# ACRONYMS

| | |
|---|---|
| ACF | Action Contre de la Faim |
| AIDS | Acquired Immuno Deficiency Sundrome |
| AMI | Aide Medicale Internationale |
| ARI | Acute Respiratory Infections |
| BI | Bamako Initiative |
| CAD | Children Aide Direct |
| CARE | |
| CDC | Communicable Disease Control |
| CDD | Control of Diarrheal Diseases |
| CHW | Community Health Worker |
| Concern | |
| CRS | Catholic Relief Services |
| CWS | Community Water and Sanitation |
| ECOWAS | Economic Community of West African States |
| ECOMOG | Economic Community Peace Monitoring Group |
| EPI | Expanded Programme on ~~EPI~~ Immunization |
| EU | European Union |
| FFS | Fee for Service |
| GOAL Ireland | |
| GOL | Government of Liberia |
| GTZ | German Technical Assistance |
| HACO | Humanitarian Affairs Coordination |
| HSCC | Health Service Coordination Committee |
| IDA | International Dispensary Association |
| IMR | Infant Mortality Rate |
| JFK | John F. Kennedy |
| LHC | Liberia Health Committee |
| MEDAIR | |
| MERCI | Medical Emergency Relief Cooperative International |
| MERLIN | Medical Emergency Relief International |
| MCH | Maternal and Child |

| | |
|---|---|
| **MDM** | **Medicins Du Monde** |
| **MMR** | **Maternal Mortality Rate** |
| **MOH&SW** | **Ministry of Health and Social Welfare** |
| **MPEA** | **Ministry of Planning and Economic Affairs** |
| **MSF** | **Medicins Sans Frontiere** |
| **NACP** | **National AIDS Control Program** |
| **NDS** | **National Drug Service** |
| **NPFL** | **National Patriotic Front of Liberia** |
| **NPRSG** | **National Patriotic Reconstruction Assembly Government** |
| **OXFAM** | |
| **RDF** | **Revolving Drug Fund** |
| **SCF-UK** | **Save the Children Fund/UK** |
| **STD** | **Sexually Transmitted Diseases** |
| **TBA** | **Traditional Birth Attendant** |
| **TMT** | **Top Management Team** |
| **TNIMA** | **Tubman National Institute of Medical Arts** |
| **UNICEF** | **United Nations Children Educational Fund** |
| **UNSCOL** | **United Nations Special Coordinator for Liberia** |
| **WHO** | **World Health Organization** |

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Defining Health Sector Policy and Guidelines in Post Conflict Liberia

# COMPLEX EMERGENCY: THE LIBERIAN EXPERIENCE
# A CASE STUDY OF LIBERIA'S HEALTH SECTOR

## 1 0 INTRODUCTION

## 1.1 JUSTIFICATION

The justification for writing this paper is to document the experiences of Liberia's health sector during the seven year period of a complex civil war These experiences may be useful to others who may experience similar situations.

## 1.2 METHODOLOGY

Two groups have been constituted ~~under the guidance~~ of two international consultants to carry out the case study as follows:

### 1.2.1 Working Group

This consists of technicians from the Ministries of Health, Planning and Economic Affairs, Internal Affairs, the National Referral Hospital, the private sector and the World health Organization This group meets weekly to compile information, review documents, share experiences, and interview individuals.

### 1.2 2 Steering Committee

This consists of members of the working group, representatives of UN agencies, government ministries and NGOs, county health officers, community members, and religious leaders. The work of the working group is reviewed and or revised by the Steering Committee which meets once a month.

## 1 3 BUDGET

A toal amount of twenty thousand United States Dollars have been appropriated by EHA/HQ as extra budgetary funds to conduct the study

## 1.4 STRUCTURE OF THE STUDY

The study looks at the historical background and possible causes of the conflict; the pre-conflict health system, the conflict situation and its impact on the health system (1990-1997); the post conflict situation (1997-1998) with particular reference to the National Plan of Action for post conflict rehabilitation and reconstruction of the health sector, and the identification of critical key issues affecting the smooth transition to development. One of the key issues will be selected for an in-depth study. Some recommendations have been advanced on issues such as linking relief to rehabilitation and development during the conflict period and to use the post conflict period not only to restore the health system but also as an opportunity to correct the errors of the past in the health system.

# 2.0 CONTEXT FOR THE STUDY

## 2.1 GEOGRAPHY

Liberia is situated on the West Coast of Africa. It is bounded on the West by Sierra Leone, on the East by Ivory Coast, on the North by Guinea and on the South by the Atlantic Ocean. There are two seasons, each lasts for six months.

The total population of Liberia according to the 1984 census was 2,101,828. The projected population for 1997 is 2,936,481 including refugees (750,000). The population is marked by a relatively large proportion of very young people. An estimated 54% of the population is below 20 years of age. Children ages 0-14 comprise 43.1%, however 0-9 age group represents 32% of the population. There are 13 political subdivisions or counties grouped into 4 regions (Southwestern, North-central, South-central and Southeastern)

## 2.2 HISTORICAL BACKGROUND AND CAUSES

Although Liberia's civil war was triggered by a revolt against a repressive military regime, its root causes go deeper into the history of the country's development as a nation.

Since independence in 1847, there has been a lack of development of a genuine democratic form of governance, failure to integrate the different ethnic groups and conspicuous imbalances in the distribution of wealth. Consequently, rural-urban inequities existed in every sphere of Liberian life Such an uneven distribution of wealth was reflected in poor educational facilities and health services for the majority of the population. The lack of decentralization may have contributed to the conflict.

Largely, because of the poor governance framework, Liberia's past governments failed to harness effectively the country's rich natural and human resources for promoting broad-based sustainable development. In the 1970s, the socio-economic conditions deteriorated greatly owing to external and internal economic factors. The government's failure to address effectively the deteriorating social conditions coupled with latent unrest led to increased political tensions and the military coup in 1980.

However, the military regime that came to power in 1980 failed even more glaringly to address the underlying social tensions and adhere to good governance principles. The impact of military rule on the economy was also devastating.

Hence, although Liberia's seven-year civil war was triggered by the repressive rule of the military in the 1980s, its root causes were the country's prolonged period of social injustice, ethnic rivalry, bad governance and long-term economic and social decline. In turn, the war accelerated this downward trend and aggravated the fault lines in the society

## 2.3 Pre-Conflict Health System

### 2 3.1 Health Facilities

In 1988, 30 hospitals, 130 health center, and 330 health posts/clinics were operating in both the governmental and non-governmental sectors of the system. Of these, 18 hospitals and 249 health centers/posts/clinics were listed as public sector facilities, while the rest were shared among the various non-governmental interests. (1988, Pragma). Church-sponsored facilities were the front runners in the non-governmental sector.

### 2 3.2 Geographic Distribution of Health Facilities

Most of the nation's health facilities are located in Montserrado County and the least in Rivercess. For example, Montserrado County alone, in 1989, contained around 27 percent of the total national stock of hospitals and one-seventh of all health centers, while none existed in Rivercess County.

### 2.3.3 Accessibility and Utilization

Health care services were not available to the majority of the population. Reasons for this are wide-ranging: road, rains, transport and cultural traditions. Since only 35% of the population had access to medical services, the implications are that over half of the population, particularly those in rural areas have no access to modern health care.

Health facilities generally did not operate at full capacity. Two thirds of all hospitals beds, including the JFK Memorial and Maternity Hospitals, had bed occupancy rates of 53% or less in 1998. The average number of daily visits among 249 health centers and posts was 7.3 persons, with only Margibi and Bong Counties exceeding 20 visits per day. Given the cost of personnel assigned to these facilities, utilization was highly inefficient (1988, Pragma). No information exists on the pattern of utilization of private-for-profit practices.

Liberia's health care delivery system was fundamentally weak in three respects: a) it favored fixed facilities although these facilities were under-utilized, b) it was curative services bias although most of the major causes of morbidity are preventable; and c) it was urban biased although most of the population lived in rural communities where the bulk of the diseases originate

### 2.3.4 **Human Resources for Health**

Liberia's health care delivery system boasted of a combined professional and trained medical personnel of 5,056, 2782 (55%) of whom were trained traditional midwives. There were 237 (4 7%) Physicians, 656 (13%), and professional nurses and midwives, 1,381 (27.3%) other supporting personnel. (1988, Pragma).

Using Pragma's 1988 health assessment data for 15 government hospitals, Montserrado County ranked number one in terms of staff/facility ratio (10.4), followed by Bong (5 2). There was mal-distribution of health personnel in the system. The distribution favored urban areas. It is estimated that 75% of Liberia's physicians and almost 50% of its professional nurses were in Monrovia.

### 2.3.5 **Health Manpower Training Institutions**

There were seven (7) health manpower training institutions in Liberia prior to the 1990 civil war. These institutions included: A. M. Dogliotti College of Medicine, Cuttington University College of Nursing, Tubman National Institute of Medical Arts (TNIMA), Winfred J. Harley School of Nursing, Curran Lutheran Hospital School of Nursing, the Southeastern Regional Midwife Training School and the Phebe Hospital School of Nursing These institutions were the primary sources of trained health personnel in the health sector.

### 2.3.7 **Drugs and Medical Supplies**

There were three (3) major sources of drugs supply in the country. The National Drug Service (NDS) and the Christian Health Association of Liberia (CHAL) were the largest suppliers They supplied in wholesale and bulk quantities at low and affordable prices.

In addition to these two sources, there were concessions and private sector commercial suppliers comprising of importers, distributors, pharmacies, medicine stores and "black-baggers/street sellers". There are no statistics on the number and configuration of this sub-sector.

### 2.3.8 **Water and Sanitation**

Water and Sanitation are correlated to health. At least 80% of diseases occurring in the world are water borne. (1983, Agarwal et all). Poor environmental sanitation accounted for a large proportion of illness in Liberia.

Pipe borne water was limited to Montserrado and the county headquarters to the exclusion of the more rural areas. However, the Ministry of Rural Development estimates that in 1989 support from various donors and the GOL in 12 major projects produced an output of 1,800 drilled and dug wells. Also constructed were 600 ventilated pit latrines, and 193 spring boxes. Additionally, in the same year, CHAL had completed 62 wells and 225 latrines.

### 2.3.9 **Health Care Financing**

#### 2.3.9.1GOL Funding

Government of Liberia (GOL) provided budgetary support to the health sector through Ministry of Health and the JFK. In 1988, GOL budgetary contribution to the total annual investment in health was $18.8 million. Of this, close to 70% went towards personnel services alone, a familiar pattern recorded since 1997. JFK alone took the lion share of public health resource, usually over 30% of GOL budget.

#### 2 3.9.2 **Fee-For-Service (FFF)**

Fee-For-Service schemes of public and private health facilities allowed patients to pay for subsidized medical consultation services The primary purpose was to recover as much as possible the non-salary recurrent cost of each service. Community FFS also provided village/community health workers fees for their services.

#### 2.3.93 Revolving Drug Fund (RD)

The RDF systems were schemes which allowed health facilities to recover partial or full cost used in the treatment of patients. Government instituted a RDF scheme when it became difficult to provide drugs to the system. This scheme introduced a cost recovery program in phases that would have, over a time, lead to full cost recovery. This scheme was administered by the National Drug Service (NDS).

#### 2.3.9.4 External Financial Assistance

Many external sources cooperated with GOL in the health sector. The United Nations Organizations and foreign governments supported diverse health programs/projects in Liberia. The span of such support included construction and equipping of health facilities, financial an technical support to MOH planned programs, extension of primary health care (PHC) services, population activities, manpower development, disease prevention and control, among others. In 1988, direct external contribution to total investment in health care amounted to $8.2 m or 19.4% of total health care cost of the year

## 2.4 HEALTH STATUS

The total population of Liberia, according to the 1984 census was 2,101,929. This was based on a birth rate of 48/1000, a death rate of 15/1000 and a resulting growth rate of 3.3% per annum.

### 2 4.1 Fertility

A large proportion of female population (46%) was of reproductive age (14-49). Liberia's fertility rate was 6.7 children (LDHS 1986). This rate was one of the highest in Africa. Contraceptive prevalence rate was low, estimated at below 5% with wide variation between urban and rural areas. (Over 50% of Liberian women marry by age 18) (LDHS, 1986).

### 2.4.2 Morbidity

The three leading causes of clinic attendance were malaria, diarrhea and acute respiratory infections (ARI). Malaria along accounted for over 30% of all out-patient morbidity.

### 2.4.3 Mortality

Liberia's crude death rate was historically high. The average crude death rate between 1982-1986 was 13.7/1000 population per annum.

#### 2.4.3.1 Infant and Below Five Mortality

In 1986, infant mortality was 144/1000 live births, child mortality 89/1000 live births, and under five mortality 220/1000 live births (LDHS, 1986).

#### 2.4.3.2 Maternal Mortality

The average Liberian woman during her reproductive life span can bear up to 6.7 children with great risks to her health. Pregnant women in rural areas still lived in extreme vulnerability as the health facilities were not well staffed or equipped to address obstetrics emergencies. Maternal mortality between 1980-1986 average was 2.6/1000 births.

### 2.4.4 Nutrition

Liberia's only national nutritional assessment, pre war, was undertaken in 1979. At that time, acute malnutrition was not identified as a major problem, but rather chronic malnutrition. The estimates provided at that time was 1% for acute malnutrition and 27% for chronic malnutrition.

## 2 5 PRIORITY PROGRAMS

Priority programs focused on those which would have the greatest impact in improving the high infant and maternal mortality rates and ensuring an adequate nutritional status for children, pregnant and lactating mothers.

### 2.5.1 Disease Prevention and Control

There were several programs within this division and these included:

1. Malarial control
2. Diarrhea and Acute Respiratory Infection Control
3. Tuberculosis and Leprosy Control
4. Rabies Control

### 2.5.2 Division of Family Health

This Division consisted of programs geared towards improving the health of mothers and infants. Programs in this division were

1. Maternal and Child Health
2. Family Planning
3 Nutrition

### 2.5.3 Expanded Program for Immunization

The activities of this program was geared towards controlling the spread of vaccine preventable childhood communicable diseases such as measles, pertussis, etc.

### 2.5 4 HIV/AIDS/STDs

The National AIDS and Sexually Transmitted Diseases (STDs) Program was established in 1986 with the goal of curtailing the spread of HIV/AIDS and formulating guidelines for the management of STDs such as gonorrhea, , clamydia, herpes, etc

### 2.5 5 Division of Environmental Health

The emphasis of this division was to provide technical support mainly to rural communities to ensure safe water supply (clean domestic water) and insuring proper sanitation for both urban and rural areas.

## 2.6 HEALTH CARE ADMINISTRATION

The administration of health in Liberia was looked at from three levels for the provision of health services. These were: the central Ministry of Health, the County Health Office and the Community.

### 2.6.1 The Central Ministry Level

This was the technical, supervisory and policy making level for health care delivery throughout the country.

### 2.6.2 The County Level

They provided service and monitor service provision of the health care delivery system at the community level.

### 2.6.3 The Community Level

The community participated fully as partners in health care delivery and were not just recipients. They participated in the planning and the functioning of the health facilities

## 3.0 CONFLICT SITUATION

## 3 1 OVERVIEW OF THE CONFLICT

### 3.1 1 Course, Nature and Scope

Liberia's seven-year civil war started in December 1989, as a popular uprising against a corrupt and repressive military regime. Within a few months of its initial launching, the uprising quickly spread to most parts of the country. However, the subsequent factionalization of the conflict (10 warring factions) contributed significantly to its prolongation, thereby precipitating a serious humanitarian crisis.

The protracted civil war has resulted in considerable disruption of productive economic and commercial activities and loss of livelihood for whole communities, wide spread destruction or decay of public and private properties as well as physical and social infrastructure. It also caused massive population movements and enormous human suffering One half of Liberia's pre-war population of about 2.5 million was displaced either internally or externally and over 150,000 people killed. The conflict weakened seriously the country's economic and social policy making organs and governance institutions.

Thousands of children were killed or orphaned and a high number of youths were drafted as combatants by all sides to the conflict. Owing to lack of attention to environmental protection issues and uncontrolled exploitation of the country's natural resources, environmental degradation has also worsened.

### 3.1 2 EXTERNAL INTEREST

The external political interest in the Liberian civil war involved Liberia's immediate neighbors as well as the sub-regional community. Neighboring countries were generally apprehensive about the spillage of the fighting into their territories. However, the Ivorian borders with Liberia were opened during the entire seven-years of the conflict inspite of ECOWAS sanction, allowing the free movement of civilians, fighting forces and arms through its territory. The Economic Community of West African States (ECOWAS), a sub-regional body became involved in the crisis to prevent the carnage and to also prevent the destabilization of the sub-region. A sub-regional Peace Keeping Force (ECOMOG) was sent to Liberia to restore peace. The peace keepers were opposed by the NPFL, one of the main warring parties. They were later drawn into the fighting.

### 3.1.3 COMPLEXITY, COPING MECHANISM AND PEACE

During the early days of the civil war, the government controlled about 95% of the country, hence, law and order prevailed in most parts of the country with the exception of the area where the fighting raged. However, as the fighting spread to larger areas and gained popular support, there was total lack of confidence in the government's ability to provide security for its citizens. Subsequently the formation of numerous warring factions led to a total breakdown of law and order and absolute anarchy. (The government had no control over its security forces and the warring factions exercised no supervision over what was done by their fighters). Due to the presence of numerous warring factions occupying various parts of the country, health care delivery was adversely affected.

The general populace coped with the civil war in different ways. In some instances, whole communities voluntarily moved either towards or away from the advancing fighting. Throughout the country people had to modify their diet, eating whatever was available to prevent starvation. In other instances, youths joined warring factions for varying reasons; i.e. to provide protection for their families and communities, to provide food or for their own enrichment by looting. Families took in strangers who were in need including abandoned children. People turned to religion when all seemed to be lost.

The road to securing peace in Liberia was long and arduous because of the factionalization of the conflict. Numerous peace accords were brokered, and violated but they formed the

basis for subsequent accords. The United Nations through its observer mission in Liberia monitored and encouraged the warring parties to respect the term of the peace accords A total of six accords were signed and numerous other conferences were held without reaching agreements. Conferences were held from within the West African Sub-region to as far away as Europe (Geneva) over a period of six years to finally lead Liberia to an election on July 19, 1997.

Box 1: HISTORICAL OVERVIEW OF LIBERIA 1847 - 1997

| Year | Activity |
|---|---|
| 1847 | Declaration of Independence, beginning of Americo-Liberian Rule<br>Multiparty Democracy |
| 1884 | One Party State created under the True Wig Party (TWP) |
| 1979 | April 14, demonstration in Monrovia against increase in price of staple food (rice) |
| 1980 | Nimba Raid |
| 1985 | Rigged Multiparty Elections and the failed Gen. Thomas Quiwonkpa Invasion |
| 1989 | December 24, National Patriotic Front of Liberia (FPFL) incursion led by Major Charles G. Taylor. |
| 1990 | Split within NPFL with Gen. Prince Y. Johnson forming the Independent Patriotic Front of Liberia (INPFL)<br><br>Seating of Interim Government of National Unity (IGNU) led by Dr. Amos Sawyer |
| 1991-1995 | Formation of National Patriotic Reconstruction Assembly Government (NPRAG) by Leader Charles Taylor in Gbarnga<br><br>Formation of numerous warring factions |
| 1993-1997 | Formation of several Interim Government with factional inclusion |
| 1997 | July 19 Multiparty Election |
| 1997 | August 2 Inauguration of elected Government |
| 1998 | Relative peace with Human Rights Abuses |

## 3.2 IMPACT ON THE HEALTH CARE DELIVERY SYSTEM

As in most civil conflicts, this has resulted in a considerable worsening of the country's social problems, which were disproportionately borne by innocent women and children. An increase was registered in sexually transmitted diseases (STD)/HIV/AIDS, teenage pregnancies, epidemics, substance abuse, school dropout and crime rates.

The destruction of health care and social welfare facilities including the displacement, and flight of trained health personnel and inaccessibility are some of the immediate and direct causes of the very poor health status of the population of Liberia during the war years This was evidenced by the very high mortality rates in accessible areas, particularly from malaria (21.5%) and measles (9 1%). See appendix 1)

### 3.2.1 Health Facilities

During the civil crisis, the number of functioning public health facilities in the thirteen counties of Liberia were reduced by more than 60%. Only 4 hospitals, 8 health centers and 56 clinics/health posts remained opened. (See appendix 2)

### 3.2.2 Geographic Distribution

Health facilities were concentrated mainly in Montserrado (Monrovia) thus maintaining the urban bias.

### 3.2 3 Accessibility

Two main factors contributed in accessing health care. These were insecurity in many parts of the country and physical inaccessibility (bad road condition, broken bridges and inadequate transport).

### 3.2.4 Human Resources

The total public sector health personnel in 1997 amount to 1,806. (See appendix 3). At that stage of health care delivery, the number of personnel in the health system was inadequate.

### 3.2.5 Health Manpower Training Institutions

There were only one medical school and three para-medical institutions functional during the civil war. They operated under extremely difficult circumstances and graduated about a third of what would have been their normal output.

### 3.2 6 **Drugs and Medical Supplies**

In the war years, the National Drugs Service (NDS) could not play its role of procurement and distribution of drugs for the country because of lack of resources. Hence, with the consent of the government, the NDS became an NGO supported mainly by MSF/Belgium, UNICEF and the European Union. Other NGOs, such as CHAL, MSF, etc, brought in drugs and medical supplies in support of their own operations.

### 3.2 7 **Water and Sanitation**

This sector, of water and sanitation, faced problems of access to an improved quantity and and quality of water to the population For example, in 1995, the European Union and Lifewater International inspected wells in Monrovia and its environs. Out of the 142 inspected hand pumps, 30% were out of service or required some form of repair or maintenance; 37% of the wells either ran out of water or had noticeably reduced yields during the dry season (1995, EU Well Inspection Report). Consequently, about 79% of urban dwellers and only 13% of rural dwellers had access to safe drinking water.

It was also found that most wells had well head sanitation problems including direct infiltration of storm water, growth of algae, etc The situation was not good in the sanitation sub-sector Only 30% of the population had adequate sanitation between 1990-1996. Within this global frame work, 56% of urban dwellers had access, while only 4% of rural dwellers had access to adequate sanitation (1997) the State of the World's Children).

There is a bias towards urban areas in the access of the population to safe water supplies and sanitation

### 3.2.8 **Personnel**

The civil war which was characterized by massive destruction and frequent massacres resulted into deaths, displacement and flight of trained health personnel. As a demonstration, the available statistics for the prewar era shows that the combined health work force in the private and public sectors was 5,380 of which 260 were physicians, 668 professionals nurses, 401 midwives and 254 physician assistants.

Existing post war data shows that only 32 of the 82 prewar physicians (39%( who worked in the public sector are still working in the country. A review of the current data also shows

a marked decrease in the number of other paramedical personnel, with 185 professional nurses, 166 midwives, and 120 physician Assistants (see appendix 3)

There existed, prior to the civil conflict. one (1) medical school and six (6) paramedical training institutions. At present, only the medical school and one (3) paramedical institution are operational However both institutions operate in a very poor condition and well below normal operating capacities There is also an acute shortage of teaching staff and materials at these institutions.

## 3.3 HEALTH AND HEALTH RELATED PROBLEMS

There were numerous health problems along the course of the crisis with some of these problems producing a cascade effect. Destruction of the national water supply led to the absence of safe drinking water thus the consequent increase in diarrheal and other water borne diseases. A breakdown in the activities of the expanded program of immunization (EPI) led to epidemics of vaccines preventable childhood communicable diseases such as measles, whooping cough, neonatal tetanus, etc. Overcrowding of displaced persons with the attendant poor sanitation also promogated the spread of diseases. There were repeated epidemics of cholera/diarrheal diseases, whooping cough, and hemorrhagic fevers. In 1997, there were 797 cases of cholera reported by two institutions (J.F Kennedy Hjosital and Swederelief) with no deaths recorded. Other disease conditions and social problems that were prominent included malnutrition, sexually transmitted diseases/HIV/AIDS, septic abortions, rapes, teenage pregnancy and substance abuse

### 3.3.1 Health Problems

#### 3.3.1.1 Skin Diseases

There was a sharp increase in the number of cases of skin diseases, particularly scabies, due to poor hygiene stemming from inadequate water supply and the absence of soap. Skin diseases accounted for 4% of out-patient attendance.

#### 3.3.1 2 Malnutrition

During the crisis, malnutrition became a national health problem On account of effects of the war on food security, thee was a prevalence rate of acute and severe under-five malnutrition in most parts of the country of 20% and 5% respectively. The Situational Analysis of Women and Children in Liberia (1995, UNICEF/Liberia) reported acute

prevalence rates of 51% in Grand Gedeh, 39^ in Montserrado and 33% in Lofa between 1990 - 1993 (Se appendix 4).

In October 1996, a Nutritional Assessment Report of Tubmanburg, Bomi County, from MSF revealed a global malnutrition prevalence rate of 38% and a severe malnutrition of 3%. During the period studied, thee was a total of 4,160 deaths; the main cause of death was malnutrition (October 1996, MSF).

#### 3.3.1.3 Measles

As a result of the war, there was a breakdown in EPI activities resulting in the outbreaks of vaccine preventable diseases, particularly measles in many parts of the country. In 1996 1,938 cases of measles were reported by facilities in accessible areas.

#### 3.3.1.4 Diarrheal Diseases/Cholera

Due to inadequate safe drinking water and poor environmental sanitation, there was an increase in the number of cases of diarrheal diseases Several epidemics of cholera occurred in various parts of the country, particularly Monrovia. In 1997, there were 797 cases of cholera reported by cholera units in Monrovia with no deaths amongst the victims. However, prior to 1997, case fatality rates were as high as 25% in Cape Mount County due to the inexperience of health workers in the management of cholera patients.

#### 3.3 1 5 Hemorrhagic Fevers

The first recorded outbreak of yellow fever in Liberia occurred in November 1995 in Grand Bassa County. The recognition of the outbreak was delayed because of the inexperience of health workers. Over 300 cases were recorded with 49 deaths Over 1 million persons were vaccinated against the disease. Another outbreak occurred in July 1997 in Lofa county where all three of the victims died. Fifty-three thousand (53,000) of the 100,000 population in Lofa were vaccinated.

A confirmed case of Ebola fever was reported from Pleebo, Maryland County on the border with the Ivory Coast in November 1995. Lassa virus activity had been recorded in all part of the country, however, there are three (3) endemo-epidemic foci, Lofa, Bong and Nimba Counties. Epidemics of lassa fever occurred in Bong and Nimba in 1992 with more than 25 deaths recorded.