Republic of Kenya

MINISTRY OF PUBLIC HEALTH AND SANITATION
AND
MINISTRY OF MEDICAL SERVICES

DRAFT
NATIONAL CANCER CONTROL STRATEGY

2010-2015

Table of Contents

Acknowledgements

The Ministry of Public Health and sanitation and the Ministry of Medical services wishes to thank all those who contributed to the successful completion of this document. We hope that all our partners and our health staff will adopt and continue to support us in implementing cancer prevention and control interventions as outlined in this strategy.

Special appreciation goes to the team that worked tirelessly to draw and review this document comprising mainly staff drawn from the two Ministries of Health, The World Health Organisation, Kenya Country Office, our local Universities, Private Hospitals and local NGOs.. We appreciate the great contribution of Dr Anselmy Opiyo and Dr Eliud Njuguna from the Cancer Treatment Centre, Kenyatta National Hospital and Dr Geoffrey Mutuma of Kenya Medical Research Institute. We also wish to acknowledge the contribution by Dr Joyce Nato of WHO, Kenya Office, Dr Zipporah Ali of Kenya Hospices and Palliative Care Association as well as Newton Siele and David Makumi both of the Kenya Cancer association.

The writing of this document was coordinated by the Division of Non Communicable Diseases, Ministry of Public Health and Sanitation. Special thanks to the Head of the Division, Dr William Maina, and the Cancer Programme Officer, Dr Ochiba Lukandu as well as all the staff at the division for their tireless efforts to see this process to a successful end.

List of contributors and their institutions

Dr. Opiyo Anselmy	Kenyatta National Hospital, Cancer treatment centre
Dr. William K. Maina	DNCDs, Ministry of Public Health and Sanitation
Dr. Geoffrey Mutuma	Kenya Medical Research Institute
Dr. Ochiba Lukandu	DNCDs, Ministry of Public Health and Sanitation
Dr. Eliud Njuguna	Kenyatta National Hospital, Cancer treatment centre
Dorcas Kiptui	DNCDs, Ministry of Public Health and Sanitation
David Makumi	Aga Khan University Hospital
Dr. Joyce Nato	World Health Organisation, Kenya Country Office
Dr. Izaq Odongo	Dept of Medicine, Ministry of Medical Services
Dr. Blasio O. Omuga	University of Nairobi
Dr. Zipporah Ali	Kenya Hospices and Palliative Care Associations
Edward Ndungu	DNCDs, Ministry of Public Health and Sanitation
Newton Siele	Kenya Cancer Association
Dr. Joesph Kibachio	DNCDs, Ministry of Public Health and Sanitation
Dr. Moris N. Muhinga	Provincial General Hospital. Nyeri
Dr. Eric Osoro	DNCDs, Ministry of Public Health and Sanitation
Dr John Weru	Nairobi Hospice
Dr. Ambrose Misore	PATH
Dr. Jesika Wambani	Kenyatta National Hospital, Radiology
Scholastica Mwende	DNCDs, Ministry of Public Health and Sanitation
John Mwangi	Division of Reproductive Health
Dr. J.K. Macharia	Provincial General Hospital. Nyeri
Dr. W.N. Ndaihera	Kenyatta National Hospital, Radiology
Onesmus Mwaura	DNCDs, Ministry of Public Health and Sanitation
Dr. Joyce Lavussa	World Health Organisation, Kenya Country Office
Mary Karimi	DNCDs, Ministry of Public Health and Sanitation

Foreword

Cancer is one of the leading causes of death in the world. According to WHO, the disease accounted for 7.9 million deaths in the year 2009, making up about 13% of all deaths worldwide. More than 70% of these cancer deaths occurred in low- and middle-income countries. While communicable diseases still remain a challenge to these countries, the incidence of non-communicable diseases is on the rise resulting in what is commonly known as the 'double burden of disease.'

In Kenya, cancer ranks third as a cause of death after infectious diseases and cardiovascular diseases. The country has no data on the real cancer burden, but it is estimated that over 18,000 Kenyans die of cancer annually. The incidence of cancer in Kenya has progressively increased over the years mainly as a result of increased exposure to preventable risk factors. These risk factors include the adoption of unhealthy life styles such as consumption of unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol. Other risk factors are exposure to environmental carcinogens, viral infections such as HIV, Hepatitis B & C and Human Papilloma Virus; bacterial infections such as Helicobacter Pylori; and parasitic infestations such as schistosomiasis. The most common types of cancer in Kenya are cancers of the cervix, breast, oesophagus and prostate. Other cancers include those of the head and neck, colon and rectum, stomach and liver, lymphomas and sarcomas.

Cancer touches every one of us at some point in our lives, either directly as a patient, or as the relative, friend or workmate of someone who develops cancer. It is therefore important that something be done urgently to allow better prevention and control of cancer in Kenya.

The development of this strategy reflects our shared commitment to reducing the incidence of cancer and improving the quality of life of those who develop cancer in Kenya. The strategy aims to build strong cancer prevention and control capacities both in public and private sectors through investment in cancer awareness, human resource, equipment, surveillance and research. The strategy therefore outlines comprehensive interventions to be undertaken by the government and other partners to enhance existing structures and pull together additional resources to face the challenges posed by cancer.

Effective cancer prevention and control calls for a multi-sectoral and multi-disciplinary approach. It is in this regard that we call upon other government departments, development partners, institutions of higher learning, civil society, private sector and the Kenyan community at large to join us in this noble initiative.

Hon. Beth Mugo, EGH, MP.
Minister for Public Health and Sanitation

Hon. Peter Anyang Nyong'o, EGH, MP.
Minister for Medical Services

Introduction

Cancer is a disease that results from failure of the mechanisms that regulate normal cell growth and cell death leading to uncontrollable proliferation of cells, destruction of neighbouring tissues and spread of the disease to other parts of the body. Owing to its nature, cancer is difficult to treat, and cannot be eradicated. However, it is possible to significantly reduce the effects of cancer on the society if effective measures are put in place to control risk factors associated with cancer, detect cancer cases early and offer good care to those with the disease.

This strategy aims to build on the existing health system in Kenya to strengthen cancer prevention and control capacities both in public and private sectors through control of risk factors associated with cancer, investment in cancer control workforce, equipment and through cancer research. For the first time, in Kenya, we have a cancer control strategy that brings together cancer prevention, screening, diagnosis, treatment and care for cancer patients as well as investment needed to deliver these services in terms of improved staffing, equipment, drugs, treatments and information systems.

The strategy particularly reinforces the need for action to prevent cancer, especially cancers related to smoking and unhealthy diets. Through enhanced health promotion, education and advocacy, the strategy will enable the government and other partners to enhance public understanding of cancer so that Kenyans adopt healthier lifestyles and seek advice sooner if they have symptoms that may suggest cancer. It will empower the public in general, and healthcare professionals in particular to recognise the symptoms of cancer and to support people at risk of cancer or who are living with cancer. It seeks to improve early detection of cancer by introducing or expanding the available screening programmes and putting in place mechanisms and services that are proven to save lives. It seeks to shorten the time taken to diagnose and treat cancer by streamlining the diagnosis and referral systems, the process of care and investing in more cancer treatment equipment as well as cancer specialists and other staff. Expanding and supporting the cancer workforce will reduce waiting times for cancer treatment and reduce workload on the staff. The strategy seeks to streamline and expand spending on cancer drugs and treatment so that patients receive recommended drugs of proven benefit that they need and can be assured of specialist treatment.

This strategy will ensure cancer treatment is consistent across the country by introducing new standards for cancer care, cancer registration, record keeping and accountability and also new monitoring and evaluation arrangements, as well improving coordination and sharing of resources and information among health facilities. It will ensure patients and their families have better support and information throughout their care by expanding the provision of relevant information and quality treatment including palliative care. Lastly, the strategy will enable the country to prepare for the future through education and research in the field of cancer, and ensuring a culture of evidence based medicine in cancer prevention and control.

Dr. S.K. Sharif
Director of Public Health and Sanitation

Dr Francis Kimani
Director of Medical Services

Abbreviations

DNCD	Division of Non Communicable Diseases
HCW	Health Care Workers
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
IAEA	International Atomic Energy Agency
KEHPCA	Kenya Hospices and Palliative Care Associations
KEMRI	Kenya Medical Research Institute
KENCANSA	Kenya Cancer Association
KNH	Kenyatta National Hospital
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public Health and Sanitation
NCI	National Cancer Institute
TWG	Technical working group
WHO	World Health Organisation

Executive Summary

The Government, through the Ministries of Health, is committed to ensuring a healthy nation with high quality of health care for all people. Unlike in the past, it is now recognised that cancer is a major cause of mortality and morbidity in Kenya. This strategy is a response by the Ministries of Health to the obvious need to prioritise cancer prevention and control in Kenya. It recognises that the disease cannot be eradicated, but that its effects can be significantly reduced if effective measures are put in place to control risk factors, detect cases early and offer good care to those with the disease.

The aims of this strategy are to reduce the number of people who develop cancer and the number who die from cancer, and to ensure a better quality of life for those who do develop the disease. The strategic plan covers the years 2010 to 2015. It explains the scientific basis for cancer control and prevention; outlines a vision and mission, then suggests objectives as well as interventions to prevent and control cancer in Kenya. The strategy draws from experiences gained in various countries that have similar programmes, and also borrows from technical advice provided by relevant bodies such as WHO.

Vision, Mission and goal
The Strategy envisions a country with an effective and efficient national cancer prevention and control programme in order to achieve the goal which is to reduce cancer morbidity and mortality in Kenya. Its mission is to improve community wellbeing by reducing the incidence and impact of cancer through the provision of efficient and evidence based preventive, promotive, curative and palliative care services accessible to all Kenyans.

Objectives
The objectives of the strategy cover the entire continuum of cancer prevention and control. It aims to promote cancer prevention and early detection and improve diagnosis and treatment including palliative care. The strategy also aims to promote cancer surveillance, registration and research. To achieve these, the strategy aims to build and promote partnership and collaboration in cancer control through advocacy. It also aims to integrate cancer prevention and control activities with national health and socio-economic plans and promote community involvement and participation in cancer control and prevention.

Key interventions
This strategy identifies the following key thematic areas and suggests interventions in order to prevent and control cancer in Kenya.

- **Primary prevention of cancer:** About 40% of cancers are preventable through interventions such as tobacco control, promotion of healthy diets and physical activity and protection against exposure to environmental carcinogens. Primary cancer prevention is thus considered the most cost effective way of combating cancer since

- **Early detection of cancer:** It is an approach that promotes vigilance for signs and symptoms that may be indicative of early disease. Early detection and treatment of cancer is known to reduce greatly the burden cancer such as those of the cervix. The strategy focuses not only on

enhancing early detection, but also streamlining referral of diagnosed patients for better treatment.

- **Diagnosis and treatment of cancer:** The main goals of diagnosis and treatment are to cure or considerably prolong the life of cancer patients and aims at ensuring the best possible quality of life for cancer survivors. The strategy focuses on improving diagnostic services, improving accessibility of cancer treatment services and enhancing human capacity in all fields of cancer management.

- **Pain relief and palliative care:** The strategy focuses on enhancing palliative care services, integrating these services into the existing healthcare system at all levels of care especially community and home based care.. It outlines ways to strategically link palliative care other services such as cancer prevention, early detection and treatment services for both adults and children.

- **Cancer surveillance and research:** Cancer surveillance is a fundamental element of any cancer control strategy since it provides the foundation for advocacy and policy development. The strategy focuses on enhancing cancer surveillance systems, especially cancer registration. It also suggests ways to improve cancer research capacity and dissemination and use of research findings.

- **Coordination of cancer prevention and control activities**: Coordination of all cancer prevention and control activities ensures efficient use of resources. For the long term, the strategy suggests having a centralised coordinating body such as a National Cancer Institute

- **Monitoring and evaluation**: The strategy proposes continuous measurement of the progress and impact of cancer control activities to ensure the planned interventions are achieved within the set timelines

The national cancer control strategy envisions a scenario where all activities will be carried out equitably, and owned by all implementing agencies and communities. Leadership and fairness as well as adequate coordination among all partners will be expected in running all programmes. All activities undertaken to meet the objectives of this strategy will be evidence based, sustainable and carried out through a systematic and integrated approach. There will be utmost respect for people of both gender as well as respect for religious and cultural diversity. All stakeholders are therefore called upon to embrace this strategy and join hands in confronting cancer in Kenya.

Background

What is cancer

Cancer refers to over 100 different diseases characterized by uncontrolled growth and spread of abnormal cells. It can affect almost any part of the body. There are several types of cancer. Carcinoma is the cancer that begins in the skin or tissues that line or cover organs. Sarcoma is a cancer that begins in bone, cartilage, fat, muscle blood vessels or other connective tissue. Leukaemia is cancer that starts in blood-forming tissues such as bone marrow. Lymphoma and multiple myeloma are cancers that begin in cells of the immune system. (National Cancer Forum, Ireland, 2006)

Cancer arises from one single cell following abnormal changes in the cell's genetic material (DNA). These genetic changes affect the mechanisms that regulate normal cell growth and cell death leading to uncontrolled cell growth. The abnormal changes are caused by interactions between genetic and environmental factors. Environmental factors include physical carcinogens (e.g. ionizing radiation), chemical carcinogens (e.g. asbestos, components of tobacco smoke and aflatoxins) and biological carcinogens (e.g. certain viruses, bacteria and parasites). Cancerous cells have a tendency to proliferate uncontrollably, invading neighbouring tissues and eventually, spreading to other parts of the body.

Global Burden of Cancer

Cancer is a leading cause of death worldwide. According to WHO, the disease accounted for 7.9 million deaths (about 13% of all deaths worldwide) in 2009. More than 70% of all cancer deaths occur in low- and middle-income countries. The overall burden of cancer in the world is projected to continue rising, particularly in developing countries. (Matthers CD and Loncar D. 2006)). The main types of cancer leading to overall cancer mortality each year are: lung cancer (1.3 million deaths), stomach cancer (803 000 deaths), colorectal cancer (639 000 deaths), liver cancer (610 000 deaths) breast cancer (519 000 deaths) cervical cancer (450,000) and oesophageal cancer (380,000). Deaths from cancer worldwide are projected to continue rising, with an estimated 15.5 million people being diagnosed, and 12 million of them dying of cancer in the year 2030. (WHO 2002) The most frequent types of cancer among men affect the lung, stomach, liver, colorectal, oesophagus and prostate. Among women the most common areas affected are breast, lung, stomach, colorectal and cervix.

The annual incidence of cancer globally is estimated to be 10 million. Of these 4.7 million are in developed countries while nearly 5.3 million are in developing countries. In developed countries, cancer is the second most common cause of death after cardiovascular conditions and epidemiological evidence points to the emergence of a similar trend in developing countries. The principal factors contributing to this projected increase in cancer are the increasing proportion of elderly people in the world (in whom cancer occurs more frequently than in the young), an overall decrease in deaths from communicable diseases, the decline in some countries in mortality from cardiovascular diseases, and the rising incidence of certain forms of cancer, notably lung cancer resulting from tobacco use. Approximately 20 million people are alive with cancer at present, and by 2020 this number is projected to increase to more than 30 million.

The impact of cancer is far greater than the number of cases would suggest. Regardless of prognosis, the initial diagnosis of cancer is perceived as a life-threatening event, with over one-third of patients

experiencing clinical anxiety and depression. Cancer is also distressing for the family, profoundly affecting both the family's daily functioning and economic situation. The economic shock includes both the loss of income and the expenses associated with health care costs.

Principles of cancer prevention and control

Cancer prevention and control is an organised approach to reducing the burden of cancer. (WHO 2002) It recognises that the disease cannot be eradicated, but that its effects can be significantly reduced. The aims of cancer prevention and control are to reduce the number of people who develop cancer and the number who die from cancer, and to ensure a better quality of life for those who do develop the disease.

Primary prevention

Primary prevention of cancer involves eliminating or minimizing exposure to the risk factors incriminated in its causation. Prevention of cancer is a key element in cancer prevention and control programmes (WHO 2002). It offers the greatest public health potential and the most cost-effective long-term cancer control as more than 40% of cancers could be prevented by modifying or avoiding key risk factors.

Prevention services include the use of health protection, health promotion and disease prevention strategies. These services will alert the population of cancer risk factors, promote healthier lifestyles and create healthier environments that aim to reduce potential risk factors. Some of these risk factors include tobacco use, being overweight or obese, low fruit and vegetable intake, physical inactivity, harmful use of alcohol, sexually transmitted HPV-infection, HIV infection, urban air pollution and indoor smoke from household use of solid fuels.

Early detection

Early detection comprises early diagnosis of cancer in symptomatic populations and screening in asymptomatic, but at risk populations. The aim is to detect the cancer when it is localized (before metastasis). Early detection of cancer is based on the observation that treatment is more effective when cancer is detected earlier as there is a greater chance that curative treatment will be successful, particularly for cancers of the breast, cervix, mouth, larynx, colon and rectum, and skin. Early detection is therefore successful when linked to effective treatment.

Diagnosis and treatment

Cancer diagnosis is the first step to cancer management. This calls for a combination of careful clinical assessment and diagnostic investigations including endoscopy, imaging, biochemistry histopathology, cytopathology and other laboratory studies. Once a diagnosis is confirmed, it is necessary to ascertain cancer staging, where the main goals are to aid in the choice of therapy.

The primary objective of cancer treatment is cure, prolongation and improvement of the quality of life. Treatment is multidisciplinary and may involve surgery, radiation therapy, chemotherapy, hormonal therapy or some combination of these.

Support and rehabilitation

The impact of cancer extends beyond the physical effects of the disease. It includes psychological, social, economic, sexual and spiritual consequences. The Canadian Strategy for Cancer Control (CSCC, 2006) defines supportive care and rehabilitation as the provision of the necessary services, as determined by those living with or affected by cancer, to meet their physical, social, emotional, nutritional, informational, psychological, sexual, spiritual and practical needs throughout the spectrum of the cancer experience. These needs may occur during diagnosis, treatment or follow-up after treatment, and include issues of survivorship, recurrence of the disease and, in some cases, death.

Palliative care

Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-limiting illness. This is through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain as well as any other physical, psychosocial and spiritual challenges. Pain relief and palliative care must therefore be regarded as integral and essential elements of a national cancer programme.

Cancer surveillance and Research

Cancer surveillance involves the routine and continuous collection of information on the incidence, prevalence, mortality, diagnostic methods, stage distribution and survival of those with cancer and aspects of care received. A fully functioning and dedicated cancer registry with appropriate expertise is a cornerstone of cancer-control surveillance. Research is needed across the spectrum of cancer control to provide the basis for continual improvement. A coordinated agenda for cancer research is an essential element in the effective prevention and control of cancer.

Cancer situation in Kenya

Currently, Kenya has no national data to provide an accurate view of the cancer situation. However, it is estimated that cancer is the third leading cause of death in the country after infectious diseases and cardiovascular diseases. In 2005, cancer was estimated to have killed approximately 18,000 people in the country. Many of these people were under the age of 70 years. There are more cancer cases being reported in Kenya at the present time than 10 years ago. This is partly attributed to physical inactivity, unhealthy diets, overweight/obesity, HIV/AIDS, harmful alcohol use, drugs and environmental changes. Common types of cancer in Kenya are cancers of the cervix, breast, oesophagus and prostate. Others include head and neck, colon and rectum, stomach, liver and soft tissue sarcomas. HIV associated cancers are also on the increase and affect various regions of the body.

The health systems in the country have traditionally concentrated on the prevention and control of communicable diseases at the expense of a rising burden of non-communicable diseases such as cancer. This has resulted in major weaknesses in cancer prevention and control initiatives in Kenya. Further, the country's health development agenda is focused more on communicable diseases leading to bias in resource allocation. Development partners have also not adequately invested in control of cancer and other NCDs.

According to the regional cancer registry at KEMRI, about 80% of reported cases of cancer in Kenya are diagnosed at advanced stages, when very little can be achieved in terms of curative treatment. (KEMRI 2006). This is largely due to the low awareness of cancer signs and symptoms, inadequate screening services, inadequate diagnostic facilities and poorly structured referral facilities. The country has few cancer specialists who are concentrated in a few health facilities in Nairobi. This makes it difficult for a great majority of the population to access cancer treatment services resulting in long waiting times causing some previously curable tumours to progress incurable stages.. Besides, many patients seek care in lower level health facilities where diagnosis of cancer is hampered by lack of facilities and qualified staff.

Cancer treatment infrastructure in Kenya is inadequate and some cancer management options are not readily available. Kenyans who afford cancer treatment abroad currently travel outside the country although there is no documented record of such patients.

There are no clear policies concerning terminal pain management, supportive and palliative care for cancer patients in Kenya. There is also lack of awareness on the part of health care workers, policymakers, administrators and the public that most cancer pain can be relieved with ease. Other impediments to palliative care in Kenya include shortage of financial and human resources and legal restrictions on the use and availability of opioid analgesics.

Cancer research in Kenya is not commensurate with the magnitude of the problem. This is due inadequate funding and training facilities in cancer research. There is also no comprehensive cancer surveillance system and no population based cancer registry.

Justification

There is a rising trend of cancer risk factors in almost all countries, especially in developing countries like Kenya. Establishment of a national cancer control strategy is recommended wherever the burden of the disease is significant. (WHO 2002). Unfortunately, Kenya has weak structures in all of the key areas that form the 'continuum of cancer control'. In addition, the country is classified as a low income country, with a heavy burden of communicable diseases. There is therefore an urgent need to make the most efficient use of limited resources available to make an impact in cancer prevention and control.

A national cancer control strategy or programme is a public health initiative designed to reduce the incidence and mortality of cancer and improve the quality of life of cancer patients in a particular country or state. It comprises of an integrated set of activities covering all aspects of cancer prevention and control, as well as cancer management, and also operates with an appropriate allocation of available resources among the various activities and equitable coverage of the population. This is done through a systematic and equitable implementation of evidence-based interventions for prevention, early detection, treatment, and palliation, making the best use of available resources. Proper planning ensures efficient use of resources for cancer prevention and control which results in equitable distribution of resources.

Strategic Framework

Vision

An effective and efficient national cancer prevention and control program

Mission

To improve community wellbeing by reducing the incidence and impact of cancer through the provision of efficient and evidence based preventive, promotive, curative and palliative care services accessible to all Kenyans

Goal

To reduce cancer morbidity and mortality in Kenya

Objectives

- To promote cancer prevention and early detection.
- To improve diagnosis and treatment including palliative care.
- To promote cancer surveillance, registration and research.
- To promote partnership and collaboration in cancer control.
- To advocate for cancer prevention and control legislation.
- To integrate cancer prevention and control activities with national health and socio-economic plans.
- To promote community involvement and participation in cancer control and prevention.

Guiding Principles of the Cancer Control Strategy

All activities undertaken to meet the objectives of this strategy will be guided by the following fundamental principles:

- **Ownership, leadership and fairness** in implementation of this national strategy.
- **Equity and accessibility** of services, especially for the poor and rural communities.
- **Partnership, Team building and coordination,** with the involvement of partners at various levels in the development, planning and implementation of interventions. The coordination should be based on clear definition and understanding of roles, responsibilities and mandates.
- **Innovation, creativity and accountability**, with the involvement of individuals, cancer patients, civil society and community at all stages of decision making, planning, implementation and evaluation.
- **Systematic and integrated approach** to step by step implementation of priority interventions as part of a national cancer action plan.
- **Sustainable,** with need to identify adequate resources required for the implementation.
- **Evidence-based approach** focusing on best practice, which is supported by a systematic review of scientific knowledge.
- Recognise and **respect gender sensitivity and cultural diversity**.

Strategies and Interventions

Primary prevention of cancer

Primary prevention interventions are cost effective approaches to reduce exposure to the modifiable risk factors at individual and community levels. Prevention of cancer especially when integrated with other programmes such as reproductive health, HIV/AIDs, occupational and environmental health offers the greatest public health potential and most cost effective long term method of cancer control. Approximately 40% of cancers are preventable through interventions such as tobacco control, promotion of healthy diets and physical activity and protection against exposure to environmental carcinogens.

Strategy 1: Tobacco control

Tobacco use is the leading preventable cause of cancer. It causes a variety of cancer types, such as, lung, oesophageal, laryngeal, oral, bladder, kidney, stomach, cervical and colorectal. Over 80% of all lung cancers and about one third of all cancers in developing countries are as a result of tobacco use. (Danaei et al 2005)

Objective

- To reduce the prevalence of tobacco smoking by 5% by 2015

Interventions

- Enhance implementation of legislation on tobacco control.
- Advocate smoke free environments in all indoor workplaces and public places.
- Development of tobacco cessation guidelines.
- Incorporate Tobacco Control into the community strategy.
- Incorporate tobacco control into school health program including in school curriculum.
- Conduct advocacy and public awareness of tobacco health effects.
- Provision of cessation and support services for smokers at the health facilities.

Strategy 2: Promotion of Healthy Diet and Physical Activity

Physical inactivity, unhealthy diets, obesity and being overweight play an important role as causes of cancer (WHA57.17 2004). Overweight and obesity are causally associated with cancers of oesophagus, colorectal, breast in post-menopausal women, kidney (WHO 2003) and accounts for 40% of all uterine (endometrial) cancers. Physical inactivity is also a major contributor to the rise in rates of overweight and obesity which significantly contributes to a large proportion of breast and colorectal cancer mortality.

Objectives

- To reduce the prevalence of obesity and overweight by 2% by 2015
- To increase the consumption of vegetables and fruits by 5%
- To increase the level of physical activity in the population.

Interventions

- Adapt and implement national guidelines on diet and physical activity

- To establish surveillance systems for nutrition, including dietary trends and patterns in household consumption as well as level of physical activity
- Promote farming and consumption of a variety of healthy foods.
- Promote farming, storage, preservation and cooking methods that reduce cancer risks such as aflatoxins and pesticides.
- Health promotion campaigns to raise public awareness on the benefits of physical activity and healthy diets on cancer prevention.
- Advocate for physical environments that support safe active commuting, and create space for recreational activity.
- Advocate for health promotion early in schools.
- Prepare and put in place, as appropriate, and with all relevant stakeholders, a framework and/or mechanisms for promoting the responsible marketing of foods and non-alcoholic beverages to children, in order to reduce the impact of foods high in saturated fats, *trans*-fatty acids, free sugars, or salt.

Strategy 3: Control of harmful use of alcohol

Alcohol use is a risk factor for many cancer types including cancer of the oral cavity pharynx, larynx, oesophagus, liver, colorectal and breast. Risk of cancer increases with the amount of alcohol consumed. The risk of these cancers increases substantially if the person is also a smoker.

Objective

- To reduce the prevalence of harmful use of alcohol in the country.

Interventions

- Adopt the WHO Global Strategy on harmful use of alcohol
- Advocate for the implementation of legislation on production and consumption of alcohol
- Raise public awareness especially among the young people about alcohol-related risks, including cancer, using gender specific messages.
- Incorporate control of alcohol use into the school health program
- Develop national guidelines on prevention and control of harmful use of alcohol
- Establish regional alcohol abuse treatment and rehabilitation services within health care system.
- Develop a national information system to provide regular data on alcohol consumption and related problems.

Strategy 4: Control of environmental exposure to carcinogens.

Environmental pollution of air, water and soil with carcinogenic chemicals accounts for 1-4% of all cancers. Exposure to carcinogenic chemicals in the environment can occur through drinking water or pollution of indoor ambient air. Exposure to carcinogens also occurs via the contamination of food and water by chemicals such as aflatoxins, dioxins and asbestos (Turner PC et al 2005). Indoor air pollution from coal (charcoal) fires doubles the risk of lung cancer. Occupational carcinogens also contribute to the global burden of cancer (Driscoll T et al 2005) and are causally related to cancer of the lung, bladder, larynx, skin, oesophagus and leukaemia. About 9% of all cancers in the industrialised world are caused by exposure to carcinogens at the workplace. (Miller 1984) Ionizing radiation can cause almost any type of cancer but particularly leukaemia, lung, thyroid and breast cancer (UNSCEAR, 2000).

Objective

- To reduce exposure to environmental carcinogen arising from the environment, workplaces and radiation.

Interventions

- Advocate foe enforcement and strengthening of the legal framework to protect workers and general population from environmental carcinogens.
- Regulate the dumping of toxic wastes such as industrial, nuclear and electronic wastes.
- Increase surveillance and control of environmental carcinogens and workplace emissions.
- Promote protection of work place exposure through various avenues of communication
- Routine screening of individuals exposed to occupation hazards that cause cancer.
- Supporting research into occupational exposures, and into potential environmental conditions that lead to cancer.
- Stop using all forms of asbestos.
- Improving the monitoring and reporting of occupational cancers.(industrial, agricultural, laboratory)
- Develop regulatory standards on the use of known carcinogens in the work place.
- Advocate for enforcing of the national radiation protection guidelines.

Strategy 5: Control of Biological agents that cause cancer

There are infections that either directly causes cancer, or increase the risk of cancer but cancer in itself is not infectious. These infections include Hepatitis B or C (liver cancer), Human Papilloma Virus - HPV (cervical cancer), Human Immunodeficiency Virus –HIV (Kaposi sarcoma, lymphomas), Helicobacter Pylori bacteria (cancer of stomach). It is estimated that 20% of all cancer in developing countries and 6% in developed countries are caused by viral and bacterial infections. Prevention through vaccination, early detection and treatment of these infections will reduce the risk of these cancers.

Objective

- To reduce the prevalence of cancers associated with infectious diseases.

Interventions

- Control of infectious diseases that are linked to cancer
- Increase health promotion around infectious disease-related cancers
- Promotion of healthy sexual behavior
- Vaccination against viral infections associated with cancers e.g. HPV and Hepatitis B.
- Treatment of infectious diseases causally associated with cancers.
- Develop and strengthen existing strategies on specific infectious disease prevention that contribute to cancer prevention
- Develop effective targeted screening and control of pathological agents such as HPV, HIV and hepatitis B especially in high-prevalence populations

Early detection of cancer

Early detection comprises *early diagnosis* of cancer in symptomatic populations and *screening* in asymptomatic high risk populations. It is an approach that promotes vigilance for signs and symptoms

that may be indicative of early disease. Early detection and treatment of cancer is known to reduce greatly the burden cancers such as those of the cervix. (Ponten J et al 1995, Jayant et al 1998)

Strategy 1: Enhancing early detection of cancer

Objectives

- To improve the rate of early detection of cancer
- To improve the treatment outcomes for cancer

Interventions

- Advocacy to sensitize policy makers on the need to support early detection programs.
- Raise awareness of cancer to empower the public and health workers to recognize early signs and symptoms of cancer.
- Develop guidelines for screening for early detection of specific cancers
- Build institutional capacity for screening such as provision of laboratory equipment
- Build human resource capacity.
- Integrate early detection and screening for cancer into existing health programs
- Strengthen inter institutional linkages to facilitate timely diagnosis.

Strategy 2: Streamlining referral of cancer patients

Objectives

- To strengthen diagnostic and early detection facilities at lower level health facilities
- To establish a clear referral policy for patients with cancer

Interventions

- Develop standard guidelines and tools for referral systems.
- Education to health professionals and health managers on the guidelines that allow for consultations, referrals, and transfer of patients.

Diagnosis and treatment of cancer

The purpose of diagnosis and treatment is to cure or considerably prolong the life of cancer patients and aims at ensuring the best possible quality of life for cancer survivors. The most effective and efficient treatment is linked to early detection programs and follows evidence based quality of care using a multidisciplinary approach.

Strategy 1: Improvement of cancer diagnosis

Objective

- To improve the capacity of health facilities to accurately diagnose cancer.
- To ensure a timely cancer diagnostic process.

Interventions

- Constitute a technical working group to conduct a situational analysis of cancer diagnostic capacity**.**

- Mobilize financial resources to designate and adequately equip 15 cancer diagnostic centers.
- Conduct training for at least 500 HCWs on cancer diagnosis.
- Develop guidelines for cancer diagnosis including work instruction documents and standard operating procedures.
- Ensure regular maintenance and upgrading of diagnostic equipment.
- Secure supply of consumables necessary for cancer diagnosis
- Strengthen the multidisciplinary approaches to cancer diagnosis

Strategy 2: Enhancing accessibility of cancer treatment services

Objective 1

- To improve accessibility of cancer treatment services.
- To ensure access to quality and safe cancer treatment services.

Interventions

- Constitute TWG to conduct a national needs assessment for cancer management.
- Prioritize cancer treatment and budgetary allocation
- Develop an essential cancer drug list and integrate it into the national essential drug list.
- Avail drugs and commodities for cancer treatment
- Establish multidisciplinary teams in each centre for cancer management
- Develop clinical protocols and QA guidelines for cancer management
- Establish linkages with relevant stakeholders on cancer management
- Establish Cancer specialist outreach programs at all levels.
- Improve working conditions for cancer care professionals
- Include cancer treatment in health insurance schemes
- Provide psychosocial and nutritional support.

Objective 2

- To establish and improve cancer treatment centers

Interventions

- Develop guidelines for establishment of cancer management centers
- Upgrade the national cancer treatment centre at the Kenyatta national hospital based on the guidelines.
- Establish and equip 4 regional cancer treatment centres based on the guidelines
- Establish and equip 10 sub-regional cancer treatment centres based on the guidelines
- Create awareness on cancer treatment centres
- Develop guidelines for monitoring and evaluating quality of treatment and standards of equipment at the cancer treatment centres.

Objective 3:

- To mobilize financial resources for cancer diagnosis and treatment.

Interventions

- Advocate for increased budgetary allocation.
- Lobby for financial support from other stakeholders.
- Develop guidelines for grant writing, and financial management.

Strategy 3: Human capacity development

Objective

- To enhance human resource capacity for cancer management

Interventions

- Develop and implement national training curricula for various cadres of cancer health care practitioners.
- Conduct training for at least 1000 HCPs on cancer management
- Conduct appropriate deployment of staff trained in cancer management
- Establish training centers in collaboration with national academic institutions.

Pain relief and palliative care

Palliative care should be provided from the time of diagnosis of the life limiting illness. Effective palliative care services should be integrated into the existing healthcare system at all levels of care especially community and home based care. These should be adapted to the specific cultural, social and economic setting. Palliative care should be strategically linked to cancer prevention, early detection and treatment services for both adults and children.

Strategy 1 Enhancing pain relief and palliative care

Objective

- To improve quality of life of cancer patients and their families.

Interventions

- Develop and implement national palliative care guidelines.
- Develop curricula and training materials for palliative care.
- Train healthcare providers and care givers on palliative care.
- Conduct awareness campaigns on palliative care targeting policy makers, public, media, health care personnel and regulators
- Advocate for legislation and policies that support palliative care.

- Integrate palliative care services into the national health services.
- Strengthen community and home-based palliative care services.
- Establish nutritional support services for cancer patients.
- Establish social support services for cancer patients.
- Mobilize financial resources for palliative care services.
- Develop networks, partnerships and collaboration with local and international partners.
- Enhance the multi-disciplinary teams for palliative care.
- Develop an essential palliative care drug list and integrate it into the national essential drug list.
- Provide palliative care services catering for groups with special needs e.g. children.

Cancer surveillance and research

Cancer surveillance is a fundamental element of any cancer control strategy since it provides the foundation for advocacy and policy development. Cancer control research seeks to identify and evaluate the means of reducing cancer morbidity and mortality and of improving the quality of life.

Strategy 1: Enhancing cancer surveillance

Objective 1:

- To strengthen existing cancer registries.
- To establish regional cancer registries.

Interventions

- Develop guidelines tools and standards for cancer registries
- Establish national cancer data collection and processing centre.
- Conduct regional needs assessment for establishing cancer registries.
- Adopt and customize the WHO curriculum for training cancer registrars.
- Train cancer registration personnel and sensitize health personnel on cancer registration.
- Procure equipment for regional cancer registries e.g. hardware and software

Objective 2:

- To improve the cancer surveillance system.

Interventions

- Review existing cancer surveillance and registration tools.
- Develop and harmonize cancer surveillance tools
- Train personnel on the use of the cancer registration and surveillance tools.
- Procure and maintain the hardware and software for cancer surveillance.
- Establish cancer surveillance database.

Objective 3:

- To disseminate cancer information to stakeholders.

Interventions

- Strengthen cancer data collation, analysis, interpretation and dissemination.
- Establish guidelines for dissemination and utility of surveillance/registry data.
- Hold an annual cancer conference.
- Generate and publish annual cancer status reports.

Strategy 2: Enhancing capacity for research in cancer

Objective 1

- To identify national research priorities in the area of cancer prevention and control.

Interventions

- Conduct a situation analysis on cancer research
- Establish a technical team to formulate research priorities
- Generate updates on cancer research.

Objective 2:

- To develop capacity for cancer research

Interventions

- Review and update existing guidelines in cancer research.
- Establish well equipped cancer research centers.
- Strengthen the existing cancer research institutions.
- Identify training needs in cancer research
- Develop cancer research training curriculum and materials
- Train of personnel based on training needs

Objective 3:

- To mobilize financial resources for cancer research

Interventions

- Advocate for increased budgetary allocation for cancer research.
- Lobby for financial support for cancer research from stakeholders and partners.
- Develop guidelines for grant writing, and financial management.

Strategy 3: Enhancing dissemination and use of research findings

Objective 1:

- To share research findings with other stakeholders
- To promote utilization of cancer research findings.

Interventions

- Establish guidelines for dissemination and utility of cancer research
- Have an annual cancer conference
- Disseminate cancer research findings
- Translation of research findings to inform clinical practice, public health interventions and policy formulation.

Objective 2:

- To strengthen partnerships in cancer research.

Interventions

- Develop guidelines for partnerships for cancer research
- Identify and collaborate with other research institutes
- Enforce IPR (Intellectual Property Rights)
- Promoting national research culture and ethics

Objective 3:

- To establish a cancer research database

Interventions

- Design and establish a cancer research database.
- Promote the use of the cancer research database to inform cancer research priorities.

Coordination of cancer prevention and control activities

Coordination of all cancer prevention and control activities ensures efficient use of resources. This aids in directing efforts of all key stakeholders towards a common goal and ensures smooth running of programs and avoids overlaps and redundancies.

Strategy: Enhance coordination of cancer prevention and control interventions.

Objective 1:

- To establish an institutional framework to coordinate national cancer control activities.

Interventions

- Strengthen the existing national taskforce for cancer prevention and control.
- Advocate for establishment of a statutory national cancer control institution such as a National Cancer Institute.
- Strengthen the national cancer control program
- Constitute implementation teams for the various cancer control strategies.

Monitoring and evaluation

Continuous measurement of the progress and impact of cancer control activities is essential to achieving the planned interventions. Effective systems for Mand E are vital management tools.

Strategy: Strengthen monitoring and evaluation of cancer prevention and control activities.

Objective 1:

- To monitor and evaluate cancer prevention and control interventions

Interventions

- Carry out a baseline cancer situation analysis.
- Develop monitoring and evaluation guidelines and tools.
- Develop an M&E framework for cancer prevention and control.

References

1) CSCC Governing Council, 2006, Canadian strategy for cancer control
2) Danaei G et al. 2005, Causes of cancer in the world: Comparative assessment of nine behavioral and environmental risk factors, *Lancet* 330:223
3) Driscoll T et al 2005. The global burden of diseases due to occupational carcinogens. *American journal of Industrial Medicine,* 48:419-431
4) Jayant K et al 1998, Survival from cervical cancer in Barchi registry, rural India. *Cancer Survival in developing* countries IARC Scientific Publication No 145 pp 69-77
5) Cancer Incidence Report 2000 – 2002, 2006, Nairobi Cancer Registry, Kenya Medical Research Institute, Nairobi, Kenya.
6) Matthers CD, Loncar D 2006, projections of global mortality and burden of disease from 2002 t0 2030. PloS Medicine, 3:2011-2030
7) Miller AB, 1984, The information explosion. The role of the epidemiologist, Cancer Forum. 8:67-75
8) National Cancer Forum, 2006, Ireland, A Strategy for Cancer Control in Ireland.
9) Ponten J et al. 1995, Strategies for control of cervical cancer. *International journal of cancer*, 60 1-26
10) Turner PC et al 2005, Reduction in exposure to carcinogenic aflatoxins by postharvest intervention measures in West Africa: a community based intervention study. *Lancet* 10:1950-1956
11) UNSCEAR 2000, Sources and effects of ionizing radiation. Report to the General Assembly with Annexes, New York, UN.
12) WHA57.17 2004, WHO global strategy on diet, Physical Activity and Health.
13) WHO, 2002, National cancer control programs, Policies and managerial guidelines, 2nd edition,

National cancer control strategy 2010– 2015: Implementation plan

Strategy	Objective	Activities	Outputs	Monitoring Indicators	Time Frame					Cost (KSH)	Lead Agency	Key Partners
Primary prevention of cancer												
Tobacco Control	To reduce the prevalence of tobacco smoking by 5% by 2015	Enhance implementation of legislation on tobacco control.	Legislation on tobacco reviewed	Reviews of tobacco legislations						5,000,000	MoPHS, Parliament	WHO, KETCA,, ILA
		Advocate smoke free environments in all indoor workplaces and public places	Increase in smoke free environments in Kenya	Laws and regulations describing smoke free environments						1,000,000	MoPHS, Local and county governments	WHO. KETCA. ILA
		Develop and implement national tobacco cessation guidelines	Tobacco cessation Guidelines developed and in use	No. of health facilities using the cessation guidelines						2,000,000	MoPHS, MOMS	WHO, KETCA,, ILA
		Incorporate Tobacco Control Activities (TBA) into community strategy	Tobacco control integrated into 2,500 community health units	No. of units undertaking TBA						3,000,000	MoPHS. MOMS	WHO, KETCA,, ILA
		Incorporate tobacco control into school health programme including in school curriculum.	Tobacco control initiatives introduced into 30% of primary schools.	% schools with tobacco control Initiatives						7,000,000	MoPHS, Min. Education	WHO, KETCA,, ILA
		Conduct advocacy and public awareness of tobacco health effects.	Tobacco Control messages developed and disseminated.	% awareness on tobacco effects						10,000,000	MoPHS, KETCA	WHO, KENCANS
		Provision of cessation and support services for smokers at the health facilities	Cessation and support services for smokers readily available at the health facilities	Prevalence of tobacco smoking						10,000,000	MOMS, MoPHS	WHO, NGOs
Promotion of Healthy Diet and Physical Activity	To reduce the prevalence of obesity and overweight	Adapt and implement national guidelines on diet and physical activity	National guidelines for diet and physical activity developed and implemented	Copy of document in place and in use Number of institutions using the guidelines						10,000,000	MoPHS	WHO, NGOs
		To establish surveillance systems for nutrition, including	Surveillance systems for nutrition, dietary trends	Surveillance reports and publications						5,000,000	MoPHS	WHO, NGOs

	by 2% by 2015	dietary trends and patterns in household consumption as well as level of physical activity	and patterns in household consumption as well as level of physical activity in place.								
		Put in place a mechanism for promoting the responsible marketing of foods and non-alcoholic beverages to children,	Support the strengthening of regulatory bodies to ensure responsible marketing to children.	Reduction of childhood obesity						10,000,000	MoPHS	WHO
	Increase the consumption of vegetables and fruits by 5%	Promote farming and consumption of a variety of healthy foods	Healthier diets and physical activity by the community	Reports on farming, sales consumption of various foods.						10,000,000	Min Agriculture, MoPHS	WHO, UNICEF, FAO
		Promote farming, storage, preservation and cooking methods that reduce cancer risks such as aflatoxins and pesticides.	Reduction in incidence and prevalence of aflatoxin poisoning	Farming reports						10,000,000	Min Agriculture, MoPHS, KEBS	WHO, UNICEF, FAO
	To increase the level of physical activity in the population	Advocate for health promotion early in schools	Healthier youth	Proportion of obesity in school going children						5,000,000	Min Education, MoPHS	UNICEF, WHO
		Health promotion campaigns to raise public awareness on the benefits of physical activity and healthy diets on cancer prevention.	Increased awareness on the need for and engagement in physical activity	Proportion of the general public engaging in required physical activity						3,000,000	MoPHS, Min Sports	WHO
		Advocate for physical environments that support safe active commuting, and create space for recreational activity.	Physical environments and recreation parks in place	No. of public recreation parks that are appropriately being used.						5,000,000	Min Sports, MoPHS	WHO, Public works, NEMA
Reduction of harmful use of alcohol	To reduce the prevalence of harmful use of alcohol in the country	Adopt the WHO Global Strategy on harmful use of alcohol	Strategy adopted by local government agencies	No of institutions who have adopted the strategy						1,000,000	MoPHS	WHO, NACADA, UNODC
		Advocate for the implementation of legislation on production and consumption of alcohol	Legislation on alcohol implemented	Proportion of harmful use of alcohol						5,000,000	NACADA, MoPHS	WHO

		Raise public awareness especially among the young people about alcohol-related risks, including cancer, using gender specific messages	Decreased marketing of unhealthy foods and non-alcoholic beverages to children	Level of awareness of harmful effects of alcohol					4,000,000	NACADA, MoPHS	WHO
		Incorporate control of alcohol use into the school health programme	School health programme in use	Awareness among school children					5,000,000	NACADA, MoPHS, Min Education	WHO
		Develop national guidelines on prevention and control of harmful use of alcohol	Guidelines developed	Copies of the documents					3,000,000	MoPHS	WHO
		Establish regional alcohol abuse treatment and rehabilitation services within health care system.	Regional Alcohol abuse centres developed	No and people using such centres					10,000,000	MOMS, MoPHS	WHO
		Develop a national information system to provide regular data on alcohol consumption and related problems	Information systems for alcohol established in 30% of health facilities	Proportion of facilities submitting reports on alcohol use.					5,000,000	MOMS, MoPHS	WHO
		Develop Information, Communication and Education (IEC) materials on harmful use of alcohol	Relevant IEC materials available in all health facilities	No. of facilities where the IEC materials are appropriately in use.					10,000,000	MOMS, MoPHS	WHO
Control of environmental exposure to carcinogens.	To reduce exposure to environmental carcinogen arising from the environment, workplaces and radiation.	Advocate for enforcement and strengthening of the legal framework to protect workers and general population from environmental carcinogens.	Legal framework to protect workers	Copies of the documents					2,000,000	MoPHS, NEMA	WHO
		Regulate the dumping of toxic wastes such as industrial, nuclear and electronic wastes.	Proper disposal of toxic wastes	Available waste disposal sites and disposal mechanisms for various wastes					8,000,000	NEMA	MoPHS, WHO
		Increase surveillance and control of environmental carcinogens and workplace emissions.	Reduced environmental carcinogens	Proportion of various carcinogens in air, water and soil					5,000,000	NEMA	MoPHS, WHO

		Promote protection of work place exposure through various avenues of communication	Proper communication channels on risks, degree and types of exposure	Proportion of workplaces with proper communication channels					3,000,000	NEMA, MoPHS	WHO, Labour Unions
		Routine screening of individuals exposed to occupation hazards that cause cancer.	Good post exposure care	Proportion of workers exposed to carcinogens receiving post exposure care					10,000,000	MoPHS	WHO, Labour Unions
		Supporting research into occupational exposures, and into potential environmental conditions that lead to cancer.	Increased knowledge on occupational hazards	Publications on exposures at the work place					5,000,000	MoPHS	WHO, NEMA
		Stop using all forms of asbestos.	No asbestos in use in the country	Proportion of structures still using asbestos					5,000,000	NEMA	MoPHS, WHO
		Improving the monitoring and reporting of occupational cancers.(industrial, agricultural, laboratory)	Regular reports on occupational cancers	No. of reports					5,000,000	MoPHS, Labour unions, Min of Labour	KEMRI, WHO
		Develop regulatory standards on the use of known carcinogens in the work place.	Strict regulation of carcinogens at workplaces	Regulation documents					2,000,000	Labour unions, MoPHS	WHO
		Advocate for enforcing of the national radiation protection guidelines.	Strict enforcement of radiation protection guidelines	Reports on enforcement actions taken						Min of Labour, Police	WHO
Control of Biological agents that cause cancer	To reduce the prevalence of cancers associated with infectious diseases.	Control of infectious diseases that are linked to cancer	Improved knowledge, attitude and practices (KAP) of the community towards infectious diseases causing cancer.	% increase in KAP in the community.					20,000,000	MoPHS, MOMS	WHO
		Develop and strengthen existing strategies on specific infectious disease prevention that contribute to cancer prevention	Strategies reviewed	Reports on strategies strengthened					15,000,000	MoPHS	WHO

		Develop effective targeted screening and control of pathological agents such as HPV, HIV and hepatitis B especially in high-prevalence populations	Screening and vaccination services available and in use.	% coverage of target population screened or vaccinated against cancer causing preventable infections						20,000,000	MoPHS	WHO
Early detection of cancer												
Strategy 1: Enhancing early detection of cancer	To improve the rate of early detection of cancer	Advocacy to sensitize policy makers on the need to support early detection programs	Screening guidelines in use in 30% of Health facilities.	Proportion of health facilities providing screening services as per the guidelines						5,000,000	MOMS	MoPHS, WHO
		Raise awareness of cancer to empower the public and health workers to recognize early signs and symptoms of cancer.	Increased suspicion index and self examination	% target population appropriately screened at each level of health care.						5,000,000	MoPHS, MOMS, Medical Schools	WHO
		Develop guidelines for screening for early detection of specific cancers	Cancer screening routinely provided at all levels of health care.	% increase in No. of people seeking screening services						10,000,000	MoPHS, MOMS	WHO
		Build institutional capacity for screening (Equipment, laboratory)	Increased uptake of cancer screening services	Proportion of facilities offering screening services for certain cancers						5,000,000	MoPHS, MOMS	WHO
	Improve the treatment outcomes for cancer	Build human resource capacity	Increased human resource capacity	Proportion increase in human capacity						20,000,000	MOMS	MoPHS, WHO
		Integrate early detection and screening for cancer into existing health programmes	Early detection incorporated into health programmes	Proportion of health programmes that have cancer early detection services						10,000,000	MoPHS, MOMS	WHO
		Strengthen inter institutional linkages facilitate timely diagnosis.	Improved coordination between institutions in referral and care of patients	Changes in referral times						2,000,000	MOMS, MoPHS	WHO
Strategy 2: Streamli	Strengthen diagnostic and early	Develop guidelines and standard tools for referral systems.	Guidelines developed and in use	Proportion of facilities adhering to the guidelines						5,000,000	MoPHS, MOMS	WHO

ning referral of cancer patients	detection facilities										
	To establish a clear referral policy for patients with cancer	Education to health professionals and health managers on the guidelines that allow for consultations, referrals, and transfers.	Improved coordination between institutions in referral and care of patients	Changes in referral times						4,000,000	MoPHS, MOMS	WHO
Diagnosis and treatment of cancer												
Strategy 1: Improvement of cancer diagnosis	To improve the capacity of health facilities to accurately diagnose cancer	Constitute a technical working group to conduct a situational analysis of cancer diagnostic capacity**.**	Needs/Strengths identified	Analysis report						5,000,000	MoPHS, MOMS	WHO
		Mobilize financial resources to designate and adequately equip 15 cancer diagnostic centres.	15 diagnostic centres designated	Proportion of these centres established and their output						25,000,000	MOMS, KNH, MoPHS	WHO, NIC, IAEA
		Conduct training for at least 500 HCWs on cancer diagnosis	Improved capacity of health facilities to accurately diagnose cancers.	Proportion of HCW trained						15,000,000	MOMS, KNH, MoPHS	WHO, NCI, IAEA
		Secure supply of diagnostic consumables	Improved supply of consumables	Proportion of supplies experiencing stock outs						10,000,000	MOMS, KNH, MoPHS	WHO
	To ensure a timely cancer diagnostic process.	Develop guidelines for cancer diagnosis: work instruction documents and standard operating procedures	Guidelines developed and ii use	Copies of documents and proportion of facilities using them						2,000,000	MOMS, KNH, MoPHS	WHO
		Strengthen the multidisciplinary approaches to cancer diagnosis	Robust multi disciplinary teams in cancer management	Proportion of facilities having such teams						4,000,000	MOMS, KNH, MoPHS	WHO
		Ensure regular maintenance and upgrading of diagnostic equipment.	Proper maintenance of equipment	Proportion of specific equipment not working						10,000,000	MOMS, KNH, MoPHS	WHO

Strategy 2: Enhancing accessibility of cancer treatment services	To improve accessibility to quality and safe cancer treatment services	Constitute TWG to conduct a national needs assessment for cancer management.	HCWs trained	No. of HCWs trained						2,000,000	MOMS MoPHS	IAEA, WHO,KENCANSA,KEHPCA,
		Prioritize cancer treatment and budgetary allocation	Improved budgets for cancer	Proportion of health budget dedicated to cancer treatment						50,000,000	MOMS, MoPHS	IAEA, WHO,KENCANSA
		Develop an essential cancer drug list and integrate it into the national essential drug list.	Up to date essential drug lists in place	Copies of documents and proportion of facilities using them						500,000	MOMS, MoPHS	WHO, IAEA
		Avail drugs and commodities for cancer treatment	Improved supply of drugs	Proportion of essential drugs experiencing stock outs						15,000,000	MOMS, MoPHS	KEMSA, WHO
		Establish multidisciplinary teams in each centre for cancer management	Multidisciplinary teams in place	Proportion health facilities having such teams						2,000,000	MOMS, MoPHS	WHO
		Develop clinical protocols and QA guidelines for cancer management	Protocols in place	Copies of documents and proportion of facilities using them						1,000,000	MOMS, KNH, MoPHS	WHO
		Establish linkages with relevant stakeholders on cancer management	Improved coordination among stakeholders	Reports of meeting and activities jointly performed						3,000,000	KNH, Universities	IAEA, WHO
		Establish Cancer specialist outreach programs at all levels.	Outreach programmes in place	No. of outreach events organized						15,000,000	MOMS, MoPHS	KNH, Regional Hospitals
		Improve working conditions for cancer care professionals	Better terms of services	Proportion of workers leaving service						50,000,000	MOMS, MoPHS	
		Include cancer treatment in health insurance schemes	Cancer care included in health insurance	Proportion of insurance firms covering cancer care						5,000,000	MOMS, NHIF	WHO, Insurers (AKI)
		Advocate for provision of psychosocial and nutritional support.	Improved psychosocial and nutritional support for cancer patients	Proportion of health facilities that have adopted this care						2,000,000	MOMS, MoPHS	KEHPCA
	To establish and improve cancer	Develop guidelines for establishment of cancer management centres	Guidelines developed	No. of Guidelines developed						1,000,000	MOMS, MoPHS	WHO

	treatment centres	Upgrade the national cancer treatment centre at the Kenyatta national hospital based on the guidelines.	KNH cancer treatment centre upgraded	Inventory of equipment and staff available at the centre						80,000,000	MOMS	IAEA, WHO, NCI
		Establish and equip 4 regional cancer treatment centres based on the guidelines	4 regional facilities established and equipped	No. of facilities equipped						60,000,000	MOMS	IAEA, WHO, NCI
		Establish and equip 10 sub-regional cancer treatment centres based on the guidelines	10 sub regional centres established	No. of functional facilities						30,000,000	MOMS, MoPHS	IAEA, WHO, NCI
		Create awareness on cancer treatment centres	Increased public awareness on cancer treatment	Proportion of public aware of available cancer treatment options and centres						3,000,000	MOMS, MoPHS	WHO
		Develop guidelines for monitoring and evaluating quality of treatment and standards of equipment at the cancer treatment centres.	QA guidelines developed and in use	Reports on QA assessments of cancer treatment centres						5,00,000	KNH, MOMS	WHO
	Mobilize financial resources for cancer diagnosis and treatment	Advocate for increased budgetary allocation.	Increased finances for cancer diagnosis	% increase in funding for diagnosis						2,000,000	MOMS MoPHS	IAEA, WHO,KEN CANSA
		Lobby for financial support from other stakeholders.	Increased non budgetary financial resources for diagnosis and treatment	% increase in on budgetary resources						1,000,000	MOMS, MoPHS	IAEA, WHO,KEN CANSA
		Develop guidelines for grant writing, and financial management.	Improved grant writing and financial management	Guidelines and report s on their use							MOMS, MoPHS	IAEA, WHO,KEN CANSA
Strategy 3: Human capacity development	Enhance human resource capacity for cancer management	Develop and implement national training curricula for various cadres of cancer health care practitioners.	Curricula developed and in use	No. of staff trained using the curricula						5,000,000	MOMS, MoPHS, Universities	IAEA, WHO,KEN CANSA
		Conduct training for at least 1000 HCPs on cancer management	Staff trained	No. of staff trained						20,000,000	MOMS, MoPHS, Universities	IAEA, WHO,KEN CANSA

		Conduct appropriate deployment of staff trained in cancer management	Appropriate staff distribution	Reports on national cancer staff distribution						2,000,000	MOMS, MoPHS	WHO
		Establish training centres in collaboration with national academic institutions	Training centres established	No. of training centres						15,000,000	MOMS, MoPHS, Universities	WHO, IAEA
Palliative care												
Strategy 1 Enhancing pain relief and palliative care	To improve quality of life of cancer patients and their families	Develop and implement national palliative care guidelines.	Functional palliative care guidelines in place	Copies of palliative care guidelines in use						2,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Develop curricula and training materials for palliative care.	Curricula developed and in use	Copies of palliative care Curricula available						2,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Train healthcare providers and care givers on palliative care.	HCPs trained on palliative care	No. of HCPs trained						10,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Conduct awareness campaigns on palliative care targeting policy makers, public, media, health care personnel and regulators	Awareness on palliative care created	Proportion of target groups aware						5,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Advocate for legislation and policies that support palliative care.	Policy support for palliative care services in place	Copies of policy documents						2,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Integrate palliative care services into the national health services.	Palliative care services available and accessed	No. of health facilities providing palliative care						3,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Strengthen community and home-based palliative care services.	Community and home based palliative care services available and accessed	No. of community-based palliative care programs						10,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Establish nutritional support services for cancer patients.	Nutritional support services for cancer patients	No. of patients receiving nutritional support						5,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Establish social support services for cancer patients.	social support services for cancer patients	No. of patients support groups formed						8,000,000	MOMS /MoPHS	WHO, KEHPCA,

												APCA
		Mobilize financial resources for palliative care services.	Improved support for palliative care services	Proportion of palliative care services financed by partners					3,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Develop networks, partnerships and collaboration with local and international partners.	Palliative care networks in place	No. of network programmes					3,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Enhance the multi-disciplinary teams for palliative care.	Multi-disciplinary approach to palliative care	No. of treatment centres with functional teams					2,000,000	MOMS /MoPHS	WHO, KEHPCA, APCA
		Develop an essential palliative care drug list and integrate it into the national essential drug list.	Drug list in place and integrated	Copies of drug list and its use					1,000,000	MOMS, MoPHS	WHO, KEHPCA, APCA
		Provide palliative care services catering for groups with special needs e.g. children.	Palliative care for special groups such as children in place	Reports on palliative care services for special groups					5,000,000	MOMS, MoPHS	WHO, KEHPCA, APCA
Cancer surveillance and research												
Strategy 1: Enhancing cancer surveillance	To strengthen existing cancer registries and establish regional cancer registries.	Develop guidelines tools and standards for cancer registries	Guidelines developed and in use	Copies and institutions that use them					1,000,000	KEMRI, Universities	WHO, MOH
		Establish national cancer data collection and processing centre.	Centre established	Amount of data produced and reports generated					2,000,000	KEMRI, Universities	WHO, MOH
		Conduct regional needs assessment for establishing cancer registries.	Needs established	Reports on cancer registry needs					2,000,000	KEMRI, Universities	WHO, MOH
		Adopt and customize the WHO curriculum for training cancer registrars.	National Curriculum for cancer registry in place	No. of institutions using the curricula					1,000,000	KEMRI, Universities	WHO, IARC
		Train cancer registration personnel and sensitize health personnel on cancer registration.	Cancer registrars trained	No of registrars trained					2,000,000	KEMRI, Universities	WHO, IARC

		Procure equipment for regional cancer registries e.g. hardware and software	Equipped regional registries	Number of hardware's installed and in use,						18,000,000	MoPHS, MOMS, Universities	WHO IARC
	To improve the cancer surveillance system.	Review existing cancer surveillance and registration tools.	Tools reviewed	Reports on reviews and copies of new tools						2,000,000	KEMRI	MoPHS, MOMS
		Develop and harmonize cancer surveillance tools.	Tools harmonized	Copies of harmonised tools						1,000,000	KEMRI	MoPHS, MOMS
		Train personnel on the use of the cancer registration and surveillance tools.	Personnel trained	No. of personnel trained						3,000,000	Universities	KEMRI
		Procure and maintain the hardware and software for cancer surveillance.	Reliable hardware and software in place	Inventory of hard ware available and the software in use						8,000,000	KEMRI, Universities	MoPHS, MOMS
		Establish cancer surveillance database	Database established	No. of institutions using the database						5,000,000	KEMRI, Universities	MoPHS, MOMS
	To disseminate cancer information to stakeholders	Strengthen cancer data collation, analysis, interpretation and dissemination.	Improved management of cancer data	No, of institutions using the cancer data and reports on cancer situation						5,000,000	KEMRI, Universities	MoPHS, MOMS
		Establish guidelines for dissemination and utility of surveillance/registry data.	Guidelines in place and in use	No, of institutions using the cancer data and reports on cancer situation						1,000,000	KEMRI, Universities	MoPHS, MOMS
		Hold an annual cancer conference.	Annual cancer conference held	Reports of the cancer conference						5,000,000	KEMRI, Universities	MoPHS, MOMS
		Generate and publish annual cancer status reports	Cancer reports published regularly	Copies of cancer reports						2,000,000	KEMRI, Universities	MoPHS, MOMS
Strategy 2: Enhancing capacity for research	To identify national research priorities in the area of cancer prevention	Conduct a situation analysis on cancer research	Situation analysis done	Report of the cancer research situation						3,000,000	KEMRI, Universities	MoPHS, MOMS
		Establish a technical team to formulate research priorities	Research priorities determined	Report on research priorities						2,000,000	KEMRI, Universities	MoPHS, MOMS
		Generate updates on cancer research								500,000	KEMRI, Universities	WHO, IARC

in cancer	and control											
	To develop capacity for cancer research	Review and update existing guidelines in cancer research.	Guidelines reviewed	Copies of guidelines and reports on reviews						2,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Establish well equipped cancer research centres.	Cancer research centres established	No. of cancer research centres and their outputs in terms of publications						20,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Strengthen the existing cancer research institutions.	Cancer research centre strengthened	No of publications from the research centre						15,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Identify training needs in cancer research	Training needs identified	Reports on training needs						1,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Develop cancer research training curriculum and materials	curricula developed and in use	Copy of curricula and proportion of institutions that have adopted it						2,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Train of personnel based on training needs	Personnel trained	No of personnel trained						12,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
	Mobilize financial resources for cancer research	Advocate for increased budgetary allocation for cancer research.	Increased budgetary allocation for research	Proportion of health budget dedicated to cancer research						2,000,000	KEMRI, Universities	WHO
		Lobby for financial support for cancer research from stakeholders and partners.	Increased support from partners	Amount of extra-budgetary support for cancer research						1,000,000	KEMRI, Universities	WHO
		Develop guidelines for grant writing, and financial management	Guidelines developed and in use	Reports on financial management of cancer research funds						2,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
Strategy Enhancing dissemination and use	To share research findings with other stakeholders and to	Establish guidelines for dissemination and utility of cancer research	Guidelines in place and in use	Proportion of institutions following the guidelines						1,000,000	KEMRI, MOMS	WHO
		Have an annual cancer conference	Annual cancer conference held	Reports of conferences						6,000,000	KEMRI, Universities	MoPHS, MOMS
		Disseminate cancer research	Findings disseminated	Proportion of						2,000,000	KEMRI,	WHO,

of research findings	promote utilization of cancer research findings.	findings		stakeholders aware of various research findings							Universities	MOH
		Translation of research findings to inform clinical practice, public health interventions and policy formulation	Improved use of research finding to inform clinical practice	Reports on clinical practices changed in line with new knowledge from research						2,000,000	MoPHS, MOMS	WHO
	To strengthen partnerships in cancer research.	Develop guidelines for partnerships for cancer research	Guidelines developed and in use	Copies of guidelines and proportion of institutions using them						500,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Identify and collaborate with other research institutes	Improved collaboration with other institutions	No of publications done jointly between local and international institutions						3,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Enforce IPR (Intellectual Property Rights)	Improved respect for property rights	Reports on property rights violations						2,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Promoting national research culture and ethics	Improved research culture	Proportion of people taking up cancer research						1,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
	To establish a cancer research database	Design and establish a cancer research database.	Cancer research database in place and in use	No of times the database is used (sourced)						5,000,000	KEMRI, Universities	MoPHS, MOMS, WHO
		Promote the use of the cancer research database to inform cancer research priorities	Research priorities set in line with the database	Proportion of research publication in relevant research areas						1,000,000	MoPHS, MOMS, KEMRI	WHO
Coordination of cancer prevention and control activities												
Enhance coordination of cancer prevention and control	To establish an institutional framework to coordinate national	Strengthen the existing national taskforce for cancer prevention and control.	Taskforce strengthened	Reports on meeting and activities of the taskforce						3,000,000	MoPHS, MOMS	WHO
		Advocate for establishment of a statutory national cancer control institution(s).	Statutory body formed	Reports on meetings and deliberations towards formation of a statutory body						15,000,000	MoPHS, MOMS	WHO

interventions.	cancer control activities	Strengthen the national cancer control program	National cancer control programs strengthened	Reports on the activities of the national programme						5,000,000		WHO
		Constitute implementation teams for the various cancer control strategies	Improved implementation of cancer control activities	Reports on progress of various activities						500,000	MoPHS, MOMS	WHO
Monitoring and evaluation												
Strengthen monitoring and evaluation	To monitor and evaluate cancer prevention and control interventions	Carry out a baseline cancer situation analysis.	Baseline survey done	Reports on cancer situation						4,000,000	MoPHS, MOS	WHO
		Develop monitoring and evaluation guidelines and tools.	Guidelines developed	Copies of documents and institutions using them						2,000,000	MoPHS, MOMS	WHO
		Develop an M&E framework for cancer prevention and control.	M&E Framework developed	Copies of documents and institutions using them						1,000,000	MoPHS, MOMS	WHO