

## **FORWARD**

This report contributes to the development of Liberia's health and social welfare sector. It provides the most current information and data available on the sector. The report was produced with somewhat great difficulty in terms of accessing the relevant information and data from the Ministry of Health and Social Welfare and other sources. The problem is not solely the making of the relevant agencies; with the acute lack of organized databases and reliable power, coupled with low morale occasioned by the non-payment of salaries to employees for a protracted period, cooperation, even for a meaningful exercise such as this, is bound to be less than optimal.

Particularly, the study was constrained by the general lack of user-friendly sector-wide information and data disaggregated by logical variables. Collaterally, not all of the statistics are really current (**2002**). The Liberia Health and Demographic Survey Report on which the report relies heavily was, itself, produced in 1999-2000.

Implicitly, the establishment and maintenance of a reliable sector-wide database is one of the greatest challenges of the Ministry of Health and Social Welfare. This problem must be addressed in its upcoming 5-Year National Health Development Plan. Collaterally, the training of the staff of the Research, Planning and human Resources Department to manage such a database is equally crucial.

The modicum achievement made in this report would not have been possible without the valuable inputs of the Ministry of Health and Social Welfare, the World Health Organization, the National Drug Service, and to all the organizations that participated in the stakeholders' workshop review of the draft report; to them, we say a big thank you for their inputs. We pay special tributes to Minister Peter Coleman, MD, and the Chief Medical Officer of the Republic of Liberia, Dr. Nathaniel Bartee, Dr. Omar Khatib, WHO Resident representative, and Mr. Eric Johnson, Health Economist at WHO/Liberia for their leadership and support.

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## **ACRONYMS AND ABBREVIATIONS**

AIDS	-	Acquired Immune Deficiency Syndrome
APOC	-	African Program for Onchocerciasis
ARI	-	Acute Respiratory Infection
CCA	-	Common Country Assessment
CDCs	-	Country Development Councils
CDD	-	Community Drug Distributor
CHAL	-	Christian Health Association of Liberia
CHSA	-	Country Health Services Administration
CHSB	-	County Health Services Board
CHTs	-	County Health Teams
CSS	-	Cost Sharing Scheme
DHL	-	Desley Hilbom Lynn
DHS	-	Demography Health Survey
DHTs	-	District Health Teams
ECOWAS	-	Economic Community of West African States
EMS	-	Expedited Mail Services
EPI	-	Epidemiological Data Processing Software
EU	-	European Union
FAO	-	Food and Agriculture Organization
FEDEX	-	Federal Express
GDP	-	Gross Domestic Product
GER	-	Gross Enrollment Ratio

GOL	-	Government of Liberia
HAS	-	Health Situation Analysis
HIS	-	Health Information System
HIV	-	Human Immunodeficiency Virus
HSCC	-	Health Services Coordinating Committee
ICOM	-	International Communication
IDA	-	International Dispensary Association
IEC	-	Information, Education and Communication
JFKMC	-	John F. Kennedy Medical Center
LDHS	-	Liberia Demography and Health Survey
LHDS	-	Liberia Health Demographic Service
LTC	-	Liberia Telecommunication Corporation

## **ACRONYMS AND ABBREVIATIONS CONTINUE**

LURD	-	Liberia United for Reconciliation and Democracy
MCH	-	Maternal Child Health
MCH/FP	-	Maternal Child Health/ Family Planning
MOHSW	-	Ministry of Health and Social Welfare
MPEA	-	Ministry of Planning and Economic Affairs
NACP	-	National Aids Control Programs
NDS	-	National Drug Services
NER	-	Net Enrollment Ratio
NGOs	-	Non-Governmental Organizations
NHAC	-	National Health Advisory Council
NHP	-	National Health Policy
NNS	-	National Nutritional Survey
NPP	-	National Patriotic Party
PHC	-	Primary Health Care
PHL	-	Public Health Laws
RDF	-	Revolving Drug Scheme
RIA	-	Roberts International Airport
SBA	-	Subah-Belleh Associates

STD	-	Sexual Transmitted Diseases
TTM	-	Trained Traditional Midwives
UNDP	-	United Nations Development Programmed
UNICEF	-	United Nations International Children Educational Fund
WFP	-	World Food Program
WHO	-	World Health Organization

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## CHAPTER 1

### 1. EXECUTIVE SUMMARY

The Government of Liberia (**GOL**) and the World Health Organization (**WHO**) commissioned this Health Situation Analysis (**HSA**). The study sought to: describe the current health status of the population; define existing organization and management of health services and the health care delivery system; identify constraints which adversely impact health care delivery in the country; and propose ways of improving the performance of the system and enhancing the health status of the population. The study is primarily to inform the preparation of a five-year National Health Development Plan. This expanded Executive Summary presents the major findings, analyses, and recommendations.

### Country Context

**Political:** Another civil war is currently ravaging the country. The war, being prosecuted by the Liberians United for Reconciliation and Democracy (**LURD**) against the Government, which started and was being contained in the north of the country, has now spread to six of Liberia's fifteen political sub-divisions. On account of the seriousness of the war, the Government declared a state of National Emergency in February 2002 for three months and extended it in June 2002 for another three months. The war is destroying properties, disrupting agricultural production, displacing large segments of the population, and desolating innocent human lives. There is now a growing humanitarian crisis occasioned by these developments. Meanwhile, the international community continues to assist Liberia end the war. The Government has announced the hosting of a National Peace and Reconciliation Conference in July this year to address the root causes of continued conflicts in Liberia that are undermining harmony and development.

**Economic:** The economy is slowed; there is a steady decline in annual growth. The annual rate of growth dropped from 22.9% in 1999 to 7.2% in 2000. Preliminary figures for the year 2001 registers a lower rate of 5.8%. Despite the declining trend in the annual rate of growth, the economy has shown signs of resilience, particularly in the rural subsistent sector. Rice production has attained nearly 75% of pre-war production level, while cassava production has reached its 1988 output level of 313,000 tons. Fish production has also made a rebound; 2001 production level exceeded that of 2000 by 64%.

The predominant iron ore mining sector is dormant, manufacturing is near to absent, and maritime revenue is declining. Logging, charcoal production and alluvial mining have become relatively more important to the economy. Charcoal production contributed 9% of Gross Domestic Product (**GDP**) in 1999, compared to 2% during pre-war times. Log extraction and rubber have intensified and presently constitute the most reliable sources of official foreign exchange earnings. Liberia's debt stands at US\$2.8 billion as at September 2001. Domestic arrears reached nearly 303 million in 2001, accounting for approximately 9% of the total national debt stock. Poverty is widespread; approximately 76% of the population lives on less than US\$1.00 daily. Illiteracy is a major contributing factor; 63% of the population cannot read and write.

**Demography:** The population is 2.7 million and is growing at the rate of 2.5%. The population is young; 51.9% is less than 18 years old, while children less than 5 years account for 14.4%. Women 14-49 years constitute 45.3% of the female population. Approximately 3% of the population is above 65 years. The fertility rate is 6.2 and child bearing is early and widespread;

three out of every four women 20-24 years of age have had a child. The use of modern family planning methods among women is 11.3%. Average household size is 5.1. Men constitute 80% of heads of households, compared to women who account for 20%. Approximately 32% of the population resides in urban communities, compared to 68% that reside in rural areas. Montserrado County is the most populated political sub-division, accounting for 30.7% of the total population.

**Source: Ministry of Planning and Economic Affairs**

In 1998 and 1999, GDP growth in real terms amounted to 31% and 35% respectively. Although there was a slow down in 2000, real GDP grew at 26%.

Liberia's post-war economy has been based on primary production. Logging, charcoal production and alluvial mining have become relatively more important because of the near absence of manufacturing, iron ore mining and the decline in maritime revenues. Charcoal production contributed 9% of GDP in 1999, compared to 2% during pre-war times. Log extraction and rubber have intensified and presently constitute the most reliable sources of official foreign exchange earnings.

Despite the declining trend in annual growth rate, the economy has shown signs of resilience, particularly in the rural subsistence sector. Increases have been recorded in rice and cassava production, the nation's staples. Rice production attained nearly 75% of pre-war production level in 1999 and cassava reached its 1988 output volume of 313,000 tons. Fish production, substantially reflecting an output of the artisanal fishing, has made a rebound. Production in 2001 shows an increase of 64% over that of 2000.

## **Employment**

Prior to the war, the pattern of distribution of employment in Liberia showed a persistent loss by the concession sub-sector due to disinvestment. The informal sector made a relative gain at the expense of the formal sector, but as elsewhere in Africa, total disposable income probably dropped, due to the high disguised unemployment content of informal sector employment growth.

Formal sector employment contributes a fifth of total employment. The public sector dominates employment, with some 45,000 personnel including security and paramilitary personnel. In 1960, Government employed only 11,600 employees who, during Liberia's economic boom, constituted only one in seven wage earners. The rubber plantations, the next most important source of wages, employed 6,800 workers in 1999, less than 20% of the number employed during the late 1960s.

Accurate informal sector employment figures are unavailable. However, the informal sector provides employment for many who lost jobs in the formal sector. A significant portion of the active labor force has engaged itself in informal economic activities such as petty trading, currency exchange and other service businesses as a means of securing an alternative source of

income. The informal sector has emerged as the most important primary income source of household heads. The sector is highly resilient.

## **Income Distribution**

Liberia's income distribution indicates a prolonged period of skewness in the spread of income amongst the general population. Although the economy experienced double-digit growth rates in the fifties and sixties, only a small minority of Liberians benefitted from that growth. At most, 5% of the income-receiving units in the economy accounted for more than 90% of total domestic income in money and in kind. The very large share of national income went mainly to owners of concessions and land. Liberian employees at the time, who comprised some 90% of the labor force, received approximately 22% of the national income. Per capita income from Liberian wage earners averaged \$150 but non-wage earners received an average \$80 per capita from the sale of crops (**Liberia Human Development Report, 1999**).

This unequal pattern of income distribution persisted throughout and is widely believed to have been one of the underlying causes of the civil war that erupted in 1989. In the seventies, less than 1% of the population accounted for more than 60% of national income. During the eighties, per capita income declined by 2% per annum.

The occurrence of the war has exacerbated income disparities. The disruption of agricultural production and the massive displacement of the population were accompanied by extensive loss of personal and real possessions. Nearly five years after the war ended, the little possession that most people retained has continued to be threatened by a resurgence of armed incursion in which the civilian population is the common prey.

Current wage levels are low and deplorable for most employees. Public sector pay scales reflect the same rates paid when the Liberian dollar was equivalent in value to the US dollar. However, depreciation of the Liberian dollar against the United States dollar has considerably eroded in real terms. A new wage policy raising the minimum public employee pay to L\$800 attempts to guarantee a minimum of US\$16 monthly per employee. Regretfully, this amount is not sufficient to purchase one bag of rice, Liberia's staple food. Public sector salary payments are always in arrears; there has consistently been a backlog of three to six months for the past three years.

Correspondingly, poverty is widespread in Liberia. About three out of four persons (**76.2%**) live on less than US\$1.00 a day and one of two persons (**52%**) lives in severe poverty---i.e. living on less than US\$0.50 a day. Based on the current population estimate of 2.7 million, 2.06 million people live below the poverty line, with 1.4 million in severe poverty (**UNDP, Poverty Profile of Liberia, 2001**).

## **Public Finance and National Debt**

The slow pace of economy recovery has culminated into difficulties in public finances. With most agencies and activities of government restored, the 2001 budget level of US\$81.2 million is

barely 20% of the 1988 budget. Public expenditures are predominantly of recurrent nature with salaries claiming a substantial component. Allocations and actual disbursements on social services, mainly health and education, are negligible.

Liberia's debt portfolio stands at about US\$2.8 billion including interest as at September 2001. It is estimated that the debt arrears (**both external and domestic**) constitute nearly 85% of the total debt, reflecting a protracted period of non-payment. Such a large and sustained accumulation of arrears indicates a limited debt servicing capacity. On account of its restrictive debt servicing capacity, Liberia can be classified as a severely indebted country. As much as the protracted armed conflict has contributed to the current situation, the problem of meeting external debt obligations is sufficiently serious for the country to be given a non-accrual status.

As it stands, the country is ineligible to benefit from lending programs with most International Financial Institutions. Bilateral assistance program is also virtually lacking. In addition to its failure to qualify for credits and standby programs, Liberia has for the past two years been afflicted by a UN imposed sanction for its alleged complicity in the Sierra Leonean civil conflict which recently ended in free and fair elections.

## **Monetary Developments**

The performance of the monetary sector has been problematic starting with the poor macro-economic environment, deplorable infra structural facilities, outdated telecommunication facilities and the effects of poor governance in the public sector. Other constraints in the sector are the poor fiscal policies, under-capitalization and the lack of liquidity. As a direct consequence of these problems, banks and financial institutions are operating at less than full capacity and are providing very limited lending services.

The overall money supply reflects a declining trend over the past four years. Liquidity decreased slightly from L\$2.6 billion in 1998 to L\$2.4 billion in 1999. This decrease is thought largely to be due to the disappearance of mutilated notes from circulation. In 2000, overall liquidity decreased further to L\$1.99 billion, a 17% reduction, but remained stable at that level throughout 2001. The overall liquidity position was L\$2.1 billion at the close of 2001.

## **3.5 Social and Cultural**

There are sixteen (**16**) major ethnic groups in Liberia. Appendix 3.1 depicts the tribes and their share of the population. Ethnic cohesion among most of the tribes is currently cordial. However, there are known conflicts between the Lormas and Mandingoes in Lofa County; between the Mandingoes and Gio/Manos in Nimba County; and between the Krus and the Sapos and between the Krahn and the Grebos in Southeastern Liberia.

Deep-seated, historical and ethnic cleavages exist between the minority Americo-Liberians (**Congo People**) who ruled Liberia for one hundred and thirty-three years, from 1847-1980, and the majority, indigenous Liberians that ruled for ten years, from 1980-1990.

The effects of the civil war have been devastating on society. The Liberian family structure has been weakened; in some households, traditional roles have shifted such that young people are now heading households and are breadwinners. Being youthful and largely lacking in skills of any economic value, they “**hustle**” in a difficult economic terrain to the survival of their households.

The extended family system is still practiced; this provides a sort of social security for old and deprived family members.

There are still a number of unfounded beliefs concerning health. The following beliefs of Liberians regarding HIV/AIDS are telling of some of these beliefs occasioned by culture, illiteracy, poverty, and other influences: **(i)** over 50% of both men and women do not believe that one can catch the virus through sex with multiple partners; **(ii)** approximately 56% of both sexes believe that injections are a greater HIV risk factor than having sex with prostitutes; and **(iii)** approximately 50% of rural males and 49% of urban males believe that AIDS can be cured. **(LDHS, 2000).**

The Government has recently taken keen interest in gender equity and the need to empower women to be equal partners with men in the development of the country. To this effect, a new Ministry of Gender and Development has been established. The primary role of the Ministry is to advise the Government on all matters affecting the development of women and children as well as coordinate government-wide gender main streaming efforts to ensure that the perspectives of both women and men in policy formulation and legislation, focusing on gender equality, the empowerment of women and the development of children.

The new Ministry is headed by a prominent Liberia educator and states woman. She is an executive member of the ruling National Patriotic Party (NPP) and a former Foreign Minister of Liberia. Her appointment should give the new ministry “**political clout**” in meeting the challenges and exploiting opportunities in gender-main streaming, gender equity and equality, and women empowerment.

### **3.6 Education**

The illiteracy rate is a staggering 63%, with 73% of women being illiterate, compared to 50% of men. There is also urban-rural disparity: approximately only 25% of rural dwellers can read and write, compared to 61% of urban dwellers **(LDHS, 2000).**

The gross enrollment ratio **(GER)** nationally is 62% or 745,859 students. **The distribution of this enrollment by grade levels is: (i)** 45% in pre-school; **(ii)** 71% in primary school; **(iii)** 6% in secondary school; and **(iv)** 1% in vocational schools and post secondary programs **(LDHS, 2000)**

The GER for males is 68% and 57% for females. GER in rural communities is 57% compared to 73% in urban areas (**LDHS, 2000**).

Regionally, gross enrollment varies widely from a low ratio of 52% in Grand Bassa County to a high ratio of 75% in Grand Gedeh County. Counties with the least number of children in school are Bassa, Lofa, Bong, and Margibi (**LDHS, 2000**).

Over-agedness is a major feature of current Liberian education. Nationally, net enrollment ratio (**NER**) is 60%, with females having a lower NER of 55%, compared to males 65%. (**LDHS, 2000**).

### **3.7 Housing**

The exact current quantum of housing stock in Liberia is not known. However, prior to the commencement of the civil war in 1990, it was generally agreed by housing and human settlement experts that the housing stock was limited and far below the numerical requirement of the population. Given the massive destruction of cities, towns and villages by artilleries and arson committed by retreating fighting forces during the civil war, it is generally believed that the already limited stock has decreased substantially.

Approximately 95% of dwellings occupied by household are single structures, the balance 5% are multiple structures with a combination of private dwelling and part store, shop, restaurant, school, office, clinic, church, or mosque. There are comparatively more single structures in rural communities than urban communities. Approximately 97% of structures in rural communities are single use structures, compared to 90% in urban areas (**LHDS, 2000**).

Generally, dwellings in Liberia are of very poor quality. A large number of dwellings are either temporary structures, partially damaged, uncompleted, or simply in poor condition. Only 28.9% of dwellings are in good condition; 39% are partially damaged; 20.3% are temporary structures; and 11.8% are either uncompleted or poor structures. Dwellings in rural communities are generally in poorer conditions than those in urban areas (**LHDS, 2000**).

### **3.8 Transportation**

Liberia's transportation network is limited. There are two international airports, the larger Roberts International Airport (**RIA**) and the smaller James Springs Payne Airport. Both airports were destroyed during the civil war but have been partially rebuilt. At the RIA, the small terminal

has been repaired to improvise for main terminal that was destroyed during the civil war.

There are 32 domestic airstrips in the Liberia scattered in the 15 political sub-divisions. On account of the war, most of the domestic airports were either destroyed or abandoned. To date, only 8 of the 32 airstrips have been rehabilitated. The others are in a state of disrepair and have not been re-commissioned.

Rail transportation is severely limited. **Between the 50's and 70's there existed four rail services:** (i) the Yekepa-Buchanan Railroad; (ii) the Bong Mines-Monrovia Railroad; (iii) the Mano River-Monrovia Railroad; and the (iv) Bomi Hills-Monrovia Railroad. These railroads were used primarily to transport iron ores mined from production sites to seaports either in Buchanan or Monrovia for shipment to foreign markets. These railroads were destroyed and have remained non-functional since war. Recently, however, a Liberian businessman resurrected the Bong-Monrovia Railroad and is using it for commercial transportation to bring agricultural produce from the Bong Mines region to markets in Monrovia.

The road network is limited both in terms of both quantum and quality. **Nationwide, there is approximately 5211 miles of road disaggregated as follows:** (i) primary roads - 1547 miles; (ii) secondary roads - 1364 miles; and (iii) tertiary roads - 2300 miles. The road network has not been properly maintained over the last twelve years on account of the war and its impact on public finances. As such, during the rainy season, many stretches of these roads are not pliable.

There are four seaports in Liberia. The Port of Monrovia is the largest and the nation's major commercial seaport for the importation and exportation of goods; it is also a major trans-shipment port for the West African sub-region. The second largest port is the Port of Buchanan. Prior to the civil war, this port was used primarily for the shipment of iron ore produced in Yekepa to external markets. It is currently being used for exportation of round logs and rubber. The two last seaports are the Greenville and Harper Ports. These ports are comparatively smaller and account for lesser volumes of traffic. These ports are used mainly for the exportation of round logs to foreign markets.

### 3.9 Communications

Liberia has one national telecommunications outfit, the Liberia Telecommunications Corporation. The corporation manages the telecommunications services. Telephone and fax

services are largely available only in Monrovia, the Capital city. The services are generally limited with poor levels of clarity, constant outages and long response time in customer servicing.

The cellular phone sub-sector is improvising for limitations in the telephone system. Although expensive, the population has no real option; the people are thus using available cellular phone services. **There are currently two cellular phone companies:** Lone Star and Atlantic Wireless Incorporated. A third company, ICOM has since folded.

The postal system has been reactivated since its collapse during the period of the civil war. However, domestic services to rural communities are severely constrained by the non-functionality of domestic air services. International postal services have resumed, albeit at a slowed paced.

**There are three courier services, the DHL, FEDEX, and EMS, the government owned service.** These services are more reliable than the postal system and thus are used by business houses and the international community operating in the country to expedite shipments.

**There are six radio stations in Liberia;** (i) Ducor Radio, an FM station; (ii) KISS Radio, a FM station; (iii) Radio Viritas, a Catholic Church FM station, (iv) ELBC, the national AM/FM radio station, (v) Liberia Communication Network station, a short wave station; and (vi) ELWA, a Christian FM radio.

### **3.10 Food Security**

Before the civil conflict, the plantation agricultural sector of the economy provided gainful employment for more than 75% of the total labor force, and accounted for over 30% of total GDP and 25% of export receipts. In the absence of mining infrastructure, agriculture has been the main source of post war economic recovery, and in 1999 accounted for 62% of GDP and 80% of exports.

Prior to the expansion of the current fighting between the Liberians United for Reconciliation and Development (**LURD**) and the Government, the post-war food security situation in the country has been reasonably satisfactory. Within one year of the ending of the Liberian civil war in 1998, the Food and Agricultural Organization (**FAO**) estimates that rice and cassava production, Liberia's staples, had reached approximately 70% and 94% of their pre-war levels 1998, respectively.

The production of rice continues to be the major activity of the rural subsistence economy. With most displaced farmers back in their original counties of residence, with tools and seeds donated by specialized United Nations agencies and international non-governmental organizations, and planted areas expanded, rice production in 1999 is estimated to have increased to about 90% of the pre-war level of 299,000 tons, compared with 95,000 tons produced in 1996.

The food security situation in Liberia is monitored through an EU funded Joint Food Security Monitoring System which is coordinated through an inter-agency Food Security Forum. Accordingly, this System confirmed that by 1999, the food security situation had improved; **“at the household level a lack of food availability was no longer the main constraint to recovery in rural Liberia, but rather the lack of livelihood opportunities”**. The report further indicated that although the food security situation had improved, there were still **“pockets of food insecurity throughout the country as a result of the civil unrest in upper Lofa County, during the traditional hungry season from July to September and in areas isolated from markets due to poor road access”**

In 2001, the WFP distributed 14,208.078 metric tons of assorted commodities. This food assistance was provided to an average monthly beneficiary caseload of 167,132 persons of whom 49% were female recipients. Distributions of food rations were made to various categories of beneficiaries as follows: school feeding project (24.5%); refugees feeding (23.7%); internally displaced persons feeding (19.2%); vulnerable groups feeding (21.4%); therapeutic feeding (1.8%); food-for-work (5.9%); food-for-training (0.6%); returnees (0.2%); and emergency school feeding program (2.8%).

The current escalating war between the LURD and the Government is reversing the gains made in the food security situation. The war is again displacing the population and the agricultural labor force, disrupting agricultural production, destroying and looting produce (**including seeds for planting**) in agricultural storage, and enhancing malnutrition among a substantive segment of the population, particularly children, women, and elderly. In this context, the World Food Program (**WFP**) is increasing its humanitarian supply to Liberia.

Overall, constraints to adequate food security in Liberia remains: rudimentary agricultural production practices, subsisting farming, displacement of a substantial number of the population, disruption of farming, deplorable road conditions, the lack of food for farming population especially during the Ahungry season, lack of access to market information, poor security, and the lack of access to adequate farm inputs (**seeds, breeding stocks, chemicals and fertilizers**).

## CHAPTER 4: HEALTH STATUS

### 4.1 Status by Major Indicators

#### ▶ Life Expectancy

Average life expectancy at birth has substantively decreased from 55 years in 1980 to 47.7 years in 2000. Women have a higher life expectancy of 48.7 years, compared with men, 47.1 years (**LHDS, 2000**).

#### ▶ Morbidity

As at 2001, using outpatient morbidity data for 11 counties, 539,249 cases were reported in Liberia. Based on this collective record, Liberia's morbidity pattern, in order of magnitude, is as follows: malaria (**36.5%**); acute respiratory infection (**12.2%**); diarrhea (**6.9%**); worms (4.8%); skin diseases (**4.4%**); malnutrition (**4.1%**), and anemia (**3.6%**).

For children 0-11 months, eye condition is the major cause of morbidity with 18.2% of total age-group caseload for 2001; followed by neonatal tetanus (**14.2%**), and ARI (**13.5%**). (**MOH&SW Out-Patient Morbidity Report, 2001**).

For children 1-4 years, malnutrition is the leading cause of morbidity with 37.3% of total age-group caseload for 2001; followed by eye conditions (**26.9**), measles (**10%**), and anemia (**8.2%**). (**MOH & SW Out-Patient Morbidity Report, 2001**).

The malaria prevalence rate has increased from 34.6% in 1997 to 50% in 2000

**(LDHS, 2000).**

The diarrhea prevalence rate also shows a slight increment from 22.5% in 1997 to 23% in **2000 (LDHS, 2000).**

Pneumonia is a new, growing concern; its prevalent rate among children 0-59 months is 29% **(LDHS, 2000).**

▶ **Mortality**

In 1999, infant mortality was 134/1000 live births; and Under-five mortality was 235/1000 live births **(UNICEF, SBA 1999).** As at 2000, mortality rate for infant is 117/1000 live births; and Under 5s is 194/1000 live births **(LDHS, 2000).**

Maternal mortality stands at 578/100,000 live births as at 2000 **(LDHS, 2000).**

Given the problems of gross under-reporting of births and deaths in Liberia, occasioned by a highly limited and centralized system of the registration of these vital events, mortality indicators for Liberia could even be worse than these.

▶ **Immunization**

Fully vaccinated children against the six childhood diseases in 1986 was 15.6% **(LDHS, 1986).** In 2000, it was 32.2% **(LDHS, 2000).** This indicates a major improvement of over 100%.

Full antigen coverage for children age one and less has increased from 14.8% in 1997 **(CCA)** to 28% in 2000 **(NNS, 2000).** Almost three in four children received BCG and the first DPT before one year. However, coverage for the third dose of DPT falls to 38%. More than 84% received the first polio dose before age one, but less than half **(48%)** received the third dose. Fifty percent **(50%)** of children received the measles vaccine **(NNS, 2000).**

▶ **Nutrition**

Malnutrition is still a problem among children. Under nutrition is pervasive; “approximately 39% of children under five years are stunted **(short for their age)**; 6% are wasted **(thin for their age)**; and 26% are underweight” **(NNS, 2000).**

“The prevalence of stunting peaks at 54% in children 45-59 months of age, while

wasting prevalence is highest at 13% in children 12-23 months of age. Moreover, 17% of children 6-59 months fall below the minus two standard deviations cut-off mid-upper arm circumference-for-age nutritional status index. The prevalence of low MUAC-for-Age, peaks at 26% in children 12-23 months of age” (NNS, 2000).

There is also a high prevalence of iron deficiency anemia (**86.7%**) in children 6-35 months, 58% in non-pregnant women 14-49 years of age, and 62.1% in pregnant women aged 14-49 years.

Vitamin A deficiency is also high, affecting 52.9% of children 6-35 months and 12% of pregnant women (MOH/SW, 1999). With the exception of the pregnant women category, these levels are moderate and severe and, therefore, are of public health importance.

Exclusive breast-feeding is not widespread; generally, only 50% of children are exclusively breast-fed up to 2 months of age. This violates the WHO standard that recommends exclusive breast-feeding up to 4-6 months as breast milk contains all the nutrients that children need to grow, develop, and fight diseases. The median duration of breast-feeding has slightly increased from 16.7 months in 1986 to 17.2 months in 2000 (LDHS, 2000).

While supplementary feeding is common within the population, food supplements are generally of poor quality; only 25% of children receiving supplementary feeding are given protein-rich foods such as fish, meat, chicken, eggs, fruits and vegetables (LDHS, 2000).

Chronic energy deficiency among women in Liberia is relatively high; 9% of women 20-49 years of age fall below the 18.5 kg/m<sup>2</sup> cutoff for body mass index (NNS, 2000).

Malnutrition is more pronounced in boys than girls; more prevalent in rural areas than in urban areas; more prevalent in children who are cared for by persons other than their natural mothers; and more prevalent in children from relatively poor households. Regionally, wasting is more prevalent in Southeastern Liberia, particularly Grand Kru and Maryland Counties (NNS, 2000).

► **Access to Safe Drinking Water**

In 2000, approximately 32% of the population had access to safe drinking water, with urban access being 55%, compared to rural access of 10%. **(LDHS, 2000).**

Pipe-borne water facilities are severely limited in Liberia. Approximately 11.2% of households in Liberia have access to pipe-borne water; 24.9% are urban dwellers, while 4.1% are rural dwellers. A substantial amount of the population now source drinking water from tube wells and bore holes fitted with hand pumps. **(LDHS, 2000).**

▶ **Access to Sanitation**

As at 2000, 36% of households had access to proper sanitation; 71% of urban dwellers have access, compared to 18% of rural dwellers. The remaining 64% of households dispose of their human waste in bushes, streams, rivers, ponds, beaches, or holes dug in the ground **(LDHS, 2000).**

Access to proper latrines and toilet facilities throughout the country is severely limited: only one in ten households have access to flush toilet, while another 25% have access to latrines. **(LDH, 2000).**

Hygienic practices, which include human waste and garbage disposal, are still poor and rudimentary. Many Liberians are not accustomed to washing their hands with soap after: using the toilet, cleaning the waste of children, before preparing baby food, after coming home from work, school or walking about, and before eating. In a society in which the shaking of hands is commonplace, these practices are unacceptable.

▶ **HIV/AIDS**

Between 1994-2000, a total of 33495 HIV tests were performed in eight counties. Based on these tests, the overall HIV prevalence rate within the population was estimated to be approximately 5.7%. The highest HIV prevalence rate during this period was in 1997 with 7%, while the lowest was in 1994 at 4.1% **(NACP, 2002).**

In 2001, the prevalence rate increased to 8.2% **(Minister of Health and Social Welfare, 2002)**, exceeding the record set in 1997. The prevalence rate has

doubled over the eight-year period, growing by approximately 1% per annum. Including the 2002 rate, the average prevalence rate for the eight-year period (1994-2001) is 5.9%.

## 4.2 Analyses

The trend in the growth of the population has slowed from 3.3% in 1984 to 2.5% in 2001. Nevertheless this reduced rate, Liberia still accounts for a high growth rate. With a fertility rate of 6.2, and 42% of women in the childbearing population, coupled with polygamous and early marriages and low contraceptive usage among women, significant growth in the population is expected, if appropriate family planning interventions are not introduced.

Deterioration in life expectancy has been massive. This is a serious problem because life expectancy reflects the sum total of the impact of social, economic and political developments of a country. The sharp decline reflects a downward trend in social services and economic performances.

The morbidity pattern has remained largely the same over the past five years, with malaria, diarrhea, and acute respiratory infections accounting for the largest share of the morbidity pie. Regrettably, all of these diseases are preventable.

For infants and under fives, eye conditions, malnutrition, ARI, neonatal tetanus, measles and anemia are the major cause of morbidity.

Infant and under-five mortality rates have decreased. However, despite the modest improvements, Liberia fares very poorly in Sub-Saharan Africa. Using one of the internationally selected indicators for human development, under-five mortality rate, Liberia is above the regional average of 175/1000 live births, and ranks at the bottom 43<sup>rd</sup> out of 46 countries. Malnutrition, neonatal tetanus, measles, acute respiratory infections (ARI), malaria and diarrhea are the leading causes of infant and childhood mortality.

Anemia, postpartum hemorrhage and sepsis, as well as pregnancy related complications, toxemia and infections associated with unprofessional abortions are the major causes of maternal mortality (LDHS, 2000).

The domain of immunization has achieved the single greatest result in the sector in recent times. The main effort in this area has been towards the eradication of polio. Liberia received the 2001 Taskforce for Immunization Meritorious Award for outstanding contribution to health, particularly to women and children health in Africa.

Liberia has a high utilization of antenatal services; but services received are often not from doctors: only 25% of births receive antenatal care from a doctor, compared with 58% received from nurses and midwives. Additionally, only 36% of births take place in health facilities,

compared with 63% that take place at homes. Further, about 25% of births are not protected from neonatal tetanus, one of the leading causes of morbidity among infants in Liberia (**LDHS, 2000**).

Access of the general population to safe drinking water has declined by 14.9%, with the decline in urban communities being 24.2%, compared to a decline of 3.5% in rural communities. Liberia's 32% access to safe drinking water is 25 percentage points below the Sub-Saharan Africa average of 57%. Liberia's standing is less than half of the regional average.

Access to sanitation has slightly increased by 3%; however, given the magnitude of the problem, this increment is insignificant. In urban areas, access has increased by 15%, while in rural communities access has increased by 14%. The expansion of sanitary facilities by the non-governmental organizations and UN specialized agencies such as UNICEF has contributed immensely to these modest gains.

Compared to the regional average, Liberia again fares poorly in access to sanitation. In 2000, the percentage of the population in Sub-Saharan Africa with access to sanitation was 53%, compared with Liberia's 36%. Liberia is thus 17 percentage points below the regional average.

Given the low image and secrecy attached HIV/AIDS, it is generally agreed that not all cases are brought to health institutions; some cases are treated "**privately**", while others are said to require "**traditional medical attention**" and are thus so attended. The current prevalence rate of 8.2% is, therefore, likely to be an understatement.

Most HIV positives are seen in the aged 20-29 and 30-39. HIV prevalence within the population is female skewed; the male to female ratio is 1:3. The distribution of AIDS cases by occupations shows that security officers, housewives, and petty traders account for over 60% of all cases (**Report; WCAR workshop on OVC, 2001**).

Of late, there has been a surge of community based Anti-AIDS groups. These groups need to be consolidated and focused in their activities if they are to make the required impacts so much needed to fight the growing pandemic.

## **CHAPTER 5: HEALTH POLICY**

### **5.1 Health Policy**

In 2000, the Government of Liberia (**GOL**), with the assistance of the World Health Organization (**WHO**) prepared a National Health Policy. The document is a framework for health sector reforms in Liberia. The goal of the policy is to make health care delivery services throughout the country effective and efficient, thereby enhancing the quality of life of the population.

**The National Health Policy accentuates the following:** (i) preventive and curative services through the utilization of Primary Health Care (**PHC**); (ii) decentralizing full responsibility and authority of health services management from the Ministry to the operational levels in the counties, districts and local communities; (iii) empowering Liberians to take responsibility for their own health through more participation in the decisions that affect their health; (iv) strengthening partnerships and ensuring that efforts in the sector complement, rather than duplicate one another; (v) mobilizing higher levels of local and external resources in support of health care; and (vi) galvanizing the political will and commitment needed to allocate the required resources to the sector for effective planning and implementation of health programs to be derived under the policy.

The policy identifies seven health related issues as constituting Liberia's Health and Social Welfare basket. These include (i) reproductive and child health; (ii) health promotion and protection; (iii) integrated disease prevention and control; (iv) food and nutrition; (v) safe drinking water supply and environmental sanitation; (vi) non-communicable diseases; and (vii) social survival and protection.

Eight strategic policy orientations are chosen as means of enhancing effectiveness and efficiency of the health care delivery systems. These are (i) assuring equity and quality; (ii) community empowerment; (iii) partnerships, (iv) decentralization; (v) financing and sustainability; (vi)

integration and coordination; **(vii)** inter-sectoral collaboration; and **(viii)** strong government commitment.

**The policy directs two structural levels for health care service delivery in Liberia:** **(i)** policy level, the Ministry of Health and Social Welfare, and **(ii)** the operational level, the county, district and community health teams. It provides for minimum health packages for each level of the system, as well as policies on patient referrals, complementary medicine, public and private health providers, and health care providers and user relations.

The policy defines ten objectives to be pursued in Liberia's health care delivery system. **These are:** **(i)** reduce infant, child and maternal mortality rates; **(ii)** increase health coverage and access to health care services; **(iii)** reduce vulnerability of persons in difficult circumstances; **(iv)** prevent and control major communicable and emerging diseases, particularly malaria, tuberculosis, and STDs/HIV/AIDs; **(v)** increase life expectancy at birth; **(vi)** improve the quality of health care services; **(vii)** enhance managerial effectiveness and efficiency in health care delivery; **(viii)** enhance sustainable community actions for health; **(ix)** promote partnership in health development; and **(x)** demonstrate inter-sectoral action for health.

The policy sets health targets for the period 2000-2024. The targets are subdivided into five-year intervals with corresponding milestone indicators for each interval. Appendix 5.1 presents the parameters, targets and indicators.

Currently, there is no National Health Development Plan for implementing the National Health Policy to attain the reform goals articulated. As a result, there is no real basis for harmonizing and coordinating the activities of non-governmental organizations and private sector health care providers. The policy has not been widely disseminated to health care providers throughout the country.

## **5.2 Health Legislation**

In 2000, as a sequel to the new National Health Policy, five-draft health legislation were prepared by the Ministry of Health and Social Welfare. These draft legislation make revisions in the controlling Public Health law and Chapter 30 of the Executive Law of Liberia (**1972**) relative to the John F. Kennedy Memorial Center. The first draft bill contains new sections to reorganize the Ministry of Health and Social Welfare to synchronize with the role of the ministry as defined in the new National Health Policy.

The second draft bill is a redraft of the law creating the John F. Kennedy Medical Center as an

autonomous agency of the government. In keeping with the requirements of the National Health Policy, the substantive changes proposed in the draft are the constitution of the Board of Directors of the center. The Board is restructured so that it will be more independent and thus empowered to take fuller charge and control of the institution. Officers of the center will now be amendable, under contract, to the Board rather than the President. As such, non-performance of duties will be a breach of contract and ground for immediate dismissal. The Board will continue to be accountable to the government and the people through the President.

The third draft bill contains revisions of the Public Health Law of 1976 to synchronize the law with National Health Policy. Particularly, the roles and memberships of national health boards are better defined and the general penalty for violation of any provision of the law increased, among others.

The fourth draft bill comprises a new chapter of the Public Health Law on HIV/AIDS. The proposed legislation is about confidentiality and counseling in all matters concerning HIV/AIDS. It also includes provisions for protection of health care workers, reporting requirements, and penalties for intentionally spreading HIV/AIDS and for violating the law on this matter.

The fifth draft bill is a proposal to formally create a Division of Complementary Medicine within the Ministry of Health and Social Welfare.

The drafts of these legislation have been submitted to the National Legislature, through the Office of the President, for promulgation into law.

### **5.3 Analysis and Constraints**

The policy is a progressive vision for health reform in Liberia. It clearly identifies the needs and constraints of the sector as well as the mission, values, and principles on which the country's health vision is based.

Further, general objectives, sub-objectives and targets are set and priority programs and the strategies to be employed are sufficiently identified to meet the objectives and targets set. Stated objectives, however, should be augmented by the inclusion of mental health and drug abuse which is a major priority concern of the health sector.

Regrettably, the resulting legislation emanating from the policy process remains to be formally enacted into laws by the national legislature. To give urgent legal effect to the policy, it is urgent that these legislation be passed into law.

Further, some aspects of the policy seem very ambitious; for example, the current actual public health expenditure on health is US\$0.50 per capita, while projections for the future range from US\$4.79 in 2000 to US\$140.67 in 2024 See Appendix 5.1. It is not clear whether the projections are commitments negotiated with the government or whether the motivation is to challenge the government to do more in a subtle way. However, given the current political and economic problems besetting the country, these projections seem to be far-fetched. Notwithstanding, strong government's commitment and financial support are essential elements in effecting the policy.

## **5.4 Recommendations**

- Negotiate with the government a commitment of increased public sector expenditures for the sector;
- Seize the current opportunity of delay in passage of the legislation into law and recall the draft bill on the re-organization of the Ministry and fully rationalize the structure of the Ministry;
- Lobby to have enacted into law the other draft health legislation;
- Closely monitor the targets set in the policy and be flexible in adjusting them in light of evolving conditions.

## **PTER 6 : ORGANIZATION AND MANAGEMENT**

### **6.1 Public Sector**

#### **6.1.1 Policy Level**

The Ministry of Health and Social Welfare is at the policy level of the health care delivery system. Under the decentralized approach adopted in the delivery of health care, the Ministry's primary responsibilities are providing policy guidelines and direction for the health and social welfare sector. Other responsibilities include macro planning, resource mobilization, broad programming, monitoring and evaluation, technical oversight of service delivery, and major research and development initiatives.

**Currently, the Ministry is headed by a Minister and contains four departments: (i)** Department of Administration; **(ii)** Department of Social Welfare; **(iii)** Department of Planning, Research, and Human Resources Development; and **(iv)** Department of Health Services.

Each department is sub-divided into bureaus, comprising several divisions. The Department of Administration has one bureau and five divisions; the Department of Social Welfare has one bureau and two divisions; the Department of Planning, Research, and Human Resources Development has two bureaus and six divisions; and the Department of Health Services has two bureaus and thirteen County health Services Administrations.

The Departments are headed by Deputy Ministers, Bureaus by Assistant Ministers, and divisions by Directors.

The new Health Policy of 2000 calls for National Health Advisory Council (**NHAC**) to assist the Ministry in health advocacy and the mobilization of popular and political support for health development as well as providing advise to the Ministry in policy formulation. The membership of the council shall be drawn from civil society, professional and interest groups, and relevant government agencies.

#### **6.1.2 Operational Level**

At the operational level of the health care delivery system, there are County Health Teams. These teams supervised all dimensions of public health care at both the primary and secondary levels in the counties. These Teams operate under the supervision of the Ministry of Health and Social Welfare.

#### **6.1.3 Structure of Delivery System**

The health care delivery system has traditionally followed a hierarchical, pyramidal structure in which cases from the peripheral clinics are referred through health centers and county hospitals to the national referral hospital, the JFK Medical Center. Current population to facility ratio is generally large.

The New Health Policy design is intended to have one clinic for every 2,500 persons; one health center for every 25, 000 persons; and one hospital in each county.

**There are three levels in the structure:**

- A. Primary Level:** Primary level care services are front line health services and constitute the bottom of the pyramidal hierarchy. Health care services are provided through clinics in local communities. The predominant services at this level are primary health care (**PHC**) activities.
- B. Secondary level:** These are intermediate level services; these include services provided by health centers and hospitals. Health Centers are administered by the County Health Teams.
- C. Tertiary Level:** The JFK Medical Center continues to be the only tertiary facility in the country. Although it is government owned, it is an autonomous institution. It is managed jointly by a General Administrator and a Chief Medical Officer; both are supervised by a Board of Directors.

#### **6.1.4 Inter-sectoral Collaboration**

An inter-agency forum once existed; it used to be chaired by the Minister of Health and Social Welfare. The forum has since become dormant.

The Ministry of Planning and Economic Affairs holds periodic Non-Governmental Organizational Coordination Meetings at which the activities of non-governmental organizations and private-voluntary organizations are reviewed. These meetings are attended by the sectoral ministries and thus provides the Ministry of Health and Social Welfare an opportunity to be engaged in inter-sectoral dialogues relevant to its sphere of operations. There are sectoral sub-committees of this standing forum that meets when necessary.

#### **6.1.4 Decentralization**

The transfer of responsibility and authority for planning and implementing health care delivery services from the Ministry of Health and Social Welfare to the counties, districts, and local communities has always been a goal of the system. The new Health Policy of 2000 again accentuates decentralization as one of the major strategies of Liberia's health reform measures to be pursued.

To facilitate effective decentralization, the new Health Policy of 2000 has called for the establishment and/or reactivation of the following mechanisms: **(i)** Community Development Councils; **(ii)** District Health Boards; **(iii)** County Health and Social Welfare Boards; and **(iv)** a National Health and Social Welfare Council.

### **6.1.5 Supervision**

The quality of supervision in the health care delivery system is critical to the health of the population. Higher-level health managers at the Ministry pay routine supervisory visits to the counties. The County Health Teams likewise pay routine monitoring visits to health centers and clinics in local communities.

The purposes of supervisory visits differ from one group to another. Generally, the visits are intended to monitor the work of subordinates on the field and see, at first hand, the constraints they face in the discharge of their duties.

### **6.1.6 Coordination of Health Sector NGOs**

A coordinating mechanism, the Health Services Coordinating Committee (HSCC) has been established by the government. The Committee comprises representatives of the government and health sector non-governmental organizations. The committee is a framework for the consultation and collaboration between the Ministry and its NGO partners. The Ministry chairs both the forum and its Secretariat.

A monthly meeting of the Committee takes place at the Ministry of Health and Social Welfare. The meeting is forum for the sharing of ideas and experiences as well as undertaking joint planning and programming in times of health emergencies.

A dimension of the forum recently introduced is a monthly lecture series in which a health practitioner makes a brief presentation on a specific health subject of national concern. The presentation is then followed by general discussions.

### **6.1.7 Community Participation**

Since the Bamako Initiative when Liberia adopted PHC as a fundamental health strategy, Liberia has promoted community participation and empowerment in the delivery of health care services. Local communities have continuously been sensitized to play active and meaningful roles in health related activities. Households have been challenged to take responsibility for the health of their members.

It is within this context that community health development councils were created and are being reactivated. It is also against this background that cost sharing and drug revolving funds schemes were introduced in the system.

## **6.2 Private Sector**

The private sector is a major contributor to Liberia's health delivery system. The sector comprises of church owned and operated health facilities, concession facilities, facilities sponsored and operated by non-governmental organizations, and private individuals.

As at 2002, there are 187 private sector institutions; these are disaggregated as follows: 36 church facilities; 5 concession facilities; 57 NGOs facilities; and 86 facilities owned and operated by private individuals (MOHSW, Kullie, 2002).

As at July 2002, there are 29 health sector non-governmental organizations. Their operations cover the entire country. Their numerical presence is higher in Montserrado, Bong and Nimba Counties, and lower in the Southeastern region of the country, particularly Grand Kru County (See Appendix 6.1: NGOs by County of Intervention and Appendix 6.2: NGOs by areas of Intervention).

The NGOs are involved in almost all health care delivery activities including: nutrition, water and sanitation, breast-feeding, immunization, sexual and reproductive health services, family planning and reproductive health, PHC services, procurement and distribution of drugs and medical supplies, emergency and ambulance services, out and in patient care, HIV/AIDS awareness, rehabilitation and physiotherapy, human resources development, trauma counseling, mobile clinics, health education, drug abuse prevention, and housing and human settlement services (**See Appendix 6.2**).

In 1988, the private sector was providing approximately 40% of health care services in Liberia. Church sponsored medical facilities were the front-runners in the private sector. In 1988, the churches operated 6 hospitals, 71 health centers, and 199 clinics/health posts. By 1997, after the devastating impact of the civil war on the health sector, and the incapacity of the government, the private sector was delivering approximately 60% of health care services in Liberia. The situation has not changed significantly; as at 2002, it is estimated that the private sector collectively is now meeting approximately 75% of the health needs of the population and church operated medical facilities remain the front-runners.

### **6.3 Mixed Sector**

The mixed sector in which public and private sectors jointly provide health care services is limited. In a few cases, on account of the lack of funds, facilities owned by the government are operated by private sector actors such as non-governmental organizations. In such cases, the operational cost for running the facilities are borne by the private sector institution. In other instances, facilities operated by the private sector are subsidized either in cash or materials (drugs, medical supplies, food) by the government.

For a long time, the Phebe Hospital in Gbarnga was an excellent example in government-private sector collaboration. The hospital which provides secondary hospital services to

the inhabitants of Bong County and surrounding communities, was owned and operated by a consortium of churches (Lutherans, Methodists, Episcopalians). When external funding of the facility began to dwindle, the government took over funding of the facility, but requested the churches to still manage it. As such, although the hospital is technically a government facility, it enjoys a private management arrangement. Accordingly, the hospital enjoys a higher level of operational autonomy. The Phebe arrangement is the forerunner to the public sector's efforts at effective decentralization.

## **6.4 Traditional Health Sector**

Traditional medicine has always been a part of Liberia's health care delivery system. This is so because an estimated two-thirds of the population resides in rural communities and practices their culture. Cultural beliefs lead them first to herbalists and traditional healers, and only when the outcomes are not successful, do they seek modern medical treatment.

The Ministry has included in its structure a division of Complementary Medicine and a National Board on Complementary Medicine; continued research in traditional medicine is being promoted.

## **6.5 Analysis and Constraints**

The organizational structure of the Ministry of Health and Social Welfare has undergone positive developments. However, there remain some limitations: some of the divisions within the Department of Planning, Research and Human Resources Development have not been activated. These include separate divisions for planning, research, human resources development, and external cooperation. Further, Epidemiology and Health Information has been combined at the expense of management information system.

Generally, the logic of units comprising divisions, divisions comprising bureaus, and bureaus comprising departments seem not to have been consistently applied. More rationalization of the structure is warranted. In this regard, decisions contained in the National Health Policy regarding the elevation to a bureau of the Division of Pharmacy, creation of two bureaus in the Department of Social Welfare, and the elevation of the Office of the Comptroller to a Bureau of Fiscal Affairs have not been implemented.

The Health Policy calls for the establishment of County Health Services Administration (**CHSA**) to replace County Health Teams. These teams will manage health services in the counties; they will be supervised by County Health Services Boards (**CHSB**) also to be created. Each CHSA will operate on a semi-autonomous basis and at the level of a bureau in the Ministry. Each CHSA will contain four departments: social welfare, community health services, administration, and medical services.

The policy is calls for District Health Teams (**DHTs**) to manage district health services. These teams will be supervised by District Health Boards also to be created. Additionally, at the community level, there will be Community Health Teams to supervised health services in local communities. These Community Health Teams will be supervised by Community Health and Development Councils.

The National Health Advisory Council, County Health Services Administrations, District Health Teams, and other bodies such as the Community Development Councils and District Health Boards have not yet been organized.

The pyramidal structure of the health care delivery system is relevant, but it does have some limitations. If not properly anchored on strong foundations at the lower levels, communicable diseases could overwhelm the lower levels of the system. Further, the system could be impaired by the variation and extent of organizational problems such as low budgets, limited logistics, inadequate supply of drugs and supplies found at different levels of the structure.

The system is sensitive to the availability of financial resources. Faced with major financial constraints, the system collapses because expected standards of staffing, equipping, supplies and maintenance of facilities and equipment cannot be maintained.

The levels of care in the system are logical; it provides for efficient linkages for referral and mutual support.

The linkage between the County Health Teams and the hospitals has come under scrutiny. The current arrangement in which the hospital director is also the director of the CHT is being reviewed. The arrangement does not allow the hospital director to give equal attention to the CHT. Less time is spent actually planning and supervising lower level activities. Annual planning and programming are either non-existent, or not carried out on the basis of actual county health requirements. Reliable data as a basis for effective planning is limited. Besides there is the attendant risk that, under a fully decentralized system, much resources will be directed to the hospital at the expense of lower level services.

Within the current efforts of decentralization, the CHTs is charged with the management of all public health services in the county. They is also similar mechanism for coordinating health sector NGO activities in the counties as the Ministry has at the national level; regrettably, there have not been made fully functional.

County health resources will now be channeled through and managed by the CHTs. The CHTs, however, must receive the required training in management skills and

competencies. Management systems including information, logistical, and planning and financial systems must be developed and put into place prior to full-scale decentralization.

The proposed composition of the CHSAs reflects the expected roles, responsibilities and functions as defined in the new National Health Policy.

On account of the lack of resources and management capacity, the decentralization process, which began prior to its re-accentuation in the National Health Policy, has been slowed over the years.

Supervision is also generally poor. The problem is more serious at the lower levels of the system and is constrained by the gross lack of logistics. The current approach focuses on frequency of visits at the expense of structure and content.

**The planning function is weak, there is no:** (i) effective database on health facilities, personnel, and other resources; (ii) stable or consistent process with a long term, holistic view; (iii) no manpower development plan and; (iv) no defined strategy of mobilizing resources on a sustained basis.

Coordination of sector activities is weak; the inflows and outflows of funds through NGOs are not being tracked; impact assessment of their activities are not being carried out; monitoring of other private sector health care service providers is almost non-existent as they are not a part of the Health Services Steering Committee. Meetings of the Committee are primarily for receiving reports and exchanging information.

Some aspects of traditional medical practices are positive, while others are negative. The challenge, therefore, is to enhance the positive dimensions, while disabusing the population of the negative dimensions. Efforts at integrating modern and traditional medical practices has been slowed; an experiment at the Phebe Hospital where traditional bone setters work side by side with X-rays technicians and orthopedic surgeons has provided valuable lessons to the sector.

## 6.6 Recommendations

- The organizational structure of the Ministry has been improved, but it requires further rationalization and operationalization to make it holistically effective and efficient.
- Implement provisions of the National health Policy regarding the elevation to a bureau of the Division of Pharmacy, creation of two bureaus in the Department of Social Welfare, and the elevation of the Office of the Comptroller to a Bureau of Fiscal Affairs,

- Within the context of decentralization, the lower levels of the health care delivery system should be anchored on solid foundations of appropriate levels of staffing, drugs and medical supplies, and equipment;
- Communication and transportation sub-systems within the system should be strengthened to facilitate consultations, effective referral and mutual support;
- Under the new decentralized system being introduced, the county health services administration should be divorced from the county hospital, physically and managerially;
- Given the move towards decentralization, health sector managerial training is an essential pre-requisite for all county and district health teams;
- The Ministry should assist county health services administration build capacities in the areas of logistics management, planning and programming based on actual annual county health requirements;
- The Ministry should also assist county health services administrations develop formalize administrative and technical procedures to facilitate effective monitoring and to sustain uniformity and quality control;
- Supervision, particularly at the lower levels should be strengthened; the focus should be on structure and content rather than frequency; and logistical support should be enhanced to facilitate efficiency;
- The Research, Planning and Human Resources Development Department of the Ministry should be urgently strengthened; particularly its capacity to collect, organize, store, retrieve and update health and management information and data in a user-friendly manner is required. Further, the department's capacity for long-term perspective planning of facilities, logistics, and manpower needs to be enhanced. Additionally, its capacity to undertake donor marketing and tracking the inflow and outflow of sector resources, particularly of non-governmental organizations and other private service providers needs to be strengthened.
- The Health Sector Coordinating Steering Committee forum should be strengthened; private service providers should be incorporated; the meetings should be transformed from a forum of merely receiving reports to an effective clearinghouse for vetting and harmonizing NGO programs and activities within the framework of national priorities.

## **HEALTH INFRASTRUCTURE**

## 7.1 Social Welfare Institutions

As at 2000, there were 120 social welfare institutions registered with the Ministry of Health and Social Welfare. These included 62 orphanages, 19 day care centers, and 39 welfare institutions and halfway homes. These facilities were owned and operated by private providers including local and international non-governmental organizations. The government provides subsidy either in cash or kind to these institutions. These institutions also receive assistance from non-governmental organizations.

The Ministry itself operates 3 welfare institutions: Boys Town Institute, Doloken Boys Institute, and the School for the Visually Handicapped. The first two institutions have programs for rehabilitating juvenile delinquents; they provide primary and secondary education interspaced with counseling. The third institution provides primary education for visually handicapped students between the ages of 6 to 13 years, in preparation for their integration into the regular school system, but has not been rehabilitated.

## 7.2 Health Facilities

In 1990 there were 30 hospitals, 130 health centers and 330 clinics in Liberia. Then Government owned-facilities included one tertiary hospital, the JFK Medical Center, 11 secondary hospitals, 22 health centers, and 71 clinics. Most of these facilities were either damaged or destroyed during the civil war; some have been rehabilitated and made functional, while others have not.

Following the sitting of the new government in 1997, an assessment of health facilities undertaken to inform health sector reconstruction planning revealed that 90% of the facilities had been looted, damaged, or destroyed by fire from artillery shelling (**Health Policy, 2000**)

As at 2000, approximately 20% of government-owned facilities has been renovated and re-equipped through emergency and humanitarian assistance. These included 6 secondary hospitals, 20 health centers, and 60 clinics and health posts (**Health Policy, 2000**)

As at 2002, there are 346 public sector health facilities in Liberia. Of this number, 18 are hospitals, 37 are health centers, and 291 are clinics. However not all of these facilities are functioning; approximately 33% of the facilities are non-functional. Functional facilities include 12 hospitals, 32 health centers, and 189 clinics (**MOHSW, Kullie, 2002**). (See **Appendix 7.1: Public Sector Health Facilities by Counties, 2002**).

In the private sector, there are 187 functioning facilities disaggregated as follows: 10 hospitals, 10 health centers, and 167 clinics (**MOHSW, Kullie, 2002**). (See **Appendix 7.2: Private Sector Health Facilities by Counties**). (Also see **Appendix 7.3 for Private Sector Health Facilities dis-aggregated by Ownership**)

### 7.3 Equipment

At the clinic levels, the basic equipment required includes pressure taking machines, microscopes and primary health care tools and instruments.

At the secondary levels, facilities require a minimum of operating room equipment and accessory tools, laboratory, radiological, dental and medical equipment and instruments. Additionally, these facilities should contain adequate and functioning dietary, laundry and mortuary equipment. Further, they should have adequate storage facilities, power, and water supplies, sewer, and medical waste disposal systems.

At the tertiary level, the latest state-of-the-art medical equipment, machines, instruments and tools in every specialized area and supportive service out to be available. These facilities should maintain 24-hour power and water supplies, sewer, and medical waste disposal systems.

Non-medical equipment (**office equipment and tools**) such as computers, copiers, telephones, and typewriters are also required for non-medical work such as record keeping, information and data processing and reporting.

### 7.4 Communications and Transportation

Communication is essential to the effective functioning of Liberia's pyramidal structured health delivery system. Reliable communication equipments are required to smoothly transmit information and data between the various levels of the system. To expedite and facilitate timely actions (**medical consultations**) in the case of referrals, particularly critical referrals, the need for an efficient communications system cannot be overemphasized.

Currently, there exists radio communications between the Ministry of Health and the County Health Teams and the County Hospitals. Communication facilities between the clinics, health centers, and hospitals are either nonexistent or very limited.

Similarly, an effective transportation system is needed to make the total system efficient. Most hospitals have ambulances, but most health centers and clinic have no means of moving critical patients or responding quickly to emergencies. A few facilities have pickup which they use for multi-purposes, for general services' work and for moving patients. Others employ the services of commercial vehicles when the need arises.

### 7.5 Health Information System

The health information system is designed to periodically collect, analyze and make available health related information and data, trends and indicators in Liberia. All health institutions and related projects are required to submit periodic reports to the Ministry for this purpose. The information and data required are diverse, ranging from in-patient statistics, occupancy rates,

morbidity and mortality figures, among others.

There are two organizational units, at different levels, that handle health related information. First, there is the Bureau of Vital and Health Statistics; this bureau handles the recording and analysis of births, deaths and morbidity trends in the country. There are two divisions under this bureau, Vital Statistics and Health Information.

Second, there is the Division of Epidemiology and Health Information. In spite of the nomenclature, this division manages only epidemiological information and defers other health information to the Bureau of Vital and Health Statistics. Although the Director ought to report to the Chief of Preventive Services, the Director reports directly to the Chief of Health Services because of the urgency attached to the reports of the division. There is no provision for management information system.

**Three disease surveillance reports are produced:** (i) a monthly routine surveillance report; (ii) a weekly active surveillance report; and (iii) a monthly sentinel surveillance report. The disease surveillance reports are informed by outpatient morbidity reports compiled throughout the country, while the sentinel surveillance reports are informed by data obtained from purposefully selected sites across the country.

The routine surveillance report monitors morbidity, mortality, EPI, and MCH activities. It monitors 33 diseases in the country through information and data received from hospitals, health centers and clinics. The Bureau of Vital and Health Statistics manages the routine surveillance. One of the diseases routinely monitored is sexually transmitted disease (**STD**) which has been on the rise in recent times, particularly among students. The Epidemiology Division of the Ministry of Health reports in 2002 that 17% of all students had experienced STD infection in the past one year. The Division notes that STD has been on the rise between 1993-2002 and this rise has positively correlated to the rise in HIV/AIDS which prevalence has doubled since 1994. (See **Appendix 7.4: Incidence of STDs by County, 2001**).

The active surveillance report monitors 9 epidemic diseases measles, bloody diarrhea: bloody and watery; cholera, meningitis, yellow fever, Lassa fever, AFP, and NNT). The Division of Epidemiology manages the active surveillance. (See **Appendix 7.5: Disease Surveillance Statistics, 2001**).

The sentinel surveillance report monitors HIV/AIDS cases in the country in places where testing are carried out. The National HIV/AIDS/STD Control Program manages the sentinel surveillance.

## **7.6 Analysis and Constraints**

The government operated social welfare facilities were damaged and looted during the civil war; they have not been fully rehabilitated, re-equipped and refurbished. A number of health facilities also remain closed on account of the acute shortage of staff, the lack of other resources and the resumption of fighting.

Clinics, health centers and hospitals are generally poorly equipped; many lack adequate facilities such as microscopes, laboratory, radiology, dental and medical equipment and instruments.

In these facilities, pharmacy, dietary and laundry facilities are either rudimentary or non-functional. Many of these facilities are without adequate supply of power, pipe-born water, warehousing, sewer system and incinerators for proper medical waste disposal.

The entire health system is constrained by the gross lack of transportation and communications equipment. Radio and telecommunications facilities are also limited. To aggravate an already difficult situation, the inadequate roads and the poor conditions of these roads combined to compromise effective information sharing, patient referrals, supervision, and the timely delivery of drugs and medical supplies.

Maintenance of facilities and equipment is a problem within the system. Preventive maintenance is almost non-existent. Generally, basic diagnostic and civilian equipment are repaired locally, while foreign experts are either brought in to either repair sophisticated medical and plant equipment or are left to waste on account of the lack of local expertise or spare parts.

There exists a poor maintenance culture within the system. In this culture, maintenance of infrastructure is marginalized to the extent that, over time, good facilities usually depreciate dramatically as gradual deteriorations go unnoticed. There is usually the lack of spare parts and maintenance supplies because, generally, maintenance budgets are either non-existent or extremely low. In fact, maintenance budgets are often “**after thought**” estimates; they generally do not reflect long-term, comprehensive, proactive planning. In this setting, maintenance takes on a crisis, curative orientation, rather than a programmed, preventive tendency. Collaterally, because resources are scarce, limited resources are to be directed to substantive priorities; they are not to be “**wasted**” on non-substantive matters.

An example may suffice here. In the fiscal years 1998 and 1999, the two recent years for which a complete set of financial data exists in the public sector, allocations for building and equipment maintenance amounted to 1.08% and 0.99%, respectively of the Ministry of Health and Social Welfare’s total budget for those years (**Department of Research, Planning and Human Resources Development, Ministry of Health and Social Welfare, 2002**).

At the national referral hospital of last resort, the JFK Medical Center, the situation is dismal: the hospital is closed and has been so for almost two years. The closure of this tertiary hospital means that there is a broken chain in the referral system.

The hospital has been in a state of disrepair: many of the equipment are either old and obsolete, and almost all of its facilities were operating far below optimal capacities. Additionally, there was an acute shortage of specialist doctors. However, through a grant from the Taiwanese Government to the Government of Liberia, the situation at the JFK Medical Center may soon be addressed. The Center is being rehabilitated, new equipment and instruments are being procured, management sub-systems are being strengthened, drugs and medical supplies are being procured,

and an incentive system to attract and retain specialist doctors are being worked out.

The Health Information System has been improved, but still requires further strengthening. It does not contain management information and data that are equally important. Thus, adequate, up-to-date information on facilities, equipment, transportation and communication equipment and resource flow are not captured.

Additionally, reports are not regular as there are difficulties in submission. The accuracy of reports is often questionable. There often either little or no feedback from reports.

Further, the structure of the Bureau of Vital and Health Statistics needs to be rationalized. Three divisions ought to be established: one for births and death statistics, one for other health information, and the third for management information.

## **7.7 Recommendations**

- Rehabilitate and restore all social welfare facilities to their pre-war levels of functionality;
- Rehabilitate and restore all health facilities to their pre-war levels of functionality;
- Re-equip facilities with the minimum level of equipment and instruments required for each;
- Provide VHF radio communication links between the various facilities;
- Provide ambulance for each hospital and health center;
- Make adequate budgetary provisions for maintenance and install and maintain a system of preventive maintenance for buildings and equipment;
- Standardize plant and medical equipment to promote efficient maintenance and local capacity building;
- Provide computers to hospitals and health centers and manual typewriters to clinics for record keeping;
- Strengthen the power, water, sewer, and waste disposal systems at health facilities;

- Strengthen laboratory, X-rays, dietary, laundry, mortuary, and housekeeping services at the various facilities;
- Strengthen data collection and reporting within the system;
- Create and establish a division of Health Information System to cover other resources such as transport, communications, personnel, drugs and medical supplies, and infrastructure.

## **PTER 8: HUMAN RESOURCES**

### **8.1 Staffing Standards**

The clinic is the entry point in the fixed facility health care delivery service. Required minimum staffing standards include a Physician Assistant, a midwife, and a recorder.

The health center is a fixed facility providing intermediary health care delivery services. Required minimum staffing standards include a general practitioner doctor, 2 physician assistants or registered nurses, 2 midwives, and 1 laboratory technician, a social worker, an administrator, and a recorder.

The hospital is the upper level fixed facility providing advance intermediary health care services. A minimum of 30 professional and non-professional staff is required at this level. They include a general medical practitioner (**preferably with surgical skills**), 3 physician assistants, 6 registered nurses or licensed practical nurses, 6 certified midwives, 2 laboratory technicians, an administrator, a bookkeeper/finance officer, 2 record keepers (**HIS**), 2 dietary personnel, 3 laundry personnel, 2 cleaners, a social worker, and a stock control clerk.

JFK is the nation's only tertiary hospital, Liberia's premier hospital of last resort. The minimum

staffing standard requires a wider spectrum of generalist and specialists in all areas of medical science as well as a broader range of technical and administrative support staff. The exact quantum of each category of personnel was not readily discernable.

## 8.2 Availability of Health Personnel

Prior to the civil war in 1988, approximately 5,056 persons worked in the health sector. The public sector employed 3,526, while the private sector employed 1,855. Of the total health sector personnel, 2,782 (55%) were trained traditional midwives (TTMs), 237 physicians (4.7%), 656 nurses and nurse midwives (13%) and 1,381 other supporting personnel (27.3%) (Pragma, 1988).

In mid-1997, public sector health personnel amounted to 1,806 (1997, MOH, Kullie). In 1998, the Ministry of Health and Social Welfare accounted for 1,396 health personnel, excluding TTMs, operating then in the country, representing 40% of the pre-war level. Of the 1,396, 89 were physicians, 329 nurses, and 274 midwives (National Health Policy, 2000).

Regrettably, the Ministry of Health and Social Welfare does not have an update (2002) of the quantum and distribution of personnel in the system. Accordingly, it is impossible to determine current regional and gender distribution as well as ratio of manpower to facility or user group.

## 8.3 Exiting Training Institutions

As at 2002, only five of the seven pre-war training institutions are operational. **These are (i)** the A.M. Dogliotti College of Medicine; **(ii)** the Tubman National Institute of Medical Science; **(iii)** the Phebe School of Nursing and Midwifery; **(iv)** the Cuttington University College School of Nursing; and **(v)** Mother Pattern College of Health Sciences.

The A.M. Dogliotti College of Medicine offers a program leading a general Doctor of Medicine (MD) degree. **Total number of graduates in 2000/2001 was 6; projections for the next three years are as follows: 2002 (13); 2003 (15); and 2004 (12).**

**TNIMA** offers training in professional nursing, physician assistant, environmental health, and midwifery. Total number of graduates in 1999 and 2000 were 148 and 139, respectively. There were no graduates in 2001; graduates in 2002 numbered 177.

**Phebe** runs programs in professional nursing, nurse-midwifery, Laboratory science, certified midwifery, and nurse anesthesia. There has been no graduation since the end of the civil war.

**Cuttington** offers training in professional nursing (both B. Sc. and Diploma). In 2000/2001, 30 students graduated and approximately 35 students are expected to graduate in 2002.

**Mother Paten offers four sets of programs:** (i) certificate courses in primary health and social work; (ii) diploma courses medical laboratory technology; (iii) Associate Degree courses in social work and nursing; and (iv) degree courses in Nursing and general science. Total number of graduates in 2000 and 2001 are 62 and 89, respectively. Projections for the 2002, 2003 and 2004 are 70, 75, and 45, respectively. Mother Paten also offers programs in Women's Health and Development, HIV/AIDS Awareness, Trauma Counseling, and Child-to-Child Health Education.

## 8.4 Analysis and Constraints

The minimum staffing standards by levels of health care delivery in the system is logical and rational. However, there is no projected personnel requirement of the system and no manpower development plan to meet future manpower needs.

The distribution of health personnel in the system continues to show urban bias; it is estimated that almost 50% of available health human resources are located in urban centers, particularly Monrovia, the Capital City (**National Health Policy, 2000**).

There is an acute shortage of personnel in the sector. Turnover in major professional categories has been high. The civil war, lack of confidence in the long term political stability of the country, low salaries, delayed salary payments, poor conditions of service and the lack of incentives have resulted in massive brain drain of skilled and experienced personnel in the sector.

Given the acute shortage of health personnel, primary health care services, particularly in the public sector, are being provided by professional health workers and volunteers. Most of these volunteers, however, lack the skills and competencies required for the services they provide.

The problem is critical in the public sector where attracting and retaining staff, especially in rural communities, where they are most needed, has been problematic. Most current health workers prefer to work for non-governmental organizations or private sector concerns where United States dollars are earned or salary payments are timely and current.

Most training facilities are wanting in resources for faculty, teaching materials and supplies, and logistical facilities. The curricula of most of these institutions are outdated, curative bias, and are not synchronized with current health and social welfare conditions on the ground. Collaterally, none of the institutions have been accredited since the mid 1980s (**National Health Policy, 2000**).

## 8.5 Recommendations

- Undertake soonest possible, a manpower survey of personnel working in the health sector to ascertain quantities and quality of various categories of health workers currently available in the country;
- Renovate, rehabilitate and restore to functionality all pre-war health training institutions.
- Review and revise the curriculum of all training institutions to bring them in line with health sector realities on the ground.
- Expand and strengthen the capacity and capability of all training institutions.
- Local training, in-service and refresher training should be sharpen and continued whit the system, particularly for lower level personnel.
- A program of external training should be developed and put into place to meet the long-term critical needs of the country, particularly the public sector.
- The conditions of service and incentive regime shall be enhanced to be able to recruit, motivate and retain health workers, specially in rural communities.
- Undertake a long-term personnel projection and develop a 5-year Health Sector Manpower Development Plan.
- Re-establish the rural community in-service program of interns of training institutions to assist meet some of the needs of rural communities.
- Strengthen regulatory professional bodies to ensure that their members perform satisfactorily and ethically.
- Establish and ensure a functioning Human Resource Development Committee to coordinate, monitor and evaluate human resources development programs and activities.

## 9.1 Types of Care

The Liberian health care delivery system provides curative and preventive care services. **Minimum packages of care for each of the three levels in the system are as follows:**

- A. Primary Level Care** services are provided by clinics and health posts operated by community health workers.

**Services provided include the following:**

- C Information, education and communication (**IEC**)
- C Nutrition and feeding programs for malnourished children
- C Maternal and child health/family planning (**MCH/FP**)
- C Immunization against major infectious and childhood diseases
- C Water and sanitation
- C Provision of essential drugs
- C Treatment of common/endemic diseases and injuries
- C Care and special support for persons in difficult circumstances
- C Community outreach services

- B. Secondary Level Care** services are provided by health centers and secondary hospitals. In addition to the services being provided at the primary levels, **the following care services are being provided:**

- C General medicine
- C Reproductive health services including family planning
- C Minor and general surgical procedures
- C Maternity, including emergency obstetrics care
- C Dental and eye care
- C HIV/AIDS screening and counseling
- C Blood Bank Services
- C Community-based rehabilitation
- C X - rays and radiology services

- C. Tertiary Level Care** services are provided by the JFK Medical Center, the national referral hospital of last resort. It is also a teaching and medical research hospital. Regrettably, the hospital is currently closed and has been closed for almost two years. However, in the past, the JFK Center provided a wide range of specialist services with priority in obstetrics and gynecology, pediatrics, surgery and internal medicine. **Other services include:**

- C Blood bank services
- C Surgery (**thoracic, neuro, dental, orthopedic**)
- C Urology
- C ENT
- C Ophthalmology
- C Dermatology
- C Psychiatry
- C Orthopedics
- C Dentistry

C     Oncology  
C     Pathology  
C     Radiology

Generally, a symptomatic approach to diagnosis and treatment is used at the primary level, while at the secondary level, enhanced diagnosis and proper treatment is used. At the tertiary level, more sophisticated diagnosis and specialist treatment are provided.

## **9.2 Disease Prevention and Control Programs**

### **A. Malaria**

The Malaria Control Program is responsible for monitoring and evaluating the occurrence of the disease and evaluating the treatment given to the populace with respect to the general effectiveness. The program also conducts training and undertakes research in better ways of managing the disease.

Malaria control is integrated into the general health care delivery system. The program emphasizes prompt diagnosis and adequate treatment. The major activities of the program includes sensitization of local communities, training of health workers in malaria control and treatment, evaluation of insecticide treated bed nets, data collection and analyses.

The program is currently promoting the use of insecticide treated bed nets as a means of controlling the disease. In 2002, the Program distributed 2,800 bed nets through the National Drugs Service's Cost Sharing Scheme.

Malaria remains Liberia's number one cause of morbidity. In 2001, total out patient morbidity cases recorded were 535,401 of which malaria accounted for 195,617 cases. This represented a prevalence rate of 36.5%. (See **Appendix 9.1: Incidence of Liberia's three major causes of morbidity**).

### **B. Leprosy/Tuberculosis**

The Leprosy and Tuberculosis Program is responsible for controlling and managing the leprosy and tuberculosis disease. Currently the program is providing leprosy services to 10 counties and tuberculosis services to 7 counties.

In 2001, a total of 1271 leprosy patients were detected and placed in a treatment program. Of this number, there were 60 Single Lesion (**SL**), 753 Multi bacillary (**MB**), and 413 paucibacillary (**PB**) cases. Further, 37 had disability grade 1, while 47 had disability grade 2.

In the same year, 3,471 cases of tuberculosis were diagnosed and treatment begun. Of this number, 2005 were sputum positive cases, 806 sputum negative cases, 532 extra pulmonary, 34 relapse, 22 returned after defaults, 31 failures and 41 transferred. Seventy percent (**70%**) of the patients were diagnosed in Monrovia, while 30% were diagnosed out of Monrovia. The age range

highest affected is the group between 25 and 33 years. (See Appendix 9.2: Tuberculosis Cases registered in 2001).

### C. HIV/AIDS

The National AIDS/STD Control Program is responsible for the control and management of HIV/AIDS and sexually transmitted diseases in the country. The program is involved in preventive and control activities including: sensitization of local communities, dissemination of information on HIV/AIDS/STDS, the production and distribution of related educational and information materials, the promotion and distribution of condoms, issuance of HIV test kits to health facilities, counseling, and training of health workers.

In the year 2001, 987,552 pieces of educational materials were produced and distributed nationwide. From donations made by the USAID, Taiwanese Government, WHO, UNFPA, the program donated condoms to various community based organizations, non-governmental organizations, government agencies, schools and military personnel.

In the same year, another 175, 000 pieces of assorted educational materials on HIV/AIDS prevention and control were produced and distributed to various groups, while some 10,000 persons were reach in social mobilization efforts in which information on HIV/AIDS were given using multiple media.

Further, in 2001, 174 laboratory technicians from government and non-governmental organizations health facilities were trained under the program in safe blood transfusion; each participant institution was given an HIV test kit. Refresher training was given to 22 laboratory technicians already conducting HIV tests.

One of the major activities carried out by the program is its monthly sentinel surveillance of the disease. In 2001, over 4,800 tests were performed in 6 months at 11 sites in 6 counties. The bulk of these tests were from blood donors, with Phebe Hospital accounting for 38% of the donors.

The program intensified its media campaign by developing HIV/AIDS messages in the 16 major dialects. Liberian language announcers were trained to produce simple and effective messages for airing on both FM and Short Wave radio stations in the country.

In 2001, over 2,090 persons received HIV/AIDS related counseling service.

**Please refer to the following Appendices for various statistics on the HIV/AIDS situation in Liberia:** (i) Appendix 9.3: HIV Tests and Percentage Positive, 1994-2000; (ii) Appendix 9.4: HIV Prevalence By Population Sub-group, 1994-2000); (iii) Appendix 9.5: HIV Prevalence Among Visa Applicants by age and sex, 1994-2000; (iv) Appendix 9.6: HIV Prevalence Among Volunteers by age and sex, 1994-2000; (v) Appendix 9.7: HIV Prevalence Among TB Patients by age and sex, 1994-2000); (vi) Appendix 9.8: HIV Prevalence Among In-patients by age and sex, 1994-2000); (vii) Appendix 9.9: HIV Prevalence Among Out-patients by age and sex, 1994-2000; (viii) Appendix 9.10: HIV Prevalence Among Blood Donors by age and sex, 1994-2000); and (ix) Appendix 9.11: HIV Prevalence by County of Origin of those Tested.

## **D. Onchocerciasis**

Onchocerciasis (or **River Blindness**) is new growing health concern in Liberia. It is a disease caused by a worm as a result of fly bits. The flies are those usually found around river banks, hence the name River Blindness. The infection causes itching, nodules, and loss of vision resulting into blindness.

The Ministry runs an onchocerciasis program. The core of the program is the sensitization of local communities about the disease, and the mobilization of members to fight the disease.

The disease is treated by a drug called Mectizan. It controls the disease by killing the worms in the body, stops the itching, and prevents the patient from getting blind. However, the treatment is long-term; a patient must take the drug once every year for anywhere between 10 to 15 years. Thus, the greatest challenge in management of the disease is monitoring patient compliance over long periods.

The program is sponsored by the African Program for Onchocerciasis (**APOC**) through the WHO. Mectizan is sourced from Merck and Company, a pharmaceutical firm in the United States. It is given free of charge through a network of Community Drug Distributors (**CCD**). The Christian Health Association of Liberia collaborates with the program by training CDD members through funding provided by Sight Saver International and the Ministry of Health and Social Welfare.

In 2001, approximately 2,083,435 persons were targeted for treatment by the Ministry of Health and Social Welfare, but only 177,523 persons were treated (**Onchocerciasis Program, MOH, 2001**). In same year, total outpatient morbidity cases report during this period was 535,401 with 686 of those being Onchocerciasis cases. On this basis, the prevalence rate of Ochocerciasis is 0.13. (See **Appendix 9.12: Incidence of Onchocerciasis in Liberia by County, 2001**).

CHAL operates a Community Directed Treatment Program in Bong, Lofa, Nimba and Montserrado Counties. In 2001, it covered 22 out of 26 endemic districts in the four counties. It treated 497,662 persons from a targeted 500,000 persons (**CHAL, Annual Report on Onchocerciasis program, 2001**).

## **E. Immunization**

The Extended Program of Immunization Division with the Ministry manages the routine immunization program. The program seeks to vaccinate children and women against various diseases.

The domain of immunization has achieved the single greatest result in the sector in recent times. The main effort in this area has been towards the eradication of polio. Liberia received the 2001 Taskforce for Immunization Meritorious Awards for outstanding contribution to health, particularly to women and children health in Africa. In 2001, 816,076 under fives were vaccinated throughout the country, except Lofa County because of the armed conflict that existed in that region. The number of children vaccinated translates into a coverage of 122%. Additionally, 41,450 persons in Grand Kru County were also vaccinated against yellow fever. **(See Appendix 9.13: Results of National Immunization Days Results, Round 1 and 2, 2001).** **(See also, Appendix 9.14: Immunization Coverage and Category, 2002).**

### **9.3 Rehabilitative Care**

The Catherine Mills Rehabilitation Hospital was the nation's only formal sensory rehabilitation hospital. The hospital was totally damaged during the civil war; it has not been rehabilitated. The only Psychiatrist who managed the facility has since retired from public practice; he is currently in private practice using a small, personal facility located in Paynesville.

Limited rehabilitative motor care services are available within hospitals and some local communities. The Christian Health Association of Liberia (**CHAL**) runs a community-based rehabilitation program that is primarily a motor restoration program. Several mobile teams are used to provide technical assistance to local communities involved in the program. With funding from UNICEF, a prosthesis production workshop (**Ganta Orthopedic Workshop**) has been established in Ganta at the United Methodist Hospital to support the program. Corrective orthopedic surgeries are carried out at the Ganta and other hospitals. A number of persons have been trained in CBR in physiotherapy related management.

The Catholic diocese also has a small workshop near Monrovia, at Benedict Menni, that is involved in the production of prosthesis and the restoration of motor functionality in disabled persons.

An international non-governmental group, handicap International, is also in the country assisting with motor rehabilitative prosthesis production and physiotherapy.

### **9.4 Medical Research**

Medical research in Liberia is carried out by the JFK Medical Center and the Liberia Bio-medical Research Institute. Research activities at the JFK Medical Center have been dormant for a protracted period on account of a lack of a defined research program. The Bio-medical Institute has been the sole organization actively involved in medical research. However, the Institute was adversely impacted by the civil crisis. It was damaged and looted of all its scientific equipments. Its library, which contained all past research publications, including the original fieldwork data, was destroyed. Additionally, the Institute lost all of its scientific staff; all left on account of the

deteriorating situation occasioned by the post-war poor work environment and lack of attractive salaries and incentives.

Currently, the Institute is engaged in mainly renovation and rehabilitation activities. The laboratory and administrative buildings as well as the dwelling units are being repaired. There are no new equipments; although efforts have been made by management to seek external assistance in this direction, matching funds required from the Government has not been forthcoming because of scarcity of public funds.

Only one of the Institute's international affiliations has been revived; this is the relationship with the New York Blood Center. The Center has a laboratory in Liberia that is working mainly on research relative to hepatitis.

There are also no current research projects being undertaken. However, proposals have been written for donor assistance, but there has been no reliable response to pursue.

Funding for the Institute is a problem as the Government lacks the capacity to provide the requisite resources. Historically, the United States through USAID, the U.S. Army, and the European Union have been donors and reliable partners. However, given Liberia's current political problems, funding from these sources has not been forthcoming. The meager funding currently being used by the Institute is space rental fee paid by the New York Blood Center for its laboratory. The value of the rent is US\$10,500 per quarter. The New York Blood Center laboratory has three scientists (**1 European, 2 Liberians**), 5 Liberian laboratory technicians, and 20 Liberian support staff. A number of scientists from New York periodically visit the Center's laboratory at the Institute.

Prior to the civil war, staffing for the Institute consisted of over 20 professional staff and 135 support workers. Currently, however, the professional staff consists of 6 professionals and 20 support workers.

Prioritized needs of the Institute are: training opportunities for professional staff development, scientific equipments, rehabilitation of the library, and funding to re-commence research activities.

## 9.5 Health Care Coverage

Prior to the civil war in 1990, approximately 30% of the population had access to modern health. Then, in response to the World Health Organization's goal of "**Health for by the Year 2000**", Liberia recognizing her inability to reach that goal, set as her target increasing access from the then 30% to 90% by the year 2000. Regrettably, on account of the civil war and its damaging effects on all aspects of health, including infrastructures, personnel, and drugs and medical supplies, the little progress that had been made was reversed. Accordingly, as at 2000, access to

health had decline to approximately 10% in 2000 (**National Health Policy 2000**).

Although the system is fixed facility biased, the facilities are generally under-utilized. Most facilities do not operate at full capacity on account of either the shortage of personnel, the lack of drugs and medical supplies, the absence of power and water, and financial difficulties. In 1988, two-third of all hospital beds had bed occupancy rate of 53%; the average number of daily visits among 249 health centers and clinics was 7 persons, with only Margibi and Bong exceeding 20 visits per day; and public health facilities were seeing an estimated 26.7% of all outpatients and 25% of recorded inpatients (**Pragma, 1988**).

## 9.6 Analysis and Constraints

The package of health care services to be delivered at the various levels of the system are appropriate; however, they do require strengthened institutional capacities at all levels, particularly the lower levels. Currently capacities throughout the system are low on account of the lack of resources.

The disease prevention and control programs need to be strengthened in light of rising incidence of traditional and new diseases such as HIV/AIDS. In all cases, multi-approaches are required, from enhanced information, education, and communication services, improved water and sanitation services, to prompt and quality treatment.

In the special case of HIV/AIDS, a lot of media campaign effort is being made, but it seems clear that the message is not effectively getting across. Accordingly, there is an urgent need to revisit the whole message management process from development to packaging, targeting and delivery.

Rehabilitative care services are severely limited and need to be expanded. The devastating effects of the seven-year old civil war and the current resumption of fighting, has increased the number of persons in need of rehabilitative services.

Access to health of the population has reduced since 1990. This situation is occasioned by the destruction of health facilities during the conflict, displacement of health personnel, shortage of trained health workers, the inadequate supplies of drugs and essential supplies and the low level of public sector resources obligated and delivered to the sector.

Access has also been constrained by the long distances to be covered in accessing facilities and the lack of financial resources to defray the cost of the services. The LDHS report submits that at least 20% of the population spends between two to five hours trying to reach a health facility for service. The situation is worse in rural areas with 28% of the population spending such long hours to access a facility, compared to only 3% of urban dwellers (**LHDS Report 2000**).

The under-utilization of health facilities are on account of several factors, prominent among them

are: negative cultural influences, long distances of facilities, limitations at the facilities themselves such as the absence of trained health workers and lack of drugs and medical supplies, and the lack of financial resources to defray even the minimum of costs at the facilities.

## **9.7 Recommendations**

- Put into place the appropriate mix of staffing, equipment and drugs at each level of the health care delivery system to make the system effective;
- Enhance the effectiveness of the malaria control program with a focus on sanitation and the use of bed nets;
- Revisit and retool the whole message management process for HIV/AIDS from development to packaging, targeting and delivery;
- Rehabilitate the Catharine Mills Rehabilitation Hospital;
- Ensure the availability of doctors, equipment, and drugs and medical supplies at facilities to increase utilization rates.

## **HAPTER 10: DRUGS AND MEDICAL SUPPLIES**

### **10.1 General Policy and Legislation**

The Ministry of Health and Social Welfare provides policy direction to the nation's drugs and medical supplies sub-sector. The Ministry authorizes the importation, exportation, sale, use, and quality certification of all pharmaceuticals in Liberia. The Division of Pharmacy within the Bureau of Curative Services is the unit in the Ministry responsible for providing policy direction to the nation's drugs and medical supplies programs.

A drugs policy exists; the policy is an improvement of the July 1998 draft. **The policy has six objectives to be simultaneously pursued:** (i) ensuring the availability of safe and effective drugs; (ii) providing drugs at affordable prices; (iii) promoting the rational use of drugs; (iv) ensuring quality manufactured and imported drugs; (v) encouraging self-sufficiency through local manufacturing of drugs; and (vi) providing drugs for veterinarian services.

The policy covers: drug availability; public sector supply; Private sector and non-governmental organizations drug supply; importation and exportation of drugs; local production; pharmaceutical research and development; distribution, storage and maintenance; legislative and regulatory framework for control of drugs and pharmaceutical services; economic strategies for drug financing; rational use of drugs; quality assurance; human resource training and development; monitoring and evaluation; and inter-sectoral and technical cooperation. Each of these areas covers a number of sub-sections.

The rational use of drugs is a major **component of the drug policy. According to the WHO, rational use of drugs is defined as “patients receiving medication appropriate to their clinical needs, in doses that meet their individual requirements for an adequate period of time, and at the lowest cost”**. The responsibility for the rational use of drugs is considered a shared responsibility between health workers and the patients.

**The irrational use of drugs takes several forms, predominant among these are:** (i) treating the symptoms instead of the disease; (ii) treating the right disease with the wrong drugs; (iii) treating the wrong disease with the wrong drugs; (iv) treating the right disease with less quantum of the right drugs; (v) recommending expensive drugs when cheaper ones would work; (vi) patients not completing their dosages; and (vii) patients not following the prescribed directions.

There are six elements that constitute the scope of Liberia's rational use of drugs sub-policy. **These are:** (i) accurate diagnosis; (ii) right and appropriate choice of drugs; (iii) rational prescription; (iv) correct dispensing; (v) suitable packaging; and (vi) proper use by patients. The policy provides guidelines for each of these elements.

There also exists a Liberia Therapeutic Guidelines and Essential Drugs List. This document is also an improvement of the July 1998 National Essential Drug List. It identifies government-approved drugs for institutions authorized by the ministry to procure drugs for consumption in Liberia.

The Essential Drug List section of the document was prepared by adapting the WHO model. The list consists mainly of generic drugs that are used at clinics, health centers, and secondary hospitals. The drugs are grouped according to therapeutic categories and the type of health facility. Drugs on the list are first choice drugs for case management of common diseases in the country. **(See Appendix 10.1: Essential Drug List). Also included are second line drugs for the treatment of sexually transmitted diseases (STDs).**

The therapeutic guidelines section of the document supplements the essential drugs list with national protocols (**manuals**) for certain diseases such as tuberculosis, leprosy, HIV/AIDS/STDs, Malaria, and Onchocerciasis.

There exists a number of drug related legislation under the Public Health Laws and their revisions of 1976. **These laws are as follows:** (i) Chapters 41: Control of Narcotic Drugs; (ii) Chapter 42: Control of Hallucinogenic Drugs; (iii) Chapter 43: Control of Drugs other than Narcotic and Hallucinogenic Drugs; (iv) Chapter 44: poisons; and (v) Chapter 67: Pharmacy.

## 10.2 Drug Procurement

In the public sector, the National Drugs Service (**NDS**) imports drugs and medical supplies on behalf of government facilities. NDS serves public and non-for profit health facilities. Drugs and medical supplies are procured through the sponsorship of donors, principally the European Union (**EU**) and the United Nations Children Fund (**UNICEF**). NDS has contacts with a wide range of producers; at such, it compares the competitiveness of quality, price, and delivery terms of suppliers and then places an order. Items ordered are informed by the needs of facilities as shown by the monthly reports as well as the replenishment needs of NDS warehouses.

The goods are received and stored in its warehouses in Monrovia prior to distribution facilities in other parts of the country. **There are four warehouses at its central office in Monrovia:** (i) an essential drugs warehouse; (ii) a medical supplies warehouse; (iii) an expanded program of immunization supplies warehouse; and (iv) a bulk warehouse.

In the private sector, hospitals, pharmacies, national and international non-governmental organizations are permitted to import drugs. These institutions serve mainly private health facilities and services. Procurement is carried out through independent sources and contacts.

The Christian Health Association of Liberia (**CHAL**) is also a major procurer of drugs and medical supplies. CHAL pools the resources of its member institutions and buys drugs for its members' facilities. Pooling facilitates economy of scale and all the benefits derived there from. CHAL drugs are distributed largely in rural communities where most of the facilities of its members are located.

Quality control in the public sector procurement process is both by administrative and technical means. Administratively, the ministry inspects drug labels and sources and, if satisfied, registers drugs to the Liberian market. Technically, a Drug Quality Control Laboratory, with limited capacity, has recently been established at the Ministry of Health and Social Welfare.

Most of the drugs procured by NDS and CHAL are of good quality, partly because they are sourced from Europe where quality standards and controls are stronger. CHAL's drugs are procured from the International Dispensers' Association (**IDA**) in Holland. Most of the private sector drugs on the market are sourced from developing countries such as Nigeria, India, and Pakistan. Compared to the drugs procured by NDS and CHAL, they are generally perceived by the public as being of low quality. Up to date, the Ministry has not been able to prove the public view on low quality of drugs manufactured in developing countries.

There is a Pharmacy Board that regulates the practice of the profession of pharmacy in Liberia. The Ministry heads the Board's registry and Secretariat. For the first time in Liberia, in 2001, the Board administered the Pharmacist-License State Board Examination to prospective pharmacists.

### **10.3 Drug Supply/Distribution Systems**

In the public sector, drugs are supplied to the facilities through the County Health Services Administrations. Its depot is located in Monrovia at its head office from where it serves facilities across the country. A small subsidiary depot is located in Monrovia at the Paynesville Red Light as a Community Outreach Project. From this depot, NDS sells directly to the public at affordable prices.

Prior the civil war, the Monrovia depot served facilities in Montserrado, Margibi, Grand Cape Mount, and Gbapolu counties. A second depot was located in Buchanan; it served Grand Bassa, River Cess, Sinoe, Maryland, and Grand Kru Counties. This depot has not been re-activated since the ending of the war. A third depot was slated to be located in Gbarnga; it would have served Bong, Nimba, Lofa, Nimba, Grand Gedeh, and River Gee counties; the war compromised its establishment.

**There are three primary public sector outlets: (i) clinics; (ii) health centers; and (iii) secondary hospitals.** Currently, NDS is supplying 316 facilities across the country. **These include the following: (i) 138 CSS Seed Stock facilities; (ii) 40 CSS LD cash sales facilities; (iii) 29 CSS USD cash sales facilities; and (iv) 28 free customer-facilities.**

Monthly supplies to facilities served are based on the facility's prior month report submitted. A case-by-case method ensures that each facility is served on its own circumstances, which means adjustments in supply levels proportional to changes in disease patterns and patient loads.

CHAL operates the second largest drug depot in Liberia next to the NDS; it is located in Monrovia. From this depot, CHAL is currently serving 21 church-sponsored facilities. The facilities are served in accordance with the quantum of their inputs into the financial pool. CHAL

is also a collaborating partner of NDS. Since its drugs are distributed to non-for-profit users, when CHAL's supplies are exhausted, it sends its members to procure supplementary drugs and supplies from the NDS.

**In the private sector, there are three types of outlets: (i) wholesale pharmacies; (ii) retail pharmacies; and (iii) medicine and drugs stores.** Medicine and drugs stores and retail pharmacies are scattered throughout the country. Wholesale pharmacies are located only in Monrovia from they service retail pharmacies, medicine and drug stores. There is currently one wholesale pharmacy in the country. Concurrently, there are 74 retail pharmacies and 240 medicine and drug store outlets in Liberia. **(Registered Pharmacies, Medicine and Drug Stores, Pharmacy Division, Ministry of Health, 2000). (See Appendix 10.2: Registered Pharmacies, Medicine and Drug Stores, 2000).**

“**Black baggers**” and street drug peddlers are a major outlet for drugs. Although illegal, they are visible mostly in rural communities where enforcement mechanisms are weak.

## **10.4 Financing Arrangements**

In the public sector, most of the funding for the procurement and distribution of drugs has been through emergency and humanitarian assistance from the international community. Between 1990-1997, these contributions have average approximately US\$ 2.1 million per annum **(National Health Policy, 2000).**

At the Ministry, a Cost Sharing Policy (CSS) and program has been put into place. Under the program, users of drugs and medical supplies pay 50% of the cost of drugs and medical supplies, while donors defray the balance 50%. This policy is motivated by the widespread poverty in the country that has occasioned economic hardship of households. As at December 31, 2001, there are 213 facilities participating in the program. **(See Appendix 10.2)**

To implement the cost sharing scheme program, the Ministry of Health have established Drug Revolving Funds (DRFs) at public sector facilities through which the cost recovery scheme of the program is facilitated.

Performance evaluation of the participating CSS facilities, overall, has been satisfactory. Of the 213 facilities participating in the program 133 had adequate stock, 98 had increase in their capital balances, 106 had regular community involvement, and 119 had good stock management practices, and affordability was close to 100 percent **(See Appendix 10.3).**

In the private sector, financing arrangements are private; information and data on them are not available.

## **10.5 Local Production**

Local capacity for the production of drugs and medical supplies is not existent. Currently there are no drugs being produced in Liberia. In 1994, NDS established an intravenous fluid (IV) production facility; the facility was affected in the April 6 1996 fighting in Monrovia and has

since not resume operation. The Phebe Hospital also operated a facility that produced IV fluids; that too has been discontinued.

One A and A drug store on Camp Johnson Road “**produces**’ a small quantity of cough and antibiotic syrup for children (NDS, **Beyan Johnson, 2002**). It is not clear whether this is a real production facility or just a packaging operation.

The Pharmacy Division in the Ministry of Health and Social Welfare has developed and put into place a program for the registration of manufacturing companies sending pharmaceutical products to the Liberian market. It has also adopted the WHO certification scheme for pharmaceuticals moving in international commerce. The objective is quality control: ensuring that companies and their products serving the Liberian health market are first registered and recognized under their own laws and jurisdictions and, specifically, meet the requirements of Liberia.

One foreign firm, Troge Medical, based in Germany has already met the requirements of the Ministry and has been certificated. The registration of another firm, Cipla Limited of India, through Abeer Pharmaceuticals of Monrovia, the only company now importing antiviral AIDS drugs in the country, is currently being processed.

## **10.6 Analysis and Constraints**

The drug policy is largely adequate, although it could be further strengthened by better organization. Particularly, a more logical grouping and sequencing of its contents could improve the document. Further, there is need for an introduction that discusses the major problems and situation in the pharmaceutical sector, and a section on research. Additionally, some provision such as the role of the Pharmacy Board regarding the regulation of both pharmaceuticals and practitioners need re-thinking and rationalization.

Various drug legislation exist although they are largely not followed; these laws need to be updated to meet current reform developments in the health sector.

There has not been a professional determination of the total drugs and medical supplies needs for Liberia. Given the consistent reports of shortages of drugs and medical supplies across the country, especially in rural communities, there seems to be an inadequate supply to meet the demands of the health market.

Given the current situation in Liberia, the EU has informed the NDS that Liberia is no longer a priority. This means a further reduction in NDS sources of support. With other donors also cutting back their support, this will mean a deepened lack of reliability in the supply of drug and medical supplies to the public sector.

The quality of supplies from private sector wholesalers and retailers are low and substandard. Many black-baggers and peddlers of pharmaceuticals, especially in rural areas, sell fake, substandard and expired drugs. With the establishment of a testing laboratory at the Ministry, this problem should be minimized.

Effective and efficient storage and distribution of drugs and medical supplies across the country is hampered by the lack of power in many places and the poor and deteriorating road conditions in many parts of the country. Storage rooms in most facilities are inappropriate in terms of the space configuration and lack of cooling and ventilation.

Internally, the roles and functions of the Pharmacy Division and the Environmental Health Division, both of the Ministry of Health and Social Welfare, sometimes conflict when the latter inspects pharmacies, medicine and drug stores. Also, the roles, functions and responsibilities of the Pharmacy Division and the Pharmacy Board are conflicting and confusing; for example, it is not clear which one of the two ought to advise the Minister on matters relating to the wide range of pharmaceutical issues within the industry. As it stands, the Pharmacy Board is seen as an integral part of the Ministry regulating both drugs and the practice. This seems unsound and illogical.

Externally, the Pharmacy Division complains of jurisdictional overlaps or interference regarding the enforcement of drug control regulations from other government agencies such as the Ministry of Commerce, the Monrovia City Corporation, the National Police Force, the National Bureau of Immigration, and the Drugs Enforcement Agency. Perhaps the problem is the lack of coordination and information sharing between and among agencies with various complementary regulatory responsibilities. But whatever the case is, these problems do suggest a lack of adequate and clear structures for effective enforcement of drug control regulations in the country.

## 10.7 Recommendations

- The functions of the Pharmacy Division and Pharmacy Board should be rationalized soonest possible; the Pharmacy Division should be the technical arm of the Ministry responsible for the regulation of drugs and pharmaceutical services in Liberia, while the Board ought to be the professional body regulating the practice of members of the pharmacy profession, dealing with such issues as training, testing, accreditation of pharmacies and institutions, and ethical behaviors.
- Collaterally, the roles and functions of the Division of Environmental Health

regarding pharmacies, medicine and drug stores, as well as the entry and exit of drugs and related substances at all ports, should be clarified as being distinct from those of the Pharmacy Division; the former should concern itself with sanitation related matters, while the latter should concern itself with the substantive issues surrounding quality of pharmaceuticals and pharmaceutical services in Liberia.

- Further, a mechanism for inter-agency collaboration and cooperation between the Ministry of Commerce, Monrovia City Hall, the National Police, the National Bureau of Immigration, and the Drug Enforcement Agency and all other relevant government agencies should be developed and put into place concerning the inspection of pharmacies, medicine and drug stores.
- Undertake a study to determine the total drug and medical supply needs of Liberia; this would be a baseline data for planning a continuous, reliably supply of drugs and medical supplies to the health market.
- The current drug policy should be further strengthened by: better re-organization of the document, addition of an introductory chapter, provision of a research section, and keeping as close as possible to the suggested international format.
- Enforcement of drug regulations should be enhanced, particularly in rural communities, to reduce the number of fake, sub-standard and expired drugs being sold by black-baggers and street peddlers.
- Undertake a special campaign to court donors, and particularly, persuade the European Union to reconsider its classification of Liberia as a **“non priority” country**.
- With the assistance of the Government and donors, NDS should reopen its Buchanan Depot and proceed to establishing the Depot it planned for Gbarnga; these would be very helpful in the current decentralization efforts of health care delivery services.
- Review and revise drug related legislation to bring them in conformity with the new health sector reforms.

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## PTER 11: HEALTH CARE FINANCING

For this assessment, sources of health financing are categorized as public sector financing, donors' assistance and private sector financing.

### 11.1 Public Sector Financing

Government's support to the health sector is financed through budgetary allocations to the Ministry of Health and Social Welfare and the John F. Kennedy Medical Center. Government additionally provides sub-ventures to health facilities operated by faith-based organizations and individuals. Through these modes of support, government provides for health care activities and minor support to the non-governmental institutions. Its support is sometimes provided in the form of seconded personnel.

In 1988, government's budgetary allocation to health was US\$18.8 million, amounting to 5.3% of the national budget. Throughout most of the period of the civil conflict, government support to the sector was virtually lacking owing to the collapse of central governance. When general and presidential elections were held in 1997 marking the end of the civil war, budgetary support resumed, howbeit, at a level much lower than the pre-war level of public support. In real terms, the level of support coming from the public sector since the seating of the elected government remains relatively low and does not in any way match the health needs of a country emerging from a devastating and protracted civil war.

Over the past four years, direct government financing to health has averaged 4.4% of the national budget. There is, however, a marked increase in actual expenditures over budgetary allocations, suggesting a consistent pattern of under-budgeting. It further suggests the prevalence of deficit financing as the principal means of financing extra-budgetary items in the public sector. In 1998, expenditures were in excess of the budget by nearly half (42%). The variance was much larger in 1999 reflecting a 72% increases over the budget. The difference is much subdued in 2000 and does not exist at all in the 2001 expenditures report.

**Table 11.1: Public Sector Health Expenditures (in US\$ million)**

YEAR	NATIONAL BUDGET	HEALTH BUDGET	
		Allocation	Expenditures
1998	53.8	1,771,238	2,520,438
1999	66.5	1,898,755	3,327,496
2000	90.8	2,211,628	3,667,667
2001	102.0	4,165,080	4,165,080

Source: Ministry of Health & Social Welfare

Public sector health expenditures have been gradually increasing. In 1999, expenditure level went up by nearly a third (**32%**) over 1998; followed by a modest 11% rise in 2000 and then 13% in 2001. Increases in the national budget were not as robust: 6.8% in 1999, 16.2% in 2000 and 10.2% in 2001.

Public sector allocations to the health sector primarily finances wages, with the share of wages in the Health Recurrent Budget averaging 60% in the decade preceding the war. The share of wages in the Development Budget was a significant 30%. This trend is repeated in the post-war budget. In 1999, for example, 38% of health expenditures went toward staffing and went up to 45% in 2000.

On account of financial constraints, subsidies to non-governmental health facilities have been discontinued.

## **11.2 Donors' Assistance**

During the post-conflict period, total external assistance to Liberia has shown a downward trend. In 1997, for example, Liberia received US\$100.7 million, but 1997 disbursements were actually 23.7% lower than in 1996. Donors since 1996 have averaged about 20% of pledges. However, official development assistance spending on health has been very robust, in comparison to public sector spending, reflecting donors' consideration of the sector as emergency and humanitarian. Donors financed the major share of total health sector expenditures in 1998, estimated at US\$25.4 million.

A key mode of donor financing of health care delivery is through the cost-sharing schemes with the National Drug Service. The scheme was established prior to the war as an integral part of the primary health care program but was suspended during the war. The scheme has now been activated across the country.

Under the scheme, participating health facilities are allowed to recover the full cost of drugs used in treatment of patients. However given the hard economic realities, facilities are allowed to charge up to 50% of cost. The scheme is being administered by the National Drug Service and by facilities that are institutional members of the Christian Health Association. Indications are that scheme works and is reliable, complementary sources of financing health care throughout the country.

## **11.3 Private Sector Financing**

Health financing by the private sector is sourced from concessions, non-governmental organizations, faith-based institutions and privately owned/operated facilities. These sources have traditionally taken up the large slack resulting from the inadequacies of government

financing.

With on-going rehabilitation of plantation rubber, the three foreign-owned concessions engaged in the sub-sector have resumed financing health, although data are difficult to obtain. Logging concessions traditionally spend considerably less on health, therefore the total share in health finance by concessions, with total cessation of iron ore mining activities, remains a low share of the sector's pre-war contributions to health care financing.

Faith-based organizations such as churches and church-related organizations contributed a significant share of the US\$25.4 million health sector financing prior to the war. A major problem with exacting the full cost of their support is that their inputs are in various forms: in cash, in kind and in seconded personnel. However, the significance of their share of support to health care delivery is such that church-supported facilities are commonly operating in areas of the country that are isolated and grossly under served by government and other partners.

As regards the private sector, it is estimated that the average household spends around 3.8% of its estimated monthly income on health (**NDS Cost-Sharing Scheme Study, 2000**). This amount is spent directly to health facilities and local medicine/drug stores as well as in other forms of self-treatment. In the decade prior to the war, Liberians were getting accustomed to providing health safety nets through insurance policies and group hospitalization schemes. Many of these schemes have not been resurrected since the ending of the war mainly because of the difficult economic situation where three-fourths of the population lives in poverty and 80% of the workforce is unemployed.

## **11.4 Constraints and Prospects**

Public sector financing presently amounts to US\$0.50 per capita and this amount is low considering that the minimum required health package is US\$13.65 per person. The amount is also low considering enormous health needs of a nation emerging from a destructive civil conflict.

Additionally, the composition of allocations and manner of disbursements do not allow authorities to plan. Salaries are the major component of the public budget, accounting for nearly half of the budget. Other essential inputs to health delivery such as drugs, equipment, rehabilitation and maintenance of facilities are characteristically treated with lesser importance, at times almost disregarded in the budget process. Further, the disbursements are made in an irregular fashion and often delayed. Salaries, for instance, are presently in arrears by four to five months. Besides, the disbursements of public funds are often done in Liberia dollars, leaving the foreign exchange problems unsolved.

Public finance is bias towards hospital-based facilities. Over 40% of the health component of the

national budget goes to supporting one facility, the John F. Kennedy Medical Center. This skewed allocation is not only at the expense of other hospitals but also to the exclusion of numerous community-based facilities operating in rural communities.

There are prospects that the cost-sharing scheme can incrementally become a major support for health delivery services. However, for this potential to be realized, the entire country must simultaneously be experiencing a common transition from relief to rehabilitation and to development. With regions of the country enjoying relative peace whilst others are still experiencing armed conflict, it is difficult, if not impossible, to require facilities in hostile environments to participate in any aspect of a cost-sharing scheme.

In the private sector, one of the basic problems is that the true cost of assistance is almost never disclosed. Concessions, NGOs and privately owned facilities are most reluctant to disclose even to government the level of assistance they receive. This makes it difficult to establish the true cost of the total health assistance package provided. Further, the Ministry of Health and Social welfare has not developed a capacity of tracking external resource in flows into the sector.

## **11.5 Recommendations**

Health care financing is grossly inadequate. It will require both a change in the quantum of financing as well as the means of financing to ensure that the sector receives the level of support it deserves. Reforms along these lines are required:

- First, a more realistic budgeting is required in the public sector. Government must make health a priority and yearly budgetary allocations must reflect that importance. As party to the Bamako Initiative, Liberia must firmly develop a plan and commit itself to achieving the minimum acceptable health delivery package in phases over a short period of time.
- Consistent with a commitment to truly make health a priority, the Government of Liberia must consider overhauling the fiscal management system to remove health from the cumbersome bureaucratic fiscal process.
- Authorities must consider earmarking certain sources of public revenues for the health sector. Towards this end, consideration should be given to reintroducing the health tax and ensuring that proceeds are made available to the sector.

- The kingpin of this reform process should be the introduction of a decentralized financial management system.
- Sources of health financing must be diversified. Given the overall dismal economic situation, it is not feasible to expect the public sector to absorb the lion share of the health burden; neither is it realistic to pass health bill over to the population.
- New and innovative schemes such as group hospitalization and private insurance should be explored. Such schemes should be thoroughly thought of, making certain that they are relevant to and take into consideration situations in Liberia. Donors and other partners in health delivery should collaborate with the government in developing these schemes.

## **CHAPTER 12: EXTERNAL COOPERATION**

### **12.1 Overview**

Liberia's health sector is historically one of partnership between government, churches, concessions, international agencies and the private practitioners. The sector is donor-driven. It is highly dependant on external assistance. External assistance is channeled through non-government institutions or through UN agencies. Prior to the civil conflict, external assistance was routed through government and non-governmental agencies, with NGOs taking the greater share. During the war and in recent times, it has become customary to direct all external assistance for health through NGOs.

Assistance is obtained from varying sources: multilateral, bilateral and from NGOs. The United Nations system remains a principal source so health assistance. Given its role as facilitator, the

UN agencies employ other institutions as implementers. At the bilateral level, the United States, Netherlands and Sweden have consistently been dependable sources of support to the sector.

The trend in external assistance has fluctuated, overall, depicting a declining trend since 1996. With the fall in the global assistance program to Liberia, assistance to health has been particularly affected, falling dramatically by 65% by 1999. The span of activities covered includes construction, rehabilitation and furnishing of health facilities, provision of drugs and medical supplies, provision of logistics, institutional capacity strengthening, technical assistance to programs and basic management services. Support to primary health care, however, remains a thrust of external assistance. Primary health care claimed an average of 87.5% of all assistance to the health sector in 1999 and 2000. **(UNDP Development Cooperation Report).**

## **12.2 Recent Focus of External Assistance**

The recent focus of external assistance has been within the framework of addressing the massive humanitarian needs of the people occasioned by widespread displacement of the population on account of the war. A large part of the humanitarian problem being addressed is health related. Given the fluidity of the military situation, it has been difficult to exact the quantum of internally displaced persons. The Inter-agency registration data puts the figure at 139, 502 as at June 2002, while the Liberia Refugee Repatriation and Resettlement Commission places the figure at 182, 261 as at July 12, 2002. **(See Appendices 12.1: Estimates of IDPs by International Agencies; and Appendix 12.2: Estimates of IDPs Population by the LRRRC).**

As at July 20, 2002, response to the United Nations Agencies' Consolidated Appeal Programme that was launched to attend the humanitarian needs of Liberia was US\$4, 183,872, while funding outside of the CAP was US\$3,625,156. Resources mobilized through the CAP are being used for emergency relief to IDPs, repatriation of refugees, expanding and strengthening of health care services, and coordination of humanitarian assistance **(See Appendix 12.3: Donors Response to CAP as at 20th July 2002)**, while funds sourced from out side of the CAP are being used for an assortment of purposes **(See Appendix 12.4 Funding Outside of the CAP as at 20<sup>th</sup> July, 2002).**

## **12.3 Donor Support to Health Sector**

External donor assistance has been the major source of funding of the health sector in recent times on account of declining public finances and a preoccupation to persecute the war. External funding sources have been used to support diversified health related activities, including the provision of drugs and medical supplies, immunization, rehabilitation/construction, refurbishing and equipping facilities, population activities, logistics, manpower development, capacity building, and financial and technical support.

Direct external assistance to the sector in 1999 was US\$ 15, 473, 592 as compared to only US\$6,814,001 in 2001. The situation has been less positive since 2001 due largely to the international isolation of Liberia as manifested by United Nations sanctions. **(See Appendix 12.6 Donor Support to the Health Sector from 1997-2001).**

## 12.4 Constraints

It has become increasingly difficult to quantify the full level of external assistance. Assistance comes in various forms. A much larger portion of assistance comes in the form of supplies and in-kind inputs which cannot readily be valued. Further, the inflow of assistance varies from one donor to another. Their inflows are largely influenced by concerns such as the budget cycle of the donor government and not the needs that exist in-country.

Another major constraint to external assistance in Liberia is that they are not coordinated. It is very common for donors to duplicate in program areas at the expense of marginalizing other areas of need.

Lastly, the Ministry of Health, lacks the capacity to track assistance coming to the country. Following seven years of war and a protracted period of poor governance, most of the skilled health personnel have left the Ministry. Those in the country have left the public sector for greener pastures. As a result, the Ministry has limited capacity to keep track of resource inflows to the sector. Ironically, it depends on donors and NGOs for basic operational data.

However, the Ministry of Health and Social Welfare, in collaboration with the World Health Organization, has recently embarked on a program to strengthen Liberia's Health Accounts data management. A training workshop has been conducted to in this direction. This should assist address this critical problem.

## 12.5 Recommendations

- Donors should cooperate with the Government in providing financial information and data required by the Ministry of Health in assessing and analyzing the quantum of resource flows in the sector as well as the impact of such flows.
- Direct assistance should be given the Ministry of Health and Social Welfare in setting up a mechanism for tracking assistance to the country.
- Donors and their implementers should have formal program documents detailing what they want to do in Liberia.
- As much as possible, the Ministry of Health should reduce its involvement in direct implementation of programs. It should pre-occupy itself with policy formulation and macro planning, leaving implementation to other partners including local communities.

**Appendix 3.1:** Percent of Women, Age 15-19 Years, Who Are Mothers Or Pregnant with Their First Child Liberia, 1999/2000

<b>PERCENT WHO ARE</b>			
<b>AGE IN YEARS</b>	<b>MOTHER</b>	<b>PREGNANT WITH FIRST CHILD</b>	<b>PERCENT WHO HAVE BEGUN CHILD BEARING</b>
15	2.4	1.8	10.5
16	10.7	4.8	15.5
17	22.1	5.5	27.6
18	32.2	4.7	36.9
19	47.6	3.8	51.4
<b>F. Residence</b>			
	27.6	6.6	34.2
Rural	17.3	3.4	20.7
Urban			
<b>G. Education</b>			
	35.5	6.1	41.6
No Education	18.2	5.0	23.2
Primary	13.5	5.8	19.3
Secondary			
<b>Total</b>	<b>23.2</b>	<b>5.4</b>	<b>28.6</b>

Source: Demographic and Health Survey DHS, 1999/2000

**Appendix 3.2:** Population by County and Sex, Liberia, 2001

<b>COUNTY</b>	<b>NO. OF PERSONS</b>		
	<b>Both Sexes</b>	<b>Male</b>	<b>Female</b>
Bomi	19,863	9,904	9,959
Bong	293,852	146,521	147,331
Bassa	146,789	73,192	73,596
Cape Mount	35,605	17,754	17,851
Grand Gedeh	146,269	72,933	73,336
Kru	22,932	11,635	11,498
Lofa	352,206	175,618	176,588
Margibi	187,802	93,642	94,160
Maryland	115,744	57,713	58,032
Montserrado	843,862	420,767	423,094
Nimba	489,511	244,081	245,430
Rivercess	26,756	13,341	13,415

Sinoe	65,380	32,600	32,780
<b>LIBERIA</b>	<b>2,746,571</b>	<b>1,369,701</b>	<b>1,377.070</b>

Source: Common Country Assessment Update, 2001/2002

**Appendix 3.3:** Population Distribution by Ethnic Affiliation

ETHNIC GROUP	POPULATION	
	* Number	** Percent
Bassa	384,520	14.0
Gbandi	247,191	9.0
Belle	16,479	0.6
Dey	19,226	0.7
Gio	291,137	10.6
Gola	93,383	3.4
Grebo	211,486	7.7
Kissi	112,609	4.1
Kpelle	406,493	14.8
Krahn	63,171	2.3
Kru	258,178	9.4
Loma	118,103	4.3
Mandingo	43,945	1.6
Mano	200,500	7.3
Mende	54,931	2.0
Vai	153,809	5.6
No Tribal Affiliation	35,705	1.3
Others	35,705	1.3
<b>Total</b>	<b>2,746,571</b>	<b>100</b>

\*Population projection from MPEA/2002

\*\*Liberia Demographic & Health Survey 1999/2000

**Appendix 5.1: Milestone Indicators for Health: 2000-2024**

Parameters	2000	2005	2010	2015	2020	2024
<b>Infant Mortality Rate</b>	134.3/10000	100/1000	60/1000	41/1000	25/1000	15/1000
<b>Under-3 Mortality Rate</b>	259.9/100	170/1000	90/1000	53/1000	28/1000	10/1000
<b>Maternal Mortality Rate</b>	780/100,000	640/100,000	440/100,000	365/100,000	150/1000,00	70/100,000
<b>Life Expectancy at Birth</b>	58 years	60 Years	62 Years	64 Years	66 years	68 years
<b>Population Growth Rate</b>	2.6%	2.4%	2.3%	2.2%	2.1%	2.0%
<b>Total Fertility Rate</b>	6.7%	6.0%	5.0%	4.0%	3.0%	2.5%
<b>Immunization Coverage (Six (6) Childhood Diseases)</b>	59%	70%	80%	90%	95%	100%
<b>Counties with Key Social Welfare Services</b>	70%	75%	80%	85%	90%	100%
<b>GOL Health Expenditures Per Capita</b>	US\$4.79	US\$11.36	US\$28.22	US\$70.21	US\$87.35	US\$140.67
<b>% of Population with Access to safe Drinking Water</b>	46%	61.3%	76.7%	82%	92%	100%
<b>Access to Sanitary Excreta Disposal</b>	30%	50%	70%	80%	90%	100%
<b>Ante/Postnatal Care as % of Total Clinic Visits</b>	2.6%	2.5%	2.5%	2.4%	2.4%	2.4%
<b>Contraceptive Prevalence Rate</b>	5%	10%	15%	20%	25%	30%
<b>Knowledge of STDs/HIV/AIDS Prevention &amp; Control % of Population</b>	30%	60%	80%	100%	100%	100%
<b>Key Health Workers to Population Ratio</b>						
- CHWs	1:1300	1:1300	1:7647	1:5909	1:4814	1:4062
- TTMs	1:171	1:164	1:142	1:131	1:122	1:114
- CMs	1:2189	1:1145	1:775	1:585	1:470	1:393
- PAs	1:6079	1:3745	1:2398	1:1763	1:1394	1:1153
- MDs	1:8620	1:5602	1:4149	1:3294	1:2732	1:2333
- Social Workers	1:29213 1:15757	1:18705 1:9811	1:13756 1:7123	1:10441 1:5591	1:7942 1:4601	1:6060 1:3909
<b>Numbers of New Multi-Sector Initiatives per Annum</b>	N/A	5	7	10	12	14

Source: National Health Policy, 2000

**Appendix 7.1: Public Sector Health Facilities by Counties (2002) Ministry of Health & Social Welfare**

COUNTIES	HOSPITALS		HEALTH CENTERS		CLINICS		TOTAL
	Functional	Non Functional	Functional	Non Functional	Functional	Non Functional	
Bomi	1	1	-	-	6	1	9
Bong	1	1	3	2	7	-	14
Grand Bassa	1	-	-	-	7	3	11
Grand Gedeh	1	-	5	-	14	6	26
Grand Kru	-	1	2	1	9	9	22
Lofa	-	3	-	2	-	48	53
Margibi	1	-	1	-	12	3	17
Maryland	1	-	2	-	6	9	18
Montserrado	2	-	5	-	36	-	43
Nimba	2	-	6	-	32	-	40
Rivercess	-	-	1	-	16	-	17
Sinoe	1	-	4	-	4	23	32
Cape Mount	1	-	-	-	26	-	27
Gbapolu	-	-	-	-	7	-	7
River Gee	-	-	3	-	7	-	10
<b>Total</b>	<b>12</b>	<b>6</b>	<b>32</b>	<b>5</b>	<b>189</b>	<b>102</b>	<b>346</b>

Source: MOH, 2002

**Appendix 7.2: Private Sector Health Facilities by Counties (2002) Ministry of Health & Social Welfare**

COUNTIES	HOSPITALS	HEALTH CENTERS	CLINICS	TOTAL
<b>Bomi</b>	<b>1</b>	<b>-</b>	<b>11</b>	<b>12</b>
<b>Bong</b>	<b>-</b>	<b>-</b>	<b>13</b>	<b>13</b>
Grand Bassa	2	-	19	21
Grand Gedeh	-	-	-	-
Grand Kru	-	-	-	-
Lofa	-	-	-	-

Margibi	1	3	3	7
Maryland	-	1	1	2
Montserrado	5	6	95	106
Nimba	1	-	7	8
Rivercess	-	-	2	2
Sinoe	-	-	-	-
Cape Mount	-	-	12	12
Gbapolu	-	-	4	4
River Gee	-	-	-	-
<b>Total</b>	<b>10</b>	<b>10</b>	<b>167</b>	<b>187</b>

Source: MOH, 2002

Appendix 7.3: Private Health Facilities Dis-aggregated by Ownership (2002)  
Ministry of Health & Social Welfare

COUNTY	CHURCHES	CONCESSIONS	NGOs	INDIVIDUALS	TOTAL
Bomi	1	1	9	-	11
Bong	-	-	10	2	12
Grand Bassa	4	2	14	-	20
Grand Gedeh	-	-	-	-	-
Grand Kru	-	-	-	-	-
Lofa	-	-	-	-	-
Margibi	-	-	-	5	8
Maryland	1	1	-	-	2
Montserrado	23	-	7	76	106
Nimba	5	-	2	2	9
Rivercess	1	1	-	-	2
Sinoe	-	-	-	1	1
Cape Mount	-	-	12	-	12
Gbarpolu	1	-	3	-	4
River Gee	-	-	-	-	-
<b>Total</b>	36	5	57	86	187

Source: MOH, 2002

**Appendix 7.4:** Incidence of STD by County, 2001

COUNTY	STD CASES		PREVALENCE
	NUMBER	PERCENT	
Bomi	106	1.07	0.97
Bong	1327	13.45	26.14
Capemount	24	0.24	1.45
Gbarpolu	54	0.55	1.92
Grand Gedeh	655	6.663	2.83
Lofa	1349	13.66	2.59
Margibi	174	1.75	1.68
Montserrado	5372	54.38	1.56
Nimba	24	0.24	6.23
Rivercess	19	0.19	1.21
Sinoe	775	7.85	2.06
<b>Total</b>	9879	100.00	1.85

**Appendix 7.5:** Disease Surveillance (2001)

DISEASE	CASES REPORTED	AVERAGE/WEEK
Bloody Diarrhea	2,709	65

Cholera	1,062	25
Measles	630	15
Yellow fever	131	-

Source: MOH Annual Report, 2001

**Appendix 7.6: HIV Surveillance/Sentinel Site by Location**

SITE	CITY/TOWN OF LOCATION	COUNTY OF LOCATION
ELWA Hospital TB Annex*	Paynesville	Montserrado
St. Joseph Catholic Hospital	Old Road	
NACP LAB JFK Memorial Hospital* Chest Clinic*	21 <sup>st</sup> & 24 <sup>th</sup> Street, Sinkor	
SDA Cooper Hospital	12 <sup>th</sup> Street, Sinkor	
Medlink Clinic	Randall Street	
Malag Clinic	Mechlin Street	
Mother Pattern Clinic	Gardnersville	
Redemption Hospital	New Kru Town	
Liberia Government Hospital*	Tubmangburg	
CH Rennie Hospital	Kakata	Margibi
Barcolleh's Clinic*		
Firestone Health Services	Harbel	
Phebe Hospital	Suakoko/Gbarnga	Bong
Bong Mines Hospital	Bong Mines	
Ganta United Methodist Hospital	Gumpa City/Ganta	Nimba
GW Harley	Saniquilie	
Yekepa Community Hospital	Yekepa	
St. Peter Claver's Hospital Liberia Government Hospital OTC Hospital		Grand Bassa
LAC Hospital	Buchanan	
Martha Tubman Memorial Hospital	Zwedru	Grand Gedeh
F.J. Grante Hospital	Greenville	Sinoe
J. J. Dossen Hospital	Harper	Maryland
Tellewoyan Hospital*	Voinjama	Lofa
Kolahum Hospital*	Koba City/Kolahum	
Foyah Community Hospital*	Foyah City	

Behwan Clinic	Behwan	Grand Kru
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**Appendix 9.1: Incidence of Liberia's Three Major Causes of Morbidity**

COUNTY	DIAGNOSIS								TOTAL CASES
	MALARIA		ARI		DIARRHEA		OTHER		
	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent	
Bomi	4,920	45.1	1,466	13.4	444	4.1	4,078	37.4	10,908
Bong	17,917	35.3	5,729	11.3	4,972	9.8	22,155	43.6	50,773
Cape mount	465	28.0	228	13.7	128	7.7	838	50.5	1,659
Gbapolu	1,206	42.9	355	12.6	161	5.7	1,085	38.6	2,811
Grand Gedeh	8,467	36.6	3,436	14.9	1,674	7.2	9,561	41.3	23,138
Lofa	21,021	40.4	5,563	10.7	5,829	11.2	19,875	38.2	51,988
Margibi	3,119	30.1	1,589	15.3	706	6.8	4,941	47.7	10,355
Montserrado	124,729	36.2	42,085	12.2	19,958	5.8	157,483	45.7	344,255
Nimba	254	66.0	13	3.4	20	5.2	96	24.9	385
Rivercess	811	51.5	136	8.6	32	2.0	596	37.8	1,575
Sinoe	12,708	33.8	4,795	12.8	3,187	8.5	16,864	44.9	37,554
<b>Total</b>	<b>195,617</b>	<b>36.5</b>	<b>65,095</b>	<b>12.2</b>	<b>37,111</b>	<b>6.9</b>	<b>237,578</b>	<b>44.4</b>	<b>535,401</b>

Source: Out-patient Morbidity Report, 2001 MOH

**Appendix 9.2: Tuberculosis Cases (2001)**

AGE RANGE	MALE	FEMALE	TOTAL
0 - 14	39	29	68
15 - 24	229	233	462
25 - 34	359	285	644
35 - 44	256	164	420
45 - 54	139	81	220
55 - 64	58	41	99
65 -	58	34	92
<b>Total</b>	<b>1138</b>	<b>867</b>	<b>2005</b>

Source: MOH Annual Report, 2001

**Appendix 9.3: HIV Test and percent Positive (1994 - 2000)**

YEAR	NUMBER OF TESTS	PERCENT POSITIVE
1994	2743	4.2
1995	2634	5.5
1996	1856	4.8
1997	4537	7.0
1998	9630	4.6
1999	9463	6.6
2000	1818	7.6
<b>Total</b>	<b>32681</b>	<b>5.7</b>

**Appendix 9.4: Prevalence of HIV/AIDS by Population Sub-groups**

BASES FOR TEST	NUMBER OF TEST	PERCENT TESTED POSITIVE
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Antenatal	228	12.7
Blood donor	24,334	3.1
Visa Applicant	3,300	1.2
In-patient	1,610	24.5
Out-Patient	2,443	17.0
Volunteer	692	23.3
TB Patient	888	11.7
<b>TOTAL</b>	<b>33,495</b>	<b>AVERAGE = 13.36</b>

Source: HIV/AIDS Epidemiological Surveillance

Report, Dec. 1994-2000, NACP

**Appendix 9.5: HIV Prevalence Among Visa-Applicants by Age & Sex**

AGE GROUP	PREVALENCE RATE					
	MALE		FEMALE		TOTAL	
	Prevalence	Number	Prevalence	Number	Prevalence	Number
<15 yrs.	0.0	13	0.0	24	0.0	37
15-19 yrs.	0.3	681	0.2	437	0.2	818
20-29 yrs.	1.5	456	2.5	516	2.1	972
30-39 yrs.	2.1	435	0.8	383	1.5	818
40-49 yrs.	1.5	195	0.8	123	1.3	318
50 yrs & Above	1.2	86	0.0	105	0.5	191
All Ages	1.3	1,566	1.1	1,588	1.2	3,154
15-49 yrs.	1.3	1,480	1.2	1,483	1.2	2,963

Source: HIV/AIDS Epidemiological Surveillance Report, 1994-2000, NACP

**Appendix 9.6: HIV Prevalence Among Volunteers by Age & Sex (1994-2000)**

AGE GROUP	PREVALENCE RATE					
	MALE		FEMALE		TOTAL	
	Percent Positive	Number Tested	Percent Positive	Number Tested	Percent Positive	Number Tested
<15 yrs.	10.00	2	0.0	4	33.3	6
15-19 yrs.	25.0	16	23.3	30	23.9	46
20-29 yrs.	4.3	119	32.9	161	25.0	286
30-39 yrs.	19.5	164	28.8	59	22.0	223
40-49 yrs.	29.8	57	42.9	14	32.4	71
50 yrs & Above	15.4	26	0.0	5	13.0	31
All Ages	19.8	384	30.0	273	24.2	657
15-49 yrs.	20.1	358	30.9	268	24.7	626

Source: HIV/AIDS Epidemiological Surveillance Report 1994-2000, NACP

**Appendix 9.7: HIV Prevalence Among TB-Patients by Age and Sex, 1994-2000**

AGE GROUP	PREVALENCE RATE		
	MALE	FEMALE	TOTAL
		<b>76</b>	

	<b>Percent Positive</b>	<b>Number Tested</b>	<b>Percent Positive</b>	<b>Number Tested</b>	<b>Percent Positive</b>	<b>Number Tested</b>
<15 yrs.	13.3	15	0.0	21	5.6	36
15-19 yrs.	2.4	42	3.1	65	2.8	107
20-29 yrs.	6.9	131	19.1	168	13.7	299
30-39 yrs.	13.6	154	12.2	107	13.0	261
40-49 yrs.	14.8	54	9.7	31	12.9	85
50 yrs & Above	3.7	27	14.3	7	5.9	34
All Ages	9.9	423	12.8	399	11.3	822
15-49 yrs.	10.4	396	12.8	392	11.6	788

Source: HIV/AIDS Epidemiological Surveillance Report, NACP

**Appendix 9.8:** HIV Prevalence Among In-Patient by Age & Sex (1994-200)

AGE GROUP	PREVALENCE RATE					
	MALE		FEMALE		TOTAL	
	Percent Positive	Number Tested	Percent Positive	Number Tested	Percent Positive	Number Tested
<15 yrs.	15.4	39	16.3	43	15.9	82
15-19 yrs.	3.6	28	29.4	51	20.3	79
20-29 yrs.	21.6	181	32.8	256	28.2	437
30-39 yrs.	29.2	295	27.7	242	28.5	537
40-49 yrs.	17.7	175	18.3	93	17.9	268
50 yrs & Above	20.4	54	14.3	21	18.7	75
All Ages	22.5	772	27.3	708	24.8	1,478
15-49 yrs.	22.7	718	27.7	685	25.2	1,403

Source: HIV/AIDS Epidemiological Surveillance Report, NACP

**Appendix 9.9:** HIV Prevalence Among Outpatients By Age and Sex (1994-2000)

AGE GROUP	PREVALENCE RATE					
	MALE		FEMALE		TOTAL	
	Percent Positive	Number Tested	Percent Positive	Number Tested	Percent Positive	Number Tested
<15 yrs.	12.5	8	11.1	18	11.5	26
15-19 yrs.	5.7	35	9.4	107	8.5	142
20-29 yrs.	13.8	333	20.9	473	18.0	806
30-39 yrs.	18.2	495	21.6	319	19.5	814
40-49 yrs.	14.7	245	15.3	98	14.9	343
50 yrs & Above	11.0	82	12.0	25	11.2	107
All Ages	15.4	1,198	19.4	1,040	17.1	2,238
15-49 yrs.	15.7	1,116	19.2	1,015	17.4	2,131

Source: HIV/AIDS Epidemiological Surveillance Report, NACP

**Appendix 9.10:** HIV Prevalence Among Blood Donors By Age and Sex (1994-2000)

AGE GROUP	PREVALENCE RATE					
	MALE		FEMALE		TOTAL	
	Percent Positive	Number Tested	Percent Positive	Number Tested	Percent Positive	Number Tested
<15 yrs.	-	-	-	-	-	-
15-19 yrs.	3.0	400	5.8	348	4.3	6,748
20-29 yrs.	2.6	6,452	5.8	1,948	3.4	8,400
30-39 yrs.	2.9	8,099	3.8	1,617	3.0	9,516
40-49 yrs.	2.3	3,543	4.2	307	2.4	3,850
50 yrs & Above	3.0	572	0.0	33	2.8	605
All Ages	2.7	19,066	4.9	4,053	3.1	23,119
15-49 yrs.	2.6	18,494	5.0	4,020	3.1	22,514

Source: HIV/AIDS Epidemiological Surveillance Report, NACP

**Appendix 9.11:** HIV Prevalence by County of Origin of Those Tested

COUNTY	NUMBER OF TEST CONDUCTED	PERCENT TESTED POSITIVE
Bassa	3,242	4.6
Bomi	843	4.9
Bong	7,775	4.8
Capemount	1,525	5.3
Grand Kru	1,148	4.5
Grand Gedeh	545	4.2
Lofa	5,234	5.3
Margibi	652	5.2
Maryland	1,992	6.2
Montserrado	2,441	5.9
Nimba	2,245	6.2
Rivercess	708	3.8
Sinoe	1,778	5.8

Source: Chronic Disease situation in Liberia, 1994-2000  
Ministry of Health and Social Welfare (MOH)

**Appendix 9.12:** Incidence of Onchocerciasis in Liberia by County

COUNTY	CASES PREVALENCE		
	Number	Percent	Prevalence
Bomi	30	4.37	0.28
Bong	213	31.05	0.42
Cape Mount	0	0.00	0.00
Gbarpolu	0	0.00	0.00
Grand Gedeh	34	4.96	0.15
Lofa	182	26.53	0.35
Margibi	6	0.87	0.06
Montserrado	202	29.75	0.06
Nimba	2	0.00	0.00
Rivercess	2	0.29	0.13
Sinoe	12	1.75	0.05
<b>Total</b>	<b>686</b>		<b>0.13</b>

Source: 2001 Out-patient Morbidity Report, MOH

**Appendix 9.13: Result from NIDS, Round 1 and Round 2, in Liberia, 2001**

COUNTY	ESTIMATED TOTAL POP.		ESTIMATED TOTAL POP. < 5 YRS.		F. POPULATION VACCINATED				OPV COVERAGE	
	Round 1	Round 2	Round 1	Round 2	Less than 5 years		Less than 1 year		Percent	
					Round 1	Round 2	Round 1	Round 2	Round 1	Round 2
Bomi	94,667	94,667	16,094	16,094	20,853	20,802	5,778	5,846	130	129
Bong	518,251	518,251	93,744	93,744	139,116	142,384	36,389	37,639	148	152
Gbarpolu	103,351	103,351	17,564	17,564	22,126	21,713	7,660	3,439	126	135
Grand Bassa	442,427	442,427	81,854	81,854	99,632	104,927	38,844	40,694	122	128
Cape Mount	76,854	76,854	25,092	25,092	24,767	27,096	7,840	7,853	99	108
Grand Gedeh	74,052	74,052	19,798	19,798	19,902	21,157	6,280	7,596	101	107
Grand Kru	86,661	86,661	14,789	14,789	13,893	17,362	4,430	4,214	94	117
Margibi	188,751	188,751	57,153	57,153	68,830	73,387	20,525	20,788	120	128
Maryland	163,271	163,271	36,642	36,642	39,269	43,365	9,476	12,136	107	118
Montserrado	1,347,100	1,347,100	229,007	229,007	217,032	254,539	57,520	73,219	95	111
Nimba	387,868	387,868	87,897	87,897	97,258	106,682	33,044	25,539	111	121
Rivercess	56,704	56,704	16,557	16,557	16,434	17,642	5,770	6,563	99	107
Rivergee	59,585	59,585	10,108	10,108	11,580	12,463	2,192	2,683	115	123
Sinoe	3,746,636	3,746,636	731,311	748,024	816,076	890,747	244,902	260,537	112	122

**Appendix 9.14: Immunization Coverage by Antigen and Category**

ANTIGEN	COVERAGE	
	CARD ONLY (%)	CARD HISTORY (%)
BCG	57.0	79.5
OPV3	42.0	60.0
OPT1	59.5	86.0
OPT3	40.0	55.0
Measles	40.0	54.0
Yellow Fever	26.0	32.0
Vitamin A	18.0	66.0

Source: National EPI Coverage Survey, 2002 (MOH)

**Appendix 10.1: Ministry of Health and Social Welfare Essential Drugs List**

	<b>DRUGS</b>	<b>STRENGTH</b>	<b>DOSE/Form</b>	<b>UNIT</b>	<b>MD/HC</b>	<b>COMMENTS</b>
<b>1</b>	<b>ANAESTHETICS</b>					
<b>1.1</b>	<b>GENERAL ANAESTHETICS AND OXYGEN</b>					
a)	Ketamine	50mg/ml	Injection	Vial 10ml	MD	Under Medical Doctor Supervision
b)	Thiopental	1 gm	Powder for Injection	Vial	MD	Under Medical Doctor Supervision
<b>1.2</b>	<b>LOCAL ANAESTHETICS</b>					
a)	Lidocaine	1%	Injection	Vial 50 ml	HC	Health Facility Without Medical Doctor
b)	Lidocaine (plain)	2%	Injection	Vial 50 ml	HC	Health Facility Without Medical Doctor
c)	Lidocaine with Epinephrine	2%	Injection	Vial	MD	Under Medical Doctor Supervision
d)	Lidocaine, Spinal (with Glucose, Hypertonic.	5% + 7.5%	Injection	Ample 2ml	MD	Under Medical Doctor Supervision
e)	Lidocaine, Dental (with Epinephrine)	2%	Injection Vial	Cartridge 1.8ml	MD	Under Medical Doctor Supervision
<b>2</b>	<b>ANALGESICS, ANTIPIRETTICS, NON-STERIODAL, ANTI-INFLAMMATORY DRUGS AND DRUGS USED TO TREAT GOUT.</b>					
<b>2.1</b>	<b>NON-OPIOIDS.</b>					
a)	Acetylsalicylic acid	300mg	Tablet	1000/pk	HC	
b)	Acetylsalicylic lysine	1800mg	Powder for injection	Vial	HC	
c)	Allopurinol	100mg	Tablet	1000/pk	MD	
d)	Colchine Colchicine	500mg	Tablet	1000/pk	MD	
e)	Ibuprofen	200mg	Tablet	100/pk	MD	
f)	Paracetamol	100mg	Tablet	1000/pk	HC	

g)	Paracetamol	500mg	Tablet	1000/pk	HC	
h)	Paracetamol	125mg/5ml	ELIXIR	60ml/btle	HC	
i)	Probenecid	500mg	Tablet	500/pk	HC	
<b>2.2</b>	<b>OPOID ANALGESIC PENTAZOXINE</b>					
a)	Pentazocine	30mg/ml	Injection	Ampule 1ml	MD	
<b>3</b>	<b>ANTI-ALLERGICS &amp; DRUGS USED IN ANAPHYLAXIS</b>					
a)	Chlorphenamine	4mg	Tablet	1000/pk	HC	
b)	Dexamethasone	4mg/ml	Injection	Ampule 1ml	MD	
c)	Prednisolone	5mg	Tablet	1000/pk	MD	
d)	Hydrocortisone	100mg	Injection	Vial	MD	
e)	Epinephrine	1mg/ml	Injection	Ampule 1ml	HC	
<b>4</b>	<b>PRE-OPERATIVE MEDICATION &amp; SEDATION</b>					
a)	Atropine	1mg/ml	Injection	Ampule 1ml	MD	
b)	Diazepam	5mg/ml	Injection	Ampule 2ml	HC	
<b>5</b>	<b>ANTI-CONVULSANTS</b>					
a)	Diazepam	5mg/ml	Injection	Ampule 2ml	HC	
b)	Phenobarbital	30mg	Tablet	1000/pk	HC	
c)	Phenobarbital	100mg	Tablet	100/pk	MD	
d)	Phenobarbital	100mg/ml	Injection	Ampule 2ml	MD	
<b>6</b>	<b>ANTI-INFECTIVE DRUGS</b>					
<b>6.1</b>	<b>ANTI-TUBERCULOSIS</b>					
a)	Streptomycin	1gm	Powder for injection	Vial	HC	For repeat prescription
b)	Thiazina (H+T)	100mg + 50mg	Tablets	1000/pk	HC	H=INH=Isoniazid.

c)	Thiazina (H+T)	300mg + 150mg	Tablets	1000/pk	HC	T =Thiacetazone
d)	Isoniazid	100mg	Tablets	1000/pk	HC	T =Thiacetazone
e)	Isoniazid	300mg	Tablets	1000/pk	HC	T =Thiacetazone
f)	Pyrazinamide	500mg	Tablets	1000/pk	HC	T =Thiacetazone
g)	Rifampicin	150mg	Tablets	1000/pk	HC	T =Thiacetazone
h)	Rifampicin	300mg	Tablets	100/pk	HC	T =Thiacetazone
i)	Ethambutol	400mg	Tablets	500/pk	HC	
<b>6.2</b>	<b>ANTI-LEPROSY</b>					
a)	Clofazimine	100mg	Tablets	1000/pk	HC	
b)	Dapsone	50mg	Tablets	1000/pk	HC	
c)	Dapsone	100mg	Tablets	1000/pk	HC	
d)	Rifampicin	150mg	Tablets	100/pk	HC	
e)	Rifampicin	300mg	Tablet	100/pk	HC	
<b>6.3</b>	<b>ANTHELMINTICS</b>					
<b>6.3.1</b>	<b>ANTFILARIALS</b>					
a)	Diethylcarbamazine	50mg	Tablet	1000/pk	MD	
b)	Ivermectin		Tablet		HC	See MOH for Detail
<b>6.3.2</b>	<b>ANTISCHISTASOMALS</b>					
a)	Praziquantel	600mg	Tablets	500/pk	MD	
<b>6.3.3</b>	<b>INTESTINAL ANTHELMINTICS</b>					
a)	Mebendazole	100mg	Tablets	1000/pk	HC	
b)	Niclosamide	500mg	Tablets	1000/pk	MD	
<b>6.4</b>	<b>ANTIBACTERIALS</b>					
<b>6.4.1</b>	<b>PENICILLIN</b>					
a)	Amoxicillin	250mg	Tablets	1000/pk	HC	
b)	Amoxicillin	125mg/5ml	Suspension	60ml/btl	HC	
c)	Ampicillin	500mg	Injection	Vial	MD	
d)	Phenoxymethyl Penicillin	250mg	Tablets	1000/pk	HC	
e)	Phenoxymethyl Penicillin	125/5ml	Suspension	60ml/btl	HC	

f)	Procaine Benzyl Penicillin Fortified	4 million iu	Injection	Vial	HC	
g) ii	Benzylpenicillin Procaine Penicillin	1 mil. lu A	Injection A	Vial A	HC	
h)	Benzylpenicillin Benzathine	2.4 million iu	Injection	Vial	HC	
i)	Cloxacillin	250mg	Capsule	1000/pk	MD	
j)	Cloxacillin	500 mg	Injection	Vial	MD	
<b>6.4.2</b>	<b>OTHER ANTIBACTERIALS</b>					
a)	Chloramphenical	250mg	Tablets	1000/pk	MD	
b)	Chloramphenical	125mg/ml	Suspension	60ml/btl	MD	
c)	Chloramphenical	1 gm	Powder Injection	Vial	MD	
d)	Chloramphenical oily Suspension	250mg/ml	Injection	Vial	MD	
e)	Doxycycline	100mg	Tablets	1000/pk	HC	
f)	Erythromycin	250mg	Tablets	100/pk	HC	
g)	Erythromycin	125mg/ml	Suspension	60ml/btl	MD	
h)	Co-trimoxazole	200mg + 40mg	Suspension	100ml/btl	HC	
i)	Co-trimoxazole	100mg + 20mg	Tablet	100/pk	HC	
j)	Co-trimoxazole	400mg + 80mg	Tablet	1000/pk	HC	
k)	Metronisazole	5mg/ml	Injection	Vial 100ml	MD	
l)	Gentamycin	40mg/ml	Injection	Ampule	MD	
m)	Ceftriazone	250mg	Injection	Ampule	MD	
n)	Ciprofloxacin	500mg	Tablet	1000/pk	MD	
o)	Spetinomycin	2gm	Injection	Vial	MD	
p)	Clindamycin	500mg	Tablet	1000/pk	MD	
<b>6.5</b>	<b>ANTIFUNGAL</b>					
a)	Griseofulvin	125mg	Tablets	1000/pk	MD	
b)	Griseofulvin	500mg	Tablets	1000/pk	MD	
c)	Nystain	500,000iu	Tablets	100/pk	HC	
d)	Nystain	100,000iu	Passary	100/pk	HC	

e)	Nystain Suspension	100,000iu	Suspension	30ml/btl	HC	
f)	Clotrimazole		Cream	Tube	MD	
g)	Miconazole		Cream	Tube	MD	
<b>6.6</b>	<b>ANTI-PROTOZOAL</b>					
<b>6.6.1</b>	<b>ANTI-AMOEBIIC AND ANTI-GARDIASIS</b>					
a)	Metronidazole	250mg	Tablets	1000/pk	HC	
b)	Metronidazole	125mg/ml	syrup	60ml/btl	HC	
<b>6.2</b>	<b>ANTI-MALARIAL</b>					
a)	Chloroquine Phosphate	150mg	Tablet	Ampule5m l	HC	
b)	Chloroquine Phosphate	50mg/ml	Syrub	100/pk	HC	
c)	Chloroquine Sulfate	40mg/5ml	Injection	Ampule 2ml	HC	
d)	Quinine Sulfate	300mg	Tablets	100/pk	MD	
e)	Quinine Dihydrochline	300mg/ml	Injection	Ampule 2ml	MD	
f)	Sulfadozine + Pyrimethanine	500 +25mg	Tablets	1000/pk	HC	
<b>7</b>	<b>BLOOD, DRUG AFFECTING</b>					
<b>7.1</b>	<b>ANTI-ANAEMIA</b>					
a)	Ferrous Salt + Ferrous acid	200mg Fe + 0.25mg	Tablet	1000/pk	HC	
b)	Folic acid	5mg	Tablet	1000/pk	HC	
<b>7.2</b>	<b>DRUGS AFFECTING COAGULATION</b>					
a)	Phytomenadione (Vit K1)	1mg/ml	Injection	Ampule 1ml	HC	
<b>8.0</b>	<b>PLASMA SUBSTITUTE</b>					
a)	Heamacel	500ml	Injection	Infusion	MD	
b)	Dextran 70 in sodium chloride	6%	Injection	Infusion	MD	
<b>9.0</b>	<b>CARDIOVASCULAR DRUGS</b>					
<b>9.1</b>	<b>ANTI-ANGINAL</b>					
a)	Nitroglycerine	0.5mg	Tablet	100/pk	MD	

<b>9.2</b>	<b>ANTI-HYPERTENSIVE</b>					
a)	Hydralazine	20mg	Powder for Injection	Ampule	MD	
b)	Hydrochlorthiazide	50mg	Tablet	1000/pk	HC	
c)	Propranolol	40mg	Tablet	1000/pk	MD	
d)	Methyldopa	250mg	Tablet	100/pk	HC	
e)	Reserpine	0.25mg	Tablet	1000/pk	HC	
<b>9.3</b>	<b>CARDIAC GLYCOSIDES</b>					
a)	Digoxin	0.25mg	Tablet	100/pk	MD	
b)	Digoxin	.25mg/ml	Injection	Ampule 2ml	MD	
<b>10.0</b>	<b>DERMATOLOGICAL DRUGS (TROPICAL)</b>					
<b>10.1</b>	<b>ANTI-FUNGAL</b>					
a)	Benzoic +Salicyclic	6%+3%	Ointment	Tube 40g	HC	
b)	Miconazole Nitrate	2%	Cream	Tube 30g	MD	
<b>10.2</b>	<b>ANTI- INFECTIVE</b>					
a)	Gentian Violet	1%	Powder		HC	
<b>10.3</b>	<b>ANTI-INFLAMATORY AND ANTI-PRURITIC CALAMINE</b>	<b>15%</b>	<b>Lotion</b>	<b>500ml</b>	<b>HC</b>	
<b>10.4</b>	<b>SCABICIDES AND PEDICULICIDES</b>					
a)	Benzyl Benzoate	25%	Lotion	1 liter	HC	
<b>11.0</b>	<b>DISINFECTANTS AND ANTISEPTICS</b>					
<b>11.1</b>	<b>ANTISEPTICS</b>					
a)	Chlorhexidine + Cetrimide	1.5%+15%	Solution	5 liter	HC	
b)	Povidone Iodine	10%	Solution	200ml	HC	
c)	Chlorine	1mg	Tablets	1000/pk	HC	
<b>11.2</b>	<b>DISINFECTANT</b>					
a)	Calcium Hypochlorite	70%	Tablet	Granule 500gm	HC	
<b>12.0</b>	<b>DIURETICS</b>					
a)	Furosemide	40mg	Tablet	1000/pk	MD	

b)	Furosemide	10mg/ml	Injection	Ampule 2ml	MD	
<b>13.0</b>	<b>GASTRO-INTESTINAL DRUGS</b>					
<b>13.1</b>	<b>ANTICIDS</b>					
a)	Aluminium Hydroxide	500mg	Tablets	1000/pk	HC	
b)	Aluminium Hydroxide	320mg/5ml	Suspension	500ml	HC	
c)	Cimetidine	200mg	Tablet	100/pk	MD	
d)	Magnesium Trisilicate	500mg	Tablet	100/pk	HC	
<b>13.2</b>	<b>ANTIMETICS</b>					
a)	Metoclopramide	10mg	Tablet	1000/pk	HC	
b)	Metoclopramide	5mg/ml	Injection	Ampule 2ml	MD	
c)	Promethazine	25mg	Tablet	1010/pk	HC	
d)	Promethazine	25mg	Injection	Ampule 2ml	HC	
<b>13.3</b>	<b>ANTIHEMORRHOIDAL</b>					
a)	Anti-Hemorrhoidal Ointment		Ointment	Tube 30gm	HC	
<b>13.4</b>	<b>ANTISPASMODIC</b>					
a)	Atropine	1mg	Tablet	100/pk	MD	
b)	Hysocine Butylbromide	10mg	Tablet	1000/pk	HC	
c)	Hysocine Butylbromide	20mg/ml	Injection	Ampule 1ml	MD	
<b>13.5</b>	<b>DIARRHEA, DRUGS USE</b>					
a)	Oral Rehydration Salt	For 1 liter	Powder	Schet/50	HC	
<b>14.0</b>	<b>HORMONES, CONTRACEPTIVES AND OTHER ENDOCRINES</b>					
<b>14.1</b>	<b>HORMONES</b>					
a)	Dexamethasone	4mg/ml	Injection	Ampule 1ml	MD	
b)	Prednisolone	5mg	Tablet	1000/pk	MD	
c)	Hydrocortisone	100mg	Injection	Vial	MD	

<b>14.2</b>	<b>INSULIN AND OTHER ANTI-DIABETIC AGENT</b>					
a)	Insulin Isophane	40unit/ml	Injection	Vial 10ml	MD	
b)	Tolbutamide	500mg	Tablet	1000/pk	MD	
<b>15.0</b>	<b>Immunologicals</b>					
<b>15.1</b>	<b>Sera, Immunoglobulins</b>					
a)	Tetanus Anti-Toxin, Human	1,500iu	Injection	Ampules	MD	
b)	Anti-Snake Venom (Polyvalent)					
c)	Rabbies Vaccines					
<b>15.2</b>	<b>VACCINES, EPI</b>					
a)	BCG	20 doses	Injection	Vial	HC	
b)	DPT	10 doses	Injection	Vial	HC	
c)	Measles	10 doses	Injection	Vial	HC	
d)	Polio	10 doses	Oral	Vial	HC	
e)	Tetanus	20 doses	Injection	Vial		
<b>15.2.1</b>	<b>OTHER VACCINES</b>					
a)	Yellow Fever					
<b>16.0</b>	<b>OPHTHALMOLOGICALS</b>					
<b>16.1</b>	<b>ANTI-INFECTIVE AGENTS</b>					
a)	Tetracycline	1	Ointment	Tube 5gm	HC	
<b>16.2</b>	<b>LOCAL ANAESTHETICS</b>					
a)	Tetracaine	15	Solution	Ampules	MD	
<b>17.0</b>	<b>OXYTOCICS AND ANTI-OXYTOCICS</b>					
<b>17.1</b>	<b>OXYTOCICS</b>					
a)	Metrylergometrine	1.125mg/0.2 mg/ml	Tablet	100/pk	HC	
b)	Metrylergometrine	0.2mg/ml	Injection	Ampule 1ml	HC	
c)	Oxytocin	10unit/ml	Injection	Ampule 1ml	MD	
<b>17.2</b>	<b>ANTI-OXYTOCICS</b>					
a)	Salbutamol	2mg	Tablet	1000/pk	HC	

b)	Salbutation	0.5mg/ml	Injection	Ampule 2ml	HC	
<b>18.0</b>	<b>PSYCHOTHERAPEUTICS</b>					
<b>18.1</b>	<b>DRUGS USED IN PSYCHOTIC DISORDERS</b>					
a)	Chlorpromazine	25mg	Tablet	1000/pk	MD	
b)	Chlorpromazine	25mg/ml	Injection	Ampule 2ml	MD	
<b>18.2</b>	<b>DRUG USE IN ANXIETY-DEPRESSION</b>					
a)	Imipramine	25mg	Tablet	1000/pk	MD	
b)	Amitriptyline	25mg	Tablet	1000/pk	MD	
c)	Diazepan	5mg	Injection		HC	
d)	Diazepan	5mg	Tablet	100/pk	MD	
<b>19.0</b>	<b>DRUGS ACTING ON RESPIRATORY TRACT</b>					
<b>19.1</b>	<b>ANTI-ASTHMATICS</b>					
a)	Epinerphrine	1mg/ml	Injection	Ampule 1ml	HC	
b)	Aminophylline	100mg	Tablet	1000/pk	HC	
c)	Aminophylline	25mg/ml	Injection	Ampule 10ml	MD	
d)	Salbutamol	2mg	Tablet	1000/pk	HC	
e)	Salbutamol	0.5mg/ml	Injection	Ampule 1ml	MD	
f)	Salbutamol	2mg/ml	Syrup	150ml/btl	HC	
<b>20.0</b>	<b>SOLUTION CORRECTING WATER, ELECTROLYTE AND ACID-BASE DISTURBANCES</b>					
<b>20.1</b>	<b>ORAL</b>					
a)	Oral Rehydration Salt (ORS)	For 1 Liter	Powder	Sachet/50	HC	
<b>20.2</b>	<b>PARENTERAL</b>					
a)	Ringer's Lactate		Infusion	500ml, 1000ml	HC	
b)	Glucose(Dextrose)	5%	Infusion	500ml, 1000ml	MD	
c)	Glucose(Dextrose)	50% sol conc	Injection	Vial 50ml	HC	

d)	Normal Saline	0.9%	Infusion	500ml	MD	
e)	Potassium Chloride	10%	Injection	Ampule 10ml	MD	
f)	Sodium Bicarbonate	8.4%	Injection	Ampule	MD	
<b>21.0</b>	<b>MISCELLANEOUS</b>					
a)	Water for injection	10ml	Injection	Ampule 10ml	MD	
<b>22.0</b>	<b>VITAMINS AND MINERALS</b>					
a)	Ascorbic Acid	250mg	Tablet	1000/pk	HC	
b)	Ergocalciferol	1.25mg	Tablet	100pk	HC	
c)	Pyriodoxine (B6)	25mg	Tablet	100/pk	HC	
d)	Retinol (vit. A)	200,000 iu	Capsule	500/pk	HC	
e)	Multivitamin		Tablet		HC	
<b>23.0</b>	<b>CONTRACEPTIVES</b>					
a)	Levonorgestrel + ethinyl estradiol	0.15mg + 0.03mg	Tablet	28/pk	HC	
b)	Norgestrel + ethinyl estradiol	0.3mg + 0.03mg	Tablet	28/pk	HC	
c)	Levonorgestrel	0.03mg	Tablet	35/pk	HC	
d)	Medroxyprogesterone acetate	150mg	Tablet	Vial 1 ml	HC	
e)	Cooper - T 380A		Intrauterine device	1/pk	HC	
f)	Condom		Sheath	1/pk		

<b>County</b>	<b>Pharmacies</b>	<b>Medicine/Drugs Stores</b>	<b>Total</b>
Montserrado	70	182	252
Bong	1	11	12
Sinoe	0	3	3
Maryland	0	4	4
Rivercess	0	1	1
Nimba	0	12	12
Bomi	0	2	2
Margibi	3	14	17
Lofa	0	3	3
Grand Gedeh	0	5	5
River Gee	0	3	3
<b>Total</b>	<b>74</b>	<b>240</b>	<b>314</b>

Source: Pharmacy Division, Ministry of Health, 2002

COUNTY	CAMP	IDP POPULATION	G. REMARKS
Montserrado	VOA	0	IDPs in both caps moved to wilson and Blamesee. However, there are new arrivals in Zwana Camp following the recent fighting in Bomi and Cape Mount
	Zwana Town	0	
	Ricks	20,970	New IDP caseloads have also been reported in these camps and the figures are expected to change. When they arrive, they are referred to Sergbeh.  The population in Wilson, Blamesee and Jartondo are reduced by the recent shelter verification. New influx of IDPs from Grand Cape Mount and County who fled most recent fighting in those areas.
	Jartondo	9,801	
	Wilson	10,616	
	Blamesee	7,039	
	Sergbeh	26,057	
Grand Cape Mount	Sinje	13,461	No definite trace of IDPs since the attack on Sinje on 20 June. However, there are reports that a few have begun arriving in Zwana Town, some in villages around Sinje and some have already crossed over to Sierra Leone.
Bong	Cari 1&2	10,000	The population moved back to Cari from Gbondoi and surrounding villages. There are also new arrivals from Lofa.
	Totota	28,661	
Margibi	Kakata	4,355	IDPs displaced from Lofa and Bong Counties.

Nimba	Ganta	7,195	IDPs displaced from Gbarnga and its environs. Most of the population have crossed over to Guinea; several have also returned to Gbarnga.
Grand Bassa	Buchanan	1,347	IDPs from Bong County
<b>Totals</b>		<b>139,502</b>	

Source: UN OCHA, June, 2002

**Appendix 12.2:** IDPs Population Estimates by Liberia Refugee Repatriation and Resettlement Commission

COUNTY	FAMILY SIZE	FAMILY HEADS
Bong	46,916	12,825
Grand Bassa	2,425	208
Margibi	14,113	3,131
Montserrado	102,057	25,096
Nimba	16,753	3,985
<b>Total</b>	<b>182,261</b>	<b>45,245</b>

Source: LRRRC, 12 July 2002

NOTE: THERE IS DISAGREEMENT BETWEEN THE HUMANITARIAN AND LRRRC OVER THESE ESTIMATES.

**Appendix 12.3:** Donor Response to CAP as at 20<sup>th</sup> July 2002

DONOR	CHANNEL	PROJECT CODE	SECTOR/ACTIVITY	AMOUNT (US\$)
NORWAY	OCHA	LIB-02/CSS02	Coordination of humanitarian assistance	50,000
UNITED STATES	OCHA	LIB-02	Strengthening Coordination	250,000

UNITED KINGDOM	UNICEF	LIB-02/H01	Emergency relief to meet health needs of IDPs	703,991
UNITED KINGDOM	WHO	LIB-02/H03	Strengthening selected health institutions caring for IDPs	142,930
EUROPEAN COMMISSION	UBHCR	LIB-02/MS02	Repatriation and assistance to refugees	1
OTHER INCOME	UNHCR	LIB-02/MS02	Repatriation and assistance to refugees	39,419
UNHCR	UNHCR	LIB-02/MS02	Repatriation and assistance to refugees	26,626
UNHCR	UNHCR	LIB-02/MS02	Repatriation and assistance to refugees	1,503,905
UNITED STATES	UNHCR	LIB-02/MS02	Repatriation and assistance to refugees	1,230,000
FAO	FAO	LIB-02/A03	Provision of agricultural inputs to IDPs, refugees and host communities	237,000
<b>Total</b>				<b>4,183,872</b>

**Appendix 12.4: Funding Outside of CAP**

<b>DONOR</b>	<b>CHANNEL</b>	<b>DESCRIPTION</b>	<b>VALUE (US\$)</b>
FINLAND	Finnish RC	Multi-Sectoral assistance	215,889
GERMANY	ICRC	For basic medical and nutritional IDP	430,293
SWEDEN	LWF	Coordination of peace building in Liberia through strengthening in community and civic structures	613,787
SWEDEN	MSF	Primary health care	233,481
SWITZERLAND	ACF	Emergency assistance to IDPs from Lofa County	122,754
UNITED STATES	ACF	Therapeutic & supplementary feeding for fefugee children	193,500
EUROPEAN COMMISSION	ACF	Emergency assistance to the recently displaced population affected by the Lofa crisis	124,883
UNITED STATES	IRC	Prevention of sexual and gender based violence	107,356

UNITED KINGDOM	MSF	Reduce morbidity and mortality of the population in Monrovia	600,000
UNITED KINGDOM	BRCS	To meet the cost of the growing caseload of IDPs throughout the southern half of the county	571,429
NETHERLANDS	SCUK	Assistance to IDPs	188,494
EUROPEAN COMMISSION	SCF	Emergency assistance to IDPs in Liberia	107,981
GERMANY	WVI	Provision of NFIs, tools, plastic sheeting, and basic medical supplies for approx 5,000 IDPs	115,309
<b>Total</b>			<b>3,625,156</b>

**Appendix 12.5:** Donor support to the Health Sector

SOURCE	YEAR				
	1997	1998	1999	2000	2001
EU	4,564,000	4,305,495	4,536,953	1,388,271	3,000,000
WHO	1,067,000	1,114,000	1,114,000	1,312,000	1,312,000
UNICEF	4,200,000	3,900,000	3,650,000	3,200,000	2,500,000

USAID	4,736,000	3,000,743	4,458,308	4,880,424	N/A
UNFPA	N/A	391,868	1,212,332	529,284	N/A
ADB	-	-	500.000	-	-
<b>Total</b>	<b>14,567,000.00</b>	<b>12,712,106.00</b>	<b>15,473,592.00</b>	<b>11,311,979.00</b>	<b>6,814,001.00</b>

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