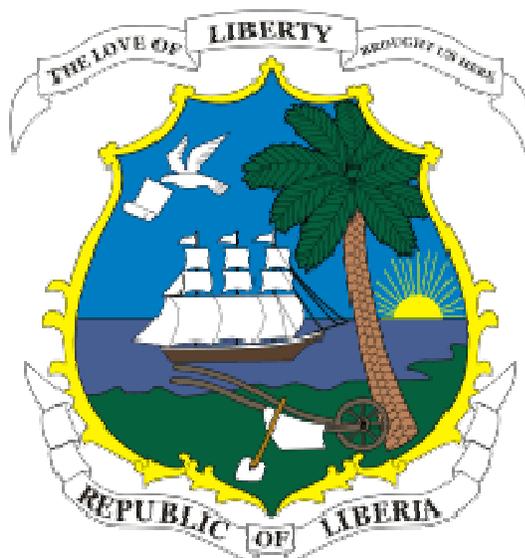


# REPUBLIC OF LIBERIA



## MINISTRY OF HEALTH AND SOCIAL WELFARE NATIONAL EPI STRATEGIC PLAN 2011-2015

REVISED  
December 2012

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The Comprehensive Multi- Year Plan (cMYP) 2011-2015 is developed as a part of normal 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) to ensure sustainable development of the EPI programme.

On behalf of the Ministry of Health and Social Welfare (MOH&SW), I wish to acknowledge all individuals, program managers of the MOH&SW, and non-governmental organizations, who in their various ways gave support to the successful completion of the Comprehensive Multi- Year Plan.

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Hon. Minister  
Ministry of Health and Social Welfare, Liberia

## LIST OF ACRONYMS AND ABBREVIATIONS

1. NRA	National Regulatory Authority.
2. AFP	Acute Flaccid Paralysis
3. CHT	County Health Team.
4. CSO	County Surveillance Officer.
5. DSO	District Surveillance Officer
6. EPI	Expanded Program on Immunization
7. MOH&SW	Ministry of Health and Social Welfare.
8. NGO	Non-governmental Organization.
9. WHO	World Health Organization.
10. MNT	Maternal and Neonatal Tetanus.
11. OPV	Oral Polio Vaccine.
12. PHC	Primary Health care.
13. UNICEF	United Nations Children Fund.
14. WPV	Wild Polio Virus.
15. GIVS	Global Immunization Vision and Strategies 2005 -2015
16. cMYP.	Comprehensive Multi-Year Plan
17. MDGs	Millennium Development Goals..
18. ICC	Inter-agency Coordinating Committee.
19. SIAs	Supplemental Immunization Activities.
20. Vit. A	Vitamin A.
21. RED	Reach Every District.
22. NIDs	National Immunization Days.
23. LLITN	Long Lasting Insecticide-Treated Nets.
24. AEFI	Adverse Events Following Immunization.
25. AD	Auto-disabled.
26. YF	Yellow Fever.
27. MSL	Measles.
28. VPD	Vaccine-Preventable Diseases.
29. IEC	Information, Education and Communication.
30. OPV3	Third Dose of Oral Polio Vaccine
31. GAVI	Global Alliance for Vaccines and Immunization.
32. PRSP	Poverty Reduction Strategy Paper
33. U5MR	Under-Five Mortality Ratio/Rate.
34. IMR	Infant Mortality Rate
35. BCG	Bacillus-Calmette-Guerin.
36. DQA	Data Quality Audit.
37. HepB	Hepatitis B Vaccine.
38. Hib	Hemophilus Influenza Type b Vaccine..
39. MDVP	Multi-Dose Open Vial Policy.
40. PIE	Post-Introduction Evaluation.
41. SOPs	Standard Operating Procedures.
42. GDP	Gross Domestic Product.
43. CHO	County Health Officer.
44. OIC	Officer-In-Charge.
45. EPR	Emergency Preparedness and Response.
46. BCC	Behavioural Change Communication.
47. NPEC	National Polio Expert Committee.
48. NCC	National Certification committee.

49. IPC	Inter-personal communication.
50. VVM	Vaccine-Vial Monitor.
51. TOT	Training of Trainers.
52. IDSR	Integrated Disease Surveillance and Response.
53. ARI	Acute Respiratory Infections.
54. UNMIL	United Nations Mission in Liberia.
55. PEI	Polio Eradication Initiative.
56. RI	Routine Immunization
57. CWIQ	Core Welfare indicator Questionnaire
58. SWOT	Strengths, Weaknesses, Opportunities & Threats

## EXECUTIVE SUMMARY

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 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 vitamin A & mebendazole into routine immunization in 2011.

The 2007 general and presidential election heralded a new beginning of the health system and the introduction of the Basic Package of Health Services (BPHS). The number of health facilities has increase from 350 prior to the war to 567. Presently 567 health facilities are offering immunization services as a result the Penta-3 administrative immunization coverage in 2009 increased to 93%. There has been a gradual increase in the coverage. Liberia is planning to introduce the pneumococcal vaccine in 2013 in line with the global goals and targets within the framework of the Global Immunization Vision and Strategy (GIVS).

A comprehensive EPI review was conducted in early 2012; this together with coverage surveys has provided the baseline for development of new goals and set targets for the EPI program for the next few years. In addition situation analysis was carried out using SWOT analysis which informed the selection of national priorities, which inturn informed the selection of key activities.

The main strategic objective for 2011-2015, is to increase national Penta-3 coverage from 63% card only(Cluster Survey 2012) to 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 2015.

The specific objectives are to:

- Ensure the availability of well maintained cold chain and logistic systems at all levels by 2015;
- Ensure that there are no vaccine stock-outs by 2011 to 2015;
- Increase the Financial sustainability of the Program;
- 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 2015;
- Improve organization of immunization services to guarantee sustainable and equitable immunization for every child by 2015 and;
- Improve the national surveillance system in line with the global goals by 2015.

In order to ensure the financial sustainability of the programme, budget was allocated to all activities for 2011-2015 including the Government and partner agencies (UNICEF and WHO) commitments for service delivery, advocacy and communication, surveillance, vaccine supply, quality and logistics, and programme management. The total budget allocated for the programme in five years for all components is U\$44,178,856. 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 resource gaps for the implementation of the strategic plan of action.

## **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 eradication initiative by 2015 and elimination of maternal and neonatal tetanus by 2015.

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 Program on Immunization (EPI) of the Ministry of Health and Social Welfare (MOH&SW) has initiated and sustained the reactivation process of all components of the program.

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 (2011-2015) 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 EPI.

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 the child 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 childhood diseases, such as measles, tuberculosis, poliomyelitis, yellow fever, diphtheria, whooping cough, tetanus, hepatitis B, child pneumonia and meningitis.

The cMYP (2011-2015) will reinforce the framework that will guide the EPI program 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 EPI 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 & SW 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.

## 2. BACKGROUND

Liberia has a total land area of approximately 111,370 square kilometres and lies on the Western coast of Africa, bounded on the West by Sierra Leone, East by Cote d'Ivoire, North by Guinea and on the South by the Atlantic Ocean.

Administratively, Liberia is sub-divided into 5 Regions, 15 counties and 88 health districts. However, In Liberia counties are equivalent to districts as defined by WHO. There are more than 195 chiefdoms, 375 clans and 3,694 towns and human settlements within Liberia's territorial confines.. The accessibility within the country is very hard, especially from the Counties Capitals to the districts. The rainy season covers almost 8 months in the year from April to November. The communications network: e.g. roads, telephone, radio and TV as well as the availability of energy sources are very limited.

According to the 2008 national housing and population census report, the population of Liberia is 3,489,072; with an annual growth rate of 2.1%. The projected population for 2013 is 3,857,310. In line with this, the proportion for children less than one year under 5 years, under 15 years, Pregnant Women and Women of child bearing age are derived. The infant and under-five mortality rates 71 and 110 per 1,000 live births respectively (LDHS-2007).

Liberia has an adult literacy rate of 55% (41% for female compared to 69% for male according to CWIQ-2007). Net Primary school enrolment ratio is 38% for male and 37% for female

Life expectancy at birth is 48 years: 48.7 for females and 44.7 for males. The national fertility rate has decreased substantially from 6.2 to 5.2. Malnutrition among under five is 8% (wasting), according to 2007 LDHS.

The unemployment rate in the formal sector is put at 18.8% male & 34.2% female, with all development indicators at their lowest level. 63.8% of the Liberian population live below the poverty line while the human development index (0.442) ranks the country as one of the least in the world. The electricity, water and sewage system destroyed during the civil conflict is gradually being restored in some parts of the country.

### Demographic Data

• Total Land Area	111kmsq
• Total Population	3,791,516
• Annual Growth Rate	2.1%
• Life Expectance years	48
• Infant Mortality Rate	71/1000
• Under Five Mortality Rate	110/1000
• Maternal Mortality Rate	994/100,000
• Stunting prevalence in children <5 years of age	39%
• Population with access to safe drinking water	65%
• Population with access to safe excreta disposal means	45%
• Antenatal care received at clinics	93.6%
• Deliveries attended by skilled personnel	41.7%

*Source: (National Census 2008/LDHS 2007)*

The country has introduced a strategy called Basic package of Health Services (BPHS) to meet the Health needs of its people. This is strictly based on the principles of Primary Health Care (PHC) encompassing the Alma Ata Declaration of Health for all by the year 2000 and beyond. Liberia is also a signatory to the World Summit of Children goals adopted in New York, in October 1990.

The major burden of disease is made up of preventable communicable diseases. The leading cause of outpatient consultations among all age groups is Malaria followed by Acute Respiratory Infections (ARI) and soil-transmitted Helminths. Among children aged below 1 year of age, malaria is the commonest cause of outpatient mortality followed by ARI and diarrhoea. The leading cause of under-1 year mortality rate in 2006 (UNICEF official summary of the state of the World children) was malaria followed by Diarrhoeal diseases, ARI, and Anaemia.

The civil crisis during 1989-2003 had a most devastating effect on the functioning and performance of the health sector. Public spending for health dropped from 10.2% in 1981 to 5.6% in 1990 and virtually 0 in 1996. Since the emergence of a new government in 2006 the proposed four years budget (2007-2010) of US \$283 million is based on US \$12 per capita increasing to US \$18 per capita.

Before the war, 350 functioning health facilities made up Liberia's health care delivery system. Since the inception of the war, most of the facilities were destroyed and vandalized. Currently, there are 567 providing immunization services.

The human and financial resources are inadequate to meet the needs of the health sector, making it difficult to deliver quality services, even in areas that are accessible. This is attributed to conditions created by the war, which caused many medical and paramedical personnel to flee the country or seek employment in other sectors.

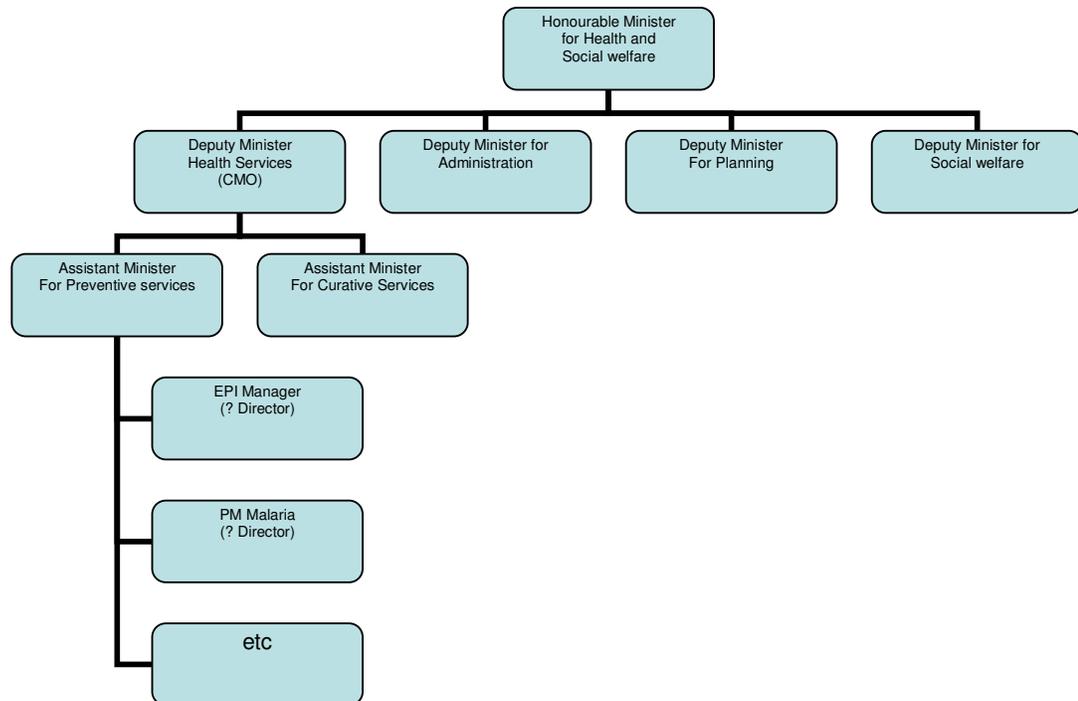
After the prolonged years of civil conflict, the 2006 national and presidential election heralded the start of a new regime under the watchful eyes of her Excellency Madam Ellen Johnson Sirleaf. Presently, the country enjoys relative peace and stability.



## 2.1 The Liberia Ministry of Health and Social Welfare Structure and the EPI Programme

### 2.1.1 Ministry of Health & Social Welfare Organogram

The Ministry of Health and Social Welfare organizational structure is divided into four departmental pillars, which are under the direct management of the Minister of Health and Social Welfare. The four departments are Social Welfare, 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**

Liberia launched its Expanded Programme on Immunization (EPI) in 1978. The EPI covers the 5 Regions, 15 Counties and 88 health districts. The national EPI Policy as part of the National Health Policy provides one dose of BCG at birth, three doses of Pentavalent doses of (at 6, 10 and 14 weeks), four doses of OPV (at birth, 6, 10 and 14 weeks) one dose of measles (at 9 months) and one dose of yellow fever (at 9 months). Pentavalent vaccine was successfully introduced in Liberia in 2008. 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 injection safety policy, the EPI Program switched to the use of Auto-disable syringes in 2005.

Improvement in Immunization services over the years has led to gradual increase in coverage as a result of the following: Increase in the number of health facilities, expansion of the cold chain, increased outreach activities and increased support from partners. Administrative coverage for DPT3 (Penta-3) rose from 31% in 2004 to 93% in 2009.

### **2.1.2.1 The EPI Policy**

Like all other components of the health delivery system of the MOH&SW, the EPI program 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 revision was conducted 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 and Social Welfare 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 National Regulatory Authority. Only agencies, institutions, organizations and or individuals designated and or approved by the Ministry of Health and Social Welfare 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 program has been carefully structured so as to meet their needs.

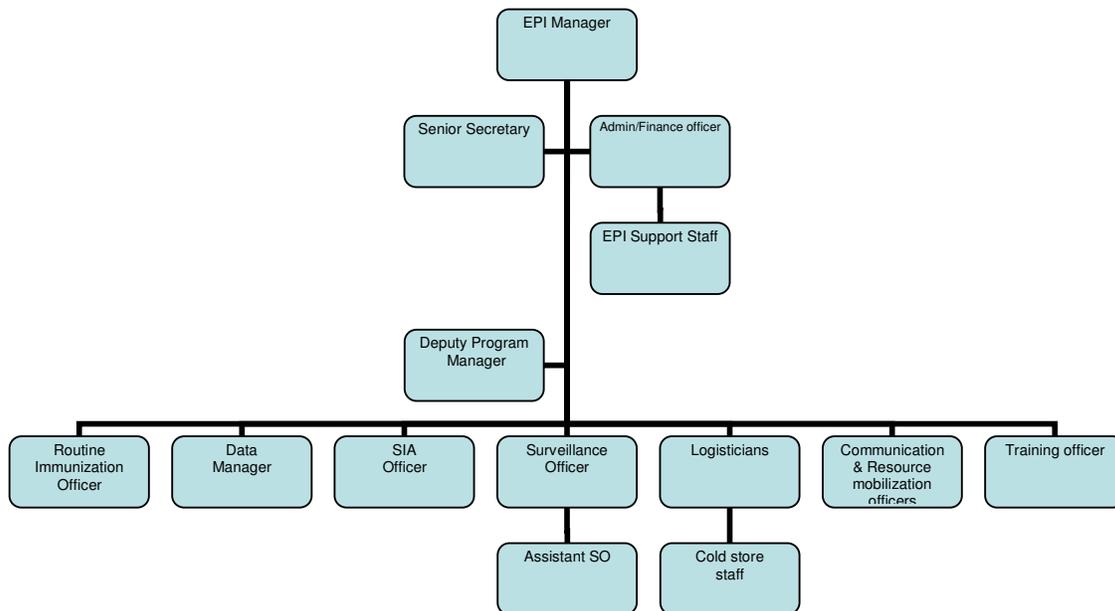
There are four (4) levels constituting the EPI structure:

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

National level

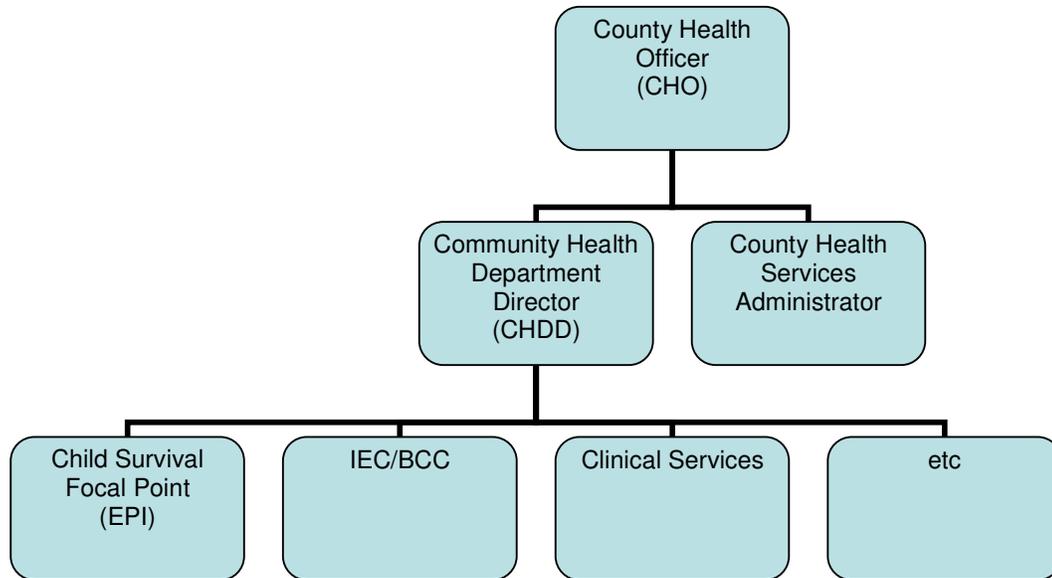
Under the national level structure are the following features:

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



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 ranks among the least developed countries in the world, based on 2007 Human Development Index Ranking (HDI). The Liberian economy has been in a state of decline since the 1980s due to extreme social and political upheaval and mismanagement. The civil war led to the destruction of productive capacities and physical infrastructures on a massive scale. However, this result has been seen as a precipitous of economic decline and the deepening of national poverty. Liberia -- a nation that had achieved food security and middle income status in the 1970s -- is today a shell of its past. The per capita income declined from US\$1,269 in 1980 to US \$163 in 2005, a decline of 87 percent. It is estimated that three fourths of the population is living below the poverty line on less than US\$1 a day (iPRS, 2007). The south-eastern region of the country, particularly Sinoe, Grand Gedeh, River Gee, Grand Kru and Maryland counties, lag behind the rest of the country in terms of socio-economic development.

During the war, agricultural production dropped precipitously as people fled their farms and markets closed. Mining and timber activity nearly ceased, rubber plantations closed, manufacturing dropped sharply and services grounded to a halt. Basic infrastructure was badly damaged by the conflict. There was virtually no public source of electricity or pipe-borne water in the country for 15 years until recently after the general and presidential election, when power and water were restored to parts of Monrovia and its surroundings in July 2006. Most of the country is still in darkness. Schools, hospitals, and clinics were badly damaged, and most government buildings seriously damaged while some are in shambles. Many roads are still impassable, which serves as a serious constraint for peace building efforts, weakens economic activity and undermines basic health and education services.

Years of mismanagement have left Liberia with a huge external debt burden, estimated at about US\$3.7 billion as of mid-2005, equivalent to an astonishing 800 percent of GDP and 3000 percent of exports. The decimation of the economy has led to very high levels of unemployment (one estimate suggests unemployment in the formal sector is 85 percent). With the collapse of so many sectors of the economy, ex-combatants and returning refugees and internally displaced persons are struggling to find work. The majority of the population works in agriculture and subsistence farming or the informal economy in trading and small scale production. Many families and communities rely on external remittances from relatives abroad and spin offs from donor-funded investments through international NGOs. Almost without exception Liberians are far worse off today than they were twenty five years ago. The Liberian economy is progressing gradually, thanks to investments in physical infrastructure, donor inflows and a gradual improvement in security in rural and urban areas. The economy finally stabilized and began to rebound in 2004. Growth reached 5.3 percent in 2005 and is expected to reach 9.0% in 2011. However, total government expenditure including grants has not exceeded US\$85 million since 2000, translating into spending per capita of only about US\$25, one of the lowest levels in the world. The 2009/10 budget was at US\$287 million, over 300% increase. Inflation, which jumped to 15 percent in 2003, has declined gradually and is now estimated to be around 6%. Massive population displacement in rural areas during the war has led torpid acceleration in urbanization. Currently close to half of Liberia population resides in urban communities. Monrovia currently hosts more than one million inhabitants according to the 2008 National Housing and Population Census, double its pre-war

population. Poor waste and water management systems have led to high levels of pollution and the rapid spread of communicable diseases in urban areas (GOL and UNDP, 2006). The literacy rate is less than 40%. Between 2000 and 2002, the Gross Enrolment Ratio declined from 73% to 49% for boys and from 73% to 36% for girls. As of 2004, the proportion of pupils starting grade one and reaching grade five was 35% for boys and 27% for girls. Net enrolment is targeted at 100% by 2015 from current level of 30%. Currently, 30% of males and 37% of females of school age are not enrolled in schools – mainly due to not having enough money to pay for associated school costs, or not having a school in the community (UNDP, 2006).

### 3.2 EPI Review

The latest comprehensive EPI review in Liberia was conducted in the first quarter of 2012, however for the purpose of this cMYP the findings of post introduction evaluation conducted in November 2008 following the introduction of Pentavalent vaccine in January 2008 has been mostly used for setting priorities.

#### Context for the Post-Introduction Evaluation in Liberia

A post introduction evaluation (PIE) is recommended by WHO for all countries that have introduced a new vaccine, ideally within 6-12 months of introduction. The objective of the evaluation is to assess the programmatic impact of the introduction on the immunization programme.

The evaluation group of the PIE conducted in Liberia was composed of representatives from: WHO, CDC and the Ministry of Health and Social Welfare (MOH&SW). UNICEF participated in the pre-assessment meeting and contributed to the final recommendations based on the findings of the field team. Six counties were selected based on criteria of good, medium and poor performance, and within those six counties, three HFs were selected based on criteria of good and poor performance. Observation visits and interviews were conducted at national, county and health facility (HF) levels, and interviews with caregivers on exit from immunization sessions were also conducted. In total, 25 sites were evaluated during the 5-day field trip.

#### Key findings

Strengths	Areas for Improvement
<b>Pre-implementation, Planning and Training</b>	
<ul style="list-style-type: none"> <li>▪ National plan of introduction developed and available</li> <li>▪ Cascade training conducted – all HCWs interviewed had been trained</li> <li>▪ NGOs involved in training</li> <li>▪ Most HFs visited had no gap between withdrawal of DPT and introduction of pentavalent</li> <li>▪ Data tools updated to reflect new vaccines</li> </ul>	<ul style="list-style-type: none"> <li>▪ No county-specific plans</li> <li>▪ No written policy on how to handle remaining DPT stock</li> </ul>
<b>Health Care Worker Knowledge</b>	
<ul style="list-style-type: none"> <li>▪ Good knowledge of HCWs at county level on new vaccines</li> <li>▪ Good knowledge of HCWs at HF level on</li> </ul>	<ul style="list-style-type: none"> <li>▪ Varying knowledge of HCWs at HF level on the diseases prevented by the new vaccines</li> </ul>

<ul style="list-style-type: none"> <li>▪ routine immunization</li> </ul>	
<b>Advocacy, Communication and Acceptance</b>	
<ul style="list-style-type: none"> <li>▪ High profile launches at all levels using local media - evidence of political will and commitment</li> <li>▪ HCWs are well prepared to provide information to caregivers</li> <li>▪ Vaccine well received by community - no refusals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Weak inter-personal programme communication</li> <li>▪ General lack of awareness by the mothers regarding diseases prevented by the vaccine</li> </ul>
<b>Coverage and Reporting</b>	
<ul style="list-style-type: none"> <li>▪ Daily tallying is correctly done</li> <li>▪ Monthly reporting done at all levels</li> <li>▪ Immunization monitoring charts are completed in all HFs</li> <li>▪ Data received at county level is mostly complete and on time</li> </ul>	<ul style="list-style-type: none"> <li>▪ Many HFs have difficulty in calculating coverage figures</li> <li>▪ Data not being used for action in most counties and HFs</li> <li>▪ Outreach not systematically recorded separately</li> </ul>
<b>Adverse Events Following Immunization</b>	
<ul style="list-style-type: none"> <li>▪ Good knowledge of AEFI at all levels- including mothers</li> <li>▪ Zero reporting (AEFI) in some facilities)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Process for managing and reporting of AEFIs over-reliant on county officials</li> </ul>
<b>Monitoring and Supervision</b>	
<ul style="list-style-type: none"> <li>▪ 94% of HFs reported <math>\geq 1</math> supervisory visit in the past 6 months</li> <li>▪ Supervision is regular and integrated</li> <li>▪ Logbooks are used at some HFs to document their findings and recommendations</li> <li>▪ Regular meetings are being held in some counties and HFs</li> <li>▪ Programme data is being reviewed in some counties during the review meetings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Impact of supervision from the county level is weak</li> <li>▪ Only 29% of HFs receiving supervisory visits received written reports of the visit</li> <li>▪ Recommendations of supervisory visits are not implemented</li> <li>▪ Visits not used as opportunities for on-the-job training</li> <li>▪ Capacity of HCWs is not currently sufficient to absorb the transition of HF management from NGOs</li> <li>▪ Regular meetings held not used to review data</li> </ul>
<b>Cold Chain Capacity and Management</b>	
<ul style="list-style-type: none"> <li>▪ Pentavalent vaccine was generally stored at correct temperature</li> <li>▪ Capacity was adequate but not uniform at most levels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Temperatures not uniformly monitored and recorded</li> <li>▪ Some HFs are over-stocked with vaccine - beyond safe capacity</li> </ul>
<b>Vaccine Management, Storage and Wastage</b>	
<ul style="list-style-type: none"> <li>▪ No expired vaccine was observed (pentavalent or other vaccines)</li> <li>▪ Few stock-outs reported in the past 6 months</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stock records were not well kept</li> <li>▪ Vaccine requisitions not based on need but on previous quantity ordered</li> <li>▪ Lack of designated, secure dry store at the county level.</li> <li>▪ Only 11% of HFs reported wastage rates.</li> </ul>
<b>Waste Management and Injection Safety</b>	

<ul style="list-style-type: none"> <li>▪ Most incinerators were functioning</li> <li>▪ 94% of disposal sites were clean</li> <li>▪ Safe injection practices were utilized at all vaccination sessions observed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Only 33% of incinerators were fenced off</li> <li>▪ Incineration at proper temperature was not uniformly observed</li> </ul>
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### Key Recommendations

- Enhance HCW and community knowledge of diseases prevented by the new vaccines to create demand for services
- Provide nation-wide refresher training with special attention to the following issues:
  - Vaccine stock and cold chain management
  - Data quality - calculating, recording, analysing and using data for action
- Update and implement nation-wide AEFI monitoring protocol through training and sensitization at all levels, including both preventive and curative HCWs
- Improve quality of supportive supervision at HF level
- Use county-level monthly review meetings to review immunization data with HFs staff and County Health Team (CHT) members. The data should be interpreted at the meetings to monitor programme quality and make planning decisions for programme improvement
- The Ministry should play a leading role in the transition of HF management from NGOs to the Ministry.
- The Ministry should focus now on building the capacity of the CHTs and HF staff to prepare for eventual transition of HFs to MOH&SW management in 2009

### 3.3 SWOT analysis by system components.

Table: 1

Components	Strengths	Weaknesses	Opportunities	Threats
1. Service delivery	<ul style="list-style-type: none"> <li>• Existence of strong coordination mechanism at national and county levels including ICC and TCC.</li> <li>• Over 90% of the public health facilities in Liberia are providing EPI services.</li> <li>• devoted health staff at national, district and health facility levels</li> <li>• Regular supply of</li> </ul>	<ul style="list-style-type: none"> <li>• Most private health facilities are not providing routine EPI services</li> <li>• Most service providers are not trained.</li> <li>• Non-estimation of wastage rates.</li> <li>• Non-utilization of defaulter tracing tools.</li> <li>• No annual</li> </ul>	<ul style="list-style-type: none"> <li>• Existence of community health committees (CHCs) and general community health volunteers (gCHVs).</li> <li>• Availability of national health plan.</li> <li>• There is political commitment</li> <li>• Active participation of some partners in routine</li> </ul>	<ul style="list-style-type: none"> <li>• No allotment in national budget for EPI services.</li> <li>• Difficult terrains and poor road network.</li> <li>• Draw-down of the UN peace mission (UNMIL).</li> <li>• Withdrawal of International NGOs.</li> <li>• Global</li> </ul>

	<ul style="list-style-type: none"> <li>• bundled vaccine.</li> <li>• Defaulter tracing tools in place.</li> <li>• Gradual increase in administrative coverage from 2005 to present.</li> <li>• Integrated delivery of high impact interventions into routine immunization.</li> </ul>	<ul style="list-style-type: none"> <li>• micro-plan for routine immunization.</li> <li>• Low staff motivation and low salary.</li> <li>• Irregular supervision.</li> <li>• High turn over and staff attrition rates.</li> <li>• Irregular and ad-hoc outreach activities.</li> </ul>	<ul style="list-style-type: none"> <li>• immunization.</li> <li>• Support from GAVI and other partners</li> <li>• Ongoing construction of additional health facilities to provide EPI activities</li> <li>• Debt relief under the HIPC initiative.</li> </ul>	<ul style="list-style-type: none"> <li>• economic crisis.</li> </ul>
Surveillance	<ul style="list-style-type: none"> <li>• Existence of surveillance at all levels.</li> <li>• Case-based surveillance for priority diseases established.</li> <li>• Strong collaboration of partners in support of surveillance.</li> <li>• Review mechanism established.</li> <li>• Target for many of the surveillance indicators achieved and maintained.</li> <li>• Existence of National Public Health Reference Laboratory.</li> <li>• Recruitment of health professionals as surveillance officers.</li> <li>• Retraining of surveillance officers.</li> </ul>	<ul style="list-style-type: none"> <li>• National Public Health Reference Laboratory not accredited.</li> <li>• IDSR not fully implemented</li> <li>• Timeliness and completeness of reporting is weak.</li> <li>• Weak feedback mechanism from upper to levels</li> <li>• Lack of transportation for surveillance activities at district level.</li> </ul>	<ul style="list-style-type: none"> <li>• Technical support from STOP teams.</li> <li>• Training of new county surveillance officers.</li> <li>• Support from WHO and partners.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of importation of WPV.</li> <li>• Declining funding for polio eradication.</li> </ul>

## SWOT analysis by system components

Table: 2

Components	Strengths	Weaknesses	Opportunities	Threats
Vaccine supply and quality	<ul style="list-style-type: none"> <li>• Forecast at national level</li> <li>• Regular supply of bundled vaccines.</li> <li>• Effective vaccine management at national level including the use of Stock Management Tool (SMT).</li> <li>• Effective vaccine co-financing mechanism established and sustained.</li> <li>• All vaccines received have VVM except BCG.</li> <li>• Strict adherence to the multi-dose vial policy.</li> <li>• All vaccines are from WHO pre-qualified manufacturers.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of laboratory facilities for vaccine quality assurance.</li> <li>• Limited monitoring of vaccine wastage at all levels.</li> <li>• Non-utilization of the vaccine management tool (DVD-MT) at county level.</li> <li>• In-effective vaccine management at county level.</li> </ul>	<ul style="list-style-type: none"> <li>• Continual GAVI co-financing support.</li> <li>• Establishment of the supply chain management mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing global demand and prices of vaccines</li> <li>• Global financial crisis</li> </ul>
Cold chain and logistics	<ul style="list-style-type: none"> <li>• Current vaccine storage capacity at national level is adequate. (Negative cold store :15m<sup>3</sup> and Positive Cold store: 80m<sup>3</sup>)</li> <li>• Adequate quantity of vaccine carriers at all levels.</li> <li>• Adequate quantity of injection safety equipments at all levels.</li> <li>• All injectable vaccines are administered with auto-disable syringes.</li> <li>• 355 (64%) solar refrigerators</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate quantity of cold boxes at all levels.</li> <li>• Inadequate number of functional Waste Disposal Units (WDUs).</li> <li>• Inadequate number of maintenance technicians for repair of solar refrigerators.</li> <li>• Lack of refrigerator and utility trucks for transportation of vaccines and supplies.</li> </ul>	<ul style="list-style-type: none"> <li>• Continual assistance from partners (UNMIL, WHO, UNICEF etc) in vaccine transport and storage.</li> <li>• Replacement of kerosene refrigerators with solar refrigerators.</li> </ul>	<ul style="list-style-type: none"> <li>• Drawdown of partners. (UNMIL).</li> <li>• Declining partners support.</li> <li>• Theft of EPI logistics (motorcycles, solar panels, cold boxes and vaccine carriers)</li> <li>• Lack of WDU components to complete installation.</li> </ul>

	<p>available in country.</p> <ul style="list-style-type: none"> <li>• All counties have at least one incinerator (15 DeMonforte incinerators in use across the country).</li> <li>• Existence of guidelines on: <ul style="list-style-type: none"> <li>. Vaccine and equipment management</li> <li>. Injection safety/safe disposal and destruction of EPI injection waste materials</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate dry storage facility at all levels.</li> <li>• Lack of designated staff for the maintenance of the WDUs.</li> <li>• 36% of our public health facilities are without solar refrigerators.</li> <li>• Inadequate VHF radios at the county level.</li> </ul>		
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### SWOT analysis by system components (Contd.)

Table: 3

Components	Strengths	Weaknesses	Opportunities	Threats
Advocacy and communication	<ul style="list-style-type: none"> <li>• Availability of National Communication strategy document.</li> <li>• Communication core team at national level.</li> <li>• Existence of health promotion officers in all 15 counties.</li> <li>• Support from partners.</li> <li>• Symposium on sustainable immunization financing held at the legislature.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of visual aids at health facility level.</li> <li>• Limited Inter-Personal Communication skills at the health facility level.</li> <li>• Social mobilization strategy is not adequately monitored.</li> <li>• Lack of social mobilization activity for routine immunization.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Extensive network of community radios in country.</li> <li>• Availability of gCHVs and CHCs.</li> <li>• Existence of legislative Health Committees.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
Components	Strengths	Weaknesses	Opportunities	Threats
Management	<ul style="list-style-type: none"> <li>• The establishment of government authority in all parts of the Country</li> <li>• Currently, there exist a</li> </ul>	<ul style="list-style-type: none"> <li>• Irregular funding</li> <li>• No annual operational plans at health facility</li> </ul>	<ul style="list-style-type: none"> <li>• Strong donors and partners support.</li> <li>• High political</li> </ul>	<ul style="list-style-type: none"> <li>• Contextual events including elections</li> </ul>

	<p>National Health Policy and plan that is aligned with the PRSP and MDGs.</p> <ul style="list-style-type: none"> <li>• The existence of Basic Package Health Services (BPHS) that is focused on primary health care including EPI.</li> <li>• Existence of Coordination mechanism at all levels (HSCC, ICC, TCC, Etc.)</li> <li>• Existence of EPI policy that is aligned with national and global priorities.</li> <li>• Established integrated review mechanism.</li> <li>• EPI Management structure with clearly defined term of reference.</li> <li>• Devolution of primary health care functions and responsibility to the Counties (decentralization).</li> </ul>	<p>level</p> <ul style="list-style-type: none"> <li>• Less involvement and coordination in routine immunization by private health sectors.</li> <li>• Inadequate and irregular supportive supervision at all levels.</li> </ul>	<p>commitment.</p>	<ul style="list-style-type: none"> <li>• Civil unrest.</li> </ul>
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Table: 4

<b>Components</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Financial sustainability	<ul style="list-style-type: none"> <li>• The establishment of the Office Financial Management (OFM) at national level</li> <li>• Devolution of Office of financial management at the County level (Decentralization).</li> <li>• Increased priority to health in the National Budget.</li> <li>• Evidence of Government commitment to co-financing (regular contribution over the years).</li> </ul>	<ul style="list-style-type: none"> <li>• Declining over all revenue receipt by government.</li> <li>• Over dependence on donor support for government business.</li> <li>• Delay in accessing funds.</li> <li>• Limited coverage of banking services outside the national capital.</li> </ul>	<ul style="list-style-type: none"> <li>• Symposium for legislators for vaccine independent initiative</li> <li>• GAVI Funding available</li> </ul>	<ul style="list-style-type: none"> <li>• Trickle down effect of Global Economic crisis.</li> <li>• Over dependence on donor support for government business.</li> </ul>

Table: 5

<b>Components</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Supplemental Immunization Activities (SIAs) -Polio -MNT -YF -Measles	<ul style="list-style-type: none"> <li>• Availability of detailed microplans at all levels.</li> <li>• Support from partners.</li> <li>• Political commitment at all levels.</li> <li>• Regular coordination at all levels.</li> <li>• Integration of other child survival interventions.</li> <li>• Timely flow of data from lower levels to the national level.</li> <li>• Regular TCC and ICC meetings</li> <li>• Intensified active surveillance.</li> <li>• Increased access and coverage.</li> <li>• Availability of adequate bundle vaccines and logistics.</li> <li>• Regular monitoring and supervision</li> <li>• Commitment of vaccinators to travel to difficult-to-reach areas.</li> <li>• Willingness of communities to receive the vaccines.</li> </ul>	<ul style="list-style-type: none"> <li>• Missed opportunities (unimmunized children)</li> <li>• Budgetary constraints</li> <li>• Immunization of over-aged children.</li> <li>• Difficulty in providing in-process data for the country per day.</li> <li>• Poor utilization of itinerary maps for teams.</li> </ul>	<ul style="list-style-type: none"> <li>• Willingness of partners to support (resource mobilization)</li> <li>• Reaching the under-served communities</li> <li>• Presence of Technical Assistants (TAs) from partners.</li> </ul>	<ul style="list-style-type: none"> <li>• More than 90% of funding for SIA from partners.</li> <li>• No budgetary allotment from government</li> <li>• High cost associated with SIA.</li> <li>• Climate change (heavy rains) and bad roads.</li> </ul>
Human resource and Institutional strengthening	<ul style="list-style-type: none"> <li>• Increased number of health facilities offering EPI services.</li> <li>• National supervisors and senior monitors provide on-site mentoring.</li> <li>• Availability of willing health personnel at all levels</li> <li>• Availability of Integrated Supervisory Checklist</li> <li>• Monitoring and Evaluation mechanism in place.</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid turn-over of staff/brain drain.</li> <li>• Unattractive salary.</li> <li>• Most health workers not yet absorbed into the civil service.</li> <li>• Over-dependence on volunteers at all levels.</li> <li>• Inadequate trained manpower and over dependence on volunteers at PHU level</li> <li>• Lack of employee appraisal mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>• Availability of willing, personnel.</li> <li>• Technical and financial support from WHO/UNICEF</li> </ul>	<ul style="list-style-type: none"> <li>• Slow absorption of qualified staff into the civil service.</li> </ul>

		<ul style="list-style-type: none"><li>• Overburdened staff.</li><li>• Poor utilization of integrated supervisory checklist.</li><li>• Low motivation of personnel.</li><li>• Insufficient/irregular supportive supervisory visits by the national and district supervisors</li><li>• Health facilities manned by untrained personnel.</li></ul>		
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Table : 6 Situation analysis of routine EPI by system components

System Components	Suggested Indicators	National Status							
		2006		2007		2008		2009	
		Adm.	Best est.	Adm.	Best est.	Adm.	Best est.	Adm.	Survey.
Routine Coverage	DPT3/Pentavalent 3 coverage	88%	60%	88%	60%	92%	64%	93%	69.2%
	% of counties with > 80% coverage	53%		67%		93%		(80%)	
	National DPT1-DPT3/Pentavalent 1-Pentavalent 3 drop-out rate	(12%)		(16%)		(13%)		(11%)	
	Percentage of counties with drop-out rate DPT1-DPT3/Pentavalent 1-Pentavalent 3 > 10	40%		80%		40%		40%	
Surveillance	% of surveillance reports received at National level from counties compared to number of reports expected	82%		86%		87%		89%	
Cold chain/ logistics	Percentage of counties with adequate numbers of functional cold chain equipment	86%		86%		86%		(56%)	
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%	
Vaccine supply	Was there a stock-out at national level during the last year?	No		No		No		No	
	If yes, specify duration in months								
	If yes, specify which antigen(s)								
Communication	Availability of a plan	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)	0%		0%		(8%)		(8%)	
Linking to other health interventions	Were immunization services systematically linked with delivery of other interventions (malaria, nutrition, child health) established	Yes		Yes		Yes		(Yes)	
Human resources availability	No. of health workers/vaccinators per 1000 population							3	
Management planning	Are a series of counties indicators collected regularly at national level? (Y/N)	Y		Y		Y		Y	
ICC	Number of meetings held last year					3		3	
Waste disposal	Availability of a waste management plan	No		No		Yes		Yes	
Program efficiency	Vaccine wastage monitoring at national level for all vaccines	No		No		No		No	
	Timeliness of disbursement of funds to counties and service delivery level	Yes		Yes		No		No	

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

Component	Suggested Indicators	National Status							
		2006		2007		2008		2009	
		Adm. Cov.	Best Est.	Adm. Cov.	Best Est.	Adm. Cov.	Best Est.	Adm. Cov.	Survey
Polio	OPV3 Coverage	87%	66%	84%	64%	92%	74%	92%	(77%)
	Non-Polio AFP rate per 100,000 children under 15 years of age		4.3		3.3				(2.7)
	Extent: NID/SNID Number of rounds Coverage range							NIDs 4/year with 102% - 122% coverage SNIDs 1/year with coverage 116%	
MNT	TT2+ Coverage	77%	73%	82%	90%	90%	91%	96%	(84)%
	Percentage of Counties reporting >1 case per 1000 live births	57%		50%		40%		33%	
	Was there an SIA? (Y/N)	Y		Y		Y		N	
Measles	Measles coverage	94%	63%	95%	64%	95%	64%	95%	60%
	Number of outbreaks reported							1	
	Extent: NID/SNID Age Group Coverage							National NID 2009 6 - 59mont hs	
Yellow Fever	YF Coverage	88%	57%	88%	57%	93%	57%	95%	59.4%
	Number and percentage of Counties reporting >1 suspected case	4/8 50%		7/8 88%		11/11 100%		6/8 75%	
	Was a preventive campaign conducted? (Y/N)	N		N		N		Y	

**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/SW shall ensure that all vaccines officially introduced in the Liberia Expanded Program 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 2011-2015, is to increase national Penta 3 coverage from 69.2% (coverage survey data 2009) by end of 2015 to 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 2015.

Table: 8 Global goals, regional goals, national objectives and milestones

Global goals (until 2015)	Regional goals (until 2015)	National objectives based on global and regional goals	Milestones
<p><b>Coverage<sup>1</sup></b> 1. By 2010 or sooner all countries will have routine immunization coverage at 90% nationally with at least 80% coverage in every district</p>	<ul style="list-style-type: none"> <li>- At least 90% of countries will attain 90% Penta 3 coverage at national level 2013.</li> <li>- At least 90% of countries will attain 80% Penta 3 coverage in all districts by 2013.</li> <li>- At least 80% of countries will have conducted hepatitis B sero-epidemiology studies.</li> <li>- All countries will have budget lines for EPI in their national budgets.</li> </ul>	<p>To achieve and sustain Penta 3 coverage of 90% nationally with at least 80% coverage in 90% of Counties by 2015.</p>	<p><b>2011:</b> 75% national coverage by survey and 70% Counties (districts) achieve Penta3 coverage of <math>\geq</math> 80%  <b>2012:</b> 80% national coverage by survey and 75% counties achieve Penta 3 coverage of <math>\geq</math> 80%  <b>2013:</b> 85% national coverage by survey and 80% counties achieve Penta 3 coverage of <math>\geq</math> 80%  <b>2014:</b> 88% national coverage by survey and 85% counties achieve Penta 3 coverage of <math>\geq</math> 80%  <b>2015:</b> 90% national coverage by survey and 90% counties achieve Penta 3 coverage of <math>\geq</math> 80%</p>
<p>Polio 2. By 2015, the World will be certified polio-free</p>	<ul style="list-style-type: none"> <li>- There will be no indigenous WPV transmission in the African Region by 2013.</li> <li>- African Region will be certified as polio-free.</li> </ul>	<p>Achieve and Sustain interruption of wild polio virus transmission by 2011 and beyond</p>	<p><b>2011:</b> 80% counties achieve certification standard surveillance and 90% counties achieve opv3 coverage of <math>\geq</math> 80% + SIAs  <b>2012:</b> 90% counties achieve certification standard surveillance and 80% counties achieve opv3 coverage of <math>\geq</math> 80%  <b>2013:</b> 95% counties achieve certification standard surveillance and 100% counties achieve coverage of <math>\geq</math> 85%  <b>2014:</b> 100% counties achieve certification standard surveillance and 100% counties achieve opv3 coverage of <math>\geq</math> 88%  <b>2015:</b> 100% counties achieve certification standard surveillance and 100% counties achieve opv3 coverage of <math>\geq</math> 90%</p>

<p><b>Measles<sup>2</sup></b></p> <p>3. 90% reduction in infant mortality by 2015 compared to 2000</p>	<p>Measles elimination in all countries of the region by 2013.</p>	<p>Measles mortality reduced by 90% by 2015</p>	<p><b>2011:</b> 100% investigation of notified suspected cases and achieve 75% measles coverage at national level by survey.  <b>2012:</b> 100% investigation of notified suspected cases and achieve 80% measles coverage at national level by survey. Conduct follow-up campaign.  <b>2013:</b> 100% investigation of notified suspected cases and achieve 85% measles coverage at national level by survey.  <b>2014:</b> 100% investigation of notified suspected cases and achieve 88% measles coverage at national level by survey.  <b>2015:</b> 100% investigation of notified suspected cases and achieve 90% measles coverage at national level by survey.</p>
<p><b>NT<sup>1</sup></b></p> <p>4. Elimination maintained in every district by 2015</p>	<p>- 90% of countries will have attained and validated MNT elimination status.</p> <p>- At least 90% of countries will attain a minimum of 80% TT2+ coverage among pregnant women in every county.</p>	<p>Achieve and maintain MNT elimination status by 2015</p>	<p><b>2011:</b> 80% of counties report &lt;1 NT/1,000 live births; 85% coverage at national level by survey.  <b>2012:</b> 85% of counties report &lt;1 NT/1,000 live births+ SIAs; 85% coverage at national level by survey  <b>2013:</b> 100% of counties report &lt;1 NT/1,000 live births; Introduce TT vaccines in school health programs. 88 percent coverage at national level by survey  <b>2014:</b> 100% of counties report &lt;1 NT/1,000 live births; 89% coverage at national level by survey  <b>2015:</b> 100% of counties report &lt;1 NT/1,000 live births; 90 percent at national level by survey.</p>

5.	50% of countries will have introduced pneumococcal conjugate vaccine in their national program.	Introduce Pneumococcal conjugate vaccine into RI by 2012	<p><b>2011:</b> conduct cold chain assessment; prepare and submit application for introduction</p> <p><b>2012:</b> Introduce pneumococcal conjugate vaccine into RI nationwide</p> <p><b>2013:</b> Conduct post introduction evaluation</p> <p><b>2014:</b> Attain same coverage as Penta 3</p> <p><b>2015:</b> Maintain same coverage as penta 3.</p>
6. <b>Yellow fever</b>	<p>– 80% of all countries at high risk will achieve routine yellow fever immunization coverage of at least 90% at the national level.</p> <p>– All countries will conduct emergency response vaccination within 4 weeks following laboratory confirmation of a case of yellow fever.</p> <p>By the end of 2015, at least 80% countries already giving YF vaccine will have YF coverage same as Measles.</p>	Maintain YF coverage as measles coverage by 2015	<p><b>2011:</b> 100% investigation of notified suspected cases and achieve 75% YF coverage at national level by survey.</p> <p><b>2012:</b> 100% investigation of notified suspected cases and achieve 80% YF coverage at national level by survey.</p> <p><b>2013:</b> 100% investigation of notified suspected cases and achieve 85% YF coverage at national level by survey.</p> <p><b>2014:</b> 100% investigation of notified suspected cases and achieve 88% YF coverage at national level by survey.</p> <p><b>2015:</b> 100% investigation of notified suspected cases and achieve 90% YF coverage at national level by survey.</p>
7. <b>Coverage<sup>1</sup></b> By 2015, all countries will have introduce Rota virus Vaccine into routine immunization services	<p>- At least 90% of countries will attain 90% Penta 3 coverage at national level 2013.</p> <p>- At least 90% of countries will attain 80% Penta 3 coverage in all districts by 2013..</p>	To achieve and sustain Rota 3 coverage of 90% nationally with at least 80% coverage in 90% of Counties by 2015.	<p><b>2014:</b> 50% national coverage achieved for Rota 3</p> <p><b>2015:</b> 88% national coverage achieved for Rota 3</p> <p>2015: Sentinel surveillance strengthened at Redemption Hospital</p>

<p><b>Coverage<sup>1</sup></b></p> <p><b>8.</b> By 2015, all countries will have to introduce one dose of Inactivated Polio Vaccine into routine immunization services</p>	<ul style="list-style-type: none"> <li>- At least 90% coverage achieved nationally by 2015.</li> <li>- At least 80% IPV achieved in all the Counties by 2015</li> </ul>	<p>To achieve and sustain IPV coverage of 90% nationally with at least 80% coverage in all Counties by 2015.</p>	<p><b>2015: 90%</b> national coverage achieved for IPV</p> <p><b>2016: 90%</b> national coverage achieved for IPV</p>
<p><b>9. Immunization Systems Strengthening</b></p>	<ul style="list-style-type: none"> <li>- At least 90% of countries will have adopted and implemented internationally approved technologies and systems for waste management</li> <li>- At least 80% of countries will have functional regulatory authorities (NRAs)</li> <li>- At least 60% of countries will have revised their EPI pre-service curriculum.</li> <li>- All countries will have incorporated an immunization component into their national health promotion and communication plans.</li> </ul> <p>6. - All countries will have functional inter-agency coordination committees (ICCs) or equivalent coordination mechanism for immunization.</p>	<ul style="list-style-type: none"> <li>• Coordination mechanism (ICC, HSCC) remains functional</li> <li>• Internationally approved technologies and systems for waste management adopted</li> <li>• To integrate EPI into national health promotion plan</li> <li>• Logistics and cold chain strengthened</li> </ul>	<p><b>2011:</b> Coordination mechanism remains functional, EPI in national health promotion plan, and installation of WDU continue; Procurement of 200 solar refrigerators.</p> <p><b>2012:</b> Replacement of aged cold chain equipment.</p> <p><b>2013:</b> Continue logistics, WDU and cold chain assessment</p> <p><b>2014:</b> Continue logistics, WDU and cold chain assessment</p> <p><b>2015:</b> Continue logistics, WDU and cold chain assessment</p>

<p><b>10. Injection safety</b></p>		<p>Regular supply of AD syringes ensured</p>	<p><b>2011-2015:</b> 100% of health facilities continue to use AD syringes.</p>
<p><b>11. Linking Immunization to other interventions</b></p>	<p>At least 80% of countries will have integrated other interventions into routine immunization and SIA sessions for target population</p>	<p>All counties integrate high impact interventions into RI and SIAs</p>	

## 1. STRATEGIES PLANNED BY COMPONENT

Table :9A Service delivery

Objective	Strategy	Key Activities
Achieve and Sustain interruption of wild polio virus transmission by 2011 and beyond	SIAs and Routine Immunization	1. Conduct 2 rounds of polio NIDs
		2. Integrate Vit-A in polio NIDs 3. Integrate deworming of children under five in polio NIDs 4. 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 2015.	Provision of sustained routine immunization in all health facilities	5. Strengthen national database and establish county database. 6. Conduct micro-planning workshops at national county and district levels and provide routine immunization service 7. Conduct outreach in underserved areas 8. Conduct quarterly supportive supervision from national to the district level and monthly supervision within the districts. 9. Purchase vehicles for supervision 10. Monitor use of Vit-A and IPT for infants with routine immunization 11. Include AEFI in national database for district monitoring
	Implement sustainable outreach activities in every district.	
	Plan to reach all areas at least four times a year	
	Reinforce Vitamin A delivery within routine immunization.	
	AEFI Monitoring	
Measles mortality reduced by 90% by 2015	Measles SIAs	12. Measles follow up campaign <5 in 2011
	Include Vit-A , IPT and LLIN in measles SIA	13. Joint planning with malaria Control Program, Family Health Division 14. Distribution of Vit A, Mbendazole and LLIN with measles campaigns

Objective	Strategy	Key Activities
Achieve and maintain MNT elimination status by 2015	TT SIAs in high risk areas	15. Conduct MNT elimination validation
		16. TT SIA nationwide in 2012 for WCBA
	Include LLIN in TT SIAs in high risk areas	17. Joint planning with National Malaria Control Program, Family Health Division 18. Distribution of LLINs with TT campaigns
Introduce Pneumococcal conjugate vaccine into RI by 2013	Pneumococcal conjugate vaccine in all counties	19. Prepare and submit application for introduction of pneumococcal conjugate vaccine. 20. Provision of Pneumococcal conjugate vaccine in every counties 21. Conduct post-introduction evaluation (PIE)
Maintain YF coverage as measles coverage by 2015	Sustain the use of Yellow fever vaccine and reduce missed opportunities	22. Provision of Yellow fever vaccine in all counties.
Coordination mechanism (ICC, HSCC) remains functional and internationally approved technologies and systems for waste management adopted <ul style="list-style-type: none"> <li>• To integrate EPI into national health promotion plan</li> <li>• Logistics and cold chain</li> </ul>	Integration and coordination mechanism at all levels.	23. Conduct sensitization and planning meeting with programs managers 24. Maintain and ensure the use of the national health plan and health reforms 25. Offer a minimum integrated health services package
All counties integrate high impact interventions into RI and SIAs	The RED approach	26. Reaching the target populations 27. Supportive supervision, 28. Linking services with the communities,

<b>Objective</b>	<b>Strategy</b>	<b>Key Activities</b>
		29. Monitoring for action, 30. Planning and management of resources.

**Table : 9B Advocacy and communications**

Objective	Strategy	Key Activities
Achieve and Sustain interruption of wild polio virus transmission by 2011 and beyond	Ensure active ICC to monitor PEI	31. Broaden agenda and participation of ICC 32. Establish Health Coordination meeting at the county level with gCHVs and CHCs 33. Maintain and sustain quarterly ICC meeting at national and county levels 34. Production and airing of health communication materials and messages for routine and SIAs. 35. Conduct BCC, IPC Training at national and county level. 36. Conduct national cross border meeting on EPI 37. Conduct social mobilization using IPC skills.
To achieve and sustain Penta 3 coverage of 90% nationally with at least 80% coverage in all Counties by 2015	Strengthen ICC at all Levels with	38. Broaden agenda and participation of ICC
	Greater NGO and community involvement at the planning and implementation	39. Conduct a meeting with the NGOs and local authorities, gCHVs and CHCs to discuss participation 31. Conduct quarterly integrated review and planning meeting at national and county levels. 32. Production of health communication IEC/ BCC materials for routine immunization 33. Maintain national cross border meeting 34. Include messages on improving outreach in communication plan 35. Conduct social mobilization using IPC.
Measles mortality reduced by 90% by 2015	Strengthen ICC at all Levels	36. Broaden agenda and participation of ICC 37. Establish at the county level with gCHVs and CHCs 38. Maintain and sustain quarterly ICC meeting at national and county levels 39. Production and airing of health communication materials and messages for routine and SIAs. 40. Conduct BCC, IPC Training at county level. 41. National cross border meeting on social mobilization. 42. Conduct social mobilization using IPC
Achieve and maintain MNT elimination status by 2015	Strengthen ICC at all Levels	43. Broaden agenda and participation of ICC 44. Maintain and sustain ICC at the national level 45. Conduct monthly Health Coordination meeting at

Objective	Strategy	Key Activities
		<p>county and levels</p> <p>46. Production and airing of health communication materials for MNT.</p> <p>47. Conduct social mobilization using IPC</p>
Introduce Pneumococcal conjugate vaccine into RI by 2013	Advocacy and IPC	<p>48. Production of advocacy, IPC and communication materials</p> <p>49. Mass media promotion and awareness activities at all levels.</p> <p>50. Conduct national and county level advocacy meetings</p> <p>51. Conduct national and county launch for Pneumococcal conjugate vaccine.</p>
Maintain YF coverage as measles coverage by 2015	YF advocacy for health workers	<p>52. Include YF in key messages for routine</p> <p>53. Production of health communication and IEC materials for routine immunization.</p> <p>54. Conduct monthly Health Coordination meeting at county and community levels</p>
Ensure 100% injection safety and waste disposal practices by 2015 and beyond	BCC	55. Production of BCC materials

**Table : 9C Surveillance**

Objective	Strategy	Key Activities
Achieve and sustain interruption of wild polio virus transmission by 2011 and beyond	AFP/EPI surveillance integrated with IDSR	<p>56. Conduct integrated active disease surveillance at all levels</p> <p>57. Improve data sharing between the national public health lab and the regional reference laboratory.</p> <p>58. Provide regular supply and equipment to counties for specimen collection.</p> <p>59. Conduct regular surveillance visits to priority sites.</p> <p>60. Conduct training for all surveillance officers at all levels.</p> <p>61. Provide operational support at all levels</p>

Objective	Strategy	Key Activities
		62. Production of surveillance tools and training materials 63. Community sensitization 64. Clinicians sensitization 65. Support outbreak investigation and response 66. Conduct BPHS quarterly review meetings 67. Hold NEC, NPEC and NCC meetings 68. Provide quarterly feedback to counties.
	Measles/Yellow Fever and Polio lab links	69. Combine measles/yellow fever polio lab support, training, and supplies
	Active surveillance in high risk counties	70. Active surveillance for AFP, measles, YF and MNT in all counties
Measles mortality reduced by 90% by 2015	Measles/EPI surveillance integrated with IDSR	71. Strengthen measles/YF and Polio laboratory
Achieve and maintain MNT elimination status by 2015	MNT/EPI surveillance integrated with IDSR	72. Conduct integrated active surveillance in all districts
Introduce Pneumococcal vaccine by 2013	Pneumococcal surveillance integrated with IDSR	73. Support smooth preparation and introduction of new vaccines, 74. Integrate pneumococcus into IDSR training
YF coverage equal to measles coverage by 2015 (Maintain YF and Measles surveillance by 2015 and beyond)	YF/EPI surveillance integrated with IDSR	( Covered under other strategies)

**Table :9D Vaccine supply, quality and Logistics**

Objective	Strategy	Key Activities
Achieve and Sustain interruption of wild polio virus transmission by 2011 and beyond	Timely vaccine forecasting and procurement	75. Procurement of OPV vaccine, forecasting, receipt and distribution
To achieve and sustain Penta 3 coverage of 90% nationally with at least 80% coverage in all Counties by 2015	Timely bundle vaccine forecasting and procurement	76. Forecasting and Procurement of bundle pentavalent vaccine, receipt and distribution.
Measles mortality reduced by 90% by 2015	Timely bundle vaccine forecasting and procurement	77. forecasting and procurement of bundle Measles vaccine, receipt and distribution  78. forecasting and procurement of bundle measles vaccine, receipt and distribution for measles follow-up campaign
Achieve and maintain MNT elimination status by 2015	Timely bundle vaccine forecasting and procurement	79. forecasting and procurement of bundle RI TT vaccine, receipt and distribution 80. forecasting and procurement of bundle TT vaccine, receipt and distribution for TT campaign
Maintain YF coverage by 2015	Timely bundle vaccine forecasting and procurement	81. forecasting and procurement of bundle Yellow Fever vaccine, receipt and distribution
Regular supply of AD syringes and ensure	Availability of supplies, equipment and network.	82. Forecast and procurement of AD syringes, receipt and

Objective	Strategy	Key Activities
adoption of Internationally approved technologies and systems for waste management	Procurement and installation of demonforte incinerators	distribution 83. procurement of spare parts and installation of additional demoforte incinerators
To ensure the availability of require cold chain and logistic systems at all levels by 2015	Availability of cold chain equipment and, materials	84. Procurement, distribution and maintenance of cold chain materials and equipment 85. Conduct logistics, WDU and cold chain assessment 86. procurement of refrigerated truck and utility trucks
No stock outs nationally by 2015	Vaccine management	87. Re-training on DVD-MT tool for vaccine management at county level 88. Regular monitoring of stock management at all levels

**Table : 9E Program Management**

Objective	Strategy	Key Activities
To use the EPI as an entry point to offer a minimum integrated health services package at all levels in line with National health policy	Integration and coordination mechanism at all levels.	89. Conduct sensitization and planning meeting with preventive services program managers 90. Review minimum integrated health package and implement joint essential health intervention activities 91. Monitor and evaluate the effectiveness and impact of combined interventions
To build capacity of health workers to implement policies and ensure the use of quality vaccine and safe immunization practices by 2015	Training and management mechanism in place	92. Training needs assessment and development of the multi-year training plan 93. MLM, Immunization in Practice Training, and monitoring and supervision 94. Training on AEFI for district health officers 95. Training on IPC, BCC and media and advocacy and on Community participation. 96. Refresher and routine/surveillance data management training 97. Vaccine supply and quality, Logistic management (vaccine equipment, cold chain, transport and injection safety and waste disposal) training. 98. Training on budgeting, micro-planning and resource allocation

<p>To ensure the security of vaccine supplies and to increase the Financial sustainability of the Program by 2015</p>	<p>Sustainable and equitable development of the EPI programme Integration of planning into national budgeting processes Develop recruitment plan with budget</p>	<p>99. Review total EPI human resources needs and develop human resources plan (including maintenance technicians), determine priority districts and fill EPI vacant posts at all levels in accordance to priorities.</p> <p>100. Planning and management of resources of all component of the programme including building financial planning and management capacity.</p> <p>101. Effective organization and coordination of the programme</p> <p>102. Support EPI operations at all levels. Data driven Monitoring and supportive supervision of the programme</p> <p>103. Continue advocacy for the inclusion of EPI in national budget to ensure financial sustainability.</p> <p>104. Conduct in-depth EPI review.</p> <p>105. Perform operational research to improve immunization systems.</p> <p>Mid-term and end of period programme evaluation and planning</p>
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## 5.0 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 2011-2015. It will also present different scenarios and identifies strategies that will improve the financial sustainability of the programme.

## **5.1. Costing the cMYP**

### **5.1.1. 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 (2010 April), for cMYPs supplied by WHO 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.

### **5.1.2. Inputs into programme costing**

The following is a brief summary of the information incorporated.

#### **5.1.2.1. Vaccines & Injection Supplies:**

The country uses surviving infants for 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 pneumococcal conjugate vaccine by the year 2013,
- The country will carry out a measles follow up campaign in 2011 and MNTE campaigns in 2012.

- Costs for respective doses of antigens and supplies are based on UNICEF prices. .

#### **5.1.2.2. 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).

#### **5.1.2.3. 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 2009, 16 vehicles (Toyota 4WD) and over 100 motorcycles were provided by the EPI partners (UNICEF & WHO) to reinforce the programme's logistics.

#### **5.1.2.4. Cold Chain Equipment, Maintenance and Overheads:**

Costs were derived as with personnel and vaccines. From 2006 to 2009, UNICEF funded a considerable number of cold chain equipment (solar refrigerators). The replacement plan for the cold chain equipment is based on the phasing out of kerosene refrigerators and replacement of the aged solar refrigerators.

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.

Key cost related highlights include the provision by UNICEF of:

- 355 Sun Frost solar refrigerators RFVB-134a and additional 200 in 2012

#### **5.1.2.5. 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 campaign operational costs were estimated at 0,6\$US for polio; 0,9\$US for measles and 0,9\$US for MNT.

### 5.1.2.6. Programme Activities, Other Recurrent Costs

The table below illustrates the estimated costs of the different programme components for the period of the cMYP (2011-2015).  
Table: 10

cMYP Component		Costs	Future Cost Projections					Total 2011 - 2015
		2009	2011	2012	2013	2014	2015	
		US\$	US\$	US\$	US\$	US\$	US\$	US\$
	Vaccine Supply and Logistics	\$3,024,559	\$3,375,747	\$3,640,615	\$3,712,494	\$6,918,943	\$8,390,801	\$26,038,601
	Service Delivery	\$232,860	\$261,205	\$284,496	\$301,565	\$319,659	\$338,839	\$1,505,764
	Advocacy and Communication	\$141,000	\$100,700	\$158,428	\$35,730	\$37,874	\$45,500	\$378,232
	Monitoring and Disease Surveillance	\$160,500	\$170,130	\$180,338	\$191,158	\$202,628	\$275,005	\$1,019,259
	Programme Management	\$243,200	\$628,349	\$626,447	\$708,127	\$722,050	\$771,644	\$3,456,617
	Supplemental Immunization Activities	\$1,295,260	\$946,753	\$867,356				\$1,814,109
	Shared Health Systems Costs	\$2,368,313	\$2,426,467	\$2,486,430	\$2,548,279	\$2,612,093	\$2,677,953	\$12,751,222
<b>GRAND TOTAL</b>		<b>\$7,465,693</b>	<b>\$7,909,350</b>	<b>\$8,244,110</b>	<b>\$7,497,355</b>	<b>\$10,813,247</b>	<b>\$12,499,742</b>	<b>\$46,963,803</b>

Table 11

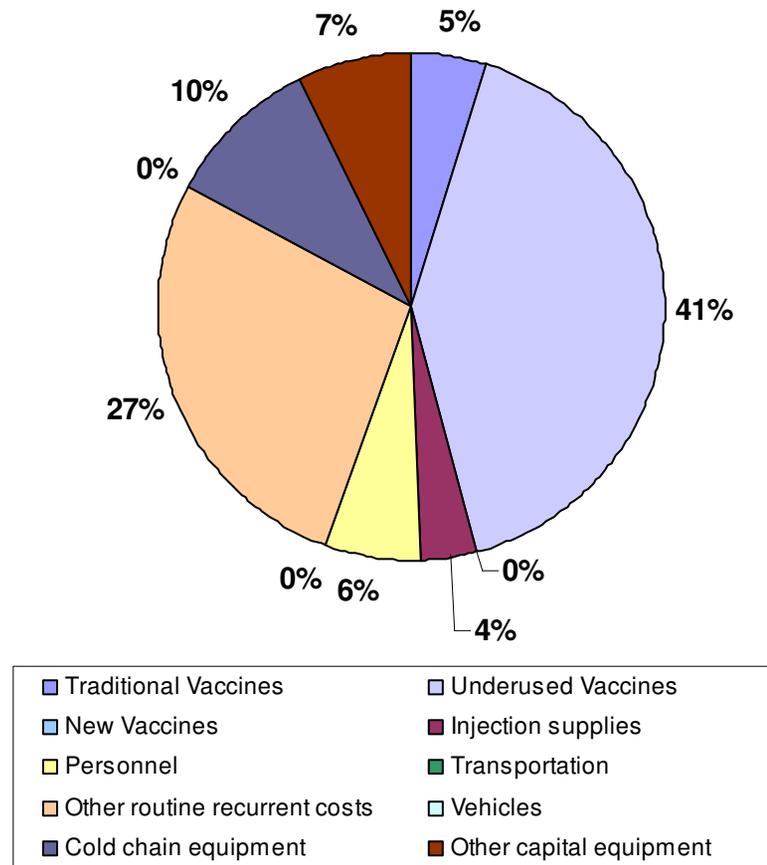
Cost Category		Costs	Future Cost Projections					Total 2011 - 2015
		2009	2011	2012	2013	2014	2015	
Routine Recurrent Costs		US\$	US\$	US\$	US\$	US\$	US\$	US\$
	Vaccines (routine vaccines only)	\$1,741,751	\$1,817,586	\$1,859,663	\$1,634,611	\$4,832,072	\$5,935,550	\$16,079,482
	Traditional	\$182,462	\$190,370	\$194,703	\$171,107	\$175,001	\$178,829	\$910,010
	Underused	\$1,559,289	\$1,627,216	\$1,664,960	\$1,463,504	\$1,497,440	\$1,530,522	\$7,783,642
	New					\$3,159,631	\$4,226,199	\$7,385,830
	Injection supplies	\$141,437	\$147,510	\$150,749	\$132,429	\$185,494	\$191,318	\$807,500
	Personnel	\$232,860	\$261,205	\$284,496	\$301,565	\$319,659	\$338,839	\$1,505,764
	Salaries of full-time NIP health workers (immunization specific)	\$103,680	\$116,261	\$126,607	\$134,204	\$142,256	\$150,791	\$670,119
	Per-diems for outreach vaccinators/mobile teams	\$53,700	\$61,374	\$67,416	\$71,461	\$75,749	\$80,294	\$356,293
	Per-diems for supervision and monitoring	\$75,480	\$83,570	\$90,472	\$95,901	\$101,655	\$107,754	\$479,352
	Maintenance and overhead	\$503,871	\$680,968	\$877,504	\$1,130,244	\$1,411,639	\$1,702,678	\$5,803,033
	Cold chain maintenance and overheads	\$115,375	\$122,298	\$129,635	\$172,668	\$221,880	\$257,608	\$904,089
	Maintenance of other capital equipment	\$375,296	\$544,679	\$733,037	\$941,855	\$1,173,094	\$1,427,405	\$4,820,069
	Building overheads (electricity, water...)	\$13,200	\$13,992	\$14,832	\$15,721	\$16,665	\$17,665	\$78,874
	Short-term training	\$50,000	\$61,480		\$63,124			\$124,604
	IEC/social mobilization	\$141,000	\$100,700	\$158,428	\$35,730	\$37,874	\$45,500	\$378,232
	Disease surveillance	\$160,500	\$170,130	\$180,338	\$191,158	\$202,628	\$275,005	\$1,019,259

	Programme management	\$96,000	\$190,800	\$179,776	\$145,304	\$141,397	\$135,161	\$792,438
	Other routine recurrent costs	\$84,000	\$362,077	\$431,840	\$483,978	\$563,988	\$618,818	\$2,460,700
	<b>Subtotal</b>	<b>\$3,151,419</b>	<b>\$3,792,456</b>	<b>\$4,122,792</b>	<b>\$4,118,144</b>	<b>\$7,694,751</b>	<b>\$9,242,869</b>	<b>\$28,971,012</b>
<b>Routine Capital Costs</b>								
	Cold chain equipment	\$375,100	\$397,606	\$421,462	\$484,863	\$160,335	\$232,851	\$1,697,117
	Other capital equipment	\$275,600	\$346,069	\$346,069	\$346,069	\$346,069	\$346,069	\$1,730,344
	<b>Subtotal</b>	<b>\$650,700</b>	<b>\$743,675</b>	<b>\$767,531</b>	<b>\$830,931</b>	<b>\$506,403</b>	<b>\$578,920</b>	<b>\$3,427,461</b>
<b>Campaign Costs</b>								
	OPV	\$1,295,260	\$761,434	\$501,095				\$1,262,529
	Vaccines and Injection Supplies	\$455,260	\$309,641					\$309,641
	Operational costs	\$840,000	\$451,793	\$501,095				\$952,888
	Measles		\$185,319					\$185,319
	Vaccines and Injection Supplies		\$185,319					\$185,319
	TT Elimination Campaign			\$366,261				\$366,261
	Vaccines and Injection Supplies			\$366,261				\$366,261
	<b>Subtotal</b>	<b>\$1,295,260</b>	<b>\$946,753</b>	<b>\$867,356</b>				<b>\$1,814,109</b>
<b>Shared Health Systems Costs</b>								
	Shared personnel costs	\$267,480	\$283,529	\$300,541	\$318,573	\$337,687	\$357,949	\$1,598,278
	Shared transportation costs	\$2,098,635	\$2,140,608	\$2,183,420	\$2,227,088	\$2,271,630	\$2,317,063	\$11,139,808
	Construction of new buildings	\$2,198	\$2,330	\$2,470	\$2,618	\$2,775	\$2,942	\$13,135
	<b>Subtotal</b>	<b>\$2,368,313</b>	<b>\$2,426,467</b>	<b>\$2,486,430</b>	<b>\$2,548,279</b>	<b>\$2,612,093</b>	<b>\$2,677,953</b>	<b>\$12,751,222</b>
<b>GRAND TOTAL</b>		<b>\$7,465,693</b>	<b>\$7,909,350</b>	<b>\$8,244,110</b>	<b>\$7,497,355</b>	<b>\$10,813,247</b>	<b>\$12,499,742</b>	<b>\$46,963,803</b>
	<b>Routine Immunization</b>	<b>\$6,170,433</b>	<b>\$6,962,598</b>	<b>\$7,376,754</b>	<b>\$7,497,355</b>	<b>\$10,813,247</b>	<b>\$12,499,742</b>	<b>\$45,149,694</b>
	<b>Supplemental Immunization Activities</b>	<b>\$1,295,260</b>	<b>\$946,753</b>	<b>\$867,356</b>				<b>\$1,814,109</b>

## 6.2. Programme expenditure and Financing

In 2009, the total programme costs were of US\$7,250,068; of these, polio supplementary immunization activities (SIAs) accounted for US\$ 1,346,500 and the routine programme costs for US\$ 5,954,808. Routine programme costs were driven mainly by the costs of the vaccines US\$ 3,151,419.

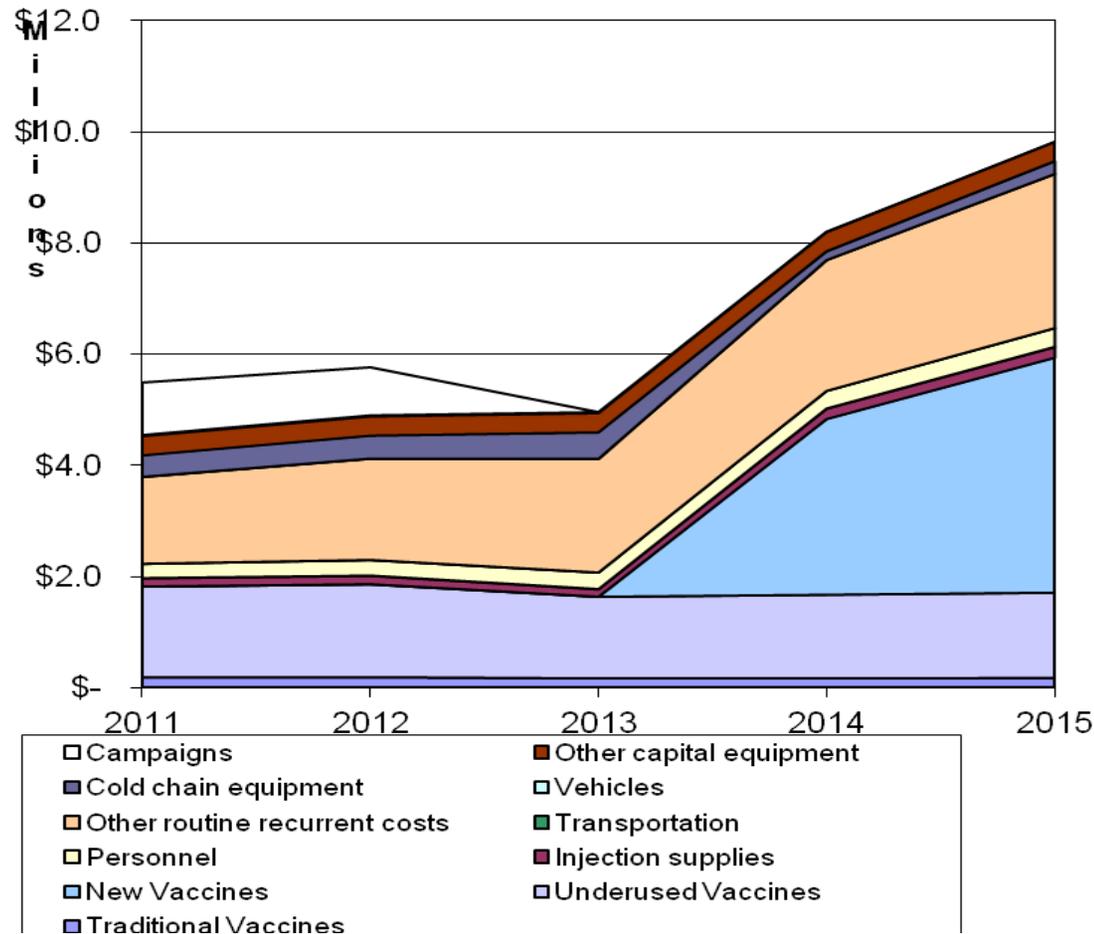
**Baseline Cost Profile (Routine Only)\***



### 5.3. Financing for the programme

This section outlines the programme financing trends. The major source of financing for the routine programme during the lifetime of the cMYP (2011-2015) is GAVI, the bulk of which is new vaccines support. This is followed by financing from UNICEF, WHO and Government. The Government will mostly be involved in the financing of personnel and some maintenance and overheads costs.

**Projection of Future Resource Requirements\*\***



## 5.4. 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
<b>Objective 1:</b> Strengthen Government contribution in EPI	▪ <b>Strategy 1.1:</b> Conduct advocacy for sustainable immunization financing	- Create a specific budget line for vaccines and supplies in the national budget
		- Increase the contribution of the government for vaccines provision
	▪ <b>Strategy 1.2:</b> Strengthen intersectoral collaboration	- Annually update costing and financing information for EPI activities
		- ensure participation of health focal persons from Ministry of Finance and Planning in ICC
		- Include discussions on immunization financing in ICC meetings
		- Provide information on immunization financing in EPI bulletin at least twice/year.
<b>Objective 2:</b> Secure the probable financing for the programme	▪ <b>Strategy 2.1:</b> Secure probable funds	- Dissiminate 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
<b>Objective 3:</b> Mobilize additional resource for the programme	▪ <b>Strategy 3.1:</b> Seek additional funds from EPI partners	Mobilize financing made available from additional partners, such as USAID and ECHO to fund planned programme activities and inputs
<b>Objective 4:</b> Improve the	▪ <b>Strategy 4.1:</b> Reduce vaccine wastage rate	- Implement holistically the RED strategy approach in all counties

OBJECTIVES	STRATEGIES	ACTIONS
programme management	<ul style="list-style-type: none"> <li>▪ <b>Strategy 4.2:</b> Implement open vial policy</li> </ul>	<ul style="list-style-type: none"> <li>- Train the personnel involved in the implementation of EPI activities at health facility level</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <b>Strategy 4.3:</b> Improve vaccine and cold chain management</li> </ul>	<ul style="list-style-type: none"> <li>- Appoint a skilled logistician</li> <li>- Put in place a sound logistic management system</li> </ul>

## 2. TIMELINE OF ACTIVITIES 2011-2015

#	Key activities	2011	2012	2013	2014	2015
<b>Service Delivery</b>						
1	Conduct 2 rounds of polio NIDs					
2	Integrate Vit-A in polio NIDs					
3	Integrate deworming of children under five in polio NIDs					
4	Increase the number of health facilities providing EPI services.					
5	Strengthen national database and establish county database.					
6	Conduct micro-planning workshops at national county and district levels and provide routine immunization service					
7	Conduct outreach in underserved areas					
8	Conduct quarterly supportive supervision from national to the district level and monthly supervision within the districts.					
9	Purchase vehicles for supervision					
10	Monitor use of Vit-A and IPT for infants with routine immunization					
11	Include AEFI in national database for district monitoring					
12	Measles follow up campaign <5 in 2011					
13	Joint planning with malaria Control Program, Family Health Division					
14	Distribution of Vit A, Mbendazole and LLIN with measles campaigns					
15	Conduct MNT elimination validation					
16	TT SIA nationwide in 2012 for WCBA					
17	Prepare and submit application for introduction of pneumococcal conjugate vaccine.					
18	Provision of Pneumococcal conjugate vaccine in every counties					
19	Conduct post-introduction evaluation (PIE)					

20	Provision of Yellow fever vaccine in all counties.					
21	Conduct sensitization and planning meeting with programs managers					
22	Maintain and ensure the use of the national health plan and health reforms					
23	Offer a minimum integrated health services package					
24	Reaching the target populations					
25	Linking services with the communities,					
26	Monitoring for action,					
27	Planning and management of resources.					
	<b>Advocacy and communications</b>					
28	Broaden agenda and participation of ICC					
29	Establish Health Coordination meeting at the county level with gCHVs and CHCs					
30	Maintain and sustain quarterly ICC meeting at national and county levels					
31	Production and airing of health communication materials and messages for routine and SIAs.					

#	Key activities	2011	2012	2013	2014	2015
32	Conduct BCC, IPC Training at national and county level.					
33	Conduct national cross border meeting on EPI					
34	Conduct social mobilization using IPC skills.					
35	Conduct a meeting with the NGOs and local authorities, gCHVs and CHCs to discuss participation					
36	Conduct quarterly integrated review and planning meeting at national and county levels.					
37	Include messages on improving outreach in communication plan					

38	Production and airing of health communication materials for MNT.					
39	Mass media promotion and awareness activities at all levels.					
40	Conduct national and county launch for Pneumococcal conjugate vaccine.					
41	Include YF in key messages for routine					
	<b>Surveillance</b>					
42	Conduct integrated active disease surveillance at all levels					
43	Improve data sharing between the national public health lab and the regional reference laboratory.					
44	Provide regular supply and equipment to counties for specimen collection.					
45	Conduct regular surveillance visits to priority sites.					
46	Conduct training for all surveillance officers at all levels.					
47	Provide operational support at all levels					
48	Production of surveillance tools and training materials					
49	Community sensitization					
50	Clinicians sensitization					
51	Support outbreak investigation and response					
52	Conduct BPHS quarterly review meetings					
53	Hold NEC, NPEC and NCC meetings					
54	Provide quarterly feedback to counties.					
55	Combine measles/yellow fever polio lab support, training, and supplies					
56	Active surveillance for AFP, measles, YF and MNT in all counties					
57	Strengthen measles/YF and Polio laboratory					
58	Conduct integrated active surveillance in all districts					
59	Integrate pneumococcus into IDSR training					
	<b>Vaccine supply, quality and Logistics</b>					
60	Procurement of OPV vaccine, forecasting, receipt and distribution					

61	Forecasting and Procurement of bundle pentavalent vaccine, receipt and distribution.					
62	forecasting and procurement of bundle Measles vaccine, receipt and distribution					
63	forecasting and procurement of bundle measles vaccine, receipt and distribution for measles follow-up campaign					
64	forecasting and procurement of bundle RI TT vaccine, receipt and distribution					
65	forecasting and procurement of bundle TT vaccine, receipt and distribution for TT campaign					
66	forecasting and procurement of bundle Yellow Fever vaccine, receipt and distribution					
67	Forecast and procurement of AD syringes, receipt and distribution					
68	procurement of spare parts and installation of additional demoforte incinerators					
69	Procurement, distribution and maintenance of cold chain materials and equipment					
70	Conduct logistics, WDU and cold chain assessment					
71	procurement of refrigerated truck and utility trucks					
72	Re-training on DVD-MT tool for vaccine management at county level					
73	Regular monitoring of stock management at all levels					
#	<b>Key activities</b>	2011	2012	2013	2014	2015
	<b>Program Management</b>					
74	Conduct sensitization and planning meeting with preventive services program managers					
75	Monitor and evaluate the effectiveness and impact of combined interventions					
76	Training needs assessment and development of the multi-year training plan					
77	MLM, Immunization in Practice Training, and monitoring and supervision					
78	Training on AEFI for district health officers					

79	Training on IPC, BCC and media and advocacy and on Community participation.					
80	Refresher and routine/surveillance data management training					
81	Vaccine supply and quality, Logistic management (vaccine equipment, cold chain, transport and injection safety and waste disposal) training.					
82	Training on budgeting, micro-planning and resource allocation					
83	Review total EPI human resources needs and develop human resources plan (including maintenance technicians), determine priority districts and fill EPI vacant posts at all levels in accordance to priorities.					
84	Planning and management of resources of all component of the programme including building financial planning and management capacity.					
85	Effective organization and coordination of the programme					
86	Support EPI operations at all levels. Data driven Monitoring and supportive supervision of the programme					
87	Continue advocacy for the inclusion of EPI in national budget to ensure financial sustainability.					
88	Conduct in-depth EPI review.					
89	Perform operational research to improve immunization systems.					
90	Mid-term and end of period programme evaluation and planning					

## 8. Annual workplan 2012

#	Key activities	Workplan 2012											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Conduct 4 rounds of polio NIDs												
2	Integrate Vit-A in polio NIDs												
3	Integrate deworming of children under five in polio NIDs												
4	Increase the number of health facilities providing EPI services.												
5	Strengthen national database and establish county database.												
6	Conduct micro-planning workshops at national county and district levels and provide routine immunization service												
7	Conduct monthly outreach and supervision in underserved areas												
8	Conduct quarterly supportive supervision from national to the district level .												
10	Monitor use of Vit-A and IPT for infants with routine immunization												
11	Include AEFI in national database for district monitoring												
13	Joint planning with malaria Control Program, Family Health Division												
17	Prepare and submit application for introduction of pneumococcal conjugate vaccine.												
20	Provision of Yellow fever vaccine in all counties.												
21	Conduct sensitization and planning meeting with programs managers												
22	Maintain and ensure the use of the national health plan and health reforms												
23	Offer a minimum integrated health												

	services package												
24	Reaching the target populations												
25	Linking services with the communities,												
26	Monitoring for action,												
27	Planning and management of resources.												
	<b>Advocacy and communications</b>												
28	Broaden agenda and participation of ICC												
29	Establish Health Coordination meeting at the county level with gCHVs and CHCs												
30	Maintain and sustain quarterly ICC meeting at national and county levels												
31	Production and airing of health communication materials and messages for routine and SIAs.												
32	Conduct BCC, IPC Training at national and county level.												
33	Conduct national cross border meeting on EPI												
34	Conduct social mobilization using IPC skills.												
35	Conduct a meeting with the NGOs and local authorities, gCHVs and CHCs to discuss participation												
36	Conduct quarterly integrated review and planning meeting at national and county levels.												
37	Include messages on improving outreach in communication plan												
39	Mass media promotion and awareness activities at all levels.												
41	Include YF in key messages for routine												
#	<b>Key activities</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	<b>Surveillance</b>												



62	forecasting and procurement of bundle Measles vaccine, receipt and distribution												
63	forecasting and procurement of bundle measles vaccine, receipt and distribution for measles follow-up campaign												
64	forecasting and procurement of bundle RI TT vaccine, receipt and distribution												
65	forecasting and procurement of bundle TT vaccine, receipt and distribution for TT campaign												
66	forecasting and procurement of bundle Yellow Fever vaccine, receipt and distribution												
67	Forecast and procurement of AD syringes, receipt and distribution												
68	Procurement, distribution and maintenance of cold chain materials and equipment												
69	Conduct logistics, WDU and cold chain assessment												
70	Re-training on DVD-MT tool for vaccine management at county level												
71	Regular monitoring of stock management at all levels												
#	<b>Key activities</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	<b>Program Management</b>												
74	Conduct sensitization and planning meeting with preventive services program managers												
75	Monitor and evaluate the effectiveness and impact of combined interventions												
77	MLM, Immunization in Practice Training, and monitoring and supervision												
80	Refresher and routine/surveillance												

	data management training											
81	Vaccine supply and quality, Logistic management (vaccine equipment, cold chain, transport and injection safety and waste disposal) training.											
82	Training on budgeting, micro-planning and resource allocation											
85	Effective organization and coordination of the programme											
86	Support EPI operations at all levels. Data driven Monitoring and supportive supervision of the programme											
87	Continue advocacy for the inclusion of EPI in national budget to ensure financial sustainability.											
88	Conduct in-depth EPI review.											

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