

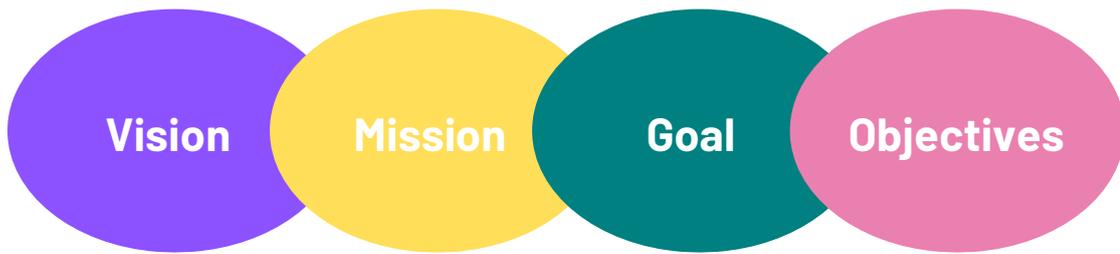


REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

NATIONAL CANCER CONTROL STRATEGIC PLAN

2022 - 2026

Implementing Cancer Control
Services Through Decentralisation
Leaving No One Behind



Vision

A Zambian health care system that is equipped, staffed, trained, and empowered to provide a full range of cancer prevention, screening, diagnostic, treatment, and care options for cancer patients and their loved ones.



Mission statement

To provide equitable access to cost-effective, quality, preventive, promotive, curative, and palliative cancer care services as close to the family as possible.



Goal

To reduce premature cancer mortality by one-third by 2030 to contribute to a healthy and productive population.



Objectives

1. To strengthen leadership and governance to implement services using a decentralised system and well-coordinated and well-structured systems to ensure the population needing the services are covered by 2026.
2. To increase Human Resource capacity of all cancer services countrywide by 2026.
3. To ensure availability of relevant, accurate, timely and accessible cancer related data to determine cancer incidence, prevalence, mortality and survival rate and support the planning, coordination, monitoring and evaluation of cancer services by 2026.
4. To ensure availability of infrastructure, medical equipment, transport, and communication at levels by 2026.
5. To increase community engagement for both childhood and adult cancer awareness and control by 2026.
6. To increase cancer service funding from less than 1% to 5% of the total health budget.

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FOREWORD



Non-Communicable Diseases (NCDs) are a major cause of disability, premature death and contribute substantially to the escalating costs of health care. According to World Health Organisation (WHO) NCDs country profile for Zambia, NCDs contribute nearly 31% of mortality if non-intentional injuries are added. Patients often present in middle age with advanced disease. Over 80% of mortality from NCDs is caused by four main diseases: cardiovascular disorders, cancer, diabetes mellitus, and chronic obstructive pulmonary disease. Recommendations have been made for the reduction of cancer risk factors through changes in lifestyle, and its control through primary prevention, screening, early diagnosis, appropriate treatment, and follow-up.

Cancer control aims to reduce the incidence, morbidity and mortality of cancer, with the improvement of quality of life for cancer patients in a defined population. This is done through the systematic implementation of evidence-based interventions for health promotion, prevention, early diagnosis, treatment and palliative care. The Ministry of Health (MoH) has been implementing cancer control activities over the last two decades. In the last six years, the implementation of cancer control services was coordinated through the National Cancer Control Strategic Plan 2016 – 2021. This was done through the Oncology Services Unit under the Department of Clinical Care and Diagnostic Services and the Cancer Control Unit under the Department of Health Promotion, Environment and Social Determinants. These efforts were coordinated through the National Cancer Control Technical Working Group (NCCTWG). More than 30% of cancers are preventable and 40% are curable for as long as they are diagnosed early.

The strategic plan 2022-2026 is a build-up and strengthening of guidance on the interventions needed to reduce the burden of cancers in Zambia. The Ministry of Health recognizes the need to control cancer using the primary health care approach and to achieve universal health coverage for cancer control services. One of the major weaknesses in the governance and leadership of cancer control is the lack of a coordinating body mandated by the law to govern cancer control services in Zambia. Over the next five (5) years, the Ministry of Health shall create the Cancer Control Act that will create institutions that will govern cancer control in Zambia. The plan has prioritized the control of breast, colorectal, prostate and childhood cancers as well as the elimination of cervical cancer in Zambia. Emphasis is also placed on ensuring that the national healthcare packages of the National Health Insurance Management Authority (NHIMA) include these priority cancers. The use of innovative technology and research should play a crucial role in cancer control programmes and must be integrated in the interventions for prevention and treatment of cancers.

The Government of the Republic of Zambia remains steadfast in our political and financial commitments to reduce incidents of cancer and this strategic plan is intended to be the basis for national response to the burden of cancer in line with the political declaration on NCDs and the Global Action Plan for the Prevention and Control of NCDs, the Sustainable Development Goals 2016 – 2030, the Global Strategy for Women’s, Children’s and Adolescent’s health 2016 – 2030, the National Health Strategic Plan 2022 – 2026 and Zambia’s 8th National Development Plan 2022 – 2026.

A handwritten signature in black ink, appearing to read 'Sylvia T. Masebo'.

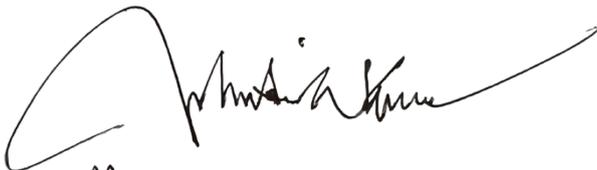
Hon Sylvia T. Masebo, MP
Minister of Health

ACKNOWLEDGMENTS



The 2022 – 2026 strategic plan has been developed through a multidisciplinary consultative process involving significant contributions and support from various stakeholders. The team committed to producing a versatile plan that reflects the aspirations of the government in the control of cancer in Zambia. I wish to extend my sincere gratitude to the technical teams from the Ministry of Health and Cancer Control for their tireless efforts in the process of developing this Plan. It is hoped that this document will guide the health sector on the cancer control activities the will lead to the prevention and reduction of the cancer incidents in the country.

On behalf of the Ministry of Health, I would further like to express gratitude to all those who contributed to the development of this strategic plan. I am indebted to the staff of the University Teaching Hospitals, Cancer Diseases Hospital, Women & New-born Hospital, Children’s Hospital, Adult Hospital, Eye Hospital, Livingstone Teaching Hospital, Arthur Davison Children’s Hospital, Kitwe Teaching Hospital, and cooperating partners including WHO, IAEA, Global Fund, UNITAID, USAID, CDC, PEPFAR, CHAI, CRS, CIDRZ, JSI, JSH, JPHEIGO, NCI-USA, local CSOs: ZCS, BTCT, KCCF, Teal Sisters and PCCZ.



PP Prof. Christopher Simoonga
Permanent Secretary – Administration

ACRONYMS

ADCH	Arthur Davison Children’s Hospital
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
BTCT	Breakthrough Cancer Trust
CBE	Clinical Breast exam
CDC	Centres for Disease Control and Prevention
CDH	Cancer Diseases Hospital
CHAI	Clinton Health Access Initiative
CIDRZ	Centre for Infectious Disease Research in Zambia
CRS	Catholic Relief Services
DISA	Data Intensive Systems and Applications
ECHO	Extended Community Health Outcomes
EHR	Electronic Health Record
EML	Essential Medicines List
EMR	Electronic Medical Record
EPI	Expanded Programme on Immunisation
GBCI	Global Breast Cancer Initiative
GICC	Global Initiative for Childhood Cancer Initiative
Globocan	Global Cancer Observatory
HCWs	Health care workers
HMIS	Health Management Information System
HRIS	Human Resource Information System
HBV	Hepatitis B virus
HPV	Human Papilloma Virus
HRD	Human Resource Development
IAEA	International Atomic Energy Agency
IARC	International Agency for Research on Cancer
IHC	Immunohistochemistry
JPHEIGO	Johns Hopkins Program for International Education in Gynaecology and Obstetrics
JSI	John Snow Inc
JSH	John Snow Health Zambia
KTH	Kitwe Teaching Hospital
KCCF	Kayula Childhood Cancer Foundation
LAN	Local Area Network
LEEP	Loop Electrosurgical Excision Procedure
LMICs	Low- and Middle-Income Countries
LMUTH	Levy Mwanawasa University Teaching Hospital
LTH	Livingstone Teaching Hospital
mHealth	mobile health
MDTs	Multidisciplinary teams
MoH	Ministry of Health
MRI	Magnetic Resonance Imaging
MV	Megavoltage
NCCTWG	National Cancer Control Technical Working Group
NCDs	Non-Communicable Diseases

NGOs	Non-Governmental Organizations
NHCP	National Health Care Package
NHI	National Health Insurance
NHIP	National Health Insurance Package
NHIMA	National Health Insurance Management Authority
NHIS	National Health Insurance Scheme
NHRA	National Health Research Authority
PEPFAR	The United States President 's Emergency Plan for AIDS Relief
PET/CT	Positron Emission Tomography/Computed Tomography
PBCR	Population Based Cancer Registry
PCCZ	Prostate Cancer Campaign Zambia
PHC	Primary Health Care
PSMA	Prostate-specific Membrane Antigen
QA/QI	Quality Assurance/Quality Improvement
RIS	Radiology Information System
ROIS	Radiation Oncology Information System
SBE	Self-Breast Exam
SDGs	Sustainable Development Goals
SJCARES	St. Jude Global Childhood Cancer Analytics Resource and Epidemiological Surveillance System
SPECT/CT	Single Photon Emission Tomography/Computed Tomography
STEP	STEPwise approach to surveillance
STP	Specialist Training Program
TAT	Turnaround Time
ToT	Training of Trainers
USAID	United States Agency for International Development
USG	Ultrasonography
UN	United Nations
UPND	United Party for National Development
UTH	University Teaching Hospital
VIA	Visual Inspection with Acetic acid
WHO	World Health Organization
WLHIV	Women Living with HIV
ZCS	Zambian Cancer Society
ZNCI	Zambia Demographic and Health Survey
ZDHS	Zambia National Cancer Institute
ZNCR	Zambia National Cancer Registry

EXECUTIVE SUMMARY

INTRODUCTION

Zambia is currently experiencing a high burden of cancer with significant consequences on morbidity and mortality, especially among women and children. Cancer control aims to reduce the incidence, morbidity, and mortality of cancer and to improve the quality of life of cancer patients through the systematic implementation of evidence-based interventions for health promotion, prevention, early detection, diagnosis, treatment, and palliative care. In order to achieve cancer control the NCCSP 2022 – 2026 was developed to build up on the NCCSP 2016 – 2021.

The NCCSP 2022- 2026, was developed according to national and health sector planning frameworks and priorities guided by: Vision 2030, the Eighth National Development Plan (8NDP), other appropriate international frameworks, including the World Health organization (WHO) initiatives for the elimination of cervical cancer, the Global Breast Cancer Initiative (GBCI) and Global Initiative for Childhood Cancer Initiative (GICC) of as well as regional, and national policy and strategic frameworks. The plan was also developed in line with the United Party for National Development (UPND) Manifesto.

The overall programme goal is to reduce premature mortality from adult cancer by 30% and improve childhood cancer survival to over 60% by 2030. It focuses on the prevention & control of breast, prostate, colorectal and childhood cancers.

Tremendous achievements were scored under the previous NCCSP 2016 – 2021 including:

1. The decentralization of cervical cancer prevention and screening to 278 facilities country wide
2. Roll out of the Human Papilloma Virus (HPV) vaccination country wide
3. Introduction of training programmes for cancer control at various levels
4. Inclusion of cancer services on the National Health Insurance Package (NHIP)
5. Development of policy documents, guidelines and IEC materials for cervical, breast and childhood cancers

However, there are still challenges, such as:

1. Gaps in leadership and governance at National level, with no provincial focal point persons or district coordinators, except for cervical cancer, resulted in poor coordination and implementation of cancer programmes
2. Low awareness levels of risk factors and health-seeking behaviour among the public
3. The current cancer core staff fall below the recommended World Health Organization (WHO) guidelines with lack of deliberate retention packages for cancer workforce professionals
4. Inadequate funding mechanisms for cancer early diagnosis and treatment
5. Limited access to cancer prevention, diagnostic and treatment services for pre-invasive and invasive cancers
6. Limited access to infrastructure, equipment, medicines and supplies
7. Inadequate coverage of cancer data in the national health data management systems, further constraining opportunities for cancer research

PROCESS

The NCCSP 2022 – 2026 was developed through a highly consultative process involving key stakeholders from both the public and private sectors. The process included the following phases: performance review with data collection and analysis of the previous National Cancer Control Strategic Plan (NCCSP) 2016 - 2021, strategic planning workshops, preparation of the draft plan, review, costing and approval.

SITUATION ANALYSIS

Zambia continues to face a high burden of cancer-related morbidity and mortality. The 2020 Global Cancer Observatory (GLOBOCAN) report estimated that the overall age-standardized cancer incidence rate for both sexes in Zambia was 153.5 per 100,000 (13,831 cases) for all cancers. They also estimated the age-standardized mortality rate to be 103.3 per 100,000 (8,672 deaths). The highest burden of cancer comes from cervical cancer (23%), Kaposi's Sarcoma (16%), Prostate cancer (11.2%), Breast cancer (7%) and oesophagus cancer (3.7%). According to WHO, most Low- and Middle-Income Countries (LMICs), the mortality rate for childhood cancers, is very high and stands at over 70%.

GOAL

To reduce premature cancer mortality by one-third by 2030 to contribute to a healthy and productive population.

STRATEGIC DIRECTIONS

As a build up to the previous National Cancer Control Strategic Plan (NCCSP) 2016 – 2021 this strategic plan prioritizes cervical, breast, prostate, colorectal and childhood cancers. The general objectives of the plan include:

1. To strengthen leadership and governance in order to implement services using a decentralised system and ensuring well-coordinated and well-structured systems to ensure the population needing the services are covered by 2026
2. To increase Human Resource capacity of all cancer services countrywide by 2026
3. To ensure availability of relevant, accurate, timely, and accessible cancer related data, to determine cancer incidence, prevalence, mortality and survival rate and support the planning, coordination, monitoring and evaluation of cancer services by 2026
4. To ensure availability of infrastructure, medical equipment, transport and communication at all levels by 2026
5. To strengthen community engagement for both childhood and adult cancer awareness and control by 2026
6. To increase cancer services (prevention, diagnosis, treatment, training and research) funding from less than 1% to 5% of total health budget by 2026 as well as leverage on the NHIMA resources.

IMPLEMENTATION

The implementation of the National Cancer control Strategic plan will include several public and private institutions, Civil Society Organisations (CSOs), and Non-Governmental Organisation (NGOs) that operate at various levels of the health sector. The Ministry of Health (MoH) has a role to make sure that

there is a coordinated governance system which requires sharing of information at various levels for evidence-based management decisions. The strategic plan will be implemented and coordinated through the existing health sector organisational and management structures and augmented by the National Cancer Institute of Zambia.

Implementation of this plan will ensure continued progress towards reducing cancer mortality by one-third by 2030 with elimination of cervical cancer using the World Health Organisation (WHO) 90-70-90 strategy, ensuring 60% of breast, childhood and colorectal cancers are diagnosed in stage I & II. Prostate cancer awareness and demand testing is emphasized.

MONITORING AND EVALUATION

Monitoring of the implementation of this plan will be based on the existing as well as new systems for routine, periodical and ad-hoc collection and reporting of health information. These will include: the systems coordinated by Ministry of Health (MoH), such as the Zambia National Cancer Registry (ZNCR), Hospital Management Information System (HMIS), Human Resource Information System (HRIS) and Electronic Logistics Management Information System (eLMIS) and Healthcare Financing System (HCF). This will be supported by other information systems such as the Global Cancer Observatory (GLOBOCAN), WHO STEP Survey, Zambia Demographic Health Survey (ZDHS), Systems collecting vital statistics on births, citizenship, and deaths.

COSTING AND FINANCING

The National Cancer Control Strategic Plan (NCCSP) 2022 – 2026 was costed on the projections of the previous NCCSP 2016 - 2021, the prevailing economic status of the country, cancer morbidity and mortality data, objectives, strategies, and interventions of the plan. The ingredient input-based approach was used to identify the specific inputs needed to carry out each intervention and the targets set to achieve the set outputs in consultation with the stakeholders. The total cost of the strategic plan for the five years is estimated at nearly ZMW 2, 399,590,585.00 (2.4) billion for the five years of implementation.

INTRODUCTION

Cancer control aims to reduce the incidence, morbidity and mortality of cancer and to improve the quality of life of cancer patients in a defined population, through the systematic implementation of evidence-based interventions for health promotion, prevention, early detection, diagnosis, treatment, and palliative care. The overall programme goal is to reduce premature mortality from adult cancer by 30% and improve childhood cancer survival to over 60% by 2030. This is in line with Sustainable Development Goal (SDG) 3, regarding "Good Health and Well-being to ensure healthy lives and promote well-being for all at all ages". SDG 3 aims to achieve universal health coverage, which seeks equitable access to healthcare services for all. Target 3.4: Reduce mortality from non-communicable diseases and promote mental health i.e. "By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being." Indicator 3.4.1: Mortality rate attributed to cardiovascular disease, cancer, diabetes, or respiratory disease. Indicator 3.4.2: Suicide mortality rate (UN, 2022). Globally the deaths caused by the four main NCDs were 17.7 million from cardiovascular diseases, 8.8 million from cancers, 3.9 million from chronic respiratory diseases, and 1.6 million from diabetes (IAEA, 2018). The risk of dying from the four main NCDs between ages 30 and 70 decreased from 23% in 2000 to 19% in 2015 (World Health, 2020). Within these SDGs the United Nations (UN) have developed the NCD Action plan and several cancer initiatives that today countries need to begin to implement to help in the reduction of mortality from cancer (World Health, 2021b).

Zambia's 8th National Development Plan 2022 – 2026 (NDP) notes a high prevalence and impact of preventable and treatable communicable diseases as well as the growing burden of non-communicable diseases (NCDs) (MoF, 2022). The National Health Strategic Plan 2022 – 2026 in line with the 8th NDP 2022-2026, has prioritised the control of cancer and other non-communicable diseases. The National Health Care Package (NHCP) includes cancer as one of the major diseases to be controlled. The NHCP emphasises universal health coverage using primary health as a vehicle for implementation of health services. The NHCP spells out the role of the government in health and its relation to other actors whose activities have an impact on health and involves overseeing and guiding the whole health system to protect the public.

SITUATION ANALYSIS

Zambia continues to face a high burden of cancer-related morbidity and mortality. The 2020 GLOBOCAN report estimated that the overall age-standardized cancer incidence rate for both sexes in Zambia was 153.5 per 100,000 (13,831 cases) for all cancers. They also estimated the age-standardized mortality rate to be 103.3 per 100,000 (8,672 deaths) which means that the majority (~63%) of new cancer cases in Zambia die from the disease. The highest burden of cancer comes from cervical cancer (23%), Kaposi Sarcoma (16%), Prostate cancer (11.2%), Breast cancer (7%) and oesophagus cancer (3.7%) (Sung et al., 2021). Childhood cancers, despite being curable, are associated with very high mortality in Zambia (>70%) (Slone et al., 2014; World Health, 2021a).

Table 1 Summary Statistics GLOBOCAN 2020

Summary Statistics 2020			
	Males	Females	Both sexes
Population	9 103 006	9 280 950	18 383 956
Number of new cancer cases	5 968	7 863	13 831
Age-standardised incidence rate (World)	166.6	154.4	153.5
Risk of developing cancer before the age of 75 (%)	16.3	15.8	15.8
Number of cancer deaths	3 791	4 881	8 672
Age-standardised mortality rate (World)	113.2	103.4	103.3
Risk of dying from cancer before the age of 75 years (%)	10.9	11.1	10.9
5-years prevalent cases	11 796	16 760	28 556
Top 5 most frequent cancers excluding non-melanoma skin cancers (ranked by cases)	Prostate Kaposi sarcoma Oesophagus Liver Colorectum	Cervix uteri Breast Kaposi sarcoma Colorectum Non-Hodgkin lymphoma	Cervix uteri Kaposi sarcoma Prostate Breast Oesophagus

Cervical Cancer remains a major public health problem in Zambia despite being one of the most preventable and treatable cancers, accounting for about 23% of all new cancer cases (GLOBOCAN, 2020a). In 2020, the incidence rate for cervical cancer stood at 65.5 per 100,000 women, the third highest incidence globally and a mortality rate of 43.4 per 100,000 women (Sung et al., 2021). The country is also severely affected by a high prevalence of HIV (11.3%) with approximately 780 900 Women Living With HIV (WLHIV) and a total population antiretroviral (ART) adult coverage rate of 78%. WLHIV are 4-6 times more likely to develop cervical cancer which is AIDS defining (WHO, 2020). The widespread use of ART has led to a decrease in Acquired Immuno-Deficiency Syndrome (AIDS) related mortality inadvertently providing a window for long term survivors who are susceptible to Human Papilloma Virus (HPV) driven cervical cancer. It is known that 99% of cervical cancer is caused by persistent HPV infection. In the immunocompromised hosts the progression of HPV lesions to cancer is faster (HPVcenter, 2021; Reusser, Downing, Guidry, & Tying, 2015).

Other AIDS defining malignancies include Kaposi's sarcoma and Non-Hodgkins Lymphomas (Rubinstein, Aboulafia, & Zloza, 2014). The rate of Kaposi's Sarcoma has not reduced in Zambia despite the effective ART programme. Additionally, we see increasing numbers of squamous cell carcinomas of the conjunctiva, head and neck, vulva and penis. In these sites HIV positivity varies from 20% to 99%.

Prostate cancer is the third most common cancer in Zambia and commonly presents with advanced stage disease compared to the developed world leading to high mortality. Breast cancer is the 4th most common cancer in Zambia with age standardized incidence rate of 20 per 100, 000 women, with a mortality rate of 9.5 per 100, 000 (about 50%). Colorectal cancer ranks as 4th and 5th common cancers among women and men respectively (GLOBOCAN, 2020b). Majority of the patients present at younger age and characterized by late presentation (89%) with lower cure rates.

Cancer Diseases Hospital (CDH) is currently the only hospital with comprehensive treatment for childhood cancers in Zambia. CDH childhood cancer data (2018-2020) indicates that WHO Global Initiative for Childhood Cancers (GICC) six index cancers constituted 50 - 70% of the ten most common childhood cancers diagnosed over the period as in other Low- and middle-income countries (LMICs). Of the estimated 1,400 new childhood cancers diagnosed annually, approximately 200 (14.3%) of them are seen at CDH. As in most LMICs, Childhood cancer survival in Zambia is estimated to be less than 20%.

Table 2 Top Ten Childhood Cancers at Cancer Diseases Hospital 2018-2020

Malignancy	Year			Total Number (Percentage)
	2018	2019	2020	
Retinoblastoma	28	24	34	86 (18.6%)
Nephroblastoma	26	32	23	81 (18.1%)
Acute Lymphoblastic Leukemia	21	14	27	62 (13.9%)
Non-Hodgkin Lymphoma	6	18	19	43 (9.6%)
Acute Myeloid Leukemia	9	20	11	40 (8.9%)
Rhabdomyosarcoma	12	19	5	36 (8%)
Hodgkin Lymphoma	9	8	10	27 (6%)
Brain Tumours	5	15	5	25 (5.6%)
Neuroblastoma	9	13	3	25 (5.6%)
Extracranial Germ cell Tumours	8	5	9	22 (4.9%)
Totals	133	168	146	447

Source: CDH HMIS, 2018-2020

Leadership and Governance

The Government of Zambia provides appropriate leadership and overall governance through the Oncology (Cancer Control) Services Unit responsible for cancer control services in the Ministry of Health. It has two sections, one responsible for cancer primary prevention, screening and early detection and the other responsible for cancer diagnosis, treatment, palliative care, education, training, and research. The coordination of cancer control services in Zambia is weak resulting in low implementation as well as cancer services coverage rates as seen in the report of the assessment of the last NCCSP 2016 – 2021.

Health Care Financing

Cancer has the most devastating economic impact of any cause of death in the world. If left uncontrolled it can reduce a country's gross domestic product (GDP) by as much as 1.5% and which can reduce economic gains of a country(ACS, 2010). Zambia's GDP was estimated to have grown by 7.2% in 2005 and 10.3% in 2010 before declining to 5% in 2013 and 2014 and declining further to 2.9% in 2015. The health services in Zambia are provided by four main sectors, namely the Government, faith-based (not-for-profit) providers, the mines, and private (for-profit) providers. The public sector is the biggest health provider and 90% of patients seek care in facilities owned and run by the Government. The average out of pocket health expenditure per house-hold per annum in Zambia in 2018 was \$7.891 (World-Bank, 2018). Other sources include employer-financed schemes through health insurance companies. External donors provide a significant budget support of nearly 34% of total resources for health. Government Republic of Zambia (GRZ financing for the health sector is provided by general tax and budget support. And recently, the national health insurance act was approved creating NHIMA which has made contributions to the national health fund mandatory in Zambia and the packages cover some of the cancer services

Cancer control services are funded through various sources. The Government of the Republic of Zambia being the main funder is complimented by cooperating partners, out of pocket expenses and the National Health Insurance. The government funding is dispersed to facilities on monthly basis through recurrent departmental charges to cover daily running costs of health Institutions. Nearly 1% of the health budget is allocated to cancer control services. Essential medicines and medical supplies are provided for in the Ministry of Health Budget and procured by Zambia Medicines and Medical Supplies Agency (ZAMMSA) and through pooled procurements supported by cooperating partners.

According to the WHO cervical cancer resource mapping 59% of resources from 2016 – 2019 period were allocated to prevention efforts (WHO, 2020). The resources allocated to diagnostic, treatment and palliation was at 14%. Community and stakeholder engagement was 5% whilst technical assistance and health information were 12% and 9% respectively. "The dispensation to research was the lowest at 0.7%. For health system levels, secondary and primary levels were projected at 40% and 12% respectively following the central allotment of 45%. Community and stakeholder engagement took up 3 %. The secondary prevention to tertiary intervention ratio was 4:1 in the projection compared to approximately 2:1 in the actual budgeted costs for the same period, showing a two-fold discordance" (Lombe et al., 2021).

Service Delivery

Cancer Awareness and Prevention

Cancer awareness is provided by the health promotions units at various levels in partnership with civil society organisations as well as faith-based organisations, yet awareness levels are estimated to be at less than 5%. Prevention activities include HPV vaccination for girls aged 9-15 years and Hepatitis-B vaccinations for under 5s through established EPI program countrywide (WHO, 2013, 2023).

Alcohol and tobacco abuse have been associated with the development of a number of NCDs such as cancer that cause preventable premature deaths in the community. In Zambia, the National Alcohol Policy provides guidance on strategies to reduce the use of alcohol. However, coordination needs to be strengthened to engage all stakeholders to realize the objectives. Currently the tobacco policy is yet to be implemented to contribute to the efforts of the various health related policy document objectives to make a healthy nation. A multi sectoral and public health care approach will go a long way in complementing the NCCSP 2022 – 2026 objectives as it endeavors to reduce cancer incidences in the country of which tobacco and alcohol have notable causative association.

Cancer Screening and Early Diagnosis (Early Detection)

Cancer screening is implemented for cervical cancer and early diagnosis is mainly implemented for cervical, breast, prostate, colorectal and childhood cancers. Cervical cancer screening has been rolled out to 111 out of 116 districts in Zambia with 278 cervical cancer screening clinics that have the capacity for immediate treatment of premalignant lesions with either ablation or Loop Electrosurgical Excision Procedure (LEEP). Out of the 278 clinics, 100 have LEEP services. 86% of eligible women requiring cryotherapy or thermal ablation underwent the procedure the same day of screening. 45% of women requiring LEEP services accessed this service the same day of referral. The population coverage for cervical cancer screening using Visual Inspection with acetic acid (VIA) as a screening test was reported in the STEP survey report of 2017 to be at 16.4%. For prostate cancer and retinoblastoma early diagnosis, less than 10% of facilities have these services. At the end of 2021 there were only 4 early breast cancer diagnostic clinics in Livingstone (1) Lusaka (2) and Kabwe (1).

Colorectal cancer early diagnosis approach has been adopted for implementation through Guaiac Faecal occult blood test (gFOBT). This will be approached through a “spoke and hub” with local clinics feeding into a high level of health care where colonoscopy and biopsy, imaging and other diagnostic procedures will be done. Currently 9 facilities are conducting gFOBT and only 4 public health care facilities have colonoscopy facilities in the country, University Teaching Hospital (UTH), Levy Mwanawasa University Teaching Hospital (LMUTH), Maina Soko Military Hospital (MSMH) and Ndola Teaching Hospital (NTH)

For diagnosis, pathology services have been strengthened with 5/10 provinces having histopathology services and for imaging, 6/10 provinces have CT scanners. There are now two MRIs in the public sector one at CDH and the other at Maina Soko Military Hospital. There are no PET/CT services in Zambia currently. Currently in Zambia there are 467 sites that can conduct HPV sample collection. The adoption of self-collection is expected to increase the number of women accessing cervical cancer screening. HPV test samples, histopathology sample and patient referral is usually managed using out of pocket payment and sometimes leverages other existing programme courier systems such as the HIV programme. Currently, the country has partially defined guidelines for histopathology sample referral and results cascading.

Cancer Case Management

Cancer is usually managed by a multi-modality approach which includes surgery, chemotherapy, radiotherapy, and palliative care. The CDH is the only facility offering comprehensive cancer case management. Surgery is also performed in both private and public facilities at tertiary, provincial and district level. Chemotherapy is offered at CDH, UTH, some mission and private hospitals. CDH is the only facility in the country offering radiotherapy. Palliative care is mainly offered across the 180 first level, second level and tertiary level facilities. Zambia records approximately 14000 new cancer cases per year and only 25 – 31% of cancer patients access treatment at the current moment because only one treatment centre exists in Zambia for both adults and children (WHO, 2017).

Human Resources

Human resource capacity for cancer care at all levels remains low. The country currently has two paediatric oncologists, three gynaecologic oncologists, five surgical oncologists, ten clinical and radiation oncologists, 5 radiologists, 3 haematologists, 5 nuclear medicine physician, 10 medical physicists of which 4 are clinically qualified, 17 Pathologists (14 in the public and 3 in private sector), 0 oncology pharmacists, 15 oncology nurses and 24 radiation therapists.

Table 3 Human Resources Deficit

Category	Current Staffing numbers	Expected Standard	Gap	Local Training Available & Name of Institution
Clinical & Radiation Oncologists	10	50	40	ZACOMS/CDH Training College/Lusaka Apex Medical University
Radiologists	5	20	15	ZACOMS/Lusaka Apex Medical University
Pathologists	17 (one dedicated to cancer)	20	19	ZACOMS/UNZA
Nuclear Medicine Physicians	5	10	5	No local programme
Haematologists	3	10	7	No local programme
Paediatric Oncologist	2	20	18	No Local Programme
Oncology Nurses/Nuclear medicine nurses	15	2800	2785	UNZA/Levy Mwanawasa Medical University
Radiation Therapists	24	80	56	CDH Training College/TEVETA
Medical Physicists	4	40	30	No Local Training Programme
Oncology Pharmacists/Radiopharmacists	3 radiopharmacist 0 Oncology pharmacist	80	80	No local Programme

There have been efforts in the recent past to increase training capacity with introduction of local training programs in various specialties of cancer control. Today Zambia has training programmes in clinical & radiation oncology, gynaecologic oncology, radiation therapy, nursing oncology, pathology, radiology and palliative care.

Medicines and Medical Supplies

Availability of essential cancer medicines and supplies at the CDH currently stood at 39.5% of the essential cancer medicines and supplies list of the country that was adapted from the WHO model cancer medicine list as of August, 2021. ¹⁵The Zambia Essential Cancer Medicines list includes 75% of the WHO model list of essential medicines for children. Along with adult cancer medicines, Zambia has expressed interest in participating in the Global Platform for Access to Childhood Cancer Medicines (GPACCM) by the St Jude and WHO partnership for the treatment of childhood cancer.

Infrastructure and Equipment

Zambia only has 1 facility that offers comprehensive cancer care that caters for the population of 19.6 million people (ZamStats, 2022). There are 278 cervical cancer screening clinics, 100 LEEP clinics, 4 early breast diagnosis clinics and 1 chemo radiation facility. Theatre spaces and equipment exist at various levels of health care country wide. Equipment for cervical cancer secondary prevention has been distributed country-wide with inadequate access to thermal ablation. For radiotherapy the country has one linear accelerator, two cobalt 60 units and two high dose rate brachytherapy units.

Information Communication and Technology (ICT)/ Health Information and Research

Cancer morbidity and mortality data is collected through the Zambia National Cancer Registry (ZNCR) using IARC CanReg 5 electronic cancer data collecting tool. The ZNCR now has one Population Based Cancer Registry (PBCR) for Lusaka District. Two more PBCR are being developed for Ndola and Livingstone districts. CDH oncology database and that at other levels is collected mainly through a paper-based system. CDH has a custom-made adult cancer access data base, with the development of breast and cervical databases through Susan G. Komen support. The St Jude Global Childhood Cancer Analytics Resource and Surveillance System (SJCARES) is currently being implemented since August 2021. SJCARES is a hospital-based registry system that collects actionable paediatric oncology-specific data in more detail than is possible with the population-based registry. The Government of The Republic of Zambia has set up the e-government platform at Smart Zambia and is encouraging all public services to become electronic. It is encouraged that CDH and the rest of the screening and early diagnosis sites can have electronic medical records. At the moment the cervical cancer screening utilise an electronic database – smartcerv.

STAKEHOLDER ANALYSIS

The main stakeholders for cancer control include the community, patients with cancer, associations of people living with cancer, the central government (particularly MoH and relevant government line ministries and departments), Churches Health Association of Zambia (CHAZ), the private sector, civil society organizations, local communities, and the international community. The table below summarizes the various stakeholders and their interests:

Table 4 Stakeholder Analysis

Stakeholder	Role of stakeholder	Current Status	Interest in Issue	Influence	Position	Impact
General population and communities	Be cancer aware and seek prevention and treatment early	Inadequate awareness and poor health seeking behaviour	Medium	Medium	Supportive	High
Patients with cancers, survivors and cancer associations	Be able to seek and receive quality, efficient, and effective care early and support services for respective cancers. Be able to form support groups for patients with cancer Advocate and activism for cancer control activities	Inadequate patient involvement and participation in cancer prevention and control Few organizations mostly confined to Lusaka and Copperbelt provinces Low focus on funding cancer programs	High	Medium	Supportive	High
Health care workers	To have appropriate training, exposure, and support in the prevention, early detection, diagnosis, referral and management of cancer for different cadres at all levels of care	Inadequate knowledge, trained and number of health care workers	High	High	Supportive	High

Suppliers of goods and services	To supply in a fair, efficient, consistent, and transparent manner, quality goods and services to MoH for the control and management of cancer	No local manufacturers for cancer drugs and most equipment and challenges in obtaining drugs from international drug companies. Non-adherence of suppliers to contracts Government suppliers are now only registered by the Zambia Public	High	Low	Supportive	High
Cabinet	Providing overall policy direction and resources for cancer control	Lack of a cancer control act	High	High	Supportive	High
Other government line ministries and departments	Ensure multisectoral support to the implementation of the NCD strategic plan	Existence of inter-ministerial communication that assists policy approval	High	High	Supportive	High
Health institutions	Provision of health services to the general public, including cancer prevention, diagnosis, treatment and care, within the national health	Screen, diagnose, treat and refer appropriately	High	High	Implement	High
Traditional health practitioners/herbalists	Recognise early symptoms and encourage referral to health facility or liaise with community health workers	Patients are delayed at this level and present very late at the public health facilities. Not empowered with cancer information and services available	Medium	Medium	Moderately Supportive	Medium

The international agencies for technical or financial assistance	Provision of financial and technical support to the sector within the established policy, strategic framework, and priorities	Some are providing technical and/or financial support	High	High	Supportive	High
Traditional/ community leaders	Dissemination and enforcement of cancer awareness and provision of information and referral to facilities	Not empowered with cancer information and services available	High	High	Supportive	High
Training Institutions Foreign and Local	Training of Health Care workers in cancer control fields	Many institutions willing to provide training for cancer control courses	High	High	Supportive	High
United Nations Agencies	For Technical assistance and funding	Active collaboration and support	High	High	Supportive	High

SWOT ANALYSIS

Leadership and Governance

Strengths	Weaknesses	Opportunities	Threats
Decentralisation policy available	Diagnosis & Treatment services still centralised	Partners available to support cancer services decentralization	May not be priority of partners
NHCP includes cancer care packages in the NHI	Cancer care services not wholly included in the NHI	NHI packages with cancer services available	May be too expensive to include in the NHI for Zambia
Existence of policies and cancer control programmes	Cancer control policies and guidelines not updated	Presence of partners willing to support in updating cancer control policies and guidelines	Change in priority by local and international partners
Available NCCTWG	Poor coordination mechanism	Availability of local and international agencies supporting health care service provision	Focus of these organizations may not include the whole of the cancer spectrum
Oncology Services Unit available	No appropriate national structure to support cancer control services	Good examples of cancer control act available internationally	Partners may not be willing to share their country's act
ZNCR available	Not linked to the DHIS2 and HMIS	Available good examples of Cancer registries in the region and internationally	Unavailable to share good practices
Political will to improve oncological services and increase access to cancer services at all levels	Not all health policies include cancer services	WHO cervical cancer elimination, childhood and breast cancer early diagnosis initiatives available	Change in priorities of international partners

Strengths	Weaknesses	Opportunities	Threats
Capacity to develop and implement the NCCSP	Inadequate resources	Presence of international partners willing to assist with policies for cancer control	Change in priorities of international partners
Public Health act available	Does not include cancer control services	Availability of the St. Jude Global alliance	Change of focus by international partners
Availability of Policy documents: NHSP, NCCSP and National cancer guidelines for prevention, Diagnosis and treatment	Policies lack dissemination	Availability of international policy and guidelines	Inadequate political will for dissemination

Health Care Financing

Strengths	Weaknesses	Opportunities	Threats
Availability of funding from government for cancer control services at all levels of health care	Inadequate/inconsistent funding for cancer control and management	Availability of financing partners both local and international	Termination of funding by partners
National health insurance covers cancer care services	Some of the cancer services not covered by NHI	Availability of private insurance companies	The high cost of cancer care may not be adequately financed by NHI
Availability of internally generated revenue (IGR)	No guidelines for the utilization of this line of funding	Availability of more funders for cancer services	Sudden withdrawal of support by partners
Availability of research funding in NHRA	Cancer research not prioritised	Availability of resources and funding opportunity from international research agencies in breast cancer	International priority research areas may be at variant with local research needs

Service Delivery

Health Promotion, Community Awareness, Education and Vaccination

Strengths	Weaknesses	Opportunities	Threats
Presence of health promotion/education units at all levels of health care	Lack of a communication strategy on cancer Health promotion structures are underutilized	Established media channels to use for dissemination of information. Communities receptive to cancer health information	Traditional healers, religious beliefs and myths providing conflicting messages. low uptake of information and Poor health seeking behaviour with high treatment abandonment
Available awareness programmes within MoH	Inadequate awareness on cancer at all levels	Zambia has a receptive community that can help in raising awareness.	Inappropriate of social media in dissemination of myths and beliefs
	Meetings not held regularly	Stakeholders with interest in index cancer available Zambia has inter-sectoral collaboration within government line ministries.	Traditional practices and religious beliefs that may cause avoidance or delay in seeking cancer diagnosis and treatment
	Low awareness level among traditional and other community leaders on cancer	Zambia has good coverage of mobile phone networks, telecom providers, and prior examples of successful mHealth interventions done. Availability of mechanism to influence traditional/community and political leaders to be partners in cancer control	Low literacy levels and knowledge Inadequate information among community leaders' gaps

Strengths	Weaknesses	Opportunities	Threats
Existence of mHealth programmes	Inadequate use of technology-based interventions for prevention and control of cancers Technology not set up for 2 ways (or mostly push messaging)	Strong coverage of mobile phone networks.	High cost of sending bulk messages.
HPV vaccination has been rolled out country wide.	Coverage for HPV vaccine still not adequate	Access to GAVI support for HPV vaccine	Sustainability may not be guaranteed
HBV vaccination rolled out in under 5 and with good coverage	No funding government funding for vaccination	Access to GAVI support for HBV vaccine	Sustainability may not be guaranteed
Existing EPI programme	Current EPI programme not including HPV vaccine routinely	Partner support in HPV vaccination Enhanced inter-sectoral coordination	Sustainability may not be guaranteed

Cervical Screening and Prostate Cancer Early Detection

Strengths	Weaknesses	Opportunities	Threats
Availability of health services to perform prevention activities	Lack of coordinated prevention activities and ownership at lower levels of care	Presence of partners working in cancer prevention	Funds not assured to sustain cancer program
Coordination mechanism (Sector Advisory Group, Joint Annual Review, Mid-Term Review) in place for all Health sector stakeholders	Cancer stakeholders not taking advantage of these mechanisms	Availability of partners	Partners 'programmes might not accommodate cancer activities

Strengths	Weaknesses	Opportunities	Threats
Widespread roll out of ablative services	Inadequate number of facilities offering LEEP services.	Available human resource to tap from	Attrition of human resource
VIA, cryotherapy, Loop Electrosurgical Excision Procedure (LEEP) for cervical cancer screening and treatment available	Services not available in all districts (available in 100 districts out of 116)	Partners willing and ready to support program	Unassured long-term funding to ensure long term support
Availability of guidelines for cervical cancer prevention and management	Lack of wide dissemination and implementation of guidelines	Partners available in dissemination and implementation of guidelines	Partner priorities may be different Poor adherence to guidelines
Diagnostic equipment available 6/10 provinces have CT scanners	Inadequate number of diagnostic equipment (MRI, CTs, mammogram, nuclear medicine etc.) Most equipment is broken due to inconsistent maintenance. Inadequate number of facilities offering pathology services	Equipment available in accessible markets internationally	Limited resources available for equipment maintenance and replacement
Prostate cancer services available	Service only available in less than 10% of facilities across the country Unavailability of prostate cancer early diagnosis guidelines Non-availability of PSA test kits and equipment (USG) for prostate cancer biopsies Non-availability of PSMA imaging and therapy services performed.	Partners available to assist in service expansion	Limited partners with inadequate traction towards prostate cancer. Limited support in advocacy and resources in prostate cancer.

Breast Cancer Early Detection

Strengths	Weaknesses	Opportunities	Threats
Equipment available for early diagnosis and treatment for breast cancer	Inadequate and inappropriate equipment for breast cancer	Availability of local and international partners	Inadequate generated resources for programme implementation
Availability of breast cancer National Guidelines for Early Diagnosis of Breast Cancer in Zambia,	Guidelines not yet disseminated and implemented	Available international guidelines for breast cancer – Awareness, early detection, treatment and palliative	Reviews of guidelines may be prolonged by international collaborators and impede implementation
Availability of draft training manual for early diagnosis and treatment guidelines for breast cancer	Protocols still in draft form and institutional/CDH based	Engage collaborators for reviews	Appropriate collaborators for specific SOPS may not be available
Availability of appropriate Pathology services for breast cancer diagnosis	Inadequate and centralised pathology services	Accreditation of public pathology laboratory services by NHIMA to enhance capacity. Through NHIS - NHIMA increase population coverage to cover costs for pathological services in the country.	Private services expensive
Availability of appropriate Imaging for breast cancer diagnosis [USG, CT scan, X-Ray, Bone scan]	Unstandardized, inadequate poorly maintained and centralized diagnostic imaging equipment	Services available in private sector	Cost of service is prohibitive

Colorectal Cancer Early Detection

Strengths	Weaknesses	Opportunities	Threats
<p>Available infrastructure for diagnosis and treatment colorectal cancer- FOBT/GUAC, colonoscopy equipment, and pathology services</p>	<p>Inadequate and centralised infrastructure for early detection Non-availability of national guidelines for colorectal cancer early diagnosis</p>	<p>Availability of local expertise in Gastroenterology services</p> <p>Availability of collaborating partners for capacity building and resource enhancement</p> <p>Development of guidelines to standardise care.</p>	<p>Protracted Implementation of the programme</p> <p>Assured continuous program specific donor support</p>

Childhood Cancer

Strengths	Weaknesses	Opportunities	Threats
Cancer services with access to paediatric haematology/oncology, radiation oncology, surgery subspecialties delivered through Cancer Diseases Hospital (CDH) in Lusaka, ADCH, Livingstone Central Hospital	Comprehensive cancer services only available in Lusaka province	Availability of technical support from international hospitals and cancer centres experienced in managing childhood cancers. Availability of MOUs and collaborative agreement with international institutions supporting childhood cancer control	Loss of technical assistance because of termination of corporative agreements with collaborative institutions
Presence of Histopathology and radiology services	Limited number of histopathology laboratories and radiology services with turnaround time greater than three weeks. Laboratory at CDH not tailored to offer most Paediatric oncology pathology services (paediatric specific pathologists, laboratory reagents, radiology equipment)	Availability of partners willing to upgrade laboratory services. Private laboratories available to confirm diagnosis	Funding partner change of priority for partner-assisted services
Existence of basic patient referral mechanisms	Lack of well-coordinated childhood cancer patient referral mechanism	Availability of local and international partners and NGOs willing to support referral system strengthening	Loss of assistance because of termination of corporative agreements

Cancer Management

Cervical, Breast, Childhood, Colorectal and Prostate Cancers

Strengths	Weaknesses	Opportunities	Threats
Multi-disciplinary meetings (MDTs) in some specialities conducted (Tumour Boards)	Unavailable MDTs in some specialities Competing activities/ high workload leading to poor sustainability of MDTs	Learn from other countries with Tumour Boards. Extended Community Health Outcomes (ECHO) HIV/TB Availability of cooperating partners who might fund the program	Human resource shortage
Availability of histopathology services in Lusaka Ndola, Kabwe, Kitwe and Mongu	Though decentralised services, other facilities are not operational (Livingstone, Kalindawalo and Chinsali).	Available partners Availability of infrastructure	Partner fatigue
A national Cancer treatment centre available (Cancer diseases hospital) and providing a comprehensive cancer service	No cancer treatment centres in the provinces to support the national comprehensive cancer treatment centre the CDH.	Partners available who support cancer treatment	low prioritization of cancer care leading to low resource allocation
Available Radiotherapy equipment	High downtime of radiotherapy equipment	Vendors are required to have local service engineers. Capacity building for local biomedical engineers to maintain some radiotherapy equipment.	Inadequate hospital based biomedical engineers as first line responders. Protracted processes of securing equipment Lapses in paying for service contracts

Strengths	Weaknesses	Opportunities	Threats
Availability of operating theatres	Theatres have old and inadequate equipment with a lack of replacement plan. Ill-designed theatres	Theatre equipment is available on the market. Availability of partners and operating theatre standards	low prioritization of cancer surgical care leading to low resource allocation
National Referral System guidelines and structures in place	Referral system not cancer specific for both patients and specimens	Public- Private partnerships for efficient movement of patients and specimens	Disparate and sometimes uncoordinated sample/patient referral and cascading

Human Resources

Strengths	Weaknesses	Opportunities	Threats
<p>Availability of competent Clinical and Radiation oncologists, pathologists, Surgical Oncologists, Gynaecologic Oncologists, Hemato-oncologists, Paediatric Oncologists, Radiologists, Nuclear Physicians, Laboratory Personnel, Oncology Nurses, Radiation Therapists, Medical Physicists, and other relevant experts</p>	<p>Centralised expertise with inadequate number of specialised Health care workers (HCWs) for cancer services</p> <p>Training development and accreditation takes long</p>	<p>Availability of Medical doctors and other HCWs that could be trained within and outside the country. Availability of STP and MMED training programs.</p> <p>St. Jude Global training Opportunities to assist the current specialists can train provincial and district childhood cancer care providers</p>	<p>Lack of funded positions</p> <p>Limited staff establishment for specialised staff</p> <p>Brain-drain within and outside the country and poor staff retention</p>
<p>Availability of specialist training programs within the Ministry of health to support cancer control - ZACOMS (Clinical oncologists, Histopathologists), CDH Training College (Radiation therapists), LMMU (Oncology nursing)</p>	<p>Most programs are not funded and have inadequate lecturers</p>	<p>UNZA has a training program for pathologists and other specialties that support cancer care and could be utilised to train specialists</p>	<p>Lack of interest in health care workers to train in cancer control programs.</p>

Strengths	Weaknesses	Opportunities	Threats
Availability of non-oncology specialists (General Surgeons, Paediatricians, Gynaecologists and Physicians) country wide	Limited number of general specialist willing to be trained in oncological specialties.	Available specialised human resource and international institutions to participate in required training through collaborative efforts	Certification of such programs by local authorities' problematic Low remuneration for oncology specialists
Establishment for cancer control available	Appropriate positions for trained personnel not available in the establishment or lack funded position	Review of establishment through Public Service Management Division (PSMD)	Inadequate funding from the Central Government
Availability of biomedical engineers	Inadequate number of trained biomedical technicians/engineers available to maintain and service equipment	Availability of training programs	Inadequate training level, institutions offering biomedical engineering training
Availability of oncology ancillary human resource: ICT, Nutritionists, Social Workers, Data managers/ Information officers with dedication to cancer patient management	Oncology oriented ancillary human resource may not be readily available to meet needs for cancer management. Appropriate funded positions may not be available	Availability of international collaborations exist to assist in capacity building	Establishing training collaborative efforts may take long

Infrastructure and Equipment

Strength	Weakness	Opportunity	Threat
Available infrastructure and equipment for cancer management – CDH (Diagnostic, Radiation, Systemic therapy, Surgery, Palliative care), District and Provincial Hospitals (Diagnostic, Surgery, Palliative) with both OPD and in-patient and theatres	Current infrastructure still needs upgrade to meet current demand of cancer service provision. Space is limited in current facilities. Lack of maintenance for current equipment	Available local and international cooperating partners to assist in creating standards and infrastructure development as well as support procurement, installation, and maintenance of radiotherapy equipment	Document standards may not fit in the country's health care plan. High cost of maintenance of equipment
Availability of infrastructure for child cancer services (CDH, ADCH, LCH) with dedicated OPD and IPD service areas	Only one hospital with paediatric oncology unit Insufficient equipment for childhood cancers	Availability of International partnerships to build infrastructure and assist in the procurement of cancer equipment	Competing prioritisation for infrastructure and development
Availability of basic cancer screening and early diagnosis equipment in Provincial, district and mission hospitals	Insufficient equipment for cancer control in districts	Availability of International partnerships to build infrastructure and procure equipment	Competing priorities for infrastructure and equipment

Medicines and Medical Supplies

Strength	Weakness	Opportunity	Threat
Availability of essential cancer medicines and supplies list for both adult and childhood cancers	Cancer Medicines not under framework contracts resulting in erratic supply	WHO essential cancer medicines list, guidelines for antibiotics surveillance, antineoplastic drug resistance, and on chemo safety practices available	Sudden Withdrawal of partner support is a threat to sustained service provision. Lack of availability of chemo drugs on the local market and absence of manufacturing industries of chemo drugs locally
Availability of treatment and supportive care guidelines and SOPs for Chemo Safety Practices	No guidelines in the monitoring of Antibiotic use	Guidance available from WHO on antibiotic use and surveillance	Lack of manufacturing industry and availability on the local market of chemo and some supportive care drugs
Available guidelines on hospital waste management	Chemotherapy waste management not included in the national waste management policy	Guidance available from WHO on antineoplastic drug surveillance	Poorly packaged chemo drugs (Vials vs Ampules) and poor supply chain and market inefficiencies
Availability of ZAMMSA that procures essential cancer medicines and medical supplies	Shortage of essential cancer medicines and supplies	Willingness from partners to assist in doing pooled procurements of cancer medicines	Lack of availability of chemo drugs on the local market Partner fatigue

Health Information/ ICT and Research

Strength	Weakness	Opportunity	Threat
Availability of HMIS for key health service indicators	May not include all data variables and indicators for cancer M&E	Availability of support from international organisation and agencies	Donor fatigue and withdrawal of support resulting from priority and objective change
Availability of ZNCR / Population Based Cancer Registry (Lusaka, Ndola and Livingstone)	PBCR for Ndola & Livingstone not up to standard	Availability of support for ZNCR from cooperating partners	Donor fatigue
Available ICT departments within cancer service areas with patient registry/ registers at facility levels and prioritised cancer data at CDH	Lack of standardised electronic health records for cancer vital variables and, key indicators to inform decision making and research	Availability of external electronic data bases designed by external or internal organisation	Data bases require subscription, may be costly, data saver located outside country.
Zambia is a model country for childhood cancer control and cervical cancer elimination	Outdated protocols, guidelines and M&E for priority cancers to support WHO initiatives	International Protocols and guidelines available	Expensive licences for the electronic processes
Availability of National Health Research Authority	Lack of adequate Human resource, capacity and funding	Opportunities for research, support and funding collaboration exists: Internal and external	Premature termination of research collaborations

GAP ANALYSIS

Leadership & Governance

Although cancer control services are coordinated through the directorate of clinical care, public health and health promotions through the oncology services and the cervical cancer prevention units, implementation of planned cancer control activities is not well coordinated because it lacks adequate national, provincial and district leadership and governance structures. Only cervical cancer focal points exist on administrative appointments. There is a lack of scheduled coordination meetings. Despite having policies and guidelines inadequate implementation of cancer control services across the continuum of care. There is need for all provinces and districts to include cancer control services in their action plans.

Human Resources

Health workforce deficits remain high in Zambia with regard to the target staffing levels set in the 8th National Development Plan (8NDP) 2022 – 2026. Zambia has an estimated 1.2 physicians, nurses and midwives per 1000 population while the WHO minimum acceptable threshold is 2.3 per 1000 population (MoF, 2022; MoH, 2017). Of these 0.2 per 1000 population must be specialist doctors but Zambia only has 0.011 specialist per 1000 population

Currently there is 1 oncology nurse per 1 million population, 1 pathologist per 2 million population, 1 radiologist per 2 million population, 1 surgical oncologist per 3 million population, 1 clinical oncologist per 2 million population, 1 clinically qualified medical physicist per 3 million population, 1 Radiation therapist per 1 million population, 1 Nuclear Medicine physician per 4 million population and 1 Biomedical Engineer per 3 million population. There is need to include training of cancer specialists and other cancer healthcare workers to the Ministry of Health priority training plan to address the severe human resource deficit in this field (Trapani et al., 2021; WHO, 2022; Wilson et al., 2019).

Table 5 Table of analysis of HR Gap for Cancer Care

Category	Current Staffing numbers	Expected Standard	Gap
Clinical & Radiation Oncologists	10	50	40
Radiologists	5 (0 dedicated to cancer)	20	15
Pathologists	17 (one dedicated to cancer)	20	19
Nuclear Medicine Physicians	5	10	5
Haematologists	3	10	7
Paediatric Oncologist	2	20	18
Oncology Nurses/Nuclear medicine nurses	15	2800	2785
Radiation Therapists	24	80	56
Medical Physicists	4	40	30
Oncology Pharmacists/Radiopharmacists	3 radiopharm; 0 Onc pharm	80	80
Surgical Oncologists	5	25	20
Gynaecological oncologists	3	12	9
Anaesthesiologists	1	5	4
Paediatric surgeons	9	40	31

There is some limited tasks shifting in early diagnosis and treatment among adult cancers, however, there has not been any task shifting in childhood cancer care. Lack of deliberate retention packages for cancer workforce professionals in the public sector remain a challenge leading to attrition. Local training programmes for these cancer care professionals is also hampered by limited collaboration with local and international training institutions.

Health Care Financing

Clearly defined and sustainable funding mechanism for early diagnosis and treatment of adult and childhood cancers are lacking. Less than 1% of cancer services are currently funded by the Government against the desired 5% of the annual health care budget. Furthermore, the current NHI scheme only covers Breast, Cervical, Colorectal and Prostate cancers and none of the childhood cancers are covered. This state of affairs shifts the financial burden to the patient's family's out of pocket. This financing burden puts the patient at risk for late presentation and treatment abandonment. In addition, there is limited funds for infrastructure improvement and procurement of equipment by the central Government. It will be important to increase funding to cancer services and include these on NHIMA packages.

Infrastructure and Equipment

Although there is one comprehensive cancer treatment facility in Zambia, similar infrastructure is required in all 10 provinces. One Linear Accelerator (Mega voltage (MV) radiotherapy unit) should serve one million population, therefore there is a shortage of approximately 15 linear accelerators in Zambia. There are only four functional early-breast diagnostic clinics in the public sector out of the recommended minimum of 116 clinics at least one per district. As of 2020, out of the 13 CT scans in the country only 10 were functional (Mbewe et al., 2020). Only 4 facilities have functional MRI machines (CDH, LMUTH, Sino Zam Hospital and Fairview Hospital). The country doesn't have a PET/CT scanner and cyclotron. The country also lacks other molecular diagnostic equipment such as SPECT scanners. For cervical cancer currently Zambia has 278 clinics country wide and 100 LEEP clinics.

Health Information/ICT And Research

Despite HMIS being one of the essential functions of a strong cancer control programme, quality, and comprehensive data to guide decision-making is lacking in Zambia. At national level tools such as DHIS2 do not adequately cover cancer data and the SmartCare health information system has not integrated cancer health care services. Currently, the CDH mainly uses paper-based data collection system for patient care and referrals. Furthermore, Zambia only has one fully functional PBCR in Lusaka province

High quality research is required to support context specific health system interventions for Cancer Control. However, currently research in cancer within Zambia is uncoordinated and limited, due to limited funding as well as an inadequately trained workforce with the competence to pursue oncology research.

These gaps have been further widened by the lack of M&E component in the previous NCCSP and review of performance, as this area in cancer control could not be determined.

Medicines and Medical Supplies

The current national essential drugs list does not include all the WHO recommended essential medicines for cancer management. Supply chain management and procurement of cancer drugs and medical supplies remains ineffective with delays in procurement and supply leading to disruption in patient care.

Service Delivery

Public awareness of childhood and adult cancers remains low coupled with few public awareness campaigns which remain constant contributors to advanced disease at presentation. Furthermore, access to chemotherapy and radiotherapy, chemotherapy and surgical services is limited to the Cancer Diseases Hospital in Lusaka and a few other selected centres. Additionally, there is prolonged turnaround time in laboratory and radiologic diagnostic services which also contributes to delay in disease staging and late treatment initiation with poor treatment outcomes. Palliative care services are not well integrated at all levels of health care and blood bank services need further expansion to enhance access to the service. Finally, quality assurance (QA)/ quality improvement (QI) programmes in cancer care in collaboration with local and international institutions remains an outstanding need.

VISION, MISSION, OVERALL GOAL AND OBJECTIVES

Vision

A Zambian health care system that is equipped, staffed, trained, and empowered to provide a full range of cancer prevention, screening, diagnostic, treatment, and care options to cancer patients and their loved ones.

Mission Statement

To provide equitable access to cost-effective, quality preventive, promotive, curative, palliative cancer care services as close to the family as possible

Goal

To reduce premature cancer mortality by one-third by 2030 to contribute to a healthy and productive population.

General Objectives

1. To strengthen leadership and governance in order to implement services using a decentralised system and ensuring well-coordinated and well-structured systems to ensure the population needing the services are covered by 2026
2. To increase Human Resource capacity of all cancer services countrywide by 2026
3. To ensure availability of relevant, accurate, timely, and accessible cancer related data, to determine cancer incidence, prevalence, mortality and survival rate and support the planning, coordination, monitoring and evaluation of cancer services by 2026
4. To ensure availability of infrastructure, medical equipment, transport and communication at all levels by 2026
5. To strengthen community engagement for both childhood and adult cancer awareness and control by 2026
6. To increase cancer services (prevention, diagnosis, treatment, training, and research) funding from less than 1% to 5% of total health budget by 2026 as well as leverage on the NHIMA resources

STRATEGIC DIRECTIONS

Leadership and Governance

Objective

To strengthen leadership and governance in order to implement services using a decentralised system and ensuring well-coordinated and well-structured systems to ensure the population needing the services are covered by 2026.

Key Strategies

1. Review and adopt laws, Completion and Enactment of the National Cancer Control Act
 - a. Create Zambia National Cancer Institute (ZNCI) to strengthen coordination mechanism.
 - b. Enhance the performance of the ZNCR establishments.
 - c. Advocate for completion of national health services act and include children's rights to health.
2. Engage policy makers to update and include cancer services in existing policies and guidelines that will enhance integration of health service delivery (*Decentralise and strengthen blood bank services for support to districts to care for cancer patients from uptake point and continuation of care*).
3. Disseminate and implement policy documents/ guidelines.
 - a. Include cancer services in the NHI.
 - b. Adapt international guidelines and policies to suit local environment.
 - c. Ensure childhood cancers are part of the national health policy agenda.
 - d. Identify cancer services key performance indicators for linkage to DHIS2 and HMIS

Human Resources

Objective

To increase Human Resource capacity of all cancer services countrywide by 2026

Key Strategies

1. Skills upgrade of existing health care providers from first to fourth level health care facilities through short trainings
2. Training of committed workforce for comprehensive cancer care by 2026 to cover Lusaka, Copperbelt and Southern provinces.
3. Create staff retention packages in the health care facilities.
4. Strengthen collaboration with local, regional and international institutions including universities for staff training.

Health Care Financing

Objective

To increase cancer services funding from 1% to 5% of total health budget by 2026

Key Strategies

1. Increase government funding for health in line with the Abuja declaration of 2001
 - a. Include Cancer services in the budgets of all levels of health care
 - b. Improve funding mechanism
 - c. Create dedicated funding lines from central government for cancer control services for all priority cancers
2. Do economic modelling to show benefit of the investment of including cancer management
 - a. Do a costing exercise for adult and childhood cancer management
3. Incorporate childhood cancer care services in addition to the adult Cancer care services in NHI scheme coverage to create strong diagnosis and treatment facilities.
4. Enhance tracking and mapping of cancer care resources
5. Mobilise and prioritise local resources to fully implement the Abuja declaration of 2001
6. Ensure inclusion and funding of cancer research in the NHRA

Service Delivery

Objective

To expand and improve access to cancer awareness, prevention, early detection, and comprehensive health care to reduce cancer mortality by 2026 using evidence-based and cost-effective strategies

Key Strategies

1. Increase awareness activities (units, focal person, IEC and guidelines) for all common cancers among the general population and health care workers nation wide
2. Increase cancer prevention campaigns through implementation of mobile health (mHealth), and countrywide vaccination (HPV and Hepatitis) roll out
3. Early detection.
Establish screening and early detection activities for index malignancies countrywide through the primary health care approach
4. Treatment
Decentralise comprehensive cancer treatment (surgery, systemic therapy, radiotherapy, and nuclear medicine) and palliative care services in every province starting with two provinces; Southern and Copperbelt provinces

Communication Strategy

Objective

To strengthen community engagement for both childhood and adult cancer awareness and control by 2026

Key Strategies

1. Create a cancer communication strategy
2. Develop and conduct health talks
3. Develop and disseminate IEC materials through print and electronic media

Health information/ICT and Research

Objective

To ensure availability of relevant, accurate, timely, and accessible cancer related data, to determine cancer incidence, mortality and survival rate and support the planning, coordination, monitoring and evaluation of cancer services by 2026.

Key Strategies

Expand the geographical area coverage for the ZNCR.

1. *Strengthen population-based cancer registry (PBCR) by decentralising to two more provinces namely: Copperbelt and Southern*
2. Adopt an electronic patient record system linked to PBCR.
 - a) Create guidelines for index cancers data collection.
 - b) Identification of ICT requirements (hardware, software, and programming) and production of an essential ICT list to support index cancer care.
 - c) Create and implement local area networks (LANS) to link departments and strengthen the Data Intensive System and Appliances (DISA), Radiology Information System (RIS), Radiation Oncology Information System (ROIS) and e-patient records system.
4. Improve capacity for research through research training and grant writing
5. Improve capacity to mobilize resources for research
6. Strengthen cancer M&E systems and activities

Health information/ICT and Research

Objective

To ensure availability of relevant, accurate, timely, and accessible cancer related data, to determine cancer incidence, mortality and survival rate and support the planning, coordination, monitoring and evaluation of cancer services by 2026.

Key Strategies

1. Expand the geographical area coverage for the ZNCR.
2. *Strengthen population-based cancer registry (PBCR).*
3. Create an electronic patient record system linked to PBCR.
4. Create guidelines for index cancers data collection.
 - a. Identification ICT requirements (hardware, software, and programming) and production of an essential ICT list to support index cancer care.

- b. Create and implement local area networks (LANS) to link departments and strengthen the Data Intensive System and Appliances (DISA), Radiology Information System (RIS), Radiation Oncology Information System ROIS and e-patient records system.

Infrastructure, Equipment and Transport

Objective

To ensure availability of infrastructure, medical equipment, transport and communication at all levels by 2026

Key Strategies

1. Procurement of equipment for early diagnosis and treatment for both child and adult cancers in every province
2. Writing bankable documents to be used for resource mobilization targeted at improving and expanding infrastructure and equipment for the delivery of cancer care.

Medicines and Medical Supplies

Objective

To expand Medicines and supplies service delivery system for child and adult cancers by 2026

Key Strategies

1. Provision of quality and efficacious medicine
2. Timely and effective procurement procedures strengthened.
3. Create essential medicine and supplies list for childhood cancers early diagnosis and treatment.
4. Strengthen the surveillance of antimicrobial resistance.

Implementation Framework

Leadership and Governance

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To strengthen leadership and governance in order to implement services through decentralisation and ensuring well-coordinated and well-structured systems that ensure the population needing the services are covered by 2026	Develop and adopt laws in Zambia that will enable the development, Completion, and enactment of the National Cancer Control Act	Ministerial approval to draft act	x					
		Draft cancer control act		X				469,474.00
		Present to Cabinet and Parliament and obtain act approval			X			
		Establish ZNCI				X		88,572.00
		Operationalise ZNCI					X	252,720.00

Health Care Financing

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To increase cancer services funding to 5% of total health budget by 2026	Increase government funding to cancer control services at all levels of health care	Lobby MOH to direct facilities to include Cancer services budgets of all levels of health care	X	X	X	X	X	836,117.00
		Lobby MoF to create dedicated funding lines from central government for cancer control services for all priority cancers	X	X	X	X	X	73,261.00
	Include Cancer care services into NHIMA	Lobby NHIMA to include all cancer services in benefit package	X	X	X	X	X	73,261.00
	Increase medical tourism and internal revenue generation	Create guidelines for use of internally generated funds	X		X		X	815,507.00
		Develop business plan to aid in increasing revenue generation		X				291,064.00
	Ensure inclusion and funding of cancer research in the National Health Research Authority (NHRA) strategy	Develop and submit proposals to NHRA for funding for Cancer Research	X	X	X	X	X	54,517.00
	Mobilise and prioritise local resources to implement Abuja declaration fully	Develop bankable document for resource mobilisation targeted at improving infrastructure and equipment for delivery of cancer care		X		X		872,939.00

Health Information/ICT and Research

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To ensure availability of relevant, accurate, timely and accessible cancer related data to determine cancer incidence, mortality and survival rate to support planning, coordination, monitoring and evaluation of cancer services by 2026	Expand the geographical area coverage for the ZNCR	To strengthen the population-based cancer registries	X	X	X	X	X	151,284.00
		To create linkages between ZNCR and DHIS2 and HMIS	X		X		X	683,390.00
	Establish electronic medical tool linked to PBCR, DHIS2, HMIS and ZNCR	Develop and integrate e-Health strategic plan	X	X				569,674.00
		Develop and integrate e-Health system		X	X			458,828.00
		Implement e-Health system			X	X	X	
		Implement ECHO oncology platform to improve early diagnosis	X	X	X	X	X	
		Identification of ICT requirements (hardware, software and programming) and production of an essential ICT list to support index cancer care		X	X			55,440.00
		Create and implement local area networks (LANS) to link departments and strengthen the Data Intensive System and Appliances (DISA), Radiology Information System (RIS), Radiation Oncology Information System (ROIS) and e-patient records system		X	X			55,440.00

		Create guidelines for index cancers data collection			X	X		461,502.00
		To enhance the utilisation of data for research and quality improvement.	X	X	X	X	X	682,420.00
	Improve capacity for research	Training and implementation of research	X	X	X	X	X	1,200,221.00
		Training and implementation of Grant-writing	X	X	X	X	X	376,614.00
		Identify research priorities	X	X	X	X	X	252,470.00
		Improve capacity to mobilize resources for research	X	X	X	X	X	
	Strengthen cancer M&E systems and activities	Conduct mid and end-term review			X		X	1,508,149.00
		Monitoring and analysis of data from reports	X	X	X	X	X	541,825.00

Infrastructure, Equipment and Transport

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To ensure availability of infrastructure, medical equipment, transport and communication at all levels of health care by 2026	Enhance the operations of the cancer control services through a phased provincial decentralization approach	Refurbish and re-equip radiotherapy at Cancer Diseases Hospital		X	X	X		305,488,931.20
		Establish cancer treatment services in Southern and Copperbelt provinces	X	X	X	X	X	1,243,033.00
		Create space for early diagnostic centres at facilities for early diagnosis of breast cancer	X	X	X	X	X	1,953,367.00
	Procurement and maintenance of equipment for early diagnosis and treatment for both childhood and adult cancers in every province	Procurement of dedicated ultrasound machines for early diagnosis of breast, prostate and childhood malignancies	X	X	X	X	X	87,276,428.00
		Procurement of PET/CT scanner and a cyclotron be based at CDH Procurement of SPECT/CT scanner based at CDH new site			X	X	X	306,922,576.00
		Procurement of MRI and CT scanners based at the 3 tertiary cancer centres			X	X	X	201,129,060.00
		Procurement of maintenance contracts for equipment for cancer control	X	X	X	X	X	219,414,764.00
		Improved capacity for Chemotherapy administration improved patients at cancer centre	Procurement of Infusion set and pumps available and closed systems		X	X	X	X
		Procurement of biosafety cabinets		X	X	X	X	13,243,636.00

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
	Improve capacity for early cancer diagnosis	Procure equipment and essential commodities and reagents for performing IHCs and tumour markers		X	X	X	X	3,428,165.00

Communication Strategy

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To strengthen community engagement for both childhood and adult cancer awareness and control by 2026	To create effective communication and working collaborating with the community, partners, government, and National Technical Cancer Committee	Develop, review and disseminate communication strategy		X	X	X	X	567,918.00
		Development and conduct health talks	X	X	X	X	X	208,845.00
		Develop IECs material using print and electronic media	X	X	X	X	X	1,487,988.00
		Develop tool to measure awareness in community		X				83,716.00
		Conduct survey on cancer awareness in communities			X		X	703,292.00

Medicines and Medical Supplies

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To ensure availability of adequate quality, efficacious, safe and affordable essential cancer drugs and medical supplies at ALL levels of service delivery through efficient and effective procurement and logistics management by 2026	Strengthen systems for planning, forecasting and procurement of essential medicines and supplies for cancer services	Create essential medicine and supplies list for childhood cancers, early diagnosis and treatment	X	X	X	X		422,262.00
		Update adult cancer medicines and supply list	X	X	X	X	X	742,765.00
		National quantification and forecasting of cancer supplies and medicine	X	X	X	X	X	3,237,865.00
		Include reagents and supplies for screening, early diagnosis, and treatment on essential medicines and supplies list (EML) for central procurement	X	X	X	X	X	587,791,512.00

Service Delivery

Cervical Cancer

HPV Vaccination

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
Expand access to cervical cancer prevention, early detection, treatment and care to reduce mortality by 15% by 2026	Scale up HPV vaccinations	Secure sufficient and affordable HPV vaccines	X	X	X	X	X	1,669,066.00
		Improve communication and social mobilization	X	X	X	X	X	329,675
		Increase the quality and coverage of vaccination	X	X	X	X	X	
		Innovate to improve efficiency of vaccine delivery	X	X	X	X	X	

Cervical Cancer Screening and Pre-Cancer Treatment

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
	Access to cervical cancer screening expanded	Train staff to perform cervical cancer screening and cryotherapy/thermal ablation	X	X	X	X	X	14,479,227.00
		Train staff to perform LEEP	X	X	X	X	X	3,894,862.00
		Procure thermal ablation Equipment	X	X	X	X	X	492,115,370.00
		Procure LEEP Equipment	X	X	X	X	X	
		Procure HPV testing kits	X	X	X	X	X	
		Make HPV self-testing kits available to communities	X	X	X	X	X	13,804,021.00

Invasive Cervical Cancer Treatment, Palliative Care and Advocacy

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To expand access to cervical cancer treatment and care services in Zambia to 80% of all eligible women by 2026	Strengthen the referral system for women with complex pre-cervical cancer lesions or abnormal screening results needing further management. Strengthen cervical cancer early diagnosis and referral services in Zambia	Establish referral pathways and people centred linkages throughout the continuum of care	X	X	X	X	X	424,124.00
		Strengthen Client navigation		X	X	X	X	
		Develop and implement a client follow up and tracking system from diagnosis to treatment and follow up through Electronic Health Records	X	X				

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
	Scale up cervical cancer surgical treatment services	Training of 10 gynecologists in basic gynae oncology	X	X	X	X	X	2,460,867.00
		Implement cervical cancer management guidelines	X					627,448.00
		Upgrade theatres and procure modern equipment and supplies		X				377,783.00
		Implement QA/QI systems	X	X	X	X	X	2,730,867.00
	Scale up radiotherapy and chemotherapy services (Detailed budget in Infrastructure and Equipment and Medical supplies and Human resources)	Procure Radiotherapy equipment	X					0.00
		Establish stable supply of chemotherapy medicines	X					
		Decentralize chemotherapy and radiotherapy services	X					
		Train Clinical Oncologists	X	X	X	X	X	
	Strengthen and integrate palliative care services and survivorship	Join morphine access programs	X					53,010.00
		Train Health care workers in palliative care.		X	X	X	X	268,624.00
		Train peers in survivorship		X	X	X	X	
		Engage CSOs to provide comprehensive support designed to enhance quality of life and address physical, psychological, social and spiritual challenges faced by survivors		X	X	X	X	

Prostate Cancer

Expand Access to and make Available Prostate Cancer Services in Zambia

Objectives	Key Strategies	Interventions	Timeframe					Cost	
			2022	2023	2024	2025	2026		
To expand access to prostate cancer awareness, prevention, early detection, treatment and care to reduce mortality by 15% by 2026	Operationalise early diagnosis of prostate cancer	Develop and implement training manual	X	X	X		X	X	203,661.00
		Training of HCWs		X	X				2,057,080.00
		Develop and Implement early diagnosis guidelines for prostate cancer		X	X	X	X		4,699,116.00
		Procure medical supplies and equipment for early diagnosis of prostate cancer for all provincial hospitals		X	X	X	X		834,621.00

Breast Cancer

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To expand access to breast cancer awareness, early detection, and management to reduce mortality by 2.5% annually from 2022 to 2026, in order to attain 12.5% mortality reduction by 2026	Strengthen the referral system for women with breast lesions for early diagnosis and further evaluation and management	Establish referral pathways and people centred linkages throughout the continuum of care	X	X	X	X	X	545,466.00
		Strengthen Client navigation system by developing and implementing a client follow up and tracking system from diagnosis to treatment and follow up through Electronic Health Records	X	X	X			663,526.00
	Scale up Early breast cancer diagnostic clinics	Develop and adopt training material/ manual for Trainer of Trainers and trainees in Early breast diagnosis	X	X	X	X	X	3,549,833.00
		Procure 50 Reusable/ heat autoclavable automatic core biopsy guns for 50 clinics	X	X	X	X	X	4,343,570.00
		Procure core biopsy needles size 14G & 16G for conducting breast core biopsy	X	X	X	X	X	23,093,125.00

	(Budget included in Medicines and medical supplies and infrastructure and medical supplies)	Procurement, installation, and commissioning of frozen section equipment in first three provincial centres	X	X	X	X		
		Adopt & adapt international diagnostic report formats	X	X	X	X	X	0
	Increase HR capacity for Scaling up breast health surgical services/ Surgical Oncology services.	Train Laboratory staff on adapted standardised diagnostic reporting system	X	X	X	X	X	3,549,833.00
		Carry out trainer of trainers for Early diagnosis of breast cancer program	X	X	X	X	X	
		Development and integration of national breast health/breast cancer database for quality improvement and assessment	X	X	X	X	X	108,790.00
		Develop and adopt training manual and curriculum for surgical oncological management for breast cancer – short term training (2 & 6 weeks)	X	X	X	X	X	494,031.00
		Identify training institutions and collaborators (Establish faculty and mentors)	X	X	X	X	X	

		Development, adoption and accreditation of breast surgical oncology/ breast surgery curriculum	X	X	X			193,260.00
		Commence local training of breast cancer surgeons				X	X	

Colorectal Cancer

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
Establish colorectal cancer awareness, early diagnosis and multimodal treatment pathways to improve patient outcomes in Zambia by reducing mortality by 12.5% by 2026.	Scale up early colorectal cancer diagnosis and Increase HR capacity for Scaling up colorectal health surgical services/ Surgical Oncology services	Develop and adopt training material/ manual for Trainer of Trainers and Trainee in early diagnosis of colorectal cancer		X	X			75,221,904.00
		Develop and adopt training manual and curriculum for surgical colorectal oncological management for– short term training (2 & 6 weeks)			X	X	X	
		Identify training institution and collaborators (Establish faculty and mentors)			X			0
		Development, adoption and accreditation of colorectal surgical oncology/ surgery	X	X	X			550,192.00

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
		Commence local training of colorectal cancer surgeons				X	X	737,220.00
		Provide training and mentorship for trainer of trainers and implementers of early diagnosis of colorectal cancer program	X	X	X	X	X	1,200,238.00
		Strengthening collaborations with national ZAGAN (Zambia Association for Gastroenterology and Nutrition)/international CRC initiatives and establish other collaborations		X	X			0.00
	Strengthen the referral system for patients with high-risk pathology lesions found on early diagnosis for further evaluation and management	Establish referral pathways and people centred linkages throughout the continuum of care.	X	X	X	X	X	1,480,019.00
		Develop and implement a client follow up, navigation and tracking system from diagnosis to treatment and follow up through Electronic Health Records		X	X	X	X	

Childhood Cancer

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To improve survival of childhood cancer to 40% by 2026	To increase the number of children diagnosed with early stage childhood cancer	To train and orient community and health workers on childhood cancer	X	X	X	X	X	1,435,918.00
	To improve childhood cancer treatment completion	Partial decentralisation of childhood cancer treatment to provincial hospitals	X	X	X	X	X	882,692.00
	To document improved five-year survival for childhood cancer	Implement electronic hospital-based patient database					X	122,113.00
	To Improve Childhood cancer specimen TAT to three weeks by 2026	Incorporate reporting laboratory into clinical MDT to regularly review and track laboratory information system reports and TAT	X	X	X	X	X	0.00
	To create guidelines on the use of antineoplastic drugs in childhood cancer treatment for index cancers	Engage Stakeholders for technical & funding support	X	X	X	X		115,702.00
		Review of current guidelines & SOPs		X			X	880,641.00
		Orient staff on updated guidelines and SOPs	X	X	X	X		0.00
	Develop an effective palliative care service for childhood cancer at all levels of the health care system	Palliative care policy dissemination and implementation	X					464,147.00

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To improve survival of childhood cancer to 40% by 2026	To increase the number of children diagnosed with early stage childhood cancer	To train and orient community and health workers on childhood cancer	X	X	X	X	X	1,435,918.00
	To improve childhood cancer treatment completion	Partial decentralisation of childhood cancer treatment to provincial hospitals	X	X	X	X	X	882,692.00
	To document improved five-year survival for childhood cancer	Implement electronic hospital-based patient database					X	122,113.00
		Palliative care guidelines for childhood cancer development, dissemination & implementation	X					464,147.00
	Increased awareness of childhood cancer palliative care services	Healthcare workers orientation	X	X	X	X	X	129,827.00
		Community awareness campaign activities undertaken	X	X	X	X	X	

Human Resources

Objectives	Key Strategies	Interventions	Timeframe					Cost
			2022	2023	2024	2025	2026	
To increase Human Resource capacity for cancer services by 2026	Increase number of healthcare care workers for cancer control through the continuum of care	Draft establishment for provincial cancer treatment sites		X				530,677.00
		Treasury authority for decentralised centres		X				86,477.00
		Creation of HR positions for decentralised provincial cancer treatment centres			X	X	X	276,184,364.00
		Training plan for all specialties in the continuum care			X			827,263.00
		Review of curricular, Development of modules for clinical training	X			X		

Performance Indicators Framework (Logic Framework Matrix)

Leadership and Governance

Key Result Chain	Indicators	MOV	Baseline 2021	TARGET					Level of Reporting	Reporting Frequency
				2022	2023	2024	2025	2026		
Zambia Cancer Control Act Enacted and ZNCI established	The Zambia Cancer Control Bill Enacted	Availability of Cancer Control Act document and ZNCI establishment	Cancer control act not available	Ministerial approval to draft act	Drafting of the Cancer Control Act	Cabinet and Parliament act approval	ZNCI established	ZNCI operational	Policy	Yearly

Health Care Financing

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Government funding for cancer control Increased	Percent funding for cancer over the total health care budget	funding for cancer/ total health care budget	Yellow Book	≤ 1%	1%	2%	3%	4%	5%	Planning	Yearly
Cancer control activities included in MOH budgets at all levels	Percent of facilities with cancer control activities included in budgets	Number of facilities with cancer control activities budgets/Total number of facilities	Action Plans/ Yellow book	40%	60%	65%	70%	75%	80%	Planning	Yearly
Output 3: cancer control activities Included under NHI under NHIMA	Percentage of cancer care services on NHI benefit package	Number of Cancer care services on NHI benefit package/ Total number of cancer care services	NHI benefit package	30%	50%	60%	70%	80%	90%	Planning	Yearly
Output 4: Cancer research included on research agenda of the NHRA	Number Cancer Research funded by NHRA	Total number of NHRA funded cancer research/ Total Number of Cancer Research	NHRA reports publications	0%	2%	4%	6%	8%	10%	NHRA	Yearly

Key Chain	Result	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
						2022	2023	2024	2025	2026		
Output internally generated revenue activities Increased (ZMW)	5:	CDH IGR increased		CDH Financial Report	Two Million	Four Million	Six Million	Eight Million	Ten Million		CDH accounts department	Yearly

Health Information/ICT and Research

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Output 1 e-health records established and operational	E-Health records created and functional		Physical check and reports	e-health records not available	e-health strategic plan developed	e-health records system developed	e-health records fully implemented			CDH/ZNCR	Yearly
Output 2 PBCRs strengthened	PBCRs fully functional	Number of fully functional PBCRs/ Total Number of Cancer Registries	Physical check and reports	1 PBCR fully functional		2 PBCRs fully functional	3 PBCRs fully functional	3 PBRC fully functional	3 PBRC fully functional	ZNCR	Yearly
Output 3 Generation of local evidence for cancer control	# of cancer control research studies published		Web based search	8	12	20	25	30	35	National	annually

Infrastructure, Equipment and Transport

Key Result Chain	Indicators	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
				2022	2023	2024	2025	2026		
Output 1 Cancer Control Services decentralised	one cancer centre in Southern & Copperbelt Provinces established	Oncology Services annual reports and physical check	Building Designs and tender documents available	Procurement and beginning of construction done		Centres completed	Centres operational		Oncology Services Unit MoH	Yearly
Procurement of equipment for early diagnosis and treatment for both childhood and adult cancers in the 50 diagnostic clinics countrywide by 2026	Number of dedicated Ultrasound machines for early diagnosis of breast, prostate and childhood malignancies procured	Report Physical check	3	12	20	30	40	50	Oncology Services Unit MoH	Yearly
Upgraded and maintained radiology & Nuclear	Functional PET/CT Scan and cyclotron at CDH	Physical verification	0	0	1	1	1	1	Oncology Services Unit MoH	Biannual

Key Result Chain	Indicators	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
				2022	2023	2024	2025	2026		
Imaging services	Functional PSMA diagnostic and therapy services	Physical verification	0	0	0	1	1	1	Oncology services unit MOH	annually
	Procurement of maintenance contracts for equipment for cancer control	Contract Physical check	0	1	1	1	1	1	Oncology Services Unit MoH	annually
Improved capacity for Chemotherapy administration improved patients at cancer centre	Procurement of Infusion set and pumps available and closed systems	Physical check reports	10	20	30	50	80	100	Oncology Services Unit MoH	annually
	Procurement of biosafety cabinets	Physical check reports	2	4	6	9	10	14	Oncology Services Unit MoH	annually

Communication Strategy

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Increase cancer awareness in the population	Level of cancer awareness in the community	Number of population aware of cancer/ Total Number of population interviewed	survey	<5%	10%	15%	20	25	30%	Cancer control health promotions officer	
Communication strategy developed	Cancer awareness and communication strategy developed and disseminated		Cancer awareness and communication strategy	0		1				Cancer control health promotions officer	Yearly
Development and conduct health talks, radio and TV program	Number of health talks, radio and TV programs conducted		Physical check and reports							Cancer control health promotions officer	Yearly
IECs materials developed and disseminated	Percent IECs materials developed and disseminated	Number of IECs developed and disseminated/ Total number planned	Physical check of materials	10%	20%	30%	50%	80%	100%	Cancer control health promotions officer	Yearly

Medicines and Medical Supplies

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Output 1 Strengthen systems for planning, forecasting and procurement of essential medicines and supplies for cancer services	Percentage Essential medical tracer supplies & cancer medicines available in facilities	Number available/ number expected	Report Bulletin	40%	50%	70%	80%	90%	90%	National All levels	biannually
Output 2 Essential medicine and supplies list for childhood cancers, early diagnosis and treatment created	Percentage childhood cancer medicines available on EML	Number available/ number expected.	EML for childhood cancer	40%	50%	70%	80%	90%	90%	National All levels	Yearly
Output 3 Update cancer medicines and supply list	Child and adult cancer medicines and supply list updated		Physical check and reports	Updated	Updated	Updated	Updated	Updated	Updated	National All levels	Yearly
Output 4 National quantification and forecasting of cancer supplies and medicine	National quantification and forecasting of cancer supply and medicine conducted.		Physical check of materials	Done	Done	Done	Done	Done	Done	National All levels	Yearly

Service Delivery

Cervical Cancer

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To expand access to cervical cancer awareness prevention, early detection, treatment and care to reduce mortality by 15% by 2026 in order to achieve SDG target of 30% reduction in mortality by 2030 and elimination of cervical cancer by 2060											
Output 1 HPV vaccination scaled-up	Percent of girls fully vaccinated with HPV vaccine by 15 years of age	Number of girls fully vaccinated/Total number of girls eligible for vaccination	ZDHS/ EPI reports	40%	45%	50%	60%	70%	80%	All levels	Annually
Output 2 Access to cervical cancer screening expanded	Percent of women aged 25-59 years screened with HPV-DNA/RNA testing	Number of women screened with HPV-DNA/RNA test/Total number of women eligible for screening	Cervical Cancer Summary reports	10%	20%	30%	40%	50%	60%	All levels	Annually
Output 3: access to treatment of precancerous lesions and	Number of staff trained to perform cervical cancer screening and cryotherapy/thermal ablation per		Staff training register Cervical cancer training database	(742)	(850)	(1000)	(1200)	(1500)	(1800)	National All levels	Annually

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level Reporting	of Reporting Frequency
					2022	2023	2024	2025	2026		
invasive cervical cancer expanded.	100,000 adult female women										
	Number of staff trained to perform LEEP per 100,000 adult female women		Staff training register Cervical cancer training database	220	260	300	340	380	420	National All levels	Annually
	Percentage of screen-positive women eligible for pre-cancer treatment who complete treatment (Ablation and LEEP)	Number of screen positive women who completed pre cancer treatment/ total number of screen positive women requiring precancer treatment	Cervical Cancer Summary reports	66%	70%	75%	80%	85%	90%	All levels	Annually
	Percentage of screen-positive women eligible for cryotherapy/thermal ablation who	Number of screen-positive women eligible for cryotherapy or thermal ablation who complete	Cervical Cancer Summary reports	84%	87%	90%	>90%	>90%	>90%	All levels	Annually

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level Reporting	of Reporting Frequency
					2022	2023	2024	2025	2026		
	complete treatment	treatment / Total Number of screen-positive women eligible for cryotherapy or thermal ablation									
	Percentage of screen-positive women eligible for LEEP who complete treatment	No. of screen-positive women eligible for LEEP who complete treatment / Total No. Of screen positive women eligible for LEEP who complete treatment	Cervical Cancer Summary reports	54%	60%	67%	75%	82%	>90%	All levels	Annually
	Number of sites offering HPV DNA/RNA testing and LEEP services per 100,000 adult women	No. Of sites offering HPV DNARNA testing and LEEP services/No. Of sites eligible for	Cervical Cancer Summary reports	7 (276 clinics countrywide in total)	8 (326 clinics countrywide in total)	9 (376 clinics countrywide in total)	10 (426 clinics countrywide in total)	12 (526 clinics countrywide in total)	14 (600 clinics countrywide in total)	All levels	Annually

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level Reporting	of Reporting Frequency
					2022	2023	2024	2025	2026		
		HPV DNA/RNA testing and LEEP services									
	Number of sites offering cervical cancer screening per 100,000 adult women		Cervical Cancer Summary reports and physical checks	7 (276 clinics nationwide total)	8 (326 clinics nationwide total)	9 (376 clinics nationwide total)	10 (426 clinics nationwide total)	12 (526 clinics nationwide total)	14 (600 clinics nationwide total)	All levels	Annually
	Proportion of eligible Health sites that submitted complete and timely reports on Cervical Cancer	Number of reports submitted/ Total number of reports expected	Cervical cancer summary reports and physical checks	99	100	100	100	100	100	All levels	Annually
	Percentage of sites with availability of HPV testing	Total number of HPV testing sites/ Total number of health sites (3000)	Cervical Cancer Summary reports and physical checks	<10%	23%	30%	40%	65%	80%	All levels	Annually
	Percentage of eligible invasive cervical cancer	Number of eligible invasive cervical cancer	Cervical Cancer Summary reports	30%	40%	50%	60%	70%	80%	All levels	Annually

Key Result Chain	Indicators	Numerator/Denominator	MOV	Baseline 2021	Target					Level Reporting	of Reporting Frequency
					2022	2023	2024	2025	2026		
	patients receiving treatment	patients receiving treatment/Total No. of eligible invasive cervical cancer patients receiving treatment									
	Number of gynecologists trained to perform cervical cancer surgery		Staff training register	9	15	20	30	40	50	All levels	Annually
	Number of Clinical Oncologists trained		Staff training register	9	12	13	18	21	25	National	Biannually
	Number of gynae oncologists trained		Staff training register	3			6	9	12	National	Biannually

Prostate Cancer

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To expand access to prostate cancer awareness, prevention, early detection, treatment, and care to reduce mortality by 15% by 2026											
Output 1: Access to prostate cancer services in Zambia expanded	Percentage of Provincial facilities offering PSA testing	Number of facilities offering PSA testing/Total Number of provincial facilities eligible for offering PSA testing	Hospital Laboratory records Physical check	20%	30%	40%	50%	60%	80%	Provincial level	Annually
	Percentage of Provincial facilities offering USG prostate biopsies	Number of provincial facilities offering USG prostate biopsies /Total Number of provincial facilities eligible for offering USG prostate biopsies	Hospital records Physical check	20%	30%	40%	50%	60%	80%	Provincial	Annually

	Number of urologists trained on Prostate ultrasound guided biopsy		National Survey Training reports	5	7	10	13	15	20	National	Annually
	Prostate cancer treatment guidelines developed and disseminated		Availability of Guideline document	None	None	Draft guidelines	Guideline Complete and disseminated			National All levels	Annually
	Ratio of new early vs late prostate cancer cases diagnosed	Number of new early prostate cancer cases/Number of late prostate cancer cases	ZNCR Hospital databases	20/80	30/70	40/60	50/50	60/40	70/30	All levels National ZNCR	Annually
	Percentage of prostate cancer cases receiving treatment	Number of prostate cancer cases receiving treatment/Total number of prostate cancer cases diagnosed	Hospital databases ZNCR	30%	35%	40%	50%	60%	70%	All Levels ZNCR	Annually

Breast Cancer

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
Output 1: Improved access to Breast cancer services	Percentage of eligible women (25 to 75 years old) accessing breast health or cancer awareness services	Number of eligible women accessing breast health or cancer awareness services/Total number of eligible women accessing breast health or cancer awareness services	Hospital records EHR HMIS	16%	31%	45%	60%	70%	80%	All levels National HMIS	Annually
	Percentage of women diagnosed with early-stage breast cancer (stage I & II) (By 2040 60% in stage I & II)	Number of women diagnosed with early-stage breast cancer/Total number of women diagnosed with breast cancer	ZNCR Hospital records EHR HMIS	20%	23.5 %	%/ 27%	40%/30.5%	34%/	37.5%	All levels National ZNCR	Annually
	Proportion of eligible health facilities or sites that submitted complete and timely reports on Breast Cancer	Number of reports submitted/Total number of reports expected	ZNCR Hospital records EHR HMIS	-	40	50	60	70	80	All levels National ZNCR	Quarterly

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
	Number of level I, II & III facilities with functional breast diagnostic clinics		Hospital records EHR HMIS	2	4	20	30	40	50	All levels National ZNCR	Annually
	Number of women with suspicious findings from clinical breast evaluation who received confirmatory diagnosis within 60 days	Number of women with suspicious findings from clinical breast evaluation who received confirmatory diagnosis within 60 days/Total number of women with suspicious findings		<50%	50%	55%	60%	65%	70%	All levels National ZNCR	
	Number of women who received treatment at facility with capacity for treatment within 3	Number of women who received treatment at facility with capacity for treatment within 3 months after	Hospital records EHR HMIS	27.8%	29.5%	30.5%	34%	37%	40%	All levels National ZNCR	

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
	months after clinical breast evaluation	clinical breast evaluation/Over the total number of women with suspicious finding									
	Percentage of Breast Cancer patients completing full multimodality treatment (target 80%)	Number of Breast Cancer patients completing full multimodality treatment/Total number of eligible breast cancer patients completing full multimodality treatment	Hospital records HER HMIS	30%	35%	40%	50%	60%	70%	All levels National ZNCR	Annually
	Percentage reduction of breast cancer mortality reflected from CDH annual statistics/		Hospital records ZNCR Globocan	60%	60%	57.5%	55%	52.5	50%	All levels National ZNCR	Annually

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
	ZNCR/Globocan by 2.5% annually										
	Percentage of patients with breast cancer with Immunohistochemistry (IHC) reports	Number of patients with breast cancer with IHC reports/Total number of eligible patients with breast cancer	DISA reports Hospital records	<50%	55%	60%	65%	70%	80%	All levels National ZNCR	Annually
	Total number of annual mortality due to breast cancer		ZNCR Hospital records HMIS	423	423	412	402	391	381	All levels National ZNCR	Annually
	Number of health care workers trained in awareness, SBE and CBE and patient navigation		Hospital reports Training and mentorship reports	50	50	50	250	450	750	All levels National	Annually

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
	Number of general surgeons trained in breast health service and surgery or surgical oncology		Hospital returns HRD reports	5	5	10	15	20	25	All levels National	Annually
	Number of Radiographers and sonographers trained in breast ultrasound and reporting		Hospital returns HRD reports	5	10	20	30	40	50	All levels National	Annually
	Number of radiographers trained in breast mammography		Hospital returns HRD reports	5	10	12	15	18	20		
	Number of facilities with at least 1 appropriate ultrasound machine for early breast diagnosis	Number of facilities with at least 1 ultrasound machine/Total number of facilities carrying out early breast diagnosis	Hospital records EHR HMIS	2	4	20	30	40	50		

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To scale up and improve access to breast cancer early detection, and management in order to reduce cancer mortality by 12.5% by 2026											
	Number of facilities with at least 1 digital mammography machine	Number of facilities with at least 1 digital mammography machine/ Total number of facilities carrying out early breast diagnosis	Hospital records EHR HMIS	<5	5	7	8	9	10		

Colorectal Cancer

Key Result Chain	Indicators	Numerator/ Denominator	MOV	Baseline 2021	Target					Level of Reporting	Reporting Frequency
					2022	2023	2024	2025	2026		
Main Objective: To establish colorectal cancer awareness, early diagnosis and multimodal treatment pathways to improve patient outcomes in Zambia by reducing mortality to 12.5% by 2026.											
Output1: Colorectal cancer service established	Number of districts with integrated community oriented screening and early diagnostic program for Colorectal cancer (using gFOBT, guaiac fecal occult blood test)		Physical verification, Reports (HMIS, Paper, Hospital records)	10	10	15	20	30	50	National	Annually
	Number of facilities offering colonoscopy services for diagnosis of colorectal cancer		Physical verification, Reports (HMIS, Paper, Hospital records)	8	8	8	12	20	30	All levels National	Annually
	Percentage of early-stage colorectal cancer (Stage I & II) diagnosed	Number of early-stage colorectal cancer diagnosed/Total number of colorectal cancer diagnosed		Hospital data ZNCR	19%	19%	19%	25%	31%	40%	All levels National ZNCR

Childhood Cancers

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target					
				2021	2022	2023	2024	2025	2026	
Main Objective: To improve survival of childhood cancer to 40% by 2026										
Output 1: Health service delivery system for childhood cancer expanded	Number of provincial facilities offering childhood cancer services		Physical check	1	3	5	6	8	10	
	Percent of children diagnosed with early-stage childhood cancer	Number of children diagnosed with early-stage childhood cancer/Total number of children diagnosed with childhood cancer	Hospital records	<30%	30%	40%	50%	60%	70%	
	Percent of children completing child cancer treatment	Number of children completing cancer treatment/Total number of children initiated on cancer treatment	Hospital records	≤30%	30%	40%	50%	70%	80%	

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target				
				2021	2022	2023	2024	2025	2026
Main Objective: To improve survival of childhood cancer to 40% by 2026									
	Percentage 5-year survival rate	Number of children alive 5 years from the cancer diagnosis/Number of children diagnosed with cancer for the same period under review	PBRC/SJ CARE/Survival analysis	< 20%	20%	25%	30%	35%	40%
Output 2 Chemotherapy services decentralized to all provincial hospitals	Number of provincial hospitals with functional chemotherapy services for childhood cancer		Physical verification Provincial hospital monthly chemotherapy reports	1 (CDH)	3 (LCH and ADCH)	6	9	10	10
Output 3 Provincial hospitals able to perform Tumour marker testing	Number of provinces with hospitals able to perform Tumour markers		Monthly Diagnostic Pathology and Laboratory reports for childhood cancer from the provincial	1	2	4	6	8	10

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target					
				2021	2022	2023	2024	2025	2026	
Main Objective: To improve survival of childhood cancer to 40% by 2026										
Output 4 Childhood cancer specimen TAT is within three weeks	Percent of reports completed within three weeks	Number of reports completed/Total number of reports requested within three weeks	DISA reports	35%	50%	60%	70%	80%	90%	
Output 5 Standardized diagnostic reporting by pathologists	Percentage of Diagnostic reports according to standard	Number of diagnostic reports completed according to standard/Total number of diagnostic reports requested according to standard	Clinical Audit report	50%	60%	70%	80%	90%	100%	
Output 6 Guidelines and SOPs for chemotherapy safety practices available and	Number of guidelines and SOPs updated		Physical verification	0	4	4	4	4	4	
	Number of facilities oriented on use of		Orientation minutes and reports	0	2	4	6	8	10	

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target				
				2021	2022	2023	2024	2025	2026
Main Objective: To improve survival of childhood cancer to 40% by 2026									
Output 7 Training program in Paediatric oncology introduced	Curricula available and training programme running		Curricula development meeting reports	0	1 (paediatric oncology)	2 (paediatric nurse oncology)	3	3	3
	Number of specialized paediatric oncologists trained		HPCZ register/Training reports	2	2	2	4	6	8
	Number of specialized paediatric oncology nurses trained		GNC register/Training reports	0	0	0	0	20	40
Output 8 In service Training programme for paediatricians, pharmacists,	Curricula available and program running		HR database Physical verification of centres	0	1	1	1	1	1
	Number of Paediatricians trained in		HR database and physical	0	1	2	3	3	3

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target				
				2021	2022	2023	2024	2025	2026
Main Objective: To improve survival of childhood cancer to 40% by 2026									
and nurses for chemotherapy administration of childhood cancer	infection prevention		institutional verification						
	Number of Paediatricians and other physicians trained in critical care		HR database and physical institutional verification	1	3	7	9	16	23
	Number of secondary and tertiary hospital cancer units with ≥75% practicing paediatricians trained in chemotherapy administration		Survey and hospital reports	2/15	5/15	8/15	10/15	13/15	15/15
Output 10 Increase HR capacity of for	Number of health care workers		Training reports	12	12	22	30	40	50

Results Chain	Indicators	Numerator/Denominator	MoV	Base	Target					
				2021	2022	2023	2024	2025	2026	
Main Objective: To improve survival of childhood cancer to 40% by 2026										
early diagnosis of childhood cancers in Zambia	trained in early diagnosis of childhood cancer									
	Number of specialized Paediatric surgeons trained		HR training report	9	12	20	25	30	40	
Output 11 Electronic childhood cancer workflow established	Number of institutions with electronic health information system installed and linked to clinical areas to enhance reporting of laboratory results		CDH, ADCH and LCH annual reports	1					3	

Institutional, Legal, Policy and Regulatory Framework

Legal, Policy and Regulatory Framework

This NCCSP is anchored in the NHSP 2022-2026, the 8th National Development plan 2022 to 2026, Vision 2030, National Health Policy (NHP 2012), and the SDGs. The 8th National Development Plan 2022 – 2026 for Zambia notes the high prevalence and impact of preventable and treatable communicable diseases as well as the growing burden of non-communicable diseases (NCDs). The increase in non-communicable diseases such as cancers, cardiovascular diseases and diabetes also contribute to the disease burden and the plan includes the control of non-communicable diseases. The National Health Strategic Plan 2022 – 2026 also prioritises the control of cancer and other non-communicable diseases as guided by the NCD Strategic Plan. Zambia has the National Health Care Packages (NHCP) that have included cancer as one of the major diseases to be controlled. The NHCP of Zambia emphasises on the Universal Health Coverage using primary health as a vehicle for implementation of health services in Zambia.

Vision 2030 expresses Zambia's aspirations to become a prosperous middle-income nation by 2030. The Vision 2030 identifies health as one of the priority sectors which is expected to contribute to a healthy and productive citizenry. Cancer control is an important aspect of this vision as poor cancer control results in an economic burden for the population, healthcare systems, and the country due to healthcare spending, and productivity losses from morbidity and premature mortality.

Cancer control in Zambia currently has no legal or regulatory framework. Therefore, there is a need for development and enactment of the Zambia Cancer Control Act to define the functions of the ZNCI and the composition of its leadership and governance.

Institutional Framework

The implementation of the National Cancer control Strategic plan will include several public and private institutions, CSOs, and NGOs that operate at various levels of the health sector. The MOH has a role to make sure that there is a coordinated governance system which requires sharing of information at various levels for evidence-based management decisions. The strategic plan is implemented and coordinated through the existing health sector organisational and management structures.

The health services in Zambia including cancer care services, are provided by four main sectors, namely the Government, faith-based (not-for-profit) providers, the mine-owned hospitals, and private (for-profit) providers. The national level is responsible for overall coordination and management, policy formulation, strategic planning, and resource mobilisation.

Zambia's healthcare system is decentralized and is organised into three different levels: Primary, Secondary and Tertiary care. Primary health care facilities are in charge of provision of basic health care services, whereas secondary and tertiary health facilities provide referral or specialized health care. Government has started the decentralisation of the cancer services to increase access to the services for its population.

The Government of the Republic of Zambia established the Oncology Services Unit in 2016 at the Ministry of Health responsible for cancer management. The unit has a primary care Section responsible for cancer prevention, screening, and early detection services. There is also the Clinical Care Section responsible for cancer diagnosis, treatment, and palliative care. The Ministry of Health has a Directorate of Health Promotion, Environment and Social Determinants which is responsible for health awareness, advocacy, communication, and social mobilization for NCDs including cancer prevention. This office has representation from the national level to primary health care and the community. The country also has an Expanded Programme for Immunization (EPI) where Human Papilloma Virus (HPV) and Hepatitis B Virus (HBV) vaccinations are incorporated(WHO, 2023).

In diagnostics, the country is able to perform histopathology and imaging services at secondary and tertiary level. Treatment, mainly composed of surgery, chemotherapy, radiotherapy, and palliative care, are conducted at the Cancer Diseases Hospital, the only comprehensive cancer treatment centre in the country currently. At provincial level, there are cervical cancer focal point persons with at least one cervical cancer screening clinic in nearly every district of Zambia with all associated services for the treatment of premalignant lesions. However, there are limited early diagnosis clinics established for other cancers.

The Zambian National Cancer Registry was established in 1982 and functioned as a hospital-based cancer registry based at UTH. The registry has undergone a process of transformation from a hospital-based registry with passive surveillance to a population-based cancer registry (PBCR) with active cancer surveillance. There are currently three PBCR, one in Lusaka, the second in Ndola (Copperbelt province) and the third one in Livingstone (Southern Province).

The NCCSP will be implemented through the development and implementation of medium-term expenditure framework and the activities in the interim shall continue to be implemented via the NCCTWG.

The plan is to establish a ZNCI that is envisioned to work closely with MoH, for future coordination and successful implementation of cancer services in Zambia. ZNCI structure is proposed as below but will have to be reviewed after the law is enacted.

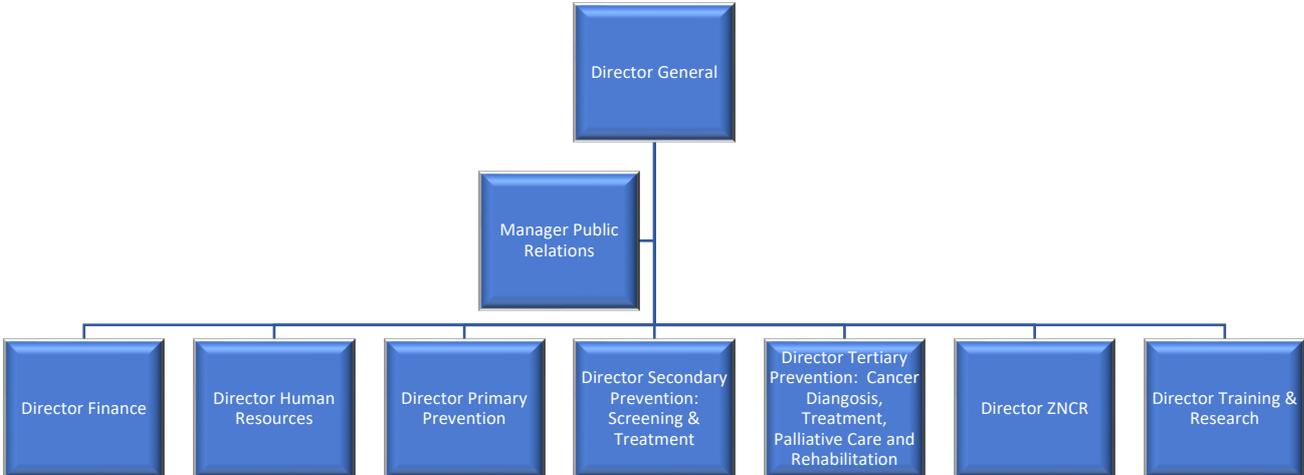


Figure 1:Proposed structure of the Zambia National Cancer Institute

Several other stakeholders will be involved in its implementation, including other line ministries and government departments, cooperating Partners, faith-based organizations, private sector, traditional and alternative medicines sector, civil society/communities, and Cooperating Partners (CPs). To ensure efficient and effective coordination of the partnerships with all stakeholders, sector wide approach and inter-sector collaboration and coordination mechanisms will be strengthened at all levels. Emphasis will be placed on strengthening the leadership and governance systems and structures, to ensure the highest levels of participation, transparency and accountability at all levels. In this regard Zambia should endeavour to urgently create a National Cancer Institute that will assist government to lead, coordinate, and implement cancer activities in the country.

Key Sector Partners

For the implementation of this NCCSP, the MoH will leverage partnerships in the cancer control continuum. This will require efficient and effective coordination of the partnerships.

The following are the key partners:

- a) Government line ministries and departments: Some actively participate in health service delivery e.g., Ministry of Education in HPV vaccination, whereas others impact the determinants of health and cancer control.
- b) Civil society and NGOs, both local and international, will play an important role in the implementation of the plan. Some organisations are involved in health promotion, provision of health services, and training and capacity building, while others are involved in advocacy for health.
- c) Communities: Much of the progress made in improving the health status of individuals depends on the existence of healthy environments and lifestyles. This NCCSP will work toward strengthening health promotion among communities and strengthening community involvement and participation in cancer control.

COST ANALYSIS

The overall objective of the cost and financing section is to generate information on cost/budget need and projected financing inflow that is needed for the implementation of the plan, and to present the financial cost not only in total, but also by year, strategic area, and output.

The first principle in arriving at the cost presented below is the rapid assessment approach, which uses both secondary data and key informants' opinions, makes assumptions based on investigators' experiences, and generates approximate estimates on the financing need. Usually, a detailed, systematic, and system-wide cost and financing study will need a period of six months. Given the urgent need of the cost and financing information for the plan, the rapid assessment was deemed to be the most appropriate method to deliver quick results.

The second principle is that the estimation of the financing need is based on outputs. This principle requires that the outputs/activities be well specified. Upon review of the draft documents, it was found that some activities are still not specific enough for the investigator to estimate their cost. The initial task was to reword the activities to make them quantifiable and be costed.

In this plan, each objective for each priority area was developed further and linked key strategies for which activities were developed. The frequency of each activity was then determined, followed by the cost of each activity.

Every intervention for each strategic area of this plan was reviewed and specific outputs developed that were consistent with the objectives, that resulted in the required outputs. Care was taken to ensure that no activity had a double cost or entry.

NCCSP COST SUMMARY

Service Delivery	2022 (ZMW)	2023 (ZMW)	2024 (ZMW)	2025 (ZMW)	2026 (ZMW)
Leadership and Governance	912,000	1,424,164	1,152,030	24,366,012	1,587,979
Human Resources	354,896	617,154	63,097,619	100,633,679	134,377,387
Health Care Financing	519,772	552,179	985,097	316,088	643,530
Health Information	577,077	1,946,620	1,792,117	669,610	1,822,373
Infrastructure	3,383,957	68,751,301	102,825,235	213,185,875	449,331,062
Communication Strategy	332,288	797,197	613,145	526,128	783,001
Medical Products and Drugs	91,334,882	100,969,956	120,941,136	132,700,139	146,248,291
a) Cervical Cancer	7,076,857	98,819,474	117,235,762	141,146,053	169,053,070
b) Breast Cancer	10,000	704,543.	2,339,750	1,214,623	1,388,358
c) Prostate Cancer	157,000	1,605,245	1,953,303	1,941,492	2,341,099
d) Colorectal Cancer	0	2,270,164,	18,751,471	24,445,824	32,034,481
e) Childhood Cancer	439,624	1,027,643	978,739	544,894	1,040,140
Grand Total	ZMW 2,399,590,585.00				

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