

Data Collection Survey on Health Sector

Country Report Republic of Liberia

October 2012

Japan International Cooperation Agency
(JICA)

KRI International Corp.

TAC International Inc.

HM
JR
12-110

Data Collection Survey on Health Sector

Country Report Republic of Liberia

October 2012

Japan International Cooperation Agency
(JICA)

KRI International Corp.

TAC International Inc.

Exchange Rate

US\$ 1=74.50 Liberian Dollar

(OANDA exchange rate, July, 2012)

This report is prepared to support JICA's country operation in health through strategic programming. The contents, however, may need to be supplemented with the latest and more detailed information by the readers since the report is mainly based on literature review and not on field study, with the exception of some countries.

Foreword

Background

The current situation surrounding the health sector in developing countries has been changing, especially at the start of the 21st century. Based on the recommendations from the concept of “Macroeconomics and Health”¹, development assistance for health has greatly increased to accelerate efforts to achieve the Millennium Development Goals (MDGs) by 2015. The development assistance for health has risen sharply from USD 10.9 billion to USD 21.8 billion in 2007². Moreover, development assistance was harmonized by the common framework developed at the three consequent high-level forums in Rome (2003), in Paris (2005) and in Accra (2008).

Regardless of such favorable environmental changes for the health sector in developing countries, the outcomes do not seem to reach the level of expectation in many countries. Many developing countries, particularly Sub-Saharan African countries, will not achieve some of their MDGs 4 (Reduce child mortality), 5 (Improve maternal health) and 6 (Combat HIV/AIDS, malaria and other diseases) by 2015. Therefore, while raising more money for health is crucial for lower-income countries striving to move closer to universal coverage³; “More Money for Health⁴”, it is just as important to get the substantial health gains out of the resources available; “More Health for Money⁵”. Efficiency is a measure of the quality and/or quantity of output of services for a given level of input, and improving efficiency should also be seen as a means of extending coverage for the same cost and the improved health outcomes.

Considering this situation surrounding the health sector in developing countries, in a recent movement of its development assistance work, JICA has been working on country-based analytical work. This consists of macro level and sector wide analytical work aiming to clarify JICA’s aid direction in each country by looking at priority areas of concern and aid mapping. The purpose of the Data Collection Survey on Health Sector is to contribute to JICA’s analytical work efforts. In the past, JICA’s analytical efforts were concentrated on the project planning purpose, as a consequence, information gathered in such analytical works were naturally limited to be around the particular projects. It is therefore thought to be important for JICA to conduct a country-based health sector review to gather complete information and analyze the whole sector to learn about the situation of the country and identify high priority problems and issues to be tackled in the health system.

Objectives of the Study

The key to the formulation of a good project is having conducted thorough sector reviews. Good sector reviews and analyses help us to understand the health situation and its determinants, and the capacity for health project implementation in the countries. They also help us to contribute to the countries for identifying the feasible projects in the context of priorities and developing the necessary policies and strategic planning for the health service delivery. It is also necessary to conduct such health sector review studies on a regular basis in order to develop and implement effective and efficient health projects. Based on this concept, JICA decided to carry out the sector review studies of 23 selected countries. The objectives of the sector review are to give recommendations to JICA on the aid direction for the health sector in each country, and to improve strategic approaches and the efficiency of aid cooperation.

Structure of the Report

The health sector study country report consists of seven chapters. Chapter 1 is the summary of the socio-economic situation of each country. Chapter 2 is an analysis of the national health policy, strategic approaches, and plans. Chapter 3 describes the health situation of each country to show the priority health problems by using health information and data. Chapter 4 is an analysis of the health service delivery function of each country, while Chapter 5 is an analysis of other functions of the country’s health system namely: human resources for health, health information systems, essential medical products and technologies including the health facilities, health financing, and leadership and governance. Chapter 6 is an analysis of the development partners’ assistance and cooperation. Based on the above analysis, Chapter 7 provides recommendations to JICA on the strategic areas of cooperation and its approaches.

¹ WHO announced “Macroeconomics and Health: Investing in Health for Economic Development” in December, 2000. This regards Health is an intrinsic human right as well as a central input to poverty reduction and socioeconomic development and the process helps place health at the centre of the broader development agenda in countries.

² Ravishankar N., Gubbins P., Cooley J.R., et al; June 2009; Financing of global health: tracking development assistance for health from 1990 to 2007; the Lancet 373:2113-2132

³ According to WHO, Universal coverage (UC) is defined as ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.
(http://www.who.int/health_financing/universal_coverage_definition/en/index.html)

⁴ In the World Health Report 2010 (WHO), the report advocates it with the following concrete three suggestions as the requirements; 1) Increase the efficiency of revenue collection, 2) Reprioritize government budgets, and 3) Innovative financing. As the forth suggestion, it advocates increasing development aid and making it work better for health.

⁵ The World Health Report 2010 also suggests the needs of improving the efficacy in the health systems and eliminating the inefficiency/waste will enable the poor countries to improve the availability and quality of the services.

Abbreviation and Acronyms

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infection
ART	Anti-retroviral Therapy
BCC	Behavior Change Communication
BMI	Body Mass Index
BPHS	Basic Package of Health Services
CDC	Centers for Disease Control and Prevention
CDD	Cross Dock Depot
CFSNS	Comprehensive Food Security and Nutrition Survey
CHAI	Clinton Health Access Initiative
CHSWT	County Health and Social Welfare Team
CHV	Community Health Volunteers
CPR	Contraceptive Prevalence Rate
DFID	Department for International Development
DHIS	District Health Information System
DHS	Demographic and Health Survey
DOTS	Directly Observed Therapy Short-course
DPT	Diphtheria, Pertussis, Tetanus
EHRP	Emergency Human Resource Plan
ENA	Essential Nutrition Action
EPHS	Essential Package of Health Services
EPI	Expanded Programme on Immunization
EU	European Union
FBO	Faith based organization
GAVI	The Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
GNI	Gross National Income
HIPC	Heavily Indebted Poor Country
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRMIS	Human Resource Management Information System
HSCC	Health Sector Coordinating Committee
IEC	Information, Education and Communication
IMF	International Monetary Fund
IMNCI	Integrated Management of Newborn and Childhood Illness
IPTp	Intermittent Preventive Treatment for Pregnant Women
IRS	Indoor Residual Spray
ITN	Insecticide-Treated Mosquito Net
IVM	Integrated Vector Management
JFA	Joint Finance Agreement
JICA	Japan International Cooperation Agency
LCM	Liberia Coordination Mechanism
LLIN	Long Lasting Insecticide-Treated Net
LMIS	Logistic Management Information System
M&E	Monitoring and Evaluation

MDG	Millennium Development Goal
MDR-TB	Multidrug-Resistant Tuberculosis
MIS	Malaria Indicator Survey
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOHSW	Ministry of Health and Social Welfare
MSM	Men having sex with men
NAC	National AIDS Committee
NACP	National AIDS Control Program
NDS	National Drug Service
NGO	Non-Governmental Organization
NHA	National Health Account
NHPP	National Health Policy and Plan
NHSWPP	National Health and Social Welfare Policy and Plan
NMCP	National Malaria Control Program
NNP	National Nutrition Policy
NTD	Neglected Tropical Diseases
NTLCP	National Tuberculosis and Leprosy Control Program
PAC	Post Abortion Care
PHC	Primary Health Care
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother to Child Transmission
PNC	Post Natal Care
PRS	Poverty Reduction Strategy
RBHS	Rebuilding Basic Health Services
RBM	Roll Back Malaria
RED	Reach Every District
SCMU	Supply Chain Management Unit
SGBV	Sexual and gender-based violence
SSF	Single Streams of Funding
STI	Sexually Transmitted Infection
TB	Tuberculosis
TFR	Total Fertility Rate
TTM	Trained Traditional Midwife
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
VCT	Voluntary Counseling and Testing
WFP	World Food Programme
WHO	World Health Organization
gCHV	General Community Health Volunteer



Source: [Http://www.freemap.jp/africa/africa_liberia.html](http://www.freemap.jp/africa/africa_liberia.html) (accessed 07/2012)

Republic of Liberia

Summary

1. The 14 years of civil war (1996-2003) in Liberia devastated the nation's economic and social systems. However, in 2010 the country completed the Heavily Indebted Poor Country (HIPC) joint program of the International Monetary Fund (IMF)-World Bank which helped the economy to gradually recover with a gross domestic product (GDP) growth accelerating to 6%. On the contrary, poverty still prevails with 57% of the population continuing to live in extreme poverty due to the decline of agricultural activities and high unemployment rate. Under-five mortality rate and maternal mortality ratio are high. Malnutrition is still common. Preventable diseases such as malaria, acute respiratory infection (ARI), and diarrhea remain the leading causes of morbidity and mortality of both adults and children.
2. The current medium-term economic growth and development strategy, “An Agenda for Transformation” and the National Budget Framework Paper FY 2012/13, place high importance “to improve the health and social welfare status of the population of Liberia on an equitable basis” in the health sector agenda. Furthermore, the National Health and Social Welfare Policy and Plan (NHSWPP) (2011-2021) is guided by the following principles; sustainability, efficiency, equity, and accountability. NHSWPP focuses on taking urgent and specific steps to improve maternal and child health through providing quality care and increasing the accessibility and utilization of public services. Guided by the National Policy on Decentralization and Local Governance 2009, the Government of Liberia has embarked on a process of devolving authorities to county administrations to develop their health policy and implementation plans, with the intention of providing services to meet the needs of the people.
3. Since the civil war ended, Liberia has made considerable efforts to reconstruct the health service system. Between the years 2000 and 2007, the infant mortality rate improved from 117 per 1000 live births to 71 per 1000 live births, and under-five mortality rate improved from 194 per 1000 live births to 110 per 1000 live births. Despite the progress, malaria (67%), ARI (14%), malnutrition (13%), and diarrhea (6%) are still major contributors to Liberia’s high rate of under-five mortality. The maternal mortality ratio also worsened from 578 per 100,000 live births to 994 per 100,000 live births during the same period. The HIV prevalence rate was 1.5%, which was substantially lower than those of the east and south African countries. However, the HIV prevalence rate in urban areas was 2.5% and the sentinel surveillance showed that the rate was 4% on average among pregnant women. The entire population is at the risk of malaria. Malaria accounted for over 38% of outpatient department attendance and 42% of in-patient deaths in 2009. Malaria is also the number-one killer of children under-five. Tuberculosis (TB) is also an important disease in Liberia. The TB death rate per 10,000 population was 48 and the incidence rate per 10,000 population was 476. These rates are higher than the average for the neighboring countries. The risk of acquiring TB was also higher in Liberia. The nutritional status of the population has improved in recent years. However, chronic malnutrition among children remains among the highest in the world at 42%. Food security in Liberia is still low, and malnutrition is a serious health concern, considering that malnutrition causes stunted growth in children and increases the severity of disease.
4. Under the National Health Policy and Plan (2007-2011), the Ministry of Health and Social Welfare (MOHSW) launched a free Basic Package of Health Services (BPHS) (maternal care, child health, prevention of infectious diseases, nutrition services, etc.) in all health facilities with the intention of providing services which had the most measurable impact on the health status of the Liberian people. At present, MOHSW is implementing the provision of the Essential Package of Health Services (EPHS) based on the success of BPHS. The provision of BPHS and EPHS have increased the utilization of health facilities and expanded the access and coverage of the services. Although BPHS demonstrated the progress in providing a set of standard services, people in many rural areas still have poor access to health services and health personnel are skewed towards the urban areas. Therefore, the strategy needs to be re-examined in view of equity in the availability and accessibility to health services. In order to further improve maternal, newborn and child health, the comprehensive health system strengthening should be continued as a requirement. This is especially for areas related in human resources, technology, referral at all levels of the health system, supply chain for drugs and medical product management, and basic infrastructure for water and electricity supply.
5. Liberia lost most of its health workforce during the civil war. In response, MOHSW prepared the Emergency Human Resources Plan (EHRP) to increase human resources, prioritizing nurses and midwives. Although the number has remarkably increased, highly qualified professionals such as doctors are

insufficient. Also, equitable distribution of human resources needs to be examined. The Health Management Information System (HMIS) was also reestablished and since 2008, each county health office has collected and compiled information of service deliveries. In 2011, the information systems of different vertical health programs were integrated into HMIS. Accordingly, HMIS is presently capable to manage comprehensive data gathering at the national and county levels. Although the civil war destroyed 90% of health facilities in the country, in 2010, the total number of new or reconstructed health facilities either public or private had increased to 550. One of the policy agenda is to increase the number of health facilities to meet the set target for 2021 by ensuring strategic redistribution of facility networks to promote equity in service delivery. Drug shortages require urgent intervention. At present, based on the 10-Year Supply Chain Master Plan, MOHSW is undertaking development of the supply chain system, including the establishment of the logistics management information system (LMIS) and upgrading of infrastructure and warehouses. Recognizing that the health sector funding is expected to be reduced over the next few years, MOHSW has developed the first Health and Social Welfare Financing Policy and Plan and two rounds of National Health Account (NHA) for more sustainable and sound financial plan and budget allocation.

6. There are a large number of development partners including donor agencies and NGOs in the health sector in Liberia. Although alignment is required to coordinate their support and activities, each development partner persists in its own modality, agenda, and management mechanism. The government's attempt to coordinate all activities has been a challenge. In 2008, the Department for International Development (DFID), Irish Aid, United Nation's Children Fund (UNICEF), and the United Nations High Commissioner for Refugees (UNHCR) established a pool fund. The pool fund has contributed to improve harmonization and alignment of donor support, also has reduced the fragmentation of supported activities at the county level. In addition to the aid effectiveness, the pool fund helps finance priority unfunded needs and capacity building of MOHSW and the county health teams (CHSWT). This has increased the leadership and capacity of MOHSW in the management of donor funding. The current NHSWPP aims to facilitate harmonization of donor support including NGOs, thus attention should be given to the direction of donor coordination to ascertain appropriate support required.
7. In response to the above-mentioned context, the priority is to improve maternal and child health through EPHS, the cornerstone of the basic health service delivery. Along with the support to service deliveries, it is important in the medium- and long-term to consider the support for capacity building of CHSWT in their provision of health services, including community intervention. As NHSWPP emphasizes, support should contribute to enhance equity in accessibility and availability of health services.

JICA Data Collection Survey on Health Sector

Country Report Republic of Liberia

Table of Contents

Foreword	
Abbreviation and Acronyms	
Map of Republic of Liberia	
Summary	
Chapter 1	Country Situation..... 1-1
1.1	Socioeconomic Situation..... 1-1
Chapter 2	Development Policies and Plans 2-1
2.1	National Development Policy 2-1
2.2	Health Sector Development Plan 2-1
Chapter 3	Health Status of the People..... 3-1
3.1	Overview 3-1
3.2	Maternal and Child Health 3-2
3.2.1	Maternal Health 3-2
3.2.2	Child Health..... 3-3
3.3	Situation of Infectious Diseases 3-3
3.3.1	HIV/AIDS..... 3-3
3.3.2	Malaria..... 3-4
3.3.3	Tuberculosis..... 3-6
3.3.4	Nutrition and Health 3-6
3.3.5	Other Health Issues..... 3-8
Chapter 4	Health Services..... 4-1
4.1	Primary Health Care Services 4-1
4.2	Maternal, Newborn, and Child Health Services..... 4-2
4.2.1	Maternal Health 4-2
4.2.2	Child Health..... 4-4
4.3	Infectious Disease Control 4-5
4.3.1	HIV/AIDS Prevention Program..... 4-5
4.3.2	Malaria Prevention Program..... 4-6
4.3.3	Tuberculosis Control Program..... 4-8
4.4	Nutrition Program 4-10
4.4.1	Other Health Issues..... 4-10
Chapter 5	Health System..... 5-1

5.1	Human Resources for health (HRH)	5-1
5.1.1	Overview.....	5-1
5.1.2	Health Workforce Planning.....	5-1
5.1.3	Situation of Human Resources	5-2
5.1.4	Human Resource Supply System.....	5-3
5.2	Health Management Information System.....	5-4
5.2.1	Health Facility Network	5-6
5.2.2	Drug Supply System	5-8
5.3	Health Financing	5-11
5.3.1	Overview.....	5-11
5.3.2	Pool Fund.....	5-12
5.4	Health Administrative System.....	5-13
5.4.1	Decentralization.....	5-13
5.4.2	Organization and Role of Ministry of Health and Social Welfare	5-13
5.4.3	Structure and Role of County Health and Social Welfare Team (CHSWT)	5-15
Chapter 6	Development Assistance and Partnership.....	6-1
6.1	Framework of Donor Coordination.....	6-1
6.2	Activities of Major Development Partners.....	6-2
6.3	Outline of Japanese Cooperation.....	6-3
Chapter 7	Priority Health Issues and Recommendations	7-1
7.1	Priority Health Issues	7-1
7.1.1	Factors Affecting Priority Issues.....	7-1
7.1.2	Government and Donor's Approach and Problems on Primary Health Care in the Future	7-2
7.2	Recommendations	7-2
7.2.1	Support to Priority Issues.....	7-3

Annex

Annex 1 : Main Indicators in the Health Sector

Annex 2 : References

List of Figures and Tables

Figure 3-1	HIV Prevalence Rates by Gender and Age	3-4
Figure 3-2	HIV Prevalence Rate by Region	3-4
Figure 3-3	Prevalence of Malaria in Children (6-59 months) by Region	3-5
Figure 3-4	TB Mortality, Incidence, and Prevalence Rates (1990-2010)	3-6
Figure 3-5	Chronic Malnutrition Among Children 6-59 Months by County	3-7
Figure 4-1	ANC Visit by County (% of ANC 4 th) (2010)	4-2
Figure 4-2	Delivery by Location (2007-2010).....	4-3
Figure 4-3	Delivery by Skilled Personnel (2000-2010).....	4-3
Figure 4-4	Immunization Coverage by Antigen (Children 0-59 months) (2010)	4-4
Figure 4-5	Coverage of ACT Treatment (2007-2010)	4-8
Figure 4-6	Notification of New TB Cases (2001-2010)	4-9
Figure 5-1	HMIS Data Source (Plan)	5-5
Figure 5-2	Health Information System (HIS) Data Flow	5-5
Figure 5-3	HIS Reporting by County (2010).....	5-6
Figure 5-4	Service and Administrative Levels of Health Facilities	5-7
Figure 5-5	Average Distance from Communities to Facilities by County.....	5-8
Figure 5-6	Organizations Responsible for Supply Chain	5-10
Figure 5-7	Health Commodity Supply Chain Plan for 2020	5-10
Figure 5-8	Structure of the Pool Fund and Disbursement Mechanism.....	5-13
Figure 5-9	Ministry of Health and Social Welfare Organizational Structure.....	5-15
Figure 5-10	Organizational Structure of Montserrado CHSWT.....	5-16
Figure 6-1	Major Donor Funding by County (2008 and 2012)	6-1
Table 1-1	Selected Economic and Population Indicators.....	1-1
Table 2-1	Monitoring Framework of NHSWPP (2011-2021).....	2-2
Table 3-1	Indicators for Health	3-1
Table 3-2	Malaria Cases Diagnosed, Treated, Deaths by County (2010)	3-5
Table 3-3	Malnutrition Status of Children (6-59 months) (2006 and 2010)	3-7
Table 4-1	Service Area of EPHS.....	4-2
Table 4-2	Estimated Budget by Activity (2010-2015)	4-6
Table 4-3	HIV/AIDS Control Program Performance (2008-2010).....	4-6
Table 4-4	Funding Sources of Malaria Control Program (2004-2010) (US\$)	4-7
Table 4-5	Malaria Control Program Performance (2009 and 2005)	4-8
Table 5-1	Number of Health Workers by Cadre (2006 and 2009) and EHRP Target (2010).....	5-2
Table 5-2	Health Workers by County and Cadre (2009).....	5-2
Table 5-3	Educational Institutes for Health Human Resources	5-3
Table 5-4	Number of Public Health Facilities (2011) and Target Numbers (2021).....	5-7
Table 5-5	Service Area of Health Facilities	5-7
Table 5-6	National and Health Sector Budget (2007/2008-2010/2011)	5-11
Table 5-7	Financing Agent and Function of Health Sector Budget (2007/2008).....	5-11
Table 6-1	Main Aid Mechanisms in the Health Sector (2011).....	6-1
Table 6-2	Donor's Assistance and Areas of Support.....	6-2
Table 6-3	GFATM Support for HIV/AIDS, TB, and Malaria Programs.....	6-2
Table 6-4	Health Sector Support by the Japanese Government.....	6-3

Chapter 1 Country Situation

1.1 Socioeconomic Situation

The 14 years of civil war (1989-2003) in Liberia killed over 200,000 people and forced one million people to flee the country. Since the civil war ended, Liberia's economic and social transformations continue, and the economy is gradually recovering. However, the impact of the war remains a factor in the slow economic growth, decline in the agricultural activities, and high unemployment rate in Liberia. Many people still live in extreme poverty and three quarters of the population live on less than US\$1 a day. The 2011 Human Development Index (HDI) of the United Nations Development Programme (UNDP) ranked Liberia at 182 out of the 187 countries and territories. Liberia was classified as one of the least developed countries in the world [1] [2] [3]. After finishing the Enhanced Heavily Indebted Poor Countries (HIPC) Initiative Completion Point⁶, Liberia also became eligible for 100% relief on eligible debts by the International Monetary Fund (IMF), the World Bank, and the African Development Fund (AfDF) [4].

Table 1-1 Selected Economic and Population Indicators

Indicator	Unit	Value	Year	Source
Population	Person	4.1 million (3,476,608)	2011 (2009)	1*
Population Growth Rate	%	4.2	2000-2009	2
Economic Growth Rate	%	5.5	2010	3
GNI per Capita	US\$	160	2009	2
Net Official Development Assistance Received (% of GDP)	%	78.3	2009	1
Population in Severe Poverty	%	57.5	2007	1
Literacy Rate (15 years old and above)	%	59.17	2005-2010	1
Primary School Net Enrolment/Attendance	%	40	2005-2009	2

Note: * In parentheses, the data from the 2008 Census

Sources: 1. Human Development Report 2011, UNDP (2011) [2]
2. The State of the World Children 2011, UNICEF (2011) [5]
3. World Development Indicators, the World Bank (2012) [3]

Liberia is administratively divided into Greater Monrovia District, 15 counties⁷ and 95 districts with an estimated population of 4.1 million in 2011. Of these, 48.2% of the population live in the urban areas and one-third live in the capital of Monrovia.

⁶ In order to receive a full and irrevocable reduction in debt available under the HIPC Initiative, a country must:

1. Establish a further track record of good performance under programs supported by loans from the IMF and the World Bank.
2. Implement satisfactorily key reforms agreed at the decision point.
3. Adopt and implement its PRSP for at least one year.

⁷ 15 counties are: Bomi, Bong, Gbarpolu, Grand Bassa, Grand Cape Mount, Grand Gedeh, Grand Kru, Lofa, Margibi, Maryland, Montserrado, Nimba, River Cess, River Gee, and Sinoe

Chapter 2 Development Policies and Plans

2.1 National Development Policy

In line with the new Medium-term Economic Growth and Development Strategy, “An Agenda for Transformation” which started in July 2012, the Government of Liberia intends to move from an emergency reconstruction phase to a development phase.

The goal and objectives of the health sector in the above strategy are as follows:

Sector Goal: To improve the health and social welfare status of the population of Liberia on an equitable basis.

Sector Objectives:

- To increase access and utilization of the Essential Package of Health Services (EPHS) of catchment communities living within 5 km from the nearest health facility to 85%,
- To transfer management and decision-making to lower administrative levels to improve service delivery,
- To make health and social welfare services affordable for the population and country, and
- To increase the number of health workers from a population ratio of 5.7/10,000 to 14/10,000 [6].

The Poverty Reduction Strategy (PRS) (2007-2011) also states that one of the sources of poverty in Liberia is poor health. The health sector is included as one of the four PRS pillars under the Infrastructure and Basic Services. The priority areas for the health sector are; (i) building human resources in the health sector, (ii) expanding access to the Basic Package of Health Services (BPHS)⁸, (iii) rehabilitating health infrastructure, (iv) strengthening social welfare programs, (v) developing support systems, and (vi) strengthening health financial system [7].

The National Budget Framework Paper FY2012/13⁹ also emphasizes the need for urgent and specific interventions to tackle with the high maternal and child health.. These interventions should contribute to the PRS strategic objectives and to the sector goal [6].

2.2 Health Sector Development Plan

The National Health Policy and Plan (NHPP) (2007-2011) released in 2007 was used as a document to achieve the targets set in the Poverty Reduction Strategy Paper (PRSP). NHPP defined BPHS as a cornerstone of the basic health services to be offered at the health facilities of all levels, including the facilities operated by non-government organizations (NGOs) [8].

The National Health and Social Welfare Policy and Plan (NHSWPP) (2011-2021) issued in July 2011 is guided by the four principles: sustainability, efficiency, equity, and accountability. Table 2-1 shows the objectives, indicators, and targets for NHSWPP.

⁸ Currently, implemented as EPHS

⁹ The fiscal year starts on 1 July and ends on June 30.

Table 2-1 Monitoring Framework of NHSWPP (2011-2021)

Objective	Indicator	Baseline	Source	2021 target
Healthier population	Maternal mortality ratio (per 100,000 live births)	994 (2007)	DHS	497
	Under-five mortality rate (per 1,000 live births)	114 (2009)	MIS	57
	Life expectancy at birth (years)	59 (2010)	UNDP	TBD
Increased access and utilization of health service	Percentage of population living 5 km from the nearest health facility	69% (2010)	RBHS	85%
Responsiveness to users' expectations through decentralization, ensuring a fair degree of equity	Equity index: ratio contacts (head count)/head in 25% of the population (counties) with highest consumption over 25% population with lowest consumption	2.39 (2010)	HMIS	1.5
Financial protection	Public expenditure in health and social welfare as percentage (%) of the total public expenditure	7.8% (2010)	MOF/O FM	>10%
Service provision	Maternal health (Number and % of deliveries that are facility-based with a skilled birth attendant)	22% (2010)	HMIS	80%
	Family planning (Couple-years of protection with family planning methods)	45,798 (2010)	HMIS	TBD
	Child healed/EPI (Number and % of children under one year who received DPT3/pentavalent-3 vaccination ¹⁰)	74% (2010)	HMIS	90%
	Service consumption (OPD consultations per inhabitant per year)	0.9 (2010)	HMIS	2.0
	Malaria (Number and % of pregnant women provided with 2nd dose of IPTp for malaria)	29% (2010)	HMIS	80%
	HIV/AIDS (Number of pregnant women tested with HIV+ and receiving a complete course of ARV prophylaxis to reduce the risk of mother to child transmission (MTCT))	1,613 (2011)	HMIS	TBD
	Tuberculosis (Number of smear positive TB cases notified per 100,000 population)	103 (2010)	NLCP	127
Systemic components	Human resources (Number of skilled birth attendants-physicians, nurses, midwives and physician assistants/10,000 population)	5.7 (2010)	HMIS	14
	Drugs (Number and % of facilities with no probability of stock-out of tracer drugs during the period such as amoxicillin, cotrimoxazole, paracetamol, ORS, iron folate, ACT, FP commodity)	TBD	HMIS	95%
	HMIS (Number and % of timely, accurate, and complete HIS reports submitted to MOHSW during the year)	76% (2010)	HMIS	90%
	Financing (Percentage of execution of annual allocation of GOL budget for health)	64% (2010)	HMIS	95%
	Quality (Number and % of facilities reaching two star level in accreditation survey including clinical standards -public network facilities)	9.3% (2011)	Accreditation Report	90%

Source: National Health and Social Welfare Policy and Plan 2011-2021, MOHSW (2011) [9]

¹⁰ DPT3: three doses of the combined diphtheria/pertussis/tetanus vaccine. Penta3: three doses of the combined DPT, hepatitis B, and haemophilus influenza

Chapter 3 Health Status of the People

3.1 Overview

The aftermath of the conflict largely affected the health system in Liberia due to the looting and destruction of health facilities, loss of health professionals, and shortage of qualified health personnel. Since then, the Government of Liberia (GOL) has made efforts in rebuilding the basic health system with the help of donor agencies and NGOs under the NHPP. The BPHS and the Essential Package of Health Services (EPHS) including scaled-up and additional services, have also revitalized the primary health care (PHC) services, with an outcome in the recent improvement in the infant and child mortality. On the other hand, the high maternal mortality is still a matter of great concern. Food insecurity and malnutrition are pervasive throughout the country. Preventable diseases such as malaria, acute respiratory infection (ARI), and diarrhea remain the leading causes of morbidity and mortality for both adults and children. Table 3-1 shows the major health indicators. Please refer to Attachment 1 for more indicators.

Table 3-1 Indicators for Health

Indicator	Unit	Liberia	Sub-Saharan Africa	Year
Crude Birth Rate	per 1,000 population	38	38	2009
Crude Death Rate	per 1,000 population	10	14	2009
Total Fertility Rate (TFR)	-	5.0	5.0	2009
Population Growth Rate	%	4.2	2.8	2000-2009
Life Expectancy at Birth	years	59	53	2009
Infant Mortality Rate	per 1,000 live births	80	81	2009
Under-five Mortality Rate	per 1,000 live births	112	129	2009
Infants with Low Birth Weight	%	14	14	2005-2009
1-year-old Children Immunized Against DPT1	%	75	80	2009
1-year-old Children Immunized Against DPT3	%	64	70	2009
Maternal Mortality Ratio	per 100,000 live births	990	610	2008
Antenatal Care Coverage (at least once)	%	79	73	2005-2009
Antenatal Care Coverage (at least four times)	%	66	43	2005-2009
Skilled Attendant at Birth	%	46	45	2005-2009
Institutional Delivery	%	37	41	2005-2009
HIV Prevalence among Young People (aged 15-24)	%	1.5	4.7	2009
Population using Improved Drinking-water Sources	%	Total: 68 Urban: 79 Rural: 51	Total: 60 Urban: 83 Rural: 47	2008
Population using Improved Sanitation Facilities	%	Total: 17 Urban: 25 Rural: 4	Total: 60 Urban: 83 Rural: 47	2008

Source: The State of the World Children 2011, UNICEF (2011) [5]

In regard to the level of progress in achieving the Millennium Development Goals (MDGs), under-five mortality rate and infant mortality rate under Goal 4 (Reduced child mortality) have reduced by over 50%; yet, further reduction to meet 2015's target will be slow. Although the proportion of institutional delivery increased from 37% to 64%, and the proportion of births attended by skilled health personnel increased from 46% to 85% between 2007 and 2010, Liberia is not on track to achieve the 2015 target of maternal mortality under Goal 5 (Improved maternal health). Considering that Liberia restored its democratic government in 2005, five years after the MDG was adopted by a resolution of the United Nations General Assembly, the country already had a five-year handicap with respect to attaining the MDGs. Achieving other health related targets (Goal 1: Eradicate extreme hunger and poverty, Goal 6: Combat human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS), malaria and other diseases) are also serious challenges [10].

3.2 Maternal and Child Health

3.2.1 Maternal Health

It is reported that the maternal mortality ratio (MMR) increased from 578 per 100,000 live births to 994 per 100,000 live births between 2000 and 2007¹¹ [1]. Given this extremely high maternal mortality, the President of Liberia, in 2010 declared maternal death as a reportable medical condition in 24 hours. As a result of this mandate, regular health facility reporting commenced including maternal deaths in July 2010. However, it is important to note that reported deaths are grossly understated, as it excludes many maternal deaths that occurred within the community [11].

Majority of maternal deaths are due to postpartum hemorrhage, obstructed or prolonged labor, complications of unsafe abortion, eclampsia, malaria, and anemia [11]. Women who survived from critical condition may suffer from prognostic symptoms such as vesicovagino-rectal fistula and infertility. Furthermore, adolescent pregnancy and delivery greatly increase the risk of maternal and infant deaths [12]. The factors including an acute shortage of skilled human resources, inadequate emergency obstetric care, the lack of referral systems, poor nutritional status of women and high teenage pregnancy contribute to the high rate of maternal mortality. Among them, delays in reaching a referral hospital can have tremendous impact on maternal survival rates. In addition to the delay in deciding to seek care by the family, there are numerous obstacles in accessing health facilities such as distance, inadequate public transport, transportation cost, poor road condition and security in traveling at night. There are also reported cases of women who waited a few days and died without taking emergency obstetric care after they reached the health facilities [13] [12].

Many teenage mothers are at risk from numerous complications associated with pregnancy. According to the Demographic and Health Survey (DHS), the proportions of women aged 15-19 who have already had a child or were pregnant with their first child increased from 29% to 32% between 1999-2000 and 2007 [14]. According to the 2009 Malaria Indicator Survey (MIS), the proportion was as high as 62.3% [15]. Adolescents are more likely to engage in unprotected sex, which can result in unwanted pregnancy or sexually transmitted infections (STI) including HIV. In addition, the increasing numbers of illegal and unsafe

¹¹ According to the UNICEF estimate, MMR was 990 in 2008; much higher than the average for Sub-Saharan Africa (610).

abortions complicates this situation. Post abortion care (PAC) is also very limited and not many health care providers have the required skills to provide PAC [13].

3.2.2 Child Health

Due to the improved basic health services such as the immunization program, the infant mortality rate declined from 117 per 1000 live births in 2000 to 71 per 1000 live births in 2007. The under-five mortality rate also declined from 194 per 1000 live births in 2000 to 110 per live births in 2007. Although some improvements in child mortality were seen, malaria (67%), ARI (14%), malnutrition (13%), and diarrheal diseases (6%) remain the main causes of under-five deaths [1]. According to the 2010 Comprehensive Food Security and Nutrition Survey (CFSNS), only 28% of children in the survey did not have any illness in the two weeks preceding the interview. Counties with the highest prevalence of child illness came from the rural areas of Montserrado, Nimba, Gbarpolu, Grand Gedeh, and Grand Kru. All of these counties have greater than 80% of children suffering from at least one illness¹². In the survey, sick children with any illness had statistically higher levels of malnutrition, which decreased their body resistance and increased the severity of disease [16].

Neonatal mortality is also associated with complications such as fetal distress, prolonged labor, prolapsed cord, and other conditions that could be prevented or treated by skilled health care providers coupled with proper equipment and supplies [13].

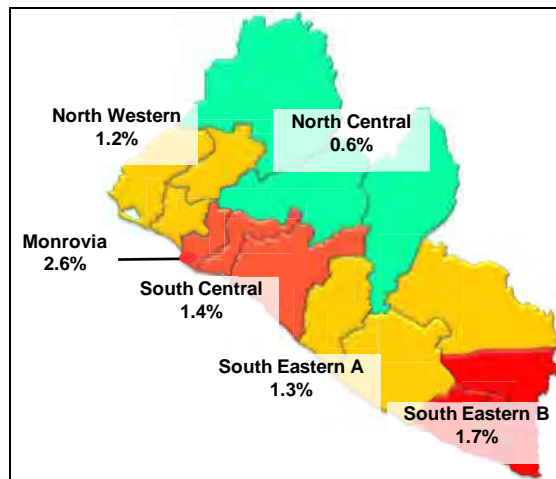
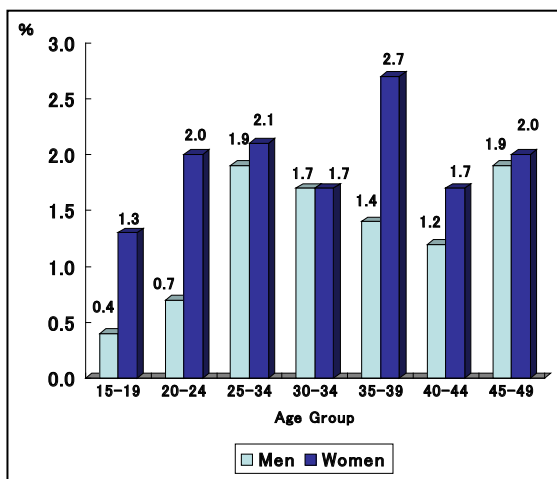
3.3 Situation of Infectious Diseases

3.3.1 HIV/AIDS

To date, the 2007 DHS provides the most reliable data on HIV prevalence among the general population. The DHS results showed an HIV rate of 1.5% among the general population aged 15-49 (1.3% HIV-1; 0.2% HIV-2; 1.8% women; 1.2% men). Figure 3-1 and 3-2 indicate that the differences in HIV rates between women and men, particularly significant are in the 15-19 years age group and the 20-24 years age group. This highlights the particular vulnerability of young women and girls [17].

Geographically, the border area of the south-eastern region has a high HIV rate. This might reflect the influence of cross-border trades, mining activities, and the transactional sex and/or sex work. A more in-depth research has not been done to understand the situation. Furthermore, DHS data revealed significant differences between urban and rural settings. The overall HIV rate in urban areas is at 2.5% against 0.8% only in rural areas with the highest rate found among women in Monrovia at 2.9%.

¹² The question was asked about the presence or absence of diarrhea, cough, fever, or any illness



Source: Liberia Demographic and Health Survey, MOHSW et al. (June 2008) [14]

Figure 3-1 HIV Prevalence Rates by Gender and Age

Figure 3-2 HIV Prevalence Rate by Region

The results of the facility-based studies among women attending antenatal care (ANC) clinics in 2006 and 2007 showed a prevalence of 10.4% in one urban health center and rates of 7% or more in 4 out of 13 urban clinics. The average rate for the rural sites was 2.6%.

Unsafe sex is the major cause of HIV transmission in Liberia. In this regard, groups who are at particular risk include sex workers and their clients, orphans, street children, men who have sex with men (MSM), men in incarceration, mobile populations, and uniformed personnel including UN peacekeepers. Condom use is rare in Liberia. Among young people aged 15-24 years who had sexual intercourse, only 6% used condom during their first sexual intercourse. Among women who reported having higher-risk sex in the past 12 months, only 14% used condom; while 26% of men used condom at the last higher-risk sex [17]. In addition, poverty and high unemployment rate in Liberia are also contributors of the HIV epidemic, as they are associated with high labor mobility and are more likely to increase the risk of men and women engaging in unprotected sex with multiple sex partners. Sexual violence is widespread and constitutes a major risk for HIV infection.

As described above, the overall HIV prevalence rate was relatively low at 1.5%. However, this obscures the high HIV rate in urban areas (2.5%) and among pregnant women and the generalized epidemic. Without effective prevention program, there is a risk that the HIV epidemic would rapidly spread in Liberia [17].

The spread of other sexually transmitted infections (STI) is also a matter of concern. Based on the World Health Organization (WHO) syndrome approach, 276,011 new cases of STI were reported in 2010 across various health facilities. Montserrado had the highest number of new STI cases with 83,112 [11].

3.3.2 Malaria

Malaria is endemic in Liberia and the entire population is at risk of the disease. The risk is high in the central and southern regions and the transmission peak is during the months of September to October. Malaria cases increased from 720,000 per year in 2006-2007 to 749,000 cases in 2009. This increase may be explained by the improved reporting. The 2009 MIS reports that malaria accounted for over 38% of outpatient department

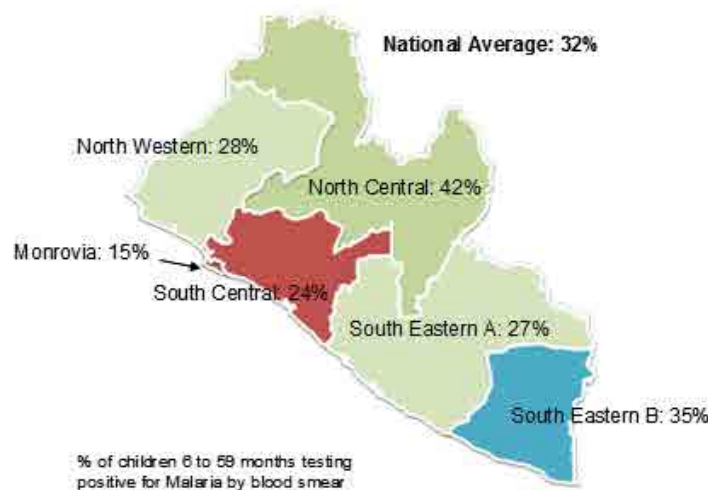
attendance and 42% of in-patient deaths. Table 3-2 shows that malaria accounts for about 40% of outpatient department attendance, and the number of malaria related inpatients were 80,000. Malaria also accounted for 37.4% of inpatient deaths in 2010 [11] [18].

Table 3-2 Malaria Cases Diagnosed, Treated, Deaths by County (2010)

County	Consultations	Malaria Cases	Proportion of Malaria Consultations (%)	Treated with ACT	Malaria Death
Bomi	160,767	59,754	37.2	48,445	40
Bong	301,449	115,188	38.2	99,740	8
Gbarpolu	74,510	24,418	32.8	20,270	7
Grand Bassa	197,766	96,565	48.8	68,053	104
Grand Cape Mount	150,779	63,541	42.1	54,362	19
Grand Gedeh	98,300	38,425	39.1	35,242	33
Grand Kru	63,871	20,748	32.5	18,819	13
Lofa	343,807	141,457	41.1	118,956	81
Margibi	285,183	121,793	42.7	85,952	43
Maryland	130,576	46,158	35.3	34,092	24
Montserrado	611,113	255,748	41.8	189,897	749
Nimba	434,251	181,000	41.7	138,658	163
River Cess	86,866	32,018	36.9	26,962	12
River Gee	94,679	36,149	38.2	30,400	12
Sinoe	98,156	32,306	32.9	27,714	20
Whole Country	3,132,073	1,265,268	40.4	997,562	1,328

Source: Annual Report 2010, MOHSW (15 January 2011) [11]

Malaria was the number-one killer of children under-five, overtaking diarrhea, ARI, and malnutrition in 2010 [11]. As Figure 3-3 shows, the prevalence of malaria in children under-five was lowest in Monrovia (15%) and highest in the north central region (42%). MIS reports that children whose mother are less educated and those in lowest wealth quintiles are more likely to have a higher risk of malaria transmission [15].

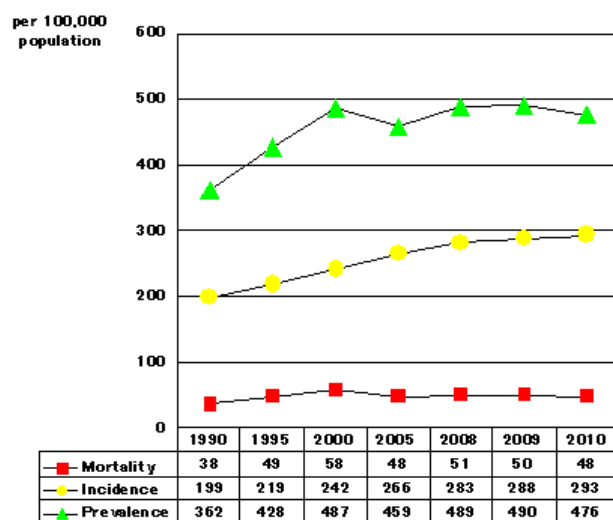


Source: National Malaria Strategic Plan 2010-2015, NMCP-MOHSW (January 2010) [18]

Figure 3-3 Prevalence of Malaria in Children (6-59 months) by Region

3.3.3 Tuberculosis

Tuberculosis (TB) is one of the major public health problems in Liberia. According to WHO estimates, the TB mortality rate was 48 per 100,000 population, the incidence rate was 293 per 100,000 population, and the prevalence rate was 476 per 100,000 population in 2010. All three figures are higher than the average of Sub-Saharan Africa (30; 276; and 332, respectively) [19]. Figure 3-4 shows that the TB mortality, incidence, and prevalence rates from 1990 to 2010. Although the National Tuberculosis and Leprosy Program (NTLCP) was launched in 1989, the discontinuation of the program due to the civil war may be attributed to increased burden of TB. The 2009 NTLCP report showed that 22% of TB patients were HIV-infected [8] [11].



Source: Tuberculosis Control Report 2011, WHO (2011) [19]

Figure 3-4 TB Mortality, Incidence, and Prevalence Rates (1990-2010)

3.3.4 Nutrition and Health

About two-thirds of Liberians are engaged in agriculture activities. Most of them depend on smallholder subsistence agriculture for their livelihood. Although there has been an increase in the production of paddy in recent years, the per capita yield is still very low at 1.5 mt/ha in Liberia¹³. Two-thirds of the food supply are imported in Liberia. The situation such as competition from cheaper imported food and limited road infrastructure undermines the access to markets for small farmers. The poverty rate in rural areas is 68% (55% in the urban areas). Average households spend 53% of their total cash expenditure on food. As such, the level of food security is low in Liberia and malnutrition is still a major health concern. Regionally speaking, the south-eastern region, with the poorest infrastructure and access to markets, educational opportunities, and health services, is most affected by food insecurity.

The situation of the chronic malnutrition among children based on the results of the 2010 CFSNS is shown in Figure 3-5. The overall prevalence of chronic malnutrition was around 40%, and the highest rate was as high as 60%. Results indicated that malnutrition prevailed throughout the country and chronic malnutrition was more prevalent in rural areas than in urban areas. Monrovia has the lowest prevalence of chronic malnutrition with 31%, while Sinoe, Grand Bassa, Bomi, and Margibi have prevalence rates over 44%.

¹³ The per capita yield of paddy is 3.6 mt/ha in Senegal.



Source: Comprehensive Food Security and Nutrition Survey 2010, MOA and WFP (October 2010) [16]

Figure 3-5 Chronic Malnutrition¹⁴ Among Children 6-59 Months by County

Table 3-3 shows the trend of malnutrition among children. As shown in Figure 3-5, the overall stunting prevalence rate of 41.8% was one of the highest in the world. It is also notable that the rates of many counties exceeded the WHO cut-off threshold of 40%.

Table 3-3 Malnutrition Status of Children (6-59 months) (2006 and 2010)

Age	Wasting ¹⁵	Stunting ¹⁶	Underweight ¹⁷
2006	6.9%	39.2%	26.8%
2010	2.8%	41.8%	14.9%

Source: Comprehensive Food Security and Nutrition Survey 2010, MOA and WFP (October 2010) [16]

Moreover, 14% of children were born underweight, and at the time of CFSNS, a total of 218,857 children (6-59 months) were estimated to be stunted. Children between 18-29 months old have the highest level of moderate and severe stunting of 45.6%, while 6-17 months old have lower level of 30.7%. Acute malnutrition was prevalent in 2.8% of children between 6-59 months old. The prevalence of iron deficiency among children was as high as 87% (16,000 children) [16].

Infant and young child feeding practices affect the health of children under-24 months. Breastfeeding is widely practiced in Liberia, yet the average length of breastfeeding is 18-19 months. Sixty percent of children are not breastfed up to 24 months in line with international recommendations. It was also reported that 71% of infants under-six months are not exclusively breastfed [16] [20].

The overall stuntedness was found in 2.6% of women. River Gee and Bomi counties had the highest prevalence of stuntedness of women with over 5%. The rate of malnutrition among women between 15-19

¹⁴ Chronic malnutrition is measured by stunting (shortness in height compared to the average).

¹⁵ Wasting: weight for height < -2 standard deviations (SD) of the WHO Child Growth Standards median

¹⁶ Stunting :height for age < -2 SD of the WHO Child Growth Standards median

¹⁷ Underweight: weight for age < -2 SD of the WHO Child Growth Standards median

years old was 15%, and 10% of them had body mass index (BMI) less than 18.5 (underweight). Iron deficiency was found in 59% of non-pregnant women and 62% of pregnant women [16].

3.3.5 Other Health Issues

(1) Sexual and Gender-based Violence (SGBV)

Many women and girls became victims of sexual violence during the civil war. It was also a survival strategy for many women during the war to depend on “transactional sex”, sex in exchange for goods, money and/or protection. Even after the war, many forms of sexual and gender-based violence (SGBV) including rape, sexual assault, and sexual child abuse continue to be serious social concerns in the country.

A survey in Lofa County by the United Nations Population Fund (UNFPA) and the Centers for Disease Control and Prevention (CDC) in 2007 reported that 59% of all women had at least one sexual violent incident including rape and transactional sex for both war and post-war periods (1999-2003). Another study conducted by the Ministry of Health and Social Welfare (MOHSW) and the World Health Organization (WHO) in 2004 showed that 75% of female respondents had been raped during the civil war. Likewise, the 2007 DHS Study reported that 45% of women ever experienced physical violence since they were 15 years old, while 29% had faced violence in the last 12 months. Few incidents of sexual violence were reported due to social pressure as well as the suppressed socio-economic status of women. Besides, the present legal protection, health and psychosocial services fail to ensure confidentiality and support of the SGBV victims [17].

(2) Mental Health

While national prevalence studies have not been completed, mental health problems caused by the civil war is a significant health issue. Reports on high rates of major depression (40%), post-traumatic stress disorder (44%), and high rates of substance abuse among ex-combatants were noted [8].

Chapter 4 Health Services

4.1 Primary Health Care Services

Under the NHPP (2007-2011), the BPHS was implemented to strengthen the provision of basic health services. At the same time, the management and implementation of health service systems at the county level have gradually strengthened in line with the decentralization policy. The principle purposes of BPHS were 1) to describe a standardized package of health services and 2) to promote a (re)distribution of health services in a way that ensures that there will be universal access to essential health services. BPHS was designed to provide most urgent and high-impact interventions to improve the health status of the Liberian population. Donor funding accounted for 47% of BPHS which was spent on contracts with NGOs to support 292 health facilities [8] [9] [21].

Each health facility would obtain accredited status of “fully functional” by delivering the entire BPHS to its target population. The 2011 BPHS Accreditation Final Results Report stated that among the 531 open health facilities (376 government and 155 private facilities), 316 (84.3%) government facilities met the standards for BPHS accreditation (overall accreditation score of 75% or higher)¹⁸. As of 2010, BPHS surpassed the Heavily Indebted Poor Countries (HIPC) and Poverty Reduction Strategy (PRS) completion point of 70% [22]. The free service provision through BPHS and the current EPHS were believed to increase the service availability and access to the Liberian people¹⁹ [1].

Although BPHS demonstrated the progress in providing a set of standard services, more comprehensive and improved services were required. In addition, a survey found that 40% of all households traveled one hour or more to the nearest health facility. The strategy needs to be re-examined to ensure equitable services among densely populated urban areas and vast but sparsely populated rural areas²⁰.

The EPHS will achieve the following purposes over ten years from 2011.

1. To expand the standardized primary package of health services.
2. To provide equitable access.
3. To strengthen the service delivery network.
4. To provide the basis for operational plan development [8].

The services to be available through EPHS are shown in Table 4-1.

¹⁸ In 2010, 80% of the government facilities met the accreditation criteria. NGOs operated 74% of the government facilities.

¹⁹ According to NWSWPP, the current suspension of user fees shall be extended at least until 2013.

²⁰ The target is to place reliable service delivery points which provide EPHS to the communities within 5 km.

Table 4-1 Service Area of EPHS

Continuing Services in BPHS			
Maternal and Newborn Health Services		Child Health Services	
Antenatal Care	Postpartum Care	EPI	Child Nutrition
Labor and Delivery Care	Newborn Care	IMNCI	Management of Acute Malnutrition
Emergency Obstetric and Newborn Care	Maternal and Newborn Nutrition		Micronutrient Supplementation
Reproductive Health		Communicable Disease Prevention and Control	
Family Planning Service	Reproductive Cancer	STI/HIV/AIDS	Malaria
Adolescent RH	Obstetrics Fistula	TB	Other Diseases with Epidemic Potential
Reinforcing Services in BPHS			
Child Nutrition	SGBV Services	Mental Health	
Expanding EPHS Contents (New Services)			
Non-communicable Diseases (NCD)	Environment and Occupation Health	Eyes, Ears, Dental, Skin Care	
Neglected Tropical Diseases (NTD)	School Health Services	Prison Health Services	

Sources: National Health and Social Welfare Policy and Plan 2011-2021, MOHSW (2011) [9]
Essential Package of Health Services-Primary Care, MOHSW (June 2011) [8]

4.2 Maternal, Newborn, and Child Health Services

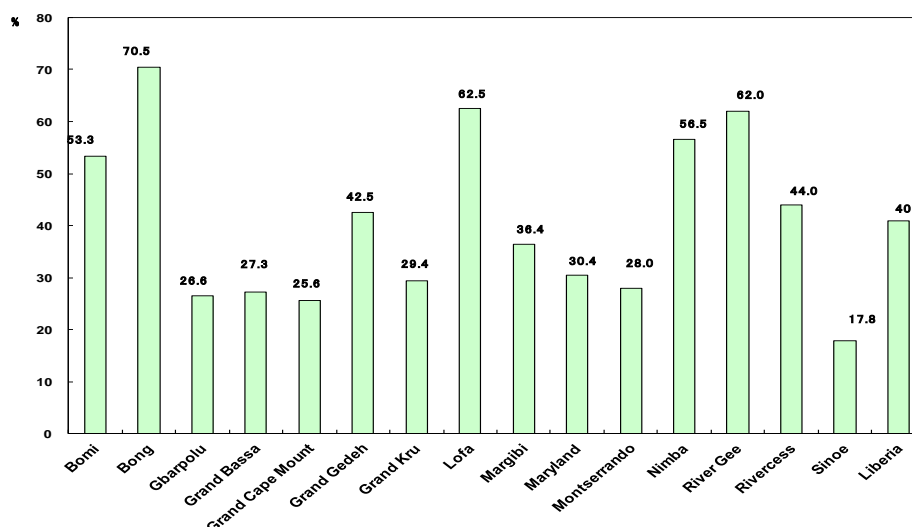
4.2.1 Maternal Health

(1) Maternal Mortality

In 2007, the Road Map for the Reduction of Maternal and Newborn Mortality in Liberia was developed in line with MDG targets 4 and 5. The strategies of the road map are as follows:

- To provide skilled attendants at all levels of health care delivery system,
- To strengthen the referral system to link all levels of health facilities, and
- To provide family planning.

The coverage of the first antenatal care (ANC) for 2010 was not accurate due to possible double counting. As indicated in Figure 4-1, the overall coverage rate for the ANC 4th visits was 40.9% and there were significant differences by county. A priority intervention is to increase the coverage and use of ANC to reduce maternal deaths.



Sources: Annual Report 2010, MOHSW (15 January 2011) [11]

Figure 4-1 ANC Visit by County (% of ANC 4th) (2010)

As shown in Figure 4-2, the percentages of institutional delivery and delivery with skilled personnel have significantly improved. The percentage of home delivery decreased from 63% in 2007 to 36% in 2010, while institutional delivery increased from 37% in 2008 to 64% in 2010. Figure 4-3 shows that delivery with skilled personnel increased from 46% in 2007 to 64.7% in 2010.

Up to now, specific data are not yet presented to show whether the improvements in maternal services have contributed to the reduction of maternal deaths.

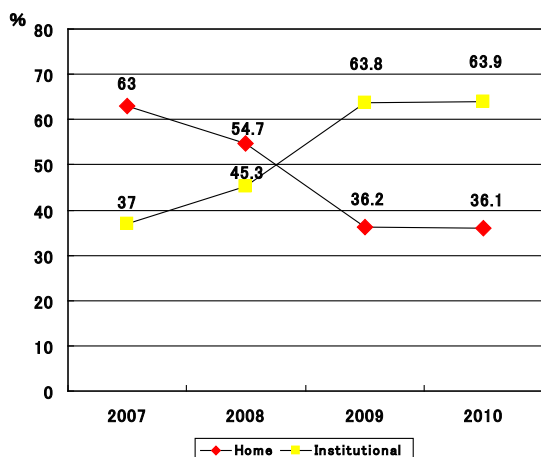
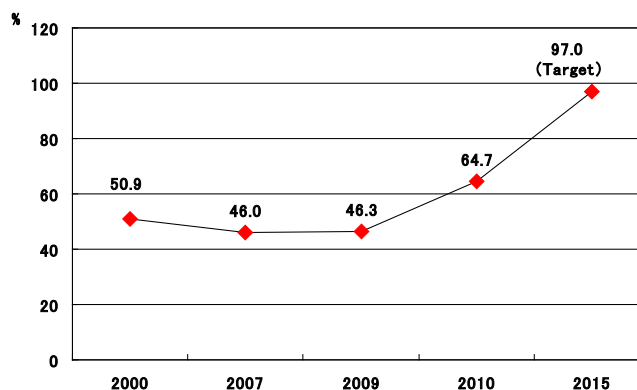


Figure 4-2 Delivery by Location (2007-2010)



Source: Annual Report 2010, MOHSW (15 January 2011) [11]
Figure 4-3 Delivery by Skilled Personnel (2000-2010)

(2) Reproductive Health

The provisions of family planning (FP) services are identified as an essential component of the primary and reproductive health care which play a major role in reducing fertility, maternal, as well as newborn mortality. However, according to the 2007 DHS, the total fertility rate (TFR) was 5.2, and the contraceptive prevalence rate (CPR) was only 11%²¹. The unmet needs²² were as high as 82% among women aging 15-49, although only 7% of these women were using any method of FP [23]. For 2010, the new acceptors of oral pills were 41,611 and injectables (Depo-Provera) were 22,493. Oral pills and injectables are the two widely used FP methods in Liberia. EPHS will promote family planning services through ANC, postnatal care (PNC), and other outpatient department (OPD) consultations. In addition, EPHS will train community health volunteers (CHV) on counseling and distribution of FP commodities. Training programs will be expanded for more health personnel to provide all available FP methods, by ensuring accountability and informed choice [8] [11] [13].

In Liberia, the rate of teenage pregnancy is one of the highest in the world. Around 62% of girls become pregnant by the age of 19. Of these, 26% of adolescent pregnancies were unintentional, while 30% of pregnancies among adolescents ended in unsafe abortions. Given this situation, EPHS focuses on strengthening information education and communication (IEC) / behavioral change communication (BCC) programs on sexual and reproductive health and SGBV. EPHS also requires health facilities to provide

²¹ According to the 2009 Malaria Indicator Survey (MIS), TFR was 5.9 (4.21 for the urban areas and 7.5 for the rural areas).

²² Women within two years of birth spacing were asked if the last birth was planned or desired.

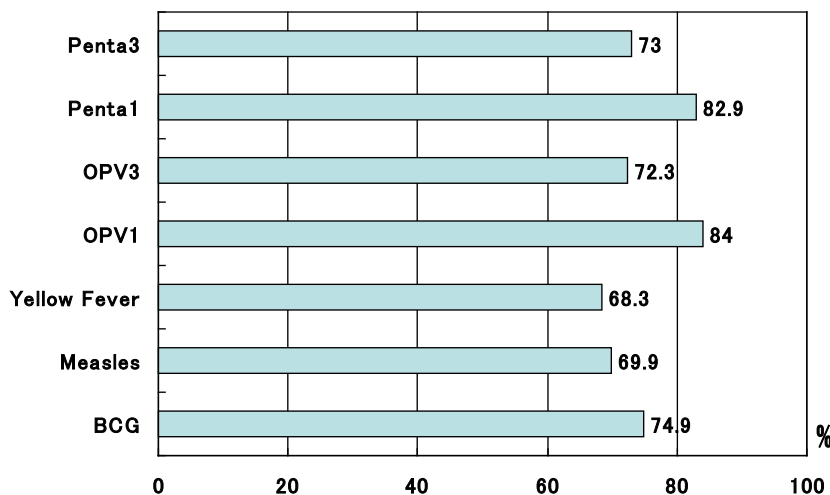
services to the youth based in alignment with the Adolescent Health Standard. Likewise, similar interventions will be introduced to the EPHS School Health Services, and county health and social welfare teams (CHSWTs) will establish youth sexual and reproductive health programs at the community level [8] [11].

4.2.2 Child Health

The target for child survival is to meet the MDG target of reducing under-five mortality by two-thirds. As 90% of child death is caused by malaria, diarrhea, ARI, and neonatal, EPHS especially focuses on the Expanded Program on Immunization (EPI), Integrated Management of Neonatal and Child Illness (IMNCI), child nutrition, and malaria control [8] [24].

- **Expanded Program on Immunization (EPI)**

Figure 4-4 shows the immunization coverage by antigen among children 0-59 months in 2010.



Source: Annual Report 2010, MOHSW (15 January 2011) [11]

Figure 4-4 Immunization Coverage by Antigen (Children 0-59 months) (2010)

Immunization coverage for DPT3/Penta3 increased from 36% in 2000 to 73% in 2010, while immunization coverage for measles increased from 38% in 2000 to 69.9% in 2010. Although the increase in the immunization coverage is significant, full vaccination coverage rate remained approximately 75% using the measles and yellow fever coverage. Therefore, the immunization program will strengthen the Reach Every District (RED) approach to ensure that all children have access to the services.

- **IMNCI**

The Integrated Management of Neonatal and Childhood Illness (IMNCI) provides effective treatment for malaria within 24 hours of the onset of fever, management of ARI, and oral rehydration treatment (ORT) for diarrhea. Parents/caregivers will be taught about appropriate case management and medication in primary health facilities. In 2009, community health strategies which includes an introduction of IMNCI at the community level was developed. In accordance with this strategy, general CHVs will provide case management of the above-mentioned illnesses and refer severe cases to health facilities [1].

- **Prevention of Malnutrition**

To combat with the serious chronic malnutrition, CHSWTs use the Essential Nutrition Actions (ENA)

approach and provide mothers the education on appropriate infant and young child feeding. Micronutrient supplementation at all health facilities will also be implemented under ENA.

- **Micronutrient Supplementation**

EPHS provides for Vitamin A supplementation every six months and deworming for children under-five. Efforts will also be intensified to attain the Universal Salt Iodization goal of 90% and to address the iron deficiencies in children. Fortification of food with micronutrients will be initiated as a part of the ENA package [8].

4.3 Infectious Disease Control

4.3.1 HIV/AIDS Prevention Program

(1) Implementation Structure and Strategy

The National AIDS Committee (NAC), chaired by the President, is the primary body to coordinate the national response to HIV/AIDS. Although NAC was first established in 2000, it was ineffective for years due to resource constraints and was only re-established in June 2007. At present, NAC is responsible for providing HIV/AIDS care, treatment, and support services, as well as coordinating and monitoring of the activities. The National AIDS Control Program (NACP) was established in 1987, however, a substantive program was started only after the initiation of the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) Rounds 2 (2004-2007). NAC collaborates with NACP in promoting the HIV/AIDS program. At the county level, CHSWTs are primarily tasked in coordinating HIV/AIDS activities. However, their effective programs are hampered by the following factors; a) lack of coordination at the central level, b) limited integration of NACP into other health programs of MOHSW, and c) weak infrastructure at the county level.

The National HIV/AIDS Strategic Framework (NSF) II (2010-2014) has the following two overall goals:

1. To contain the HIV prevalence rate among the general population below 1.5 % in 2014.
2. To mitigate the impact of epidemic on the health and wellbeing of persons infected and affected by HIV/AIDS.

The important objectives in NSF include (i) strengthening quality and scaling up coverage of prevention, care, and treatment services, (ii) multisectoral collaboration, and (iii) effective public-private partnerships, with special emphasis on the gender aspects and gender equity as young women are particularly vulnerable to the HIV epidemic.

(2) HIV/AIDS Program Budget

The key interventions under NACP are IEC/BCC, condom promotion, counseling and testing, prevention of mother to child transmission (PMTCT), and STI treatment. Specific sub-programs such as safe blood program, high-risk group program (female sex workers, their clients, mobile population), school program, and workplace program are also part of the NACP activities. The estimated budget for the program (2010-2015) is indicated in Table 4-2²³.

²³ Please refer to Chapter 6, Table 6-3 for the GFATM assistance.

Table 4-2 Estimated Budget by Activity (2010-2015)

Activity	US\$
Coordination and Management	7,270,461 (7.3%)
HIV Prevention	36,018,464 (36.3%)
Treatment, Care, and Support	50,183,998 (50.5%)
Strategy Management Information	3,461,181 (3.5%)
Policy, Advocacy, and Enabling Environment	2,338,025 (2.4%)
Total	99,272,129

Source: National HIV/AIDS Strategic Framework II 2010-2014, NAC (2010) [17]

Liberia has implemented the GFATM supported programs since 2002. Succeedingly, the Liberia Coordinating Mechanism (LCM) was also established. In addition, NGOs, faith-based organizations (FBO), the United Nations System and bilateral donors (US and Ireland etc.) contributed to the national HIV/AIDS response [17].

(3) Performance of the HIV/AIDS Control Program

As seen in Table 4-3, the HIV/AIDS service sites have expanded since 2008. For instance, voluntary counseling and testing (VCT) sites increased from 89 in 2008 to 176 in 2010, PMTCT sites from 29 in 2008 to 149 in 2010, and anti-retroviral therapy (ART) sites from 19 in 2008 to 29 in 2010 [11].

Table 4-3 HIV/AIDS Control Program Performance (2008-2010)

Service Delivery Area	2008	2009	2010
Number of VCT sites	89	114	176
Number of PMTCT sites	29	55	149
Number of ART sites	19	22	29
Number of blood banks operating in line with the National Guideline	3	5	6
Number of people receiving ART	2,017	2,970	3,906
Number of people tested for HIV	420	690	1,174
Number of STI cases treated according to the National Guidelines	51,515	243,717	272,390
Number of health workers trained in HIV service delivery	763	1,000	1,341
Number of free condoms distributed to high risk population	2,200,000	10,300,000	10,919,798

Source: Annual Report 2010, MOHSW (15 January 2011) [11]

However, access to the testing services is still limited. Laboratory capacity also needs to be strengthened. As many of the people living with HIV (PLHIV) dropped-out of the care and treatment program, services such as home-based care, nutritional support, and defaulter tracing should be intensified to ensure that critical services are accessible to PLHIV [17]. Under EPHS, NACP plans to further increase access by providing services at all levels of health care system in order to cover 80% of HIV-positive pregnant women by 2015 [8].

4.3.2 Malaria Prevention Program

(1) Implementation Structure and Strategy

The National Malaria Control Program (NMCP) has the mandate to assure planning, implementation, and coordination of malaria prevention activities. Malaria related services are provided by the health facilities and CHVs. The National Malaria Strategic Plan (2010-2015) aims to achieve the roll back malaria (RBM) objectives and the MDG targets by reducing 50% of the malaria morbidity and mortality rates in 2010 and to reverse the incidence of malaria in 2015.

The targets for 2015 under the Strategic Plan include:

- To increase access to prompt and effective artemisinin-based combination therapy (ACT) treatment for 80% of the population.
- To increase the use of intermittent preventive treatment for pregnant women (IPTp) to 80%.
- To increase the use of long lasting insecticide treated nets (LLITN) among the whole population, especially the vulnerable populations such as pregnant women and children under-five to 80%.
- To conduct indoor residual spray (IRS) in the high risk areas.

The NMCP consists of the following four strategic activities: (i) malaria case management, (ii) IPTp with Sulphadoxine-Pyrimethamine (SP), (iii) integrated vector management (IVM): insecticide-treated mosquito net (ITN) and IRS, and (iv) awareness, health education, and BCC. Then, three managerial functions (monitoring and evaluation, supply chain, and program management) are designed to support the implementation of the strategic activities [18].

EPHS focuses on the following three major strategies to improve malaria prevention and treatment:

- Improved treatment through scaled up availability and use of ACT within 24 hours at all levels of the health care delivery system. Availability and use of ACT in all government and private health facilities.
- An IVM approach: provision of LLITNs to all family units as well as distribution to targeted pregnant women and children under-five, and implementation of IRS for targeted areas.
- Emphasizing the role of the general community health volunteer (gCHVs) in malaria prevention and control. Increased support for health education and BCC at all levels of the health care delivery system.

(2) Malaria Program Budget

Besides the government funding, the NMCP is supported by the international organizations, bilateral donors, international and domestic NGOs. The two major funding agencies are GFATM and the U.S. President's Malaria Initiative (PMI)²⁴ [25]. The Table 4-4 shows the major funding sources of the malaria control program from 2004 to 2010.

Table 4-4 Funding Sources of Malaria Control Program (2004-2010) (US\$)

	2004	2005	2006	2007	2008	2009	2010
Government	-	27,216	44,569	51,104	60,118	-	-
GFATM	2,797,574	3,387,041	5,956,306	-	8,863,680	345,575	8,229,609
PMI	-	-	-	2,500,000	24,798,000	11,800,000	72,000,000
WHO	-	93,931	163,508	-	-	5,786,287	-
UNICEF	-	-	-	-	-	226,743	-
Others	-	-	-	-	-	50,000	-

Source: World Malaria Report 2011, WHO (2011) [26]

²⁴ Date of operation of PMI: October 2008 to September 2013

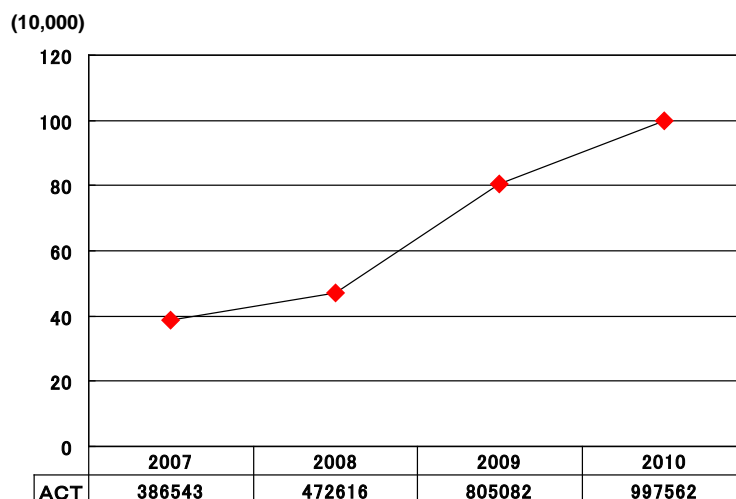
(3) Performance of the Malaria Control Program

The 2009 Malaria Indicator Survey (MIS) reported the following progress as shown in Table 4-5. The overall malaria prevalence rate has decreased and the access to the prompt and effect ACT has increased²⁵.

Table 4-5 Malaria Control Program Performance (2009 and 2005)

Core Indicator	2005	2009
Proportion of children under-five receiving prompt and effective treatment for malaria within 24 hrs from the onset of fever	5.26%	17%
Proportion of women who received two or more IPTp during the last pregnancy in the past two years	4.5%	45%
Proportion of households with at least one ITN	18%	47%
Proportion of children under-five who slept under an ITN in the previous night	2.6%	27%
Proportion of pregnant women who slept under any net in the previous night	31%	33%

Source: Malaria Indicator Survey, MOHSW et al. (September 2009) [15]



Source: Annual Report 2010, MOHSW (15 January 2011) [11]

Figure 4-5 Coverage of ACT Treatment (2007-2010)

The following areas should be improved or strengthened in the future program:

- With many unconfirmed cases of malaria, irrational use of drugs due to over-diagnosis of malaria cases.
- Inadequate records of IPTp in the health facilities.
- Lack of management and accurate reporting of malaria drugs and commodities in the supply chain system.
- Use of ACT in public and private health facilities and in the community.
- Use of ITN.

4.3.3 Tuberculosis Control Program

(1) Implementation Structure and Strategy

The National Leprosy and Tuberculosis (TB) Control Program (NLTCP) coordinates the overall program of activities. The program objectives are to increase confirmed cases and treatment success rate of leprosy and

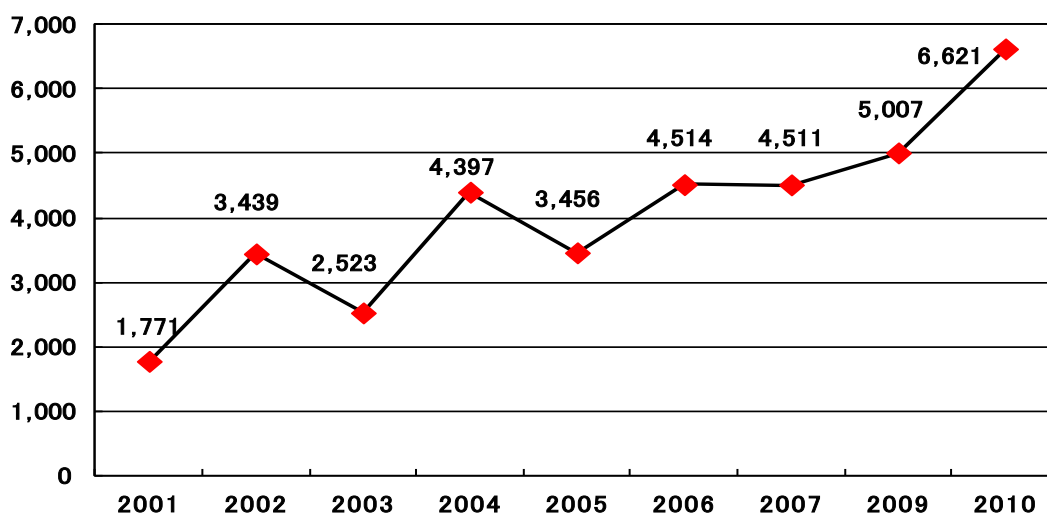
²⁵ The latest MIS will be issued in July 2012

TB in the country. Specific objectives of NLTCP are listed below:

- To improve case notifications of new smear positive TB cases from 103 per 100,000 in 2010 to 127 in 2015.
- To provide high quality DOTS (Directly Observed Therapy Short-course) with increased success rate from 83% to 85% by 2015.
- To expand effective TB and HIV collaborating mechanisms by increasing access to integrated TB/HIV services.
- To establish the management and treatment of multi-drug-resistant tuberculosis (MDR-TB) cases from 2011[9].

(2) TB Control Program Performance

Under the NHPP (2007-2011), Liberia adopted the Global STOP TB Strategy and the DOT Strategy. The government with the partnership of GFATM also established the Round 7 Support (2008-2013). Consequently, 145 diagnostic facilities are operational at present and in 2010, 66 new DOT centers were established. Currently, there are 333 health facilities and two specialized centers at TB Annex Hospital in Monrovia and Montserrado County. The Ganta Rehabilitation Center in Nimba County also provides DOTS services. The program also equipped 22 health facilities with new microscopes. Integrated TB/HIV services were jointly established with NACP in 130 health facilities, and the TB/HIV focal persons are assigned in all counties. The TB case detection rate was 71% in 2010. This surpassed the WHO recommended target of 70%. The treatment success rate was 82% in 2010. As presented in Figure 4-6, all forms of reported TB cases increased from 1771 in 2001 to 6621 in 2010. This increase can be attributed to the expansion of the TB services and improved reporting.



Source: Annual Report 2010, MOHSW (15 January 2011) [11]

Figure 4-6 Notification of New TB Cases (2001-2010)

As seen above, the provision of TB services has greatly expanded in recent years, however, drug distribution covered 62% and microscopy services covered only 27% of all functioning health facilities. Therefore, the TB service delivery needs to be expanded and sustained. At the same time, access to health facilities among

TB patients needs to be improved. As one of the strategies, a community-based treatment program was introduced. However only 4% out of 5964 TB patients received treatment under this program in 2009 [1] [11]. EPHS therefore will expand access to improve diagnosis and high quality DOTS including, community-based DOTS program and integrated TB/HIV services [8].

4.4 Nutrition Program

The National Nutrition Policy (NNP) of October 2008 has the following objectives:

- To reduce the prevalence of malnutrition in all forms, including micronutrient deficiencies;
- To reduce, through the planning and implementation of preventive programs, the levels of morbidity, cost of treatment of diseases, and mortality due to malnutrition; and
- To improve infant and young child feeding and caring practices for women and children.

NNP complements the National Health Policy and the Food Security and Nutrition Strategy, which aims to enhance the sectoral programs (e.g., agriculture, health, economic growth and development, and poverty reduction). EPHS also emphasizes the urgency of addressing nutrition problem, yet, only 0.01% of the health sector budget was spent on direct nutrition interventions in 2007/2008. Half of the Liberian population still lives in extreme poverty and cannot spend on food to provide 2400 calories/day. In consequence, prevalence of malnutrition increases risk of morbidity and mortality. MOHSW, in line with NNP, has committed to accelerate coverage of nutrition program by institutionalizing the Essential Nutrition Actions (ENA). The development partners such as the United Nations Children's Fund (UNICEF), the United States Agency for International Development (USAID), and the United Nations Program also provide support to the government nutrition program [9][27].

4.4.1 Other Health Issues

(1) Sexual and Gender-based Violence (SGBV)

As SGBV is now recognized as emergent public health problem, EPHS will provide the SGBV services including counseling, examination, and treatment, particularly post-exposure prophylaxis (PEP) to rape victims [8].

(2) Mental Health

According to the 2011 BPHS Accreditation Result Report, there was one inpatient psychiatric facility in Montserrado and three other outpatient facilities located in Bong, Grand Gedeh, and Montserrado counties. EPHS plans to train 181 mental health clinicians by 2015. At the PHC clinics, trained mental health clinicians will screen, diagnose, and provide treatment and referral services. Likewise, the follow up and referral services by social workers and CHV will be initiated [8].

Chapter 5 Health System

5.1 Human Resources for health (HRH)

5.1.1 Overview

One of the most important priorities in expanding health service delivery is strengthening the capacity of existing health workforce and producing additional workers with the right skills through equitable distribution, effective management, motivation, and retention schemes. The shortage of health workforce is a serious problem in many developing countries, yet the problem in Liberia is further devastated by the impact of the civil war. In 2006, there were less than 20 physicians, as compared to 237 before the war, and nurses made up the majority of the remaining workforce. Thereby, 668 nurses, 297 certified midwives, and 1091 nurse aides provided the majority of primary care. The 2009 Human Resource Census reported that only 30% of 8553 public sector health workers were either clinical or skilled professionals (e.g. physicians, physician assistants, nurses, midwives, pharmacists, lab technicians). Liberia will continue to face a severe shortage of qualified health professionals except for nurses [9] [28].

5.1.2 Health Workforce Planning

When the 2007 NHPP was developed, a disproportionate concentration of health workers in urban areas was recognized in addition to a severe scarcity of qualified health workers. However, the government capacity in human resource planning and management was extremely weak with little information available. The MOHSW issued the Emergency Human Resource Plan (EHRP) (2007-2011) based on the results of the rapid assessment on health workers. Although targets were set for all cadres of health personnel, nurses and midwives were prioritized as a means of addressing the high maternal and infant mortality rates and to quickly increase the overall number of health workforce. As the rapid assessment addressed the concentration of health workers in hospitals and in urban areas, EHRP also highlighted equitable distribution as well as enhancement performance of health workers.

The EHRP strategies include increasing and standardizing salaries, incentive packages in order to retain health workers in remote areas, reopening training institutions, and providing scholarships. As a result, the total number of clinical health workers increased to 4653 in 2010. Simultaneously, the proportion of nurses and nurse aides in the total number of workers increased to 73% [9] [11] [28]. Another strategy was to recruit ‘volunteer’ health workers who provide PHC services at the community level and were given an incentive pay from donor funding, in order to respond to the limited resources and employment ban in the public sector, a condition agreed upon in the HIPC initiative²⁶ [1] [28].

In 2007, the BPHS set the salary scale. As a result, the salary gap among the government health workers and NGO workers was equalized. This decision ceased the geographical and organizational migration (e.g., from public to NGO run facilities) of health workers. BPHS also developed standard job descriptions for all BPHS facilities and established standardized facility supervision [1]. In 2008, MOHSW established a Human

²⁶ Community health workers (CHW) who fill a serious workforce gap, are regarded an important component in the health service system, especially in the areas where the access to health facilities is poor. However, since the Ministry of Finance made a policy decision to cease incentive payments to government volunteers in 2010, motivating and retaining CHWs has been an issue.

Resource Unit to develop HR policy, planning and management. The unit is also responsible for collecting and disseminating HR information, HR development, and incentive and scholarship schemes. A county human resource officer was also assigned in each CHSWT based on the decentralization plan. The county level HR officers are responsible for recruitment and deployment of workers, performance management, and provision of information to the central level. In addition, with funding from the Health Sector Pool Fund, a human resources information and payroll system has been installed at the central level.

5.1.3 Situation of Human Resources

Table 5-1 below shows the number of health workers in 2006 and 2009, and the EHRP target numbers. Although the overall number of health workers has increased from 2006 to 2009, there is still a shortfall of health workers except for nurses.

Table 5-1 Number of Health Workers by Cadre (2006 and 2009) and EHRP Target (2010)

Type	2006 Rapid Assessment	2009 Census	2010 EHRP Target (shortfall)
Physician	168	90	215(125)
Physician Assistant	273	286	507(221)
Nurse	668	1,393	595(-798)
Nurse Aide	1,091	1,589	N.A.
Certified Midwife	297	412	708(296)
Dentist	13	23	N.A.
Laboratory Technician	149	137	163(26)
Laboratory Assistant	156	239	387(148)
X-ray Technician	25	22	62(40)
Pharmacist	31	46	74(28)

Source: Rebuilding Human Resources for Health, Varpilah et al. (12 May 2011) [28]

Table 5-2 below shows the distribution of health workers by county.

Table 5-2 Health Workers by County and Cadre (2009)

State	Physician	PA	Nurse	CM	Pharmacist	Lab Tech/ Lab Aide	Others	Total
Bomi	1	7	53	23	2	12	209	307
Bong	5	10	124	43	5	22	408	617
Gbarpolu	1	4	27	10	1	6	117	166
Grand Bassa	5	10	89	18	2	18	309	451
Grand Cape Mount	1	9	49	14	2	8	206	289
Grand Gedeh	2	10	40	9	2	13	209	285
Grand Kru	1	4	12	7	0	7	193	224
Lofa	9	20	120	37	5	33	633	857
Margibi	4	11	90	36	3	31	336	511
Maryland	6	17	48	11	0	10	270	362
Montserrado	48	126	512	153	20	125	1,864	2,848
Nimba	5	33	121	26	2	65	589	841
River Cess	1	8	39	8	0	2	148	206
River Gee	0	11	26	9	0	8	144	198
Sinoe	1	6	43	8	2	16	315	391
Total	90	286	1,393	412	46	376	5,950	8,533

Source: Annual Report 2010, MOHSW (15 January 2011) [11]

(The data derived from the 2009 Human Resource Census)

Currently, MOHSW is finalizing the National Human Resource Policy and Plan and developing the detailed long-term HR plan including HR development, equitable distribution, management, and in-service training. MOHSW will design and launch a large-scale training program to upgrade the skills of health workers. They will also coordinate with higher education and pre-service training institutions by developing an accreditation and investment program to strengthen the capacity of pre-service training institutions and improve the effectiveness of workforce production²⁷ [9] [28]. Strategies and interventions are required to redistribute health workers and increase their retention in rural areas with poor access to basic health services. Certified midwives (CMs) and registered nurses (RNs) are concentrated in the hospitals, however, leaving clinics and health centers are severely understaffed. Based on the results of an analysis conducted by MOHSW with the World Bank and Clinton Health Access Initiative (CHAI)²⁸ support, MOHSW will redistribute nurses and midwives from areas with excess capacity to facilities/counties suffering severe shortages of health workers [28] [29].

5.1.4 Human Resource Supply System

The prolonged war also severely destructed the medical, nursing, and other educational system. School buildings and educational resources were destroyed or damaged, and there is a critical shortage in teaching staff in medical schools and university hospitals. This situation hampers the medical education in the country. In 2009, the A.M. Dogliotti College of Medicine had two teaching staff for Internal Medicine, one for ENT, two for Orthopedics, no teaching staff for Surgery, Gynecology and Obstetrics, Pediatrics, Radiology and Psychiatry, and one contract oversea staff each for Neurology and Anesthesiology. The number of college graduates in 2007 was only four. The medical educational capacity needs to be rebuilt by increasing the number of teaching staff in medical and nursing schools and university hospitals, and renovating educational facilities. The number of qualified physicians needs to increase to resolve the current critical gap [30].

The medical and health educational institutes reopened after the war are listed in Table 5-3.

Table 5-3 Educational Institutes for Health Human Resources

Institution	Cadre	County
Tubman National Institute of Medical Arts	Physician Assistant , Nurse Midwife, Environmental Health Practitioner	Montserrado
Cuttington School of Nursing	Nurse	Bomi
Phebe School of Nursing and Midwifery	Nurse, Midwife	Bomi
Mother Patern School of Health Sciences	Nurse	Montserrado
Mother Christana Smythe Nursing School	Nurse	Montserrado
Winifred J. Harley School of Nursing	Nurse	Nimba
Esther Bacon Training of School of Nursing and Midwifery	Nurse, Midwife	Lofa
Curran Lutheran Midwifery School	Midwife	Lofa
Martha Tubman School of Midwifery	Midwife	Grand Gedeh

Sources: Rebuilding Human Resources for Health, Varpilah et al. (12 May 2011) [28]
Data Collection Survey on Health Sector, Republic of Liberia, JICA (October, 2009) [31]

²⁷ The five-year Strategy for National In-service Education was developed in December 2009 to improve the skills of frontline health care service providers (RNs, CM, PAs) to give high quality comprehensive health care based on the BPHS.

²⁸ CHAI was established by the Clinton Foundation in 2009 to expand access to treatment of HIV/AIDS and malaria by improving commodity markets for medicines and diagnostics. CHAI also helps developing countries strengthen the health service system.

5.2 Health Management Information System

After the end of the civil war, the health information system was largely inactive. Situations such as the health status of the people, its affecting factors, and utilization of the health services, were not well known. Since 2005, MOHSW has been working on rebuilding the Health Management Information System (HMIS) through capacity building of MOHSW-HMIS Unit, introduction of new information communication technology, and revision of reporting tool. As a result, significant progress has been made on information flow, system building, evidence-based planning, and policy decision in recent years. With the introduction of the District Health Information System (DHIS)²⁹ in 2008, the coverage of routine health facility reports in each county has increased. Subsequently, the National HMIS Policy and Strategy was developed in 2009.

Although the information systems of vertical health programs and HMIS were running parallel, in 2011 all health information systems were in principle integrated into one HMIS system. With the integration of the information systems of vertical programs into HMIS at the central level, a standardized reporting form was introduced in the health facilities. This has minimized the reporting burden and increased the reporting efficiency at the facility level. It has also improved the capacity to collect comprehensive information at the central and county level³⁰ [32].

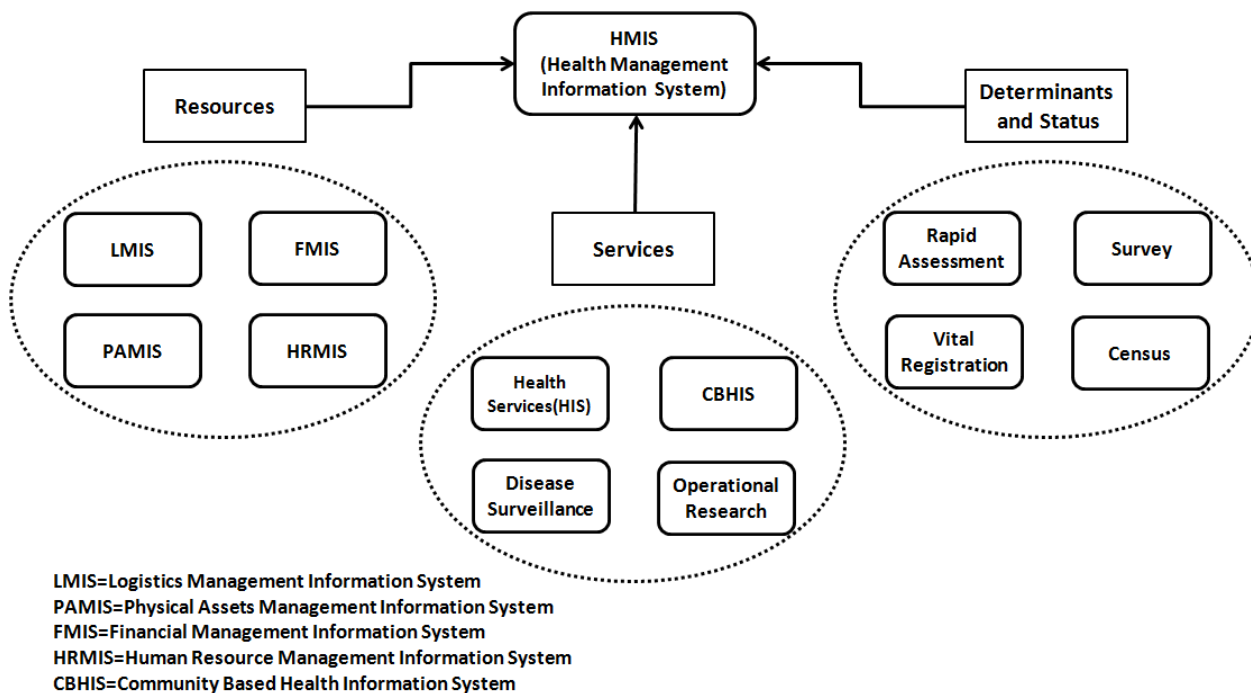
As described in Figure 5-1, sources of HMIS include the Health Information System (HIS) (a health service component of HMIS), Financial Management Information System, Human Resources Management Information System (HRMIS), and Physical Assets and Management Information System. MOHSW aims to integrate all these sub-systems into one comprehensive HMIS database. Among these sub-systems, HRMIS is in the process of being integrated into HMIS. The supply chain management unit (SCMU) in MOHSW is separately working on the development of Logistics Management Information System (LMIS)³¹. In addition, HIS will be complemented by vital statistics such as births and deaths, whose collection will be revitalized through the National Birth Registration Policy and Plan³² [9].

²⁹ DHIS is a tool for collection, validation, analysis, and presentation of aggregate statistical data. The system allows the user to design the contents of a specific information system without the need for programming.

³⁰ Interview survey with MOHS-HMIS Unit (February 2012)

³¹ Interview survey with MOHS-HMIS Unit (February 2012)

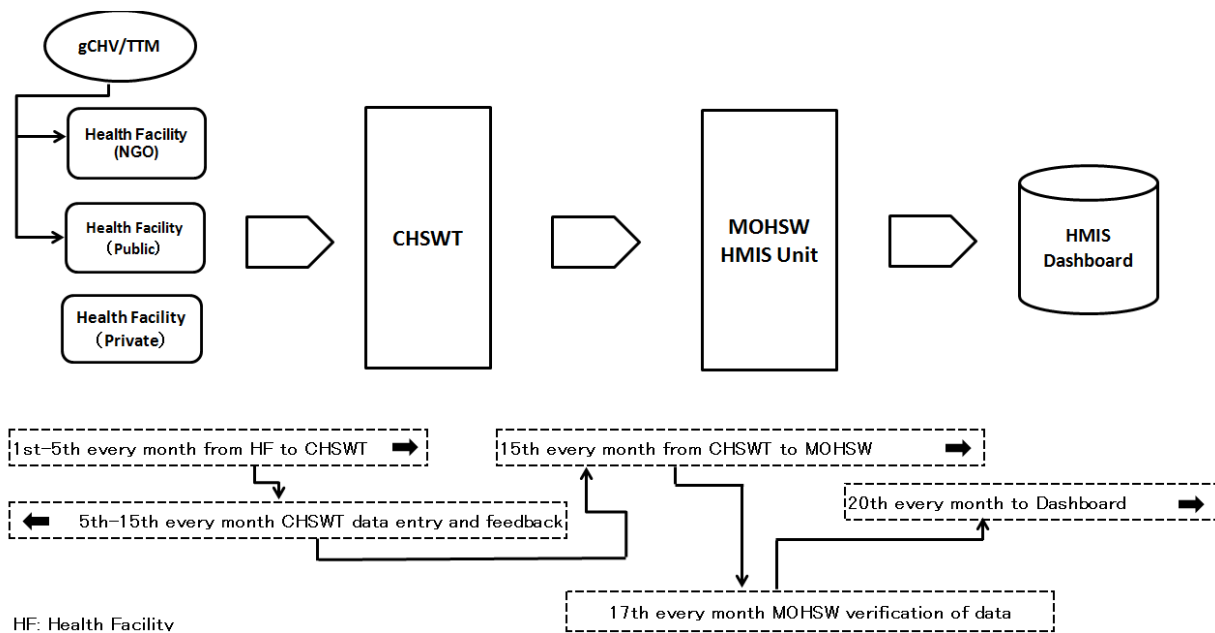
³² The 2007 DHS reports that under-five registrations was only at 4%. Although the percentage slightly increased to 10% in 2010, the coverage of birth registration needs to be vigorously improved through the following strategies: (i) health facility based registration, (ii) community base registration, and (iii) national birth registration campaign.



Source: Strategy and Implementation Plan for the National Health Management Information System, MOHSW (June 2009) [32]

Figure 5-1 HMIS Data Source (Plan)

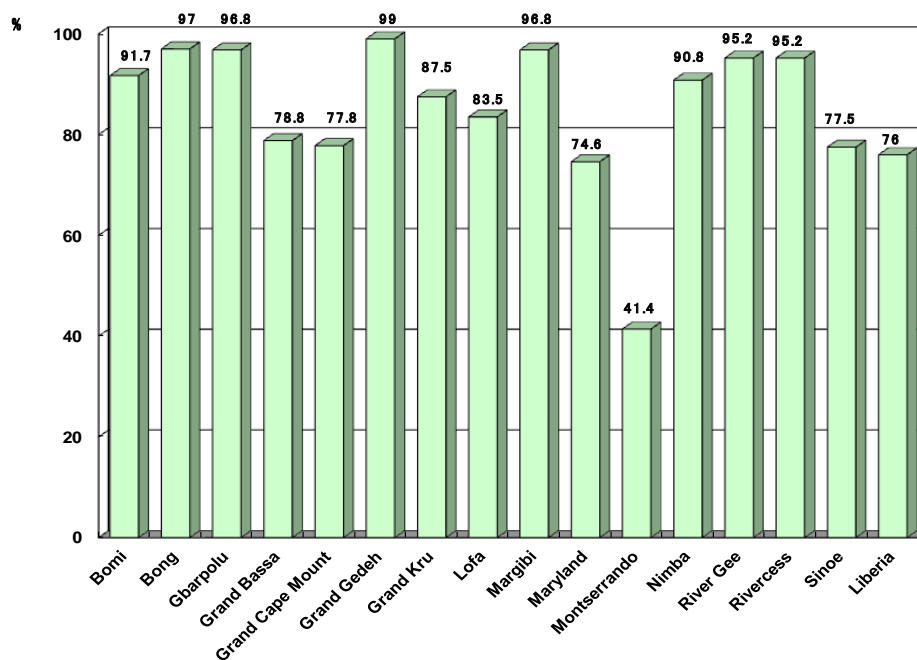
All health facilities, either public or private/NGO supported, are obliged to submit routine health data to the County Health Social Welfare Team (CHSWT). (However, the submissions of data from private facilities are inadequate.) HMIS reports are collected on a monthly basis, while informations on reportable diseases are collected on a weekly basis. Maternal death shall be reported within 24 hours regardless of whether the death occurs at the health facility or at home [8]. Figure 5-2 explains the HIS data flow from health facilities to the central level.



Source: Interview Survey with MOHSW-HMIS Unit (February, 2012)

Figure 5-2 Health Information System (HIS) Data Flow

Figure 5-3 shows the HIS reporting rates by county. The overall rate was 76% in 2010 and 77% in December 2011. The rate of Montserrando County was low at 41% in 2010 and 52% in 2011; yet eight counties exceeded 90% of reporting rate. There are over 200 health facilities in Montserrado and only 45 of these are public facilities while the rest are privately run. The reason for the low reporting rate in Montserrado can be explained by the lack of supervision and management, and training for private facilities on data collection and reporting³³.



Source: Country Situational Analysis Report, MOHSW (July 2011) [1]

Figure 5-3 HIS Reporting by County (2010)

The priority issue is to ensure the quality of information through improved reporting and capacity strengthening of the districts, counties and health facility staff, including private facilities on data collection and management. Furthermore, the data feedback system needs to be developed in linking each level from the central, county, district to facility in order to enhance data-sharing and full use of information.

5.2.1 Health Facility Network

The civil war destroyed 242 of the 293 public facilities operating before the war. The supply chain system was also fragmented and dysfunctional. Rebuilding the overall social infrastructure including communication, transportation, electricity, and water as well as health infrastructure require urgent investment. With these constraints, health facilities were dependent on external aid to function, and many of the facilities were operated and managed by NGOs. While outside of Monrovia, humanitarian agencies provided some services, most of the population had little or no access to health care. The government has vigorously invested in the rebuilding health system, and as a result the number of public and private facilities increased 550 in 2010. The number of public facilities (2011) and the target numbers in 2021 are shown in Table 5-4 [1] [28] [33].

³³ Interview survey with MOHSW-HMIS Unit and M&E Unit (February 2012)

Table 5-4 Number of Public Health Facilities (2011) and Target Numbers (2021)

Facility	2011	2021
JFK Medical Center (autonomous national facility)	1	1
Regional Hospital	-	4
County Hospital	24	21
Health Center /District Hospital	31	98
Clinic	343	419
Service Delivery Point	-	150 (facilities)
		81 (non-fancily based)
Total	399	624

Sources: Overview of the Revised Health and Social Welfare Policy and 10-year Plan-Presentation, MOHSW (17 January 2012) [34]

Figure 5-4 describes the service and administrative level of health facilities. Table 5-5 shows the service area of each health facility.

Level of Service	Service Delivery Point (SDP) /Health facility	Administrative Level			
Primary	gCHV, TTM Non-permanent SDP Clinic	Community	District	County	National
Secondary	Health Center District Hospital				
	County Hospital				
Tertiary	Regional Hospital National Referral Hospital				

Source: National Health and Social Welfare Policy and Plan 2011-2021, MOHSW (2011) [9]

Figure 5-4 Service and Administrative Levels of Health Facilities

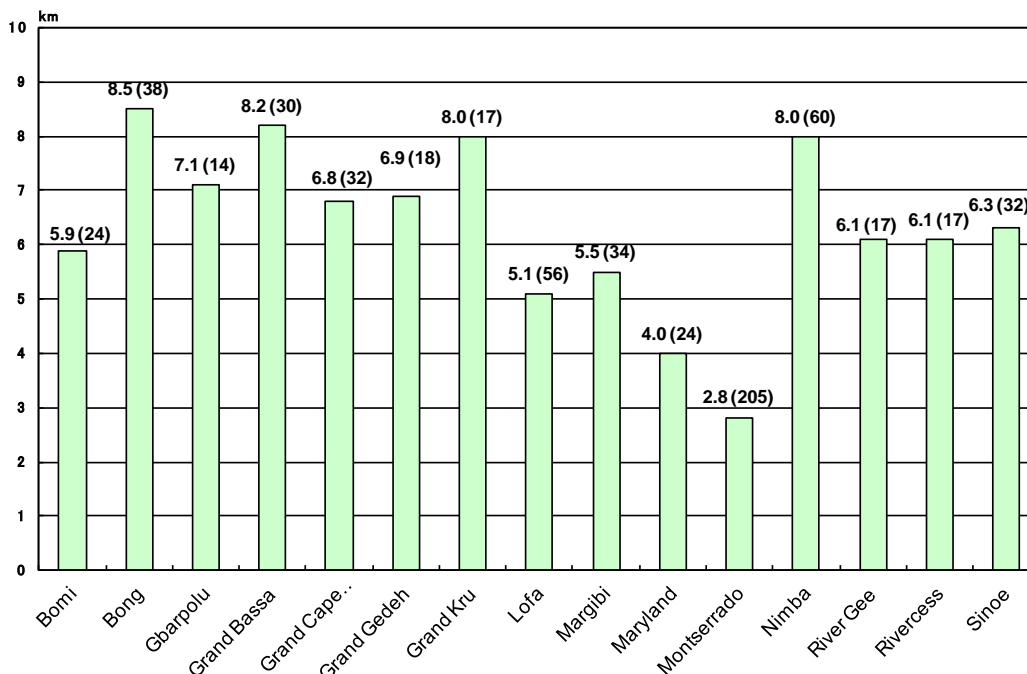
Table 5-5 Service Area of Health Facilities

Community Health Volunteer (CHV)	Trained Traditional Midwife (TTM) and gCHV (General Community Health Volunteer): gCHVs provide case management of diarrhea, ARI, malaria, and nutrition support. Both gCHV and TTM are supplied with drugs and commodities from the health facilities in charge. gCHV and TTM are also obliged to report on their activities to the health facilities.
Clinic	A small facility with no more than five beds, providing basic preventive and curative care.
Health Center	A primary care facility with up to 40 beds, providing a range of curative and preventive services, supported by a small laboratory for catchment population of 25,000 to 40,000.
County Referral Hospital	A referral facility with more than 50 beds, providing common surgical condition, including basic intensive care for catchment population of 200,000.
Regional Hospital/ JFK Hospital	A tertiary and top referral hospital. Regional hospitals are managed by CHSWT with more than 250 beds. The catchment population plans to be over 500,000.

Sources: Supply Chain Master Plan, MOHSW (25 August 2010) [35]
Health and Social Welfare Policy and Plan 2011-2021, MOHSW (2011) [9]

The 2008 Population Census found that 40% of the population travel one hour or more to the nearest health facility (31% travel more than 80 minutes). Besides, according to a more recent survey of the Rebuilding

Basic Health Services (RBHS) (November 2010), the average distance to the nearest facility in most counties is beyond 5 km (one-hour walking), and the average distance in Bong, Grand Bassa, Grand Ku, and Nimba is 8 km. Despite the recent expansion of the health facility network, it is clear that the access and availability of the basic health services have not improved in most counties, and therefore, more evidence-based strategy is required for designing a facility network [1].



Note: * () : the total number of public and private facilities including NGO·FBO facilities

Source: Country Situational Analysis Report, MOHSW (July 2011) [1]

Figure 5-5 Average Distance from Communities to Facilities by County

In regard to the service provision, the 2008 Facility Survey conducted in Nimba County revealed that while the maternal and child health services were not adequately provided in the facilities, HIV/AIDS (counseling and testing) and malaria (ACT) services were more frequently available. The reasons for the disparities in service provision were; IMCI and emergency obstetric care (EmOC) are more complex services than HIV testing or ACT, and the priority of international and bilateral donors such as the GFATM may be reflected [33].

5.2.2 Drug Supply System

The drug supply system including central and county level warehouses and distribution network lacks adequate investment and funding. In addition, the situation such as insufficient transportation means and fuel, poor road condition, limited information sharing, all hinder the functional and reliable drug supply. As a result, delayed drug supply and stock-outs in facilities and poor quality of drug management have affected the service delivery. The stock-outs of drugs and health commodities at the facility level are also caused by the improper inventory management and forecasting, due to irrational use of drugs, non-adherence to the Standard Treatment Guidelines, or wrong prescriptions. In the 2007 DHS, 51% of surveyed women (60% of women in rural area) stated that the lack of drugs in government health facilities was one of the barriers in seeking timely health care [9].

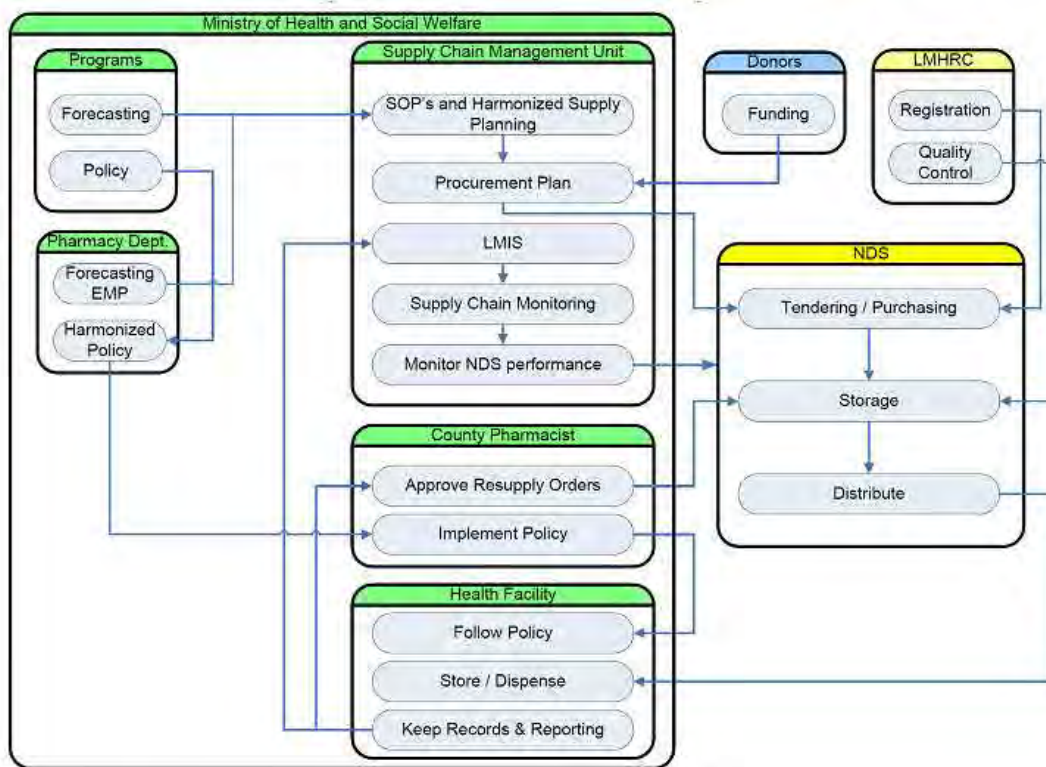
The funding mechanism of drug supply is also fragmented. For instance, MOHSW procures the drugs only for the facilities run by themselves, bilateral donors procure drugs for the facilities run by NGOs, while the vertical programs (U.S. President's Malaria Initiative-PMI, GFATM, the Global Alliance for Vaccines, and Immunization -GAVI) procure the relevant drugs to be provided free of charge in all facilities³⁴ [1]. To improve the situation, MOHSW developed the 10-year National Supply Chain Master Plan in August 2010. The plan aims to build an effective supply chain system through comprehensive procurement, warehousing, and distribution services, vital for the delivery of the EPHS [1] [8]. Based on the master plan, the Supply Chain Management Unit (SCMU) is established under the Pharmacy Division of MOHSW³⁵ [1]. SCMU is responsible for coordinating and overseeing all supply chain activities within the public sector, managing LMIS, and carrying out quantification and procurement planning. Each CHSWT manages the budget for the purchase of drugs and health commodities in the county and shares the logistics information to SCMU. At present, the drugs and commodities of malaria, TB, HIV/AIDS, family planning, EPI, and other essential drugs are all procured and distributed under one system. Each program unit closely coordinates with SCMU and decides which products are required, and when and where for their program³⁶ [35].

Figure 5-6 describes the organizations responsible for the drug procurement, supply chain, and their roles. The National Drug Service (NDS) is a semi-autonomous body responsible for procurement, storage, and distribution of essential drugs. According to the master plan, NDS is a single mechanism responsible for procurement, warehousing, and distribution services at the central level. Currently, the procurement, inventory management, distribution and information management capacities of NDS are not adequate, therefore, further technical and financial supports to NDS are required. Although the Standard Treatment Guidelines (STGs) were partially revised, the 2001 National Drug Policy, the 2007 Essential Drug List, and the National Formulary are all required to be revised [1] [35].

³⁴ USAID uses a parallel supply chain management system, the pool fund and EU have the option of procuring from NDS or procure elsewhere if drugs are not available for their support facilities, and NGOs rely on other sources than NDS to supply their support government facilities

³⁵ Establishing a SCMU was a requirement for MOHSW to become the principal recipient (PR) of GFATM funds.

³⁶ Interview survey with SCMU (February 2012)

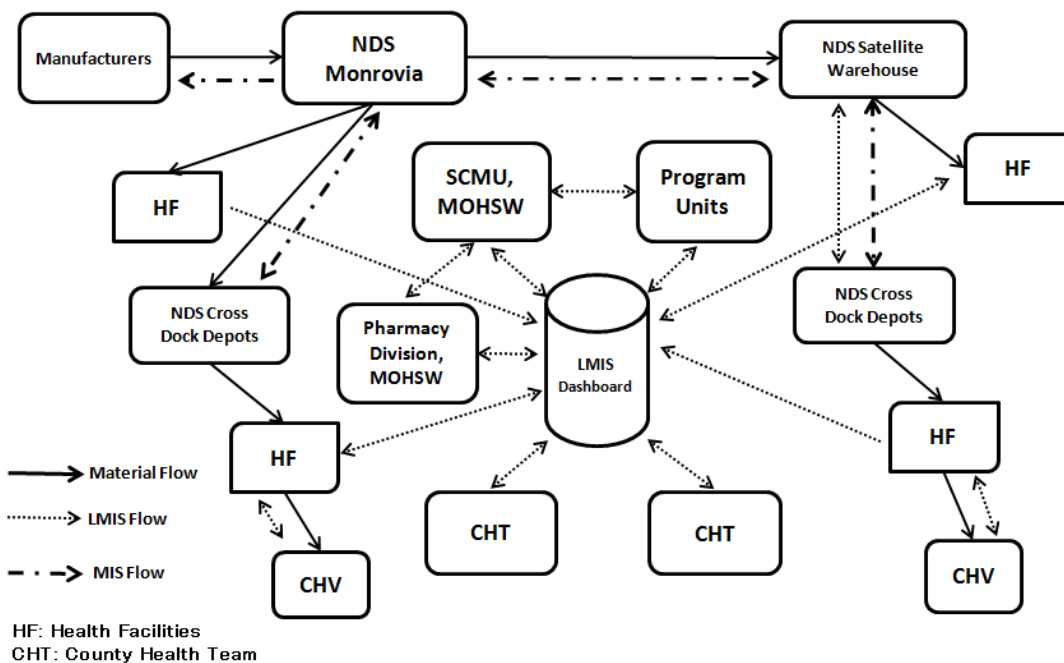


LMHRC: Liberia Medicine and Health Products Regulatory Committee
EMP: Emergency Medical Products
LMIS: Logistic Management Information System

Source: Supply Chain Master Plan, MOHSW (25 August 2010) [35]

Figure 5-6 Organizations Responsible for Supply Chain

Figure 5-7 shows the supply chain system plan for 2020.



Source: Supply Chain Master Plan, MOHSW (25 August 2010) [35]

Figure 5-7 Health Commodity Supply Chain Plan for 2020

The Central Drug Warehouse (NDS Central Warehouse) and three large-scale NDS satellite warehouses (Monrovia, Bomi, and Grand Gedeh counties) will be constructed. Under these warehouses, cross dock depots (CDD) will be strategically placed in five locations. NDS will send all procured drugs to three NDS satellite warehouses on a quarterly basis. Subsequently, the drugs will be sent to CDD on a monthly basis and sent from CDD to each facility. All information related to supply chain will be accumulated in LMIS dashboard for real-time data.

5.3 Health Financing

5.3.1 Overview

As mentioned earlier, the Liberian economy is recovering. However a significant increase in health sector budget for the next 10 years may not be expected due to the recent reduction in donor funding and financing requirements in other sectors. Table 5-6 shows that according to the National Health Account (NHA), in 2007/08, approximately US\$100 million was allocated in the health sector. This represented a per capita expenditure of US\$29 (the average for the west and central Africa region was US\$28). The government spending in total health expenditures accounted for 15%. Donor funds are basically used to support service delivery at the primary care level, while the largest portion of the government expenditure is used for referral hospitals [1] [36]. As shown in Table 5-6, the national budget of 2010/2011 was about US\$370 million and the percentage of the national budget allocation to the health sector for past four years remained at 7% to 8% (NHPP target was 15% in 2009).

Table 5-6 National and Health Sector Budget (2007/2008-2010/2011)

Fiscal Year	2007/2008	2008/2009	2009/2010	2010/2011
National Budget (US\$)	208,819,357	298,087,792	347,035,687	369,379,000
Health Sector Budget (US\$)	18,705,242	22,906,608	25,767,030	32,480,992
Percentage of Health Sector Budget to National Budget (%)	8.96	7.68	7.42	8.79

Source: Country Situational Analysis Report, MOHSW (July 2011) [1]

As Table 5-7 shows, the donor funding amounted to 47% of all funds in the health sector and the household out-of-pocket (OOP) spending amounted to 35%, or US\$10 per person.

Table 5-7 Financing Agent and Function of Health Sector Budget (2007/2008)

Financing Agent Distribution as a % of THE	Public	15
	Private organization	3
	Donor	47
	Household OOP spending	35
Function Distribution as a % of THE	Curative Care	54.3
	Pharmaceuticals	10.0
	Prevention and Public Health Programs	21.7
	Health Administration	14.0

THE: Total Health Expenditure

OOP: out-of-pocket

Source: Liberia National Health Account 2007/2008, MOHSW and USAID (October 2009) [36]

In Liberia, despite the free BPHS, the proportion of household OOP spending in total health expenditure is large. About 12% of households exceeded the threshold of 10-12% of household's income. BPHS and EPHS have increased the access to health services yet individual households are not well protected from their

spending on medical expenses. The results of the 2010 Benefit Incidence Analysis Study suggested that higher income groups were more likely to use government subsidized health services than lower income groups and many of the people in the rural areas had very limited access to health services. Therefore, the study also suggested that pro-poor services should be ensured by better targeting the subsidy policy and by subsidizing the services and level of facilities that are most likely to be used by poorer population groups (i.e., outpatient services at the clinic or lower level facilities) [11] [37].

In 2010, MOHSW and Health Financing Task Force developed the first Health and Social Welfare Financing Policy and Plan to ensure a more sustainable and strategic provision of quality health services. The final version of the new policy was presented in the Cabinet in February 2012. Furthermore, USAID supports the capacity building of the Health Financing and Policy Unit of MOHSW in preparation of the second NHA.

5.3.2 Pool Fund

The Health Sector's Pool Fund was established in March 2008 with the following objectives:

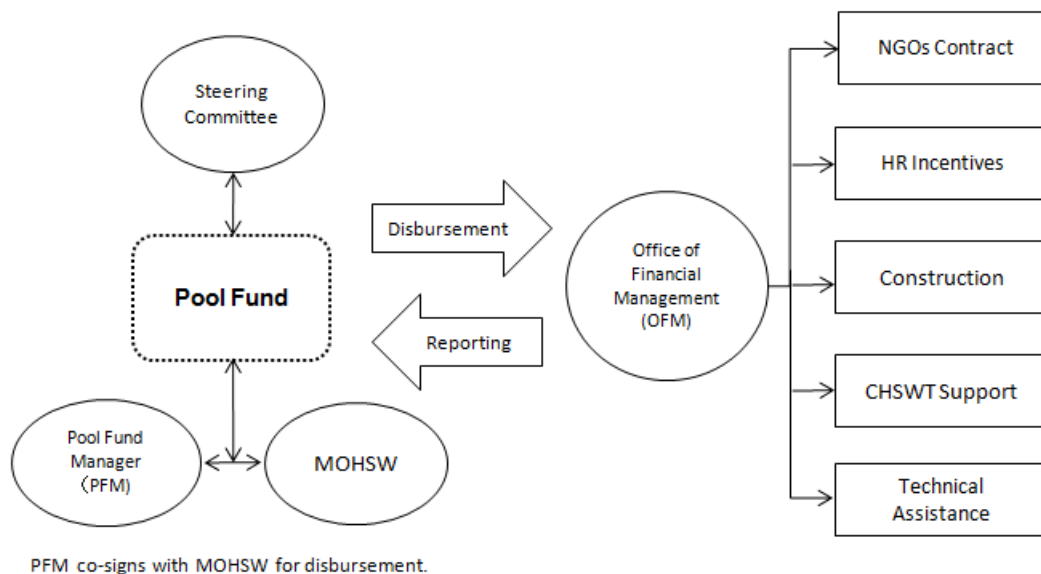
- To help finance priority unfunded needs within the NHP.
- To increase the leadership of MOHSW in allocation of resources.
- To reduce the transaction costs associated with managing multiple different donor projects.

The funding of pool fund comes from DfID, Irish Aid, UNICEF, and UNHCR³⁷. The fund is jointly managed by the Pool Fund Steering Committee (Ministry of Finance, MOHSW, JFA donors, and other donors: WHO, the World Bank, European Union (EU), USAID, NGOs, etc.) and a private accounting firm. Disbursements from the pool fund are based on a dual-signatory arrangement between the MOHSW and the accounting firm [38].

Figure 5-8 describes the structure of the pool fund and its disbursement mechanism.

In 2010, the total contribution from donors was over US\$40 million. Around 75% of the contributions have been committed to expand access to basic health services, while the balance was invested in infrastructure, human resources, and support systems. The pool fund contributed to the expansion of the network of public facilities by 24% and the percentage of facilities providing BPHS increased from 36% in 2008 to 82% in 2010. Over one-third of public health facilities are now pool fund-financed through a combination of contracting-into local government and management contracting using NGOs. Although the pool fund was a comparatively small proportion of the total donor support, it has a significant role in strengthening the capacity and stewardship of MOHSW in financial management and coordination of donor funding. The pool fund resources were also allocated to strengthen the MOHSW's Monitoring and Evaluation Unit, the Office of Financial Management, the Infrastructure Unit, the External Aid Coordination Unit, and the Health Services Department [39].

³⁷ The four contributing donors entered into a Joint Finance Arrangement (JFA) with the Government of Liberia.



Source: The Liberian Health Sector Pool Fund, Hughes et al. (February 2012) [39]

Figure 5-8 Structure of the Pool Fund and Disbursement Mechanism

5.4 Health Administrative System

5.4.1 Decentralization

The National Policy on Decentralization and Local Governance was issued in 2009. The government has also embarked on a process of decentralization of political, fiscal, and administrative areas. At present, only a plan was presented to the parliament for the fiscal decentralization, and the Ministry of Interior and Planning is preparing a national strategic plan. Only MOHSW has a strategic plan for its decentralization process³⁸.

According to the Decentralization Policy, MOHSW will only carry out policy formulation, promulgation of regulations, resource mobilization and allocation, national planning, broad sector programming and M&E. CHSWT, in turn, is responsible for aspects of support system function at the district, facility, and community levels. The County Health and Social Welfare Board, chaired by the County Superintendent, advises on county-level policy and planning, assists with resource mobilization, and coordination and monitors performance of CHSWT. MOHSW is planning to expand the management and administrative capacity of CHSWT and progressively transferring the role of financial planning and accounting to the County Administration. At present, each county is developing a two-year implementation plan in line with the NHSWPP. The implementation plan emphasizes the strategy to improve maternal and child health, TB, HIV/AIDS, and malaria control [1] [9].

5.4.2 Organization and Role of Ministry of Health and Social Welfare

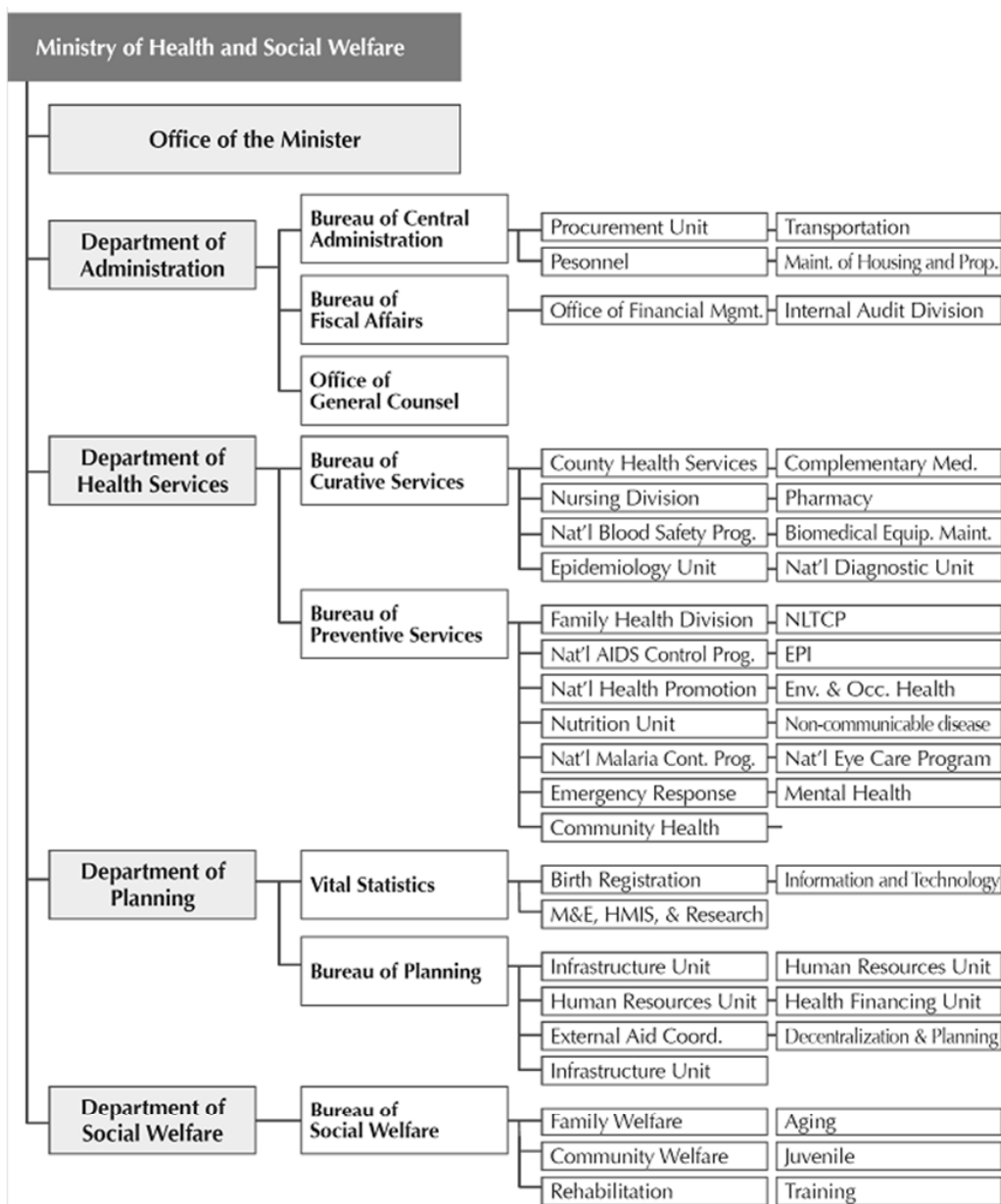
The MOHSW consists of four departments: the Department of Administration (manages the personnel services, financial matters, logistical support system etc.), Department of Planning (responsible for the macro planning, policy development, monitoring and evaluation, research and dissemination of health statistics etc.), the Department of Health Services (responsible for technical matters), and Department of Social Welfare (responsible for social services). MOHSW is headed by the Minister of Health and Social Welfare and

³⁸ Interview survey with MOHSW-Policy and Financing Bureau (January 2012)

administered by four deputy ministers and seven assistance ministers. As mentioned earlier, the roles of MOHSW are as follows:

- Monitoring and advising on health and social welfare laws and establishing regulations for their enforcement.
- Formulating and revising national policy and strategic plan.
- Establishing national goals, objectives and long-term national planning targets for the equitable protection and improvement of health and social welfare.
- Strengthening and managing health systems, especially those related to human resources, drug management, HMIS, financing, infrastructure and coordination.
- Coordinating a research agenda to inform policy, planning, and sectoral performance.
- Mobilizing and allocating resources in accordance with transparently established formulas and the National Policy for Health and Social Welfare Financing.
- Coordinating broad national programs that shall be implemented by the CHSWTs (e.g. malaria control, expanded program on immunization, national health promotion campaigns).
- Conducting analytical work and monitoring on sectoral performance [1].

Figure 5-9 presents the organizational chart of the Ministry of Health and Social Welfare.



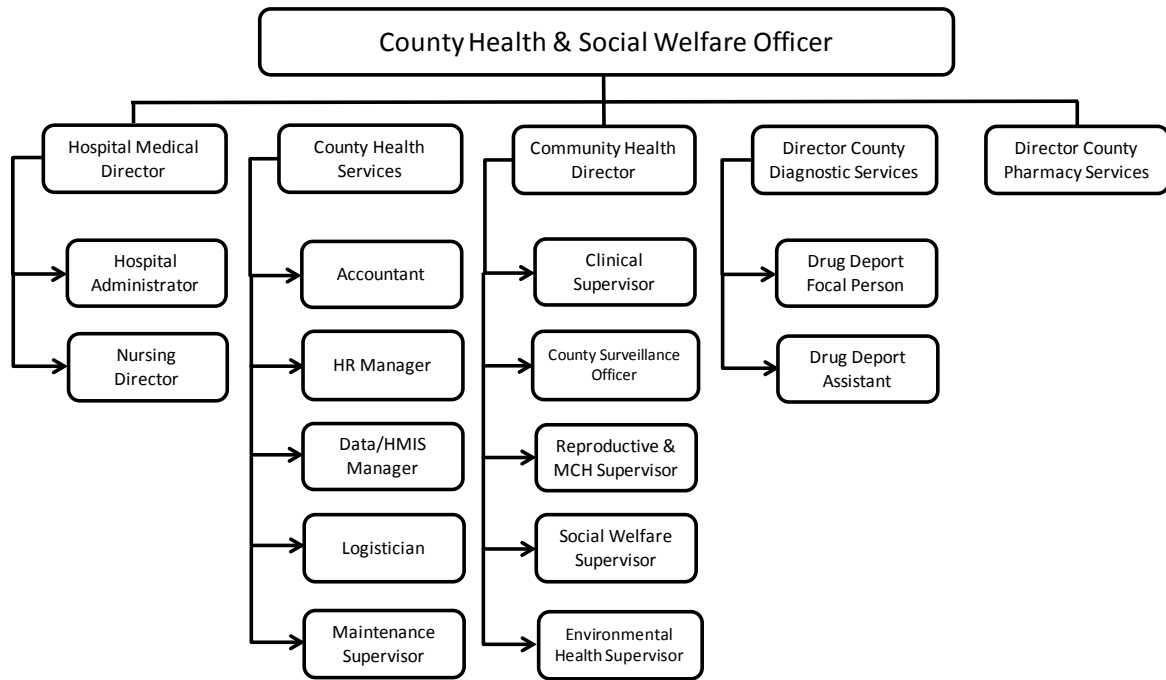
Source: Country Situational Analysis Report, MOHSW (July 2011) [1]

Figure 5-9 Ministry of Health and Social Welfare Organizational Structure

5.4.3 Structure and Role of County Health and Social Welfare Team (CHSWT)

At the sub-national level, a County Health and Social Welfare (CHSW) officer administers the CHSWT in each of the 15 counties. A chief medical officer in CHSWT is assigned to oversee all health sector activities and report to the CHSW Officer. At the district level, a district health officer (usually an officer in charge (OIC) in one of the health facilities) manages and coordinates services in the facilities at the district level. A county pharmacist procures essential drugs from the central and distributes them to the health facilities. Likewise, an EPI officer is responsible for the procurement and distribution of immunization vaccines, and a reproductive supervisor is responsible for the family planning commodities. Each county has an M&E officer who is in charge of the supervision and management of data collection from the health facilities.

Figure 5-10 presents the organizational chart of Montserrado CHSWT.



Source: Montserrado CHSWT Presentation (June, 2012) [40]

Figure 5-10 Organizational Structure of Montserrado CHSWT

Chapter 6 Development Assistance and Partnership

6.1 Framework of Donor Coordination

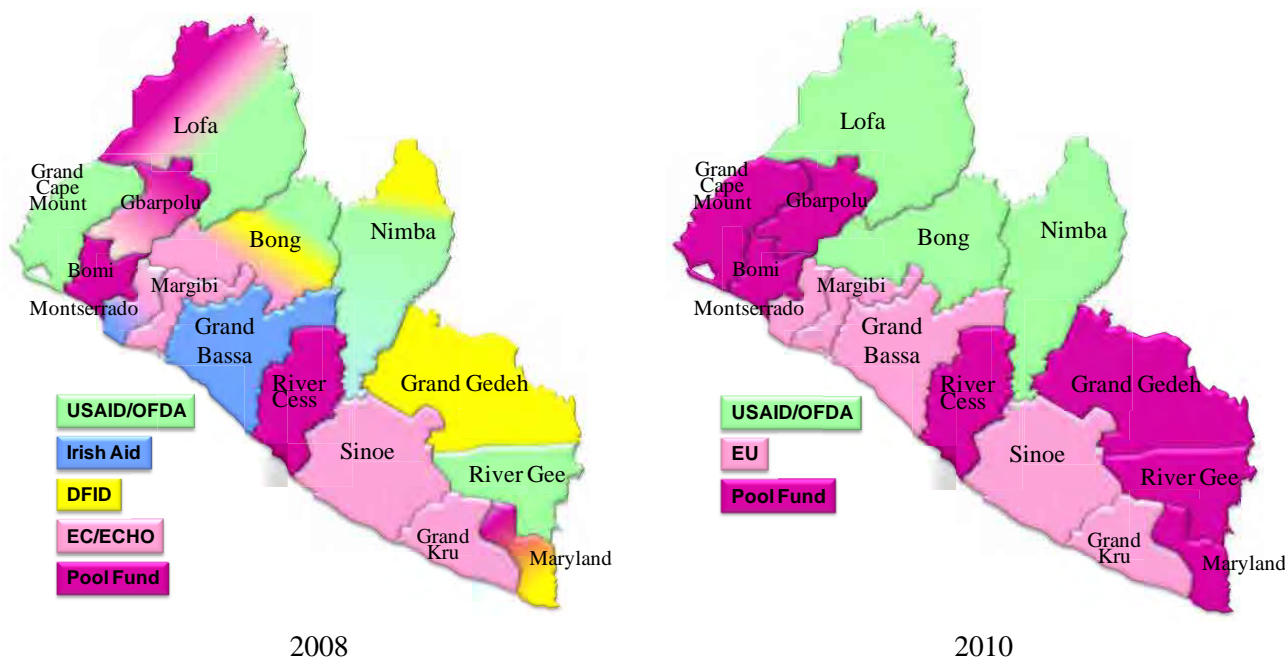
When the NHPP was issued in 2007, MOHSW established a Health Sector Coordinating Committee (HSCC) to mobilize and coordinate the different major sources of support for the NHPP. The HSCC is chaired by the Health Minister and consists of the government, all donors, UN agencies, and NGOs who are active in the health sector. Table 6-1 shows the main aid mechanism in the health sector.

Table 6-1 Main Aid Mechanisms in the Health Sector (2011)

Aid Mechanism	Pool fund	Project Support	Disease-Specific Project Funding
Main Features	Use Country System	Use Donor System	Use Parallel System
Donor	DFID, UNICEF, UNHCR Irish Aid	USAID, EU	GAVI, GFATM, PMI
Annual Expenditure	US\$10,000,000	US\$18,000,000	US\$35,000,000
Proportion of THE	6%	11%	20%

Source: The Liberian Health Sector Pool Fund, Hughes et al. (February 2012) [39]

The current NHSWPP continue to guide the partnerships and coordination of donor agencies including supported NGOs. In this respect, Figure 6-1 shows an improved coordination of donor funding and a reduced fragmentation of support through the introduction of the pool fund. At the same time, the pool fund has led the CHSWT to work with a single donor and facilitated more efficient and coordinated management of activities at the county level [1] [39].



Source: The Liberian Health Sector Pool Fund, Hughes et al. (February 2012) [39]

Figure 6-1 Major Donor Funding by County (2008 and 2012)

It is also a fact that geographical donor coordination has not necessarily resulted in a more equitable distribution of aid. For instance, the USAID’s Rebuilding Basic Health Services (RBHS) Project can assist the capacity building of CHSWT such as training and logistical support; yet this support is only applicable to the counties where USAID is working. On the contrary, the European Union (EU) humanitarian support is

prohibited to be used for non-humanitarian purposes, and almost no support is provided for CHSWT capacity building. In this respect, although the amount is limited, the pool fund has the flexibility to support real financing needs [39].

6.2 Activities of Major Development Partners

Table 6-2 summarizes the major donor's support. Most donor agencies support the MDGs priority areas. As shown earlier, USAID and EU thrusts are geographically coordinated.

Table 6-2 Donor's Assistance and Areas of Support

	Country Strategic Plan	Geographic Focus	Areas of Support						
			Child Health	Maternal Health	Nutrition	HIV/AIDS	Malaria	TB	HSS
UNICEF	The Country Programme Action Plan 2008-2012		○	○	○	○ ⁽¹⁾	○		○
WHO	Country Cooperation Strategy 2008-2011		○	○	○	○	○	○	○
USG · USAID	The Global Health Initiative-Liberia Strategy 2011-2015	Bong, Lofa, Nimba, and a part of Montserrado, Margibi, and Grand Bassa	○	○	○	○ ⁽²⁾	○	○	-○
EU ⁽³⁾		Sinoe, Grand Kru, Margibi, Gbarpolu	○	○	○	○	○	○	
World Bank									○ ⁽⁴⁾

Note : (1) Prevention of mother-to-child transmission

(2) No PEPFAR support for 2011-12

(3) Through BPHS/EPHS

(4) Supports include medical education

Sources: Improving Nutrition Practice in Liberia, UNICEF (21 June 2010) [41], Weekly Situation Report No.53, UNICEF (16 January 2012) [42], USAID [43] (<http://liberia.usaid.gov/node/52>), Global Health Initiative Liberia Strategy, USG (September 2011) [44], Liberia Health System Reconstruction Project-Project Data Sheet, The World Bank (30 November 2009) [45], Implementation Completion and Results Report (IDA-H3040), The World Bank (30 March 2011) [46]

The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) support is listed in Table 6-3.

Table 6-3 GFATM Support for HIV/AIDS, TB, and Malaria Programs

Grant Type	Round	Period	Total Signed Amount (US\$)	Principal Recipient
HIV/AIDS	R2	2004/12-2007/2	7,423,268	UNDP
	R6	2007/6-2010/4	16,828,475	UNDP
	R8	2010/4-2012/9	32,809,911	MOHSW
Tuberculosis	R2	2004/12-2007/2	4,288,516	UNDP
	R7	2008/6-2013/5	11,687,919	UNDP
	SSF	2011/7-2014/6	6,708,478	MOHSW
Malaria	R3	2004/12-2007/2	11,868,992	UNDP
	R7	2008/6-2011/5	20,774,047	UNDP
	SSF	2011/6-2013/6	30,210,266	MOHSW
	SSF	2011/6-2013/6	7,709,085	Plan International

Source: Liberia-Grant Portfolio and GFATM (1 April 2012)
(<http://portfolio.theglobalfund.org/en/Grant/List/LBR>) [25]

6.3 Outline of Japanese Cooperation

Due to the aggravated situation caused by the civil war, Japan suspended bilateral assistance to Liberia in May 1990 and only provided humanitarian assistance through international organization and NGOs. After the peace accord in 2003, Japan pledged to resume bilateral economic cooperation at the Washington D.C. Partner Forum in February 2007. At present, the Japanese government is providing technical assistance and grant aid, focusing on health and infrastructure development. Table 6-4 summarizes the health sector assistance by the Japanese government.

Table 6-4 Health Sector Support by the Japanese Government

Grant Aid and Multilateral Cooperation				
Assistance Period	Scheme	Project Name	Assistance Amount	Objective/Summary
FY 2005	Grant Aid	The Project of Infectious Disease Prevention for Children (through UNICEF)	259 million yen	Financial support for the procurement of mosquito nets, malaria and ARI drugs, and immunization vaccines.
FY 2006	Grant Aid	The Project of Infectious Disease Prevention for Children (through UNICEF)	187 million yen	Financial support for the procurement of mosquito nets, malaria drugs, and immunization vaccines.
FY 2007	Grant Aid	The Project of Infectious Disease Prevention for Children (through UNICEF)	200 million yen	Financial support for the procurement of: -Immunization vaccines for children under 12 months in the country; -Malaria drug for children under-five and pregnant women in Montserrado, Bomi, Lofa, and Maryland counties; -LLIN for children under-five and pregnant women in Bomi County with the lowest ownership rate of LLIN.
FY 2009-2010	Grant Aid	The Project for Rehabilitation of the Liberian-Japanese Friendship Maternal Hospital	364 million yen	Restoration of Liberian-Japanese Friendship Maternity Hospital and provision of medical equipment.
FY 2009	ML	Reduction of Maternal, Newborn Mortality in Liberia	3.42 million US dollars	
5/2/2010 ~ 31/8/2010	Grant Aid	The Project of Infectious Disease Prevention for Children (with UNICEF)	162 million yen	Financial support for the procurement of immunization vaccines and other commodities to strengthen infectious disease control for children and pregnant women.
8/3/2011 ~ 30/9/2011	Grant Aid	The Project of Infectious Disease Prevention for Children (through UNICEF)	304 million yen	Financial support for the procurement of: -Vaccines and other commodities for immunization program to improve maternal and child health. -Tub wells and antiseptic solution for better hygienic environment. Financial support for hygiene education.

Experts		
Assistance Period	Project Name	Objective/Summary
1/5/2010/5/1~21/8/2010	Maintenance of the Medical Equipment	Strengthened management system of medical equipment in Liberian-Japanese Friendship Maternal Hospital
1/5/2010~21/8/2010 (extension up to 31/3/2011)	Capacity Development of Medical Personnel in Liberian-Japanese Friendship Maternal Hospital (Hospital Management)	Strengthened management capacity in Liberian-Japanese Friendship Maternal Hospital
1/6/2010/~15/2/2011	Enhance Management on Liberian-Japanese Friendship Maternal Hospital (Maternal and Child Health)	Strengthened capacity of service delivery in Liberian-Japanese Friendship Maternal Hospital
1/6/2011~31/3/2012	Enhance Management on Liberian-Japanese Friendship Maternal Hospital (Maternal and Child Health)	Strengthened capacity of service delivery in Liberian-Japanese Friendship Maternal Hospital
1/6/2011~31/3/2012	Maintenance of the Medical Equipment	Strengthened management system of medical equipment in Liberian-Japanese Friendship Maternal Hospital

Training Programs in Japan and Third Country	
Assistance Period	Training Name (Number of Participants)
FY 2007	Reproductive Health and BCC (2)
FY 2008	Health Administration (2), Hospital Management (1), Nursing Management (1), Health Policy Development (1), Infectious Disease Control (1), Maternal and Child Health (3)
FY 2009	Health Human Resources Development (long-term) (1), Total Quality Management for Health Care Facilities for Africa (Egypt)(2), Newborn and Child Health Care (1), Hospital Management (1), Nursing Management (2), Hospital Infection Management and Control (1), Health Administration (2), Community Health Program Management (5), Reproductive Health and BCC (1)
FY 2010	Total Quality Management for Health Care Facilities for Africa (Egypt)(1), Nursing Management (2), Maternal Child Health Nursing Management (2), Health Administration (2), Hospital Administration and Health Services Management (2), Newborn and Child Health Care (1), Hospital Infection Management and Control (1), Infectious Disease Control (2)
FY 2011	Total Quality Management for Health Care Facilities for Africa (Egypt)(2), Health Hygiene Management (1), Maternal Child Health Nursing Management (2), Hospital Administration and Health Services Management (2), Safe Motherhood (2), Newborn and Child Health Care (1), Maternal and Child Health Promotion in Public Health (2), Medical Equipment Maintenance (1), Health Policy Development (1), Prevention and Control Measures of AIDS for the Next Decade (1)

Sources: ODA Country Data Book, Ministry of Foreign Affairs (August, 2010) [47]
Japan's ODA Rolling Plan for the Republic of Liberia, Ministry of Foreign Affairs (August 1, 2010) [48]
Data Collection Survey on Health Sector, Republic of Liberia, JICA (October, 2009) [31]
JICA Knowledge Site [49]

Chapter 7 Priority Health Issues and Recommendations

7.1 Priority Health Issues

The prolonged civil conflict and aftermath impact resulted in a long-term social and economic instability in Liberia. The health service system was severely damaged and even basic health care services were extremely difficult to provide due to multiple problems such as destruction of infrastructure, facilities, medical equipment, severe shortage of drugs, skills, human resources, and financial constraints. Since 2007, under the NHPP and the NHSWPP, the availability of basic services has been improved. However, significant gaps still exist in the health sector. One of the most critical priorities in the health sector in Liberia is the high maternal mortality, which increased substantially from 2000 to 2007.

As stated earlier, even though the services such as institutional delivery and delivery with skilled personnel have improved, emergency obstetric care (EmOC) services and referral systems are far from adequate. Improved services to reduce maternal mortality need to be strengthened. Child mortality has declined during the same period in 2000-2007, however, malaria, ARI, malnutrition, and diarrhea are still the leading causes of child mortality, and further interventions are required to control these preventable diseases. Newborn deaths accounted for 60% of infant (under one) deaths. In response to this situation, newborn care services also need to be strengthened.

7.1.1 Factors Affecting Priority Issues

The provision of basic health services was disrupted for many years in Liberia. Despite recent improvements, universal access to maternal health services, specifically, antenatal care (ANC) and postnatal care (PNC), institutional delivery attended by skilled personnel, referral of emergency cases, prompt and sound EmOC in the facility and safe abortion, have been serious challenges especially in the rural areas. This situation is attributed to the country's high maternal mortality. In addition, adequate services are not yet provided to the nutritional problem among pregnant women and high rate of teenage pregnancy.

Access to basic health care services can prevent and/or treat many cases of malaria, newborn illness, ARI, and measles which are the major causes of under-five mortality. Newborn care service with qualified health personnel and medical equipment can significantly reduce neonatal mortality. Malnutrition reduces body resistance and increases severity of illness. Proper interventions (nutritional education, therapeutic feeding, regular vitamin, and micronutrients supplementation etc.) are also required to improve chronic malnutrition.

The BPHS and the on-going EPHS have strengthened the capacity of health facilities in providing a set of standardized services. Each health facility is expected to provide different services according to their level of care, however, their ability to respond to emergency care is not sufficient.

The basic infrastructure on roads, electricity, and communication are not well developed, and a shortage of health professionals in the rural areas at the primary level and inadequate referral system continue to be health sector problems. Moreover, there are problems on the supply side, e.g., disproportionate concentration of health personnel and facilities in urban areas, and problems on demand side, e.g., physical access (time

required to reach the nearest facility) and utilization of health facilities. Although BPHS provided free health care services, household OOP spending was estimated at 35%. High OOP spending imposes a large financial burden especially in lower income groups, while a study revealed that higher income groups are more likely to use government subsidized health services.

7.1.2 Government and Donor's Approach and Problems on Primary Health Care in the Future

Through BPHS and EPHS, the Government of Liberia with the help of donor agencies is providing a package of basic health care in primary health care system at the community level with emphasis on the maternal and child health services. Due to financial constraints, BPHS and EPHS are designed to provide high-impact interventions. The implementation of BPHS and EPHS have revitalized the health care system, by increasing the number of facilities since the end of the civil war, standardizing the basic health services, and introducing an accreditation system for the health facilities. Although the number of institutional deliveries and deliveries assisted with skilled personnel have increased, functional referral system and access to family planning services to reduce fertility including teenage pregnancies need a serious attention. In response, EPHS will expand sexual and reproductive health services including target adolescents.

BPHS/EPHS and other programs have strengthened the Integrated Management of Neonatal and Child Illness (IMNCI). IMNCI provides services such as effective treatment for malaria within 24 hours of the onset of fever, management of ARI, oral rehydration treatment (ORT) for diarrhea. Although the community IMNCI strategy is developed to expand the access to the services, an implementation structure and human resources need to be strengthened. The immunization coverage has increased significantly, yet the government has adopted the Reach Every District (RED) approach to ensure that all children have access to the services. To improve serious chronic malnutrition, CHSWTs will introduce the Essential Nutrition Actions (ENA) approach to all health facilities and give mothers education on appropriate infant and young child feeding and micronutrient supplementation to children.

The government intends to further increase the number of health facilities in line with the current health policy. Guided by the EHRP, the number of nurses and midwives significantly increased to play a major role in expanding maternal and child health interventions. On the contrary, Liberia has a severe shortage of physicians. Up to the present, although several education and training institutes have reopened, medical education and in-service training programs need to be restored in the future. To ensure equity, the salary scale among the government health workers and NGO workers was equalized. The information has been collected through the Health HR Census and other surveys for more equitable distribution of health workers. The disparities in the access to service between the urban and rural areas, and the utilization of health facilities between the high and the low income group have been observed through several studies; thereby equity in access and availability of health services should be highlighted along with the expansion of services and provision of quality care.

7.2 Recommendations

At present, geographical area for Japanese ODA is restricted due to security reasons. Japanese assistance can be directed to support the MCH component of EPHS, which contribute to the reduction of maternal and infant/child mortality. Specific approaches are as follows:

- Short-term expert and training programs for management and technical capacity building of nurses and midwives who are cornerstone of the health services.
- Grant aid program to provide drugs and medical equipment and to improve facility infrastructure.

7.2.1 Support to Priority Issues

Japanese assistance can be provided for the improvement of maternal, infant and child mortality, and the expansion of service use and financial protection (reduction in household OOP expenditure) by emphasizing the strategies described in (1) and (2) below. For the capacity building of support system, assistance should include the management capacity building of CHSWTs who will be implementing and managing more tasks in the service delivery in line with the decentralization policy, and strengthening a support system for community intervention which will complement the services provided by health facilities (e.g. linking referral facilities with community intervention).

(1) Quality Improvement of Service Delivery

Facility development support will be provided to improve the quality of services for the following interventions through technical support and provision of drugs and other commodities:

- Intervention to improve maternal mortality (ANC and PNC, IPTp, family planning, prevention of teenage pregnancy, safe abortion, EmOC, etc.).
- Intervention to improve child health (IMNCI, immunization, nutritional support etc.).

(2) Capacity Building of Support System

Implementation of EPHS is said to be an enormous logistics challenge under the current service delivery environment. To contribute to the successful provision of EPHS, in addition to the direct support to the service delivery, assistance for capacity building of support system can be provided in a mid- to long-term period (implementation and management capacity, human resource development, infrastructure, supply chain network, information system, and referral system etc.).

(3) Ensuring Equity

NHSWPP particularly highlights equity in provision of service delivery as one of the priority issues. Therefore, it is essential to support services which people in the rural areas and/or in the lower economic cadre have better access, by considering strategic distribution of health facilities and selection of target groups. This approach also coincides with an important strategy to improve maternal mortality and child health. At present, results from HMIS, BPHS Accreditation Reports, and other studies and surveys have been accumulated. Strategic planning and priority setting can also be developed based on evidence.

It may be noted that in the course of a rapid reconstruction and development process, the disease and health structure of the population could change in a mid- to long-term period (e.g., support to non-communicable diseases, mental health, and disability).

As mentioned above, there are a quite few information available on the health sector in Liberia, thereby, when designing and implementing support, these information can be fully used to ensure and promote equity in the health service delivery.

ATTACHMENTS

Attachment 1: Major Health Indicators

Attachment 2: References

Attachment 1: Major Health Indicators (Republic of Liberia)

Republic of Liberia			MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region	
0 General Information	0.1 Demography	0.1.01	Population, total		WDI	2,127,098	2,847,290	3,994,000	2010	853,434,000	(2010)	Sub-Saharan Africa (developing only)
		0.1.02	Population growth (annual %)		WDI	-1.5	4.9	4.0	2010	2.5	(2010)	Sub-Saharan Africa (developing only)
		0.1.03	Life expectancy at birth, total (years)		WDI	42.3	46.0	56.2	2010	54.3	(2010)	Sub-Saharan Africa (developing only)
		0.1.04	Birth rate, crude (per 1,000 people)		WDI	46.1	43.3	39.1	2010	37.4	(2010)	Sub-Saharan Africa (developing only)
		0.1.05	Death rate, crude (per 1,000 people)		WDI	21.3	17.7	11.0	2010	12.6	(2010)	Sub-Saharan Africa (developing only)
		0.1.06	Urban population (% of total)		WDI	45.3	54.3	61.5	2010	37.4	(2010)	Sub-Saharan Africa (developing only)
	0.2 Economic · Development Condition	0.2.01	GNI per capita, Atlas method (current US\$)		WDI		140	200	2010	1,188.5	(2010)	Sub-Saharan Africa (developing only)
		0.2.02	GNI growth (annual %)		WDI					4.1	(2010)	Sub-Saharan Africa (developing only)
		0.2.03	Total enrollment, primary (% net)	2.1	WDI					76.3	(2009)	Sub-Saharan Africa (developing only)
		0.2.04	Ratio of female to male primary enrollment (%)	3.1	WDI		73.5	90.7	2008	91.6	(2009)	Sub-Saharan Africa (developing only)
		0.2.05	Literacy rate, adult total (% of people ages 15 and above)		WDI			59.1	2009	62.3	(2009)	Sub-Saharan Africa (developing only)
		0.2.06	Human Development Index		HDR	0.23		0.33	2011	0.46	(2011)	Sub-Saharan Africa
		0.2.07	Human Development Index (rank)		HDR	131 / 160		182 / 187	2011			
0.3 Water and Sanitation	0.3.01	Improved water source (% of population with access)	7.8	HNP Stats		61	73	2010	61.1	(2010)	Sub-Saharan Africa (developing only)	
	0.3.02	Improved sanitation facilities (% of population with access)	7.9	HNP Stats		12	18	2010	30.6	(2010)	Sub-Saharan Africa (developing only)	
1 Health Status of People	1.1 Mortality and Morbidity	1.1.01	Age-standardized mortality rate by cause (per 100,000 population) - Communicable		GHO			782	2008	798	(2008)	Africa
		1.1.02	Age-standardized mortality rate by cause (per 100,000 population) - Noncommunicable		GHO			766	2008	779	(2008)	Africa
		1.1.03	Age-standardized mortality rate by cause (per 100,000 population) - Injuries		GHO			63	2008	107	(2008)	Africa
		1.1.04	Cause of death, by communicable diseases and maternal, prenatal and nutrition conditions (% of total)		HNP Stats			68.0	2008	64.6	(2008)	Sub-Saharan Africa (developing only)
		1.1.05	Cause of death, by non-communicable diseases (% of total)		HNP Stats			27.9	2008	28.3	(2008)	Sub-Saharan Africa (developing only)
		1.1.06	Cause of death, by injury (% of total)		HNP Stats			4.1	2008	7.1	(2008)	Sub-Saharan Africa (developing only)
		1.1.07	Distribution of years of life lost by broader causes (%) - Communicable		GHO			82	2008	78	(2008)	Africa
		1.1.08	Distribution of years of life lost by broader causes (%) - Noncommunicable		GHO			14	2008	15	(2008)	Africa
		1.1.09	Distribution of years of life lost by broader causes (%) - Injuries		GHO			4	2008	17	(2008)	Africa
	1.2 Maternal and Child Health	1.2.01	Maternal mortality ratio (modeled estimate, per 100,000 live births)	5.1	MDGs	1,100	1,100	990	2008	650	(2008)	Sub-Saharan Africa (developing only)
		1.2.02	Adolescent fertility rate (births per 1,000 women ages 15-19)	5.4	MDGs		148.5	130.8	2010	107.6	(2010)	Sub-Saharan Africa (developing only)
		1.2.03	Mortality rate, under-5 (per 1,000)	4.1	MDGs	226.6	168.9	102.6	2010	121.2	(2010)	Sub-Saharan Africa (developing only)
		1.2.04	Mortality rate, infant (per 1,000 live births)	4.2	MDGs	151.2	115.1	73.6	2010	76.4	(2010)	Sub-Saharan Africa (developing only)
		1.2.05	Low-birthweight babies (% of births)		HNP Stats			13.7	2007	13.3	(2010)	Sub-Saharan Africa (developing only)
		1.2.06	Fertility rate, total (birth per woman)		HNP Stats	6.5	5.9	5.2	2010	4.9	(2010)	Sub-Saharan Africa (developing only)
	1.3 Infectious Diseases	1.3.01	a) Prevalence of HIV, male (% ages 15-24)	6.1	MDGs			0.3	2009	1.5	(2009)	Sub-Saharan Africa (developing only)
			b) Prevalence of HIV, female (% ages 15-24)	6.1	MDGs			0.7	2009	3.8	(2009)	Sub-Saharan Africa (developing only)
		1.3.02	Notified cases of malaria per 100,000 population	6.6	MDGs Database			29,994	2008			
		1.3.03	a) Malaria death rate per 100,000 population, all ages	6.6	MDGs Database			87	2008	96	(2009)	Sub-Saharan Africa
			b) Malaria death rate per 100,000 population, ages 0-4	6.6	MDGs Database			83	2008	519	(2009)	Sub-Saharan Africa
		1.3.04	Tuberculosis prevalence rate per 100,000 population (mid-point)	6.9	MDGs Database	362	487	476	2010	479	(2009)	Sub-Saharan Africa
		1.3.05	Incidence of tuberculosis (per 100,000 people)	6.9	MDGs	199	242	293	2010	271	(2010)	Sub-Saharan Africa (developing only)
		1.3.06	Tuberculosis death rate (per 100,000 people)	6.9	MDGs	38	58	48	2010	28	(2010)	Sub-Saharan Africa (developing only)
		1.3.07	Prevalence of HIV, total (% of population ages 15-49)		HNP Stats	0.3	3.3	1.5	2009	5.5	(2009)	Sub-Saharan Africa (developing only)
		1.3.08	AIDS estimated deaths (UNAIDS estimates)		HNP Stats	100	3,500	3,600	2009			
	1.3.09	HIV incidence rate, 15-49 years old, percentage (mid-point)		MDGs Database								
	1.3.10	Partial Prioritization Score by the Global Fund (HIV)		GF			8	2012				
		Partial Prioritization Score by the Global Fund (Malaria)		GF			12	2012				
		Partial Prioritization Score by the Global Fund (TB)		GF			10	2012				
1.4 Nutrition	1.4.01	Prevalence of wasting (% of children under 5)		HNP Stats		7.4	7.8	2007				
2 Service Delivery	2.1 Maternal and Child Health	2.1.01	Births attended by skilled health personnel, percentage	5.2	MDGs Database		50.9	46.3	2007			
		2.1.02	Birth by caesarian section		GHO			3.5	2007	3.5	(2011)	Africa
		2.1.03	Contraceptive prevalence (% of women ages 15-49)	5.3	MDGs		10	11.4	2007	21.7	(2010)	Sub-Saharan Africa (developing only)
		2.1.04	Pregnant women receiving prenatal care (%)	5.5	HNP Stats		84.4	79.3	2007	73.5	(2010)	Sub-Saharan Africa (developing only)
		2.1.05	Pregnant women receiving prenatal care of at least four visits (% of pregnant women)	5.5	HNP Stats			66.0	2007	45.6	(2010)	Sub-Saharan Africa (developing only)
		2.1.06	Unmet need for family planning, total, percentage	5.6	MDGs Database			35.6	2007	24.8	(2008)	Sub-Saharan Africa
		2.1.07	1-year-old children immunized against: Measles	4.3	Childinfo		63	64	2010	75	(2010)	Sub-Saharan Africa
		2.1.08	1-year-old children immunized against: Tuberculosis		Childinfo		78	80	2010	84	(2010)	Sub-Saharan Africa
		2.1.09	a) 1-year-old children immunized against: DPT (percentage of infants who received their first dose of diphtheria, pertussis and tetanus vaccine)		Childinfo		80	75	2010	85	(2010)	Sub-Saharan Africa
			b) 1-year-old children immunized against: DPT (percentage of infants who received three doses of diphtheria, pertussis and tetanus vaccine)		Childinfo		46	64	2010	77	(2010)	Sub-Saharan Africa
		2.1.10	1-year-old children immunized against: Polio		Childinfo		56	71	2010	79	(2010)	Sub-Saharan Africa
	2.1.11	Percentage of infants who received three doses of hepatitis B vaccine		Childinfo			64	2010	74	(2010)	Sub-Saharan Africa	
	2.2 Infectious Diseases	2.2.01	Condom use with non regular partner, % adults (15-49), male	6.2	MDGs			25.6	2007			
2.2.02		Condom use with non regular partner, % adults (15-49), female	6.2	MDGs			13.8	2007				

Attachment 1: Major Health Indicators (Republic of Liberia)

Republic of Liberia				MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region	
2.2	2.2.03	Men 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database				27.2	2007	33	(2005-2010)	Sub-Saharan Africa	
		2.2.04	Women 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database			20.5	2007	26	(2005-2010)	Sub-Saharan Africa	
		2.2.05	Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years	6.4	MDGs Database			0.85	2007	0.92	(2005-2010)	Sub-Saharan Africa	
		2.2.06	Use of insecticide-treated bed nets (% of under-5 population)	6.7	HNP Stats			26.4	2009	34.0	(2010)	Sub-Saharan Africa (developing only)	
		2.2.07	Children under 5 with fever being treated with anti-malarial drugs, percentage	6.8	MDGs Database			67.2	2009	36	(2008-2010)	Sub-Saharan Africa	
		2.2.08	Tuberculosis treatment success rate under DOTS, percentage	6.10	MDGs Database		80	79	2008	80	(2008)	Sub-Saharan Africa	
		2.2.09	Antiretroviral therapy coverage (% of people with advanced HIV infection)	6.5	MDGs			14.0	2009				
		2.2.10	People aged 15 years and over who received HIV testing and counselling, estimated number per 1,000 adult population		GHO			90.3	2010				
		2.2.11	Testing and counselling facilities, estimated number per 100,000 adult population		GHO			9.3	2010				
		2.2.12	Pregnant women tested for HIV, estimated coverage (%)		GHO			42	2010				
		2.2.13	Percentage of HIV-infected pregnant women who received antiretroviral drugs to reduce the risk for mother-to-child transmission (Mid point)	6.5	MDGs Database			16	2009				
		2.2.14	Tuberculosis case detection rate (all forms)		HNP Stats		22.0	56.0	2010	60	(2010)	Sub-Saharan Africa (developing only)	
		2.2.15	Tuberculosis treatment success rate (% of registered cases)	6.10	MDGs		80.0	83.0	2009	79	(2009)	Sub-Saharan Africa (developing only)	
		2.3	2.3.01	Vitamin A supplementation coverage rate (% of children ages 6-59 months)		HNP Stats			96.7	2010	85.8	(2010)	Sub-Saharan Africa (developing only)
				2.3.02	Consumption of iodized salt (% of households)		HNP Stats				49.8	(2010)	Sub-Saharan Africa (developing only)
2.4	2.4.01	Estimate of health formal coverage		ILO					11.6		Countries of very high vulnerability		
		2.4.02	Population not covered (%) due to financial resources deficit		ILO			92.8		85.8	Countries of very high vulnerability		
		2.4.03	Population not covered (%) due to professional health staff deficit		ILO			92.1		74.6	Countries of very high vulnerability		
3	3.1	3.1.01	Physicians (per 1,000 people)		HNP Stats			0.01	2008	0.2	(2010)	Sub-Saharan Africa (developing only)	
			3.1.02	Midwives (per 1,000 people)		HNP Stats							
			3.1.03	Nurses (per 1,000 people)		HNP Stats			0.2	2004			
			3.1.04	Dentistry personnel density (per 10,000 population)		GHO			0.01	2008	0	(2007)	Africa
			3.1.05	Density of pharmaceutical personnel (per 10,000 population)		GHO			0.75	2008	1.0	(2007)	Africa
	3.2	3.2.01	Health expenditure, total (% of GDP)		HNP Stats		9.3	11.8	2010	6.5	(2010)	Sub-Saharan Africa (developing only)	
			3.2.02	Health expenditure, public (% of total health expenditure)		HNP Stats		14.3	32.5	2010	45.1	(2010)	Sub-Saharan Africa (developing only)
			3.2.03	Health expenditure, private (% of total health expenditure)		HNP Stats		85.7	67.5	2010	54.9	(2010)	Sub-Saharan Africa (developing only)
			3.2.04	Out-of-pocket health expenditure (% of private expenditure on health)		HNP Stats		52.2	52.2	2010	64.7	(2010)	Sub-Saharan Africa (developing only)
			3.2.05	Health expenditure, public (% of government expenditure)		HNP Stats		9.0	11.1	2010	10.0	(2005)	Sub-Saharan Africa (developing only)
			3.2.06	External resources for health (% of total expenditure on health)		HNP Stats		5.5	55.1	2010	10.5	(2010)	Sub-Saharan Africa (developing only)
			3.2.07	Social security expenditure on health as a percentage of general government expenditure on health		GHO		0.0	0.0	2009	7	(2009)	Africa
			3.2.08	a) Health expenditure per capita (current US\$)		HNP Stats		18.5	29.2	2010	84.3	(2010)	Sub-Saharan Africa (developing only)
		b) Per capita total expenditure on health (PPP int. \$)		GHO		39	53	2009	157	(2009)	Africa		
	3.3	3.3.01	a) Median availability of selected generic medicines (%) - Public		GHO								
b) Median availability of selected generic medicines (%) - Private				GHO									
3.3.02			a) Median consumer price ratio of selected generic medicines - Public		GHO								
b) Median consumer price ratio of selected generic medicines - Private				GHO									
3.3.03			Hospital beds (per 1,000 population)		HNP Stats			0.8	2010	1.2	(1990)	Sub-Saharan Africa (developing only)	

WDI: World Development Indicators & Global Development Finance (<http://databank.worldbank.org/ddp/home.do>) (Accessed 07/2012)

HDR: Human Development Reports (<http://hdr.undp.org/>) (Accessed 07/2012)

HNP Stats: Health Nutrition and Population Statistics (<http://databank.worldbank.org/ddp/home.do>) (Accessed 07/2012)

GF: Global Fund eligibility list for 2012 funding channels, the Global Fund to Fight AIDS, Tuberculosis and Malaria (<http://www.theglobalfund.org/en/application/applying/ecfp/>) (Accessed 07/2012)

GHO: Global Health Observatory Country Statistics (<http://www.who.int/gho/countries/en/>) (Accessed 07/2012)

GHO: Global Health Observatory Repository (<http://apps.who.int/ghodata/>) (Accessed 07/2012)

MDGs: Millennium Development Goals (<http://databank.worldbank.org/ddp/home.do>) (Accessed 07/2012)

MDG database: Millennium Development Goals Indicators (<http://mdgs.un.org/unsd/mdg/>) (Accessed 07/2012). Regional data is available on The Millennium Development Goals Report Statistical Annex 2011 (United Nations).

Childinfo: Childinfo UNICEF (<http://www.childinfo.org/>) (Accessed 07/2012)

ILO: World Social Security Report 2010/11: Providing coverage in times of crisis and beyond. International Labour Office Geneva: ILO 2010.

1.3.10 *Partial Prioritization Score* is composed of the income level score for the country and the disease burden score for the particular disease in the country. The minimum score is 3 and the maximum score is 12.

2.4.01 *Estimate of health formal coverage* is indicated as percentage of population covered by state, social, private, company-based, trade union, mutual and other health insurance scheme.

2.4.02 *Population not covered (%) due to financial resources deficit* (based on median value in low-vulnerability group of countries) uses the relative difference between the national health expenditure in international \$ PPP (excluding out-of-pocket) and the median density observed in the country group with low levels of vulnerability as a benchmark for developing countries. The rate can be calculated using the following formula:

Per capita health expenditure not financed by private households' out-of-pocket payments (PPP in int. \$) [A]

Population (in thousands) total [B]

Total health expenditure not financed by out of pocket in int. \$ PPP (thousands) [C = A x B]

Population covered by total health expenditure not financed by out-of-pocket if applying Benchmark* (thousands) [D = C ÷ Benchmark]**

Percentage of the population not covered due to financial resources deficit (%) [F = (B - D) ÷ B x 100]

*Benchmark: Total health expenditure not financed by out-of-pocket per capita = 350 international \$ PPP.

**This formula was partially modified from the original in the source to suit an actual calculation.

2.4.03 *Population not covered (%) due to professional health staff deficit* uses as a proxy the relative difference between the density of health professionals in a given countries and its median value in countries with a low level of vulnerability. The rate can be calculated using the following formula:

Total of health professional staff [A = B + C]

Number of nursing and midwifery personnel [B]

Number of physicians [C]

Total population (in thousands) [D]

Number of health professional per 10,000 persons [F = A ÷ D x 10]

Total population covered if applying Benchmark* (thousands) [E = A ÷ Benchmark x 10]

Percentage of total population not covered due to health professional staff deficit [G = (D - E) ÷ D x 100]

Benchmark: 40 professional health staff per 10,000 persons.

Attachment 2 : References (Republic of Liberia)

	TITLE	AUTHOR	URL	YEAR
1	Country Situational Analysis Report	MOHSW		July 2011
2	Human Development Report 2011	UNDP	http://hdr.undp.org/en/reports/global/hdr2011/	2011
3	World Development Indicators	The World Bank	http://data.worldbank.org/data-catalog/world-development-indicators	2012
4	Country Info, Liberia	IMF	http://www.imf.org/external/country/LBR/index.htm?pn=2	
5	The State of the World Children 2011	UNICEF	http://www.unicef.org/publications/files/SOWC_2011_Main_Report_EN_02242011.pdf	2011
6	National Budget Framework Paper FY2012/13	GOL	http://www.mof.gov.lr/doc/Final%20First%20Edition%20Budget%20Framework%20Paper%201213.pdf	2012
7	Republic of Liberia Lift Liberia Poverty Reduction Strategy-Second Annual Progress Report April 2009-March 2010	IMF	http://www.imf.org/external/pubs/ft/cr/2011/cr11214.pdf	July 2011
8	Essential Package of Health Services-Primary Care: The Community Health System Phase One	MOHSW	http://www.moh.gov.lr/doc/EPHS-Hospital%20Package.pdf	June 2011
9	National Health and Social Welfare Policy and Plan 2011-2021	MOHSW	www.moh.gov.lr/doc/Final-NHSWP.P.pdf	2011
10	The Millennium Development Goal Report	United Nations	http://www.un.org/millenniumgoals/11_MDG%20Report_EN.pdf	2011
11	Ministry of Health and Social Welfare 2010 Annual Report	MOHSW	JICA LFO	15 Jan 2011
12	A Critical Analysis of Maternal Morbidity and Mortality in Liberia, West Africa	Lori et al. (Midwifery 2012 Feb 28 (1): 67-72)	http://www.ncbi.nlm.nih.gov/pubmed/21232836	28 Feb 2012
13	Draft Operational Plan to Reduce Maternal and Neonatal Mortality in Liberia	Subcommittee on Maternal Mortality Reduction (MOHSW et al.)	http://www.africare.org/our-work/where-we-work/liberia/Resources/4Liberia_ResourceDoc.pdf	Mar 2008
14	Liberia Demographic and Health Survey	MOHSW et al.	http://www.measuredhs.com/pubs/pdf/fr201/fr201.pdf	June 2008
15	Liberia Malaria Indicator Survey 2009	NMCP-MOHSW	http://pdf.usaid.gov/pdf_docs/PNADQ924.pdf	Sep 2009
16	The State of Food and Nutrition Security in Liberia -Comprehensive Food Security and Nutrition Survey 2010	MOA and WFP	http://documents.wfp.org/stellent/groups/public/documents/ena/wfp231358.pdf	Oct 2010
17	National HIV/AIDS Strategic Framework II 2010-2014	NAC	http://www.google.co.jp/search?sourceid=navclient&hl=ja&ie=UTF-8&rlz=1T4GGNI_jaJP464JP465&q=National+HIV%2fAIDS+Strategic+Framework+II+2010-2014	2010
18	National Malaria Strategic Plan 2010-2015	NMCP-MOHSW	liberiamohsw.org/...%20Plans/Revised%20NMSP%	Jan 2010
19	Tuberculosis Control Report 2011	WHO	http://www.who.int/tb/publications/global_report/en/	2011
20	Nutrition at a Glance-Liberia	The World Bank	http://siteresources.worldbank.org/NUTRITION/Resources/281846-1271963823772/Liberia.pdf	2010
21	Basic Package of Health and Social Selfcare Services for Liberia	MOHSW		June 2008

Attachment 2 : References (Republic of Liberia)

	TITLE	AUTHOR	URL	YEAR
22	January 2011 BPHS Accreditation Final Results Report	MOHSW	http://www.moh.gov.lr/doc/Ministry_of_Health_and_Social_Welfare2011[1].pdf	May 2011
23	Family Planning Needs during the First Two Years Postpartum in Liberia-Liberia's DHS Reanalysis for PFP	USAID and MCHIP	http://www.mchip.net/sites/default/files/Liberia%20DHS%20Reanalysis%20for%20PFP_Final%202012.pdf	Dec 2011
24	National Strategy for Child Survival in Liberia (2008-2011)	MOHSW et al.	http://www.basics.org/documents/National-Strategy-for-Child-Survival_Liberia.pdf	
25	Grant Portfolio-Liberia	GFATM	http://portfolio.theglobalfund.org/en/Grant/List/LBR	1 Apr 2012
26	World Malaria Report 2011	WHO	http://www.who.int/malaria/world_malaria_report_2011/en/	2011
27	National Nutrition Policy	GOL	http://www.theniapeleproject.org/files/national%20nutrition%20policy%20Liberia%2008.pdf	Oct 2008
28	Rebuilding Human Resources for Health: a case study from Liberia	Varpilah et al. (Human Resources for Health 9:11)	http://www.human-resources-health.com/content/9/1/11	12 May 2011
29	Strategy for National In-Service Education	MOHSW	http://www.basics.org/documents/National-In-Service-Education-Program_Liberia.pdf	Dec 2009
30	Effect of Civil War on Medical Education in Liberia	Challoner and Forget (International Journal of Emergency Medicine 2011 4:6)	http://www.ncbi.nlm.nih.gov/pubmed/21408002	16 Feb 2011
31	Report on Data Collection Survey on Health Sector (Republic of Liberia)	JICA (African Department)		Oct 2009
32	Strategy and Implementation Plan for The National Health Management Information System	MOHSW	http://www.basics.org/documents/HMIS-Strategy_Liberia.pdf	Jun 2009
33	Availability of Essential Health Service in Post-conflict Liberia	Kruk et al. (Bull World Health Organ 2010;88:527-534)	http://www.who.int/bulletin/volumes/88/7/09-071068/en/index.html	2010
34	Overview of the Revised Health and Social Welfare Policy and 10-year Plan-Presentation	MOHSW		17 Jan 2012
35	Supply Chain Master Plan-A ten year plan for one, efficient, and effective public health supply chain in Liberia	MOHSW	JICA LFO	25 Aug 2010
36	Liberia National Health Accounts 2007/2008	MOHSW and USAID	http://www.healthsystems2020.org/content/resource/detail/2439/	Oct 2010
37	Financing Liberia's Health Care	USAID and Health System's 20/20	http://www.healthsystems2020.org/content/resource/detail/85811/	2012
38	Annual Report on the Health Sector Pool Fund-Activities and Expenditure through September 30, 2009	MOHSW and PWC	http://liberiamohsw.org/1st%20Annual%20Report,%20July%202009.pdf	July 2009
39	Innovative Financing in Early Recovery: The Liberian Health Sector Pool Fund	Hughes et al. (Center for Global Development: Working Paper 288)	http://www.cgdev.org/files/1425944_file_Hughes_Glassman_Liberia_health_pool_FINAL.pdf	Feb 2012
40	Montserrado CHSWT Presentation Materials			June 2012
41	Improving Nutrition Practice in Liberia	UNICEF		21 June 2010

Attachment 2 : References (Republic of Liberia)

	TITLE	AUTHOR	URL	YEAR
42	UNICEF Weekly Situation Report No.53-Liberia (9-15 January 2012)	UNICEF	http://reliefweb.int/sites/reliefweb.int/files/resources/UNICEF%20Liberia-%20SITREP%2353-%209-15%20Jan%202012.pdf	16 Jan 2012
43	USAID Home Page	USAID	http://liberia.usaid.gov/node/52	
44	Global Health Initiative Liberia Strategy	USG		Sep 2011
45	Liberia Health System Reconstruction Project-Project Data Sheet	The World Bank	http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2010/01/19/000333037_20100119232826/Rendered/INDEX/521410PJPR0P10101Official0Use0Only1.txt	30 Nov 2009
46	Implementation Completion and Results Report (IDA-H3040)	The World Bank		30 Mar 2011
47	Japan's ODA: Country Data Book 2011, Liberia 【in Japanese】	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/region/africa/tanzania/index.html	Aug 2010
48	Japan's ODA: Rolling Plan for Liberia	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/region/africa/tanzania/index.html	1 Aug 2010
49	JICA Knowledge Site 【in Japanese】	JICA	http://www.jica.go.jp/activities/issuess/health/index.html	2012
50	President's Malaria Initiative-Malaria Operational Plan FY2012	USAID	http://pmi.gov/countries/mops/fy12/liberia_mop_fy12.pdf	15 Nov 2011