
LIBERIA

# NATIONAL CANCER POLICY

## 2018 - 2022

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## List of Acronyms

| | |
|---|---|
| AC3 | African Caribbean Cancer Consortium |
| AFCRN | African Cancer Registry Network |
| ASCUS | Atypical Squamous Cells of Undetermined Significance |
| CA | Cancer |
| CBE | Clinical Breast Examination |
| CBOs | Community Based Organization |
| CHAs | Community Health Assistants |
| CHWs | Community Health Workers |
| EBV | Epstein-Barr Virus |
| EBL | Endemic Burkitt Lymphoma |
| FBO | Faith Based Organization |
| FNA | Fine Needle Aspiration |
| HBV | Hepatitis B Virus |
| HGSIL | High-Grade Squamous Intraepithelial Lesion |
| HMIS | Health Management Information System |
| HMER | Health Information Systems Monitoring, Evaluation, and Research |
| HPV | Human Papilloma Virus |
| IARC | International Agency for Research in Cancer |
| JFD | Jackson F. Doe Hospital |
| JFKMC | John F. Kennedy Medical Center |
| KS | Kaposi's Sarcoma |
| LCPS | Liberians College of Physicians and Surgeons |
| LCS | Liberia Cancer Society |
| LEEP | Loop Electrosurgical Excisional Procedure |
| LINCAR | Liberia National Cancer Registry |
| LMICs | Low and Middle-Income Countries |
| MDGs | Millennium Development Goals |
| NCCC | National Cancer Control Committee |
| NCCS | National Cancer Control Strategy |
| NCDs | Non-Communicable Diseases |
| NGOs | Non-Governmental Organizations |
| NHL | Non-Hodgkin Lymphoma |
| PHC | Primary Health Care |
| PSA | Prostate-Specific Antigen |
| SDGs | Sustainable Development Goals |
| SSA | Sub-Saharan Africa |
| TWG | Technical Working Group |
| VIA | Visual Inspection with Acetic Acid |
| WHO | World Health Organization |

## Foreword

According WHO data, Non-Communicable Diseases (NCDs) accounted for 71% of the 56.9 million deaths in 2016 globally. The leading causes of NCD deaths were cardiovascular diseases (44% of all NCD deaths), followed by cancers (22%), Chronic Obstructive Pulmonary Disease (9%), and Diabetes (4%).[1] The burden of these diseases is rising disproportionately among lower income countries, including Liberia.

NCDs have not been the focus of the Health System in Liberia, despite their increasing trends. With considerable progress in the national response to infectious diseases, the Ministry of Health is now focusing on the prevention and control of NCDs, particularly cancers.

In Liberia, cancers are among the major causes of death, together with infectious diseases and cardiovascular diseases. Although the exact burden of cancer in Liberia is unknown, hospital records indicate increasing trends that should be addressed as a major public health problem. In most developing countries, including Liberia, the leading cancers in women are breast cancer and cervical cancer; while in men, prostate and esophageal cancers are most common.

Modifiable behaviors, such as tobacco use, physical inactivity, unhealthy diet, and the harmful use of alcohol, all increase the risk of NCDs. Risk factors to cancers also include infectious agents such as human papilloma virus, Hepatitis B and C viruses, Human Immunodeficiency Virus (HIV), *Helicobacter pylori*, and parasitic infestations such as schistosomiasis, all of which are common in Liberia. These risk factors are preventable through public health approaches.

By adopting culturally appropriate strategies and combining our shared commitment to reduce the incidence of cancers, I have no doubt that our efforts will protect our residents from cancers and improve the quality of life of those who develop cancers in Liberia. This Cancer Policy aims to build strong cancer prevention and control capacities through investments in raising awareness, human resources, infrastructure, surveillance system, and research on cancers to scale up and improve effective cancer screening, early detection, diagnosis, treatment and care services in the country.

To achieve our cancer prevention and control goals, it is imperative that we work together in a multi-sectoral and multi-disciplinary approach. I therefore wish to thank the other government ministries and agencies, international development partners, donors, and our local civil society and private sector that have been instrumental in developing this policy, and I encourage other sectors of our society and Liberians at large to join us in this noble initiative to save lives.

Hon. Wilhelmina S. Jallah

**MINISTER**

[1] https://www.who.int/gho/ncd/mortality_morbidity/en/

# Acknowledgement

The process leading to the finalization of this National Cancer policy and strategic plan started in 2016 and went through several processes. The eventual finalization would not have been possible without the concerted efforts of multiple stakeholders including donors, health partners, units and departments within the Ministry of Health.

We are grateful to the then Minister of Health, Dr. Bernice T. Dahn, whose leadership, support and interest in cancer provided an enabling environment that sustained the discourse and completion of this valuable document. Similarly, we are grateful to the rest of the administrative echelon of the Ministry Of Health for the support provided during the process of development of this policy. Special gratitude is extended to the Assistant Minister for curative services, Dr. Catherine Cooper, who has provided direct oversight of the Cancer program.

We acknowledge the invaluable input and contribution of Dr. Annmarie Beddoe of Mt. Sinai Hospital (USA), whose support birthed and sustained the development of this policy. She is recognized as the brain behind this policy. The priceless support received from the National Cancer Control Committee is equally acknowledged and much appreciated.

Recognition is hereby made and appreciation rendered to The Woman Global Cancer Initiative and the World Health Organization (WHO) for their technical input and financial support that have facilitated the review, finalization and validation of this valuable policy document.

Several international, national and civil society organizations have rendered their time, expertise and other resources to the development of this policy document including; development of policy statements, alignment of strategies, manuscript review, amongst others. These stakeholders include (but are not limited to): Center for Disease Control and Prevention (CDC), Liberia Cancer Society (LCS), Public Health Initiative Liberia (PHIL), Global Health Innovation and Action Foundation (GHIA), Hope for Women International Hospital, National Public Health Institute of Liberia (NPHIL), John F. Kenney Medical Center (JFKMC), Partners in Health (PIH), Redemption Hospital, Phebe Hospital, Jackson F. Doe Memorial Hospital (JFD), and Clinton Health Access Initiative (CHAI).

We are indebted to other stakeholders within the MoH, including: Divisions of Family Health, Health promotion, Nursing, Nutrition, within MoH, as well as the County Health Officers (CHOs) and other health Partners.

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Deputy Minister/ Chief Medical Officer-RL

# Executive Summary

Cancer is a multifactorial disease in which a group of normal cells undergoes malignant transformation, resulting in uncontrolled growth of cells that develop the ability to metastasize or travel to distant sites in the body via lymph or blood. Cancer is now recognized globally as one of the leading Non-Communicable Diseases (NCDs), second only to cardiovascular diseases. Cancers contribute to over 8.8 million deaths (22% of total deaths from NCDs) each year and this figure is projected to rise to over 10 million, unless the problem is addressed urgently [1]. Human cost is not the only loss caused by cancer, it is also responsible for immense costs to health systems, unbearable economic and emotional burdens on families, and irreplaceable losses to communities.

In Liberia, cervical cancer and breast cancer have been estimated to be the most frequently occurring cancers in women, while liver cancer is the most common cancer in both sexes [2]. National efforts and infrastructure to combat this disease is evolving as knowledge and awareness of cancers increase with more understanding of the impact that environmental and genetic factors have on this disease.

This National Cancer Policy prioritizes cancer prevention and control in Liberia. The MOH is working with the Liberian Cancer Society to spearhead its advocacy efforts, building its private sector support to mobilize funding and dissemination of information on cancer, and advocating within the public sector to mobilize support and budgetary allocation for cancer prevention and control. For this plan to be effective, measures must be put in place to control risks, detect cases early, and offer quality care to those with the disease.

This strategy recognizes that the current infrastructure of Liberia is unable to address all cancers that affect its residents. It therefore proposes an incremental response to cancer management beginning with health education and awareness-raising, active screening for breast cancer and cervical cancer, appropriate treatment of these cancers, and simultaneous collection of data on other cancers in the country. Building and expanding Liberia's cancer care infrastructure with initial focus on breast cancer and cervical cancer will allow the health system to establish a strong foundation for provision of quality cancer services.

This strategic document reflects the developing knowledge on the risk factors associated with cancers and embraces the experiences gained from other countries in the African Region that have established similar programs.

The Ministry of Health will continue to collaborate with international partners and civil society mobilize technical support and build on scientific evidence to expand the National Cancer Program.

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# 1. Overview of the Cancer Situation in Liberia

## 1.1 Introduction

Cancer is a leading cause of deaths worldwide. According to estimates from the International Agency for Research on Cancer (IARC), there were 14.1 million new cases and 8.2 million deaths (about 13% of all deaths worldwide) in 2012.[1] The majority of all cancer deaths, 70%, occur in low and middle-income countries (LMIC). By 2030 the overall burden of cancer in the world is expected to increase to 21.7 million cases and developing countries are expected to bear the brunt of this increase. This increase will be due mainly to the progressive aging of the population in developed and developing countries, as well as to current trends in the prevalence of smoking and the increasing adoption of unhealthy lifestyles. Many cancers, such as breast cancer in women and lung cancer in men, kill people during their productive years. Breast and cervical cancers are among the top four cancers that affect women worldwide. Cervical cancer alone contribute about 8% of all cancers in women.

In the African region 26% of cancer cases are secondary to chronic infections, e.g. Hepatitis B Virus (liver cancer), Human Papillomavirus (cervical cancer), and *Helicobacter pylori* (stomach cancer). In the African region, the most common cancers in men are prostate cancer, primary liver cancer, and Kaposi's Sarcoma), while breast cancer, cervical cancer and primary liver cancer are common in women. WHO estimated age-standardized cancer death rate in Liberia in 2008 at 95 and 91 per 100,000 for women and men, respectively.[2] The diagnosis of cancer is also made at late stages of the disease; up to 80% of cancer patients already have advanced stage incurable tumors at the time of diagnosis.

Limited pathology infrastructure and human resource capacity restrict diagnosis and identification of most cases of cancer in Liberia, leading to gross under-reporting of morbidity and mortality from this disease complex. Therefore, the interventions and strategy outlined in this Liberia National Cancer Policy focus on increasing human resources and diagnostic capacity, mitigation of risk factors, increasing awareness and providing evidence-based, quality treatment options for cancers.

## 1.2 Cancers in Liberia

### 1.2.1 Epidemiology of Cancers

A number of common cancers in Africa, including cancers of the cervix, breast, mouth, throat, larynx and skin, can be detected early in the pre-cancer stage, when cure is possible. Childhood cancers, such as Retinoblastoma and Wilms Tumor, also fall into this category.

There is currently no functioning mechanism to assess the burden of cancer in Liberia. Although various public and private institutions render some form of cancer care, an integrated, evidence-based service provision and standardized treatment guidelines are presently lacking. Determining the number of new (incidence) and existing (prevalence) cancer cases in Liberia is currently difficult because of the lack of consistent pathology services and lack of a functional population-based cancer registry.

Based on data from sub-Saharan Africa (SSA), Globocan has reported that cervical cancer ranks as the most common cause of cancer incidence and mortality among women in the region. In Liberia, it is estimated that 366 new cases of cervical cancer arise each year, making it the most common cancer among women in Liberia. There are estimated 269 deaths attributed to cervical cancer in the country, annually.[6]

A recent review of 157 women with cervical cancer diagnosed in Monrovia between March 2008 and July 2013 demonstrated that 62% of patients presented with advanced stage disease (stages III and IV) and that most of these women died from cancer-related causes within one year of presentation.[7] Those patients who were treated with only symptomatic management succumbed to their disease in 3 months, on average. Patients who were treated with neo-adjuvant chemotherapy followed by surgery survived on average 6 months, while patients who were treated with primary surgery lived the longest (35 months, on average).

Data on HPV-related cervical cancers in Liberia are limited and most reports use estimates based on data from other West African countries. However, a cross-sectional study done in Monrovia between 2012 and 2013 evaluated HPV positivity among 614 women who presented for cervical cancer screening and reported a 20.3% prevalence of high-risk HPV.[8] Abnormal cytology ranging from atypical cells of uncertain significance (ASCUS) to high-grade squamous intraepithelial lesion (HGSIL) was present in 9.25% of participants.

Until recently, breast cancer was the most frequently diagnosed cancer worldwide and the leading cause of cancer-related deaths. About 60% of breast cancers are believed to occur in LMICs. The exact prevalence of breast cancer in Liberia is unknown but according to WHO data published in 2014, there were approximately 320 new cases diagnosed and 174 deaths from breast cancer that year. The number may be under representative, considering the lack pathology services for diagnosing breast lesions and many patients fail to seek medical care even for visibly progressing disease. Among the most targeted efforts for this cancer policy is the promotion of awareness and risk factor modification so that patients present early in the course of disease. Early presentation combined with the availability of a Fine Needle Aspiration (FNA) lab for diagnosing cancer would allow patients to be appropriately triaged and referred for treatment.

Prostate and liver cancers are among the top causes of cancer-related deaths among Liberian men. The incidence of prostate cancer in Africa is difficult to assess because of lack of screening and poor registry. Overall, accruing data on mortality and burden of disease becomes challenging given the indolent course of prostate cancer, lack of follow up, and deaths from inter-current diseases among those previously diagnosed with cancer. Estimates from pooled data suggest a prostate cancer incidence of 22 per 100,000, with most men succumbing to disease because of advanced stages at presentation. Routine prostate-specific antigen (PSA) testing is has not been adopted as an effective screening tool; therefore, attention should be directed to creating awareness of the disease and implementation of a screening program based on routine digital examination.

Data from the Globocan database of the IARC suggests Prostate Cancer is the second most commonly diagnosed cancer and the leading cause of mortality attributable to cancer among men in West Africa.

The other most common cancer affecting West African men and women is liver cancer. Chronic infection with Hepatitis B Virus (HBV) is a strong risk factor for developing liver cancer and Sub-Saharan Africa (SSA) has one of the highest HBV-related liver cancer rates in the world. It is therefore critical to establish programs for HBV screening and treating HBV infections. Currently, newborn vaccinations are given at tertiary and secondary hospitals but not at some private birthing facilities. This makes it necessary to integrate HBV vaccine in routine immunization programs and adopt HBV vaccinations for most at risks groups, including health workers and People Living with HIV. The high impact intervention for prevention of chronic HBV-induced hepatitis and subsequent liver cancer is the administration of birth dose monovalent HBV vaccine, which WHO is urging and supporting member states to adopt. To determine prevalence and incidence of these and other cancers in Liberia, establishment of pathology services and documentation through cancer registry are essential.

Based on data from Ghana, pediatric cancers account for 1.4% of all cancers registered, and non-Hodgkin Lymphoma (NHL) accounts for more than one third of all pediatric cancers (35%). Nephroblastoma (Wilms Tumor), the most common solid tumor, exceeded 10% of all pediatric tumors in West African countries, based on regional data (Senegal 22%, Mali 17.6%, and Ivory Coast 14.5%). In Liberia, the most common childhood cancer encountered is Burkitt Lymphoma. Diagnosis is made on clinical examination, and there is currently a treatment protocol that is administered on an in-patient basis. Leukemias are also commonly seen, but determining the exact type of leukemia is challenging because of inability to read bone marrow biopsies; steroids are the mainstay of palliative treatment for these patients.

Although there is no screening for Nephroblastoma, awareness of the disease and of its association with genetic syndromes that predispose to Nephroblastoma is important to drive early presentation and treatment when survival rates approach 90%. Dramatic improvements in the survival of children with NHL have been realized in the past 30 years and an increase in 5-year survival from 45% to 85% in children under age 15 years is now common. Since most NHLs in Africa are more common in malaria endemic areas and tend to be associated with latent Epstein Barr Virus (EBV) infection, there has been growing interest in monitoring EBV-DNA in peripheral blood as a surrogate for EBV-positive malignancies. Although there is no organized pediatric oncology program in Liberia, patients who can afford to purchase chemotherapy agents at local pharmacies are treated in one of three hospitals (JFK, JFD, and Hope for Women) with modified drug regimens designed for use in Liberia. Data collection to establish incidence of the varied pediatric tumors is essential for future planning and development of a pediatric oncology program.

There are numerous factors that contribute to an increase in the burden of cancer in Liberia, including:

- Prevalence of infectious (HBV, HIV/AIDS) and parasitic diseases (Schistosomiasis)
- Prevalence of risk factors (behavioral, biological, and environmental factors)
- Limited cancer awareness among health professionals
- Limited cancer awareness among the population

### 1.2.2 Main Risk Factors for Cancer

Reduction of risk factors is the most cost-effective means for control of cancer as well as other chronic conditions. An estimated 40% of cancer cases could be prevented, largely through modifying aspects of our lifestyles, which we have the ability to change.

The main risk factors for cancer include:

1. Behavioral factors: alcohol and tobacco use, risky sexual behavior, lack of exercise and unhealthy diet. The information and awareness of the population makes them more responsible for their health by adopting healthy behavior. In addition, frequent consumption of fruits and vegetables can reduce the risk of developing epithelial cancers.
    a. ***Alcohol use*** is a risk factor for many diseases and injuries: Cancer of breast, larynx, colorectal, liver, esophagus, oral cavity and pharynx.
    b. ***Tobacco use***: In 2015 the percentage of adults 15+ years in the African region who said they smoke tobacco ranged from 3.1% to 20.6% with a median of 10.3%. The WHO 2014 Global report on tobacco use estimates that 12% of all deaths among adults aged 30 years are attributable to tobacco use.[3] More than 71% of all lung cancer deaths are attributable to tobacco use.[2] For Liberia, the age-standardized prevalence estimates for daily tobacco smoking among persons aged 15 years and above was estimated by WHO in 2015 respectively at 14.7 % for male, 1.2% for women, and 7.9% for both sexes[4]. Liberia' Steps wise survey 2011: percentage who currently smokes tobacco: both sexes: 9.9%; Males: 17.2%; Females: 2.8%.[5]
    c. ***Insufficient physical activity*** is associated with incidence of major non-communicable diseases. Relative risk of insufficient physical activity on major NCDs: Breast Cancer, Colorectal Cancer, Coronary Heart Disease and Type 2 Diabetes.
    d. ***Unhealthy diet***s play an important role in the development of NCDs (CVD, diabetes, cancer). The reduction of salt consumption, elimination of trans fats, the consumption of a balanced diet rich in fruits and vegetables are essential measures.
2. Biological factors: obesity, age, gender and genetic/hereditary predisposition.
3. Environmental factors: exposure to environmental carcinogens such as chemicals such as pesticides, aflatoxin (a food contaminant) and arsenic (a water contaminant), air pollutants including components of tobacco smoke, and infectious agents like the Human papillomavirus (HPV), Hepatitis B Virus, Hepatitis C Virus, and Epstein-Barr Virus (EBV).
4. Genetic factors: a strong family history, and germ line and/or somatic mutations.

Many of the risk factors for cancer overlap with those for communicable or other non-communicable diseases (NCDs). It is therefore important to recognize that integrating these cancer control efforts into other programs focusing on NCDs such as cardiovascular diseases, diabetes, and chronic respiratory disease as well as with communicable diseases such as HIV/AIDS and hepatitis makes economic sense and will provide the best possible health outcomes for all Liberians.

### 1.2.3 Challenges, Strengths, Weaknesses, and Urgent Needs

#### *1.2.3.1 Challenges*

There exist challenges to successful implementation of a cancer control program, including:

- Lack of epidemiological data on cancer incidence, prevalence, and mortality for the overall population.
- Limited current strategies for primary prevention (e.g. immunizations) and secondary prevention of cancer.
- Limited or non-existent infrastructure to diagnose and register cancer (pathology, radiology, laboratory services, cancer registry).
- Lack of human resources, and limited training opportunities, for cancer treatment and management. Including issues of availability, recruitment, education, training and retention.
- Outdated or non-existent treatment modalities (chemotherapy, radiation therapy, surgical equipment).
- Lack of cost analyses for implementing a national cancer control program and understanding the economic impact of cancer in the country.
- Limited understanding of health financing questions (e.g. what is the cost of care that the patient will incur? How much can the government supplement cancer care per individual?)
- Many cancers are diagnosed late with a consequent low survival rate.
- Lack or pain relief and palliative care services to improve the quality of life of patients and their families.
- Health systems not prepared for cancer care and coping with growing demand.
- Insufficient mobilization of community resources to change common beliefs and attitudes, as well as other government and non-government partners in the fight against cancer.

#### *1.2.3.2 Strengths*

There is enthusiasm for and interest in developing a cancer program in Liberia. Strong government leadership by the Ministry of Health provides multiple advantages: national ownership, better involvement of administrative and health professionals, national visibility of the program and integration with public resources and data that would support the expansion of the strategy and help to build a population-based cancer registry. Another major strength of the program is the targeting of the entire spectrum of cancer care from advocacy and awareness, prevention, screening, diagnosis and treatment to palliative care.

Adopting a phased approach beginning with the two most common cancers and expanding to include other cancers as foundations are laid, makes economic and health workforce-sense. Integration of the program with the MOH NCD unit and engaging other multi-sectoral partners will promote effective implementation and sustainability of the overall program.

#### *1.2.3.3 Weaknesses*

Changes in leadership may have impact on implementation. In general, the process is slower as buy-in will involve multiple government actors and relevant stakeholders with different priorities.

Collaboration and coordination with infectious disease programs and MOH Family Health Division to improve implementation of activities, is presently a gap. However, there is a need to increase collaboration with other relevant programs and departments at the Ministry of Health to improve implementation.

#### *1.2.3.4 Urgent Needs*

There is an **urgent need** to establish guidelines and develop effective strategies for cancer service provision that will establish a standard of care in the country. The Integrated Mission of Program of Action for Cancer Therapy (imPACT) has recently delivered an analysis of the cancer control and management capacities in Liberia and their recommendations have been incorporated in this document. Among their recommendations to target the most common cancers in Liberia are investments in pathology services, support of population-based cancer registration, increasing awareness, early detection and treatment campaigns directed at tobacco-control measures, universal immunization with Hepatitis B vaccine, piloting clinical breast examination programs, and adopting VIA as the national cervical cancer screening modality.

Although pathology services are currently limited to one pathologist in a remote area of Liberia, there is an established a fine needle aspiration (FNA) laboratory at JFK Hospital in 2017, while full-service pathology infrastructure is being mobilized. Several funded efforts around the country are working to establish radiology services, improve the health workforce, provide specialty training, implement infectious disease protocols, oversee quality control, and improve laboratory services throughout Liberia.

# 2. The National Cancer Control Strategy

The National Cancer Control Strategy (NCCS) for the Republic of Liberia is a 5-year strategy that is designed to plan and implement sustainable and cost-effective programs that will drive prevention, treatment and control of cancers in the country. The governing body of the NCCS is the National Cancer Control Committee. It comprises public, private, and civil sector stakeholders who will oversee the implementation of the National Cancer Control Strategy and advise on expansion of the program as part of an integrated approach to combating NCDs under the leadership of the Ministry of Health.

The initial focus of the program will be on breast and cervical cancers with expansion to other cancers as infrastructure is established.

## 2.1 Vision, Mission, Goal and Objectives

### 2.1.1 Vision

The National Cancer Policy envisions the use of available evidence-based technology for effective and efficient cancer prevention and control.

### 2.1.2 Mission

This policy's mission is to not only reduce the number of people who develop cancer but also to ensure better quality of life for those living with, and those who will succumb to, the disease. It will endeavor to empower the health workforce with the skills to combat cancer and to empower communities with knowledge and awareness about this disease so that they become invested in their wellbeing and health by seeking care early. In so doing we strive to reduce the incidence and impact of cancer from its onset, through education of the community, prevention, early diagnosis, treatment and palliative care, and support for all Liberians.

### 2.1.3 Goal

To reduce cancer-related morbidity and mortality in Liberia through implementation of cost effective prevention and control interventions and improving of quality of life of patients and their families.

### 2.1.4 Objectives

The objectives of this policy will be to address the full spectrum of the disease encompassing prevention, detection, early diagnosis, treatment, surveillance, and palliation. It aims to promote cancer prevention and early detection through community and health worker awareness, behavior modification, screening and treatment of precancerous lesions, and vaccination when available. It aims to strengthen health infrastructure to ensure accessible, quality services and accurate diagnosis and to utilize shared resources that will dictate evidence-based treatment. It will develop patient-centered palliative care that meets the medical, psycho-social and spiritual needs of our most vulnerable.

The policy also aims to promote cancer surveillance, registration, and research that will guide the expansion of services based on the burden of disease that will drive cancer prevention and control activities relevant to all cancers in Liberia. It also aims to integrate cancer prevention and control with other national non-communicable disease (NCD) strategies that are being implemented throughout the country.

## 2.2 The Guiding Principles

1. Government leadership and commitment.
2. Evidence based interventions and integrated approach.
3. Equitable and affordable access for all Liberians.
4. Holistic cancer services to support the physical, emotional, social and spiritual patients and family's needs.
5. Dignity: patients are treated with respect throughout the course of illness including the death and dying.

## 2.3 Key Interventions of the Policy

This policy proposes cancer control methods that will target key areas of concern in Liberia. The National Cancer Policy will draw from the country's cumulative experience in tackling communicable disease outbreaks, and will be managed by the Ministry of Health (MOH) NCD Division.

Guidelines for implementing cancer control strategies will be evidence-based and will be updated as scientific information is obtained. Although the initial focus will be on breast and cervical cancer, the program will be built with the flexibility to expand to eventually encompass all cancers affecting Liberian men, women, and children.

### 2.3.1 Primary Prevention of Cancer

Eliminating and/or reducing exposure to risk factors that predispose to cancer in susceptible populations are the most cost-effective means of combating cancer, reducing the country's cancer burden and improving population health. Almost half of all cancers are preventable through such primary interventions as limiting the use of tobacco and alcohol, controlling obesity through promotion of healthy diet and physical activity, reinforcing occupation health and safety, proper waste management, and protection against exposure to environmental carcinogens. Additional primary prevention measures that incorporate strategies to address breast cancer and prostate cancer including those mentioned above; awareness of infectious causes of cancer like hepatitis B and C viruses for liver cancer, Human Papilloma Virus (HPV) for cervical cancer, *Plasmodium Falciparum* malaria (*pf* malaria) and Epstein Barr Virus (EBV) for endemic Burkitt's Lymphoma (eBL) and HIV-related malignancies including cervical cancer, non-Hodgkin's Lymphoma (NHL) and Kaposi's Sarcoma (KS); and vaccination where available, will be integral to our primary prevention efforts.

One of the first efforts before embarking on awareness campaigns directed to communities is the education and training for all categories of staff that will participate in the management of patients with cancer. Community Health Assistants (CHAs) and Primary Health Care Providers as the first point of contact in the health system will undergo introductory training in cancer awareness and risk factor assessment to ensure consistent and accurate delivery of information.

Primary prevention of cancer involves activities such as: public awareness of risk factors, Advocate for behaviors favoring cancer prevention such as prevention of tobacco consumption, physical activity or safe sex, immunization against hepatitis virus and introduction of HPV vaccines.

### 2.3.2 Early Detection and Surveillance of Cancer

Early detection of cancer, when coupled with early intervention, is known to greatly reduce the burden of cancers, improve outcomes, and reduce the cost of care. This policy focuses on enhancing the capacity, including education, of care providers at Primary Health Care (PHC) clinic levels 1 and 2 as well as ensuring that secondary care facilities are vigilant in referring at-risk patients based on identification of key risk factors, while encouraging breast self-awareness.

Integrating breast and cervical cancer detection programs at the PHC level, with a scale-up to prostate and liver cancers, will leverage the skills of health workers who are already trained in triaging maternal and reproductive health care, HIV and Malaria control, and child and adolescent health. This is a horizontal approach that will effectively drive early detection. Community awareness programs are important in compliance with all screening programs and referral to treatment centers. Proper surveillance is to be included in PHC training and screening programs.

### 2.3.3 Diagnosis and Treatment of Cancers

The success of the diagnosis and treatment of cancers rely on improved infrastructure, including imaging and pathology services and skilled human resources (physician specialty team) to ensure accurate and early diagnosis. It requires standard treatment guidelines for the common cancers in the country, continuous availability and affordability of medicines for cancer chemotherapy, and capacity for appropriate referral of various cancer patients.

As recommended by the World Health Organization (WHO), the policy prioritizes establishment of early diagnosis and treatment services for selected cancers in order to provide a minimum standard of care and allow an incremental approach. Prioritizing resource-sensitive treatment interventions will help build a sustainable program.

### 2.3.4 Pain Management and Palliative Care

The integration of palliative care services into the NCCS is dependent on the availability and control of opioids, education of health workers and the public, harnessing the strengths of spiritual and traditional leaders, community engagement, and the utilization of culturally appropriate psychosocial support structures and approaches to program implementation.

Utilization of additional therapies, such as nutritional support and physiotherapy, should be adopted to improve quality of life.

### 2.3.5 Cancer Surveillance and Research

The policy promotes establishment of cancer monitoring systems, specifically a population-based cancer registry. Data collection and utilization will be paramount to improve local research capacity and also enable clinical use of data to inform strategies to address the cancer burden of the country. The data from the cancer registry will be integrated into the Health Information System (HIS) of the MOH.

A process to establish a national cancer registry was initiated in July 2012 with a needs assessment conducted by the NCD Unit to determine the human resource and infrastructure capacity in the country to implement a cancer registry. The African Caribbean Cancer Consortium (AC3) and the African Cancer Registry Network (AFCRN) held a joint consultative visit in November 2013 to further explore the possibility to establish a cancer registry in Liberia. At the end of the visit, it was recommended for Liberia to establish a population-based cancer registry. This led to the approval of the Liberia National Cancer Registry (LINCAR) project to oversee this implementation. A Technical Committee and National Focal Person were appointed to lead the process. In 2016 office identified at the Maternity Hospital at JFK Hospital; WHO has funded the refurbishment and purchase of the computers and the office furnishings.

### 2.3.6 Monitoring and Evaluation

The policy proposes continuous measurement of the progress and impact of cancer control activities to ensure that the planned interventions are achieved within the set timelines and within the standards of care proposed by this policy. Such evaluations are vital to identify the areas of the policy that need revision, and additionally they provide important feedback to the MOH for future finding and budget assessment.

Regular and periodic **monitoring** will be provided by the National Cancer Committee in coordination with the national program for NCDs and decentralized structures of the Ministry of Health at the Intermediate and Peripheral levels.

The mid-term and final **evaluations** of the implementation of the policy will be carried out in accordance with the provisions of the National Health Development Plan.

## 3. Implementation Phases

The Policy will be implemented in three (3) distinct phases and the priority will be given to the fight against breast and cervical cancer, childhood cancer, Hepatitis B vaccination efforts to prevent liver cancer, the prevention of tobacco consumption and harmful use of alcohol.

### 3.1 Priorities of the National Policy:

- Breast cancer and cervical cancer
- Childhood cancers
- Prostate cancer
- Hepatitis B vaccination efforts to prevent liver cancer
- Prevention of alcohol and tobacco use

### 3.2 Phase 1(Year 1-3)

**Focus on Montserrado and Bong counties**

The objectives of the initial phase of the National Cancer Policy are:

1. Develop a national plan for cancer control that takes into account national contexts and priorities within the framework of NCDs
    a. Set up a national committee for the fight against cancer chaired by a person of high rank, with a defined mandate
    b. Mobilize and allocation the resources in a cost-effective manner for the implementation of plan
    c. Adapt/implement strategies to prevent and control tobacco use, and address alcohol use, sexual and reproductive factors and others main risks factors.
2. To promote public awareness of breast cancer and cervical cancer.
    a. Develop information, education, and communication (IEC) materials and radio messages regarding breast cancer and cervical cancer.
    b. Disseminate these materials and messages to 10,000 women in the first year, increasing to 40,000 women by the third year.
3. To promote early detection of breast cancer and cervical cancer.
    a. We project that in the initial two counties, 20% of targeted women, above the age of 25 years, will reach out directly to our center for information and 10% will enroll for screening in the first 3 years.
    b. Train thirty health workers in visual inspection with acetic acid (VIA) and clinical breast examination (CBE) in the first year and one hundred by the third year.

4. To provide continuing education for a minimum of four radiology technicians at each selected site in radiology and ultrasonography within the first year through collaborations with international partners.
    a. Educate health workers in interpreting radiology films, and ultrasonography.
    b. Support a sponsored radiologist (physician) for training in radiology
    c. Augment radiology technician training to include preparation of patients for CT scans and MRI as infrastructure continues to improve by the second year.
5. To promote advanced training of non-physician health care professionals in chemotherapy administration.
    a. In the first year, train in the United States one (1) pharmacist and one (1) nurse in the preparation and administration of chemotherapy drugs hired at each infusion center.
    b. Train additional pharmacists and nurses using the "train the trainer" (ToT) model by the third year.
6. To train physicians in cancer screening and treatment.
    a. In the latter half of the first year, hire a breast surgeon and begin training of surgery resident in breast cancer biopsies and surgical treatment.
    b. Train health workers in VIA and CBE.
    c. By the second year, enroll a graduating OB/GYN resident in a Gynecologic Oncology fellowship that will be completed in 3 years. This resident will work in the center under mentorship during the two years of training.
7. To establish collaboration with international partners to provide pathology services to ensure low cost and proper diagnostic.
    a. Establish a fine needle aspiration (FNA) lab in the first year and train technicians to process aspirates.
    b. Establish histopathology services within the first year.
    c. Continue improving the infrastructure to process pathology specimens and hire a pathologist at JFK.
8. To begin laying the foundation for radiation therapy infrastructure.
    a. In the first year, work with the IAEA and Liberia's Environmental Protection Agency (EPA) and Ministry of Lands, Mines, and Energy to establish a unit responsible for national registry of radiation sources, monitoring of radiation exposure and establishing guidelines for safety from medical exposure.
    b. Support the training of Liberian physicists, radiation oncologists, radiotherapy technologists, radiation nurses and maintenance engineers in preparation for radiation therapy services in phase three.
9. To seek collaboration with hospital partners responsible for developing a center of diagnostic imaging.
    a. As the center is developed, issue petitions for the funded imaging center to provide diagnostic services for patients with cancer.
    b. Provide training for hospital technicians in preparation, positioning, and interpreting of images.

10. To establish and maintain a national population-based cancer registry.
    a. In the first year, establish an office for cancer registry at JFK Medical Center for the current Director of the Liberian National Cancer Registry (LINCAR).
    b. Hire and train one staff member in data extraction for data entry during the first year and establish a protocol for data collection; install the CanReg5 system on the registry computers. Data collection will take place at seven health facilities in Montserrado, Bong, and Nimba Counties.
11. To initiate preventive interventions for liver cancer and other common cancers affecting both men and women.
    a. Institute hepatitis vaccines for at least 50% of all newborns in Montserrado County in the first year and extend to four counties by the third year.
    b. Initiate a demonstration-screening program for Hepatitis B and C targeting the most vulnerable groups in Monrovia in the first year and extend to all pregnant women, the community, and blood supply by the third year.
12. To promote awareness of common pediatric cancers by educating physicians and health workers about common pediatric cancers.
    a. Incorporate the physical signs (enlargement of jaw, abdominal distention, fevers) into the discharge instructions of all discharged newborns and to mothers with newborn babies. In the first year, reach 80% of newborn mothers delivering in hospitals in Bong and Montserrado counties prior to discharge through this awareness campaign.
    b. Include education in school health division& incorporate Minister of Education.
13. To provide education in palliative care for patients and assemble a team of social workers, nurses, and physicians to guide pain management, and the end-of-life treatment and support for patients and caregivers.
    a. In the first year, establish a sustainable supply of opioid, especially oral morphine, for pain management at Redemption Hospital.
    b. Train palliative care team, at each site, one (1) nurse, one (1) doctor, one (1) social worker, one (1) pharmacist in palliative care in the first year, in collaboration with collaboration Ministry of Health NCD Unit.
14. To commission relevant cost analyses from health financing unit MOH. In the first year, obtain an assessment of costs for construction of a functional cancer center including start-up costs and annual operating and maintenance costs for a radiation therapy center.
15. To establish procurement of essential cancer drugs in collaboration with Clinton Health Access Initiative
    a. Conduct a cost analysis for sustainable drug supply chain.
    b. Obtain monthly costs for chemotherapy drug procurement, and establish a procurement source.
16. To promote research and dissemination of results through academic centers.
    a. Work with local academic and international partners to cover the spectrum of research activities from demonstration studies, implementation research, to randomized controlled trials conducted and authored in a collaborative manner.
    b. Develop an appropriate information system for program monitoring and evaluation and select appropriate indicators.
    c. Mobilize resources for program implementation, involving all stakeholders,

### 3.3 Phase 2 (Year 4-5)

The Objectives of the second phase of the National Cancer Policy are:

1. To expand breast and cervical cancer awareness and screening.
    a. Train an additional 100 health care workers in at least eight counties. Training programs with professional health care workers (midwives, nurses, PAs) at secondary hospitals and clinics. These training workshops will be delivered at strategic sites throughout the country.
    b. Conduct workshops and simulation training in at least four counties, and enable educators to disseminate information on the most common cancers in Liberia.
2. To expand awareness with community health workers Montserrado County and beyond, targeting both teaching institutions and community centers.
    a. Conduct workshops in at least four counties, and enable educators to disseminate information on the most common cancers in Liberia.
3. To promote awareness of prostate cancers in men and encourage digital examinations among men with the goal to reach 25% of men at the major teaching hospitals in Year 4.
4. To prepare the infrastructure for housing a linear accelerator unit, working closely with the radiation protection entity established during phase 1 to develop regulations and ensure safety standards for radiation therapy.
    a. Develop a cost analysis for the building radiation therapy infrastructure, including a bunker to house the unit.
    b. Work in collaboration with IAEA and radiation safety and nuclear security committee.
5. To hire a full team to provide cancer-appropriate care at the national center, including a medical oncologist, surgical oncologist, radiation therapy oncologist, and gynecologic oncologist, by the end of the fifth year.
6. To complete training for designated staff from every facility with radiation equipment to implement radiation safety and medical protection regulations and guidelines, by the end of the fifth year.
7. To run a palliative care program that will provide both hospital-based and home-based palliative care services in collaboration with Ministry of Health NCD Unit.
    a. Train twenty health-care workers in palliative care
    b. Train an additional one hundred community health workers to provide home visits, deliver medicines and provide care to the terminally ill in their homes.
8. To complete the infrastructure for a fully functional pathology laboratory at the national center that will provide histo-pathologic and immune-histochemical diagnosis. Pathology labs will eventually be developed at all of the major teaching hospitals throughout the country.
9. To scale up operations of the National Cancer Registry (LINCAR).
    a. Hire at least three additional staff. The registry staff will be responsible for collecting pathology data regionally and reviewing charts for building a population-based registry.
    b. Finalize and implement a functional registry protocol for data collection.
    c. Training county officers in HMIS (hospital management information system) to facilitate collection of cancer registrar data.

### 3.4 Phase 3 (Beyond Year 5)

By the fifth (5th) year, the national cancer center should be fully functional to serve Liberia's cancer patients, providing radiologic work-up and diagnosis as well as surgery, chemotherapy, and radiation therapy. A diverse group of cancers will be targeted for treatment. Beyond year five, infrastructural and technologic improvements will be made to expand and improve the country's cancer treatment capacities.

## 4. Institutional framework for implementing the policy

For the harmonious and effective implementation of the policy, a national cancer control program and a National Cancer Control Committee will be put in place.

### 4.1 National Cancer Control Committee (NCCC)

The Cancer Committee will oversee the implementation of the National Cancer Control Policy through the National Cancer Control Program. The Committee will function as the leadership team (board) and will be headed by a coordinator and the Minister of Health or their designee.

#### 4.1.1 Functions of the Cancer Committee

a. Coordinate communication among committee members and between sub-committees
b. Oversee the development and revision of the national cancer strategy, and cancer program plan
c. Oversee the implementation plan
d. Advocate for legislation to support implementation of the cancer strategy
e. Advocate for government budget allocation and disbursement to the health sector in general and to cancer-related activities in particular
f. Oversee financing, budgeting and fund raising for the program
g. Oversee and coordinate cancer control activities including awareness, prevention, early detection, treatment and palliative care
h. Oversee education and training of health workers and development of health systems around cancer care
i. Coordinate integration with the National NCD program
j. Set research priorities
k. Recommend resources to improve infrastructure around cancer care and communication

#### 4.1.2 Functions of the Coordinator

a. Organize the work of the Cancer Committee (set up subcommittees with assigned activities)
b. Set the culture of the program
c. Represent the program to the public and to collaborating agencies
    - Provide assistance to various subcommittees
    - Ensure that all meetings, activities, and events are coordinated for maximum effect
d. Set targets for evaluation, monitoring and improvement
e. Review and evaluate program at regular intervals

### 4.1.3 Composition of the Cancer Committee

a. Ministry of Health representatives and other representatives from the public sector
b. Private Sector (local businesses, private medical facilities, multinational corporations operating in Liberia)
c. Community representatives (spiritual, CHA)
d. UN agencies: WHO, UNFPA, UNICEF
e. Academic institutions (University of Liberia, Liberia College of Physicians and Surgeons, international partners)
f. Cancer organizations (LCS, ACS, ICCP, NCCN, GHIA-Foundation)
g. Cancer surveillance and registry (LINCAR)
h. Hospitals: JFK, Hope for Women, Redemption, Phebe/CB Dunbar, Cooper, Family Health Center, Jackson F. Doe Hospital

## 4.2 Implementing Partners of the Policy

### 4.2.1 National Cancer Control Strategy (NCCS)

After review and edits by all members of the National Cancer Control Committee and consultants, the NCCS will be ratified. Updates and amendments to the NCCS will be presented and agreed upon by committee members to include updated information and to inform policy. The NCCS recommends an integrated approach with gradual phase-in of programs as scientific knowledge and infrastructure improvements.

### 4.2.2 Role of the Ministry of Health

The Ministry of Health shall provide the leadership for this policy and in this capacity, shall provide strategy formulation, approve recommended revisions as well as establish guidelines and standard operating procedures. The MOH shall coordinate quality assurance, perform monitoring and evaluation and ensure integration of the program into Liberia's NCD strategic plan.

### 4.2.3 Role of NCCS Secretariat

The Minister of Health, through the National Cancer Policy, will nominate a Cancer Committee Secretariat who shall be approved by the committee to coordinate the various activities of the committee, including setting up and coordinating input from the technical working groups (TWGs). The Secretariat will establish an institutional framework to ensure standardization of cancer-related activities countrywide and integrate the cancer committee into the Non-Communicable Disease Unit.

### 4.2.4 Role of Community and Civil Society

The Liberia Cancer Society (LCS) will be the coordinating civil society organization for cancer awareness. It will function as a liaison between community-based organizations (CBOs), non-governmental organizations (NGOs), faith-based organizations (FBOs), and private sector entities with interests in cancer awareness and prevention. LCS will establish a database of all such civil society organizations, indicating activities that partners are involved in, and their areas of operation within the country.

Civil society, along with the government of Liberia, shall ensure full engagement and empowerment of the community through social mobilization to fulfill the specific goals of both cervical and breast cancer prevention.

Government of Liberia through NCCP/C shall strengthen communication to increase cancer awareness, facilitate behavioral change, and influence social norms, helping to ensure that women access screening and prevention services. It is important therefore that all information imparted to the community, health workers, trainers and policy makers is accurate and appropriately framed.

The civil societies, private institutions, and community-based organizations shall lead advocacy efforts will help to raise awareness and galvanize financial and political support from a broad-based, research-driven perspective. This support is crucial in allowing the voice of cancer to resonate throughout Liberia.

### 4.2.5 Role of Health Providers

Currently there are no trained community-health workers for cancer prevention. However, the role of the community health workers shall be to raise awareness and refer suspected cancer cases to the relevant facilities. Training guide and stepped plan to be developed separately.

## 4.3 Priority TWGs

Based on country priorities and available resources the following committees shall be established to perform the following list of responsibilities.

### 4.3.1 Breast and Cervical Cancer

The Committee will establish a Breast and Cervical Cancer Working Group to:

a. Delineate the national goal for early detection and awareness
b. Identify resources to help meet this goal (local support, national and international grants and funding)
c. Identify strategies to overcome barriers previously identified
d. Determine key action steps for stated priorities
e. Oversee that priorities are met in a timely fashion
f. Give feedback and present to the general committee on the progress of the working group at each meeting

### 4.3.2 Liver Cancer

The Committee will establish a Liver Cancer Working Group to:

1. Delineate goals for awareness and prevention
2. Determine steps and guidelines for a health worker immunization program
3. Assess the prevalence of Hepatitis C in high risk populations
4. Assess the cost of Hepatitis B immunizations for newborns
5. Assess the cost of community immunization with Hepatitis B vaccine
6. Identify barriers for screening of blood supply for Hepatitis B and C

### 4.3.3 Childhood Cancers

The Committee will establish a Childhood Cancer Working Group to:

a. Delineate goals for awareness of the most common childhood cancers
b. Identify resources available to meet the demands
c. Identify barriers that prevent meeting the identified goals
d. Recommend 2 priority strategies for short and medium term
e. Determine key action steps for each priority strategy

Committees for Prostate and Leukemia will be established at a later date once the priority therapies have been successfully established.

## 4.4 Program specific goals

### 4.4.1 Cervical Cancer – Education, Awareness, Prevention and Screening

a. Training community health workers as the first line of patient contact to promote awareness of cervical cancer so that they can direct community members to the Primary Health Centers (PHCs) for screening. CHWs should be educated in risk factors, signs and symptoms and should be able to discuss various methods of screening available in the country.
b. Primary health care (PHC) workers should have basic awareness about cervical cancer, age of onset, presenting symptoms and factors that put patients at risk; they should have knowledge about cervical cancer, its etiology, disease course and options for diagnosis and treatment. PHC should be the main providers performing VIA and cryotherapy and thermo-coagulation procedures, using the "see and treat" method; additionally, they should be educated on the benefits and side effects of the HPV vaccine and be able to transition to HPV testing as resources are increased and screening technology improves.
c. Train physicians in all aspects of cervical cancer etiology and pathophysiology to provide screening and treatment for all stages of cervical pre-cancer and cancer including performance of VIA and HPV testing; they should be able to perform cryotherapy, thermo-coagulation, Loop Electrosurgical Excisional Procedure (LEEP) and cone biopsy for non-invasive lesions.

### 4.4.2 Breast Cancer – Education, Awareness, Prevention and Screening

a. Train community health workers (CHWs) on breast cancer risks, symptoms and presentation to promote awareness among community members, perform clinical breast exams (CBE) and initiate referrals for higher-level care.
b. Primary Health Care workers (PHCs) should be knowledgeable about breast cancer presentation, risk factors and symptoms; they should be able to facilitate screening by performing clinical breast exams (CBEs) and initiating appropriate referrals for diagnostic testing.
c. Physicians should be trained to perform Fine Needle Aspiration (FNA) and excision of palpable breast masses for diagnostic evaluation. They should be able to perform breast ultrasonography and perform sono-directed core biopsies of deep-seated masses detected on ultrasonography. They should understand the benefits and limits of mammography as a screening method and the drawback to using ultrasonography for primary screening.

### 4.4.3 Liver Cancer Awareness and Prevention

a. CHWs should be knowledgeable that liver cancer is a common cancer among both men and women in Liberia. They should know the risk factors for liver cancer, and the role of hepatitis viral infection, obesity and alcohol use in the development of liver cancer. They should be able to identify at-risk populations, recognize symptoms of hepatitis and know when and where to refer patients for further evaluation.
b. Primary health care workers should be knowledgeable about the importance of hepatitis B and C screening, and be able to administer vaccination as part of a preventative strategy. They should be able to counsel patients with positive screening and refer them for appropriate follow up.
c. Physicians should be able to recognize sonographic evidence of cirrhosis, and space occupying lesions in the liver. They could oversee the FNA of liver biopsies performed under sonographic guidance and counsel patients with positive findings.
d. Assessment on burden of hepatitis B and C infections among high-risk groups and the general population. In the next year, provide assistance for a hepatitis B vaccine program to immunize all health care workers in the next year, high risk populations in the next two years, and the community thereafter.

### 4.4.4 Leukemia- Primary Prevention, Education and Awareness

The goals of primary prevention are:

a. To combat infectious agents that cause cancer through immunization or pharmacologic agents.
b. Decrease exposure to cancer causing factors and agents.
c. Promote lifestyle changes such as increasing healthy eating habits, decreasing smoking and alcohol intake and increasing physical activity).
d. One of the first efforts before embarking on awareness campaigns directed to communities is the education and training for all categories of staff that will participate in the management of patients with cancer. Community Health Assistants (CHAs) and Primary Health Care Providers, as the first point of contact in the health system, will undergo introductory training in cancer awareness and risk factor assessment to ensure consistent and accurate delivery of information.
e. Evaluation of data from HPV demonstration vaccine program and assess costs for a national vaccine program in the next 48 months.

### 4.4.5 Prostate Cancer Awareness and Screening

a. CHWs and Primary Health care workers should be trained to recognize risk factors and symptoms of prostate cancer and provide awareness counseling and referrals to tertiary sites for further evaluation. This should be part of a generalized training program on cancer awareness over the next 1-3 years.
b. Physicians should be able to conduct a digital examination to evaluate for enlargement of the prostate, and conduct a preliminary work up and evaluation of all high risk patients
c. Appropriate imaging, including ultrasound, should be available as a preliminary evaluation given current imaging infrastructure.

## 4.5 Cancer Registry

As part of the National Cancer Control Strategy, a process to establish a national cancer registry was initiated in July 2012 with a needs assessment conducted by the NCD Unit to determine the human resource and infrastructure capacity in the country to implement a cancer registry.

The African Caribbean Cancer Consortium (AC3) and the African Cancer Registry Network (AFCRN) held a joint consultative visit in November 2013 to further explore the possibility to establish a cancer registry in Liberia. At the end of the visit, it was recommended for Liberia to establish a population-based cancer registry.
This led to the approval of the Liberia National Cancer Registry (LINCAR) project to oversee this implementation. A Technical Committee and National Focal Person were appointed to lead the process.

2016 Office identified at the Maternity Hospital at JFK Hospital; WHO has funded the refurbishment and purchase of the computers and the office furnishings.
2017 FNA lab to be established at JFK Hospital as part of World Bank funded Health Workforce Program. Technicians will be trained in processing of aspirates, and faculty will be present for training of local physician in the interpretation of slides. Local faculty will be hired to gather and input cancer data.
2018 Establishment of a histopathology lab with assistance from Health Workforce Program funded faculty.
2020 Development of immuno-histochemical staining.

The cancer registry will play a vital role in recording the varied cancers that occur throughout the 15 counties of Liberia. The goal is to determine the burden of cancer in Liberia and provide critical cancer data that will enhance budgeting and forecasting and prioritizing of cancer treatment in Liberia.

## 4.6 Monitoring and Evaluation (M&E)

To assess performance and to determine if the target populations are being reached, there should be continuous monitoring of procedures and outcomes. Comprehensive evaluation is required to measure performance and available resources, as well as obtain measures of coordination of services and efficiency of performance. Such evaluations are vital to identify the areas of the strategy that need revision, and additionally they provide important feedback to the MOH for future funding and budget assessment. M&E process will be integrated with HMER and sections related specifically to cancer will be incorporated into HMIS.

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