ZIMBABWE

Ministry of Health and Child Care

# National Cancer Prevention and Control Strategy for Zimbabwe

2014 - 2018

The
Epidemiology & Disease Control
NON COMMUNICABLE DISEASES UNIT

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# National Cancer Prevention and Control Strategy for Zimbabwe 2014 - 2018

PRIMARY HEALTH CARE
A HEALTHY NATION
MINISTRY OF HEALTH & CHILD CARE
ZIMBABWE

# FOREWORD

Cancer is a disease that affects large numbers of people from all walks of life. Diagnosis of cancer induces fear both in the individual and in families, and is frequently viewed as a death sentence. Its prevention, diagnosis and treatment poses great challenges particularly in resource constrained environments. There is reason for optimism however, as research indicates possibilities for major strides in its prevention and cure. There have been major improvements in the diagnosis and treatment of cancer, particularly in high income countries. However, adoption of new technologies in cancer diagnosis and treatment will place substantial and diverse pressure on the already overburdened and underfunded health delivery system, and therefore requires careful planning and resource mobilisation.

Currently, over 5000 new cancer cases are diagnosed (all types) in Zimbabwe annually. Experience has, however, shown us that this is just the tip of the iceberg as many cancers are not captured by the routine National Health Information System because the patients do not present for treatment, or some deaths are not registered. Of those who do report, the majority are already at an advanced stage of disease, due to limited access to screening services. The current cancer treatment and palliation services are unable to meet the existing demand. Additionally, and despite great progress in reducing HIV prevalence in recent years, Zimbabwe remains one of the countries most heavily burdened with HIV with an adult prevalence of 15%. The large number of people living with HIV results in an even higher number of people who will develop cancer in Zimbabwe. Meeting this increased demand and ensuring sufficient quality of services will require early and sustained decisions on investment, human resource planning and the re-organisation of health care services.

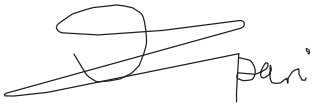
To address the rising cancer burden, this first National Cancer Prevention and Control Strategy is aligned with the priorities highlighted in the National Health Strategy 2009-2013 and advocates for a comprehensive cancer control policy and programme. Cancer prevention and control requires a population-wide, integrated and cohesive approach to cancer that encompasses prevention, screening, diagnosis, treatment and support, palliative and rehabilitative care. This calls for strong political, technical, and practical leadership as well as significant investment in terms of infrastructure and equipment, human resources, technologies, medicines and vaccines. Appropriate investment will ensure that patients accessing health care services in Zimbabwe are assured of their right to receive quality treatment and care regardless of who and where they are.

This Strategy therefore focuses on reform and re-organisation of the way cancer services are delivered in Zimbabwe, in order to ensure that future services are consistent and associated with good clinical outcomes for all cancer patients and quality care for the patients and their caregivers. It is envisaged that this will address the current finding of low cancer survival rates and fragmentation of services for cancer patients which are of major concern to the Ministry. While cancer survival

rates have been noted to vary by type of cancer, the major cause of these low survival rates has been identified as lack of access to early detection and early treatment. The strategy therefore seeks to address some of these anomalies.

The Strategy will also seek to ensure that cancer prevention and care across the whole country is equitable and of the highest possible standard, through the establishment of a National Cancer Forum whose mandate will be to monitor performance of the national cancer prevention and control programme and advise the Minister of Health and Child Care accordingly.

I wish to thank the National Cancer Prevention and Control Committee for their hard work and the efforts expended in developing this strategy. Their professional dedication is an inspiration to us all, and will help lead us forward to our goal of a healthy nation.



Dr P.D Parirenyatwa (MP)
Minister of Health and Child Care

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# Acknowledgements

The development of this Strategy was led by the National Cancer Prevention and Control Strategy Committee. This committee was formed following the Integrated Missions Programme of Action for Cancer Therapy (imPACT mission) of the International Atomic Energy Agency (IAEA), that highlighted the National Cancer Strategy as a need of high priority to enable the setting up of a Comprehensive National Cancer Control Programme (NCCP). The commitment and diligence shown by committee members to the process of developing this Strategy is an inspiration to all. The concerted effort and team spirit shown in producing this document is commendable.

This Cancer Prevention and Control Strategy is also a result of extensive consultation with international and national cancer control stakeholders including the World Health Organisation (WHO), the United Nations Population Fund (UNFPA), Family Health International 360, Cancer Association of Zimbabwe, the National Cancer Alliance of Zimbabwe, Breast Cancer Alleviation of Zimbabwe, Hospice Association of Zimbabwe (HOSPAZ), Island Hospice Zimbabwe, Scientific and Industrial Research Development Centre (SIRDC), Radiation Protection Authority of Zimbabwe, Africa University Faculty of Health Sciences, University of Zimbabwe College of Health Sciences Departments of Radiology, Obstetrics and Gynaecology, Surgery, Pathology, Paediatrics, Medicine and Ophthalmology. The process was also very fortunate to benefit from the direct input and involvement of cancer survivors who added a human face to the Strategy.

Many thanks go to Ministry of Health and Child Care officials who were also involved and provided excellent support in the development of this Strategy. These include the Radiotherapy Centres at Parirenyatwa Group of Hospitals and Mpilo Central Hospital, the Non-Communicable Diseases Unit, Reproductive Health Unit, AIDS and TB Unit, Directorate of Pharmacy Services, the Rehabilitation Unit and the Oral Health Department. Special thanks to Mr Tonderai Kadzere, Strategy and Policy Development Officer, in the Policy and Planning Directorate for the support and guidance in the initial processes of the development of the Strategy, and for guiding its finalisation and Mr Chenjerai Sisimayi for guidance and leadership for the M&E framework development.

The Ministry is also profoundly grateful to Dr Anna Miller for editing and to Savanna Pharmaceuticals for their financial assistance towards the costs of production and launching of this Strategy.

# Acronyms

| | |
|---|---|
| CT | Computerised Tomography |
| CIN | Cervical Intraepithelial Neoplasia |
| BMI | Body Mass Index |
| EBRT | External Beam Radiotherapy |
| FCTC | Framework Convention for Tobacco Control |
| HIV | Human Immune Deficiency Virus |
| HOSPAZ | Hospice Association of Zimbabwe |
| HPV | Human Papilloma Virus |
| IARC | International Agency for Research on Cancer |
| IAEA | International Atomic Energy Agency |
| INCTR | International Network for Cancer Treatment and Research |
| JRMO | Junior Resident Medical Officer |
| KS | Kaposi Sarcoma |
| KIDZCAN | Children Can Survive Cancer Zimbabwe |
| KRA | Key Result Areas |
| LEEP | Loop electrosurgical excision procedure |
| MCAZ | Medicines Control Authority of Zimbabwe |
| MOHCW | Ministry of Health and Child Welfare |
| MRI | Magnetic Resonance Imaging |
| MUGA | Multiple Gated Acquisitions |
| NCCP | National Cancer Control Programme |
| NCD | Non Communicable Diseases |
| NTD | Neglected Tropical Diseases |
| OI Clinic | Opportunistic Infections clinic |
| PC | Palliative care |
| PSA | Prostatic Specific Antigen |
| PET | Positron Emission Tomography |
| RT | Radiotherapy |
| RTPS | Radiotherapy Treatment Planning System |
| SIRDC | Scientific and Industrial Research Development Centre |
| SPECT | Single Positron Emission Tomography |
| SRMO | Senior Resident Medical officer |
| STI | Sexually Transmitted Infections |
| UNFPA | United Nations Population Fund |
| UZ | University of Zimbabwe |
| UZ-UCSF | University of Zimbabwe and University of California & San Francisco collaboration |
| VIA | Visual Inspection with Acetic Acid |
| VIAC | Visual Inspection with Acetic Acid and Cervicography |
| VILI | Visual Inspection with Lugol's iodine |
| WHO | World Health Organisation |
| WHO AFRO | World Health Organisation Africa Regional Office |
| ZNCR | Zimbabwe National Cancer Registry |

# Executive Summary

Cancer is emerging as a major public health concern in sub-Saharan Africa and is expected to double in the next twenty years. Cervical cancer, though preventable and curable in its early stages, is the leading cause of cancer deaths in this region.

In Zimbabwe, cancer is a major cause of morbidity and mortality with over 5000 new diagnoses and over 1500 deaths per year. The number of people developing cancer is expected to increase due to HIV & AIDS and other infections, unhealthy lifestyle choices and an ageing population. Most of the common cancers in Zimbabwe are infection associated.

The Prevention and Control of Cancer Committee in Zimbabwe(PCCZ) established in 1992, oversaw the development of a ten year plan for the National Cancer Control Programme for Zimbabwe (1994-2004). However, the programme was not fully implemented, or adequately monitored and several key gaps in cancer prevention and control have been noted. Cancer Prevention and Control Programmes are grossly underfunded due to competing priorities. Coordination of the various stakeholders involved in the prevention and control of cancer services is limited, resulting in duplication, fragmentation and inequity in service provision. Despite the high prevalence of HIV associated cancers and other infection related cancers, there is no integration of HIV & AIDS, STI and cancer control programmes. There are on-going programmes training health workers in cancer prevention and control, but the numbers trained fall far short of meeting the country's requirements. In addition, there are no specialist oncology nurses, clinical haematologists or paediatric oncologists and no local training programmes for such cadres. The situation is compounded by the absence of a national cancer policy, action plan, standardised cancer management guidelines and a functional referral system. This has resulted in challenges in cancer prevention and control including late diagnosis, delay in instituting appropriate treatment and lack of standardised approaches to cancer management.

A coordinated, sustained communication programme is envisaged to complement the current existing efforts through advocacy and social mobilization to effect behaviour change. This strategy is the first for Zimbabwe, and seeks to address the gaps in cancer prevention and control described below.

Cancer Primary Prevention: Prevention is the most cost-effective intervention especially in resource constrained environments such as in Zimbabwe. Thirty to forty percent of cancers are preventable by avoiding certain known risk factors. The main factors contributing to the increasing incidence of cancer in the African region include infectious agents, increasing tobacco use, harmful alcohol use, unhealthy diets, physical inactivity and environmental factors. A comprehensive Cancer Communication strategy focusing on cancer risk factors needs to be formulated and implemented as a matter of urgency.

Cancer Early Detection: The majority of cancers present at an advanced stage when management is more costly and treatment outcomes are poorer. This is mainly due to lack of access to early detection (screening and diagnosis) compounded by human and material resource constraints and general lack of awareness. Factors resulting in delays in early detection of cancers need to be addressed to improve outcomes.

Cancer Diagnosis and Treatment: There are only two functional public health centres offering diagnostic and treatment facilities for cancer in Zimbabwe. The centres have no formal accommodation for patients seeking services. Limited availability of resources, including chemotherapy medicines, opioid analgesics and cancer control skilled manpower further compromise patient care in the country. Very limited clinical research also limits availability of local evidence to guide policy and cancer management guidelines. Although most pediatric tumours are potentially curable, there are limitations in diagnosis and treatment again leading to poor outcomes.

Cancer Palliative Care and Rehabilitation: A draft Palliative Care Policy for Zimbabwe is in place, awaiting final approval by the Ministry of Health and Child Welfare. The policy seeks to address pain management and the psycho-social and cultural needs of all people living with cancer. There is need to improve access to palliative care country-wide through essential medicine provision, training of service providers, research and integrated teamwork.

Cancer Surveillance and Research: The Zimbabwe National Cancer Registry is a population-based registry mainly for Harare. The registry provides annual reports on cancer incidence and mortality and is recognised globally. It currently provides technical support to other registries in the region. Inadequate resources (both human and financial) hamper efforts to expand the cancer registry services to all provinces, as well as limit the scope of cancer research being conducted. Unfortunately there is also sub–optimal collaboration between the relevant stakeholders involved in cancer research resulting in fragmented research efforts. These gaps need to be addressed.

The vision for this strategy is *'A cancer free Zimbabwe'* and the mission is *'to increase awareness on all cancer related issues and create an enabling environment for adoption and practice of evidence based cancer prevention, early detection, diagnosis, treatment, palliative care, rehabilitation, surveillance and research leading to reduction in cancer related morbidity and mortality'.* This will be achieved through implementation in six strategic areas addressing the key gaps, including: programme strengthening; cancer primary prevention; cancer early detection; cancer diagnosis and treatment; palliative care and rehabilitation; and cancer surveillance and research.

The key activities to be implemented under this strategy include the development of policies, plans and guidelines to standardise case identification, referral and management at various levels. Training of health workers in developed guidelines and protocols will be prioritised to address the identified skills gap. The implementation of cancer control, prevention and management by health workers will be complemented by national level awareness of communities through campaigns. Service delivery will be assessed by evidence from operations research throughout the programme cycle.

It is envisaged that these activities will lead to results which may be witnessed in the short, medium and long term as described in the accompanying monitoring and evaluation framework. Improvements in knowledge and skills in cancer prevention and management and the actual provision of these services are expected in the short term. It is hoped that this will also match the anticipated increase in utilisation of the available services due to raised awareness. Improved access to quality cancer control, prevention and management services are expected in the short to medium and long term.

## Thinking Ahead:

This National Cancer Prevention and Control Strategy is the first to be developed, and will lead to the development of a cancer control policy action plan.

Planning must address the education, human resources needs, technology trends, developments and evolution of workplace roles in service delivery models. There is need to develop a national cancer control workforce plan to support the operational planning needs for the cancer control programme.

## Vision:

# A Cancer Free Zimbabwe!

## Mission:

**Increase awareness on all cancer related issues and create an enabling environment for adoption and practice of evidence based cancer prevention, early detection, diagnosis, treatment, palliative care, rehabilitation, surveillance and research.**

# Part One

# Context for Strategy

# Zimbabwe National Cancer Strategy

# 1. CANCER BURDEN

## 1.1 Global Cancer Burden

Globally cancer is the third leading cause of death and 12 million new cancer cases and 7.6 million cancer related deaths were recorded worldwide in 2008. These figures are projected to increase to 26 million cases and 17 million deaths annually by 2030 .
The projected increase is due to:

- Growth and aging of populations
- Entrenchment of modifiable risk factors or behaviours such as unhealthy diets, physical inactivity, tobacco use and harmful use of alcohol
- Slower decline in cancers related to cancer causing infections: HIV, HPV, and HBV among others, particularly in low resource countries

Developing countries bear the heaviest burden of cancer. About 70% of all cancer deaths in 2008 occurred in low- and middle-income countries. In sub-Saharan Africa, cancer is emerging as a major public health concern. In 2008 there were 715,000 new cases and 542,000 cancer deaths. Cervical cancer is the leading cause of cancer deaths in this region. Both cancer cases and deaths are expected to double in the next twenty years.

## 1.2 Cancer Burden In Zimbabwe

The World Health Organization has projected an increase in cancer particularly in developing nations and Zimbabwe is not spared. A total of 3,519 new cancer cases were recorded among Zimbabweans in 2009, comprising 1,427 (40.6%) males and 2,092 (59.4%) females.

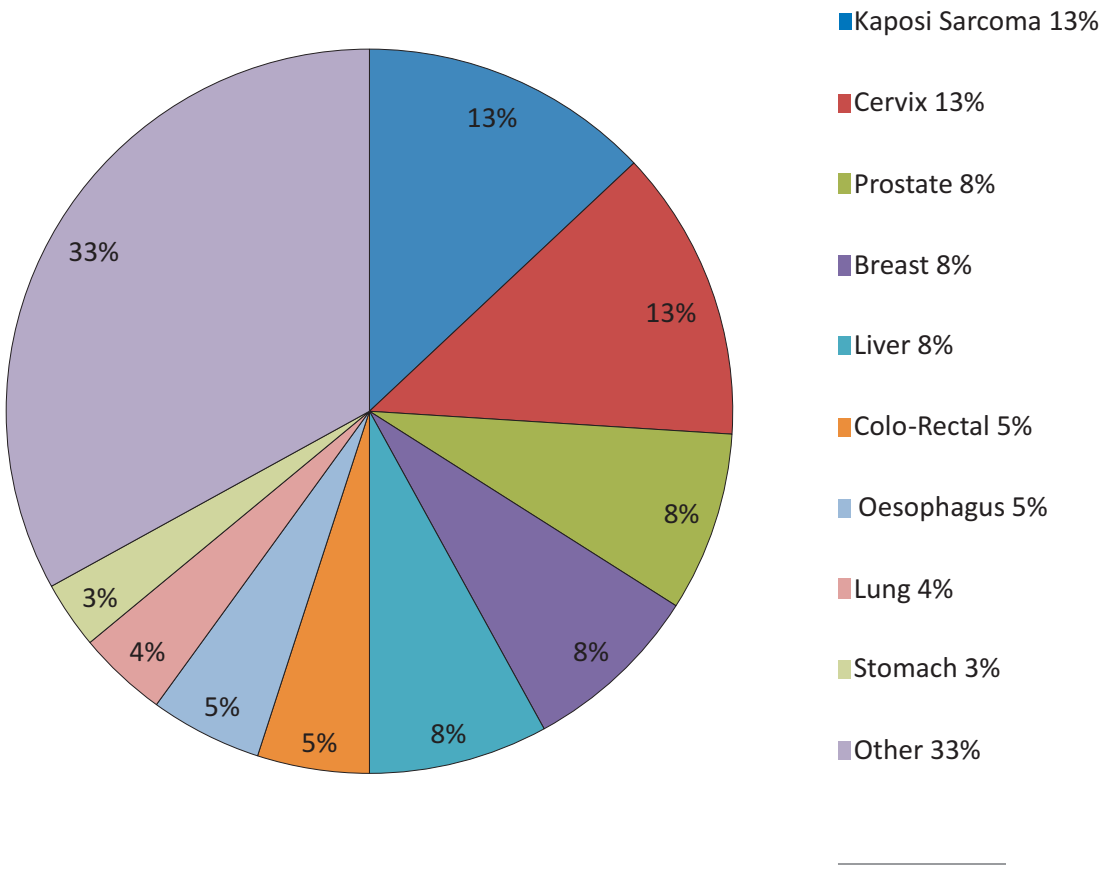
According to the Zimbabwe National Cancer Registry (ZNCR) 2009 annual report, the five leading causes of cancer among black Zimbabwean men were: Kaposi sarcoma (20.8%), prostate (13.7%), oesophagus (6.3%), non-Hodgkin's lymphoma (6.2%) and liver (5.7%). The five most common cancers among Zimbabwean black women were cervical cancer (33.5%), breast (11.7%), Kaposi sarcoma (8.9%), eye (6.5%) and non-Hodgkin lymphoma (4.9%).

In non-black men the most frequent cancer was non-melanoma skin cancer (50.7%). This was followed by prostate (10.8%), colon (6.9%), melanoma skin cancer (5.4%) and lung (4.9%). In non-black women the most common cancers were:non-melanoma skin cancer (35.4%), breast (17.7%), cervical cancer (7.4%), non-Hodgkin's lymphoma (5.1%) and colon (3.4%).

Of the 157 childhood cancers (age 0-14 years) recorded in 2009, 79 were in boys (50.3%) and 78 were in girls (49.7%). The most frequently occurring cancers in boys were Kaposi sarcoma(20.3%), retinoblastoma (16.5%), leukemia (11.4%), Wilm's tumor (10.1%) and connective and soft tissue (7.6%). The commonest cancers in girls were Wilm's tumor (21.8%), retinoblastoma (16.7%), Kaposi sarcoma (12.8%), connective and soft tissue (10.3%) and brain nervous system (3.8%). It is worth noting that most pediatric cancers are curable, especially if detected and treated early.
Cancer mortality in Zimbabwe is high mainly

due to late presentation of disease, intercurrent disease including HIV and limited access to early detection and treatment services. The main causes of cancer mortality are shown in figure 1 below:

**Figure 1: Mortality from specific cancers as a proportion of all cancer deaths in Zimbabwe 2009**




Source: Zimbabwe National Cancer Registry, 2009

## 2. CANCER PROGRAMME IN ZIMBABWE

### 2.1 National Cancer Control Programme for Zimbabwe (NCCP)

In 1994, the Ministry of Health and Child Care and other stakeholders developed the National Cancer Control Action Plan for Zimbabwe (NCCP). The overall aim was to formulate, plan and implement a coordinated program for the prevention and control of cancer in Zimbabwe. However, a number of challenges and gaps related to this plan were identified, including:

- Many health professionals did not have access to the plan
- The plan was not fully implemented or adequately monitored
- It did not highlight childhood cancers and the association between cancer and HIV & AIDS

The National Health Strategy (2009 – 2013) for Zimbabwe incorporates cancer prevention and control. However, many elements of cancer prevention and control are yet to be implemented. A draft Non Communicable Diseases (NCDs) policy is also in place, but it needs to be reviewed by all relevant stakeholders and partners then operationalised.

### 2.2 Funding Constraints

In Zimbabwe where competition for limited funds is high, cancer has remained low on the agenda. Diseases like cholera, HIV & AIDS and malaria have been major priorities for the government and are receiving significant funding while non-communicable diseases like cancer are left with limited funding. The Cancer Prevention and Control Programme is grossly underfunded and as yet few partnerships exist to support the programme, with the exception of screening for cancer of the cervix which is supported by partners. Lack of resources makes it difficult to attract and retain health care providers and also results in shortages of essential chemotherapy pain control medicines, cancer diagnostic and treatment equipment. All of these factors combined increase the morbidity and mortality caused by cancer.

### 2.3 Integration and coordination of cancer control efforts

Cancer control services are provided by the MOHCC and partners but no mechanism is in place for coordination, resulting in fragmented service provision. Evidence is available on HIV as a risk factor for cancer. In 2005 the Zimbabwe National Cancer Registry Annual report indicated that 60% of cancers in Zimbabwe were HIV related, yet no mechanism is in place for integration of HIV and cancer control programmes. Additionally, unsafe sex promotes transmission of Human Papilloma Virus (HPV) contributing significantly to cancer of the cervix (70%) and other cancers, but again there is no integration of cancer control with the Sexually Transmitted Infections (STI) programme.

The referral system is not fully functional with inadequate skilled personnel and experts in cancer management at district, provincial and central level, resulting in centralised cancer services. It is therefore difficult for the majority of patients to access cancer services.

The Cancer Prevention and Control Committee was re-established in 2009 and has been the main body advocating for support of cancer issues. The committee started lobbying for the introduction of the HPV Vaccine in November 2009, and more partnerships are required to meet the goal of a cancer free Zimbabwe.

Although some new programmes and services may arise from the recommendations of the

comprehensive cancer control planning committee, it is not only about creating new programs and services, but also coordinating and integrating what already exists. Zimbabwe is fortunate to have many resources, workgroups and subcommittees to draw upon in moving implementation of this strategy forward.

### 2.4 Training

Health care professionals are the critical link in ensuring that people obtain timely cancer screening and reduce their risk of developing cancer. Currently the University of Zimbabwe offers an undergraduate programme for Radiography training and a post graduate programme on Radiation Oncology. There has been ongoing training of Radiographers at diploma level by the School of Radiography which is now an associate college of the University of Zimbabwe. The Radiotherapy Centre has been recognised for internship rotations of newly qualified doctors before deployment to the districts since 2010. Post graduate students in paediatrics do rotations in the paediatric oncology unit as part of the requirements for paediatrics training.

At the moment there are no facilities in Zimbabwe to train Nuclear Medicine personnel. The personnel currently available were trained abroad through technical co-operation programmes with the International Atomic Energy Agency (IAEA). There is also currently no training of oncology nurses, which is a critical area in the overall management of cancer.

### 2.5 Standard Treatment Guidelines for Cancer

In order to deliver high quality health care and support services, there should be evidence-based consensus among specialists about the management of specific cancers. Clinical guidelines outline a multi-disciplinary approach to cancer treatment and enable some uniformity in the evaluation, treatment and follow-up care of cancer patients. A more detailed approach to patient management includes the development of clinical pathways that define specific medical interventions such as doses of medications to be administered, chemotherapy regimens and imaging studies.

The guideline for cancer management "Oncology in Zimbabwe" is long outdated having been formulated and published in 1992, therefore management of cancer is not standardised with differing management protocols and guidelines at different levels of the service delivery system. There is therefore need for different disciplines to agree upon cancer management protocols and standardise cancer management based on the current available evidence.

### 2.6 Communications for Cancer Control

Health literacy is essential to effect behaviour change. However, there is currently no coordinated, sustained communication programme. One NGO, the Cancer Association of Zimbabwe (CAZ), provides free health education materials in two languages. In addition to brochures and reference books, videos can also be viewed at the centre. The centre invites community groups and individuals to give presentations about various health topics, including disease prevention and overall well-

being. However, cancer health promotion programmes must be rapidly scaled up if success is to be achieved. Strategies include advocacy, social mobilisation and programme communication which will involve mass communication activities (electronic, print and interpersonal).

### *2.6.1 Advocacy and social mobilisation*

Advocacy for health refers to a combination of individual and social actions, designed to get positive commitment, policy support, social acceptance and systems support for a particular health goal, programme or intervention. Advocacy may be carried out through lobbying, social marketing, community mobilisation and other approaches. Social mobilisation is a process by which relevant stakeholders and partners of a society are engaged in a dialogue for co-ordinated actions as in the cancer prevention programme. Various players including health workers need to be appropriately oriented for cancer control. Both advocacy and social mobilisation rely heavily on programme communication. Programme communication seeks to inform and motivate specific groups of people to accept and use unfamiliar ideas and practices to change harmful habits using different communication strategies and approaches.

### *2.6.2 Health literacy*

Health literacy refers to the people's ability to obtain, interpret and understand basic health information and health services, and to use such information and services in ways that promote their health . Guided by the Health Literacy/Promotion Taskforce the programme will aim to increase the proportion of Zimbabweans who are cancer literate to 80% by 2017. The strategy will involve education and raising awareness in various communities on cancer prevention. Documented best practices will be adopted and used.

### *2.6.3 Protection against chronic infections*

Control of cancers induced by biological agents requires combating of the infections concerned. Personal and environmental measures, such as eliminating intermediate hosts of parasites will be promoted to reduce human exposure. These measures will augment essential measures including education to minimise the transmission of infection. Examples include: teaching people to avoid infected water, unsafe sexual behaviour, injection drug use, sharing of used needles, and urination/defecation in water. Effective vaccines will be the most potent weapons against the viruses estimated to cause up to 15% of all cancers. Vaccination is currently available only against the hepatitis B virus. Hepatitis B Virus vaccination of infants in areas of high prevalence is being promoted by WHO's Expanded Programme on Immunisation as a means of preventing chronic hepatitis. The effect of such vaccination on the incidence of liver cancer should become apparent in about 30 years' time. The strategy will also not be complete without the much awaited roll out of the HPV vaccination programme.

## 2.7 Areas For Action in Strengthening Programme

- Lack of standardised cancer management guidelines, lack of NCDs/ Cancer Policy and Action plans result in non-standardised service provision, late diagnosis or delay in taking prompt appropriate action particularly at peripheral health facility level
- Lack of programme coordination mechanisms results in either service duplication or inequity in service provision

- Under-funding of cancer control activities
- Absence of a fully functional referral system
- No integration of cancer control services with HIV & AIDS and STI services
- Limited advocacy with parliamentarians and policy makers on importance of prevention and control of chronic infections to improve cancer control.

## A CANCER FREE ZIMBABWE

# 3 CANCER PREVENTION IN ZIMBABWE

## 3.1 Background to Cancer Prevention

The development of cancer is generally linked to personal habits, lifestyles and environmental conditions. The main factors contributing to the increasing incidence of cancer in the African region include infectious agents, increasing tobacco use and harmful alcohol use, unhealthy diets, physical inactivity and environmental factors.

To a lesser extent, inherited genetic factors also increase the risk of cancer (5 – 10%).
Social and economic factors are major determinants of increased cancer risk. Cancer risk factors are highest in groups with the least education and lower socio-economic classes . Knowledge of many of these factors can serve as the basis of cancer control. Prevention means eliminating or minimising exposure to the causes of cancer, and includes reducing individual susceptibility to the effect of such causes.

Prevention not only focuses on the risks associated with the particular illness or problem but also on protective factors. Vaccination against Human Papilloma Virus (HPV) and Hepatitis B Virus (HBV), for instance, can protect against cervical and liver cancers respectively. This approach offers the greatest public health potential and the most cost-effective long-term method of cancer control and provides clear evidence that public health actions by governments and the promotion of healthy lifestyles could prevent as many as a third of cancers worldwide.

Cancer prevention is a key element in the cancer prevention and control programme. However, Zimbabwe has not yet fully formulated a national cancer prevention strategy. Awareness programmes by the CAZ and partners have been conducted in a few isolated places, mainly in Harare and Bulawayo. There is an urgent need for the introduction of comprehensive educational programmes that address areas such as control of cancer causing infections, harmful substance abuse, nutritional and physical education issues.

## 3.2 Risk Factors

Major risk factors vary according to the level of economic development. In Zimbabwe the major risk factors include infections, nutrition and tobacco use.

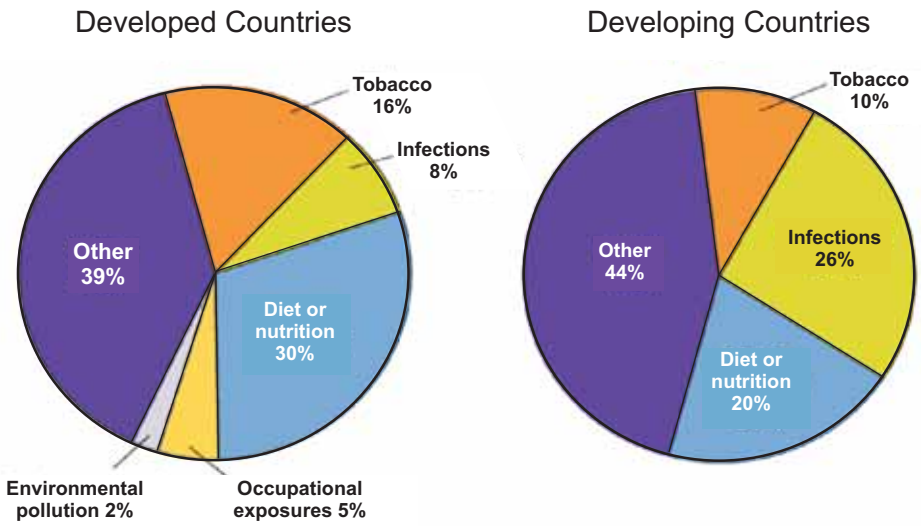
### *3.2.1 Infections*

While cancer is not itself infectious, there are a number of infections that either directly cause or increase the risk of cancer. In fact according to WHO (2008) estimates, almost 22% of cancer deaths in the developing world and 6% in industrialised countries are caused by chronic infections. Major cancer causing infectious agents in Zimbabwe include Human Immunodeficiency Virus (HIV), Human Papilloma virus (HPV), hepatitis B and hepatitis C viruses, Epstein-Barr virus and Helicobacter pylori. Interventions such as immunisation, treatment of infections and behavioural change can reduce exposure to specific risk factors. Vaccines for prevention of hepatitis B and HPV infections are now available as described below.

#### *3.2.1.1 Human Immunodeficiency Virus (HIV)*

According to the Zimbabwe National Cancer Registry 2005 Annual Report, 60% of cancers were associated with HIV infections. The impact of HIV is reflected in the high incidence rates of Kaposi sarcoma and other HIV associated cancers which include cervical cancer, squamous cell carcinoma of the conjunctiva and non-Hodgkin's lymphoma.

**Figure 2: Proportion of Cancer Causes by Major Risk Factors and Level of Economic Development**




**Source:** Cancer Atlas, 2006

Controlling HIV prevalence will have a big impact on the epidemiology of cancer in Zimbabwe. The principal objective in HIV and AIDS control is reduction in HIV transmission through promotion of general behavior change, condom use, access to treatment and prevention of mother-to-child transmission (PMTCT) using anti-retroviral medicines and safer infant feeding practices. Focus should therefore be directed at integrating HIV and Cancer prevention services as controlling HIV will assist in controlling cancer.

#### *3.2.1.2 Human Papilloma Virus (HPV)*

The sexually transmitted HPV (especially subtypes 16 and 18) is now recognised as the principal cause of cancer of the uterine cervix. Infection with these viruses is prevalent in young women, but the factors that cause these infections to persist and in some cases result in the development of invasive cancer are still being researched.

Worldwide, HPV-16 and 18 contribute to over 70% of all cervical cancer cases, 41 - 67% of high-grade cervical lesions and 16-32% of low-grade cervical lesions. Zimbabwe has a population of 3.96 million women aged 15 years and older who are at risk of developing cervical cancer. Cervical cancer ranks as the most common cancer in women in Zimbabwe. About 35% of women in the general population are estimated to harbor cervical HPV infection at a given time, and 79.6% of invasive cervical cancers in Zimbabwe are attributed to HPV subtypes 16 or 18. Both the bivalent and quadrivalent HPV vaccines are potentially effective against about 70% of cervical cancer. In Zimbabwe, HPV vaccination was approved in 2009. Support from the Global Alliance on Vaccines and Immunisations (GAVI) requires showing ability to vaccinate an adolescent population. Zimbabwe is yet to implement HPV Vaccine demonstration projects before launch and roll out of the vaccine.

#### *3.2.1.3 Hepatitis B and C*

Chronic infection with Hepatitis B or C Virus (HBV or HCV) is the main risk factor for cancer of the

liver. Incidence is particularly high in sub-Saharan Africa and Eastern Asia where viral Hepatitis (HBV) is transmitted at the time of birth or during early childhood. Research in Zimbabwe has confirmed that the majority of infections are acquired between the ages of 6 months and 5 years. In 1999, MOHCC in collaboration with WHO re-introduced HBV vaccination targeting children less than five years of age. Vaccination had been suspended due to inadequate funding in 1995. Since 2007, HBV vaccine has been administered in combination with Diphtheria, Pertussis, Tetanus and Heamophilus influenza Type B as a five-in-one vaccine (Pentavalent Vaccine). The coverage of this vaccine is good and in 2010 it was 87%.

#### *3.2.1.4 Schistosomiasis and other parasitic infections*

Schistosomiasis is one of the most widespread human parasitic infections. The causative organism, schistosoma, spends part of its life cycle in snails that inhabit shallow waters and is then released into the water, infecting humans by penetrating the skin. Passing of urine or faeces into the water by infected people promotes spread of schistosomiasis, thereby sustaining the life cycle. There are still areas in Zimbabwe where the prevalence of schistosomiasis is very high. Patients who are chronically infected with schistosomiasis have an increased risk of developing bladder cancer. Controlling this disease will therefore have a positive impact on the incidence of bladder cancer.

#### *3.2.1.5 Bacterial infections*

Infection of the stomach lining by a bacterium, *Helicobacter pylori*, known to be the cause of peptic ulcer disease and gastritis, can also cause stomach cancer. Infection with this bacterium can be eradicated with antibiotic therapy, and it is possible that some of the reduction in stomach cancer in many countries during the 20th century was a result of such therapy.

### *3.2.2 Tobacco*

Worldwide, tobacco use is the single largest causative agent of cancer, accounting for 30% of all cancer deaths in developed countries. Tobacco smoking is also responsible for a large amount of chronic lung disease and contributes heavily to cardiovascular disease.

Tobacco smoke contains approximately 4,000 chemical substances, of which at least 438 can lead to cancer. The most dangerous substances in tobacco are nicotine, tobacco tar, and carbon monoxide which contain the carcinogenic polyaromatic hydrocarbon and nitroso compounds. In addition to lung cancer, tobacco consumption increases the risk of cancers of the oral cavity, larynx, oesophagus, pancreas, kidneys and bladder. Lung cancer risk is determined by the amount of daily consumption of tobacco, duration of smoking and depth of inhalation. For regular smokers, the relative risk for development of lung cancer is more than 20 times higher than that of non-smokers. Environmental tobacco smoke (passive smoking) is also carcinogenic but the risk is much less (1.15-1.2 times less) than that of regular smokers.

In Zimbabwe, tobacco is smoked or chewed in various forms. Tobacco is also consumed frequently as a mixture with other substances. However cigarette smoking is the most common form of tobacco use. Evidence suggests that people in Zimbabwe start smoking at a younger age, increasing the risk of developing cancer over the years. Young people usually encounter the practice among their peers and may then take up the habit themselves. Typically, tobacco use begins through social contacts, but the habit is reinforced by the development of psychological dependence derived from the nicotine content of tobacco. Cessation of smoking significantly reduces the risk of lung and other tobacco associated cancers even after many years of addiction. However, even ten or more years after stopping, the risk is greater than that of those who have never smoked. A study in Zimbabwe showed that

tobacco consumption was six times more prevalent in males than females. Unfortunately, there is no enforcement on people to smoke in designated areas. This exposes the general population to passive smoking and its adverse consequences. This same study showed that 24.7 % of youths in Zimbabwe were exposed to second hand smoke.

The Government policy on tobacco is directed towards individual and mass education against tobacco use. The powerful commercial interests involved in production and distribution of tobacco products exploit people's dependence on tobacco in order to maintain sales. Government action regarding land use, subsidies, taxes, and other leverage on prices has a profound influence on the spread of tobacco use. Although the International Framework Convention for Tobacco Control (FCTC) outlived its lifespan in 2012, it remains a blueprint for effective control of tobacco, outlining articles on protecting populations from exposure to tobacco smoke; implementing graphic warning labels on tobacco packaging; passing comprehensive bans on tobacco advertising, promotion, and sponsorship; and promoting cessation, among other issues. It will thus remain a reference document for this strategy.

It should be noted that:

- Zimbabwe has not yet ratified the Framework Convention for Tobacco Control
- Tobacco is a major cash crop in Zimbabwe
- Legislation on tobacco use exists in Zimbabwe but implementation lags behind. Action against tobacco now will reduce future problems associated with its use to a minimum.

A holistic approach under the Health literacy framework will be adopted to reduce population exposure to tobacco. The strategy will advocate for enabling legislation, promotion of 'sin' taxes and an environment that promotes tobacco cessation. This will reduce the economic and social acceptability of tobacco use in line with the WHO recommended strategies.

### *3.2.3 Alcohol consumption*

Heavy consumption of alcoholic beverages increases the risk of cancers of the oral cavity, pharynx, larynx, oesophagus and liver, and may increase the risk of breast and colorectal cancers. The risk is linearly related to the mean daily consumption . The carcinogenic effect of alcohol in relation to oral, pharyngeal, laryngeal and oesophageal cancer is exacerbated by tobacco use.

Apart from the increased risk of cancer, alcohol consumption also causes alcoholism (addiction), alcohol psychosis, chronic pancreatitis, liver cirrhosis, hypertension, haemorrahagic stroke and low birth weight to babies born to alcoholic mothers. Furthermore, inebriation associated with alcohol drinking is responsible for a high proportion of accidents and injuries (15-40%) including road traffic accidents.

The Zimbabwe STEPwise survey in 2005 revealed that current alcohol consumption is very high especially among males, with a prevalence of 58% in males and 13.5% in females. This was probably an underestimate due to under-reporting of alcohol consumption, especially in females, due to cultural factors.

Control of alcohol will therefore require taking into account the wide range of social forces that affect alcohol use. Efforts to reduce population exposure to alcohol will reflect concern about a range of diseases, as well as the domestic, social, and industrial problems that arise from alcohol use. Practical obstacles

to the use of alcohol are required. The most effective action a government can take to reduce individual alcohol consumption is to raise prices of alcohol through taxation. Other measures that have been tried with varying degrees of success include limiting the places and times at which alcohol is available, raising the minimum legal age at which alcohol may be purchased, and creating a government monopoly on alcohol sales. All of these efforts will complement the health literacy strategy.

### *3.2.4 Nutrition, obesity and physical activity*

Up to 30% of cancers are related to diet and nutrition. Excess salt intake causes arterial hypertension and an elevated risk of stomach cancer. However, due to modern methods of food preservation, the incidence of stomach cancer is declining worldwide. A western diet (highly caloric food, rich in animal fat and protein) often combined with sedentary lifestyle and resulting energy imbalance, increase the risk of colon, breast, prostate, endometrial and other cancers. Physical activity, avoidance of obesity and frequent daily intake of fresh fruit and vegetables reduce the risk of oral cavity, lung, cervix uteri and other cancers.

Eating patterns in developing countries like Zimbabwe are shifting towards the Western lifestyles especially in urban areas, a situation that is termed the 'Nutrition Transition'. There has been a noted decrease in staple foods rich in starch, dietary fiber and plant protein sources. There has also been an increase in foods from animal origin which are rich in total fat and saturated fatty acids, and energy-dense snack foods, carbonated sweetened beverages, and alcoholic beverages. Red meat intake, especially of processed meats, has also been associated with certain cancers like prostate cancers.

Obesity is epidemic in many developed countries, and is increasingly becoming a concern in many developing countries including Zimbabwe. Studies have shown varying degrees of consistency that excess body mass is associated with an increased risk of cancer. There are links between obesity and the risk of breast cancer (in older women), endometrial cancer and cancers of the kidney, colon, and oesophagus. Not being physically active increases the risk of colorectal cancer. Together physical inactivity and obesity are linked to 30% of colon, endometrial, kidney and oesophagael cancers as well as 30% of breast cancers in older women. Losing weight and exercising (at least 30 minutes a day most days of the week) help reduce the risk of developing cancer.

### *3.2.5 Occupational and environmental exposure*

Historically, exposure of chimney sweeps to soot and of other workers to certain types of mineral oil were found to cause cancer of the scrotum; metal mining gave rise to lung cancer, and chemicals used in dye works to bladder cancer. Identification of occupational factors in cancer etiology is hindered by the fact that as many as twenty to thirty years may elapse between exposure and disease. However, the concentration of exposure among relatively few workers has made it possible to pinpoint several occupational situations responsible for a variety of cancers. Risk is generally apparent from the age of about fifty years, but maximum risk may not be seen until the post-retirement years due to the long latent period for induction of many occupationally-induced cancers. Health protection measures include monitoring the use of potentially carcinogenic materials and processes in industry, providing public education, and enacting appropriate legislation to minimise occupational and environmental exposure to carcinogenic

agents. There is existing legislation on exposure to most occupational carcinogens in Zimbabwe. These include the following Acts of Parliament:

- Pneumoconiosis Act (minimise dust exposure to employees)
- Radiation Protection Act (minimise radiation exposure to workers)
- Environmental Management Act

#### *3.2.5.1 Control of occupational exposure to carcinogens*

Minimising occupational and environmental exposure to carcinogenic agents calls for the identification and assessment of existing or potential hazards. Zimbabwe has an excellent opportunity to learn from the experience of the industrialised countries, and to take steps to avoid the emergence or importation of cancer hazards in industry. Wherever occupational cancer hazards are found to exist (for instance among illegal gold panners), exposure standards must be set that will minimise the risk to workers. This typically requires the appropriate government, scientific, industrial, and labour organisations to review and discuss relevant data and then agree on controls. Once a quantitative standard is set, industrial processes must be modified to ensure that the agreed maximum exposure level is not exceeded. This may involve the mechanical redesign of a process, substitution of materials, or other significant adaptations. Personal protective clothing can also be utilised but it cannot always be relied upon as workers are not always compliant. However, surveillance of workers should be carried out wherever possible.

#### *3.2.5.2 Radiation*

Ultraviolet radiation which comes from natural sunlight, sunlamps and other sources can lead to skin cancers (melanoma, squamous cancers and basal cell cancers). These cancers occur more commonly in individuals who have little melanin pigment such as albinos and white skinned races. While some sun exposure is healthy, excessive exposure particularly during childhood or repeated exposure in adults, seems to increase the risk of skin cancer. Preventive measures include avoiding sun exposure during times of peak intensity especially between 10:00hrs and 16:00hrs, use of sun-screen lotions, wearing protective clothing and avoiding artificial UV exposure. Other sources of radiation such as medical sources, natural sources and nuclear fallout should be paid attention to through health promotion programmes and regulatory measures to control exposure levels.

### 3.3 Areas for Action in Prevention of Cancer

- 30-40% of cancers are preventable: prevention is the most cost-effective intervention especially in resource limited settings such as in Zimbabwe
- There is no integration of cancer and chronic infection control, yet most cancers in Zimbabwe are associated with infection
- A comprehensive Cancer Communication strategy focusing on cancer prevention should be formulated and implemented as a matter of urgency

## 4. EARLY DETECTION OF CANCER

### 4.1 Background to Early Detection of Cancer

The majority of cancer patients (80%) in Zimbabwe present late (3rd and 4th stage), resulting in increased premature deaths from cancer. Diagnosis of cancer at an earlier stage of the disease can enhance the chance of successful treatment outcome and greatly increase the chance of a successful cure. A major component of early detection is education of the population to promote early diagnosis and screening. Increased awareness of possible warning signs and symptoms of cancer among health professionals (nurses, doctors) and other health care providers and the general public will result in prompt action leading to early diagnosis and possible cure.

Screening programmes and early diagnosis can be effective in improving the success rate of treatment, and many cancers have the best chance of cure when they are detected at an early stage. Screening saves lives and improves quality of life, while reducing the need for and costs of treatment of advanced disease. However, national cancer screening programmes in Zimbabwe are still at an early stage.

### 4.2 Availability of Screening Services for Early Detection of Cancer

Screening services for most cancers, including cervical cancer (PAP smears), breast cancer (mammogram and ultrasound scanning) are available in private institutions but the cost is prohibitive for the majority. Even among those who can afford screening, there have been insufficient awareness campaigns to encourage people to be screened for cancers. These services are generally centralised and thus not available to the majority (rural) population. Most of the Medical Aid Societies do not provide cover for screening services, while there is co-sharing of the cost with the client by those that do cover screening. Only one Medical Aid Society provides screening for prostate cancer using Ultra Sound Scanning (USS).

Most government institutions do not offer screening for prostate, breast, cervical or colon cancers, as the key health professionals lack adequate information and skills to provide the services, coupled with lack of basic equipment. However, the Ministry of Health and Child Care has several sites (Mpilo, United Bulawayo Hospital, and Masvingo) providing cervical cancer screening services using visual inspection with acetic acid and cervicography (VIAC). Zimbabwe National Family Planning Council (Spilhaus), City of Harare Clinics and Newlands clinic (HIV and AIDS service organisation) also provide screening services. However, all of these services are centralised in urban areas. Additionally, screening programmes for paediatric cancers are not yet in place. Simple clinical screening tests such as looking for the white reflex in the eye for retinoblastoma and palpation of abdomen for masses should be integrated into basic primary health care services including growth monitoring of children less than 5 years.

Several non-governmental organisations including but not limited to the Cancer Association of Zimbabwe, KIDZCAN, National Cancer Alliance of Zimbabwe, Brain Tumour Association and Breast Cancer Alleviation of Zimbabwe are currently complementing government efforts in cancer prevention and early detection through their advocacy and health promotion efforts with the community. KIDZCAN also supports children with cancer financially by paying for investigations,

improving early diagnosis and facilitating early treatment. Unfortunately, most of the children present with advanced stage disease.

Local research institutions have carried out studies on cervical cancer screening. Visual Inspection with Acetic Acid (VIA) was pioneered by a team of researchers from the Department of Obstetrics and Gynecology, University of Zimbabwe, in collaboration with researchers from Johns Hopkins Programme for International Education in Gynecology and Obstetrics (JHPIEGO) in published material. University of Zimbabwe researchers demonstrated that cryotherapy was a reasonable option to treat cervical intraepithelial neoplasia (CIN) compared to Loop excision (LEEP) in a randomised control trial.

Zimbabwe MOHCC demonstration projects with VIA and treatment with cryotherapy were successfully launched by UZ researchers in Mutoko, Gwanda and Chiredzi. The VIA/cryotherapy screening and treatment programmes were based on the "see and treat" principle with high retention of screen positive cases who are immediately treated with cryotherapy. The Mutoko and Gwanda programmes stopped screening due to trained staff shortages that occurred across MOHCW at the height of the economic crisis, however the Chiredzi programme continued.

### 4.3 Areas for Action in Early Detection of Cancer

- Lack of access to early detection (screening and diagnosis) facilities
- Advanced stage presentation of patients with cancers, increasing the cost of management and leading to avoidable premature deaths
- Inadequate resources (human, equipment and technology) negatively impacting on cancer early diagnosis
- Lack of information on the need for regular cancer screening and reduced utilisation of those services that are available, both in the public and private sector
- Prohibitive costs of screening services
- Absence of an effective national mechanism to motivate, organise and co-ordinate cancer screening activities
- Provision of cancer early detection services (early diagnosis and screening) at all levels, accompanied by a sound referral system (referral centres with capacity to take up the referral case)
- Lack of formal assessment of the reasons for delays in early detection of cancers, focusing on who is affected and why
- Programmes to encourage earlier presentation of cancer, including training of primary care workers on cancer prevention, early diagnosis, early recognition of symptoms and signs of cancer (early warnings) and taking appropriate action – referral to next level for further management are yet to be developed

## 5. DIAGNOSIS AND TREATMENT

### 5.1 Background to Diagnosis and Treatment of Cancer

There has not been any reliable or consistent documentation of most elements of cancer diagnosis and treatment in Zimbabwe. This is a reflection of the low priority that cancer has so far been given. The diagnostic infrastructure for cancer in the country is limited. Important early diagnostic facilities like pathology are available only in Harare and Bulawayo. The performance of diagnostic tests and sending of specimens from patients in the district hospitals may take three or more weeks on average to complete, when available. The three major modalities of cancer treatment namely surgery, radiotherapy and chemotherapy are also inadequate in the country in terms of personnel, medicines and equipment. This has led to some people who can afford it to seek treatment outside the country.

There are two Radiotherapy Treatment Centres, one in Harare and the other in Bulawayo. To reach such facilities patients must spend huge amounts of money, frequently beyond their reach. Such constraints leave an un-estimated number of cancer cases in the population either without diagnosis or treatment. The central location of the treatment centres in the country make the stark reality of inequitable access obvious.

### 5.2 Diagnostic Radiology

General radiology is the basic fundamental imaging modality. Whilst this facility should be available at district, provincial and central hospitals most of these institutions are currently unable to provide this service. This is due to non-functional old equipment and a serious human resources shortage. The private sector offers a reasonable service that covers all imaging modalities at a cost. There are a number of these centers in the major towns of the country, which somewhat relieves the pressure on the barely functional public sector.

The availability of diagnostic and treatment services for cancer in Zimbabwe can be summarized as follows:

- Plain X-rays can be taken at district, provincial and central hospitals
- Biopsy is done at provincial and central hospitals and a few mission hospitals
- Cytology is very limited but offered by private laboratories at a cost
- Computerised Tomography (CT) scanning is available in Harare and Bulawayo. The private sector offers a reasonable service at a cost. Public facilities for CT scanning are inadequate and non-functional most of the time
- Mammography is available at private institutions and recently one machine has been installed and commissioned in the government sector at Parirenyatwa Group of Hospitals
- Magnetic Resonance Imaging is available in private institutions but is very expensive
- Brachy therapy equipment for gynaecological cancers is available at Mpilo and Parirenyatwa Group of Hospitals
- Parirenyatwa and Mpilo Hospitals have their own pharmacies. However chemotherapy medicines are expensive and barely available there. Patients who are prescribed such medications must try to obtain them at private pharmacies. In paediatrics, chemotherapy medicines are mainly supplied by KIDZCAN.

### 5.3 Pathology

Basic laboratory services are available in the district hospitals, mission hospitals and some private centres. Histopathology services are however centralised to the towns of Harare and Bulawayo in both the private and public sectors.

Pathology services are seriously affected by skilled staff shortages at all levels. The ideal number of pathologists is one for every 250,000 of the population. Hence, Zimbabwe would ideally need 48 pathologists. However, there are only five pathologists for the whole country, four in Harare and one in Bulawayo. This major human resource gap has to be rectified for any successful cancer control effort.

### 5.4 Nuclear Medicine

Nuclear Medicine plays a pivotal role in the management of cancer patients, both diagnostic and therapeutic. The role of this modality is in staging of cancer by screening for the presence or absence of skeletal metastatic disease, especially in cancers such as breast and prostate cancer. The most sensitive and cost-effective method of screening for skeletal metastatic disease is whole body bone scanning. The other role is in the monitoring of cardiac function for those patients on chemotherapy medicines that are cardiotoxic. Such patients require measurement of cardiac ejection fraction for which the gold standard is radionuclide Multiple Gated Acquisitions (MUGA).

Sentinel Lymph node mapping and intra-operative use of a gamma probe have been used in localizing sentinel lymph nodes with success in malignant melanoma and breast cancer, enabling oncologists to make well-informed decisions in planning therapy for patients.

Therapeutic applications of nuclear medicine techniques include, but are not limited to, bone pain palliation, Meta-Iodo Benzyl Guanidine (MIBG) therapy for neuro endocrine tumours and Zevalin therapy for refractory or recurrent non-Hodgkin's Lymphoma.

There are two State-owned nuclear medicine facilities in Zimbabwe, one at Parirenyatwa Group of Hospitals with one non-functional Siemens E-cam gamma camera (installed in 2003) and another at Mpilo Central Hospital (with one obsolete Sophy Gamma camera installed in the 1990s). Until late 2010 when the gamma camera broke down, some nuclear medicine studies were available at Parirenyatwa Group of Hospitals while at Mpilo Hospital, the facility has been non-functional since early 2003. This implies that for a long time cancer patients (as well as other non-cancer patients) have not been receiving the optimal care due to non-availability of functioning nuclear medicine facilities.

The ideal equipment would comprise:

- Two Dual-Head SPECT-CT gamma cameras at each Centre (total of four)
- One PET-CT scanner at each centre (total of two)
- Two Dose calibrators at each centre (total of four)
- One Well counter at each centre (total of two)
- One Laminar flow unit at each centre (total of two)
- Two Gamma probes at each centre (total of four)

There is currently only one Nuclear Medicine Physician serving in Government attending to both Parirenyatwa and Mpilo Hospitals. There are two Nuclear medicine technologists, one at Parirenyatwa and the other at Mpilo Central Hospital with the latter having been recalled from retirement. There are no

medical physicists at the two nuclear medicine facilities, which is in contravention to recommendations from the International Atomic Energy Agency (IAEA) as medical physicists are responsible for radiation protection matters.

There are no facilities in Zimbabwe to train Nuclear Medicine personnel at the moment. The personnel currently available were trained abroad through technical co-operation programmes with the IAEA.

The ideal staffing complement would comprise:

- Three Nuclear Medicine Physicians at each Nuclear Medicine Centre (total of six)
- Six Nuclear Medicine radiographers/technologists at each centre (total of twelve)
- Two Medical Physicists at each centre (total of four)
- Three Nuclear Medicine Nurses at each centre (total of six)

### 5.5 Radiotherapy

The two National Radiotherapy Centres are located at Parirenyatwa Group of Hospitals in Harare and Mpilo Central Hospital in Bulawayo. All of the cancers are treated at the centres except for some Kaposi Sarcoma (KS) patients that are seen at the KS clinic at Parirenyatwa Group of Hospitals. Much like a community health centre, no cancer patient is denied service. The patients pay USD10 for consultation; this fee does not cover chemotherapy and radiotherapy. The centres provide treatment services on an outpatient basis. Whilst on treatment the patient may have to leave his or her family for several weeks in order to receive treatment. At Parirenyatwa Group of Hospitals, there are two oncology wards, one for adults and one for children to accommodate the very sick patients. There is a hostel (Tariro Hostel situated at Harare Central Hospital grounds) that used to house people undergoing treatment not in need of admission, but it is currently not functioning.

Brachytherapy equipment for gynaecological cancers is available at Mpilo Hospital. New brachytherapy equipment capable of treating a number of cancers has recently been procured by Parirenyatwa Group of Hospitals.

The IAEA recommends a minimum of one machine for every 1 million of the population, the ideal being one machine for every 500,000 of the population. Zimbabwe therefore needs between 12-24 radiotherapy machines. However, for about a decade only one sub-optimally functioning radiotherapy machine has been serving the whole nation. The Mpilo radiotherapy facility has not offered any services since 2003.

The current equipment available for radiotherapy can be summarised as follows:

- Linear accelerators (two in Harare, one in Bulawayo). Old and in need of replacement
- Radiotherapy Treatment Planning System (RTPS)
- Two Brachytherapy units (Bulawayo one old and needing replacement, Harare unit awaiting commissioning)
- Two Simulators both needing replacement
- Dosimetry Equipment

The ideal equipment would comprise:

- At least 1 External Beam Radiotherapy (EBT)machine per million population
- 3 dimensional conformal radiotherapy Special Linear accelerator accessories for use when treating children
- Chemotherapy medicines at

reasonable cost or no charge to the patient
- Regular supply of strong pain medication such as morphine

The IAEA recommends that there should be one oncologist for every 500,000 people in a population. The current staff complement is well below this recommended ratio. Currently, the radiotherapy departments have seven qualified Radiation Oncologists (6 are in Harare), 4 Physicists, 16 Radiographers and 6 Nurses. There are no trained oncology nurses in the departments. Currently, the University Of Zimbabwe College Of Health Sciences offers an undergraduate Bachelor of Radiography programme for radiography training and a postgraduate Masters in Radiotherapy and Oncology programme for Radiation Oncology. There has been ongoing training of Radiographers at diploma level by the School of Radiography that is an Associate College of the University of Zimbabwe College of Health Sciences. However, there is still a need to train more professionals in the above fields. Training of oncology nurses is long overdue.

The Radiotherapy Centre is now recognised for internship rotations of newly qualified doctors (junior resident medical officers and senior house officers) before deployment to the districts.

### 5.6 Chemotherapy

Chemotherapy is administered at Parirenyatwa and Mpilo Hospitals and three other private institutions namely St Anne's Hospital, Avenues Clinic and Mater Dei Hospital. There is chronic unavailability of chemotherapy medicines in the public sector. Most patients in these institutions have to purchase chemotherapy medicines from the private pharmacies. The cost of these medicines is prohibitive. Even in the private sector there are chemotherapy drug shortages, resulting in disruption to patients' treatment. Most of these medicines are not registered with Medicines Control Authority of Zimbabwe (MCAZ) due to issues around cost of registration.

Chemotherapy and other support medicines are expensive and are often not available at Parirenyatwa Group of Hospitals and Mpilo Central Hospital. Patients that need chemotherapy medicines get them from private pharmacies at a very high cost. Many patients cannot afford the medicines resulting in patients receiving the chemotherapy inconsistently or not finishing the course. This, coupled with late presentation of disease, leads to poor treatment outcomes. Funding is a major hindrance in the stocking of both Parirenyatwa Group of Hospitals and Mpilo Central Hospital Pharmacies.

### 5.7 Surgery

Biopsies can be performed at Provincial, Mission and Central hospitals. However there is a lack of standardisation of procedures carried out for the various cancers. There are no stand-alone surgical oncology units even at the tertiary level. This limits the uniformity of surgical cancer treatment across the board. Surgery is one of the most well-staffed and older disciplines in the country. Sub-specialisation has been well achieved in that field. It only remains for evidence based cancer surgery to be promoted and for surgical oncology units to be established. This is likely to be achieved through multi-disciplinary meetings and the availability of national treatment guidelines for cancer.

### 5.8 Paediatric Oncology Units

The Paediatric Oncology Unit is situated at Parirenyatwa Group of Hospitals in Harare

and is intended to cater for all children in the country. Medicines are sourced and supported by KIDZCAN. The paediatric surgical unit is located at Harare Hospital, and the separation of the two services can sometimes cause challenges accessing timely surgery. Children and their parents often travel very long distances to come to Harare, and have challenges with bus fares to keep returning for treatment. This can result in high defaulting rates.

### 5.9 Areas for Action in Diagnosis and Treatment of Cancer

- Most cancer patients present with late stage disease
- Increasing incidence of common cancers and anticipated further rise in incidence with the introduction of effective surveillance, early detection and screening measures
- Lack of current cancer treatment guidelines and resulting lack of standardisation of cancer management across institutions
- Few centralised functional diagnostic and treatment facilities
- Need for accommodation for patients on cancer treatment
- Shortage of essential diagnostic and treatment equipment and consumables
- Limited human resources and lack of incentives to retain skilled staff in cancer diagnosis and treatment
- Poor availability of cancer medicines, notably chemotherapy and opioid analgesics
- Limited clinical research, hence limited availability of a local evidence base
- Limitations in Paediatric cancer diagnosis and treatment

## 6. PALLIATIVE CARE AND REHABILITATION

### 6.1 Background to Palliative Care and Rehabilitation

Palliative care and rehabilitation are essential elements in the continuum of care for cancer patients. The World Health Organisation (2002) defines Palliative Care as "an approach that improves the quality of life of patients and their families facing problems associated with life-threatening illness, through the prevention and relief of suffering, the early identification and impeccable assessment and treatment of pain and other problems, physical, psycho-social and spiritual".

Palliative Care Principles:

- Provides relief from pain and other distressing symptoms
- Enhances the quality of life, and will also positively influence the course of illness
- Integrates the psychological and spiritual aspects of patient care
- Offers a support system to help patients live as actively as possible until death
- Offers a support system to help the family cope during the patient's illness and in their bereavement
- Uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated
- Affirms life and regards dying as a normal process
- Intends neither to hasten nor postpone death
- Is applicable early in the course of illness, in conjunction with other therapies that are implemented to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications.

Palliative care for children represents a special, albeit closely related field to adult palliative care. WHO defines palliative care for children as, " the active total care of the child's body, mind and spirit, and also involves giving support to the family. It begins when illness is diagnosed, and continues regardless of whether a child receives treatment directed at the disease."

It is recommended that health providers must evaluate and alleviate a child's physical, psychological and social distress. Effective palliative care requires a broad multi-disciplinary approach that includes the family and makes use of available community resources. It can be successfully implemented even if resources are limited. Palliative care can be provided in tertiary care facilities, in community health centres, and even in children's homes (the child's own home, community home or institution).

While some elements of both adult and paediatric palliative care have been implemented as part of medical and household interventions for patients, palliative care was formally introduced in 1979 by Island Hospice Service in Zimbabwe. The goal of palliative care is to improve the quality of life for patients and family members facing the diagnosis of life-threatening or life-limiting illness. Palliative care provides the right of access to adequate pain control medication and health care which improves their quality of life. Palliative care is not limited to specific diseases, and the palliative care approach and palliative care principles apply to any life-threatening illness. For children the principles apply to paediatric chronic disorders.

Embedded in the WHO principles of palliative care is the emphasis on active living with statements of "quality of life", "affirms life", "to help patients live as actively as possible".
Many health care professionals and people who could benefit from palliative care view palliative care as care of the dying. This restricts referral and access to palliative care for many people who could receive significant benefit from this care.

### 6.2 Palliative Care in Zimbabwe

Zimbabwe has a long history of providing palliative care, with Island Hospice Service being one of the first hospice organisations to provide hospice and palliative care not only in Zimbabwe but in Africa, since 1979. By 1997, 17 regional branches had been formed throughout the country and approximately 13 organisations were providing palliative care by 2004.

This growth in palliative care provision has been a result of several initiatives and factors that have necessitated and facilitated the provision of palliative care in Zimbabwe. Initially palliative care services were generally accessed by a small minority population and the disease focus was cancer. However, with the growth of the disease burden due to HIV and AIDS, palliative care provision has widened to include those living with and experiencing HIV and AIDS and other chronic illnesses.

The result was growth of community based services throughout the country provided by both hospice organisations and community home based care organisations. The community and home based care programme national review of 2006 noted that there was at least one community and home based care programme in each of the 62 districts of Zimbabwe.
Notable initiatives have facilitated palliative care service provision in the country. In 1992, the MOHCW established the Prevention and Control of Cancer Committee in Zimbabwe that comprised relevant stakeholders and professionals. The committee oversaw the development of a ten year plan for the National Cancer Control Programme for Zimbabwe (1994-2004) with the overall aim to formulate, plan and implement a coordinated and cost effective programme for the prevention and control of cancer in Zimbabwe. Aspects of palliative care policy were incorporated in this plan.

Within this period the post of a Programme Officer for Cancer and Palliative Care was filled in 1994, funded by the World Health Organisation (WHO)demonstrating commitment from government. Palliative care training was established in the eight provinces and the two cities of Harare and Bulawayo during the same period. However, due to lack of funds coupled with the economic challenges, the programme was not sustained. The post of Programme Officer for Cancer and Palliative Care still exists but is not occupied. In 1999 a national Hospice and Palliative Care Association of Zimbabwe (HOSPAZ) was registered to support and promote palliative care services in collaboration with the MOHCW.

In 2004, through a pilot project in five African countries which included Zimbabwe, WHO estimated that a total of 208,600 people were dying from HIV and AIDS or cancer annually in Zimbabwe. The proportion of people needing palliative care was estimated at 1 in 60. Those dying from HIV and AIDS or cancer and suffering pain were estimated at 56,900. The report noted that the number actually needing palliative care was much higher, because it should also include those suffering from serious illnesses but not dying the same year, as well as those suffering from diseases other than cancer or HIV and AIDS. In addition,

palliative care is provided not only at the end of life. In light of these considerations, WHO estimated that at least 1% of the country's population will need palliative care. The WHO report noted the long tradition in provision of palliative care in Zimbabwe but noted the low level of integration of palliative care into the health system. In-country training at various levels was being provided by Island Hospice.

The review of Hospice and Palliative Care in Africa done in 2001 noted that Zimbabwe had thirteen hospice and palliative care organisations, six of which were branches of Island hospice, two provided in-patient provision at a hospice organisation and six in a hospital setting. All thirteen organisations were making outpatient service provisions while four had day care or clinics. In a subsequent review by African Palliative Care Association (APCA) in 2010, service provision had reduced to nine organisations offering palliative care services: three hospices and six home based care organisations that have integrated palliative care, and various Mission Hospitals.

During this review Zimbabwe was put in category 4 in terms of palliative care services provision. In this category countries were providing hospice and palliative services and were approaching wider integration with the public health system. The main characteristics of this category were:

- Availability of a critical mass of activists country wide
- A range of providers and service types
- Broad awareness of palliative care
- Some measure of integration with mainstream service providers
- Established education centres
- Research being undertaken
- A national association in existence

Palliative care provision is part of the National Health Strategy and Palliative Care Standards are already in use. The National Palliative Care Policy and National training curriculum are to be finalized in 2013. Analgesia is an important component of cancer care, particularly in an environment like Zimbabwe where patients tend to present with advanced stage disease. Shortage of opioid analgesia is very common leaving patients with uncontrolled pain.
Morphine which is an essential medicine in management of cancer pain has not been in stock at Mpilo for several years now. The morphine supply at Parirenyatwa Group of Hospitals has been erratic over the years.

### 6.3 Rehabilitation

Rehabilitation for cancer patients mainly includes teaching and advising on activities of daily living and pain management. Rehabilitation intervention is provided through physiotherapy, occupational therapy, prosthetic services, counselling, home based care and support depending on the client's needs.

Occupational Therapy has a key role in rehabilitation. Occupational therapy aims to improve quality of life, so that peoples' lives will be as comfortable, productive and independent as possible. This applies even if life expectancy is short because people living with cancer can experience very rapid changes in their illness and care setting. Occupational therapists working with these people need to be particularly responsive to changing needs, responding quickly and planning forward carefully to take account of deterioration.

Occupational therapists promote the well-being and independence of people with cancer in various settings such as:

- home or community
- hospital (acute or community)
- nursing or residential homes

- day care hospices
- in-patient hospices

As people move between home, hospitals and specialist care they should have access to occupational therapy services at any stage and in all sectors. An occupational therapist's starting point is always the experiences of the people they are working with (cancer patients and their family/caregivers). Their choices and priorities drive any interventions that may take place. Partnership with people living with cancer helps them find new options to improve the quality of life of the patients and carers.

### 6.4 Areas for Action in Palliative and Rehabilitation Care

- Guidelines to assess and address the psychosocial and cultural needs of all people living with cancer are unavailable
- Opiod availability should be ensured at all times
- Access and effectiveness of palliative care need to be improved through training, research, essential palliative care medicines provision and integrated teamwork
- Palliative care providers at all levels, including the family, need to be supported with emotional and social support, information, adequate equipment, medicines and supplies to minimize burn-out
- Communities and employers need to become part of the system of support for cancer patients, including rehabilitation and palliative care services

## 7. CANCER SURVEILLANCE AND RESEARCH

### 7.1 The Zimbabwe National Cancer Registry

Zimbabwe has a well-established and productive population-based cancer registry, one of few such centers in Africa. It is currently providing technical support to other registries in the region on behalf of the International Agency for Research on Cancer (IARC), WHO/AFRO and the International Network for Cancer Treatment and Research (INCTR).

The Zimbabwe National Cancer Registry (ZNCR) was established in 1985 and achieved adequate population coverage for the population of Harare City by 1990. The history, surveillance methods, data quality and completeness of registration have been described in detail elsewhere. Briefly, the registry performs active and passive case finding based on public and private hospital in- and out-patient records, public and private histology reports, radiotherapy records and death certificates. Results from the Registry have been extensively published in medical journals and other scientific publications. The registry has provided data to important international publications including three successive volumes of the 'Cancer Incidence in Five Continents' series (Volumes VII, VIII and IX) published by the International Agency for Research on Cancer and the International Association of Cancer Registries, the 'International Incidence of Childhood Cancer' - Volume II (1998) published by the IARC, 'Cancer in Africa, Epidemiology and Prevention'(2003) published by the IARC and 'Cancer Survival in Africa, Asia, the Caribbean and Central America' (2011) published by the IARC .

Bulawayo had the first Cancer Registry established in Zimbabwe in 1963 which was very active and data was successfully collected over the years (1963-1977). The Registry was closed in 1977 during the war of independence. It was revived in the 1990s and provided data to the ZNCR until 2006 when operations were suspended due to economic challenges facing the country. The registry has lost experienced staff over the years. This has impacted negatively on its operations. Efforts are at an advanced stage to revive the historic Bulawayo Cancer Registry, a development which will help to improve national coverage and ascertain the true burden of cancer in the country.

### 7.2 Other Data Sources

There are other sources of data related to cancer in Zimbabwe including the National Surveillance Systems (T5 &T9) and hospital based surveillance system, that capture cancer data among other diseases within the integrated disease surveillance system. Special surveys also capture critical cancer data, for example the Zimbabwe STEPS surveillance studies sponsored by WHO which capture data on risk factors for cancer and other non-communicable diseases. The most recent published survey was in 2005.

### 7.3 Research Needs

Of the 16 million cases of cancers predicted to occur annually worldwide by 2020, 70% of these will be in developing countries. In sub-Saharan Africa, research has been dedicated to agriculture and infectious diseases as well as HIV and AIDS at the expense of non-communicable diseases such as cancer. Therefore, there is need to address this gap in research and answer many questions for the Zimbabwean setting.

Suggested Research Priority Areas:

- New medicines and prevention measures
- Vaccine introduction e.g. generation of validation data for HPV strains endemic to local populations
- Effective ways to improve access to quality cancer health care services e.g. ways to decrease healthcare costs associated with cancer prevention and treatment, and the feasibility of introducing a cancer levy
- Effectiveness of medicinal plants, indigenous herbs and traditional treatments and ways of integrating them into the conventional healthcare system
- Effective ways of servicing, expanding and maintaining the existing cancer registry (most of the data available is hospital based and therefore may not capture all cases)
- Effectiveness (impact assessment) of the awareness campaigns for prevention and treatment of cancers
- Develop innovations e.g. screening of cancers, early diagnosis and treatment

### 7.4 Areas for Action in Cancer Surveillance and Research

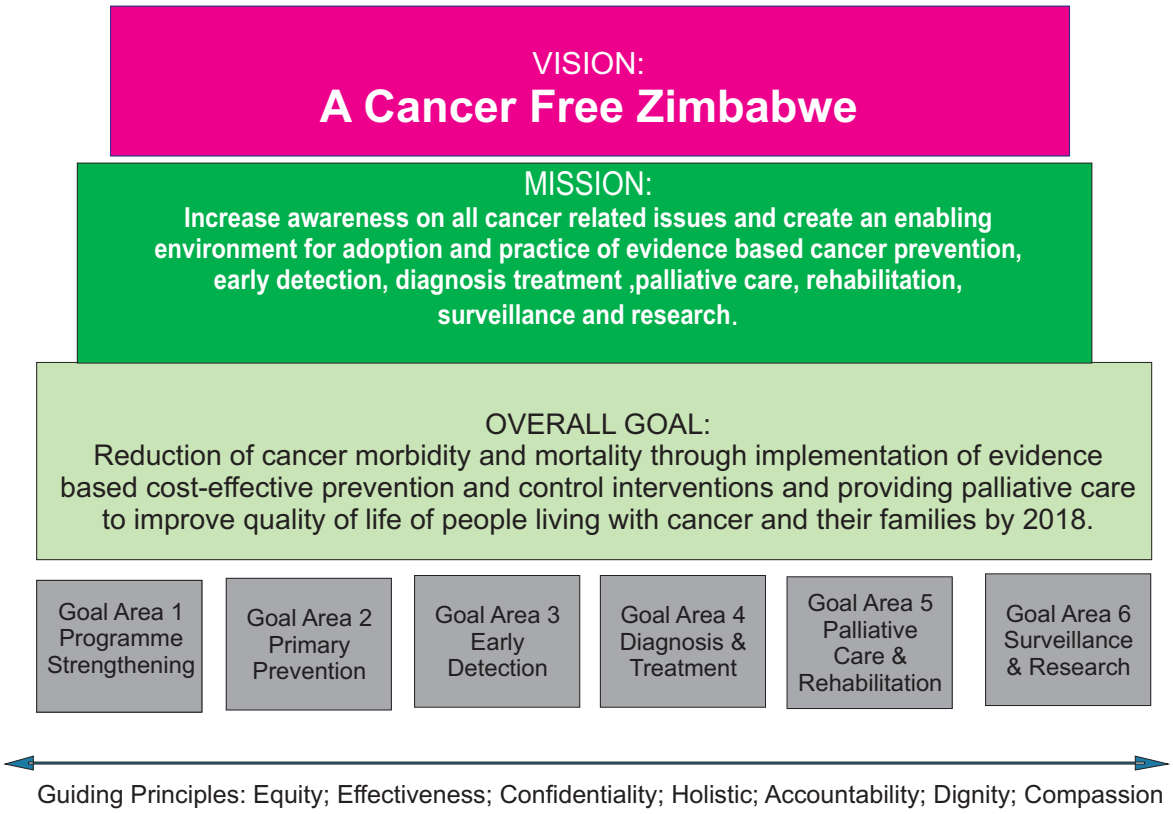
- Inadequate skilled human resources to expand cancer registry services to all provinces due to brain drain and limited funding to train personnel
- Inadequate funding for cancer research, due to low investment in research (low priority for cancer research as resources are channeled towards communicable diseases)
- Sub–optimal collaboration between the relevant stakeholders involved in cancer research resulting in fragmented research efforts
- Absence of up-to-date cancer registries

# Part Two

# Strategic Approach

# Zimbabwe National Cancer Strategy

# Strategic Framework




## Guiding Principles:

1. Equity, fair and non-discriminatory access to cancer services
2. Effectiveness, treatment and management that improves the patient's quality of life
3. Confidentiality, shared personal information including diagnosis is not revealed to anyone else without the permission of the patient.
4. Holistic, cancer services assess and support the physical, emotional, social and spiritual needs of the patients and their families
5. Accountability, service providers, organisations and government are held responsible for upholding sound and ethical practice
6. Dignity, patients are treated with respect throughout the course of illness including death and dying
7. Compassion, cancer services are provided with genuine care and empathy for the patients and their families

## Overall Goal:

Reduction of cancer morbidity and mortality through implementation of evidence based cost-effective prevention and control interventions and providing palliative care to improve quality of life of people living with cancer and their families by 2018.

## Goal Areas:

1) **Programme Strengthening:**
   Standardisation of practice of National Cancer Prevention and Control services in all organisations providing cancer services
2) **Cancer Primary Prevention:**
   Promote appropriate behaviours and provide an enabling environment for the prevention and control of cancer in 60% of the targeted audience by 2018
3) **Cancer Early Detection:**
   Reduce late presentation (3rd and 4th stage) of selected cancers (cervical ,breast, prostate and oral in adults; Wilm's tumour, retinoblastoma, Kaposi Sarcoma, leukaemia and non-Hodgkins lymphoma in children) from 80% to 50% by 2018
4) **Cancer Diagnosis and Treatment:**
   Increase the proportion of people accessing comprehensive cancer diagnostic and therapeutic services in line with Standard National Cancer Management guidelines
5) **Cancer Palliative Care and Rehabilitation:**
   All cancer patients and their families who require palliative care and rehabilitation have access to these services
6) **Cancer Surveillance and Research:**
   Ensure nationwide comprehensive cancer surveillance data by 2018:
   Strengthen evidence based policy development and decision making for cancer prevention and control

## 1. PROGRAMME STRENGTHENING

**Goal 1:** Standardisation of practice of national cancer prevention and control service in all organisations providing cancer services.

| Objective: | Strategy: | Indicators | Target |
|---|---|---|---|
| 1.1 To strengthen the cancer prevention and control programme by 2018 | Development of comprehensive NCDs policy and national cancer control three year rolling plan | Existence of comprehensive national NCDs Policy and cancer control three year rolling plans | 2014 |
| 1.2 To provide leadership for cancer control by 2018 | Establishment of national cancer prevention and control forum | Existence of a national cancer forum | 2015 |
| 1.3 To mobilise resources for cancer prevention and control | Partnership development both locally and internationally | Percentage contribution of partnerships to cancer and budget | Ongoing |
| | Advocacy and communication for resource mobilisation | Percentage of health budget and disbursement allocated for cancer prevention and control | 2015 |
| | Lobby for channeling of 'sin taxes' towards NCDs prevention and control | Percentage of 'sin taxes' channeled to the health sector | 80% of 'sin taxes' channeled to MoHCW by 2018 |
| 1.4 To standardise cancer early detection and management at all levels by 2015 | Development of guidelines | Availability of cancer early detection and management guidelines | 2015 |
| | Strengthen referral system | Availability of referral guidelines | 2015 |
| 1.5 To improve partner / stakeholder coordination in cancer prevention and control | Development of coordination mechanisms | Existence of functional coordination mechanisms | 2015 |
| 1.6 To integrate cancer control and HIV & AIDS/STI services by 2016 | Development of integrated Cancer/HIV & AIDS/STI management guidelines | Existence of Integrated Cancer /HIV &AIDS/STI management guidelines | Guideline at all institutions by 2016 |
| | Integration of cancer /HIV& AIDS/STI early detection and management services | Percentage of facilities providing HIV & AIDS /STI and Cancer integrated services | 100% by 2018 |
| | Human Resource Development | Level of integration of Cancer early detection with HIV & AIDS/STI services | 100% by 2018 |
| | | Percentage of clients accessing Integrated HIV & AIDS/STI and Cancer services | 100% by 2018 |
| | | Number of staff trained in integrated Cancer/HIV & AIDS/STI early detection and management services | 100% by 2018 |

## 2. CANCER PREVENTION IN ZIMBABWE

**Goal 2:** Promotion of appropriate behaviours and provision of an enabling environment for the control and prevention of cancer in 60% of the targeted audience by 2018

| Objective: | Strategy: | Indicators: | Target |
|---|---|---|---|
| 2.1 To increase the proportion of Zimbabweans who are cancer literate to 80% by 2018 | Mass media communication | Existence of a functional communication strategy encompassing radio programs, magazines/bulletins, song and drama programmes | - Monthly radio programmes on cancer<br>- Annual magazine<br>- 5 songs on cancer by 2018<br>- 1 TV Drama centered on cancer by 2015<br>5 IEC messages by 2016 |
| | Lobby for the review and strengthening of school health programme | Existence of cancer education in the schools health programme | 100% Integration of cancer education by 2018 |
| | Healthy lifestyles (including safer sex) promotion campaigns | Number of campaigns held | - 1 national launch<br>- 10 provincial campaigns by 2018 |
| | Integration of cancer and other selected NCDs in the school curriculum | Number of schools with integrated NCDs in curriculum | 100% by 2018 |
| | Integration of cancer and other selected NCDs education into workplace wellness programs | Number of company-clinics implementing cancer wellness programs by 2018<br><br>Percentage of registered companies/ institutions implementing annual cancer prevention programmes by 2018 | 50% of registered companies with clinics by 2018<br><br>100% of registered companies/institutions by 2018 |
| | Integration of cancer and other selected NCDs awareness into Community based health programmes (VHW, CHBC cadres) | Number of community based focal persons trained in cancer education | 100 per province by 2018 |
| 2.2 To provide protection against chronic infections (HPV , hepatitis B on - going, Schistosomiasis by 2018) | Introduction of HPV vaccination for the girl child aged 9-13 years. | HPV vaccination coverage | 85% by 2018 |
| | Maintaining high HB vaccination coverage in the under 1 year olds | HB vaccination coverage | 100% by 2016 |
| | Strengthening schistosomiasis control measures in all endemic districts | Schistosomiasis control coverage in endemic districts<br><br>Schistosomiasis case management coverage<br><br>Schistosomiasis Vector control coverage | 100% by 2018<br><br>100% by 2018<br><br>100% by 2018 |

**Goal 2:** Promotion of appropriate behaviours and provision of an enabling environment for the control and prevention of cancer in 60% of the targeted audience by 2018

| Objective: | Strategy: | Indicators: | Target |
|---|---|---|---|
| 2.3 To empower patients, family members and the public to exercise their legal rights to health and health care by 2018 | Educate patients, family members and the public on existing laws that protect their legal rights with support from Ministry of Labour and Social Welfare, NSSA and other stakeholders | Knowledge levels of existing laws and legal rights | 80% of the population knowledgeable by 2018 |
| 2.4 To reduce population exposure to tobacco | Lobby for increased taxes levied on tobacco sales | Prevalence of people smoking tobacco by 2018 | Tobacco smoking reduced by 5% by 2018 |
| | Lobby for enforcement of existing tobacco control legislation | Percentage of institutions or facilities adhering to tobacco control legislation | Ongoing |
| | Creating an enabling environment for tobacco cessation | Existence of facilities providing tobacco cessation services | One centre per province by 2015 |
| | Lobby for the ratification of the framework convention on tobacco control (FCTC) | Accession of the FCTC | Accession of FCTC by 2016 |
| | Lobby for banning of tobacco advertisement | Existence of a ban on tobacco advertisement | 0% Advertising by 2018 |
| 2.5 To reduce population exposure to alcohol | Lobby for increased taxation on alcohol | Prevalence of individuals who engage in harmful use of alcohol | Reduction by 5% by 2018 |
| | Lobby for enforcement of existing alcohol control legislation | Percentage of institutions or facilities adhering to alcohol control | 100% adherence by 2018 |
| | Finalisation of the alcohol control policy | Existence of alcohol control policy | Policy in place by 2014 |
| | Reduction of harmful use of alcohol | Number of psycho-social support groups in place | 1 per district by 2018 |
| | | Number of alcohol rehabilitation facilities | 1 per province by 2018 |

**Goal 2:** Promotion of appropriate behaviours and provision of an enabling environment for the control and prevention of cancer in 60% of the targeted audience by 2018

| Objective: | Strategy: | Indicators: | Target |
|---|---|---|---|
| 2.6 To minimise occupational and environmental exposure to carcinogenic agents by 2018 | Lobby for increased exposure monitoring of personnel working with radiation | Percentage of institutions dealing with known radioactive substances registered or licensed | 100% by 2018 |
| | | Number of institutions complying | 100% by 2018 |
| | Lobby for licensing and inspection of institutions dealing with known carcinogenic substances | Proportion of institutions registered | 100% by 2018 |
| | | Proportion of institutions complying | 100% by 2018 |
| | Workplace education on reducing risk of exposure | Proportion of institutions complying | 100% coverage by 2018 |
| | | Proportion of employees reporting awareness | 100% coverage by 2018 |
| | Lobby for consistent environmental assessment and monitoring for carcinogenic substances | Existence of monitoring system in place for institutions dealing with known carcinogenic substance | In place by 2015 |
| | | Percentage of institutions dealing with known carcinogenic substances inspected at least once per year | 100% by 2018 |
| | Lobby for provision of protection against UV rays for at risk groups – e.g. Albinos | Percentage of at risk individuals receiving sunscreens (creams) | 100% by 2018 |
| | Lobby for consistant UV intensity monitoring and reporting | Quality reporting on the UV index | Weekly reports by 2015 |

## 3. CANCER EARLY DETECTION (EARLY DIAGNOSIS AND SCREENING)

**Goal 3:** Reduction of late presentation (3rd and 4th stage) of selected cancers (KS, Cervical, breast and prostate) in adults and KS, Wilms Tumour and Retinoblastoma leukemia and non-Hodgkins in children)

| Objectives: | Strategies | Indicator: | Target |
|---|---|---|---|
| 3.1 To equip primary health facilities, district, provincial and central hospitals staff with skills in cancer early detection by 2018. | Development of early detection and referral (early warning signs) guidelines | Availability of cancer detection and management guidelines or protocols<br><br>Provision of early detection services in the system | 100% of facilities with guidelines / protocols<br><br>All levels of the system providing early detection services by 2018 |
| | Strengthen institutional (District and Provincial hospitals) capacity for cancer early diagnosis (biopsy and laboratory) | Percentage of district, provincial and central hospitals providing early cancer diagnosis services | 100% of District, Provincial and Central hospitals by 2016 |
| | Integration of routine screening with HIV & AIDS and STI services | Percentage of OI / STI /OPD/ MCH Clinics providing routine, integrated screening services in district, provincial and central hospitals | 100% by 2016 |
| | | Number of health personnel trained in integrated screening services | 20% trained per facility by 2018 |
| 3.2: To establish routine selected cancer screening services at Central, Provincial and District hospitals by 2018 | Capacity building for routine screening for selected cancers (adult - oral, breast and prostate, cervical and childhood - retinoblastoma, Wilms tumour, KS) | Percentage of district, provincial and central hospitals providing routine screening services for selected cancers | 100% of district, provincial and central hospitals by 2016 |
| | Strengthen referral system | Existence of functional referral system<br><br>Existence of referral guidelines | In place 2018<br><br>In place 2018 |
| | Promotion and utilisation of early detection services | Percentage of cervical cancer screening sites with HPV DNA testing | Existence of HPV DNA testing by 2018 |
| | | Proportion of women aged 25 to 59 examined at least once for cancer of the cervix | 25% by 2018 |
| | | Number of (individuals) men and women screened for cancer (by type of cancer) at a health institution | 10% coverage |
| 3.3: To increase access to comprehensive cancer screening services | Institutional capacity building for cervical cancer and HIV & AIDS and STI screening | Percentage of health facilities providing intergrated cervical cancer/ HIV and AIDS/ STI screening<br>Number of staff trained in integrated cervical (VIAC), breast cancer screening HIV & AIDS and STI service per facility | 60% by 2016<br><br>100% provincial and district hospitals by 2016<br><br>100% primary health care facilities by 2018 |

## 4. CANCER DIAGNOSIS AND TREATMENT

**Goal 4:** Increasing the proportion of people accessing comprehensive cancer diagnostic and therapeutic services in line with Standard National Cancer Management Guidelines.

| Objectives: | Strategies: | Indicator: | Target |
|---|---|---|---|
| 4.1 To increase the proportion of patients that have timeous access to standardised cancer diagnostic and therapeutic services by 30% and 50% respectively by 2018 | Review of national cancer management guidelines | Existence of reviewed national cancer management guidelines | All existing guidelines reviewed by 2015 |
| | Training of health workers (all levels) on new cancer management guidelines | Percentage of health workers trained and providing cancer management services | 50% institution and 20% of workforce by 2018 |
| | Rehabilitate cancer therapy services at Mpilo Central Hospital and Parirenyatwa Hospital | Existence of functional radiotherapy services at Mpilo Central Hospital and Parirenyatwa Hospital | 100% Functionality by2018 |
| | Establishment of one additional centre that offers cancer diagnostic and treatment services | Existence of new functional diagnostic and therapeutic centre | Ongoing |
| | | Number of functional diagnostic and therapeutic centers | Increase by 1 centre by 2018 |
| | Increase and retain human resource base for cancer control | Availability of adequate human resources for cancer control | 70% staffing level by 2018 |
| | Increase availability of functional medical equipment and technology for diagnosis and treatment at all levels of the health delivery system | Number of centres with functional diagnostic and therapeutic cancer control equipment | 3 centres by 2018 |
| | Increase cancer medicine availability in all treatment facilities from (10% essential to 80%) in line with National Medicines Policy | Availability of essential cancer management medicines | 80% by 2018 |
| | Lobby for availability of essential cancer medicine at NatPharm to reduce cost of medicines to the patient | Availability of affordable essential cancer management medicines from NatPharm | 80% availability by 2018 |

## 5. CANCER PALLIATIVE CARE AND REHABILITATION

**Goal 5:** Improving access to palliative care and rehabilitation services to cancer patients and their families

| Objectives: | Strategies | Indicator: | Target |
|---|---|---|---|
| 5.1 To increase availability of essential pain medication as per WHO recommendations by 40%, as measured by reports of morphine used (3 step analgesic ladder) to all patients in pain by 2018 | Lobbying to allow all palliative care trained nurses to initiate opoid prescription | Ability of palliative care trained nurses to prescribe opiods | 100% of trained nurses prescribing opiods by 2018 |
| | Strengthen the supply chain of all pain medication in the country by engaging Natpharm as per WHO recommendations | Percentange of Health Institutions (at relevant levels) with zero morphine stock-outs | No stock out by 2018 |
| | | Percentage of reported morphine usage | 100% (i.e. all patients in need prescribed) |
| 5.2 To provide holistic care (spiritual, emotional, social and physical) to all cancer patients and families by 2018 | Develop multi disciplinary teams at all levels of health delivery system (institutional and community) | Proportion of health institutions with palliative care multidisciplinary teams | 20% by 2016 |
| 5.3 To develop and implement oncology and palliative care training programmes for all levels of health workers by 2018 | Develop relevant national curricula in oncology and palliative care for all health workers (Training of Trainers, Certificates, Diplomas, Degrees) | Proportion of relevant health care workers trained in palliative care and oncology | 20% by 2018 |
| 5.4 To increase rehabilitation access for cancer patients, survivors and their families by 2018 | Supply Central, Provincial and District hospitals with resources and equipment for cancer rehabilitation<br><br>Provision of prostheses and other assistive devices | Proportion of district hospitals with adequate equipment for cancer rehabilitation<br><br>Availability of prostheses and other assistive devices | 100% by 2018<br><br>100% by 2018 |
| 5.5 To increase support services for cancer patients, survivors and their families by 2018 | Increase awareness of rehabilitation services to cancer patients in communities, workplace and among health providers | Number of cancer patients referred for rehabilitation services | 40% increase from 2010 level by 2018 |
| | Establish and support psychosocial support groups | Number of functional support groups | At least 1 per district by 2018 |
| | Development of supportive material for cancer rehabilitation in the appropriate language | Number of appropriate IEC materials produced<br><br>Number of institutions with IEC materials | 1 message per year<br><br>100% by 2018 |

**Goal 5:** Improving access to palliative care and rehabilitation services to cancer patients and their families

| Objectives: | Strategies | Indicator: | Target |
|---|---|---|---|
| 5.6 To increase the proportion of patients that have timely access to palliative care and rehabilitation services by 2018 | Develop national cancer related palliative and rehabilitation care standards and guidelines | Availability of cancer related palliative and rehabilitation care standards and guidelines | Standards and guidelines in place by 2018 |
| | Disseminate standards, utilise and practice palliative care according to National Palliative Care Standards (2009) | Proportion of health care providers practising palliative care according to National Palliative Care Standards (2009) | 100% by 2018 |

## 6. CANCER SURVEILLANCE AND RESEARCH

**Goal 6:**
Ensuring nationwide comprehensive cancer surveillance data by 2018, and strengthened evidence based policy development and decision making for Cancer Prevention and Control by 2018

| Objective | Strategies | Indicator | Target |
|---|---|---|---|
| 6.1 To ensure complete national cancer surveillance by 2018 | Expand Cancer Registry services to all provinces by 2018 | Provincial coverage of Cancer Registry | 100% by 2018 |
| | Lobby for legislation to make cancer a notifiable disease | Cancer notification status | Cancer classified as notifiable disease by 2018 |
| 6.2 To strengthen evidence based policy development and decision making for cancer prevention and control | Development of cancer research agenda | Availability of cancer research agenda by 2015 | Agenda available by 2015 |
| | Promotion and support of operational research on cancer related issues at all levels | Increased funding of cancer research | 50% increase by 2018 |
| | Strengthen collaboration with National Institute of Health research and other research institutes | Number of research studies (collaborative) conducted and disseminated | 3 by 2018 |

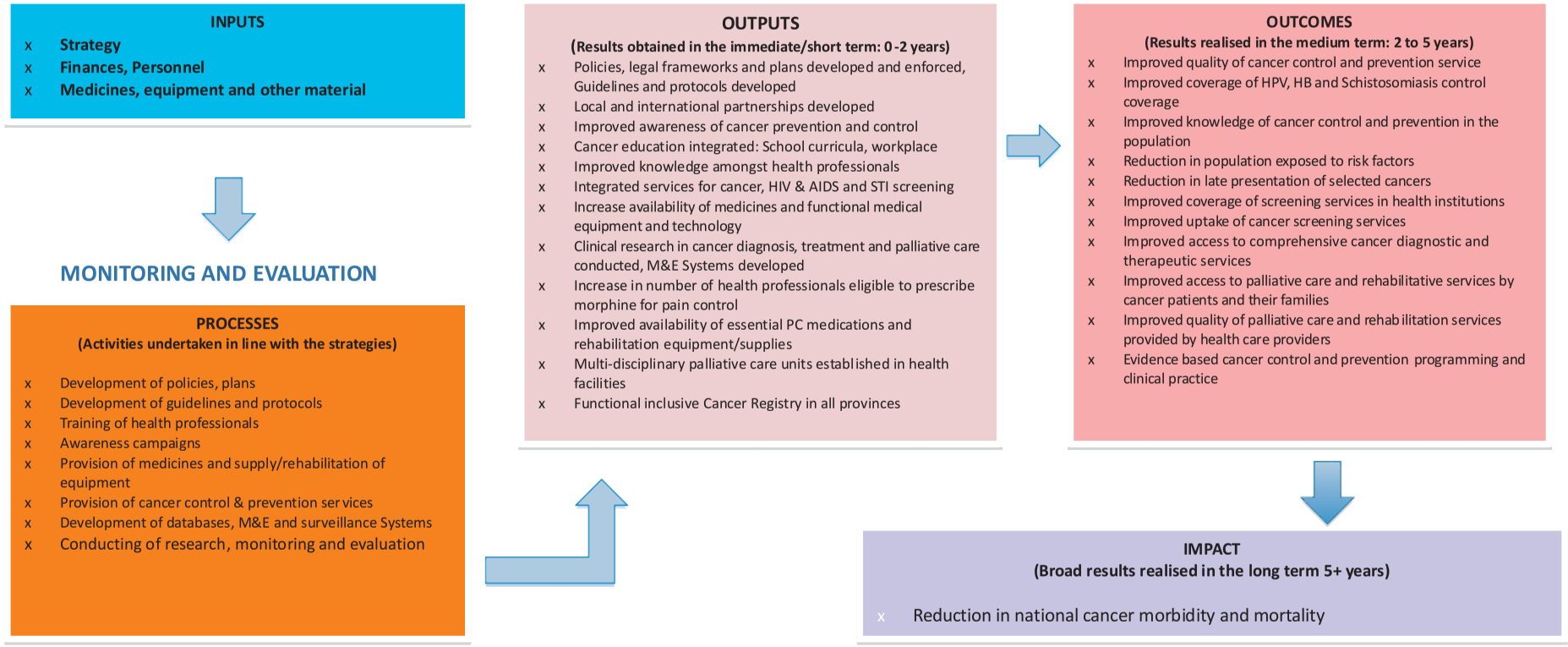
# Annex 1

# Monitoring and Evaluation Framework

# Zimbabwe National Cancer Strategy

# ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

## THE NATIONAL CANCER STRATEGY SUMMARY RESULTS CHAIN (THEORY OF CHANGE)



## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

### FRAMEWORK

| | |
|---|---|
| **KRA 1:** | **Programme Strengthening** |
| **GOAL:** | Standardise practice of National Cancer Prevention and Control service in all organisations providing cancer services |
| **OBJECTIVE 1:** | To strengthen cancer prevention and Control programme by 2018 |
| **OBJECTIVE 2:** | To provide leadership for cancer control by 2015 |
| **OBJECTIVE 3:** | To mobilise resources for cancer prevention and Control |
| **OBJECTIVE 4:** | To provide standardised cancer detection and management guidelines for all levels of the system by 2015 |
| **OBJECTIVE 5:** | To improve partner / stakeholder coordination in cancer prevention and control |
| **OBJECTIVE 6** | To integrate cancer control and HIV & AIDS & STI services by 2016 |
| **IMPACT:** | Reduction in national cancer morbidity and mortality |

| **Impact Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
|---|---|---|---|---|
| Incidence of cancer by type of cancer | Cervical (↓by 5%)<br>KS & Breast (↓ by 2%)<br>Prostate & Non<br>Non Melanoma Skin (↓2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |
| Cancer mortality rates | Cervical↓ 5% | Cancer Registry | Cancer Registry, NCCP | Annual |
| **Outcome 1:** | Improved quality of cancer prevention and control service | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| % of health institutions providing standardised cancer control and prevention services according to set guidelines and protocols | 50% of Institutions per province | Activity Reports, Quality of Care (QoC) Assessments[1] | NCCP | Annually |
| % of facilities offering integrated cancer control with HIV and AIDS and STI programme. | 100% | Activity Reports, Quality of Care (QoC) Assessments | NCCP | Annually |
| **Output 1:** | A comprehensive NCDs Policy and National Cancer Control Three Year Rolling Plan | | | |
| **Output 2:** | A National Cancer Prevention and Control Forum | | | |

[1]This may take the form of the National Integrated Health Facility Assessments (NIHFA) as a component of assessment

| | |
|---|---|
| **Output 3:** | Local and international partnerships developed |
| **Output 4:** | Cancer early detection and management guidelines developed |
| **Output 5:** | Early detection and referral protocols developed and disseminated |
| **Output 6:** | Establishment of Cancer Database |
| **Output 7:** | Functional coordination mechanisms in place |
| **Output 8:** | Sustainable funding for national cancer prevention and control services |

| Output Indicator (s) | Performance Target | Source/Means of Verification | Responsibility | Frequency |
|---|---|---|---|---|
| Existence of a comprehensive National NCDs Policy and Cancer Control Three Year Rolling Plan | In place by 2014 | Activity Reports | NCCP | Quarterly |
| Existence of a National Cancer Forum (***Appointed by the Minister)*** | In place by 2015 | Activity Reports | NCCP | Quarterly |
| Availability of Cancer Detection and Management Guidelines | 2015 | Activity Reports | NCCP | Quarterly |
| Existence of a functional referral system at all levels | 2015 | Activity Reports | NCCP | Quarterly |
| Availability of a functional Cancer Data Base | 2015 | Activity Reports | NCCP | Quarterly |
| Availability of functional Coordination Mechanisms | 2015 | Activity Reports | NCCP | Quarterly |
| % amount of health budget and disbursement allocated for Cancer Prevention and Control | 2015 | Health Budget | NCCP | Quarterly |
| % contribution of partnerships to Cancer Prevention and Control budget. | 2015 | Health Budget/Activity Reports | NCCP | Quarterly |

## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

| | |
|---|---|
| **KRA 2:** | **Cancer Prevention** |
| **GOAL:** | To promote appropriate behaviours and provide an enabling environment for the control and prevention of cancer in 60% of the targeted audience by 2018 |
| **OBJECTIVE 1:** | To increase the proportion of Zimbabweans who are cancer literate to 80% by 2018 |
| **OBJECTIVE 2:** | To provide protection against chronic infections (HPV, hepatitis B, schistosomiasis) |
| **OBJECTIVE 3:** | To reduce population exposure to tobacco |
| **OBJECTIVE 4:** | To reduce harmful use of alcohol |
| **OBJECTIVE 5:** | To minimise occupational and environmental exposure to carcinogenic agents |
| **OBJECTIVE 6:** | To monitor and evaluate the implementation of cancer prevention and control activities at all levels by 2018 |
| **IMPACT:** | Reduction in national cancer morbidity and mortality |

| **Impact Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
|---|---|---|---|---|
| Incidence of cancer | Cervical (⬇ by 5%)<br>KS & Breast (⬇ by 2%)<br>Prostate & Non Melanoma Skin (⬇by2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |
| Cancer mortality rates | Cervical⬇ 5% | Cancer Registry | Cancer Registry, NCCP | Annual |
| **Outcome 1:** | Improved coverage of HPV, HB and Schistosomiasis control measures | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| HPV vaccination coverage | 85% by 2016 | National Health Surveillance | NCCP | Annual |
| HB vaccination coverage | Above 90% | National Health Surveillance | NCCP | Annual |
| Schistosomiasis control coverage, endemic districts | 100% by 2016 | National Health Surveillance | NCCP | Annual |
| Schistosomiasis case management coverage | 100% by 2016 | National Health Surveillance | NCCP | Annual |
| Schistosomiasis vector control coverage | 80% on-going | National Health Surveillance | NCCP | Annual |
| **Outcome 2:** | Improved knowledge of cancer control and prevention in the population | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |

| | | | | |
|---|---|---|---|---|
| Proportion of Zimbabweans who are cancer literate | 80% by 2018 | Surveys/ZDHS | NCCP | (Mid Term, Post Strategy) |
| **Outcome 3:** | Reduction in population exposed to cancer risk factors | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Prevalence of smoking amongst men and women | 5% reduction by 2018 | Surveys/ZDHS | NCCP | Biennial |
| Prevalence of individuals who engage in harmful use of alcohol among men and women | Reduction by 5% 2018 | Surveys/ZDHS | NCCP | Biennial |
| Proportion of facilities (restaurants, bars etc.) and institutions adhering to tobacco control legislation | 100% by 2018 | Surveys | NCCP | Biennial |
| Proportion of institutions complying with legal framework for radiation exposure and management of carcinogenic substances | 100% by 2018 | Environmental assessments and surveillance monitoring for carcinogenic substances | NCCP | Biennial |
| Proportion of individuals at risk of UV rays (e.g. albinos) with access to protective measures | 100% by 2018 | Surveys/ZDHS | NCCP | Biennial |
| **Output 1:** | Improved awareness of cancer prevention and control | | | |
| **Output 2:** | Cancer education integrated in school health programme and workplace wellness programmes | | | |
| **Output 3:** | Policy and legal frameworks for cancer control and prevention established and enforced | | | |
| **Output 4:** | A results based Cancer Monitoring and Evaluation system including registration, surveillance [2] and operations research established and implemented | | | |
| **Output Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Existence of a functional Cancer Communication Strategy encompassing radio programmes, magazines/bulletins, song and drama programmes | Cancer Communication strategy in place by 2015 | Activity Reports | NCCP | Quarterly |
| Existence of cancer education in the school health programme | In place by 2015 | Activity Reports | NCCP | Quarterly |
| No. of company- clinics implementing cancer wellness programmes by 2017 | 100% | Activity Reports | NCCP | Quarterly |

[2]Includes quality reporting for the UV Index

## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

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|---|---|---|---|---|
| % of registered companies/institutions implementing annual cancer prevention programmes by 2018 (Include informal sector) | 50% | Activity Reports | NCCP | Quarterly |
| Number of community based focal persons trained in cancer education | 100/ province | Activity Reports | NCCP | Quarterly |
| Cancer awareness campaign coverage | Target Campaigns (1 national launch, 10 annual provincial campaigns) | Activity Reports | NCCP | Quarterly |
| No. of facilities providing tobacco cessation programmes | 10 by 2015 | Activity Reports | NCCP | Quarterly |
| Accession of the FCTC | Accession by 2014 | Activity Reports | NCCP | Quarterly |
| Existence of Alcohol Control Policy | Policy in place by 2014 | Activity Reports | NCCP | Quarterly |
| No. of facilities providing alcohol cessation programmes | 10 by 2015 | Activity Reports | NCCP | Quarterly |
| No.of psycho-social support groups for cancer wellness in place by 2018 | 1 per District | Activity Reports | NCCP | Quarterly |
| % of institutions dealing with known carcinogenic substances registered/licensed | 100% | Activity Reports | EMA, RPAZ | Quarterly |
| Availability of a functional system for environmental assessment and monitoring for carcinogenic substances | In place by 2015 | Activity Reports | EMA, RPAZ | Quarterly |

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| **KRA 3:** | **Cancer Early Detection (Early Diagnosis and Screening)** |
| **GOAL:** | Reduce late presentation of selected cancers (cervical, breast, prostate in adults; Wilm's tumour, Retinoblastoma, KS, and non Hodgkins lymphoma in children) by 20% |
| **OBJECTIVE 1:** | To equip primary health facilities, district, provincial and central hospitals staff with skills in cancer early detection by 2018 |
| **OBJECTIVE 2:** | To establish selected cancer (cervix, breast, prostate, oral) screening services at Central, Provincial and District hospitals by 2018 |
| **OBJECTIVE 3:** | To roll out integrated cervical and breast cancer screening (VIAC) to district and provincial hospitals by 2015 and all primary health care facilities by 2018. |
| **IMPACT:** | Reduction in national cancer morbidity and mortality |

| **Impact Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
|---|---|---|---|---|
| Incidence of cancer | Cervical (↓ by 5%)<br>KS & Breast (↓ by 2%)<br>Prostate & Non Melanoma Skin(↓ by2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |
| Cancer mortality rates | Cervical↓ 5% | Cancer Registry | Cancer Registry, NCCP | Annual |

| | |
|---|---|
| **Outcome 1:** | Reduction in late presentation of selected cancers by 20% by 2018 |

| **Outcome Indicator** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
|---|---|---|---|---|

## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

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|---|---|---|---|---|
| Proportion of cancer cases presenting late (3rd and 4th stage) for selected cancers | by 20% (2018) | Cancer Registry | NCCP | Annually |
| **Outcome 2:** | Improved coverage of screening services in health institutions | | | |
| **Outcome Indicator** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| % of district, provincial and central hospitals providing early detection services | 100% by 2018 | Activity Reports | NCCP | Quarterly |
| % of OI Clinics providing screening services | 100% by 2018 | Activity Reports | NCCP | Quarterly |
| % of health facilities providing integrated cervical, HIV & AIDS and STI screening | 100% by 2016 | NHIS (National Health Information System) | NCCP | Quarterly |
| % of district, provincial and central hospitals providing routine screening services | 100% by 2016 | Activity Reports | NCCP | Quarterly |
| **Outcome 3:** | Improved uptake of cancer screening services | | | |
| **Outcome Indicator** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| % of women aged 25-59 years examined at least once for cancer of the cervix | 25% (WHO) by 2018 | Survey Reports, ZDHS | NCCP | Biennial |
| No. of individuals (men and women) screened for cancer( by type of cancer) at a health institution | 10% annual increase | NHIS (National Health Information System) | NCCP | Quarterly |
| **Output 1 :** | Health professionals trained in routine screening for selected cancers at provincial and district hospitals | | | |
| **Output 2 :** | Early detection and referral protocols developed and disseminated | | | |
| **Output 3 :** | Integrated service provision for cancer, HIV and STI screening | | | |
| **Output 4 :** | Improved awareness of cancer early detection services | | | |
| **Output Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| No. of health professionals trained in cancer early diagnosis and routine screening | 100% by 2016 | Activity Reports | NCCP | Quarterly |
| No. of health professionals trained in integrated cancer screening, HIV & AIDS and STI screening | 20% per facility | Activity Reports | NCCP | Quarterly |
| Availability of a clear and documented referral system for use | In place by 2015 | Activity Reports | NCCP | Quarterly |

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|---|---|---|---|---|---|
| **KRA 4:** | **Cancer Diagnosis and Treatment** | | | | |
| **GOAL:** | Increase the proportion of people accessing comprehensive cancer diagnostic and therapeutic services in line with Standard National Cancer Management Guidelines. | | | | |
| **OBJECTIVE 1:** | To increase the proportion of patients that have timeous access to standardised cancer diagnostic and therapeutic services by 30% and 50% respectively by 2018 | | | | |
| **OBJECTIVE 2:** | To promote utilisation of evidence-based methods in cancer management. | | | | |
| **IMPACT:** | Reduction in national cancer morbidity and mortality | | | | |
| **Impact Indicator (s)** | | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Incidence of cancer by type of cancer | | Cervical (↓ by 5%)<br>KS & Breast (↓ by 2%)<br>Prostate & Non Melanoma (↓ by 2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |
| Cancer related mortality | | Cervical ↓ 5% | Cancer Registry | Cancer Registry, NCCP | Annual |
| **Outcome 1:** | Improved access to comprehensive cancer diagnostic and therapeutic services | | | | |
| **Outcome Indicator** | | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |

| | | | | |
|---|---|---|---|---|
| % of suspected referred cases who receive comprehensive diagnostic services. | Increase by 30% From 20009 level | Activity Reports | NCCP | Quarterly |
| % of diagnosed patients who receive therapeutic services | Increase by 50% From 2009 level | Activity Reports | NCCP | Quarterly |
| **Output 1:** | National Cancer Management Guidelines developed | | | |
| **Output 2:** | Improved knowledge on use of National Cancer Management Guidelines by health workers | | | |
| **Output 3:** | Improved coverage of centers offering cancer diagnostic and treatment services | | | |
| **Output 4:** | An adequate human resource base for cancer control established and retained | | | |
| **Output 5:** | Increase availability of medicines and functional medical equipment and technology for diagnosis and treatment at all levels of the health delivery system. | | | |
| **Output 6:** | Clinical research in cancer diagnosis and treatment conducted | | | |
| **Output Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Availability of National Cancer Management (NCM) Guidelines | 2015 | Activity Reports | NCCP | Quarterly |
| % of health workers trained in NCM Guidelines and available. | 50% by 2018 | Activity Reports | NCCP | Quarterly |
| Number of centres offering cancer diagnostic and treatment services | Increase by 1 | Activity Reports | NCCP | Quarterly |
| Functionality of Radiotherapy Centres at Mpilo Central Hospital (MCH) and Parirenyatwa Group of Hospitals | MCH and PGH functional by 2014 and continuous | Activity Reports | NCCP | Quarterly |
| Proportion of health workers trained in cancer management providing cancer control services | 100% of trained | Activity Reports | NCCP | Quarterly |
| Number of centres with functional diagnostic and therapeutic cancer control equipment. | 3 | Activity Reports | NCCP | Quarterly |
| % of health institutions at (DPC)providing zero stock out of essential cancer management medications | 100% | Activity Reports | NCCP | Quarterly |
| Availability of affordable essential cancer management medicines from NatPharm | 100% by 2018 | Activity Reports | NCCP | Quarterly |

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|---|---|
| **KRA 5:** | **Cancer Palliative Care and Rehabilitation** |
| **GOAL:** | To improve access to palliative and rehabilitation care by cancer patients and their families |
| **OBJECTIVE 1:** | To increase availability of essential pain medications as per WHO recommendations by 40% |
| **OBJECTIVE 2:** | To provide holistic care (spiritual, emotional, social and physical) to all cancer patients and families by 2018 |
| **OBJECTIVE 3:** | Develop and implement oncology and palliative care training programmes for all levels of health workers by 2018 |
| **OBJECTIVE 4:** | Increase rehabilitation access for cancer patients, survivors and their families by 2018 |
| **OBJECTIVE 5:** | Increase support services for cancer patients, survivors and their families by 2018 |
| **OBJECTIVE 6:** | To facilitate evidence based palliative care and rehabilitation practices by 2018 |
| **OBJECTIVE 7:** | To empower patients to exercise their legal rights by 2018 |
| **IMPACT:** | Reduction in national cancer morbidity and mortality |

| **Impact Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
|---|---|---|---|---|
| Incidence of cancer by type of cancer | Cervical (⬇ by 5%)<br>KS & Breast (⬇by 2%)<br>Prostate & Non Melanoma Skin (⬇by 2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |

## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

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|---|---|---|---|---|
| Cancer mortality rates | (Cervical⬇ by5%) | Cancer Registry | Cancer Registry, NCCP | Annual |
| **Outcome 1:** | Improved access to palliative care and rehabilitative services by cancer patients and their families | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Proportion of cancer patients (and families) referred for palliative care and rehabilitation services receiving services | 100% | Activity Reports/ National PC Register, Surveys | NCCP, HOSPAZ | Annually |
| **Outcome 2:** | Improved quality of palliative care and rehabilitation services provided by health care providers | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Proportion of health care providers practicing palliative care according to National Palliative Care Standards (2009) | 100% | Activity Reports, Annual Quality of Care Assessments | NCCP, HOSPAZ | Annually |
| Proportion of health care providers providing rehabilitation services according to National Rehabilitation Standards and Guidelines | 100% | Activity Reports, Annual Quality of Care Assessments | NCCP, HOSPAZ | Annually |
| % of relevant health care workers demonstrating appropriate morphine use | 100% | Quality of Care Assessments | NCCP | Annually |
| **Output 1:** | Increase in number of health professionals (including nurses) eligible to prescribe morphine for pain control | | | |
| **Output 2:** | Improved availability of essential palliative care medications (include pain medications) and rehabilitation equipment/supplies | | | |
| **Output 3:** | Multi-disciplinary palliative care units established in health facilities | | | |
| **Output 4:** | National curricula in oncology and palliative care for all health workers developed | | | |
| **Output 5:** | Improved awareness of the population of available palliative care and rehabilitation services and the legal rights to access | | | |
| **Output 6:** | National monitoring and evaluation system for rehabilitation and palliative care services established | | | |
| **Output 7:** | National Rehabilitation Standards or Guidelines developed | | | |
| **Output Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| % of practicing PC trained nurses eligible to prescribe morphine | 100% by 2018 | Activity Reports | NCCP | Quarterly |

| | | | | |
|---|---|---|---|---|
| % of health institutions (at relevant levels) with zero morphine stock-outs | 100% by 2015 | Activity Reports<br>Health Facility Assessments | NCCP | Quarterly, Annually |
| % of district hospitals with adequate equipment for cancer rehabilitation (prosthesis + assistive devices) | 100% by 2018 | Activity Reports<br>Health Facility Assessments | NCCP | Quarterly, Annually |
| %of health institutions with PC multidisciplinary teams | 20% | Health Facility Assessments | NCCP | Annually |
| % of health care workers trained in palliative care and oncology | 20% by 2018 | Activity Reports | NCCP | Quarterly |
| No. of cancer patients referred for rehabilitation services. | 40% by 2018 | Activity Reports | NCCP | Quarterly |
| Number of functional integrated cancer and HIV & AIDS psycho social support groups. | At least 1 per District | Activity Reports | NCCP | Quarterly |
| Availability of a national monitoring and evaluation system for rehabilitation and palliative care services | In place by 2014 | Activity Reports | NCCP | Quarterly |
| Availability of National Rehabilitation Standards and Guidelines | 2015 | Activity Reports | NCCP | Quarterly |

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|---|---|---|---|---|---|
| **KRA 6:** | **Cancer Surveillance and Research** | | | | |
| **GOAL:** | To strengthen cancer surveillance and research by 2018 | | | | |
| **OBJECTIVE 1:** | To expand Cancer Registry services to all provinces by 2018. | | | | |
| **OBJECTIVE 2:** | To facilitate complete national cancer surveillance by 2018 | | | | |
| **OBJECTIVE 3:** | To provide evidence-based data on cancer control and prevention programme by 2016. | | | | |
| **OBJECTIVE 4:** | To strengthen evidence based policy development and decision making for cancer prevention and control. | | | | |
| **IMPACT:** | Reduction in national cancer morbidity and mortality | | | | |
| **Impact Indicator (s)** | | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |

## ZIMBABWE NATIONAL CANCER STRATEGY MONITORING AND EVALUATION FRAMEWORK

| | | | | |
|---|---|---|---|---|
| Incidenceof cancer by type of cancer | Cervical ((by 5%)<br>KS & Breast (by 2%)<br>Prostate & Non Melanoma Stan (by 2%) | Cancer Registry, ZDHS | Cancer Registry, NCCP | Annual |
| Cancer mortality rates | Insert target | Cancer Registry | Cancer Registry, NCCP | Annual |
| **Outcome 1:** | Evidence based cancer control and prevent ion programme and clinical practice | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Availability of policy briefs and/or recommendations for programming and/or clinical practices based on surveillance data and research/surveys conducted | At least 3 policy briefs or recommendation papers drafted by 2018 | Policy Briefs, Annual and Survey Reports | NCCP | Annually |
| Evidence of programme review and adjustments based on surveillance data and research by 2018 | 100% of recommendations have clear actions undertaken | Policy Briefs, Annual Reports | NCCP | Annually |
| **Outcome 2:** | Accurate, complete and timely reporting of data on cancer epidemiology, control and prevention activities | | | |
| **Outcome Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Accuracy, completeness (national coverage) and timeliness rates for surveillance data | 100% | National Health Surveillance System, HMIS | Cancer Registry, HMIS | Monthly |
| **Output 1:** | Research agenda developed | | | |
| **Output 2:** | Cancer classified as a notifiable disease | | | |
| **Output 3:** | An all-inclusive (includes private sector data) National Surveillance System | | | |
| **Output 4:** | Functional Cancer Registry in all provinces | | | |
| **Output 4:** | Operations and clinical research conducted regularly directly and through collaborations | | | |
| **Output 5:** | Continuous programme learning through regular performance reviews and evaluations | | | |
| **Output Indicator (s)** | **Performance Target** | **Source/Means of Verification** | **Responsibility** | **Frequency** |
| Provincial coverage of the Cancer Registry | 100% by 2015 | NCCP | Quarterly | Activity Reports |

| | | | | |
|---|---|---|---|---|
| Cancer notification status | Cancer classified as a notifiable disease by 2018 | NCCP | Quarterly | Activity Reports |
| Existence of a National Cancer Research Agenda | Available end 2015 | NCCP | Quarterly | Activity Reports |
| No. of research studies (+collaboratively) conducted and disseminated | 3 by 2018 | NCCP | Quarterly | Activity Reports |
| Availability of Baseline cancer epidemiological data | Baseline epidemiological report by 2015 | Activity Reports | NCCP | Quarterly |
| Availability of report on key risk factor trends | In place by 2015 | Activity Reports | NCCP | Quarterly |
| Integration of the cancer registry into the national health information programme | In place by 2014 | Activity Reports | NCCP | Quarterly |

# Annex 2

## Contributors to Strategy Development

# Zimbabwe National Cancer Strategy

Following on from the stakeholders meeting, a National Cancer Prevention and Control Strategy Development Committee was formed, chaired by Dr N Ndlovu and facilitated by the NCDs Unit. Sub-Committeees were established to work on specific sections of the strategy as follows:

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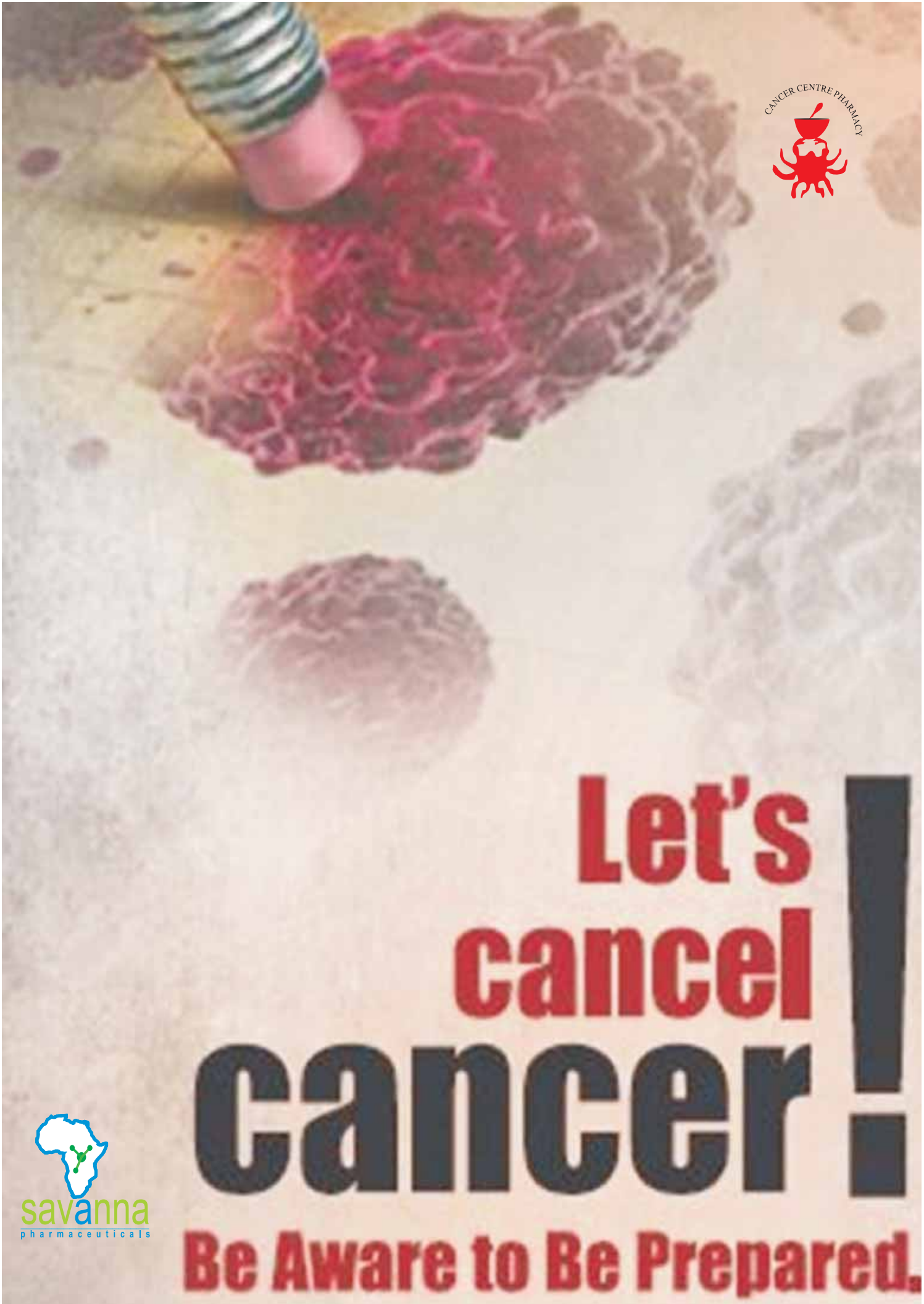
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cancer!
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pharmaceuticals
Be Aware to Be Prepared.