >80%)	42	20	12	>90	20	40	60	80	>90
4. Maintain PNG's Polio-free status	OPV3 national coverage	75	61	65	>80	80	>80			
	% Districts with OPV3 coverage >80%	NIL	22	20	>90	40	60	80	>90	
	Non-polio AFP rate (/100 000 children under 15 years of age)	1.5	1.01	0.46	>1	>1				
	% AFP cases with adequate stool samples within 2 weeks after reporting	58	72	17	>80	70	> 80			
	OPV in SIAs national coverage	-	-	-						
	% Districts with OPV in SIAs coverage >90%	-	-	-						
5. Achieve elimination of maternal and neonatal tetanus	DTP3 national coverage (⇒DTP-HepB-Hib 3 national coverage)	75	60	60	>90	70		80		>90
	% Districts with TT+ coverage >80%	18	19	19	>90	20	40	60	80	>90
	# Districts with NT / 1000 live births ≥ 1	NA	NA	15	0			0		
	# High-risk districts conducting SIAs with TT	-	-	-					23	40
	% School-aged children receiving TT through the routine school health programme	-	-	28	>80	40		70		>80
6. Introduce the vaccination against Streptococcus pneumoniae and Human Paplilloma Virus to the routine EPI schedule and surveillance of new Vaccine preventable diseases when available	# Pneumococcal meningitis cases identified in the Paediatric Sentinel Surveillance System	-	-	19						
	Pneumococcal vaccine national coverage after its introduction in the routine immunization services (*new*)	-	-	-	>80			60	70	>80
	# Cervical cancers (2006-2008)	No Data	281	410						
	Formal process (e.g. consultation meeting) for approval of introduction of HPV vaccine (*new*)	-	-	-				(+)		
	# Rotavirus confirmed cases identified in Rotavirus Sentinel Surveillance System	-	-							
	# Japanese Encephalitis cases identified in Acute Encephalitis syndrome Surveillance	-	-	-						

NDOH Strategic Objectives for EPI (from PNG "Child Health Policy and Plan, 2009-2020")	**Indicators** for reviewing "National Trend & Status", setting "cMYP Target" and "Milestones", and monitoring the progress of implementation of "Strategies" and "Activities"	**National Trend & Status**			**cMYP Target**	**Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives**				
		2006	**2007**	**2008**		**2011**	**2012**	**2013**	**2014**	**2015**
7. Integrate EPI delivery with other health interventions	National guidelines for minimum package of integrated services	-	-	-		(+)				
	# Health facilities with "Outreach Patrol"	-	-	-	800			800		
	# Schools visited during EPI's out reach activities for school student health check-up	-	-	-						
	# Mosquito bednets delivered by EPI system / in SIAs	-	-	-				(+)*		
	# Pregnant mother checked and reported on general health condition in SIAs with TT+	-	-	-					50	60
	# Children checked and reported on their general health condition and nutritional status in SIAs (supplementation with Vitamin A and Deworming)	-	-	-						
8. Conduct supplemental immunization activities every 2 years to intensify the routine immunization	Total # children vaccinated in SIAs	NA	NA	949,582						
	Total # non-fully-vaccinated children identified and vaccinated in SIAs (*new*)	-	-	177,218						
	Total # children receiving Vit. A in SIAs	-	-	-						
	# Districts participating in SIAs	-	-	89	89		89			
	# Districts with SIAs coverage >95%	-	-	42	>80		60			
9. Ensure all children receive at least 2 doses of vitamin A, at 6 and 12 months, according to the Vitamin A policy	% Children receiving Vit. A- Second Dose before the 1st birthday	-	-	-	>80	30	50	60	70	>80
10. Extend routine vaccine services to the community health (aid) post level	# Community health posts with functional cold chain equipment	30	40	46		50		60		70
11. Maintaining the performance of the national measles/rubella laboratory under WHO accreditation standard and strengthening laboratory capacity for new vaccines	Test results are reported by the laboratory on measles IgM samples within 7 days of receipt	-			>80	50	55	60	70	> 80
	Serological tests are performed on at least 50 specimens annually for Measles and Rubella				>50	> 50				
	Accuracy of measles and rubella IgM detection				>90	> 90				
	Internal quality control (QC) procedures for IgM assays implemented					(+)				

	Proficiency test score				90	90				
	Results from virus detection and genotyping (if performed) are completed within 2 months of receipt of specimen AND data reported to WHO monthly				≥80%			40	45	50
	Score from the annual on-site review of laboratory operating procedures and practices				≥80%	≥80%				
	Serological tests are performed on at least 100 specimens annually for Rotavirus				>100	>100				
	% Stool specimen collected for Rotavirus testing within 2 days of hospital admission				90	50	60	70	80	90

* Number of bednets to be distributed will be determined by working closely with the Malaria Programme of NDOH - Data either not relevant or Data not collected by the present National Health Information system

Annex 2-1. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*1. Achieve high quality immunization services that reach every child and mother*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
1. Achieve high quality immunization services that reach every child and mother	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	1.1 Strengthen technical assistance to poorly performing districts and urban poor	1.1.1 Review of the existing national guidelines on microplanning	√				
				1.1.2 Revise and conduct a national trainers training on microplaning (RED)	√				
				1.1.3 Ensure PHO to conduct a on-site microplanning workshops in 2-3 poorly performing districts every year during the supportive supervision	√	√	√	√	√
				1.1.4 Update the "PNG Immunization Manual" for the health facility staff	√				
				1.1.5 Enhancing outreach activities during National Health Week	√	√	√	√	√
			1.2 Enhance implementation of supportive supervision	1.2.1 Develop a national standardized guidelines for supportive supervision with updated checklist to be used by NDOH and PHO staff	√				
				1.2.2 Develop a national standardized guidelines for supportive supervision with updated checklist to be used by District and Health Facility staff	√				
				1.2.3 Conduct NDOH's supportive supervision visits to all 22 provinces every year	√	√	√	√	√
				1.2.4 Ensure PHO to conduct supportive supervision visits to 2-3 districts every year	√	√	√	√	√
		Advocacy & Communications	1.3 Implement key components of National Communication Strategy	1.3.1 Collaborate with other Member States and WHO in WPR in proposing and developing new EPI resolutions	√			√	
				1.3.2 Develop and disseminate immunization-promotion video to provincial staff and media		√			√
				1.3.3 Establish an advocacy & communication committee on EPI and other MCH in every district (need TOR, memberships, etc.)			√		

				1.3.4 Collaborate with NCD and Simbu in piloting new information, education communication (IEC) activities (for parents, health workers, general public)		√			
		Surveillance	1.4 Develop a national routine AEFI management system	1.4.1 Revise and disseminate the national AEFI guidelines	√				
				1.4.2 Develop and conduct a national trainers training course on AEFI management	√				
				1.4.3 Develop and conduct provincial training courses on AEFI management	√				
				1.4.4 Establish National AEFI Committee to review all reported AEFIs	√				
		Vaccine supply, quality and logistics	1.5 Procure and distribute sufficient vaccines and injection safety materials	1.5.1 Update vaccine requirement annually	√	√	√	√	√
				1.5.2 Monitor stock-outs quarterly at national and provincial levels	√	√	√	√	√
				1.5.3 Ensure bundled shipments to be distributed from National Store to lower levels	√	√	√	√	√
				1.5.4 Secure adequate funds every year	√	√	√	√	√
			1.6 Maintain cold chain equipment and ensure operational system	1.6.1 Update national cold chain inventory annually and revise equipment replacement plan for aging equipment	√	√	√	√	√
				1.6.2 Provide technical support to provinces on cold chain maintenance, repairs and replacement	√	√	√	√	√
				1.6.3 Coordinate with JICA and UNICEF in replacing aging cold chain equipment with new one		√		√	
				1.6.4 Collaborate with JICA in provision of technical support on cold chain maintenance and repair to Provincial Health Offices		√		√	
		Programme management	1.7 Strengthen EPI programme management capacity at national, provincial and district levels (refer to 1.2)	1.7.1 Develop a National Annual Activity Plan with costing and financing	√	√	√	√	√
				1.7.2 Provide quarterly feedback to field staff in an EPI bulletin (e.g. coverage, cold chain, new vaccines, vaccine consumption)	√	√	√	√	√
				1.7.3 Conduct annual national and provincial EPI training (AEFI investigation, response and reporting, MLM)		√			√
				1.7.4 Conduct annual trainer training course on data management for provincial information officer and district managers	√		√		√
				1.7.5 Conduct EPI annual national meeting by National EPI team for review of provincial HOs	√	√	√	√	√

			1.8 Secure resources and monitor implementation	1.8.1 Use AAP of EPI to advocate to Department of Treasury through the Policy and Planning Division of NDOH for adequate funding	√	√	√	√	√
				1.8.2 Circulate comprehensive Multi-Year Plan and AAP with the members of Interagency Coordinating Committee and other donor agencies	√	√	√	√	√
				1.8.3 Review implementation of AAP of EPI quarterly through NDOH Quarterly Review Meeting	√	√	√	√	√
				1.8.4 Data Quality Assessment of 23 prioritized poor performing districts	√		√		√
			1.9 Promote immunization safety	1.9.1 Continue to conduct the refresher training on injection safety and waste management for health facility staff	√		√		√

Annex 2-2. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*2. Make progress towards elimination of measles*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
2. Make progress towards elimination of measles	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	2.1 Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district (refer to 2.9) in developing and implementing its annual micro plan for measles elimination activities	2.1.1 Revise national guidelines on district microplanning for measles elimination activities	√		√		√
				2.1.2 Develop and conduct an annual national training workshop on district microplanning for measles elimination activities to be attended by all Provincial Health Offices and the priority district		√		√	
			2.2 Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district (refer to 2.9) for monitoring and accelerating implementation of its annual microplan for measles elimination activities	2.2.1 Revise national guidelines on supportive supervision with checklist for monitoring implementation of district microplan for measles elimination activities	√		√		√
				2.2.2 Ensure NDOH and the Provincial Health Office to carry out supportive supervision with on-site training for all the priority district at least one time in a year	√	√	√	√	√
			2.3 Conduct high-quality MCV SIAs (ensuring all districts to achieve >95% coverage) every two year	2.3.1 Enhance activities described in 2.1.2 and 2.1.2	√		√		√
				2.3.2 Enhance involvement of international partners on-site (e.g. advocacy, training, supervision, etc.)		√		√	
				2.3.3 Enhance Rapid Coverage Assessment during the Measles SIAs		√		√	
		Advocacy & Communications	2.4 Use "PNG National Health Week" as opportunity for strengthening advocacy on National Measles Elimination	2.4.1 Develop a national catchword or "slogan" for measles elimination	√		√		
				2.4.2 Ensure PNG's Prime Minister or Health Minister to advocate measles elimination in PNG during National Health Week	√	√	√	√	√
				2.4.3 Review and implement the National Communication strategy		√		√	
				2.4.4 Develop and review support strategy from Corporate bodies / Private Sector	√		√		
		Surveillance	2.5 Strengthen District's capacity in reporting all suspected measles cases with collection of serum	2.5.1 Conduct annual refresher training for districts to report all suspected measles	√	√	√	√	√

			specimens	cases and collection of serum samples					
				2.5.2 Supervisory visits to poor performing districts by Provincial and National Surveillance Officers	√	√	√	√	√
				2.5.3 Quarterly Feedback to districts on Surveillance indicators by PDCO	√	√	√	√	√
			2.6 Strengthen PHO's capacity in provision of technical support to the district manager in detecting, investigating and reporting suspected measles cases	2.6.1 Conduct annual refresher training for provincial disease control officer to investigation of reported suspected measles cases and collection of serum samples	√	√	√	√	√
				2.6.2 Supervisory visits to poor performing provinces by National Surveillance Officers	√	√	√	√	√
				2.6.3 Quarterly Feedback to provinces on Surveillance indicators by National Level	√	√	√	√	√
			2.7 Improve the diagnostic capacity of Central Public Health Laboratory	2.7.1 Supportive Supervision and feedback on laboratory quality indicators	√	√	√	√	√
				2.7.2 Ensure regular supply of kits and reagents	√	√	√	√	√
				2.7.3 Enhance human resource of the laboratory in the area of coordination with NDOH and surveillance data collation and transmission	√				
		Vaccine supply, quality and logistics	(Refer to 1.5 and 1.6)						
		Programme management	2.8 Enhance coordination capacity of NDOH and the Provincial Health Office in national measles elimination programme	2.8.1 Establish Measles Elimination Committee at national and provincial level	√				
				2.8.2 Organize an annual National Measles Elimination Consultation Meeting with PHOs and international partners to review the progress & develop an annual national and provincial plans	√	√	√	√	√
			2.9 Strengthen focused support to districts with weak capacity in implementation of measles elimination activities	2.9.1 Revise criteria for identification of priority district in each year in terms of measles elimination activities	√	√	√	√	√
				2.9.2 Select 50 priority districts for focused support on measles elimination activities (6 for NDOH and 2 for each Provincial Health Office) at the beginning of each year (refer to 2.1-2.2)		√		√	

Annex 2-3. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*3. Make progress towards control of hepatitis B*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
3. Make progress towards control of hepatitis B	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	3.1 Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district (see 3.9) in developing and implementing its annual micro plan for accelerated hepatitis B control (Refer to 1.1 on guidelines for EPI microplan)	3.1.1 Develop a national guidelines on district microplanning for accelerated hepatitis B control with special emphasis to timely delivery of birth dose (Within 24 hrs)	√				
			3.2 Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district (refer to 3.9) for monitoring and accelerating implementation of its annual microplan for accelerated hepatitis B control	3.2.1 Develop a national guidelines on supportive supervision with checklist for monitoring implementation of district microplan for accelerated hepatitis B control	√				
				3.2.2 Ensure NDOH and the Provincial Health Office to carry out supportive supervision with on-site training for all the priority district at least one time in a year	√	√	√	√	√
			3.3 Promote timely administration of Hep B at birth	3.3.1 Develop and distribute an IEC materials on the importance of timely administration of HepB at birth for the health staff including birth attendant	√				
				3.3.2 Develop and distribute an IEC materials on the importance of timely administration of HepB at birth for the community and parents	√				
				3.3.3 Expand community based use of Uniject from the pilot district (East Sepik) to five identified priority districts (one per year)	√	√	√	√	√
		Advocacy & Communications	3.4 Use "PNG National Health Week" as opportunity for strengthening advocacy on accelerated hepatitis B control with immunization	3.4.1 Develop a national catchword or "slogan" for the importance of "timely HepB-birth dose"	√				
				3.4.2 Ensure PNG's Prime Minister or Health Minister to talk on accelerated hepatitis B control with immunization in every PNG National Health Week	√	√	√	√	√
			3.5 Promote community and parents awareness on the importance of " institutional or supervised delivery"	3.5.1 Develop IEC materials for the community and parents on importance of "institutional or supervised delivery" in collaboration with MCH programme	√				

		Surveillance	3.6 Sero-survey	3.6.1 Convenience Serosurvey as baseline		√			
				3.6.2 Follow-Up serosurvey					√
		Vaccine supply, quality and logistics	(Refer to 1.5 and 1.6)						
		Programme management	3.8 Enhance coordination capacity of NDOH and the Provincial Health Office in national hepatitis B control programme	3.8.1 Reiterate accelerated hepatitis B agenda of National EPI committee	√	√	√	√	√
				3.8.2 Provincial Level EPI Committee to monitor and advise on the progress towards WHO's regional immunization goals of measles, hepatitis B, polio and MNTE	√	√	√	√	√
				3.8.3 Continue to organize the annual national EPI meeting in collaboration with PHOs and the international partners to review the progress in the previous year and develop / update an annual national and provincial plans	√	√	√	√	√
			3.9 Strengthen focused support to districts with weak capacity in implementation of hepatitis B vaccination	3.9.1 Revise criteria for identification of priority district in each year in terms of accelerated hepatitis B control (e.g. vaccination coverage, reporting performance, etc.)	√	√	√	√	√
				3.9.2 Select 50 priority districts to provide focused support on accelerated hepatitis B control (6 for NDOH and 2 for each Provincial Health Office) at the beginning of each year (refer to 3.1-3.2)	√	√	√	√	√

Annex 2-4. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*4. Maintain PNG's Polio-free status*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
4. Maintain PNG's Polio-free status	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	4.1 Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district (see 4.9) in developing and implementing its annual micro plan for activities for sustaining polio-free (Refer to 1.1 on guidelines for EPI microplan)	4.1.1 Revise national guidelines on district microplanning for activities for sustaining polio-free status	√				
				4.1.2 Conduct an annual national training workshop on district microplanning for polio free activities along with EPI Microplan to be attended by all Provincial Health Offices and the priority district	√		√		√
			4.2 Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district (refer to 4.9) for monitoring and accelerating implementation of its annual microplan for polio free status	4.2.1 Develop a national guidelines on supportive supervision with checklist for monitoring implementation of district microplan for activities for sustaining polio-free status	√				
				4.2.2 Ensure NDOH and the Provincial Health Office to carry out supportive supervision with on-site training for all the priority district at least one time in a year	√	√	√	√	√
			4.3 Incorporate OPV into MCV SIAs which will be conduced in every two year	4.3.1 OPV doses administered to all target children during the Measles SIAs		√		√	
			4.4 Identify high risk districts based on coverage for targeted OPV SIAs	4.3.1 OPV doses administered to all target children during the mini OPV SIAs	√		√		√
		Advocacy & Communications	4.4 Strengthen and sustain awareness on the importance of polio vaccination among the health staff and community people	4.4.1 Conduct awareness workshop for the health staff at district and hospital levels during other EPI training programmes		√		√	
				4.4.2 Use the opportunity for supervisory visit to enhance the awareness among the health staff at district and hospital levels and community people	√	√	√	√	√
		Surveillance	4.5 Strengthen District's capacity in reporting all AFP cases with adequate stool samples	4.5.1 Support the surveillance unit in strengthening active case search at the health facility	√	√	√	√	√

				4.5.2 Quarterly feedback on AFP Surveillance indicators to all provinces and districts	√	√	√	√	√
			4.6 Strengthen PHO's capacity in provision of technical support to the district manager in reporting all AFP cases with adequate stool samples	4.6.1 Support the surveillance unit in strengthening active case search at the health facility	√	√	√	√	√
			4.7 Strengthen coordination and communication between National disease surveillance unit and WHO accredited regional Laboratory	4.7.1 Ensuring regular communication between national disease surveillance unit and Regional Laboratory				√	
		Vaccine supply, quality and logistics	(Refer to 1.5 and 1.6)						
		Programme management	4.8 Enhance coordination capacity of NDOH and the Provincial Health Office in sustaining polio-free in PNG	4.8.1 Provincial Level EPI committee to monitor and advise on the progress towards WHO's regional immunization goals at provincial level as measles, hepatitis B, polio, MNTE	√	√	√	√	√
				4.8.2 Continue to organize the annual national EPI meeting in collaboration with PHOs and the international partners to review the progress in the previous year and develop / update an annual national and provincial plans	√	√	√	√	√
			4.9 Strengthen focused support to districts with weak capacity in implementation of activities for sustaining polio free status in PNG	4.9.1 Revise criteria for identification of priority district in each year in terms of sustaining polio free status in PNG (e.g. vaccination coverage, AFP reporting performance, etc.)	√				
				4.9.2 Select 50 priority districts to provide focused support on sustaining polio free status in PNG (6 for NDOH and 2 for each Provincial Health Office) at the beginning of each year (refer to 4.1-4.2)	√	√	√	√	√
			4.10 NCC and expert panel meetings	4.10.1 Annual NCC and Expert Panel meetings for timely case classification and etc.	√	√	√	√	√

Annex 2-5. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*5. Achieve elimination of maternal and neonatal tetanus*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
5. Achieve elimination of maternal and neonatal tetanus	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	5.1 Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district (refer to 5.9) in developing and implementing its annual micro plan for MNTE activities	5.1.1 Develop a national guidelines on MNTE activities	√				
				5.1.2 Develop and conduct an annual national training workshop on district microplanning for MNTE activities to be attended by all Provincial Health Offices and the priority district		√			
			5.2 Strengthen supportive supervision with on-site training by NDOH and Provincial Health Office to the priority district (refer to 5.9) for monitoring and accelerating implementation of its annual microplan for MNTE	5.2.1 Develop a national guidelines on supportive supervision with checklist for monitoring implementation of district microplan for MNTE activities	√				
				5.2.2 Ensure NDOH and the Provincial Health Office to carry out supportive supervision with on-site training for all the priority district at least one time in a year			√		
			5.3 Conduct TT 2+ campaign in high-risk districts to achieve >80% coverage for all women of childbearing age	5.3.1 Desk Review for TT 2 + coverage in all districts of PNG with identification of High Risk districts for targeted TT campaign in WCBA		√			
				5.3.2 Conduct TT 2+ campaign in identified districts			√	√	√
			5.4 Increase routine TT coverage for pregnant women and school children	5.4.1 Enhance MCH outreach services every month in easily accessible areas	√	√	√	√	√
				5.4.2 Conduct MCH Patrols quarterly in difficult to reach areas along with other EPI integrated services	√	√	√	√	√
				5.4.3 Revitalize the existing school health program to reach 6 yrs. And 13 yrs. Children	√	√	√	√	√
		Advocacy & Communications	5.5 Use "PNG National Health Week" as opportunity for strengthening advocacy on MNTE in PNG	5.5.1 Ensure PNG's Prime Minister or Health Minister to talk on MNTE in every PNG National Health Week	√	√	√	√	√
		Surveillance	5.6 Develop a national system for NT surveillance and monitoring	5.6.1 Develop a national standards and policies for NT surveillance (case definitions,	√				

				case investigation, case response, etc.);					
				5.6.2 Strengthen NT surveillance with other disease surveillance activities	√				
				5.6.3 Integrate NT Surveillance with the existing Paediatric Hospital Surveillance for other VPDs	√				
		Vaccine supply, quality and logistics	(refer to 1.5 and 1.6)						
		Programme management	5.7 Complete development and issuance of a National Plan of Action for MNTE in PNG	5.7.1 Consultative meeting with MCH and other related programme at National Level	√				
				5.7.2 Develop a National Plan of Action for MNTE		√			
			5.8 Enhance coordination capacity of NDOH and the Provincial Health Office in MNTE activities	5.8.1 Provincial EPI committee to monitor and advise on the progress towards WHO's regional immunization goals at provincial level as measles, hepatitis B, polio, MNTE	√				
				5.8.2 Continue to organize the annual national EPI meeting in collaboration with PHOs and the international partners to review the progress in the previous year and develop / update an annual national and provincial plans	√	√	√	√	√
			5.9 Strengthen focused support to districts with weak capacity in implementation of MNTE	5.9.1 Define criteria for prioritization of district in each year in terms of TT2+ coverage and Protection At Birth (PAB) variables in PNG (e.g. vaccination coverage, delivery practices, etc.)	√				
				5.9.2 Select 50 priority districts to provide focused support on MNTE (6 for NDOH and 2 for each Provincial Health Office) at the beginning of each year (refer to 5.1-5.2)	√	√	√	√	√

Annex 2-6. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*6. Introduce the vaccination against Haemophilus influenzae type b, Streptococcus pneumoniae and Human Paplilloma Virus to the routine EPI schedule when available and affordable*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
6. Introduce the vaccination against *Haemophilus influenzae* type b, *Streptococcus pneumoniae* and Human Papilloma Virus to the routine EPI schedule and surveillance of new vaccine preventable diseases when available	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	6.1 Strengthen provision of technical support by NDOH and Provincial Health Office to the priority district (see 6.9) in developing and implementing its annual micro plan and providing Supportive Supervision for Haemophilus influenzae B (Hib) (as a part of DTP-HepB-HiB vaccine) (Refer to Table 2-3 for all activities related to HepB)	6.1.1 Develop a national guidelines on district microplanning for Hib as a part of all other EPI vaccines	√				
				6.1.2 Develop and conduct an annual national training workshop on district microplanning for Hib to be attended by all Provincial Health Offices and the priority district	√	√	√	√	√
			6.2 Develop a national system of vaccination for Streptococcus Pneumonia	6.2.1 Develop national standards and policy for pneumococcal vaccination	√				
				6.2.2 Introduce pneumococcal vaccine into routine EPI		√			
				6.2.3 Monitor the performance of the provinces and districts on pneumococcal vaccine coverage performance along with other EPI vaccine every year			√	√	√
			6.3 Develop a national system of vaccination for Human Papilloma Virus (HPV)	6.3.1 Pilot HPV vaccination in identified two provinces	√				
				6.3.2 Develop national standards and policy for HPV vaccination		√			
				6.3.3 Expansion of the HPV vaccination to other provinces			√		
				6.3.4 Monitor the performance of the provinces and districts on HPV coverage performance along with other EPI vaccine every year				√	√
			6.4 Develop a national system of vaccination for other vaccine preventable diseases (supported by disease burden and characteristics identified through proposed surveillance system)	6.4.1 Strengthen and Institutionalize surveillance system for Rotavirus, JE and other VPDs	√	√	√	√	√
				6.4.2 Develop plan for introduction of vaccine for these new VPDs in EPI Schedule			√		
		Comm	6.5 Use "PNG National Health Week" as opportunity for	6.5.1 Ensure PNG's Prime Minister or	√	√	√	√	√

			strengthening advocacy on Hib in PNG	Health Minister to talk on Hib activities in every PNG National Health Week					
				6.5.2 IEC material for community and health workers be prepared on importance of Hib along with other EPI vaccines	√				
			6.6 Use "World Pneumonia Day" and other important occasions (National Health Week) as an opportunity for strengthening advocacy of Pneumococcal vaccination in PNG	6.6.1 Ensure PNG's Prime Minister, Health Minister and/or Paediatric Society to promote pneumococcal vaccination activities in PNG	√	√			
				6.6.2 Develop IEC material for community and health workers on importance of pneumococcal vaccination	√				
			6.7 Use "World Cancer Day" and other important occasions related to women issues as an opportunity for strengthening advocacy of HPV vaccination in PNG	6.7.1 Ensure PNG's Prime Minister, Health Minister and/or Obstetrics and Gynaecological Society / Paediatric Society and professional Women group (Lady Doctors Association) to promote HPV vaccination in PNG	√	√	√	√	√
				6.7.2 Develop IEC material for community and health workers on importance of HPV vaccination		√			
		Surveillance	6.8 Strengthen capacity of major provincial and district hospitals to conduct Hib Surveillance	6.8.1 Conduct on-site training for all identified hospitals on testing all suspected meningitis cases	√	√	√	√	√
				6.8.2 Quarterly Feedback to all provinces on Surveillance indicators by National Team	√	√	√	√	√
				6.8.3 Supervisory visits to all provincial hospitals including the sentinel sites by National Surveillance Officers	√	√	√	√	√
			6.9 Strengthen capacity of major provincial and district hospitals to conduct pneumococcal surveillance	Refer to 6.9.1 - 6.9.3					
			6.10 Strengthen the existing Bacterial Meningitis Surveillance system	Refer to Strep. Pneumonia and HiB surveillance					
			6.11 Strengthen the capacity of O&G professionals to conduct cervical cancer screening (In collaboration with MCH Programme Officers)	6.11.1 Strengthen the on-going surveillance and review the surveillance guidelines and standards for HPV detection through cervical cancer screening	√	√	√	√	√
				6.11.2 Training of Professional Health Workers on Pap-smear and cancer detection	√	√	√	√	√
		pp ly, qu ali ty an	6.12 Procure and distribute sufficient Hib vaccine as a part of DTP-HepB-Hib vaccine (Refer to 1.5)	6.12.1 Secure adequate funds for country co-financing	√	√	√		

				6.12.2 Secure adequate funds for assuming full responsibility of complete financing				√	√
			6.13 Procure and distribute sufficient pneumococcal vaccine	6.13.1 Secure adequate funding support for vaccine introduction		√			
				6.13.2 Secure adequate funds for country co-financing			√	√	√
			6.14 Procure and distribute sufficient HPV vaccine	6.14.1 Secure adequate funding support for pilot vaccine introduction		√			
				6.14.1 Secure adequate funding support for national vaccination programme			√		
			6.15 Maintain cold chain equipment and ensure operational system for DTP-HepB-Hib vaccine (Refer to 1.6)						
			6.16 Maintain cold chain capacity for Pneumococcal Vaccine	6.16.1 Assess the National and Provincial cold chain capacity for adequate storage and replacement	√				
			6.17 Maintain cold chain capacity for HPV vaccine	6.17.1 Assess the National and Provincial cold chain capacity for adequate storage and replacement		√			
		Programme management	6.18 Enhance coordination capacity of NDOH and the Provincial Health Office in new and underutilized vaccines (Hib, Pneumococcal and HPV) activities	6.18.1 Provincial EPI committee to monitor and advise on the progress on the new and underutilized vaccine		√	√	√	√
				6.18.2 Continue to organize the annual national EPI meeting in collaboration with PHOs and the international partners to review the progress in the previous year and develop / update an annual national and provincial plans		√	√	√	√

Annex 2-7. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*7. Strengthen system integration of other health interventions with EPI delivery* "

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
7. Strengthen system integration of other health interventions with EPI delivery	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	7.1 Strengthen provision of technical support in developing and implementing national plan for integration of other health interventions with EPI (Development of the operational plan will be done before the first year of implementation of the intervention and the implementation will be carried out as per SIA / Routine EPI plan supported through both Static and Outreach EPI services)	7.1.1 Develop an operational plan and implement distribution of Bednets by EPI system / in SIAs in collaboration with National Malaria Programme	√	√		√	
				7.1.2 Develop an operational plan and implement checking nutritional status of children in routine MCH clinics in collaboration with National Nutrition Programme	√	√	√	√	√
				7.1.3 Develop an operational plan for TT2+ implementation campaign in collaboration with National Safe Motherhood Programme			√	√	√
				7.1.3 Develop an operational plan and implement conducting school student health check up during EPI outreach in collaboration with National Department of Education and National School Health Authorities	√	√	√	√	√
		Advocacy & Communications	7.2 Use concerned department meetings and important occasions to strengthen the advocacy of integrated services and importance of EPI to the community	7.2.1 Develop a national advocacy tool in collaboration with all stakeholders		√			
				7.2.3 Develop communication material for the community and health workers on importance of integrated services		√			
		Programme management	7.3 Enhance coordination between different stakeholders and NDOH	7.3.1 Organize annual coordination meetings to review the progress			√	√	√

Table 2-8. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI –

"*8. Conduct supplemental immunization activities every 2 years to intensify the routine immunization*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
8. Conduct supplemental immunization activities every 2 years to intensify the routine immunization	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in Table 1*	Service delivery	8.1 Conduct high-quality MCV **SIAs** (ensuring all districts to achieve >95% coverage) every two year	Refer Table 2-2 (Section 2.3.1, 2.3.2, 2.3.3)					
			8.2 Conduct high-quality TT + Campaigns in targeted identified districts	Refer Table 2-5 (Section 5.3)					
			8.3 Conduct high-quality targeted OPV SIAs	Refer Table 2-4 (Section 4.4)					
			8.4 Conduct VPD specific SIAs						
		Advocacy & Communications	8.2 Use "PNG National Health Week" as opportunity for strengthening advocacy on National Measles Elimination, TT Campaigns and OPV SIAs	Refer Table 2-2, 2-4, and 2-5					
		Vaccine supply, quality and logistics	8.3 Procure and distribute sufficient Measles, TT and OPV Vaccine and injection safety material	Refer 1.5 and 1.6					
		Programme management	8.4 Strengthen focused support to districts with weak capacity in implementation of SIAs	Refer table 2-2, 2-4 and 2-5					

Annex 2-9. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"*9. Ensure all children receive at least 2 doses of vitamin A, at 6 and 12 months, according to the Vitamin A policy*"

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
9. Ensure all children receive at least 2 doses of vitamin A, at 6 and 12 months, according to the Vitamin A policy	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	9.1 Strengthen provision of technical support by NDOH and Provincial Health Office to all districts in developing and implementing its annual micro plan for vitamin A supplementation	Refer to Table 2-1 (1.1.1 and 1.1.4) with special reference to Vitamin A					
			9.2 Delivery of Vitamin A and De-worming during SIAs	Refer to Table 2-2, 2-6, 2-7, 2-8					
		Advocacy & Communications	9.2 Implement key components of National Communication strategy	Refer to Table 2-1 (1.3.2 and 1.3.3) with special reference to Vitamin A					
		Supply, quality and logistics	9.3 Procure and distribute sufficient vitamin A	9.3.1 Update Vitamin A requirement annually	√	√	√	√	√
				9.3.2 Monitor Stock outs quarterly at National and provincial level	√	√	√	√	√
				9.3.3 Secure adequate funds every year	√	√	√	√	√
		Programme management	9.4 Strengthen EPI programme management capacity at national, provincial and district levels	Refer to 1.7					
			9.5 Secure resources and monitor implementation	Refer to 1.8					

Annex 2-10. NDOH Strategies and Key Activities for achieving NDOH Strategic Objective for EPI:

"10. Extend routine vaccine services to the community health (aid) post level "

NDOH Strategic Objective for EPI	NDOH Milestones for the Objective	Strategies		Key Activities	Timeline				
					11	12	13	14	15
10. Extend routine vaccine services to the community health (aid) post level	*Refer to Milestones for reaching cMYP Targets & achieving NDOH Strategic Objectives in ANNEX 1*	Service delivery	10.1 Strengthen technical assistance to community health post for extending routine vaccine services	6.1.1 Refer to Table 2-1 (1.1, 1.2, 1.5, 1.6)					
		Advocacy & Communications	Refer to Table 2-1 (1.3)						
		Programme management	10.3 Strengthen EPI programme management capacity at provincial and district levels	Refer to Table 2-1 (1.7)					
			10.4 Secure resources and monitor implementation	Refer to Table 2-1 (1.8)					
			10.5 Promote immunization safety	Refer to Table 2-1 (1.9)					