REPUBLIC OF LIBERIA

MINISTRY OF HEALTH
NATIONAL EPI STRATEGIC PLAN (DRAFT)
2016 -2020

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ACKNOWLEDGEMENT

The Comprehensive Multi- Year Plan (cMYP) 2016 -2020 is developed as a part of standard cycle of long term EPI planning and as a partial requirement for receipt of Global Alliance for Vaccine and Immunization (GAVI) support. The plan is developed within the framework of the Global Immunization Vision and Strategy (GIVS) and Global Vaccines Action Plan (GVAP) to ensure sustainable development of the EPI programme.

On behalf of the Ministry of Health (MOH), I would like to acknowledge all individuals, programme managers/division heads of the MOH, and partner organizations, who in their various ways provided invaluable contributions to the successful completion of the Comprehensive Multi- Year Plan.

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Hon. Minister

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LIST OF ACRONYMS AND ABBREVIATIONS

1. AEFI	Adverse Events Following Immunization
2. AD	Auto-disabled
3. AFP	Acute Flaccid Paralysis
4. ARI	Acute Respiratory Infections
5. BCC	Behavioral Change Communication
6. BCG	Bacillus-Calmette-Guerin
7. CDC	Center for Disease Control & Prevention
8. CHDD	Community Health Department Director
9. CHO	County Health Officer
10. CHT	County Health Team
11. cMYP	Comprehensive Multi-Year Plan
12. CSFP	Child Survival Focal Person
13. CSO	County Surveillance Officer
14. CWIQ	Core Welfare indicator Questionnaire
15. DHO	District Health Officer
16. DQA	Data Quality Audit
17. DSO	District Surveillance Officer
18. EPI	Expanded Programme on Immunization
19. EPR	Emergency Preparedness and Response
20. EVD	Ebola Virus Disease
21. GAVI	Global Alliance for Vaccines and Immunization
22. GDP	Gross Domestic Product
23. GIVs	Global Immunization Vision and Strategies 2005 -2015
24. GPEI	Global Polio Eradication Initiative
25. GVAP	Global Vaccines Action Plan
26. HepB	Hepatitis B Vaccine
27. Hib	Haemophilius Influenza Type b Vaccine
28. ICC	Inter-agency Coordinating Committee
29. IDSR	Integrated Disease Surveillance and Response
30. IEC	Information, Education and Communication
31. IMR	Infant Mortality Rate
32. IPC	Inter-personal communication
33. LLITN	Long Lasting Insecticide-Treated Nets
34. LMHRA	Liberia Medicine & Health Products Regulatory Authority
35. MCV	Measles Containing Vaccine
36. MDGs	Millennium Development Goals
37. MDVP	Multi-Dose Open Vial Policy
38. MNT	Maternal and Neonatal Tetanus
39. MOH	Ministry of Health
40. NCC	National Certification committee
41. NGO	Non-governmental Organization
42. NIDs	National Immunization Days
43. NPEC	National Polio Expert Committee
44. OIC	Officer-In-Charge

45. OPV	Oral Polio Vaccine
46. OPV3	Third Dose of Oral Polio Vaccine
47. PHC	Primary Health care
48. PIE	Post-Introduction Evaluation
49. RED	Reach Every District
50. RI	Routine Immunization
51. SIAs	Supplemental Immunization Activities
52. SOPs	Standard Operating Procedures
53. SWOT	Strengths, Weaknesses, Opportunities & Threats
54. TOT	Training of Trainers
55. U5MR	Under-Five Mortality Ratio/Rate
56. UNICEF	United Nations Children Fund
57. UNMIL	United Nations Mission in Liberia
58. USAID	United States Agency for International Development
59. Vit. A	Vitamin A
60. VPD	Vaccine-Preventable Diseases
61. VVM	Vaccine-Vial Monitor
62. WHO	World Health Organization
63. WPV	Wild Polio Virus
64. YF	Yellow Fever.

EXECUTIVE SUMMARY

The comprehensive multi-year plan is a medium term strategic plan for Liberia's Expended Programme on Immunization (LEPI). This plan provides strategic direction for the immunization programme over a five years period considering seven cardinal planning steps. The cMYP is always prepared in consonance with the Ministry of Health Policy and Plan as well as the Investment Plan of Liberia's Health Sector. The current cMYP (2011-2015) ends December 31, 2015. To this, a new cMYP has to be develop to cover the period (2016 – 2020) to accommodate and plan for the introduction of two new vaccines – Rotavirus and Inactivated Polio Vaccine and Human Papillomavirus Vaccine Demonstration Project in Bong and Nimba Counties as well as other key activities. The cMYP will be aligned with all policy documents of the health sector to ensure consistency.

The Inter agency Coordination Committee (ICC) through it chairmen (Hon. Minister of Health) along with its members agreed that Liberia's EPI introduced the aforementioned vaccines in 2014 and 2015 into its routine immunization programme but had to postpone it due to the EVD outbreaks.

The goal of this is to reduce the morbidity and mortality of vaccine preventable diseases Liberia with the view of contributing to the attainment of international and regional goals and targets; particularly the just ended Millennium Development Goals (MDGs) that seek to reduce the under-five mortality rate by two-thirds by 2015 and the new Sustainable Development Goals (SDGs) 2030, the attainment of a routine immunization coverage of 90% nationally with at least 80% coverage in every district and the reduction of measles mortality rate by 90% as compared to the 2000 levels by 2015. This includes extending the benefits of new and underused vaccines to all children; the integration of other child health interventions (e.g. Vitamin A and Mebendazole) into routine immunization by 2017.

Presently, there is about 745 health facilities of which 522 are offering regular immunization services across the entire country. This has help to increase access to regular immunization services by its citizenry. Using Penta 3 and Measles as indicators, the trend in routine immunization coverage rates was progressive that is Penta-3 administrative immunization coverage from 31% 2004 to 89% in 2013. However, this achievement was eroded due to the devastating EVD outbreaks that led to a drastic decline in the immunization coverage rates especially for third dose of pentavalent vaccine (Penta 3 - 63%) and measles containing vaccine (MCV – 58%) in 2014. Liberia introduced the pneumococcal conjugate vaccine in January 2014 while Rota virus and inactivated polio virus vaccines and HPV demo-project will be introduced in the first and second quarters of 2016 in line with the global goals and targets within the framework of the Global Immunization Vision and Strategy (GIVS) and Global Vaccine Action Plan (GVAP).

A comprehensive EPI review was conducted in early 2012; this together with coverage surveys, EVD outbreak have provided the baseline for development of new goals and set targets for the EPI programme for the next five years. In addition situation analysis was carried out using SWOT method which informed the selection of national priorities that in turn informed the choice of key health activities especially for immunization.

The main strategic objective for 2016 -2020, is to increase national Penta-3 coverage from 71.4% card only (LDHS 2013) to at least 90% nationally with at least 80% coverage in all counties as well as measles mortality reduction by 90% as compared to the 2000 level by the end of 2020.

The specific objectives are to:

- Ensure the availability of well-maintained cold chain and logistic systems at all levels by 2020;
- Ensure that there are no vaccine stock-outs by 2016 to 2020;

- Increase the Financial sustainability of the Programme;
- Introduce new vaccines
- Offer a minimum integrated health services package at all levels in line with National policy;
- Build capacity of health workers to implement policies and ensure the use of quality vaccine and safe immunization practices by 2020;
- Improve organization of immunization services to guarantee sustainable and equitable immunization for every child and other target groups by 2020 and;
- Improve the national surveillance system in line with the global goals by 2020.

There are enabling and impeding factors that affect effective implementation of all components of the immunization system in the country. Access to improved and high quality immunization services, difficult terrain in most hard-to-reach areas , human resource constraints and rumor about vaccination as a result of the EVD outbreaks have been major challenges encountered during the last years of implementation of the just ended cMYP (2011-2015). Amid these challenges there Government of Liberia has been committed to its co-financing contribution, provision of qualified and dedicated staff and effective collaboration with key health partners (UNICEF, WHO, GAVI and USAID) in supporting the delivery of high quality immunization services.

Many inputs were placed in to the development of this document, ranging from situation analysis, through costing of all EPI systems areas (service delivery, advocacy and communication, surveillance, vaccine supply, quality and logistics, and programme management), annual workplan and finally monitoring and evaluation. Monitoring the implementation of this document will be conducted through periodic review meetings and time-test mechanism.

The total budget for the programme in five years for all components is **U$166,689,820**. As the plan is expected to be implemented within the framework of the Global Immunization Vision and Strategy, the Government of Liberia urges all partners working for the child survival and development programmes to mobilize resources to fill the gaps for the implementation of the strategic plan of action.

Chapter 1: Country Information - This describes the country profile and demographic information, administration and politics, socio-economic situation and environment, health status and Expanded Programme on Immunization of Liberia.

Chapter 2: Situation Analysis – This provides information on the current issues and challenges facing the immunization programme of Liberia. It further provides detail on the strengths and weaknesses of the immunization programme by system components in Liberia.

Chapter 3: Goals, Objectives, Key Activities, Indicators and Milestones – This chapter describes three goals (national, regional and global) and objectives of the cMYP, the strategic components, key activities, indicators and milestones. This chapter concludes by providing practical and actionable activities aim at strengthening identified weaknesses.

Chapter 4: Costing, Financing and financial gaps - This chapter elaborates plans for financing and sustain ability of the plan.

Chapter 5: Monitoring and evaluation - This is the final chapter that describes the monitoring and evaluat ion mechanisms put in place to ensure effective and efficient implementation of the plan.

PREAMBLE

Liberia being a signatory to the Convention of the Rights of the Child (CRC) has implemented activities over the past few years to ensure that "the right of every child to the highest attainable standard of health" was achieved. Under these umbrellas and those of the World Health Assembly and African Union resolutions, Liberia is signatory to the achievement of international and regional goals and targets, particularly the Millennium Development Goal to reduce the under-five mortality rate by two-thirds by 2015; the attainment of a routine immunization coverage of 90% nationally with at least 80% coverage in every county and the reduction of measles mortality rate by 90% by 2015, including extending the benefits of new and underused vaccines; the sustainable elimination of vitamin A deficiency by 2015; to pursue the remaining goals of polio end game strategic plan by 2018 and elimination of maternal and neonatal tetanus by 2020.

The immunization services delivery in Liberia had many challenges in the past due to the civil war. Due to the level of peace and stability in the country, the Expanded Programme on Immunization (EPI) of the Ministry of Health (MOH&SW) has initiated and sustained the reactivation process of all components of the programme.

When the first Liberia cMYP (2006 - 2010) was developed, the Country was in the phase of transition from conflict to recovery and reconstruction. This led to the reconstruction and construction of health facilities and relocation of health personnel to their various areas of assignments. The development of this cMYP (2016 – 2020) is taking place during the period that the Country is witnessing an unprecedented phase of development thus creating high expectation on the part of the population. This places greater demand on health services including immunization.

In the past few years, surveillance indicators for vaccine preventable diseases have recorded positive improvement. This is mainly due to improvement in immunization performance. However, occasional outbreaks continue to be recorded, increasing threats to the survival and development of children and women of childbearing age,

In this direction, the regular development of the Comprehensive Multi Year Plan has become a part of the health planning process in Liberia particularly gearing towards reducing the burden of vaccine preventable childhood diseases, such as measles, tuberculosis, poliomyelitis, yellow fever, diphtheria, whooping cough, tetanus, hepatitis B, child pneumonia, diarrhea, cancer and meningitis.

The cMYP (2016 -2020) will reinforce the framework that will guide the EPI programme for the coming years taking into consideration the prevailing realities and circumstances that govern the African region and the world.

The process of developing this new cMYP has been an all-inclusive effort involving Government and Partners.

It is hoped that this cMYP will provide the basis and impetus for increased collective action to control, eliminate and eradicate vaccine- preventable diseases in Liberia and to deal effectively with their negative impact on the child, individuals, families and the entire community.

Finally, the Government of Liberia, through the MOH is committing itself to reinforce the Global and regional conventions on the rights and survival of the child through the framework of the Global Immunization Vision and Strategies within this cMYP and urges all partners to join the Government of Liberia in identifying the means of support and working together through effective partnership to reduce the prevalence of disease burden in Liberia.

1. BACKGROUND

The projected population for 2015 is estimated at 4.02 million with a growth rate of 2.1% (NHPC, 2008). Land area approx. 111,370 square km and lies on the Western coast of Africa, bounded on the West by Sierra Leone, East by Côte d'Ivoire, North by Guinea and in the South by the Atlantic Ocean.

Population density is around 30 per square km, but very uneven, with four counties hosting about 70% of the total population. Massive population displacement in the rural areas during the war led to artificially accelerated urbanization, resulting in severe overcrowding in towns and cities. The literacy rate is less than 40%.

Administratively, Liberia is sub-divided into 5 Regions, 15 counties, 88 health districts and 136 political districts. There are more than 200 chiefdoms, 200 clans and 3,694 towns and human settlements in the country. However, the districts do not meet the criteria for health district as defined by the WHO. The accessibility within the country is very hard, especially from the County Capitals to reach the districts. The raining season covers almost 9 months in the year and the communications network: e.g. roads, telephone, radio and TV as well as the availability of energy sources and distribution is very limited.

Three fourths of the population lives below the poverty line on less than US$1 a day. The economy is, however, making a modest recovery, and there is a gradual improvement in security in rural areas. Life expectancy at birth is 48 years: 48.7 for females and 44.7 for males.

1.1 National Health indices

Liberia's health services severely disrupted by years of conflict and looting was being revitalized but was still very weak when the Ebola virus disease epidemic struck.

The health status of Liberia before the EVD outbreak may be summarized as follows:

- Infant mortality rate of 54/1,000 (LDHS, 2013);
- Under-Five/Child Mortality rate of 94/1,000 (LDHS, 2013);
- Maternal mortality ratios of 1,072/100,000 (among the highest in the world; LDHS 2013);
- The national fertility rate of 4.7;
- HIV prevalence rate between 2 and 12%;
- Exclusive breast-feeding of children less than six months of only 35%;
- Children under-fives who are underweight 15%;
- Access to safe water and sanitation around 24% and 26% respectively;

Table 1: Projected population for 2015 by age category and sub-population

County	Tot. Pop.	Live Births	Surviving Infants	Under 15 Pop	Under 5 Pop	Pregnant Women	CBA Women	HFs
Bomi	97,291	4,184	3,892	43,781	16,539	4,475	22,377	23
Bong	385,701	16,585	15,428	173,565	65,569	17,742	88,711	39
Gbarpolu	96,446	4,147	3,858	43,401	16,396	4,437	22,183	16
Grand Bassa	256,409	11,026	10,256	115,384	43,590	11,795	58,974	30
Grand Cape Mount	146,975	6,320	5,879	66,139	24,986	6,761	33,804	33
Grand Gedeh	144,873	6,230	5,795	65,193	24,628	6,664	33,321	18
Grand Kru	66,982	2,880	2,679	30,142	11,387	3,081	15,406	17
Lofa	320,217	13,769	12,809	144,098	54,437	14,730	73,650	56
Margibi	242,795	10,440	9,712	109,258	41,275	11,169	55,843	34
Maryland	157,225	6,761	6,289	70,751	26,728	7,232	36,162	24
Montserrado	1,293,349	55,614	51,734	582,007	219,869	59,494	297,470	111
Nimba	534,376	22,978	21,375	240,469	90,844	24,581	122,906	63
Rivercess	77,248	3,322	3,090	34,762	13,132	3,553	17,767	18
River-gee	82,707	3,556	3,308	37,218	14,060	3,805	19,023	19
Sinoe	118,425	5,092	4,737	53,291	20,132	5,448	27,238	33
National	4,021,019	172,904	160,841	1,809,459	683,573	184,967	924,834	534

1.2 Health Infrastructure and personnel:

There were about 647 health facilities (both public and private) of which about 534 were actively providing immunization services before the EVD outbreak.

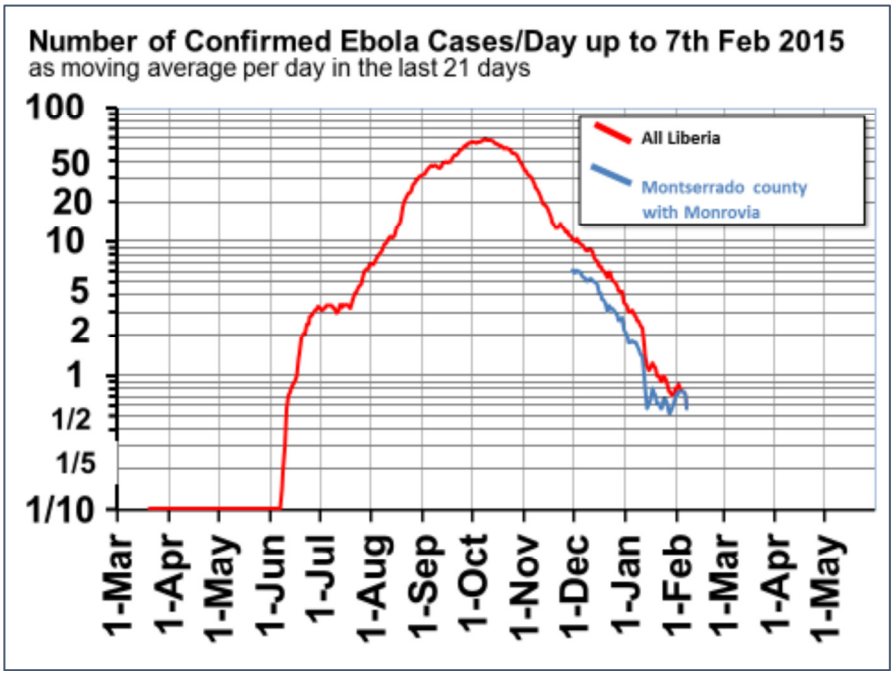
The health workforce before the EVD outbreak consisted of around 4,000 full-time and 1,000 part-time staff. This includes 168 physicians, 273 physician assistants, and 453 registered nurses and more than 1,000 nurse aides. The health care system was fragmented, uneven, and heavily dependent on vertical programmes.

1.3 Impact of EVD on Health and EPI services

The Ebola Virus Disease (EVD) outbreak started in Liberia in March, below are the major chronological events with regards to the EVD outbreak in Liberia

- 17th March 2014: Reports from Lofa County Health Officer of 2 suspected cases of hemorrhagic fever in Foya
- 21 March 2014: EVD was Laboratory confirmed in Guinea
- 22nd March 2014: Joint MOH-WHO team to Foya for investigation and response
- 24th March 2014: NTF is established
- 30th March 2014: EVD confirmed in Liberia
- 25th May 2014: Onset of 2nd wave of EVD outbreak (no case reported between 10 April and 24th May), The number of cases have been coming down since late October and the average number of cases is now less than 1 per day.

Chart 1: EVD Epidemic curve Liberia



The outbreak disrupted RI and all other health services except those related to the EVD response. The closure of many health facilities and the loss of large numbers of Health Care Workers (371 cases and 179 deaths including 4 vaccinators) to the EVD have adversely affected routine health services.

The table below shows the effect of the EVD outbreak on some of the indicators being monitored by the MoH

Table 2: Indicators monitored by the MoH

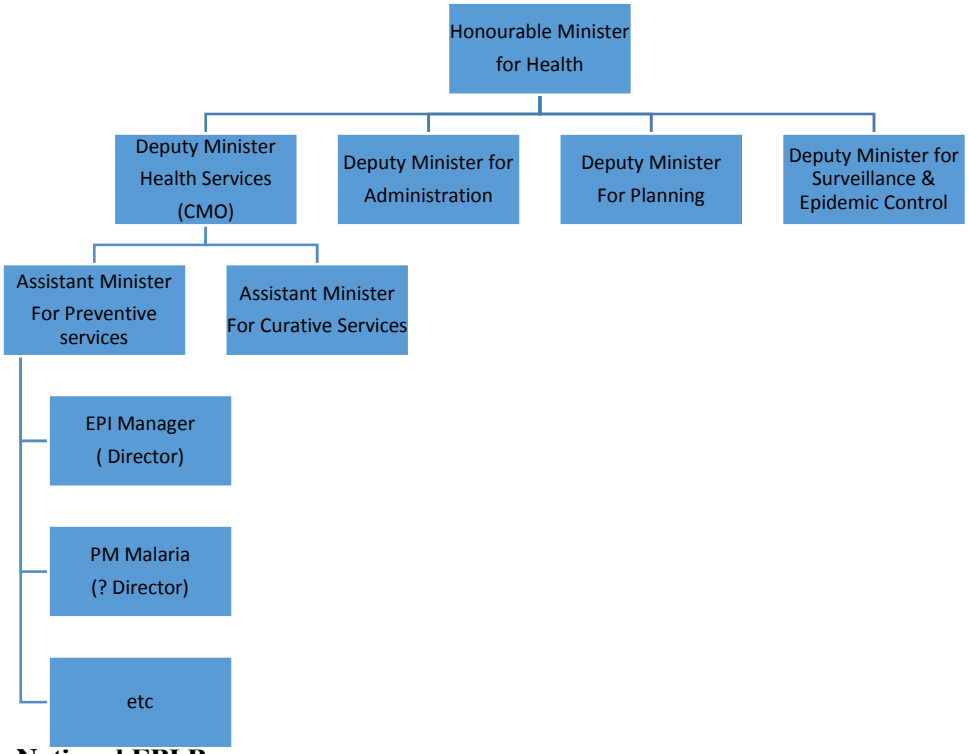
	Pre-Ebola (Q1 of 2014)	**During Ebola crisis (Q3 of 2014)**
HMIS completeness	86%	50%
Institutional deliveries	48 %	24%
Fully immunized children	58%	26%
4 ANC visits completed	63%	28%
ANC iron folate distribution	40%	29%
Intermittent preventive treatment of Malaria in pregnancy	52%	20%

Source: Ministry of Health, 2014

2.1 The Liberia Ministry of Health Structure and the EPI Programme

2.1.1 Ministry of Health Organogram

The Ministry of Health organizational structure is divided into four departmental pillars, which are under the direct management of the Minister of Health. The four departments are Surveillance & Epidemic Control Response, Planning, Research and Development, Administration and Health Services Department. The four departments are further sub-divided into different structures to ensure smooth operationalization of the Ministry's programmes.



2.1.2 The National EPI Programme

The Expanded Programme on Immunization (EPI) was launched in 1978 in accordance with WHO recommendation to all member countries. EPI covers the 5 Regions, 15 Counties and 91 health districts within the country. The national EPI Policy is an integral part of the National Health Policy and Investment Plan which provide routine vaccination services to children less than one year as well as women of child bearing age especially pregnant women. According to the current immunization schedule, one dose of BCG is administer at birth and up to eleven months, three doses of Pentavalent vaccine (at 6, 10 and 14 weeks), four doses of OPV (at birth, 6, 10 and 14 weeks), three doses of Pneumococcal conjugate vaccine – 13 (at 6, 10 and 14 weeks), one dose of measles (at 9 months) and one dose of yellow fever (at 9 months). Pneumococcal conjugate vaccine was successfully introduced in Liberia in January 2014. Every woman of childbearing age (14-49 years) is also provided 5 doses of tetanus toxoid at minimum intervals of 4 weeks, 6 months, and 1 year. As part of the effective vaccine and cold chain management policy, the EPI Programme switched from manual temperature monitoring device to digital (Fridge Tag) in 2013.

Prior to the Ebola virus disease (EVD) epidemic outbreak, Liberia's immunization programme made significant progress over the years which led to gradual increase in the coverage for DPT3 (Penta-3) rose from 31% in 2004 to 89% in 2013 as a result of the following:

- Increase in the number of health facilities,
- Expansion of the cold chain capacity,
- Intensification of regular outreach activities and increased support from partners

2.1.2.1 The EPI Policy

Like all other components of the health delivery system of the MOH, the EPI programme operates on a well-defined EPI policy, which was introduced in the 80s formalized in 1993 and has been regularly updated since then. The latest version was revised in 2010.

The key aspects of the policy document are summarized in the general EPI policy statement, which reads: The Government of Liberia shall ensure equal access to quality EPI services to its people in the spirit of GIVs. This being non-negotiable, the Ministry of Health shall ensure that adequate and potent EPI antigens are available in the country at all times. All Agencies designated to procure antigens intended for use in Liberia must get approval from the Liberia Medicine and Health Products Regulatory Authority. Only agencies, institutions, organizations and or individuals designated and or approved by the Ministry of Health shall provide EPI services in order to guarantee equitable access to quality vaccines.

2.1.2.2 The EPI Structure and Related Functions

For proper and effective management and delivery of immunization services to all eligible persons in Liberia, the EPI programme has been carefully structured so as to meet their needs.

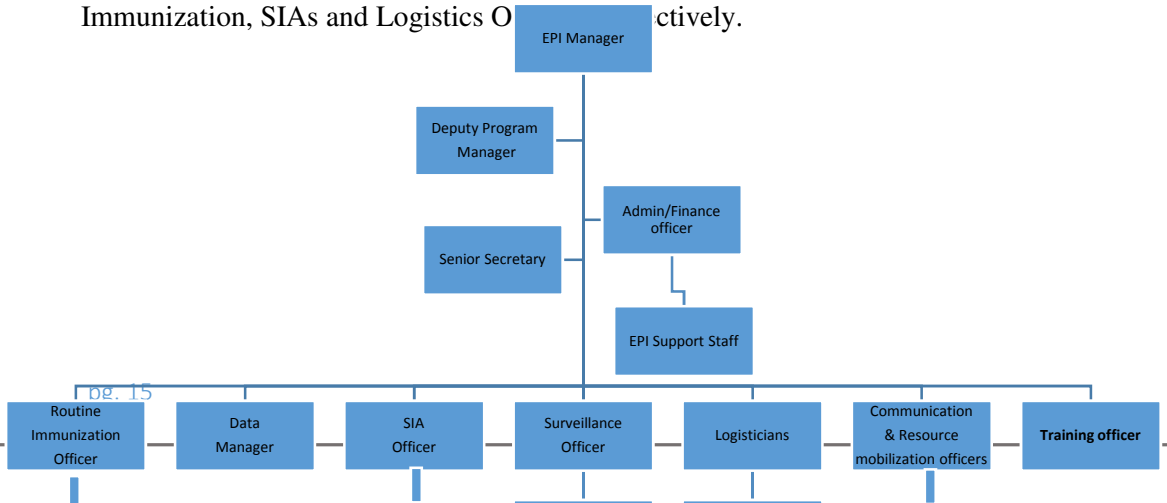
There are four (4) levels constituting the EPI structure:

1. National level
2. County level
3. District & Health facility Levels

National level

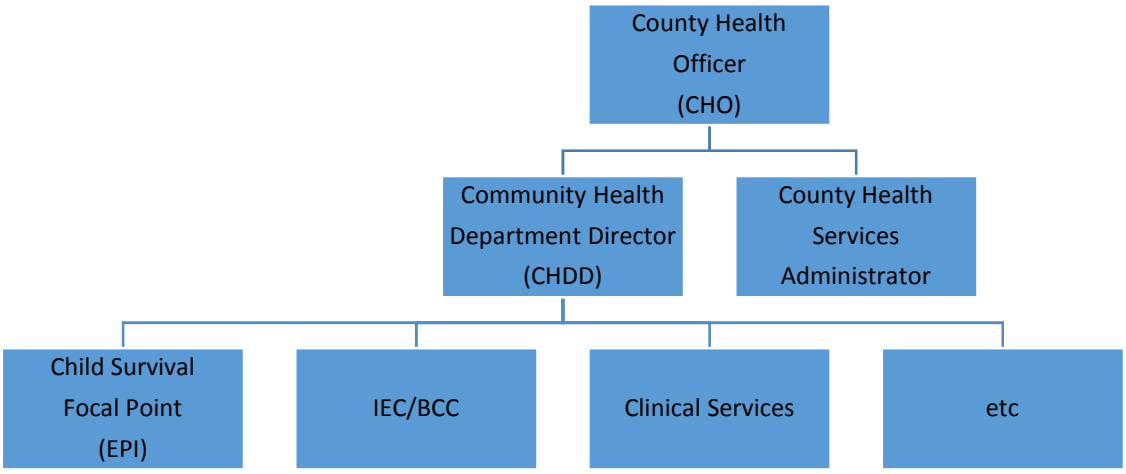
Under the national level structure are the following features:

A National EPI Manager who oversees and coordinates all EPI related activities in health institutions designated by the MOH to carry out such activities in the country. The National EPI Manager reports to the Assistant Minister for Preventive Health Services. Other members under the National Level structure of EPI programme include: Deputy Manager, Data Manager, Communications, Surveillance, Routine Immunization, SIAs and Logistics O ctively.



County level:

At the county level, the County Health Officer (CHO) oversees the planning, implementation and evaluation of immunization activities. In addition, there is a county Child Survival Officer who is responsible for the day-to-day EPI operations and a surveillance officer who is responsible for Vaccine Preventable and priority Diseases surveillance.



District & Health Facility Levels:

At this level, there are District Health Officers (DHOs) who are polyvalent in function and oversee EPI activities. At the facility level, the Vaccinator is responsible for the day to day EPI services under the supervision of the officer in charge (OIC) of clinic. In addition, there are 88 District Surveillance officers, trained in routine immunization and disease surveillance.

3 SITUATIONAL ANALYSIS

3.1 The Socio-Economic Situation

Liberia, a country located in West Africa, borders with Sierra Leone to its west, Guinea to its north and Ivory Coast to its east. It covers an area of 111,369 square kilometers and is home to about 4 million people. It is a low-income country with an estimated GDP per capita of USD 454 in 2013. Although the real GDP growth in 2014 had been projected at 5.8%, it was estimated to have declined to 2.5% or less by the end of 2014 due to the EVD crisis. The country is geographically divided into five regions and 15 counties, with populations ranging from 57,913 in Grand Kru County to 1,118,241 in Montserrado County.

Over a 14-year period (1989 to 2003), Liberia went through a civil war that left the health system dysfunctional with the destruction of the infrastructure and severe health workforce shortages. Since 2005, the country has made great effort to rebuild the health system through reform and introduction of the Basic Package of Health Services (BPHS).These include:

- Placement of 4,133 non GOL payroll HWs on the GOL Liberian dollar payroll;
- Construction of national drugs warehouse;
- Construction of 2 regional EPI cold-rooms in Bong and Grand Gedeh Counties;
- Procurement of drugs & medical supplies; and
- Restoration of routine health care services under the National Health Policy and Plan 2007 – 2011 and later the Essential Package of Health Services (EPHS) under the National Health Policy and Plan 2011 – 2021.

The strategy identifies priority areas including deconcentration, access to essential health services, increasing the health workforce and expanding the package of health services. The strategy enables transformation from a highly centralized to a decentralized client centered health care delivery system, focusing on the EPHS. The service delivery system is pluralistic with a variety of direct service providers (government, faith-based organizations, local and international non-governmental organizations, private sector). The government abolished user fees in 2006 to ensure that access to equitable healthcare services by its citizenries irrespective of wealth quintiles. However communities frequently reported informal payments as a common practice.

However, during the EVD epidemic outbreak in 2014, the number of health facilities that remained open varied from one county to the next averaging to about 86%. Although in some of the counties many of the health facilities remained open their client load was very minimal for a variety of reasons ranging from fear to distrust in the health system. The table below shows the percentage of health facilities that remained open and were reporting some EPI services for each of the counties for Quarters 1-4 2014. Montserrado County with over a third of the target population had less than 25% of health facilities operational in Quarter 4. Margibi fared worse because of the devastation they experienced with loss of large number of their health personnel to EVD.

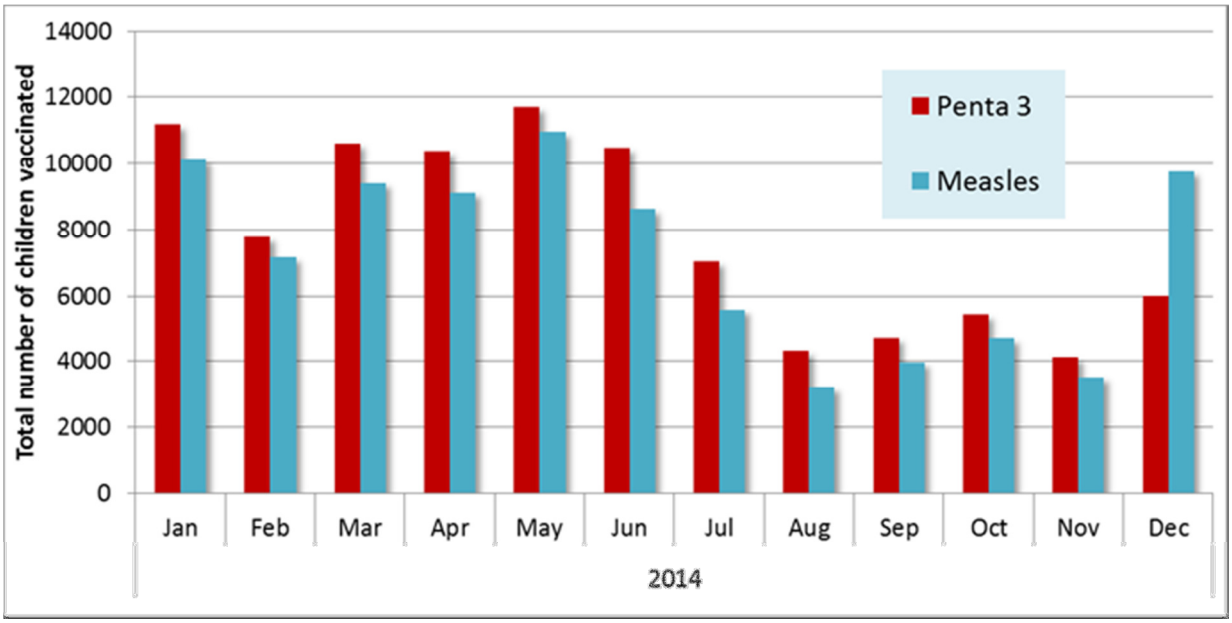
Table 3: Health Facility Reporting Rate by Quarter

County	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Bomi	100%	100%	64%	72%
Bong	100%	89%	100%	100%
Gbarpolu	88%	93%	93%	74%
Grand Bassa	79%	100%	89%	79%
Grand Cape Mount	100%	81%	63%	51%
Grand Gedeh	98%	96%	100%	94%
Grand Kru	88%	100%	100%	96%
Lofa	98%	99%	79%	95%
Margibi	99%	96%	26%	34%
Maryland	96%	99%	94%	53%
Montserrado	77%	75%	59%	24%
Nimba	100%	100%	88%	92%
River Gee	100%	98%	59%	67%
Rivercess	98%	98%	92%	96%
Sinoe	100%	100%	89%	101%
Liberia	93%	92%	76%	68%

Legend	
80-Above	
50-79	
<50	

The decline in the number of health facilities providing EPI services also showed in the EPI performance. The chart below shows the decline in EPI performance from the second quarter of 2014. The first round of PIRI in December raised the coverage for that month slightly.

Chart 1: Number of children reached with routine immunization Jan - Dec 2014. Liberia



The outbreak also necessitated the declaration of the state of Emergency in July by which time all planned RI activities such as outreach, PIE, EVM HPV demonstration project and introduction of new vaccines had to be canceled.

In accordance with the guidance for Immunization Programs in the African Region in the Context of Ebola the planned SIAs were also canceled.

2.2 Vaccine supply & quality

Although most of the shipments of vaccines in to the country were carried out on schedule, shipment of the new vaccines slated for introduction was canceled. Because of closure in some cases sudden closure, redeployment or death of some health care workers vaccine management and thus vaccine quality suffered at all levels. There were however adequate quantity of vaccines to service the level of service delivery that was possible and also for the planned rounds of PIRI. Since EVD response entailed more attention to IPC including injection waste management, EPI services benefitted to some extent in receiving IPC training, supplies and management of waste.

2.3 Logistics:
Cold chain equipment breakdown was frequent and repairs could be carried out on time. Some of the solar refrigerators have packed up. Motorcycles for outreach also broke down and many have remained so leaving many health facilities without a means of conducting outreach to distant outreach sites. In some of the counties mote that 80% of the motorbikes have become unserviceable

2.4 Advocacy and communication:
The ongoing Ebola vaccine trial which started the same time with the second round of PIRI has done a great damage to the trust in EPI services that existed before. Rebuilding that trust is now a great priority.

2.5 Surveillance of VPDs
Surveillance of VPDs was essentially neglected at the height of the EVD outbreak for a variety of reasons including the suspension of specimen transportation by DHL. The structures need to be reactivated and the EVD response structured can be used to resuscitate VPDs surveillance.

2.6 Program management:
Planning, Coordination, supervision, monitoring and evaluation all suffered during the year as plans could not be implemented, supervisory visits could be carried out.
Financing: processing and disbursement of funds to operational level could not be carried out because of the EVD response activities.
Capacity building:
Most health workers have not received training on immunization practices for more than 12months.
Training on IPC has also not reached all EPI service providers resources.

3.2 EPI Review

The latest comprehensive EPI review in Liberia was conducted February 2012. The EPI review identified multiple strengths and weaknesses in Liberia's immunization program. The areas of strength include:

- Substantial increases in budget for health since 2006
- Facility-level quality assurance system in place covering indicators such as handwashing stations and fenced incinerators
- Adequate staffing at many facilities
- Motivated and committed staff at many facilities and counties
- Motivated and committed community volunteers (gCHVs, TTMs, town and village chiefs)
- Many facilities functioning again
- Many areas of EPI appear acceptable and improving: surveillance, waste management, immunization safety, vaccine supply and quality, capacity building

However, critical barriers exist which are holding back Liberia's immunization program from reaching 90% coverage. These include inequities in program performance which are probably leading to pockets of under-vaccinated Liberians. Areas of every county are not consistently reached with routine EPI services. In some counties, the entire EPI system may be weak and merits in-depth investigation. These counties are Grand Cape Mount, Grand Kru, River Gee and Maryland. Across most immunization system components, these four counties consistently had the lowest performing indicators collected in this EPI review. Often when all other counties had positive results for an immunization component (such as surveillance), in these counties activities were weak or non-existent.

Monrovia requires a special urban approach for EPI. Montserrado County currently has approximately 33% of Liberia's target population for routine immunization. This county has 201 facilities, however only about 50% offer routine immunization services, largely because many facilities are private and may or may not be equipped to offer EPI. Many areas of Montserrado are densely populated (e.g. Monrovia) and are serviced by large health facilities and hospitals where multiple types of health services are offered.

Priority Recommendations: National Level

The following priority recommendations should be addressed urgently. These recommendations are directed at the national level at which responsibility should be taken.

- Conduct annual internal joint RI review and planning activity
- Develop transparent EPI budgets with clear line-items
- Reassess immunization policies
- Update policy on vaccine storage at health facilities and vaccine handling during transportation and RI sessions
- Implement identified best practices
- Assign a national staff member to act as a sub-national supervisor to one well-performing and one under-performing county.

Priority Recommendations: County Level

- Improve methods for estimating target population at county level

Priority Recommendations: All Levels

- Reinforce the value of monitoring data to drive implementation of RI
- Improve microplanning at county and facility levels
- Create special urban approach for EPI

Specific Recommendations: National Level

- Create standardized stock management form/guide for HF/CHT to ensure sufficient data is recorded to determine wastage rates and provide for efficient vaccine forecasts.

- Review county supply transport needs: The MOH should ensure that all health facilities have access to a dedicated "transport" to perform critical activities related to disease surveillance, outreach, follow-up of defaulters, etc. Depending on the size of the catchment area, specific health facilities may also merit use of dedicated transport.

- Reassess capabilities of all CHTs, particularly in the counties of concern, for proper skills and address identified weaknesses.

- Emphasize EPI Policy on the use of gCHVs and TTMs for social mobilization, identification of beneficiaries and defaulter tracking.

- The MOH/EPI should ensure that supervision at all levels is conducted in a more structured and effective manner and train supervisors in systematically using documentation to follow-up on weak areas of performance.
- Over the next ten years, the Government of Liberia should strive to increase its co-financing portion of its vaccines (target of 20%) and define a timeline when all aspects of the EPI program will be fully managed by the Government and the Community.
- For long-term planning, and following the updating of national EPI policies, the MOH/EPI should assemble a comprehensive list of all training gaps (cross-cutting and technical) and prepare a master training plan addressing overall health system needs. National and County training could occur in phases, based upon system priorities, and should be competency based.
- National level supervision team should follow up on counties to ensure that cold chain repairs are made to repairable equipment, and that equipment is not standing idle for want of a correct electricity connection. It is especially important to have more than one refrigerator working at county level so that chilled water packs can be prepared for safe transportation of freeze-sensitive vaccines. National level should develop/review procedures for retiring defunct equipment that is beyond economic repair, and follow up that the designated level has adhered to these procedures.

Specific Recommendations: County Level

- Institutionalize written feedback and follow-up in supervision logbooks by county health teams during visits to health facilities.

- Ensure county supervision reinforces the RED topics, particularly using data for action.

- Institutionalize use of local headcounts by gCHVs and TTMs for vaccine forecasting and defaulter tracking for monitoring uptake.

- Every three months, analyze data gathered on changes in routine coverage, Penta1 and Penta3 drop-out rates or additional performance indicators to assess program performance with district and health facility staff.

- Ensure integrated partner planning process for routine immunization occurs between county partners and county health teams on a quarterly basis.

- CHTs should ensure that logistics and maintenance plans are developed for all vehicles, cold chain equipment, incinerators, electrical wiring, fencing, etc. and that realistic budgets based on the plans are prepared so that adequate funding can be made available (covering the gaps) in integrated annual plans.

Specific Recommendations: Facility Level

- Record the date the outreach session was conducted. If the outreach session was not held, record the reason why.

- Use the microplan to track the number of doses administered per village and create a prioritization list based on gaps in coverage.

- Carry out head counts and conduct defaulter tracking with the support of the gCHVs, TTMs and others at community level.

- Inform supervisors and CHT as soon as maintenance and repairs are needed for equipment, vehicles, incinerators etc. so that the necessary funding for repair or replacement can be obtained promptly from the most appropriate source (county health budget, partners, NGOs, special projects, community).
- Follow up on the status of such requests with a transparent paper trail of documentation that CHT and national EPI supervisors can view.

Context for the Post-Introduction Evaluation in Liberia

The Expanded Programme on Immunization (EPI) along with its partners (WHO, CDC, USAID and UNICEF) had planned to conduct a post introduction evaluation (PIE) for PCV-13 into routine immunization. The World Health Organization (WHO) recommends all countries that have introduced new vaccine(s), ideally is expected to conduct a post introduction evaluation within the timeframe of 6-12 months after introduction. Due to the EVD outbreak and its devastating effect on the health systems and other unforeseen circumstances, PCV-13 PIE was postponed for 1st quarter 2015.

However, looking at the time interval from introduction till now, it seems unrealistic to conduct a PIE. Therefore, EPI proposes to conduct an in-depth EPI Review that will inform the overall programme performance.

A. Service Delivery: SWOT analysis by system components

Components	Strengths	Weaknesses	Opportunities	Threats
1. Service delivery	• Existence of coordination mechanism at national and county levels including ICC and TCC. • Over 90% of the public health facilities in Liberia are providing EPI services. • devoted health staff at national, district and health facility levels • Regular supply of bundled vaccine. • Defaulter tracing tools in place. • Integrated delivery of high impact interventions	• Delay in reporting of data from the counties to central • Some private health facilities are not providing routine immunization services • Lack of refresher training of service providers. • Irregular inventory at all levels • Non-implementation of defaulter tracing • Low staff motivation Irregular	• Existence of community health committees (CHCs) and general community health volunteers (gCHVs). • Availability of national health plan. • There is political commitment • Active participation of some partners in routine immunization. • Support from GAVI and other partners • Ongoing construction	• Difficult terrains and poor road network. • Draw-down of the UN peace mission (UNMIL). • Withdrawal of International NGOs. • Global economic crisis. • Sustainability of Infection prevention and control measures being implemented (IPC) supplies and practices. • Occurrence of another public health events of international concern

	into routine immunization. • Most private facilities are providing regular routine immunization services • Quarterly review meetings Development of annual micro-plan for routine immunization. • Availability of EPI vehicle in all counties • Multi dose vial policy being implemented	supervision. • High turned over and staff attrition rates. • Irregular and ad-hoc outreach activities. • Inadequate space for dry and cold store • Decrease in administrative coverage since 2014 • Inadequate budgetary allocation for Immunization Programme in the National health Budget. • continuous existence of missed opportunities (unimmunized children) to vaccinate children	of additional health facilities to provide EPI activities • Debt relief under the HIPC initiative. • Construction of two Regional cold stores • Infection prevention and control measures being implemented(IPC) •	

A. Logistics/Vaccines management (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats
Vaccine supply and quality	• Annual forecasting for vaccines and its related materials at national level • Regular supply of bundled vaccines. • Effective vaccine management at national level including the use of Stock	• Weak collaboration between Liberia Medicine & Health Product Regulatory Authority (NRA) and Expanded Programme on Immunization (EPI) for vaccine quality assurance • Limited monitoring of vaccine wastage at	• Partners' continual support for new and traditional vaccines. • Establishment of the supply chain management mechanism. • Budget line established for vaccines	• Increasing global demand and prices of vaccines • Global vaccine shortage • Continuous reliance on donor supports for the procurement of all vaccines.

	Management Tool (SMT). • Effective vaccine co-financing mechanism established and sustained. • All vaccines received have VVM. • All vaccines are WHO pre-qualified.	all levels. • In-effective vaccine management at county and HF level. • in effective vaccine packaging during distribution • Lack of cross analysis of vaccination data and vaccines data at all levels • Non-utilization of the vaccine management tool (DVD-MT) at county level. • Irregular updating of vaccines stock ledgers at all levels		
Cold chain and logistics	• Construction of two new regional cold rooms in Bong & Grand Gedeh Counties • Adequate quantity of vaccine carriers and cold boxes at all levels. • Adequate quantity of injection safety equipment at all levels. • All injectable vaccines are administered with auto-disable syringes. • Existence of guidelines on: . Vaccine and equipment management . Injection safety/safe	• Frequent breakdown of cold chain equipment • Current vaccine storage capacity at national level is inadequate. (Negative cold store :15m^3 and Positive Cold store: 65m^3) • Inadequate number of functional Waste Disposal Units (WDUs). • Lack of utility trucks for transportation of dry supplies. • Inadequate dry storage facility at all levels. • Lack of maintenance of the WDUs. • Inadequate VHF radios at the	• Continual assistance from partners (UNMIL, WHO, UNICEF etc.) in vaccine transport and storage. • New vaccine store to be built at national level •	• Drawdown of partners. (UNMIL). • Declining partners support. • Theft of EPI logistics (motorcycles, solar panels, cold boxes and vaccine carriers)

	disposal and destruction of EPI injection waste materials • All refrigerators at county and HF levels are equipped with Fridge tag • All counties have EPI vehicles	county level. • Lack of regular update of cold chain equipment inventory • Lack of CCE maintenance plan • Lack of designated staff for the maintenance of CCE		
Human resource for logistics	• Personnel available at all stores and an organogram is available • Appraisal mechanism in place	• Limited capacity (knowledge and skills) for personnel • Lack of clear or defined TOR for cold chain personnel at county level. • Weak implementation of appraisal system at all levels • Limited logistic supports • Low motivation for staff		• High turnover of staff

B. Advocacy, Communication & Social Mobilization (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats

Advocacy, Communication and Social Mobilization	• Availability of National Communication strategy document. • Existence of Technical Working Group (TWG) for innovation of new programmes through advocacy at National and international levels • Communication Core Team at national level to develop communication messages • Existence of Health promotion Focal Person in all 15 counties • Strong collaboration with EPI and HP Divisions • Existence of Social Mobilization Committee at County level • Community meetings	• Limited visual aids/job aids at facility and community levels • Limited routine social mobilization messages in county, district, health facility and community levels • Limited training for service providers on Interpersonal Communication skills	• The presence of large number of partners supporting post EVD messages • Community participation in HP activities • Involvement of Local County Authority in communication activities • Existence of Community Structures to support Social Mobilization activities. • Existence of Community Radio Stations. • Advocacy of National Legislatures for Immunization	• High staff turn over • Donor fatigue

C. Surveillance and Monitoring & Evaluation (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats
	• Existence of surveillance structures at all levels.	• National and Regional Public Health Reference Laboratories not	• Support from GoL • Existence of National and	• Risk of importation of WPV and other diseases of

Surveillance and M&E	• Case-based surveillance and monitoring for priority diseases established. • Coordination and collaboration of partners in support of surveillance • Availability of set Targets for surveillance indicators. • Existence of trained Surveillance staff at National and County levels • Capacity building Mechanism for surveillance officers in place. • Existence of a referral mechanism	accredited. • Partial implementation of enhanced IDSR. • Weak specimen transportation mechanism. • Weak reporting systems (Timeliness and completeness) • Weak feedback mechanism at all levels • Inadequate logistics for surveillance and monitoring activities. (eg: fuel, motorbikes, vehicles, storage etc.) • Inadequate specimen collection kits at county and district levels	Regional Public Health Reference Laboratories. • Technical support from STOP teams. • Surveillance training by partners at all levels • Support from WHO and other donor communities . • Availability of Partners	epidemic potential. • Porous international borders • Declining funding for polio eradication • Bad road conditions. • Poor social immunities for professional in remote areas

D. Programme Management (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats
Programme Management	• There exists a National Health Policy & Plan • The existence of Essential Package Health Services (EPHS) that is focused on primary health care including EPI • Existence of Coordination mechanisms at all levels (national & county) • Existence of EPI policy that is aligned with national and global priorities.	• Less involvement and coordination in routine immunization by private health sectors • Irregular supportive supervision at all levels • Inadequate implementation of follow up actions after supervision • Weak monitoring of Social mobilization strategy at all levels	• Strong donors and partners support. • High political commitment.	• Contextual events including elections • Civil unrest.

	• Existence of micro-plans at health facility level • Established review mechanisms • EPI Management structure with clearly defined term of reference. • Deconcentration of primary health care functions and responsibility to the Counties (decentralization).	• Weak communication system. (eg: Irregular internet connectivity, Base radios and GSM) • Irregular performance feedback mechanisms at all levels		

E. Financial Sustainability (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats
Financial sustainability	• The establishment of the Office Financial Management (OFM) at national level • Devolution of Office of financial management at the County level (Decentralization). • Increased priority to health and EPI in the National Budget. • Evidence of Government commitment to co-financing (regular contribution over the years) • Establishment of an inter-country Parliamentary Forum for Financial	• Delay in accessing funds. • Limited coverage of banking services outside the national capital • Delay in liquidation of funds at all levels • Irregular funding	• Establishment of an inter-country Parliamentary Forum for Financial Sustainability • GAVI Funding available • Expansion of banking services outside of nation capital	• Over dependence on donor support for government business

	Sustainability			

F. Human resource and Institutional strengthening (SWOT) analysis

Components	Strengths	Weaknesses	Opportunities	Threats
Human resource and Institutional strengthening	• Increased number of health facilities offering EPI services. • Availability of supervisors and senior monitors provide on-site mentoring. • Monitoring and Evaluation mechanism in place.	• Over-dependence on volunteers at all levels. • Absence of structured mechanism for training of EPI service providers	• Existence of Integrated Supervisory mechanisms • Availability of service providers • Availability of technical support from partners	• Rapid turn-over of staff • Slow pace of absorption of health workers on the Government payroll

System Components	National Indicators	2010		2011		2012		2013			2014	
		Adm	[i]Est	Adm	Est	Adm	Est	Adm	Est	[ii]Survey	Adm	
Routine Coverage	DPT3/Pentavalent 3 coverage	75%	70%	77%	77%	93%	80%	89%	76%	71.4%	63%	
	% of counties with > 80% coverage	47%		73%		93%		87%			13%	
	National DPT1-DPT3/Pentavalent 1-Pentavalent 3 drop-out rate	11%		10%		9%		8%			15%	
	Percentage of counties with drop-out rate DPT1-DPT3/Pentavalent 1-Pentavalent 3> 10	73%		33%		40%		33%			67%	
Surveillance	% of surveillance reports received at National level from counties compared to number of reports expected	100%		100%		100%		100%			100%	
Cold chain/ logistics	Percentage of counties with adequate numbers of functional cold chain equipment											
Immunization safety	Percentage of Counties that have been supplied with adequate (equal or more) number of AD syringes for all routine immunizations	100%		100%		100%		100%			100%	
Vaccine supply	Was there a stock-out at national level during the last year?	No		No		No		No			No	
	If yes, specify duration in months	NA		NA		NA		NA			NA	
	If yes, specify which antigen(s)	NA		NA		NA		NA			NA	
Communication	Availability of a plan	Yes		Yes		Yes		Yes			Yes	

Financial sustainability	What percentage of total routine vaccine spending was financed using government funds? (including loans and excluding external public financing										
Linking to other health interventions	Were immunization services systematically linked with delivery of other interventions (malaria, nutrition, child health) established	Yes		Yes		Yes		Yes		Yes	
Human resources availability	No. of health workers/vaccinators per 1000 population	0.15		0.15		0.14		0.14		0.16	
Management planning	Are a series of counties indicators collected regularly at national level? (Y/N)	Yes		Yes		Yes		Yes		Yes	
ICC/HSCC	Number of meetings held last year	4		2		3		3		3	
Waste disposal	Availability of a waste management plan	Yes		Yes		Yes		Yes		Yes	
Programme efficiency	Vaccine wastage monitoring at national level for all vaccines	No		No		No		No		No	
	Timeliness of disbursement of funds to counties and service delivery level	Yes		Yes		Yes		Yes		No	

[i] WHO/UNICEF Estimates
[ii] Liberia Demography and Health Survey

Mission statement: The Government of Liberia shall ensure equal access to quality immunization services to all eligible persons within the borders of the country free of charge. This being non-negotiable, the MOH shall ensure

that all vaccines officially introduced in the Liberia Expanded Programme on Immunization (LEPI) are available in adequate quantity and appropriate potency in the country at all times.

4.0 NATIONAL OBJECTIVES AND MILESTONES

The strategic objective for 2016-2020, is to increase national Pentavalent vaccine third dose (Penta 3) coverage from 71.4% (coverage survey data 2013) by end of 2020 to at least 90% nationally with at least 80% coverage in all counties as well as measles mortality reduction by 90% as compared to the 2000 level by the end of 2020.

Table: 7 Situation analysis of routine EPI by system components (continued)

Component	Suggested Indicators	National Status											
		2010		2011		2012			2013			2014	
		Adm	Est WHO /UNICEF	Adm	Est WHO /UNICEF	Adm	Est WHO /UNICEF	Cov. Survey	Adm	Est	DHS	Adm	Est WHO /UNICEF
Polio	OPV3 Coverage	75%	71%	77%	77%	93%	93%	57.8%	89%	89%	66.7%	62%	49%
	Non-Polio AFP rate per 100,000 children under 15 years of age			3.2		3.3			2.9			1.2	
	Extent: NID/SNID Number of rounds Coverage range			7 rounds coverage ranging from 97-106%			4 rounds coverage ranging from 94 to 99%		3 rounds coverage ranging from 98 to 143.7%			NA	
MNT	TT2+ Coverage			74%		74%		60.4%	76%			58%	
	Percentage of Counties reporting >1 case per 1000 live births			2/3 67%		0			0			0/3 0%	
	Was there an SIA? (Y/N)	N		Y		N			N			N	
Measles	Measles coverage			71%	71%	80%	48.1%	80%	74%	64.7%	74%	58%	58%
	Number of outbreaks reported			1		0			0			1	
	Extent: NID/SNID Age Group Coverage			National NID 2014 6 - 59months								National NID 2014 6 - 59months	
	YF Coverage			70%	70%	78%	47.3%	78%	73%	63.4%	73%	54%	54%

	Number and percentage of Counties reporting >1 suspected case			%		%			4/12 (33.3%)			1/3 33.3%	
Yellow Fever	Was a preventive campaign conducted? (Y/N)			N		N			N			Y	

Table: 8 **Global goals, regional goals, national objectives and milestone**

Global goals (until 2020)	**Regional goals (until 2020)**	**National objectives based on global and regional goals**	**Milestones**
Coverage[1] 1. By 2020 or sooner all countries will have routine immunization coverage at 90% nationally with at least 80% coverage in every district	✚ To improve immunization coverage beyond the current levels ✚ DTP vaccine coverage to reach 90% region-wide by the end of 2020 ✚ All countries to introduce PCV by the end of 2020 ✚ At least 37 countries to introduce the rotavirus vaccine by 2020 ✚ At least 35 countries to introduce HPV by the end of 2020 ✚ At least 25 countries to introduce a birth dose of Hep B by the end of 2020	✚ To achieve Penta 3/PCV3 coverage of 90% nationally with at least 80% coverage in 90% of Counties by 2020.	**2016:** 75% national coverage by survey and 70% Counties (districts) achieve Penta 3/PCV3 coverage of ≥ 80% - Conduct EPI coverage survey **2017:** 80% national coverage by survey and 75% counties achieve Penta 3/PCV3 coverage of ≥ 80% **2018:** 85% national coverage by survey and 80% counties achieve Penta 3/PCV3 coverage of ≥ 80% - Switch Penta formulation from 1 to 10-dose vial size **2019:** 88% national coverage by survey and 85% counties achieve Penta 3/PCV3 coverage of ≥ 80% - Conduct EPI coverage survey **2020:** 90% national coverage by survey and 90% counties achieve Penta 3/ PCV3 coverage of ≥ 80%

Polio 2. By 2020, the World will be certified polio-free	▪ To complete interruption of poliovirus transmission and ensure virus containment ▪ All countries to interrupt transmission of wild poliovirus by 2018 ▪ All OPV-using countries to introduce at least one dose of inactivated polio vaccine by 2020 ▪ All polioviruses to be laboratory contained and the Region certified polio free by the end of 2018. ▪ A regional polio legacy plan to be finalized by the end of 2019	Achieve and Sustain interruption of wild polio virus transmission by 2016 and beyond	**2016: Achieve** 75% national coverage by survey and 70% Counties (districts) achieve coverage of ≥ 80% - **Introduce at least one dose of IPV** - Switch from tOPV to bOPV - 3 rounds of OPV SIAs **2017:** 80% national coverage by survey and 75% counties achieve OPV3/IPV coverage of ≥ 80% - Conduct 2 rounds of SIAs **2018:** 85% national coverage by survey and 80% counties achieve OPV3/IPV coverage of ≥80% - 2 rounds of OPV SIAs **2019:** 88% national coverage by survey and 85% counties achieve OPV3/IPV coverage of ≥ 80% **2020:** 90% national coverage by survey and 90% counties achieve OPV3/IPV coverage of ≥ 80%
Measles[2] 3. 90% reduction in infant mortality by 2020 compared to 2000	▪ To attain the elimination of measles and make progress in the elimination of rubella and congenital rubella syndrome ▪ All countries to achieve an incidence of confirmed measles of less than 1 case per million population by 2020 ▪ MCV1 coverage to be at least 95% at the national and district levels and SIA coverage to be 95% in all districts ▪ At least 25 countries to introduce rubella-containing vaccine by 2020	▪ Measles mortality reduced by 90% by 2020	**2016:** 100% investigation of notified suspected cases and achieve 75% measles coverage at national level by survey. **2017:** 100% investigation of notified suspected cases and sustain 75% measles coverage at national level by survey - Conduct follow-up campaign. **2018:** 100% investigation of notified suspected cases and achieve 80% measles coverage at national level by survey. **2019:** 100% investigation of notified suspected cases and achieve 85% measles coverage at national level by survey. - Apply for MCV2 introduction **2020:** 100% investigation of notified suspected cases and sustain 85% measles coverage at national level by survey - Introduce MCV2 - Conduct follow-up campaign.

NT[1] 4. Elimination maintained in every district by 2020	✚ To attain and maintain elimination/control of other vaccine-preventable diseases ✚ All countries to attain and validate elimination of maternal and neonatal tetanus by 2020 ✚ All high-risk countries to attain yellow fever immunization coverage of 90% or higher by 2020 ✚ All countries within the meningitis belt to introduce Men-AfriVac TM through campaigns, and 15 of them to have the vaccine in routine immunization by 2020 ✚ Sero-prevalence of HbsAg among children younger than 5 years to be less than 2% by 2020	✚ Achieve and maintain MNT elimination status by 2020	**2016: 8**0% of counties report <1 NT/1,000 live births; 85% coverage at national level by survey. **2017:** 85% of counties report <1 NT/1,000 live births+ SIAs; 85% coverage at national level by survey **2018:** 100% of counties report <1 NT/1,000 live births; Introduce TT vaccines in school health programmes. 88 percent coverage at national level by survey **2019:** 100% of counties report <1 NT/1,000 live births; 89% coverage at national level by survey **2020:** 100% of counties report <1 NT/1,000 live births; 90 percent at national level by survey.
5. New vaccines introduction		Introduce Rotavirus vaccine into RI by 2016	**2016:** 75% national coverage by survey and 70% Counties (districts) achieve Rota 2 coverage of ≥ 80% **2017:** 80% national coverage by survey and 75% counties achieve Rota 2 coverage of ≥ 80% **2018:** 85% national coverage by survey and 80% counties achieve Rota 2 coverage of ≥ 80% **2019:** 88% national coverage by survey and 85% counties achieve Rota 2 coverage of ≥ 80% **2020:** 90% national coverage by survey and 90% counties achieve Rota 2 coverage of ≥ 80%.

6. Yellow fever		Maintain YF coverage as measles coverage by 2020	**2016:** 100% investigation of notified suspected cases and achieve 75% YF coverage at national level by survey. **2017:** 100% investigation of notified suspected cases and sustain 75% YF coverage at national level by survey **2018:** 100% investigation of notified suspected cases and achieve 80% YF coverage at national level by survey. **2019:** 100% investigation of notified suspected cases and achieve 85% YF coverage at national level by survey. **2020:** 100% investigation of notified suspected cases and sustain 85% YF coverage at national level by survey
7. Human Papillomavirus vaccine		Introduce Human Papillomavirus vaccine into RI by 2019	**2016:** Introduce first dose of round 1 and second dose of round 1 and achieve at least 85% coverage… **2017:** Deliver first and second dose of round 2 and achieve 85% administrative coverage and at least 80% by survey. Also, 80% counties achieve … coverage of ≥ 80% - Conduct evaluations and write report 2018: Application for national roll out **2019:** Conduct/implement national roll out. Attain at least 85% coverage. **2020:** 90% national coverage by survey and 90% counties

8. Immunization Systems Strengthening	- At least 90% of countries will have adopted and implemented internationally approved technologies and systems for waste management - At least 80% of countries will have functional regulatory authorities (NRAs) - At least 60% of countries will have revised their EPI pre-service curriculum. - All countries will have incorporated an immunization component into their national health promotion and communication plans. - All countries will have functional inter-agency coordination committees (ICCs) or equivalent coordination mechanism for immunization.	5. Coordination mechanism (ICC, HSCC and County Health sector meeting) remains functional 6. Internationally approved technologies and systems for waste management adopted 7. Strengthen integration between EPI and other programmes eg. FHD, HP, Nutrition, CHD, etc. 8. Reinforce communication for Immunization into national health promotion plan 9. Logistics and cold chain strengthened	**2016:** - 75% of planned Coordination meetings are held. - 75% of EPI service providers have access to safe waste disposal system - At least 80% of all immediate activities within the EVM Improvement plan be implemented on schedule **2017:** - 80% of planned Coordination meetings are held. - 85% of EPI service providers have access to safe waste disposal system - At least 90% of all medium term activities within the EVM Improvement plan be implemented on schedule **2018:** - 85% of planned Coordination meetings are held. - 90% of EPI service providers have access to safe waste disposal system - 100% of all medium term activities within the EVM Improvement plan be implemented on schedule
9. Immunization Systems Strengthening			**2019:** - 90% of planned Coordination meetings are held. - 95% of EPI service providers have access to safe waste disposal system - At least 75% of all long term activities within the EVM Improvement plan be implemented on schedule **2020:** - **At least** 95% of planned Coordination meetings are held. - 100% of EPI service providers have access to safe waste disposal system - 100% of all long term activities within the EVM Improvement plan be implemented on schedule

		Regular supply of AD syringes ensured	2016-2020: 100% of health facilities continue to use AD syringes. 2016-2020: Introduce any new appropriate technologies for the administration of vaccines
10. Linking Immunization to other interventions	At least 80% of countries will have integrated other interventions into routine immunization and SIA sessions for target population	All counties integrate high impact interventions into RI and SIAs	2016-2020: 100% of counties conduct high impact interventions during RI and SIAs

STRATEGIES PLANNED BY COMPONENT

Table :9A Service Delivery

Objective	Strategy	Key Activities
Achieve and Sustain interruption of wild polio virus transmission by 2018 and beyond	SIAs and Routine Immunization	1. Conduct high impact polio NID - 3 rounds in 2016 - 2 rounds in 2017 - 2 rounds in 2018 2. Integrate with other high impact interventions during RI and SIAs 3. Increase the number of health facilities providing EPI services
To achieve and sustain Penta 3 coverage of 90% nationally with at least 80% coverage in all Counties by 2020.	Provision of sustained routine immunization in all health facilities	4. Establish data base at district level 5. Strengthen county and national database levels 6. Conduct and implement micro-plans at HF, district, county and national levels
	Implement sustainable outreach activities in every district.	7. Conduct outreach in underserved and hard – to – reach areas
	Plan to reach all under-served and hard – to – reach areas at least four times a year	8. Conduct regular supportive supervision - Monthly supervision within the districts by counties - Quarterly by national level
	Reinforce Vitamin A delivery within routine immunization in collaboration with Nutrition Division	9. Conduct regular monitoring and evaluation - Quarterly by county - Bi-annually by national 10. Procure 22 vehicles for supervision (15 for CHTs; 2 regional cold stores; 5 national)
	Conduct AEFI Monitoring during Routine Immunization and SIAs	11. Procure stock of Vit-A for infants and postpartum mothers 12. Include AEFI in county and national databases

Measles mortality reduced by 90% by 2020	Strengthen routine immunization, conduct high quality SIAs, and integrate with high impact interventions	13. Conduct Measles follow up campaigns for <5s in 2017 & 2020 14. Prompt investigation and response to all suspected and confirmed cases of outbreak 15. Joint planning with other Health Services Programmes (Malaria Control, Family Health, Nutrition, Health Promotion, etc.) 16. Distribution of Vit A, Mebendazole and LLIN with Measles campaigns
Sustain MNT elimination status by 2020	Strengthen routine immunization, conduct high quality SIAs, and integrate with high impact interventions, including clean delivery practices	17. MNT surveillance and response to outbreaks 18. TT SIAs nationwide in 2017 for WCBA
Introduce new vaccines into RI by 2020	Switch from tOPV to bOPV and introduction of IPV into RI	19. Implement the tOPV to bOPV switch plan at all levels
	Introduce Rotavirus vaccine into RI	20. Implement Rotavirus vaccine introduction plan 21. Conduct Rotavirus vaccine post introduction evaluation (PIE)
	HPV Demonstration and national rollout nationwide	22. Implement HPV Demonstration project 23. Conduct required evaluations for HPV Demo Project 24. Prepare and submit application on HPV national rollout

Objective	Strategy	Key Activities
Maintain YF coverage as Measles coverage by 2020	Sustain the use of Yellow Fever vaccine and reduce missed opportunities	25. Ensure availability of adequate quantities of Yellow Fever vaccine in all counties 26. Strengthen surveillance and response to outbreaks of YF.
Coordination mechanism (ICC, HSCC, County Health Sector meeting, Health Board meeting) remains functional - To integrate EPI into national health promotion plan	Strengthen coordination and integration mechanisms at all levels.	27. Establish/maintain and regularly update directory of all relevant stakeholders 28. Plan and hold coordination meetings; document and disseminate the proceedings of the meetings, implement follow up actions. Details properly stored 29. Plan and hold coordination meetings with neighboring countries 30. Conduct sensitization and planning meetings with vertical programmes focal points 31. Maintain and ensure the use of the national health plan and health reforms

Ensure proper wastes management system by 2020	Strengthen wastes management system at all levels	32. Use the existing Health Care WASH Assessment Report done in 2015 { MOH, UNICEF, Public Work} to develop and implement EPI waste management plan in all counties 33. Adopting appropriate waste management technology and system 34. Provide capacity building for service providers at all levels
Effective logistics and cold chain system		35. Implement activities in the EVM improvement plan
All counties integrate high impact interventions into RI and SIAs	The Reaching Every Community approach	1. Reaching the target populations 2. Supportive supervision, 3. Linking services with the communities, 4. Monitoring for action, 5. Planning and management of resources.

Table : 9B Advocacy and communications

Objective	Strategy	Key Activities
To strengthen communication and social mobilization in support of EPI to achieve and sustain disease eradication, elimination, and control by 2016 and beyond	Advocacy, social mobilization, community engagement, production and dissemination of messages	6. Strengthen health coordination meetings at all levels 7. Implement plan for routine and SIAs

Table : 9C Surveillance

Objective	Strategy	Key Activities

Strengthen surveillance for vaccine preventable diseases (VPD) to attain and sustain key surveillance indicators by 2016 and beyond	VPD surveillance embedded into Integrated Disease Surveillance Response (IDSR)	31. Conduct integrated active disease surveillance at all levels 32. Improve data sharing and feedback system at all levels. 33. Provide regular supplies and equipment to counties for case investigation 34. Conduct regular surveillance visits to priority sites. 35. Conduct training for all surveillance officers at all levels. 36. Provide operational support at all levels 37. Production of surveillance tools and training materials 38. Conduct community sensitization 39. Clinicians sensitization 40. Support outbreak investigation and response 41. Hold NTF, NPEC and NCC meetings

Table :9D Vaccine supply, quality and Logistics

Objective	Strategy	Key Activities
Improve and sustain adequate vaccines supply, quality and appropriate logistics at all levels by 2016 and beyond	Timely forecasting, procurement and distribution of bundle vaccines Ensure availability of appropriate and functional cold chain equipment and transport	1. Annual forecasting, procurement of bundle vaccines, and installation of adequate cold chain equipment and temperature monitoring devices 2. Develop distribution plan, 3. Distribute bundle vaccines 4. Expansion/construction of dry storage at all levels 5. Implement activities in the EVM improvement plan

Table : 9E Programme Management

Objective	Strategy	Key Activities

Ensure that EPI programme structures are established, manned, and properly resourced at all levels by 2016 and beyond	Strengthen EPI structures Review the organogram, policy and staff TOR, Ensure availability of technical and sufficient staff to fulfil EPI vision and objectives at all levels Advocate for the inclusion of EPI operations support in national budget to ensure adequate financial sustainability	1. Conduct EPI human resource needs assessment at all levels 2. Develop human resources plan (including maintenance technicians) 3. Recruit additional staff to fill EPI vacant and new posts at all levels 4. Conduct training needs assessment and develop multi-year training plan 5. Conduct comprehensive micro plan at all levels to include all aspects of EPI 6. Conduct bi-annual staff evaluation and institute measures to improve programme implementation 7. Maintain/sustain EPI quarterly review meetings 8. Conduct in-depth EPI review (external) 9. Conduct formative research to drive decision making to improve immunization systems 10. Conduct mid-term and end of period programme evaluations for future planning 11. Provide adequate support (financial, logistical and technical) to EPI operations at all levels 12. Convene stakeholders meetings and engagement with other relevant partners for additional resource mobilization to support new vaccines introduction 13. Conduct quarterly monitoring and supportive supervision to improve data quality and service delivery

Cost, Budget and Financing for EPI cMYP

This section presents the budget, financing and financing gap analysis for the EPI programme, based on the expected activities for the period 2016 - 2020. It will also present different scenarios and identifies strategies that will improve the financial sustainability of the programme.

Costing the cMYP

Methodology

The methodology used is based on estimating the costs of different programme inputs (such as vaccines, personnel, or vehicles needed), and activities to be carried out (such as trainings, etc.). The cMYP guidelines developed by WHO and UNICEF as well as the revised costing tool (2014), were used.

The programme's costs are derived in a variety of costing methodologies, depending on the interventions planned. These include:

- The ingredient approach: based on the product's unit price and quantity needed each year adjusted for by the proportion of time used for immunization. This is used for costing inputs such as personnel, vehicles, etc;
- Rules of thumbs: based on immunization practices, such as a percentage of fuel costs as representative of maintenance costs for vehicles;

- Past spending: where lump sum past expenditure is used to estimate future expenditure. For example past cost per child immunized for specific campaigns, training activities, etc.

Inputs into programme costing

The following is a brief summary of the information incorporated.

Vaccines & Injection Supplies:

The country uses national estimates for surviving infants to carry out forecasting for all antigens, apart from BCG where live births is used. Costs are a function of the unit price for individual vaccines, with quantities determined by the target population adjusted for by coverage and wastage objectives.

Key cost related highlights include:

- The country intends to introduce rotavirus and inactivated polio virus vaccines by the year 2016,
- The country intends to begin human papilloma virus vaccine demonstration project by the year 2016
- The country will carry out a Measles follow up campaign in 2017 and MNTE campaigns in 2017.
- Costs for respective doses of antigens and supplies are based on UNICEF prices. .

Personnel costs (EPI specific and shared):

The personnel for EPI at the national level spend 100% of their time on EPI related activities and on average 5 days per month on supervision apart from the support staff. In addition, costs and time spent on supervision and outreach activities were included for the different cadres at the different levels of the system (counties, districts and health facilities).

Vehicles and transport costs:

The costs of vehicles were derived in the same manner as personnel. Additional maintenance costs were estimated as represented by 15% of fuel expenditure. In 2013 and 2014 a total of 19 vehicles (Toyota 4WD) and over?? Motorcycles were provided by the EPI partners (GAVI, UNICEF & WHO); with projection to procure additional 20 vehicles and 666 for the life span of this cMYP (2016-2020), to reinforce the programme's logistics capacity.

Cold Chain Equipment, Maintenance and Overheads:

Costs were derived as with personnel and vaccines. The program will continue use existing facilities provided by partners and new platform such as cold chain equipment (CCE) optimization platform by GAVI for expansion and upgrading cold chain capacity.

The average running cost per unit of cold chain equipment correspond to the average monthly overheads costs (electricity or fuel depending on the type of equipment) and the average maintenance cost corresponds to the average yearly cost of maintenance and repairs of each unit of cold chain equipment.

Operational Costs for Campaigns:

The operational costs for campaigns were based on operational costs for past campaigns and include all non-vaccine and injections supplies cost. These include the cost of personnel (per-diems…) and other operational costs such as training, transport and social mobilization. The average operational cost per child used for future campaigns operational costs were estimated at US $0.5 for polio; US$0.9 for Measles, and US$0.9 for MNT.

Programme Activities, Other Recurrent Costs

The table below illustrates the estimated costs of the different programme components for the period of the cMYP (2016 -2020).

Table 10:

cMYP Component	Expenditures	Future cost projections					
	US$	US$	US$	US$	US$	US$	US$
	2014	2016	2017	2018	2019	2020	Total 2016 - 2020
Vaccine supply and logistics (routine only)	$ 5,123,413	$ 4,411,759	$ 4,536,239	$ 4,712,570	$ 6,963,831	$ 6,775,756	$ 27,400,156
Service delivery	$ 2,556,894	$ 5,520,970	$ 8,602,712	$11,813,808	$ 15,131,813	$18,577,767	$ 59,647,069
Advocacy and Communication	$ 400,000	$ 561,000	$ 416,160	$ 424,483	$ 162,365	$ 165,612	$ 1,729,620
Monitoring and disease surveillance	$ 1,513,920	$ 3,013,529	$ 4,255,288	$ 5,540,422	$ 6,875,370	$ 8,261,615	$ 27,946,224
Program management	$ 810,210	$ 1,696,617	$ 1,178,101	$ 1,760,956	$ 1,769,873	$ 2,279,526	$ 8,685,073
Supplemental immunization activities (SIAs)	$ -	$ 1,956,756	$ 7,712,299	$ 1,313,716	$ -	$ 1,318,061	$ 12,300,832
Shared Health Systems Costs (EPI Portion)	$ 1,521,740	$ 2,842,791	$ 4,299,932	$ 5,795,543	$ 7,276,520	$ 8,766,059	$ 28,980,846
Grand Total	$ 11,926,177	$ 20,003,422	$ 31,000,731	$31,361,499	$ 38,179,772	$46,144,396	$166,689,820

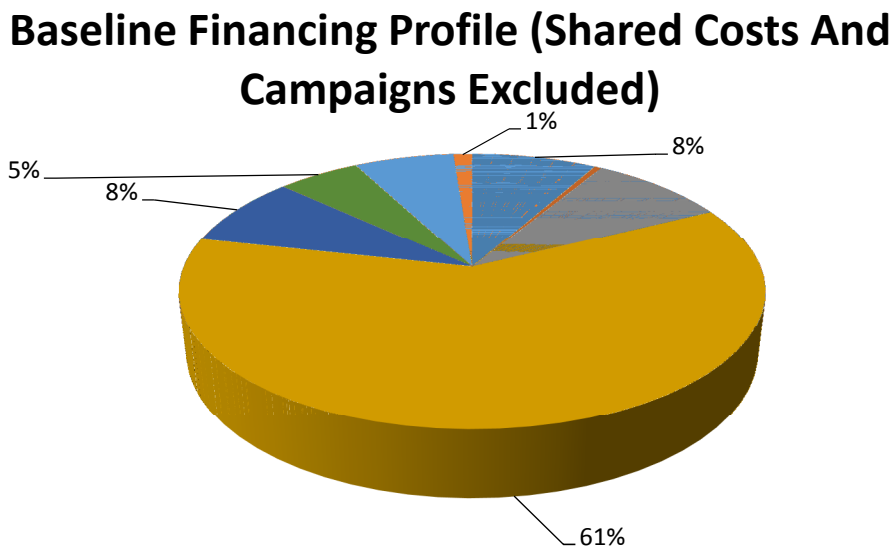
Table 11:

Cost category	2014	2016	2017	2018	2019	2020	Total 2016 - 2020
Routine recurrent costs							
Vaccines (routine vaccines only)	$4,832,072	$3,792,260	$3,903,826	$4,058,818	$6,283,029	$6,073,772	$24,111,704
Traditional	$175,001	$205,511	$209,140	$218,821	$230,781	$233,863	$1,098,117
Underused	$1,497,440	$1,147,010	$1,330,605	$1,286,980	$1,297,934	$1,345,123	$6,407,651
New	$3,159,631	$2,439,738	$2,364,080	$2,553,017	$4,754,314	$4,494,786	$16,605,936
Injection supplies	$185,494	$106,228	$117,291	$127,822	$165,562	$165,593	$682,496
Personnel	$3,549,720	$7,672,889	$11,959,564	$16,414,638	$21,043,131	$25,850,197	$82,940,419
Salaries of full-time EPI health workers (immunization specific)	$1,978,200	$4,373,352	$6,863,519	$9,451,543	$12,140,343	$14,932,914	$47,761,670
Per-diems for outreach vaccinators/mobile teams	$537,600	$1,096,704	$1,677,957	$2,282,022	$2,909,578	$3,561,323	$11,527,583
Per-diems for supervision and monitoring	$1,033,920	$2,202,833	$3,418,089	$4,681,073	$5,993,210	$7,355,960	$23,651,166
Transportation	$41,094	$50,914	$61,236	$80,243	$81,893	$83,530	$357,816
Fixed Site Strategy (Incl. Vaccine Distribution)	$8,561	$10,607	$12,757	$16,717	$17,061	$17,402	$74,545
Outreach strategy	$32,105	$39,776	$47,840	$62,690	$63,979	$65,258	$279,544
Mobile strategy	$428	$530	$638	$836	$853	$870	$3,727
Maintenance and overhead	$311,160	$416,153	$589,474	$671,819	$710,272	$735,528	$3,123,245
Cold chain maintenance and overhead	$0	$49,810	$84,089	$38,532	$16,909	$28,298	$217,638
Maintenance of other capital equipment	$0	$0	$0	$0	$0	$0	$0
Building Overheads (Electricity, Water…)	$311,160	$366,343	$505,385	$633,286	$693,363	$707,230	$2,905,607
Short-term training	$329,050	$416,823	$26,010	$403,126	$162,365	$509,638	$1,517,962
IEC/Social Mobilization	$400,000	$561,000	$416,160	$424,483	$162,365	$165,612	$1,729,620
Disease Surveillance	$480,000	$810,696	$837,199	$859,349	$882,160	$905,654	$4,295,059
Program management	$125,000	$821,651	$599,888	$676,789	$816,726	$1,012,974	$3,928,029

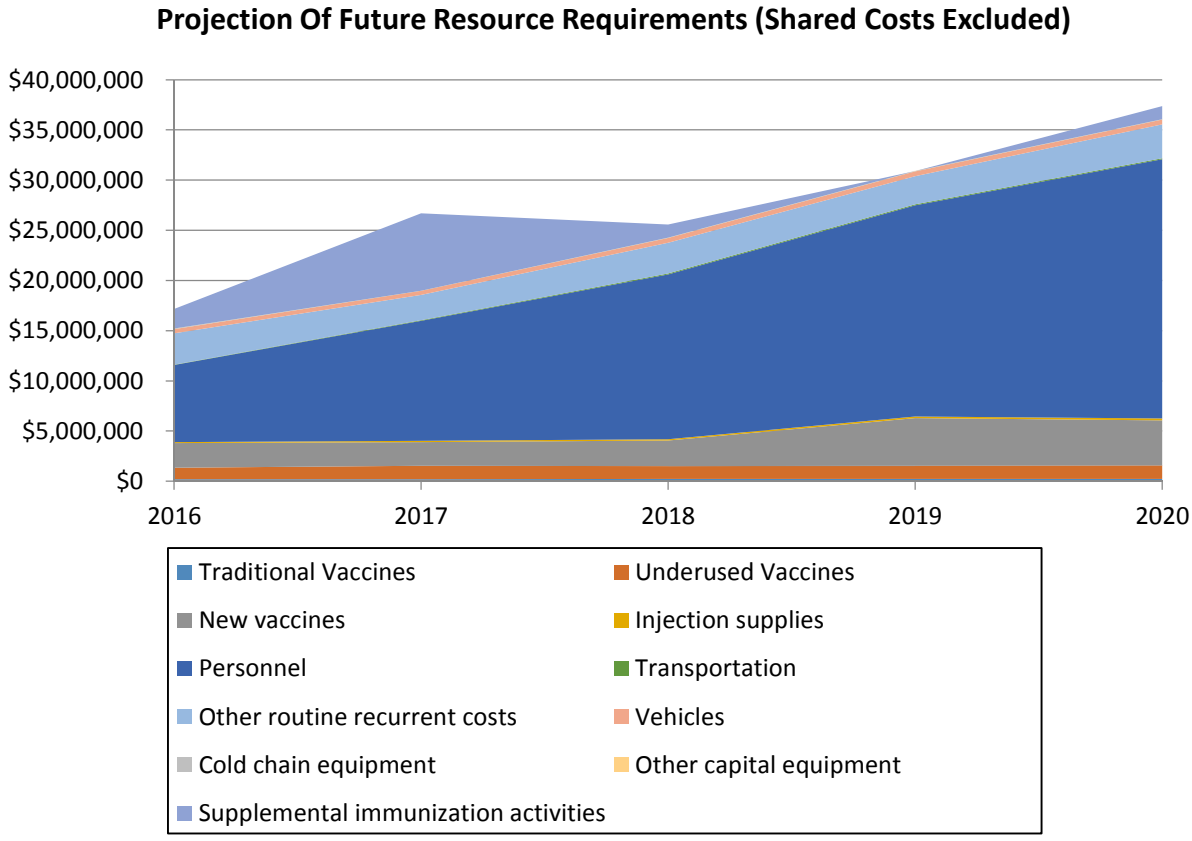
Other routine recurrent costs	$45,000	$91,800	$46,818	$47,754	$97,419	$49,684	$333,475
Subtotal	$10,298,591	$14,740,413	$18,557,466	$23,764,842	$30,404,921	$35,552,183	$123,019,824
Routine capital costs							
Vehicles (100% EPI)	$105,847	$393,265	$418,809	$472,979	$472,305	$481,751	$2,239,110
Cold chain equipment	$0	$70,196	$12,225	$14,418	$26,026	$26,342	$149,209
Other capital equipment	$0	$0	$0	$0	$0	$0	$0
Buildings Construction (100% EPI)	$0	$0	$0	$0	$0	$0	
Subtotal	$ 105,847	$ 463,462	$ 431,034	$ 487,397	$ 498,332	$ 508,094	$2,388,318
Supplemental immunization activities (SIAs)							
Children aged 0-59 months (polio)	0	1,956,756	1,309,068	1,313,716	0	0	$4,579,540
Vaccines & injection supplies	$0	$325,710	$221,704	$226,352	$0	$0	$773,766
Operational costs	$0	$1,631,046	$1,087,364	$1,087,364	$0	$0	$3,805,774
Children aged 6-59 months (measles)	0	0	1,262,617	0	0	1,277,163	$2,539,780
Vaccines & injection supplies	$0	$0	$226,351	$0	$0	$240,897	$467,248
Operational costs	$0	$0	$1,036,266	$0	$0	$1,036,266	$2,072,532
Women of child bearing age (WCBA) 14-49 years (TT)	0	0	5,140,614	0	0	40,898	$5,181,512
Vaccines & injection supplies	$0	$0	$372,789	$0	$0	$40,898	$413,687
Operational costs	$0	$0	$4,767,825	$0	$0	$0	$4,767,825
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0

Operational costs	$0	$0	$0	$0	$0	$0	$0
	0	0	0	0	0	0	$0
Vaccines & injection supplies	$0	$0	$0	$0	$0	$0	$0
Operational costs	$0	$0	$0	$0	$0	$0	$0
Subtotal	0	1,956,756	7,712,299	1,313,716	0	1,318,061	$12,300,832
Shared Health Systems Costs (EPI Portion)							
Shared Personnel Costs	$1,208,580	$2,474,408	$3,790,385	$5,158,012	$6,578,828	$8,054,413	$26,056,046
Shared Transport Costs – Vehicles, Fuel and Maintenance	$0	$0	$0	$0	$0	$0	$0
Shared buildings - construction	$2,000	$2,040	$4,162	$4,245	$4,330	$4,416	$19,192
Shared Buildings – Overhead	$311,160	$366,343	$505,385	$633,286	$693,363	$707,230	$2,905,607
Subtotal	$ 1,521,740	$ 2,842,791	$ 4,299,932	$ 5,795,543	$ 7,276,520	$ 8,766,059	$ 28,980,846
Grand Total	$ 11,926,177	$ 20,003,422	$ 31,000,731	$ 31,361,499	$ 38,179,772	$ 46,144,396	$ 166,689,820
Routine Immunization	11,926,177	18,046,666	23,288,432	30,047,783	38,179,772	44,826,336	154,388,988
Supplemental immunization activities (campaigns)	0	1,956,756	7,712,299	1,313,716	0	1,318,061	12,300,832

Programme expenditure and Financing



5.3 Financing for the programme



Financial Sustainability Strategies

Based on the above programme financing situation, the financial sustainability strategies will be focusing on the following key objectives:

- Strengthen the Government contribution to EPI,
- Secure the probable financing for the programme,
- Mobilize additional resources for the programme,
- Improve the programme management.

Respective strategies to be followed up are illustrated in the table below.

OBJECTIVES	STRATEGIES	ACTIONS
Objective 1: Strengthen Government contribution in EPI	**Strategy 1.1**: Advocacy for sustainable immunization financing	- Continue advocacy meetings with the legislature to increase budgetary allocation for immunization
		- Include discussions on immunization financing in ICC meetings
		-Provide information on immunization financing in EPI bulletin at least twice a year
		- Annually update costing and financing information for EPI activities
	Strategy 1.2: Strengthen inter-sectoral collaboration	- Ensure participation of health focal persons from line Ministries and Government Agencies in HSCC and ICC
Objective 2: Secure the probable financing for the programme	▪ **Strategy 2.1:** Secure probable funds	- Disseminate the EPI cMYP to ensure all partners are aware of planned strategies, and financing situation for the programme
		- Discuss with traditional EPI partners during the development of their respective programme of work for the coming years
Objective 3: Mobilize additional resource for the programme	▪ **Strategy 3.1:** Seek additional funds from EPI partners	Mobilize fund from other donors such as USAID, World Bank, etc. to fund planned programme activities and inputs
Objective 4: Improve programme management to achieve higher performance	▪ **Strategy 4.1:** Reduce vaccine wastage rate	- Implement open vial policy -Improve vaccine and cold chain management - Appoint a skilled logistician - Put in place a sound logistic management system

	▪ **Strategy 4.2:** Implement REC/REP strategy approach in all counties	- Train the personnel involved in the implementation of EPI activities at health facility level -Conduct regular supportive supervision -Provide operational support
	▪ **Strategy 4.3:** Strengthen VPD surveillance	-Training of county and district health officers as well as OICs -Track surveillance indicators -Conduct regular review/feedback meetings - Provide operational support to counties to enhance VPD surveillance

TIMELINE OF ACTIVITIES 2016 -2020

#	Key activities	2016	2017	2018	2019	2020
A.	**Service Delivery**					
1	Develop and implement micro-plans at HF, district, county and national levels					
2	Increase the number of health facilities providing EPI services					
3	Integrate RI with other high impact interventions (Vitamin A, etc.)					
4	Conduct outreach in underserved and hard – to – reach areas					
5	Conduct at least 3 rounds of PIRI annually					
6	Conduct high quality polio NIDs integrated with other high impact interventions (Vitamin A, Mebendazole, etc.)					
7	Conduct regular supportive supervision					
8	Conduct regular monitoring and evaluation					
	Procure stock of Vit-A for infants and postpartum mothers					
	Conduct Measles follow up campaigns for <5s integrated with Vit A, Mebendazole and LLIN					
	Prompt investigation and response to all suspected and confirmed cases of outbreak					
	Joint planning with other Health Services Programmes (Malaria Control, Family Health, Nutrition, Health Promotion, etc.)					
	MNT surveillance and response to outbreaks					

	TT SIAs nationwide in 2017 for WCBA					
	Implement the tOPV to bOPV switch plan at all levels					
	Implement Rotavirus vaccine introduction plan					
	Implement HPV Demonstration project					
	Conduct Rotavirus vaccine post introduction evaluation (PIE)					
	Prepare and submit application on HPV national rollout					
	Conduct required evaluations for HPV Demo Project					
	Ensure availability of adequate quantities of Yellow Fever vaccine in all counties					
	Strengthen surveillance and response to outbreaks of YF.					
	Establish/maintain and regular update directory of all relevant stakeholders					
	Plan and hold coordination meetings; document and disseminate the proceedings of the meetings, implement follow up actions. Details properly stored					
	Plan and hold coordination meetings with neighboring countries					
	Conduct sensitization and planning meetings with vertical programmes focal points					
	Maintain and ensure the use of the national health plan and health reforms					
	Use the existing Health Care WASH Assessment Report done in 2015 { MOH, UNICEF, Public Work} to develop and implement EPI waste management plan in all counties					
	Adopt appropriate waste management technology and system					
	Provide capacity building for service providers at all levels					
	Implement activities in the EVM improvement plan					
B.	**Advocacy, communication and social mobilisation**					
27	Conduct health sensitization and coordination meetings at all levels					
28	Update and implement communication plans for routine and SIAs					
C.	**Surveillance**					
	Conduct regular surveillance visits to priority sites.					

	Conduct training for all surveillance officers at all levels					
	Production of surveillance tools and training materials					
	Conduct community and clinicians sensitization					
	Support outbreak investigation and response					
	Provide operational support at all levels					
	Hold NTF, NPEC and NCC meetings					
D.	**Vaccine supply, quality and Logistics**					
	Annual forecasting, procurement of bundle vaccines					
	Installation of adequate cold chain equipment and temperature monitoring devices					
	Develop distribution plan,					
	Distribute bundle vaccines					
	Expansion/construction of dry storage at all levels					
	Implement activities in the EVM improvement plan					
	Procure 22 vehicles (15 for CHTs; 2 regional cold stores; 5 national) for supervision					
E.	**Programme Management**					
	Conduct EPI human resource needs assessment at all levels					
	Develop human resources plan (including maintenance technicians)					
	Recruit additional staff to fill EPI vacant and new posts at all levels					
	Conduct training needs assessment and develop multi-year training plan					
	Conduct bi-annual staff evaluation and institute measures to improve programme implementation					
	Conduct in-depth EPI review (external)					
	Conduct formative research to drive decision making to improve immunization systems					
	Conduct mid-term and end of period programme evaluations for future planning					

Annual workplan 2016

Id Number	Task name	Start month	End month	% Compl	1	2	3	4	5	6	7	8	9	10	11	12	Budget	Expenditure Tracking	Notes
	Provide quarterly financial support to 354 HF for outreach Vaccination Teams for 12 months @ US$50.00	1	12	0.0%													416,520		
	Conduct refresher training on immunization in practice for 66 TOT and 1,108 service providers	1	1	0.0%													216,565		USD$53,110.00 available
	Conduct quarterly periodic intensification of routine immunization (PIRI) in all counties	3	12	0.0%													525,000		PIRI activities implementation dates: March, June, September and December 2016
	Conduct quarterly monitoring and supportive supervision to district and HFs (provide US$150/month for 12 months)	1	12	0.0%													27,000		
	Assignment of technical assistant to support poor performing Counties , 1month (DSA, Fuel Vehicle maintenance and contigency)	2	2	0.0%													30,000		
	Conduct national micro-planning exercise	1	1	0.0%													53,110		
	Urban Strategy Implementation	1	12	0.0%													216,000		
	HPV Demo Project in Bong & Nimba	4	10	0.0%													198,500		Assessment in April, launch in May, and 2nd dose administration in November 2016
	Conduct 3 rounds of polio NIDs with one of the rounds being integrated with vit A & mebendazole/albendazole for children under five years	2	10	0.0%													1,956,756		round 1 in Feb., round 2 in Mar., and round 3 in Oct. 2016, budget is including vaccine cost.
	Mass media communication	1	12	0.0%													90,000		
	Support the development/production of messages	4	4	0.0%													309,750		
	Provide support to disseminate messages to counties for switch and new vaccine introduction	1	3	0.0%													200,000		
	support for community engagement (community meetings, defaulter tracking, etc.)	1	12	0.0%													235,000		
	Production and airing of health communication materials and messages for routine immunization and campaigns	1	12	0.0%													70,000		
	Conduct BCC, IPC Training at national and county level.	3	3	0.0%													53,000		
	Revision of social mobilization plan/ strategy	2	2	0.0%													10,000		
	Monitoring and supervision of Routine Socail mob and communication activities in the fifteen counties	3	12	0.0%													50,000		
	Provide regular logistics support and equipment for the conduct of active surveillance activities at counties and districts	3	12	0.0%													60,000		Support to be provided quarterly
	Support outbreak investigation and response	1	12	0.0%													30,000		
	Provide financial support for NCC, NEC, and NPEC activities	3	12	0.0%													15,000		

Annual workplan 2016 Cont'd

Id Number	Task name	Start month	End month	% Compl	1	2	3	4	5	6	7	8	9	10	11	12	Budget	Expenditure Tracking	Notes
	Fuel for County Generators	1	5	0.0%													52,500		
	Fuel for County Vehicles for vaccine distribution	1	5	0.0%													42,000		
	Vehicle maintenance support county level vehicles @ $250/month	1	5	0.0%													51,000		
	Support for Transport at district level for distribution of vaccines x 91 districts	1	12	0.0%													52,800		
	Supplies and maintainance for district & HF motorbikes 150 @ $20/month	1	12	0.0%													36,000		
	Vehicles insurance for 1 year	2	2	0.0%													5,100		
	Motorbike insurance for 1 year	2	2	0.0%													7,500		
	Support for running and maintainance of central and 2 regional cold	1	12	0.0%													36,000		
	Insurance, running and maintainance cost for refrigerated and utility trucks	2	2	0.0%													5,400		
	Procurement (international) of one 4 X 4 utility truck for delivery of assorted immunization supplies	2	8	0.0%													60,000		
	Purchase of 140 pieces solar direct drive refrigerators for the expansion of HF cold chain	2	8	0.0%													560,000		
	Purchase of IPC materiels	3	9	0.0%													280,684		
	Purchase of rain gears for vaccinators and midwives for 530 HFs	1	2	0.0%													26,500		
	Procrement of data management and ICT equipment (e.g. Lap top, back-up, antivirus, etc) for County and National levels	3	4	0.0%													24,000		
	Procure 100 motorbikes for integrated outreach services	1	5	0.0%													236,300		

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