THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE

National Cancer Control Strategy (NCCS) (2013 - 2022)

February 2013

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ARV	Anti Retro Viral drugs
BCE	Breast Clinical Examination
BSE	Breast Self Examination
CACX	Carcinoma of Cervix
CIN	Cervical Intraepithelial Neoplasm
HBV	Hepatitis B Virus
HEPS	Health Education Programme Section
HPV	Human Papilloma Virus
HIV	Human Immunodeficiency Virus
IAEA	International Atomic Energy Agency
IARC	International Agency for Research on Cancer
INCTR	International Network of Cancer Treatment and Research
KAP	Knowledge Attitude Practice
KCMC	Kilimanjaro Christian Medical Centre
MEWATA	Medical Women Association of Tanzania
MNH	Muhimbili National Hospital
MoHSW	Ministry of Health and Social Welfare
NCCP	National Cancer Control Program
NCCS	National Cancer Control Strategy
NCOs	Non-Governmental Organizations
ORCI	Ocean Road Cancer Institute
PACT	Program Action for Cancer Therapy
PASADA	Pastoral Activities and Services for People with AIDS in Dar es Salaam
PHC	Primary Health Care
TACC	Tanzania Cancer Commission
TPCA	Tanzania Palliative Care Association
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection with Lugol's Iodine
WHO	World Health Organization

COMMON CANCER CASES

Based on the strength of scientific literature, the following are the risk factors for the different types of cancer which are prevalent in Tanzania:-

Cancer of Cervix

The risk factors are infection with Human Papilloma Viruses (HPV), early age at first sexual intercourse, many sexual partners or partners who have had many sexual partners, multiple births, long-term oral contraceptive use, and cigarette smoking.

Kaposi's sarcoma

The main risk factor is infection with Human Immunodeficiency Virus (HIV). Other risk factors include, being a male and having multiple sexual partners.

Cancer of Oesophagus

The most important risk factors are tobacco use and excessive alcohol ingestion. Other possible risk factors include obesity, inadequate diet, poor nutrition, decreased levels of certain nutrients (e.g. carotene, ascorbic acid, riboflavin, niacin, thiamine, zinc, magnesium, and selenium), and insufficient consumption of fruits and vegetables.

Breast Cancer

The risk factors are family history (especially mother or sister) of breast cancer, personal history of breast, ovarian, or endometrial cancer, susceptibility genes (BRCA-1, BRCA-2), some forms of benign breast disease (atypical hyperplasia), menstruation at an early age, late menopause, never bearing children, first child born after age 30, high doses of ionizing radiation, long term use of post-menopause estrogens and progestin, obesity after menopause, and excessive alcohol consumption. Other possible risk factors are dietary fat and physical inactivity.

Cancers of Head & Neck

Tobacco and alcohol usage account for most head & neck cancers. Another risk factor is a diet low in fruits and vegetables. Other possible risk factors are poor oral hygiene, trauma and use of mouthwashes with high alcohol content.

Non-Hodgkin Lymphoma

Risk factors are reduced immune function particularly due to infection with HIV, Epstein-Barr or human T-cell leukaemia/ lymphoma virus. Possible risk factors are organ transplant, occupational exposure to pesticides, herbicides, or organic solvents.

Hodgkin Lymphoma

Risk factors are infectious mononucleosis and Epstein-Barr virus infection. Possible risk factors are family history of Hodgkin lymphoma especially among siblings and genetic factors.

Skin Cancer

Majority of the patients with skin cancers in Tanzania are albinos. The risk factors are ultraviolet radiation (sunlight), fair skin, high doses of ionizing radiation, occupational exposure to arsenic, polycyclic hydrocarbons (coal tars, pitches, and asphalt, creosote, soot, lubricating and cutting oils) and

rare hereditary diseases such as multiple basal cell carcinoma syndrome, xeroderma pigmentosum, and albinism. Possible risk factors are burn scars, chronic infections, and photosensitizers in tanning, cosmetics, and medicines.

Bladder Carcinoma

The most important risk factor is bladder infection with schistosoma haematobium (a parasitic flatworm) and cigarette smoking; other risk factors are occupational exposure to benzidine and 2-naphthylamine and occupations in the dye, leather or rubber industry. Possible risk factors are heavy coffee consumption, urinary tract infections or low urine flow, dietary factors, tobacco use and genetic factors.

Leukaemia

The risk factors are family history, high doses of ionizing radiation, alkylating drugs used to treat cancer and other diseases, and occupational exposure to benzene. Possible risk factors are exposure to electromagnetic fields, pesticides, smoking, and several immune-related diseases.

The risk factors for other cancers observed at ORCI, although not so frequently:-

Liver

The risk factors are chronic infection with hepatitis B or C virus, cirrhosis of the liver (chronic liver injury, usually due to alcohol abuse), aflatoxin ingestion (produced by a common mold that invades poorly stored peanuts and other foods), and occupational exposure to thorium dioxide or vinyl chloride.

Lung

Tobacco smoking is responsible for nearly 90% of all lung cancers. Other contributing risk factors are environmental tobacco smoke (second-hand smoke). High doses of ionizing radiation, residential radon exposure and occupational exposure to mustard gas, chloromethyl ethers, inorganic arsenic, chromium, nickel, vinyl chloride, radon, asbestos or by-products of fossil fuel are also thought to increase risk. Possible risk factors are air pollution and insufficient consumption of fruits and vegetables.

Larynx

Most cases are caused by cigarette smoking. Other risk factors are alcohol and occupational exposure to asbestos.

Prostate

Risk factors are some types of prostatic hyperplasia and a family history, especially a father or brother. Possible risk factors are a diet high in animal fat, obesity, hormonal factors, a sexually transmitted agent, smoking, alcohol, and physical inactivity.

FOREWORD

Cancer is now recognized globally as one of the leading non-communicable diseases; globally different cancers contribute to over 7.9 million deaths equivalent to 13% of total global mortality) each year and this figure is projected to rise to nearly 10 million unless the problem is addressed urgently.

Tanzania is not spared from the devastating effects of cancer; it is estimated that 40,000 new cancer cases are reported of which 80% of those victims die every year and the number is reported to be increasing both in Tanzania and worldwide. The government, through the Ministry of Health and Social Welfare (MoHSW) was alarmed with the situation and established cancer services in the country since 1970s. One of the key milestones was the establishment of the National Cancer Institute- Ocean Road Cancer Institute (ORCI), in 1996 through an act of Parliament. Since then, the ORCI, International Atomic Energy Agency (IAEA), WHO and other partners have been in the driver's seat in combating cancer in the country despite limited resources, both financial and human.

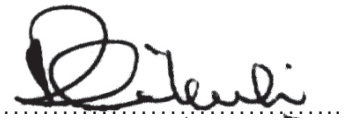
Some of the significant steps made by the ORCI in collaboration with its partners include establishment of hospital-based cancer registry, cancer awareness education to the public, facility-based as well as outreach-based cervical and breast cancer screening services, palliative care services and conducting local and multi-centre researches.

Although only 10% of cancer cases reach the ORCI for treatment, 80% of cases report to the institute and majority of them at late stages of the disease. Moreover, knowledge on cancer prevention, cure and care is still a mystery to many people including the victims of the disease despite the fact that one third of cancer can be prevented and early detection and effective treatment of a further third is also possible.

The World Health Organization advocates for development of national cancer control programs as the best means of reducing the incidences and impacts of cancer and improving the quality of life of those with cancer within available resources. This involves a comprehensive, planned approach that will identify and implement priorities for action from cancer prevention activities through treatment, rehabilitation and palliative care.

But these efforts and services need to be coordinated in a coherent and most cost effective manner hence the need for a National Cancer Control Strategy (NCCS) which is a fundamental step in the development and implementation of a comprehensive and coordinated program to control cancer in Tanzania. The government of Tanzania through the MoHSW established a national steering committee to lead and oversee the work of formulation and implementation of a national cancer control strategy and action plan. Recognizing the importance of effective coordination of national Cancer control and prevention services in the entire country, the MoHSW has effected a national coordination office.

The development of this strategy reflects a shared commitment to reducing the incidence of cancer and improving the quality of life of those who develop cancer especially the most vulnerable, and integrating cancer control services and intervention in the existing healthcare services. I would like to call upon development partners and other stakeholders to support us in these endeavors given that this strategy and action plan cannot be implemented without internal and external sources financial resources.



Regina L. Kikuli

ACTING PERMANENT SECRETARY

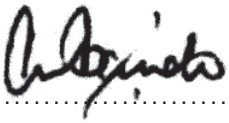
ACKNOWLEDGEMENT

I would like to thank all the local as well as international partners for their valuable contributions towards completion of this document. The successful development of the National Cancer Control Strategy and action plan involved long consultative meetings of the national steering committee for cancer control and valued input from a wide range of stakeholders.

Furthermore, the successful completion of this document was made possible by members of governmental as well as nongovernmental organizations during stakeholders' workshop. The contribution from the individuals and organizations is highly acknowledged.

The MOHSW would like to acknowledge all those who contributed in one way or another to the successful development of this document. The Ministry particularly wishes to acknowledge the invaluable contribution of WHO, Program Action for Cancer Therapy (PACT) and International Atomic Energy Agency (IAEA) for their financial and technical support.

Last but not least, the Ministry would like to acknowledge the government of Tanzania through the former Ministers for Health and Social Welfare for supporting this initiative.



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Dr. Donan W. Mmbando
ACTING CHIEF MEDICAL OFFICER

EXECUTIVE SUMMARY

Over the years, Tanzania has recorded increase in the number of new cancer cases and deaths; lack of coordinated and funded national cancer control program has resulted in inequitable access to services, late stage presentations and poor treatment outcomes leading to significant number of cancer patient dying rather than getting cured.

The National Cancer Control Strategy (NCCS) is a roadmap toward the development and implementation of a comprehensive and coordinated national response to cancer in Tanzania. The successful development of the National Cancer Control Strategy and action plan involved long consultative meetings of the national steering committee for cancer control and valued input from a wide range of individuals, groups, organizations and members during a stakeholders' workshop.

The NCCS sets principles and goals to guide existing and future actions to control cancer. The key purposes of the strategy are to integrate cancer control into existing healthcare delivery system, reduce the incidence and impact of cancer, enhance quality of life for those with cancer and reduce inequalities with respect to access to cancer care.

VISION

To make Tanzania among countries with low cancer burden

MISSION

To provide a coordinated, comprehensive and responsive, national cancer control program for Tanzania.

The overall objective of this strategy is to cover the entire continuum of cancer prevention and control; it specifically aims to promote cancer prevention and early detection and improve diagnosis and treatment including palliative care. The strategy also aims to promote cancer surveillance, registration and research.

Key interventions

i. **Primary prevention:** this is the most efficient and cost-effective form of cancer control; the goal of primary prevention is to reduce exposure to cancer that will later lead to risk factors. Specific interventions include provision of HPV vaccination for girls aged 9-13 years and promote anti-tobacco campaigns.

ii. **Early detection (screening and diagnosis):** This intervention is known to greatly reduce the burden of cancers and improve outcomes. Its aim is to detect the cancer when it is localized to the body organ of origin, before it has time to spread to other parts of the body. Expansion of training and screening of cervical cancer as well as detection for breast, prostate and childhood cancer in all zonal and regional hospitals are among priority interventions.

iii. **Treatment:** The infrastructure for cancer treatment is important to ensure reduction in mortality. The need for a more integrated approach to treatment and care, with the patient as the focus, is recognized as critical for curing or prolonging the life of those with cancer.

iv. **Palliative care:** Palliative care focuses on maintaining and improving quality of life. This is especially important for those people who are diagnosed with cancers that are life threatening, and those for whom cancer treatment is no longer effective. Training of doctors at regional and zonal hospitals on palliative care and procurement of oral morphine and distribution to the hospitals are among priority activities for the first 5 years.

v. **Cancer registration and surveillance:** As a fundamental element of any cancer control strategy, surveillance provides the foundation for advocacy and policy development. This strategy will ensure collection, monitoring and reporting of national cancer data so as to facilitate cancer control interventions including establishment of population-based cancer registry.

vi. **Training, Education and Research:** Given the shortage of cancer experts such as oncologists, pathologists and oncology nurses in Tanzania, this strategy suggests implementation of the following interventions within the first five (5) years

- Establishment of postgraduate oncology degree,
- Establishment of radiation therapy technology degree,
- Establishment of undergraduate degree for oncology-nursing,
- Increase funding for cancer research,

vii. **Integration and Coordination of Cancer Control into existing health services:** In order to ensure effective implementation of cancer control programs, integration into the existing health care system is essential. It is also important to have an overseeing program for cancer control in Tanzania. Hence the strategy will focus on establishment of a cancer control program and contraction of a National Cancer Institute.

Institution and management framework

The NCCS will be operationalized at three levels - national, regional, and district - in an overlapping fashion. The goal is to provide well - coordinated, effective, transparent, accountable and sustainable leadership and management structures at national, regional and district levels to implement the strategy as well as involve other stakeholders from the public, private and civil society sectors. The NCCS will be managed by different structures at different levels. At national level the Prime Minister's Office and Ministry of Health and Social Welfare are the main oversight structures. They will oversee the implementation of activities by different stakeholders and will also ensure that the various key players plan and implement their cancer related interventions in a timely manner.

National health financing for cancer

The Government of Tanzania through the Ministry of Finance and Economic Affairs should ensure they obtain funds from international or local funding organizations to implement the National Cancer Control Program activities. Furthermore, the Prime Minister's Office and Ministry of Health and Social Welfare should ensure adequate funding to district, regional, referral and specialised hospitals

for expenditure on cancer control activities. The Ministry of Finance should ensure adequate funding to the Ministry of Health and Social Welfare to enable it to ensure coordination and monitoring of the National Cancer Control Activities.

International donor agencies particularly Program Action for Cancer Therapy (PACT) and its partners would be expected to play an important role for mobilization of resources and provision of technical support in the national response initiative to combat cancer. Costing of this strategy will be conducted to ascertain the total budget for the activities.

CHAPTER 1

INTRODUCTION

What is Cancer?

Cancer is a generic term used to describe a group of over 100 diseases that occur when malignant forms of abnormal cell growth develop in one or more body organs. These cancer cells continue to divide to produce tumors. Cancer cells can invade adjacent structures and spread via the lymph or blood to distant organs. Some of the biological mechanisms that change a normal cell into a cancer cell are known, while others are not. Cancer differs from most other diseases in that it can develop at any stage in life and in any body organ.

No two cancers behave exactly the same way. Some may follow an aggressive course such that the cancer grows rapidly. Other types grow slowly or may remain dormant for years. Very high cure rates can be achieved for some types of cancers, while for others the cure rates are disappointingly low and await improved methods of detection and treatment. The wide range of cancer treatments and associated services reflects the biological diversity of cancer.

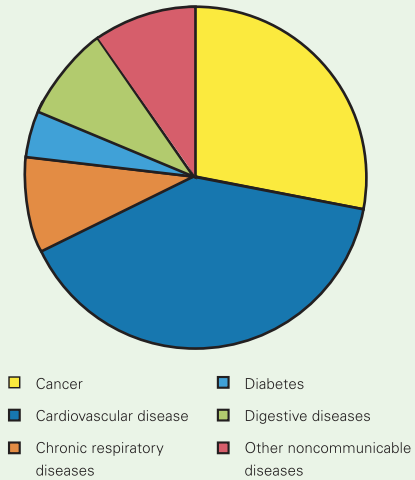
Differences in incidence of the many types of cancer between countries, after migration and over time have led to the conclusion that the great majority of cancers are caused by factors in our lifestyles or environment. Hence, reducing the exposure of populations to these factors has the potential to reduce the number of people who develop cancer.

Currently it is estimated that about 80 percent of cancers are due to our environment or lifestyle and therefore are potentially preventable.[1] For some cancers the risk factors have been clearly identified, while for others further research is needed.

GLOBAL OVERVIEW

Cancer has been noted as one of major life threatening Non Communicable Diseases worldwide. About 7.6 million people die from cancer which is equivalent to 21% of all NCD deaths globally. Nearly two thirds of all cancer diagnoses occurring in low- and middle-income countries.[2]

At least 30% of future cancer cases are preventable by comprehensive and carefully considered action taken. (WH01995).



Source: NCD reports 2010

Figure1: Proportion of global NCD deaths under the age of 70, by cause of death, 2008

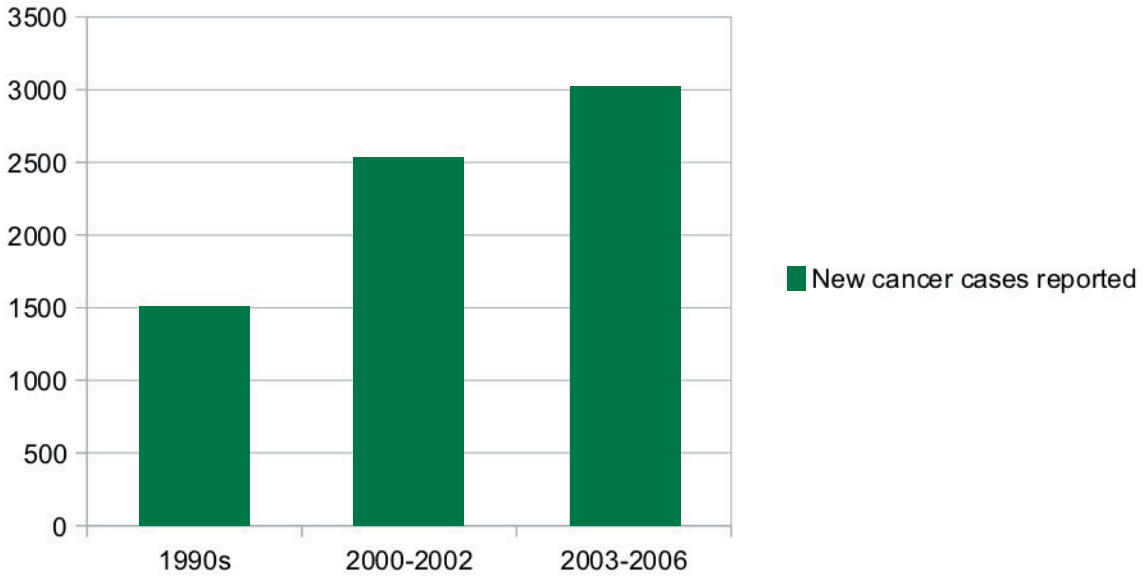
1 Doll and Peto 1981
2 Global Status Report on Noncommunicable Diseases 2010

Cancer burden in Tanzania

Tanzania, like many other countries, has an increasing number of people who are developing cancer due to diverse reasons. Cancer is now a major cause of morbidity and mortality in Tanzania, being the 5th cause of death among adult men and 2nd among female adults.[3] At present about 35,000 people develop cancer each year, and recent forecasts suggest that by 2020 this number will increase by 50%. This will cause increasing strain on already stretched health systems and resources.[4]

There has also been a notable increase in the number of new cancer cases for the past ten years. The table below indicates the rapid increasing in number of new cancer cases that have been reported in Tanzania between 1990 and 2006.

Figure 2: Reported Cancer Cases at the ORCI



The number of cases indicated here may however not depict the actual situation in the country due to the fact that about 80-90% of cancer patients are unable to access diagnostic and treatment facilities and end up dying at home or at traditional healers' clinics. It is also a matter of concern because about 75-80% of the patients attend to hospitals at advanced stages when it is not possible to completely cure them.

In Tanzania the leading cancers for both sexes are carcinoma of cervix, Kaposi's sarcoma and breast cancer. The first and the third can be screened and detected in their early stages if effective affordable cancer control programs are put in place. This happened in the western countries during the last thirty years and there has been a significant decrease in the incidence and mortality of cervical cancers.[5]

3 Cause of Deaths (WHO,2004)
4 Global Action against Cancer, UICC,2005
5 Globocan, IARC, 2002

Figure 3: Top 10 Cancer among males in Tanzania

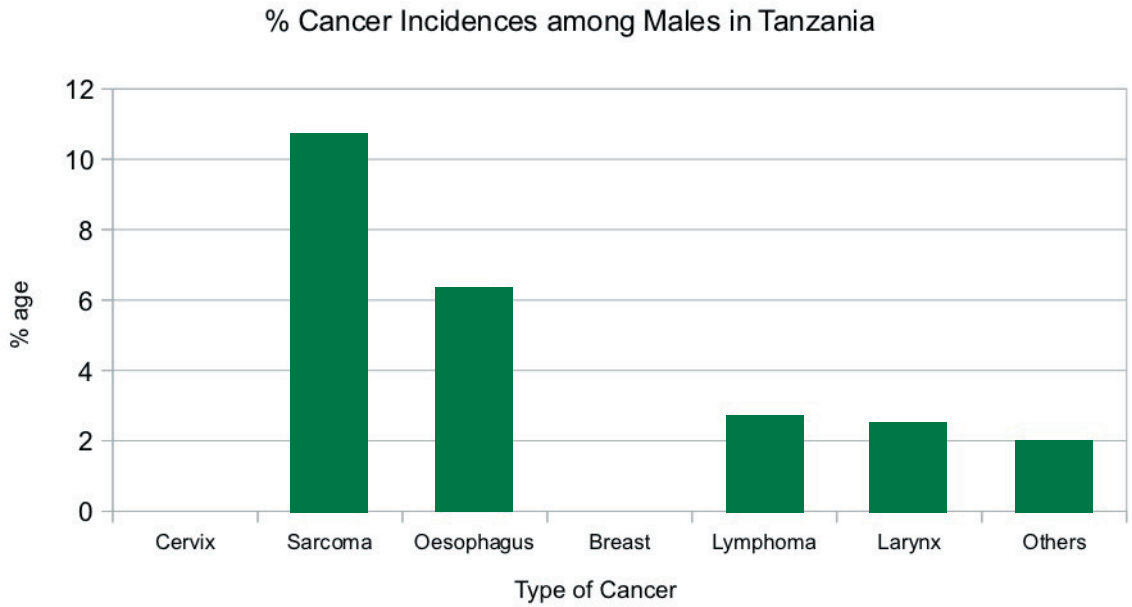


Figure 4: Top 10 Cancer among Females in Tanzania

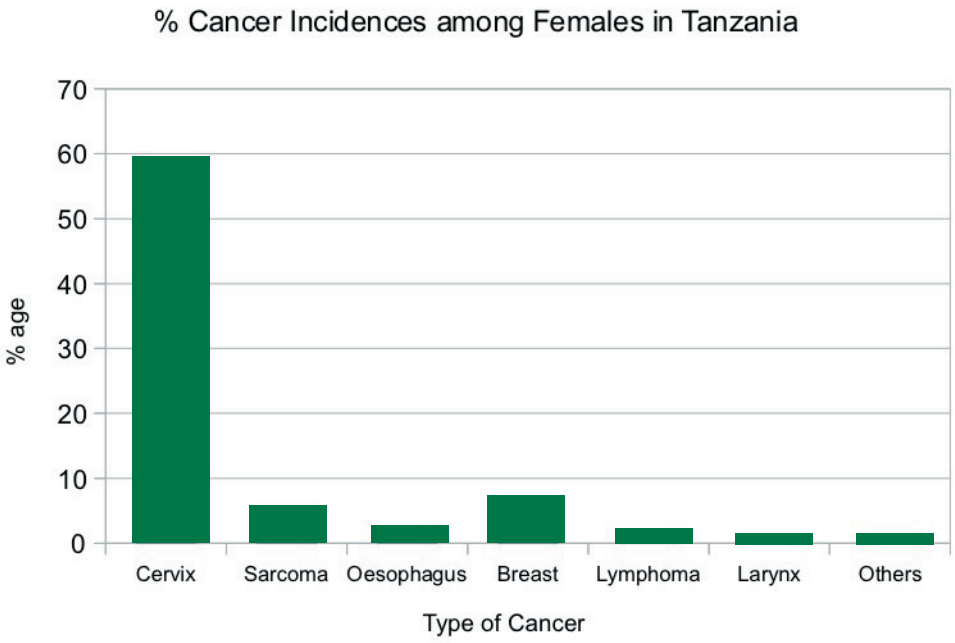


Figure 5: Map of Tanzania showing estimated new cancer cases in each region for 2007 (approx 1 in 1000 Tanzanians develops cancer each year) Move map to Cancer Situation in Tanzania.

CANCER PREVENTION AND CONTROL STRATEGIES

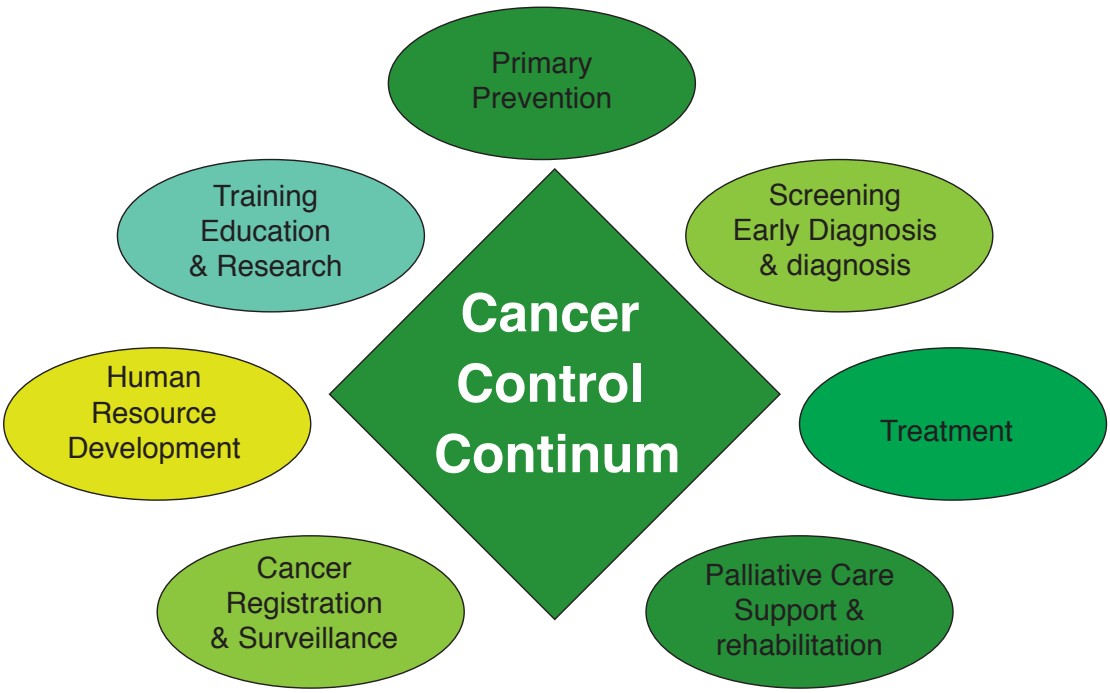
Control and prevention of cancer requires a planned, systematic and coordinated approach at all stages of a cancer continuum (primary prevention, early detection, registration, training, education, diagnosis, treatment, palliative care, and research). It also requires resources, which are always likely to be limited. It is eminent that the disease cannot be completely eradicated in the foreseeable future, but its effects can be minimized. The establishment of the NCCS offers the most rational means of achieving the maximum degree of cancer control, even when resources are constrained.

Cancer control strategy encompass all aspects of cancer care, however WHO in its document on *Managerial Guidelines of National Cancer Control Program* (NCCP) has identified and classified cancers which are preventable, easily detectable, and effectively treatable as well as those for which only palliative care is available. Other areas that need to be considered are equity of access to services, workforce development, need for relevant research, monitoring, data collection and analyses.

This provides the cornerstone for formulation of NCCP depending on country's cancer load and pattern. Enthusiastic commitment of the government as well as those of non-government organizations are highly needed to make the strategy effective. A glossy document that is not acted upon will have little effect on cancer in Tanzania. Stakeholder input and long-term involvement are essential to the success of this important initiative.

THE CANCER CONTROL CONTINUUM

Reducing the incidence and impact of cancer requires a planned, systematic and coordinated approach to a myriad of activities within what is known as the 'cancer control continuum'.



CANCER CONTROL SITUATION IN TANZANIA

Cancer control is an organized approach to reducing the burden of cancer through prevention; cancer registration; screening and early detection; treatment; education, training and human resource development; and palliative care.[6] In Tanzania, cancer control activities and services are undertaken by a wide range of government and nongovernment agencies involving both a paid and a volunteer workforce. For the past decades, most of the cancer control initiatives have been done by ORCI and to a lesser extent by NGOs such as MEWATA, PASADA, TTCF, TPCA, Muheza DDH and Selian Hospital. Their activities extend from reducing our risk of developing cancer, to the care of those of us who will ultimately die from the disease.

In 1991, the Tanzania Cancer Society was established with the priority of advancement and dissemination of knowledge concerning cancer, encouragement of research concerning cancer, promotion of cancer prevention, cancer screening, early diagnosis, treatment and good care for all patients suffering from cancer, improvement of training and treatment facilities in the field of cancer medicine. However, the association has been dormant for the past 3-4 years due to a number of reasons including; lack of funds and lack of commitment by the members after establishment of ORCI in mid-1990s. Efforts are on the way to revive the association.

6 http://www.moh.govt.nz/cancercontrol September 14, 2007

Primary Prevention

According to the WHO (2002), cancer prevention should be a key element in all cancer control programs. Cancer prevention focuses not only on factors that increase a person's chances of developing cancer (such as tobacco use), but also on protective factors such as a healthy diet and physical activity.

Prevention services include the use of health protection, health promotion and disease prevention strategies to alert the population to cancer risks, promote healthier lifestyles and create healthier environments that aim to reduce potential cancer risks. The prevention workforce, that involves both government and non-government personnel, includes public health, health promotion, primary health care and community providers.

Because people's exposure to risk factors is generally the result of a complex range of behavioral, social, economic and cultural factors that are not easy to change, efforts to reduce the incidence of these lifestyle-related cancers require a comprehensive approach. Overseas experience shows that the effectiveness of such approaches depends on their being implemented widely over a substantial period of time, with adequate resources, leadership and a sound research base.[7]

The important approach of primary cancer prevention is public cancer education on issues concerning possible risk factors. The cancer education can be carried out in several ways including use of print media, electronic media, public rallies, posters, brochures, banners, media interviews, scientific seminars etc.

The activities for primary cancer prevention in Tanzania focused on spreading awareness of better life styles such as optimizing diet and physical activities, reducing exposure to known risk factors and on reducing exposure to tobacco smoke through smoking prevention and cessation. The activities of cancer education have been carried out mainly by ORCI; however because of financial constraints, they have not received a constant wide coverage in the region.

Smoking is a serious public health problem and human consumption is the only and exclusive goal of tobacco production. Tobacco is associated with 3 of the top 5 cancers at ORCI i.e. cervical cancer, oesophageal cancer and head & neck cancers. Tanzania produces about 9,600 tons of tobacco annually; it is estimated that about 35% (range: 8% Mara to 42% Kilimanjaro) of Tanzanians aged 12 and above smoke tobacco regularly. A study done in Dar es Salaam found that about 27% of males and 5% of females aged 15 and above had history of smoking cigarettes.[8]

The Government of Tanzania through the Ministry of Health established an act on tobacco in 2003 which was enacted by the Parliament of Tanzania. The act concerns regulation of manufacturing, labelling, distribution, sale, promotion of tobacco products and smoking in specified areas. The major problem lies in the enforcement of the above law as there is no specific organ established to oversee the implementation of the above law in certain areas. For example, it is prohibited to sell cigarettes to under 18 year olds, but currently anybody can buy cigarettes without being asked his/ her age; it is also prohibited to sell tobacco products within a health care establishment, however this law is not followed. A study on smoking habits among youth students in secondary schools in Dar es Salaam

7 Cancer Council Australia 2001
8 Jagoe et al., 2002

showed a prevalence of ever-smoking of 7.9%.[9] In another study among cancer patients at ORCI [10]the prevalence of ever-smoking for cervical cancer (35.7%), lung cancer (60.0%), laryngeal cancer (83.0%) and oesophageal cancer (66.7%) was higher than for non-cancer patients (10.5%). These studies highlight the importance of controlling tobacco use in Tanzania.

Primary liver cancer is mostly attributed to Hepatitis B virus. It is estimated that by the age of 15 years, about 80% of children in Tanzania show signs of being infected with Hepatitis B virus and approximately 10% become chronic carriers. It has been found that the majority of infections are acquired between the age of 6 months and 5 years. Hepatitis B is a major risk factor for primary liver cancer although the number of new patients seen at ORCI is less than 50 per year. A large number of patients seen in consultant hospitals are not referred to ORCI due to limited treatment options. Hepatitis B viral infection can be prevented by vaccination with Hepatitis B vaccine, and this will help to prevent liver cancer and other liver diseases such as liver cirrhosis. Currently, Tanzania offers this vaccine in its Expanded Program on Immunisation (EPI).

Cervical cancer is caused by Human Papilloma Virus (HPV). Majority of women are exposed to the virus once they become sexually active. The ideal way to prevent HPV infection would be through vaccination prior to exposure. Recently in developing countries, HPV vaccines designed to protect against infections with high risk types (HPV16 and HPV18) are given to girls starting at an age of 9. However the cost is still high and it will not be affordable for majority of people unless it is included into EPI in developing countries. In Tanzania, at the moment HPV vaccines are available commercially in private hospitals although the cost is high.

Other primary cancer prevention measures in Tanzania although done in a limited capacity include; education on increased daily intake of vegetables, increased percentage of people who eat fruits every day, decreasing daily intake of fat, reducing intake of alcohol to modest amounts, and well informed sexual and reproductive health. A systematic baseline study on dietary consumption of vegetables, fruits, fats and alcohol among healthy as well as cancer patients in Tanzania may be helpful for evaluation purposes.

Cancer Registration and Surveillance

Cancer registry is an information system designed for the collection, storage, management and analysis of data on persons with cancer. There is no doubt that cancer is a major health problem in Tanzania and the need of studying its epidemiological, clinical and pathological aspects in this country cannot be overemphasized. One of the major tools for achieving this goal is the establishment of a population-based cancer registry. Currently Tanzania does not have any standard population-based cancer registry, but there are few hospital-based cancer registries.

Cancer control monitoring and surveillance involve the routine and continuous collection of cancer-related information on the incidence, prevalence, mortality, diagnostic methods, stage distribution, and survival of those with cancer and aspects of the care received. Monitoring of known risk factors such as tobacco smoking and the prevalence of population exposure to those risk factors is also part of cancer control surveillance. Surveillance will be a fundamental element of the NCCS. The data collection required for surveillance involves collaboration of service providers and, where necessary, continuing

9 Ngoma et al., 2007
10 Mwaiselage et al., 2007

legislative support. A fully functioning and dedicated cancer registry with appropriate expertise is a cornerstone of cancer control surveillance.

The ORCI hospital-based cancer registry was established in 2000 with the aim of improving the care of cancer patients in the hospital, research in treatment and contributing to the hospital planning and professional education. The current registry records cancer cases attending ORCI using manual forms and then into CANREG4 computer software. However, the registry faced a number of problems including regular crushing of the computer, outdated computer and inadequate staff with required knowledge. The cancer registry at Muhimbili National Hospital (MNH) in Dar es Salaam is a pathology-based registry which was established in 1966. Recording of the cancer cases is done using its own format. This registry keeps record of cancers diagnosed within the pathology laboratory. However, this registry stopped working for a number of years now. Kilimanjaro region has a population-based cancer registry which is run by KCMC since 1998 and records an average of 2660 cases per annum. The registry office is at KCMC but registry staff visit other hospitals for abstraction of cancer cases, although very occasionally due to limited resources.

For the past few years, a number of other major private hospitals in Dar es Salaam have employed (on permanent or temporary terms) pathologist for the diagnosis of cancer in their hospitals. These hospitals do keep records of the cancer diagnosed by their pathology laboratory. Therefore, it is difficult to know the true incidence of cancer with several stand-alone hospital-based registries. The establishment of a population-based registry will help to give the true magnitude of cancer in Tanzania. This can be done through a committee comprising members from major hospitals, WHO and MOHSW.

Early Detection (Screening and Diagnosis)

The aim of early detection is to identify the cancer when it is localized (before it has time to spread to other parts of the body).It is based on the observation that treatment will be more effective when the disease is detected early as there is a greater chance that curative treatment will be successful.

Screening for cancer is an organized process aimed at reducing the incidence or mortality from cancer. People who have no symptoms are invited (either directly or through publicity) to undergo a test or procedure, usually at regular intervals. Although a number of cancer screening tests have been developed, only a few have been proven effective. To be considered effective a screening test must meet a number of requirements established by the WHO and others.

Early detection efforts should be focused on those cancers where this has been shown to reduce cancer morbidity and mortality. Because early detection is only part of a wider strategy including diagnosis, treatment and follow-up, its effectiveness is dependent on the sustainability of other services along the cancer control continuum (WHO 2002).

Early detection of cancer can involve strategies like education about signs and symptoms and improved access to primary care so as to promote early presentation. Such strategies may also include endeavors to dispel myths, fears and negativity about cancer that may influence the likelihood of seeking medical advice. Early detection of cancer prior to the development of symptoms may occur through screening. In some instances, the purpose of screening is to detect cancer at an early stage of development, while in others cancer screening identifies precursors of cancer, the treatment for which can reduce the risk of cancer developing.

In Tanzania, efforts have been made by ORCI to educate the public on the early signs and symptoms of the common cancers. These efforts, although in a very limited capacity, involved production of brochures, posters and TV/Radio professional interviews. The messages from these activities may not have reached a wider audience and efforts to use other means were hindered by financial constraints.

In 2001, the ORCI in collaboration with IARC and INCTR introduced a cervical cancer screening program using Visual Inspection with Acetic Acid (VIA) and/ or Lugol's Iodine (VILI). This screening clinic located at ORCI is run free of charge. The unit screens women mainly from Dar es Salaam and surrounding regions. Until December 2010, a total of about 19000 women were screened for cervical cancer, and about 20 to 25 women were screened per day. The program started as a research project and later on it became a service. The program faces a number of constraints especially on advertisement and sensitizing women to attend the clinic.

In 2006, ORCI received funds from the government in order to conduct nationwide cancer control activities. The cancer control activities focused on cervical and breast cancer screening using VIA and BCE, respectively, in the regions in Tanzania. Furthermore, the program involves conducting cancer education programs, and training of clinicians and nurses in the regional as well as district hospitals on screening procedures. The ORCI team spent 14 days in each region to conduct the education, training and screening services. Till December 20io,thirteen regions have been covered, Kilimanjaro - Mwanga district,, Tanga - Muheza district,, Pwani - Bagamoyo, Morogoro region, Mwanza region, Lindi region, Iringa region, Ruvuma region, Mtwara region, Dodoma region, Manyara region, Dar es Salaam region, and Kigoma region have been covered ; and about 200 doctors and nurses have been trained. A total of 45,000 women have been screened in the regions. Plans are underway for establishment of screening clinics in the remaining regional hospitals.

In addition, a breast cancer screening campaigns was conducted by a non-governmental organization, Medical Women Association of Tanzania (MEWATA), in collaboration with a private TV and Radio station (ITV/Radio One) for women in Dar es Salaam (n = 7,259) and Mwanza (n = 11,668) in 2005; in Mbeya (23,102) in 2006 and in 2008 in Mtwara (n=8,028), Lindi (n=), Manyara (n=2,046) and Dodoma (n=6,875). The aim of the screening was to raise awareness on breast cancer, conduct breast clinical examination (BCE) and teach women how and when to do breast self-examination (BSE). This program faced a number of challenges among them lack of funds for making the program sustainable and difficulties in treatment of women diagnosed with cancer.

Furthermore, there are other organizations which conduct cervical cancer screening clinics in different parts of the country since 2009; they are JHPIEGO in Morogoro region particularly in Ifakara; Ground for Health in Kigoma region and PATH in Geita region. These clinics are supported by these international organizations.

There are other individual-based screening programs conducted by cancer specialists in government as well as private clinics for different types of cancers. However, the screening is done on an adhoc basis. Lack of mammography machines in many of the hospitals posed a big challenge.

The WHO (2002) describes cancer diagnosis as the first step to cancer management. It involves a combination of clinical assessment and a range of investigations, such as endoscopy, imaging,

histopathology, cytology and laboratory studies. Diagnostic tests are also important in identifying the extent to which the cancer may have spread (known as 'staging'). Cancer staging is necessary for determining options for treatment and assessing likely prognosis.

In Tanzania, there are no laid-down guidelines for the diagnosis and referral of cancer patients. Currently, if a patient is suspected or diagnosed with a cancer at a dispensary level, the patient will be referred to a district or regional hospital for confirmation of the diagnosis. From there, the patient will be referred to a consultant hospital for diagnostic procedures and surgical treatment (if possible) before being referred to ORCI for chemotherapy and/ or radiotherapy. In Tanzania, only four consultant hospitals have a pathology laboratory; Bugando Medical Centre in Mwanza, Mbeya referral hospital in Mbeya, Kilimanjaro Christian Medical Centre (KCMC) in Kilimanjaro and Muhimbili National Hospital in Dar es Salaam. There are other private as well as religious hospitals which have pathology laboratories in the country. This referral system is long and leads to late detection of cancer and delays in treatment.

Treatment

Treatment of cancer is complex, involving a range of therapies. These include surgery, radiation, chemotherapy or hormonal therapy, or a combination of these. The aim of treatment is to cure (i.e., to result in normal life expectancy), or to prolong and improve the quality of life of those with cancer (WHO 2002).

In Tanzania, a cancer treatment option includes surgery, radiotherapy, chemotherapy and hormonal therapy. However, treatment option may depend on the type of cancer and stage at presentation. At the moment, ORCI is the only specialized centre for cancer treatment offering chemotherapy, radiotherapy, and hormonal therapy. Consultant hospitals, major private hospitals, regional hospitals and some district hospitals may perform cancer surgery.

Palliative Care

Palliative care is total care of people who are dying from active, progressive diseases or other conditions when curative or disease-modifying treatment has come to an end. Palliative care services are usually provided by multidisciplinary teams who work with people dying from cancer, providing support and care for them and their families. Palliative care:

- affirms life and regards dying as a normal process
- aims neither to hasten nor to postpone death
- aims to provide relief from distressing symptoms
- integrates physical, social, emotional and spiritual aspects of care to help the dying person and their family attain an acceptable quality of life
- offers help to the family and carers during the person's illness and their bereavement

Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual (WHO 2002).

Palliative care for children represents a special field - albeit closely related to adult palliative care - whose principles also apply to other pediatric chronic disorders (WHO 2002).

In Tanzania as far as cancer treatment is concerned, about 80% of cancer patients present for treatment in advanced stages where the most that can be offered is palliative care. It is increasingly observed that a good number of HIV infected individuals would present with HIV-related cancers such as Kaposi's sarcoma, lymphomas, cervical cancer and leukemia. As such Tanzania saw the need of having these services in order to attain quality of life with minimal suffering among patients with incurable diseases as well as those who are terminally ill patients.

ORCI hospital-based palliative care services were established in 2001. This hospital-based service is managed by a team composed of oncologist, epidemiologist, public health specialists, sociologist, nurses and representatives from non-governmental organizations. The project is funded by Diana Princess of Wales Memorial Fund. One of the project objectives is to provide drugs for symptoms and pain control such as oral morphine. ORCI is permitted to procure powdered morphine from the Medical Stores Department. This is then processed into liquid oral morphine formulation at the pharmacy unit within ORCI. The team has conducted training program for primary health care providers in Kinondoni district in Dar es Salaam as part of the effort to establish a home-based care program. However much is needed to train health workers in other districts as well as to establish link with organizations providing home-based care for AIDS patients.

In Tanzania, there are other palliative care initiatives in centers such as Muheza Hospice Care (offers hospital-based care for HIV/AIDS and cancer patients), Pastoral Activities and Services for People with AIDS in Dar es Salaam (PASADA; offers care for HIV/AIDS patients), Selian Lutheran Hospital Hospice in Arusha and Winmware Hospice in Mbeya.

Training, Education, Research, and Human Resources Development

As in other areas of cancer control, research involves the use of multidisciplinary approaches. Cancer research seeks to identify and evaluate the means of reducing cancer morbidity and mortality and of improving quality of life of people living with, recovering from, or dying of cancer. Research should be carried out across the spectrum of cancer control and provide the basis for continual improvement.

As identified by the WHO (2002), the major categories of research are:

- laboratory (e.g. biological mechanisms underlying cancer)
- epidemiological (environmental or human behavioral factors)
- clinical (determining the most effective treatment)
- psychosocial and behavioral (e.g. factors impacting on prevention, the response to screening, and the impact of diagnosis and treatment)
- health systems and health policies (e.g. how services can best be implemented and organized)

Research is currently being conducted in Tanzania in most fields of cancer control, but the effort is somewhat uncoordinated and unevenly distributed, and varies greatly in quality and quantity. Although overseas research findings are an important source of new knowledge, there is much vital information that can only be obtained through Tanzania-based research.

Lack of funding for cancer research has been a major setback in trying to find the real population-based magnitude of cancer in Tanzania. Cancer research is necessary in order to add more scientific knowledge with regard to epidemiology, curative outcomes, psychological and behavioral patterns in Tanzania. Furthermore, findings from cancer research will help the government and ORCI to set priorities of cancer control activities.[11] In Tanzania, majority of cancer research have focused on epidemiological aspects and very few in laboratory and clinical aspects. This is because enough funds are needed for researches involving molecular studies as well as clinical trials. Cancer research have largely been conducted by researchers at ORCI, MNH, MUHAS, BMC, BUCHS, NIMR and scientists in other organizations.

Training and human resources development has not been a major priority in the management of cancer in Tanzania due to lack of resources. This has made career development as well as improvement in cancer care throughout the country a major problem. Currently, in Tanzania, a university program which offers specialized training for cancer treatment i.e. MMED clinical oncology training and a Bachelor's degree in Radiation Therapy Technology have been established at MUHAS.

11 ORCI (2006), Comprehensive Cancer Control Capabilities in Dar es Salaam, a Project Proposal

RATIONALE FOR THE NATIONAL CANCER CONTROL STRATEGY

Cancer control services in Tanzania have largely been a business of the ORCI. This has left gaps and fragmentation of service provision and delivery. A lack of coordinated foresight in workforce development over the last decade has resulted in chronic gaps and shortages, exacerbated by limited specialist training in some areas. This situation, coupled with limited resources, has resulted in delay for some people requiring treatment for their cancers. It has also resulted in inequitable access to services for socially disadvantaged and geographically isolated groups unable to afford the travel and related costs to cancer treatment centers.

Tanzania requires a cancer control strategy because:

1) Data from ORCI show high numbers of patients who report with late stage disease
2) Tanzanians expect that, irrespective of where they live, there will be reasonable and easy access to high-quality cancer care
3) Effective and efficient use of limited resources is crucial
4) Cancer control cannot be achieved by any single organisation or by government alone, and so cancer control needs to be a priority on the national health agenda
5) The strategy will develop and strengthen alliances among organisations and health professionals, both government and non-government, involved in the many aspects of cancer control
6) It will provide a mechanism by which cancer control activities can be systematically monitored and improved
7) The cost of treating cancer patients is very high

Therefore, the general aim of the strategy will be to provide an overarching framework to guide existing and future activities with a view of:

1. Integrating cancer control services into all levels of the existing healthcare delivery system
2. Reducing the overall incidence and impact of cancer on the Tanzania population
3. Preventing cancer so that as many of the population as possible enjoy cancer-free lives
4. Detecting cancer and providing treatment as early as possible
5. Ensuring that once a diagnosis is made those affected have prompt access to high-quality care throughout their experience of cancer
6. Assisting people, and their families, experiencing cancer to fully participate in all decision-making related to their treatment and care
7. Reducing barriers to cancer services for socially and geographically disadvantaged groups
8. Coordinating cancer research, training education, registration and surveillance
9. Furthering the development of the cancer control workforce and increasing specialist training opportunities
10. Regularly monitoring cancer control activities to ensure they are effective and remain effective.

WHO IS THE STRATEGY FOR?

The NCCS is for all Tanzanians, but it will have particular relevance to:

- government and non-government agencies whose work impacts on the delivery of cancer services and activities
- the wide range of individuals involved in the management and delivery of cancer activities and services
- those people affected by cancer

By promoting an integrated approach to the provision of cancer control activities and services, the strategy will:

- encourage and assist government and non-government service providers to work more closely together provide a common understanding of where they fit in the overall spectrum of cancer control

Strengths, Weaknesses, Opportunities, Challenges

SWOT

Strengths

- Political will and high level government commitment
- Enabling health policy
- Existing healthcare Infrastructure
- Current workforce
- The civil society
- Referral system
- Cancer institute (ORCI)
- Hospital- and population-based cancer control activities undertaken by ORCI and other stakeholders in cancer.

Weakness

- Lack of national cancer control strategy
- Lack of national cancer policy (currently its embedded in non-communicable disease policy)
- Lack of adequate human and financial resources to implement work already undertaken by ORCI
- Limited expansion of cancer diagnosis and treatment facilities

Oportunities

- Government willingness and readiness to support cancer control initiatives
- Commitment by PACT and other international development partners to support strategy development
- Three consultant/referral hospitals and a National hospital
- Five medical schools

Threats

- Workforce shortage
- Budgetary limitation
- Weak referral system

CHAPTER 2

STRATEGIC FRAMEWORK TO GUIDE EXISTING AND FUTURE ACTIONS

VISION

To make Tanzania among countries with low cancer burden

MISSION

To provide a coordinated, comprehensive and responsive, national cancer control program for Tanzania.

THE GOAL

The goal of the NCCS is to strengthen and accelerate the translation of cancer control knowledge into public health with focus on reduction of cancer cases and death as well as improvement of quality of life of patients and their families.

Thus, the Strategy will lead us towards a future where:

- Effective prevention will enable many Tanzanians to enjoy cancer-free lives
- Screening for common cancers will be a regular part of wellness activities
- Cancer will be detected early, and patients will have access to high quality treatment and care throughout the course of their illness, and receive support and rehabilitation when needed, wherever they live in Tanzania
- At the time when people are most vulnerable, confused and scared, the guide will provide assistance in treatment and care by ensuring that their needs are heard and met
- When cancer cannot be cured, or held in remission, and death is the destiny, it will happen without enduring unnecessary pain and by being close to families and friends
- There will be no fear that the health care system will abandon the people as cancer control services will be integrated into the existing healthcare delivery so that a minimum package of care will be available at each level

OBJECTIVES OF THE STRATEGY

The objectives of the strategy are to:

- Integrate cancer control into existing healthcare delivery system
- Reduce the incidence and impact of cancer
- Enhance quality of life for those with cancer
- Reduce inequalities with respect to access to cancer care

PRINCIPLES OF THE NATIONAL CANCER CONTROL STRATEGY

The NCCS sets principles to guide current and future actions towards cancer control including;

- Reduce health inequalities among different population groups.
- Ensure timely and equitable access for all Tanzanians to a comprehensive range of cancer services, regardless of ability to pay. This principle acknowledges the need to address, in a fair way, factors that impact on the ability of people to access services across the continuum of cancer control in sufficient time to be of benefit.
- Be of high quality. This principle identifies the importance of developing standards and guidelines, monitoring performance, and evaluating outcome to ensure high quality.
- Be sustainable. This principle identifies the importance of having sufficient resources, including human resources, required over a period of time to ensure a high standard of performance.
- Use an evidence-based approach. This principle acknowledges the need for actions to be based on best practice, which is supported by a systematic review of scientific knowledge and includes ongoing research and development.
- Reflect a person-centered approach. This principle recognizes a person's total wellbeing, including her or his physical, emotional, spiritual, social and practical needs within the context of family.
- Actively involve patients and communities. This principle identifies the need to have patients and communities involved in the decisions that affect them and to provide opportunities for patients' participation. It also means that services should reflect the needs of individuals and communities.
- Recognize and respect cultural diversity. This principle recognizes the importance of actions being culturally appropriate; that is, responsive to, and respectful of, the history, traditions and cultural values of all Tanzanians.
- Be undertaken within the context of a planned, coordinated and integrated approach. This principle underscores the importance of adopting a systematic and coordinated approach to ensure effectiveness and that resources are used efficiently. It also acknowledges that activities to control cancer should be part of a population-based approach to health.

STRATEGIC OBJECTIVES TO MEET THE GOALS

GOAL 1: *PRIMARY PREVENTION: Reduce the incidence of cancer through primary prevention*

Prevention approaches that aim to reduce exposure to cancer-causing risk factors offer the greatest health gain and most cost-effective form of cancer control. WHO also suggests that, based on what is already known about potential cancer risks and risk-reduction interventions, it is possible to prevent at least one-third of all cancers (WHO 2002).

Simply educating people to adopt healthy lifestyles does not on its own get people to change risk-taking behaviors such as smoking or over-eating. Coordinated public health policies and multi-faceted comprehensive interventions are needed to encourage and promote healthy social environments, and to support people to make healthy lifestyle choices, for instance supporting smokers to quit smoking.

This goal encompasses seven potential cancer risk areas, requiring approaches that aim to reach the whole population.

Key strategies:

1. Advocate for policies that promote and increase physical activity and healthy food choices in schools and at homes
2. Support evidence-based tobacco prevention and cessation programs targeting youths as well as adults
3. Raise school awareness about their role in primary prevention and engage schools in primary prevention education efforts by making materials and resources available for teachers
4. Conduct targeted, planned outreach activities to educate health care professionals, the media, the public and policymakers about cancer risk factors
5. Encourage development and implementation of model curricula for medical schools, nursing programs and other health profession schools
6. Advocacy for provision of vaccines that prevent infections that may lead to cancers

Strategic Objective 1.1: Reduce the number of people who develop cancers due to tobacco use.

Exposure to tobacco smoke increases the risk of developing lung cancer and many other types of cancers. Tobacco use is responsible for three of the top 5 cancers in Tanzania.[12]

Public health initiatives aimed at discouraging smoking and warning people of the dangers of smoking have not caused much decline of smoking among adults. About 27% of adult and 8% of youth have smoked during their life. Smoking rates among young people, particularly adolescents, show an upward trend.

12 ORCI Annual Report,2006

Priority areas for action

i. Reduce exposure to tobacco smoke and prevent the uptake of smoking through a comprehensive tobacco control program that includes increased health promotion, advocacy, cessation services, legislation, and support for international tobacco control efforts.

ii. Increase and normalize smoke-free environments (this requires stronger legislation, display and sales restrictions, and restrictions on promotion of tobacco).

iii. Support further development and implementation of strategies and activities directed towards lowering tobacco consumption among Tanzanians.

iv. Monitoring effectiveness of programs and further tobacco research.

Strategic Objective 1.2: Reduce the number of people developing physical inactivity and obesity-related cancers

More and more people are becoming obese in the Tanzanian population, particularly urban dwellers. People who are obese are more likely to develop certain types of cancer, including bowel, breast (post-menopausal) and esophageal cancer.

People who are physically active are less likely to develop bowel cancers, breast, prostate, lung and uterine cancers.

Priority areas for action

i. Foster increased physical activity through safe and accessible environments, active transport, workplaces, schools, communities and the mass media, and develop evidence and a rationale for interventions to address obesity as a risk factor for cancer.

ii. Provide and support comprehensive mass media campaigns that promote and support lifestyle change, physical activity, the development of safe and accessible public environments that encourage people to use more physically active means of transportation, such as walking, and advocate for and support workplaces that encourage employees to be physically active.

iii. Further build the evidence base for interventions addressing obesity as a risk factor and encourage action to prevent the development of obesity in children.

iv. Support appropriate interventions for the prevention of obesity, and to increase rates of physical activity for all Tanzanians.

Strategic Objective 1.3: Reduce the number of people developing nutrition-related cancers

There is evidence that links bowel and rectal cancers with a number of food and dietary habits. The composition of diet is considered important, in that fruit and vegetables, increased fibre and reduced fat intake may decrease the risk of certain types of cancers, including, oral, stomach and bowel cancers

Priority areas for action

i. Make the healthy food choice the easy choice by improving access to and availability of healthy foods
ii. Reduce the promotion of unhealthy food choices to children (for example, through advertising)
iii. Support a comprehensive campaign to raise awareness of healthy food choices
iv. Research into emerging nutrition issues.

Strategic Objective 1.4: Reduce the number of people developing infectious disease-related cancers

The presence of some infectious diseases has been associated with the development of liver cancer, cervical cancer and stomach cancer. For example, people who have had Hepatitis B and C are more likely to develop liver cancer.

Priority areas for action

i. Continue to promote safe sex practices
ii. Promote Hepatitis B and HPV vaccination, particularly for high-risk populations
iii. Protect blood product supplies from all possible infectious disease contamination
iv. Increasing health promotion around infectious disease-related cancers

Strategic Objective 1.5: Reduce the number of people developing alcohol-related cancers

About 22% of Tanzania's adult population drinks alcohol, and there is considerable variation in the amount consumed by individuals and regions.[13]

There is strong evidence that consumption of alcohol increases risk of cancers of the oral cavity, pharynx, esophagus and larynx. It probably also increases risk of cancers of the stomach, bowel, rectum, liver, breast and ovary.

Priority areas for action

i. Raise awareness on harmful effects of alcohol and its relationship with cancer.
ii. Reduce exposure to alcohol advertising.
iii. Promote health warnings on alcohol beverages about the relationship between alcohol and cancer.
iv. Increase taxation on alcohol products.

Strategic Objective 1.6: Reduce the number of people developing occupational-related cancers

A number of cases of occupational cancer occur each year in Tanzania, however, proper documentation of the cases for causal-link has not been done. Regulations are in place to protect workers against many known carcinogens. The Occupational Safety and Health Authority is responsible for ensuring that the legislative protection for workers is upheld in workplaces. Further efforts and actions are required to identify other potential carcinogens, develop strategies to reduce workers' exposure, and hence reduce the incidence of occupational cancers in the future.

13 www.who.int/substance_abuse/publications/en/united_republic_tanzania.pdf, September 2007

Priority areas for action

i. Strengthen and enforce the legal framework designed to protect workers against carcinogenic compounds in occupational settings and raise awareness of, and reduce exposure to, carcinogenic compounds in the workplace. This will include promoting smoke-free work plans and actions, and promoting physical activity in the workplace.
ii. Supporting occupational safety and health research into occupational exposures and improving the reporting of occupational cancers.

GOAL 2: *EARLY DETECTION (Screening and Diagnosis): Ensure effective screening, early detection and diagnosis to reduce cancer incidence and mortality*

The screening test is just one aspect of screening. The organization of the screening service and lines of accountability are also important in determining the impact of screening on the mortality or morbidity of the disease.[14] Because people screened do not have symptoms, more stringent quality assurance processes for each aspect of screening are required than often exist in clinical care. The structural framework used for screening services is important[15] and the methods of funding can also be important in determining the effectiveness of cancer screening.[16]

The diagnosis of cancer covers a breadth of activity, from presentation or identification of signs and symptoms, to confirmation (or elimination) of a cancer diagnosis. For those with cancer, the definitive diagnosis of cancer is the beginning of a journey, the duration of which can extend from months, to years, to a lifetime. Of prime importance is the timeliness of diagnosis. An excessive delay between the presentation or identification of initial symptoms and the definitive diagnosis can have a significant psychological effect on those with cancer and their family. This, along with a further delay to definitive treatment, can have an impact on the likely effectiveness of treatment.

Key strategies:

i. Develop a national program for early detection and screening for cervical, breast, Burkitts lymphoma and prostate cancer
ii. Establish and expand screening for cervical cancer, breast cancer, and prostate cancer using ORCI model in other hospitals.
iii. Establish and expand early detection for cervical, breast, Burkitts and prostate cancer
iv. Educate health care providers about strategies to encourage people to seek yearly physical examination
v. Develop and disseminate educational material on the importance of screening and early detection of cancer targeted toward limited-literacy, rural populations.
vi. Collaborate with all stakeholders to promote early detection, screening and cancer diagnosis
vii. Implement client and provider reminders and prompts to increase breast, cervical and prostate cancer screening uptake.

14 WHO 1986; Working Group
15 Shapiro, Coleman and Broeders, 1998
16 Calman and Hine 1997

Strategic Objective 2.1: Provide at a national level a systematic approach to cancer screening and early detection to ensure quality, acceptability and effectiveness

Providing high level strategic oversight of existing and potential cancer screening and surveillance would serve to provide the following benefits:

i. improved assessment and decision-making relating to screening programs and activities
ii. improved effectiveness and cost-effectiveness of cancer screening and familial cancer risk assessment
iii. culturally appropriate screening services
iv. reduction in inequalities between rural and urban in participation in cervical and breast screening programs
v. improved understanding of cancer screening and familial cancer risk assessment
vi. reduced cancer morbidity and mortality from well-organised, high-quality, acceptable evidence-based cancer screening

Priority areas for action

i. An effective national mechanism, such as a national cancer screening committee, is needed to provide high-level strategic oversight of existing and potential cancer screening.

Strategic Objective 2.2: Establish a process to assess the value of early detection of cancer other than that obtained through organized screening

There is evidence that survival from some cancers may be improved by early detection and treatment and that delay in detection and treatment do occur in some population groups in Tanzania due to several barriers to access.

A process is needed to identify where early detection of cancer reduces mortality and morbidity and to recommend strategies to increase early detection in those circumstances contributing to a determination of which cancers might benefit from early detection and treatment

Priority areas for action

To identify and implement strategies to reduce delays in diagnosis and treatment where these are shown to be effective in reducing mortality and morbidity from selected cancers. These strategies would include:

- A formal assessment of the reasons for delays in early detection of these cancers in Tanzania, focusing on who is affected and why
- The implementation of programs to overcome the delays, and the evaluation of their effectiveness

Strategic Objective 2.3: Educate health care providers about strategies to encourage patients about the importance of yearly physical examination.

Priority areas for action

i. Develop simple manuals to train health care providers
ii. Disseminate manuals to targeted persons
iii. Facilitate providers to advocate the strategies

Strategic Objective 2.4: Develop and disseminate educational material on the importance of screening and early detection targeted at entire population with more emphasis to rural and vulnerable groups.

Priority areas for actions

i. Develop simple posters/leaflets to advocate the importance of screening and early detection of cancers
ii. Disseminate materials to targeted population
iii. Facilitate advocacy of cancer screening

Strategic Objective 2.5: Adopt available local/ international Cancer Screening Programs to create a National Cancer Screening Program for early detection of cancers for which treatment exists.

Priority areas for actions

i. Develop a National Screening model for early detection of cancers
ii. Develop a National Screening Program for early detection of different cancers
iii. Facilitate process of program approval
iv. Disseminate materials to targeted Institutions

Strategic Objective 2.6: Collaborate with employers to promote cancer early detection, screening and treatment among their employees.

Priority areas for actions

i. Enforce National Screening program at work place
ii. Monitor and evaluate the effectiveness of the program at the sectoral level

Strategic Objective 2.7: Implement patient and provider reminders and prompts to increase breast and cervical cancer screening rates.

Priority areas for actions

1. Develop comprehensive guidelines for patient and provider reminders
2. Disseminate guidelines to targeted person
3. Facilitate providers to implement the guidelines
4. Facilitate easy accessibility of guidelines and reminders to the patients

GOAL 3: *TREATMENT: Ensure effective treatment of cancer to reduce morbidity and mortality*

Because cancer treatments are continually improving, many people are living longer with the disease. For them, cancer is now regarded as a chronic, or long-term, disease for which treatment (which includes a wide range of therapies) may be complex. At one time treatment was sequential: patients were referred to a specialist, usually a surgeon, and then to other cancer specialists for treatment. Now treatment includes combined modalities, with input from more than one discipline. In addition, many patients seek complementary and alternative therapies outside the medical system. As identified in Goal 4 (see below), support, rehabilitation and/or palliative care, which are essential in meeting the total needs of those with cancer and their family, is an integral part of treatment.

The need for a more integrated approach to treatment and care, with the patient as the focus, is recognized as critical for those with cancer and their families.

The way in which care is given and the coordination of the necessary expertise in multidisciplinary teams for the care of patients has developed apace, and approaches to more integrated care in the Tanzania setting require further development. Cancer diagnosis, treatment and care involve a wide range of providers.

Key strategies:

i. Develop and implement programs to identify and help eliminate barriers to high-quality cancer care, and advocate appropriate resources to ensure full access to services

ii. Increase access to treatment and completion of treatment and supportive services for all population.

iii. Work closely with government agencies, in Tanzania and in other countries where appropriate, to shape health care policies affecting cancer treatment.

iv. Provide expert opinion that establishes or clarifies standards of evidence-based cancer treatment.

v. Work to eliminate disparities in cancer treatment through the development of appropriate public policy initiatives, education, and practice.

vi. Develop and disseminate management tools and materials to enhance the delivery of cost-effective, high-quality cancer treatment.

vii. Increase collaboration with other regional hospitals to improve cancer treatment and practice management in their communities.

Strategic Objective 3.1: Provide optimal treatment for those with cancer

Optimizing survival and quality of life for those with cancer, means having access to treatment which on the basis of current evidence is known to provide best outcome. Tanzania has traditionally provided standard treatment for cancer at consultant hospitals and ORCI, but currently there is insufficient capacity (funding and staff) to cope with the demand for services. This has led to delays in access to some technologies essential for optimal treatment, resulting, for example, in some cancer patients having to travel to other countries for radiation treatment. Cancer is a complex disease, and its diagnosis, treatment and follow-up require the collaboration of a number of health disciplines. Close collaboration between disciplines - or multidisciplinary management - is thought to have led to more appropriate diagnosis and better selection of patients for treatment, particularly surgery, and has been shown to provide better outcomes (Department of Health, London 1995).

It is important that surgery and post-operative care take place under the care of skilled and experienced practitioners, in hospitals equipped to support these difficult problems. Optimal management requires different levels of service to function in a coordinated way. Effective liaison within a clinical group can be achieved by regular discussion through face-to-face meetings or other forms of communication. The benefits of some specific cancers being treated at a specialized unit need to be explored. Among the issues likely to impact on the establishment of such units is funding to facilitate inter-regional patient flows and the impact on the patient and family of having to travel to other regions.

Establishing what optimal treatment is, requires an ongoing and systematic process for evaluating and introducing new drug treatments and technologies when evidence emerges to support their use.

It is important that any process established to assess new cancer treatment technologies includes the capacity to compare the additional benefits gained from these treatments with benefits from existing treatments. This process should involve close collaboration with professional colleges and societies.

Priority areas for action

1. Ensuring availability of treatment facilities in zonal consultant hospitals
2. Expanding the use of multidisciplinary management (tumour boards)
3. Ensuring timely access to treatment currently recognized as providing optimal outcomes
4. Ensuring establishment of pediatric oncology services
5. Systematically assessing new treatment approaches.

Strategic Objective 3.2: Develop defined standards for treatment and care for those with cancer

Everyone with cancer needs access to a consistent standard of diagnosis, treatment and care throughout his or her cancer journey in order to achieve the best possible outcomes. Various approaches to achieve consistent standards include the use of national and regional guidelines and protocols, and interdisciplinary management through multidisciplinary clinics or teams. All of these require continuous monitoring against key performance measures to determine whether diagnosis, treatment and care reach recommended standards.

The application of guidelines and protocols in this country would be a practical and beneficial approach. There are few systems in place to monitor the use and effectiveness of guidelines and protocols relating to cancer diagnosis, treatment and care. More people with cancer should be offered the opportunity to take part in clinical trials, which are governed by defined protocols, and there is a need to set in place appropriate standards for timeliness of assessment, diagnosis and treatment. Protocols are also needed for the translation of research findings into practice (e.g. for using genetic testing in diagnosis, prognosis and treatment).

Priority areas for action

1. The development, implementation and ongoing refinement of regional and national standards, guidelines and protocols
2. Multidisciplinary approaches to treatment and care
3. The development of a minimal data set to measure performance and outcome.

Strategic Objective 3.3: Provide people experiencing cancers access to the best available drugs, surgery and treatment procedures

Cancer treatment technologies include procedures for diagnosis and staging (radiology and pathology), surgery, radiation treatment, chemotherapy, other drug therapies, and other more complex treatments such as bone marrow transplantation.

There is a need to establish a process for evaluating and allowing the introduction of newer drug treatments and technologies, when evidence emerges to support their use.

Many of the newly developed treatments being used in some countries are considerably more expensive than those currently used in Tanzania. Funding restraints have precluded their use here. It is important that any process established to assess new cancer treatment technologies includes the capacity to compare the additional benefits gained from these treatments against existing treatments.

Priority areas for action

i. Develop a nationally coordinated and consistent process for introducing new treatment technologies and drugs for cancer treatment.

ii. Develop a process to prioritize management of specific cancers with new treatment approaches.

iii. Continue to develop standards for the utilization, replacement and addition of radiation oncology equipment.

iv. Establish an expert working group of surgeons, including gynecologists, to identify major areas of surgical management which require discussion with a view to producing recommendations for surgical management.

GOAL 4: *PALLIATIVE CARE: Improve quality of life for those living with, recovering from and dying of cancer and their families through support, rehabilitation and palliative care*

Evidence shows that when people experiencing cancer receive good social and psychological support, their quality of life improves. In order to achieve the best possible outcome for people living with, recovering from, or dying of cancer, every aspect of their cancer treatment and care must recognize that person's total needs. Their physical, social, psychological, nutritional, information and spiritual needs are all equally important.

Strategic Objective 4.1: Improve the quality of life of people with life-threatening cancer and those for whom treatment is no longer effective

Palliative care focuses on maintaining and improving quality of life. This is especially important for those people who are diagnosed with cancers that are life threatening, and those for whom cancer treatment is no longer effective. When people access palliative care services, there should be a focus not only on effective symptom control but also on the emotional, spiritual, cultural and social factors that impact on the person and their family. Support for the family extends beyond the person's life. It also acknowledges bereavement.

Priority areas for action

i. Ensure policy formulation for palliative care services in the country
ii. Ensure availability of training program for palliative care for health workers
iii. Ensure availability of palliative care teams and services in all regional and district hospitals
iv. Ensure availability of home-based palliative care services

Strategic Objective 4.2: Ensure availability of oral morphine and other symptoms control medicines for patients with care in all regional and district hospitals

Oral morphine is essential for controlling pain especially among patients with advanced cancers.

Priority areas for action

1. Ensure policy formulation for oral morphine availability in the country
2. Ensure training on the use of oral morphine among primary health care workers
3. Ensure oral morphine is accessed by all patients in need

Strategic Objective 4.3: Improve return to work and quality of life of cancer patients through systematic assessment and appropriate multidisciplinary intervention for their social and vocational needs

About 20% of people with cancer will be long-term survivors, many of them of working age. Many will want to pursue a career or job for economic reasons or for personal satisfaction. Many will carry over residual effects of malignancy, or of the treatment, or both, which may affect them at work. These may be physical effects, or indirect psychological or social effects, which contribute to discrimination

as a latent sequel of chronic disease. As such, those who have been treated for cancer may encounter outright or subtle discrimination in the workplace, and may encounter other workplace or physical barriers to the return to work. Many of these damaging effects could be avoided or minimized if addressed in a timely manner as an integral part of an individual management plan.

Priority areas for action

i. Develop initial screening tool with 'triggers' to assess the vocational rehabilitation needs of cancer patients,
ii. Develop a vocational plan that includes realistic goals, timelines and outcomes for all participants.
iii. Undertake a campaign of public education and dissemination of information to address issues relating to discrimination and other potential barriers to returning to work.

Strategic Objective 4.4: Ensure all survivors of childhood cancer receive timely and ongoing support and rehabilitation, including early identification of and intervention in late effects

Although remarkable survival rates in malignancies of childhood have been achieved over the last 30 years, there is emerging evidence of major physical and psychological sequel which, if not identified early and addressed by intervention strategies, can result in serious loss of quality of life. Such 'late effects' can range in severity and are highly dependent on the specific cancer, the treatment received and the age of the child during therapy. Examples include problems with growth and cognitive abilities, learning difficulties, and endocrine complications resulting, for example, in infertility. Survivors of childhood cancer are also at risk of discrimination. The impact of such late effects of the disease or its treatment will result in escalating demand for other social services in Tanzania, such as education, employment and welfare.

Priority areas for action

i. The Ministries of Health and Education, in collaboration with relevant key stakeholders, should work cooperatively to oversee the development of national guidelines for the support and rehabilitation of children and adolescents with cancer.

ii. Appropriate educational and non-government services should implement these guidelines.

GOAL 5: *CANCER REGISTRATION AND SURVEILLANCE: Improve collection and analysis of information across the cancer control continuum through effective cancer registration, surveillance, monitoring and evaluation*

A National Cancer Registry should be part of the National Health Information System situated at the Ministry of Health and Social Welfare. It collects the histopathological diagnoses on all people with cancer and limited stage information on some cancers, and is able to provide information on cancer incidence and survival. However, resources are limited, and there are inefficiencies with the data collection, which is not linked to more accurate staging and lacks information on treatment modality and cancer-related morbidity. Cancer treating hospitals in Tanzania are attempting to develop clinical databases, but most are not comprehensive, and many collect incomplete data and are of limited utility.

Evaluation is essential in supporting decision-making processes (including planning, implementation and outcome evaluation) relating to cancer control activities and services. Continuous evaluation of standards and monitoring processes is also essential for assessing progress and enhancing effectiveness.

Monitoring the effectiveness of services is crucial. Influential and respected leadership will be needed to bring the various and diverse stakeholders together, to promote effective working relationships, and to share knowledge, skills, expertise and responsibilities in areas of common concern.

Key strategies:

- Promote policies for cancer notification in the country
- Ensure training for cancer registrars
- Promote establishment of hospital-based cancer registries
- Promote establishment of population-based cancer registries including national cancer registry

Strategic Objective 5.1: To establish hospital-based and population-based cancer registries in consultant hospitals and regions respectively.

Population-based cancer registry (PBCR) collects and processes data relating to a defined population/ geographical area, with epidemiological and public health aspects in mind; while the hospital based registry relates to data available within a specific hospital with focus on clinical care and hospital administration. If all health care facilities in a defined geographic area collect data on cancer cases as per standardized format, the pooling of data (with elimination of double entries) would result into a population based cancer registry. Hospital-based cancer registry collects cancer data visiting a particular hospital or through pathology laboratory.

Priority areas for actions:

i. Establish training centre and curricula for cancer registration in Tanzania
ii. Develop protocol for establishment of hospital-based cancer registries in consultant hospitals
iii. Develop protocol for establishment of population-based cancer registries in the regions
iv. Establish a committee to oversee the implementation of a pilot model project for PBCR for Dar es Salaam region
v. Assessment and mobilization of resources needed to improve data collection for Kilimanjaro PBCR

Strategic Objective 5.2: To establish a national cancer data collection and reporting

Data collected for the Cancer Registry has considerable potential for tracking the Establishing a nationally consistent minimal data set and coordinating with the established Cancer Registry at ORCI and other areas has the potential to create an effective cancer data system that would allow the analysis of treatment and reporting of treatment outcomes. This could be further enhanced by developing more detailed data sets for cancers identified to have particular priority for study and monitoring in Tanzania.

Links to other databases, such as those used in palliative care and primary care, and exploring the Health Management Information System (HMIS) could also help to further our understanding of the continuum of cancer care in the country.

Routine collection and analysis of more comprehensive cancer data could be used to assess how current policies, services and treatment programs are impacting on cancer, and be also used to identify where changes should be made and to measure the impact of these changes.

Priority areas for action

i. Ensure establishment of policy for cancer notification in the hospitals/country
ii. Develop a nationally coordinated minimum clinical data set that links with cancer registries.
iii. Improve Cancer Registry processes for data collection, analysis and reporting.
iv. Establish monitoring and reporting of cancer incidence and mortality.
v. Develop systems for ensuring the quality and accuracy of data.
vi. Develop additional performance indicators to monitor cancer care services.

GOAL 6: TRAINING, EDUCATION AND RESEARCH: Improve effectiveness of cancer control through training, education and research

The knowledge required for effective cancer control originates in three broad types of knowledge-generating activities: fundamental research, intervention research and surveillance.[17] Fundamental research allows us to better answer the questions: *What are the causes of different types of cancer and how can they be prevented? How does cancer start and how does it progress?* And *what is its impact on people's lives?* This type of research includes biomedical research (on the biological mechanisms underlying cancer), epidemiology (identifying the factors that increase or decrease the risk of developing cancer), public health, social sciences and economics.

Intervention research assesses the efficacy and effectiveness of actions designed to achieve cancer control. This includes testing strategies and methods relating to prevention, early detection, treatment, support and rehabilitation, and palliative care. It addresses the question, What works?

Surveillance is the collection, analysis and review of cancer-related data, and the dissemination of findings on prevalence, morbidity, survival and mortality. It provides information about practices that prevent cancer, facilitate screening, and improve care and the quality of life. It provides answers to the following: *What population subgroups have higher cancer risks?* Which *types of cancer have greater impact? How well* are *we preventing cancer incidence and controlling cancer progression?*

These three activities are the key inputs to knowledge synthesis, and the production of the evidence needed for effective prevention and control of cancer. Knowledge synthesis helps to answer: *What actions are needed now?* Thus, research allows the development of evidence-based priorities for cancer control.

Key strategies:

- Incorporate cancer research information into health care professional training programs.
- Advocate for funding for cancer research in Tanzania.
- Promote education of health care professionals about cancer research to advance the search for effective treatment modalities.
- Ensure preparation of training guidelines and curricula for oncology in medical schools
- Ensure establishment of oncology departments in medical schools

Strategic Objective 6.1: Extend and enhance research across the continuum of cancer control

There is a particular need for increased social, behavioral, environmental, and psychological and health services research to determine and evaluate better methods of preventing cancer; encouraging timely access to screening, diagnosis, treatment and palliative care services; and improving rehabilitation and support activities. Such research has great potential to substantially reduce the incidence and impact

17 Canadian Strategy for Cancer Control 1999

of cancer in Tanzania. Training as well as funding will be needed to stimulate research in fields that are presently under-investigated.

At present there is no single body responsible for identifying and remedying gaps in the spectrum of cancer research in Tanzania. Thus, there is a need to establish a strategic and continuing process for overseeing and facilitating cancer research, to provide a 'from research to policy practice' perspective for a NCCS (Canadian Strategy for Cancer Control 2001).

Priority areas for action

1. The development of a strategic and regular process for facilitating research relevant to cancer control in Tanzania
1. Ensure government funding for cancer research, training and education

Strategic Objective 6.2: To establish cancer education and training programs

Tanzania has a shortage of cancer experts i.e. oncologists (who treat cancer patients) and pathologists (who diagnose cancer) and oncology nurses who give nursing care. Training in oncology is still being regarded as a super specialty in most fields in medicine-such as gynecological oncology, medical oncology, pediatric oncology, needing someone to specialize in other disciplines first before super-specializing in oncology.

Priority areas for action

i. Facilitate trainings for candidates interested in the fields of oncology in overseas universities and colleges
ii. To develop training curriculum for oncology in Tanzanian colleges and universities
iii. To establish oncology departments in Tanzanian colleges and universities
iv. To expand cancer field practical works in the training/learning institutions and to include internship rotation in cancer institute
v. To develop educational packages for media personnel and the general public
vi. To develop basic cancer education material for schools

GOAL 7: HUMAN RESOURCES DEVELOPMENT: *Instill appropriate knowledge and skills to strategic staff in all areas of cancer control in Tanzania*

There is a pressing need to develop and implement a nationally coordinated cancer control human resources plan in this country. Currently, there are significant gaps in the cancer control workforce and a planned approach is required to enhance the preliminary work that has recently commenced on workforce planning. The planning and implementation for workforce development requires a collaborative and cooperative approach between the Ministry of Health and Social Welfare, ORCI and all other cancer service providers involved in screening, detection, diagnosis, treatment and palliative care.

Shortages of specialist professional staff in many areas of cancer care are affecting the ability to provide appropriate management and support for those likely to be affected by the disease and those already affected. Some of these workforce gaps and shortages have been well documented, particularly those in radiation therapy i.e. (Radiation oncologists, radiotherapy technologists and medical physicists, dosimetrists). There are also gaps in other cancer management disciplines such as in pathology, medical and surgical oncology, diagnostic radiology, and nursing oncology.

Gaps in other workforce groups that contribute significantly to cancer care are less well quantified; for instance, there are shortages of pathologists, radiologists, surgeons, general practitioners and community health workers. Further work is needed to identify the problems in these areas and their impact on cancer service provision.

There are still some issues to be resolved relating to the planning and development of the palliative care workforce. These include a culturally representative workforce and appropriate training for multidisciplinary team members, including counselors, chaplains, social workers, physiotherapists, occupational therapists and art therapists.

An analysis of the palliative care workforce has to be undertaken. Following this the Ministry of Health and Social Welfare and the sector will work together to establish national palliative care requirements and funding support for training, to raise awareness of the staff involved in primary cancer care and all professionals involved in cancer management.

With raising awareness and sensitization, demand for cancer management will increase. It is imperative that a coordinated and comprehensive strategic approach is taken to quantify gaps in human resource requirement across the board to cater for cancer control services, determine future staffing requirements and ensure that education and training resources are available to match those needs.

Priority areas for action

i. Sensitizing of health workforce at all levels on the magnitude of cancer
ii. Introducing in-service training at each locality
iii. Promoting and strengthening cancer training curriculum in all health care training institutions
iv. Devising mechanism for retention of specialist cadres

Strategic Objective 7.1: Identification and Rationalization of cancer control activities at different levels of Health system in Tanzania.

Priority areas for action

i. Agree on which tasks of cancer control can be carried out at what level of Tanzanian health system,
ii. Determine the manpower capacity and requirements at each level.

Strategic Objective 7.2: Identification of the training capacity (curriculum and human resource) of all health training Institutions.

Priority areas for action

i. Conduct survey of the different health Training Institutions in the country.
ii. Evaluate their syllabuses and staffing against Cancer control Management training needs
iii. Updating the Syllabuses and human resources requirements to cater for
iv. The needs of the cadres involved in cancer control and management.

Strategic Objective 7.3 Training and posting of the required workforce at each level

Priority areas for action

i. Conduct Training Needs Assessment.
ii. Develop short and long term training approach and budget for each cadre
iii. Carry out capacity and competence building for training institutions, and referral Hospitals,
iv. Jointly between training institutions and referral institutions carry out phased in service training for each cadre
v. Develop incentives for young doctors and other cancer care personnel to be motivated to go for further training.

Strategic Objective 7.4 Ensuring Recruitment and Retention of most of the trained personnel

Priority areas for action

i. Rationalize scheme of service for Health Personnel to include all cadres specific for Cancer control and management, (e.g. Medical Physicists, Radiotherapists etc)
ii. Provide attractive performance based remuneration to the trained staff
iii. Improve the working environment
iv. Provide and ensure availability of properly planned continuing education training schemes for cancer control and management professionals.

GOAL 8: *TANZANIA CANCER SOCIETY: Establish cancer society that will advocate for and effectively participate in sustainable cancer control initiatives*

Tanzania Cancer Association was established in 1991 with the priority of advancement and dissemination of knowledge concerning cancer, encouragement of research concerning cancer, promotion of cancer prevention, cancer screening, early diagnosis, treatment and good care for all patients suffering from cancer, improvement of training and treatment facilities in the field of cancer medicine. The association was formed as a non-charitable non-profit organization. The head office of the association was at ORCI and the association started with about 35 members with different professional background. However, the association was active for hardly 2-3 years since its establishment before it remained dormant to date due to a number of reasons including lack of funds and lack of commitment by the members. Establishment of National Cancer Control Strategy provides a great opportunity for reviving good intentions of the then Tanzania Cancer Association.

Key strategies:

- Promote alliance between NGOs that work on cancer control
- Promote fund-raising to support cancer control initiatives
- Promotion of cancer awareness campaigns

Priority areas for action

i. Collaborate with the Ministry of Health and Social Welfare in conducting cancer situation analysis in Tanzania
ii. Reviving memberships and Recruit more members (scholars)
iii. Work with the Ministry of Health and Social Welfare and other stakeholders in developing, reviewing and refining various related training curricular for cancer prevention and early detection
iv. Promote media communication, advocacy, and volunteerism
v. Collaborate with relevant NGOs, and other community-based organizations in various cancer control activities such as tobacco control
vi. Promote palliative care efforts in the country
vii. Devising various fund raising mechanisms for enabling seed granting
viii. Work with Ministry of Health and Social Welfare in conducting follow-up training programs across the country through the train-the-trainers approach.

Strategic Objective 8.1 Mobilize resources

Priority areas for action

i. To mobilize resources in partnership with American Cancer Society (ACS) for re-building the Tanzania Cancer Association, a non-governmental organization dedicated to community based cancer control, including prevention and early detection to access treatment and palliative care.

Strategic Objective 8.2 Community participation

Priority areas for action

i. To promote good health practices among Tanzanian communities through community sensitization and mobilization

Strategic Objective 8.3 Provide seed grants

Priority areas for action

i. To provide a competitive seed grant to members of the Tanzania Cancer Association to launch activities aimed at mobilizing improved coordination in cancer control and building the grassroots and community-based response to the fight against cancer.

GOAL 9: *INTEGRATION OF CANCER CONTROL INTO EXISTING HEALTH SYSTEM:*

Integrate cancer control interventions and services at all levels of the existing healthcare delivery system.

In order to ensure effective implementation of cancer control programs, integration into the existing health care system is essential. In Tanzania, there are three levels of health care facilities; level I comprising dispensaries and health centers, level II comprising district and regional hospitals and level III comprising consultant, referral and specialized hospitals. Thus, for effective cancer control in Tanzania, integration of the cancer control services is essential. This will ensure that these services are available, accessible and closer to the general population. It should also be noted that at each level of health care, a minimum package of services for integration will be identified and implemented.

Key strategies:

i. Identify package of interventions and services to be integrated at each level i.e. awareness creation, early detection, treatment, palliation, registration
ii. Assess the capacity of health care at each level i.e. dispensaries, health centers, district hospitals, regional hospitals, referral hospitals, specialized hospitals
iii. Institutional capacity building for cancer service delivery at each level
iv. Ensure community involvement
v. Identification of NGOs and private facilities that can contribute to cancer care activities
vi. Integrating cancer control services into existing national programs such as HIV/AIDS, school health

Strategic Objective 9.1: Revise and upgrade national level policies that reduce inequalities in respect to access to cancer care

The NCCS will set out to reduce inequalities in access to cancer care in the first instance. One of the Government's key priorities is to reduce inequalities in health.[18] Inequalities exist among socio-economic groups, ethnic groups, people living in different geographical areas, the young and the old, and males and females. These inequalities are not random and can be seen in the distribution of the cancer burden in Tanzania. Socially disadvantaged people have greater exposure to health risks and poorer access to health services, and experience a greater cancer burden.

Strategic Objective 9.2: Integrate cancer control services into all levels of health care delivery

It is important that cancer care services that can be integrated into all levels of health care through a minimal package are identified and implemented. The services that can be integrated are those that can utilize the human resource capacity and facilities that are available at the appropriate levels.

The services that should be integrated into the health delivery system include primary prevention, early detection and diagnosis, palliative care and chemotherapy for certain cancer types

18 National Strategy for Growth and Reduction of Poverty, Vice President's Office, 2005

Strategic Objective 9.3: Integrate cancer services into other health care services

The management of certain cancer types can be integrated into other services already established in the health system. For example, the management of Kaposi's sarcoma can be integrated into care and treatment centres which are located in most facilities caring for HIV/AIDS.

CHAPTER 3

INSTITUTIONAL AND MANAGEMENT FRAMEWORK

The NCCS will be operationalized at three levels - national, regional, and district-in an overlapping fashion. This section describes institutional arrangements which are in place and those which need to be created at different levels in order to ensure efficient implementation. The goal is to provide well - coordinated, effective, transparent, accountable and sustainable leadership and management structures at national, regional and district levels to implement the strategy as well as involve other stakeholders from the public, private and civil society sectors.

COORDINATION AND MANAGEMENT PRINCIPLES

The institutional and management framework provides guidance on how implementation of this strategy will be organized and coordinated. Translating the general orientation of the NCCS into concrete and detailed plans, programmes, projects and interventions and to ensure their effective implementation using gender responsive policies and a rights-based approach requires leadership at all levels and strong and well-coordinated multi-sectoral partnerships with the wide array of actors at national, regional and local levels.

The coordination and management of the NCCS is confronted with the following major challenges:

- To create a conducive environment and willingness among all partners to work together on a common goal;
- To support the integration of cancer control services and interventions into all levels of the existing healthcare delivery system;
- To provide the organizational and institutional settings and mechanisms for effective coordination and management, and
- To cooperate, share experiences and sustain trust among all partners.

COORDINATION FRAMEWORK

The government through the Prime Minister's Office, MOHSW and ORCI would do all it can to combat the increasing incidence of cancer in the country. Thus, this national cancer control strategy document is a step in the efforts to stem the tide of the rising cancer incidence in Tanzania. It is hoped that this document will help to indicate priority areas in the control against cancer in the country as well as to create the necessary environment for all stakeholders to make a commitment towards creating awareness within the population on the impact of cancer as well as the measures to be taken for control/prevention.

This document will guide the implementation of cancer control program and shall also galvanize stakeholders' actions. This document envisions co-operation among all sectors of the government machinery so that the objectives would be realized. NGOs and community groups also have a role to play and it is expected that the participatory nature of the strategies for cancer control would foster a program-success spirit among all stakeholders.

The coordination of this multi-sectoral strategy for cancer control is critical to efficient implementation and optimal use of resources. The Prime Minister's Office and MOHSW will serve as the overall leader in the coordination and implementation of the strategies. ORCI will serve as the leading organization in the implementation. The cancer control activities should be integrated into ongoing activities of ORCI, existing health care activities, ministries and other organizations, in order to maximize the use of existing manpower, financial and other resources. However, in order to develop the extensive and intensive programs necessary to have significant impact on the cancer problem, additional resources will be needed.

The government should, if necessary, increase funds for cancer control activities to be implemented by various sectors including NGOs as outlined in the strategy. This will include provision for additional key staff who will develop and coordinate the activities.

The NCCS will be managed by different structures at different levels. At national level the Prime Minister's Office and Ministry of Health and Social Welfare are the main oversight structures through the Tanzania Cancer Commission (TACC) and National Cancer Control Program (NCCP), respectively. They will oversee the implementation of activities by different stakeholders and will also ensure that the various key players plan and implement their cancer related interventions in a timely manner. The Ministries will also be responsible for the provision of technical guidance to the implementing institutions planning and implementing cancer interventions.

Roles and Functions of the Prime Minister's Office

- Establishment of Tanzania Cancer Commission (TACC)
- Coordinating the national responses to the increasing cancer burden
- Promoting research on cancer and foster linkages
- Providing basic cancer information
- Formulating policy guidelines for the response of Cancer burden and management of its consequences in mainland Tanzania
- Developing Strategic Framework for planning of all Cancer control programmes and activities within the overall national strategy
- Fostering national and international linkages among all stake holders through proper co-ordination of all Cancer control programmes and activities within the overall national strategy
- Mobilizing, disburse and monitor resources and ensure equitable distribution
- Ensuring Ministry of Local Government and Regional Administration integrates cancer control programs, in their activities

Roles and Functions of the MoHSW

- Spearhead establishment of National Cancer Control Program
- Ensuring Political and technical leadership for ministerial response
- Developing and refining the strategies for cancer control
- Advocating for the provisions of public/private resources
- Advocating for implementation of the strategies

Roles and Functions of ORCI

- Establish of National Cancer Institute for Tanzania at Mloganzila Complex
- Provide Leadership and coordination for the implementation of the strategies
- Provide technical support to other sectors as they develop cancer control activities.
- Coordinate and provide appropriate health-facility based and home-based specialized care for cancer patients.

Roles and Functions of the Zonal Referral Level

- Coordinate and provide appropriate health-facility based care for cancer patients.
- Assist in establishment of cancer treatment centers in the referral hospitals
- Provide appropriate infrastructure for cancer research and training

Roles and Functions of the Regional and District Level

- Implement sustainable innovative cancer control projects and activities, in line with the priorities of the cancer control strategy.
- Ensure integration of the cancer control activities into the existing health care package at regional and district hospitals

Roles and Functions of the Community Level

- Mobilize the communities for cancer control activities which are affordable and sustainable.

Civil society Organizations, Private Sector, and Associations of People Living with Cancer

- Coordinate among themselves as well as participating in coordinated activities to minimize duplication and enhance the establishment of complementary programs and activities.
- Mobilize resources for implementation of cancer awareness programs, cancer screening programs, community home-based care and researches.
- Advocate for the involvement of various sectors of government, regions, district and community level in cancer control.

Development Partners

- Mobilize resources for implementation of cancer control programs for the country
- Assist in supporting training programs for cancer control health personnel
- Provide technical support for cancer control programs

FROM THE NATIONAL CANCER CONTROL STRATEGY TO ITS IMPLEMENTATION

The next step will be the development of an implementation plan, which will translate the goals and objectives of the strategy into actions. The implementation plan will identify the actions needed by government and nongovernment service funders, planners and providers to achieve the overarching goals of the strategy.

It will not be possible to do everything at once and a phased introduction of the implementation plan may be required. It may be possible to implement some actions very early, whereas others will take longer to plan and carry out. The implementation plan will be developed with government and non-government agencies, health professionals and consumers involved in all aspects of cancer control.

It is anticipated that a Tanzania Cancer Commission (TACC) and National Cancer Control Program (NCCP) will be established and will oversee the implementation of the plan. The TACC will be under the leadership of Prime Minister's Office and NCCP will be under the leadership of the MOHSW. There will be several programs that will be implemented based on the goals and objectives of the strategies identified by this document. The funding of the activities will be mainly from a Government loan from funding agencies.

CHAPTER 4

NATIONAL HEALTH FINANCING OF CANCER

The Ministry of Finance and Economic Affairs should ensure they obtain loans from international or local funding organizations to implement the national cancer control program activities.

Furthermore, the Prime Minister's Office and Ministry of Health and Social Welfare should ensure adequate funding to district, regional, referral and specialized hospitals for recurrent expenditures on cancer control activities.

International donors and agencies particularly World Health Organisation and IAEA Program action for cancer therapy (IAEA-PACT) would be expected to play and important role as partners in the national response initiative to combat cancer. The government of Tanzania, donors and NGOs will therefore be the major actors in providing resources for national cancer control activities.

GOVERNMENT BUDGETARY ALLOCATION

Each year, a budgetary allocation to Tanzania Cancer Commission and National Cancer Control Program should be provided by the government through the Prime Minister's Office and MOHSW, respectively. In addition, government agencies and institutions should ensure increased collaboration in sourcing resources and technical assistance necessary for the implementation of programs and interventions throughout the country. Regional as well as district health management teams should be mandated to support appropriate level cancer control activities.

NATIONAL FUND FOR CANCER

A national cancer fund should be established with the main mission of raising funds to support cancer control programs in Tanzania. The funding should come from different sources including local as well as international partners.

CHAPTER 5

MONITORING AND EVALUATION FRAMEWORK

Monitoring and evaluation (M&E) will form an essential component of the NCCS and will seek to build on existing systems. An overall M&E plan will be developed. There will be a dedicated unit within the cancer control program which will be responsible for M&E. This unit will coordinate all M&E activities in the country and regularly produce and widely disseminate annual summary reports.

The evaluation unit will establish an overall evaluation protocol, as well as develop and oversee implementation of an evaluation plan. It will determine the needs, questions, methods, measures of effectiveness, and framework for evaluation of the NCCP activities and outcomes. The unit will also assess progress toward stated objectives and outcomes, and towards achieving the goals.

The unit will analyze the utilization and availability of resources, internal and external infrastructures. The evaluation report will be used to improve NCCP structure and function, the implementation process and improved progress towards desired outcomes.

The following areas will form part of the evaluation strategy for the NCCP for Tanzania:

- Primary prevention
- Early detection, screening and diagnosis
- Treatment
- Palliative Care
- Cancer, registration, Monitoring and surveillance
- Training and Research
- Cost effectiveness of different strategies
- Human resources development
- Tanzania cancer society

The evaluation strategy should lead to the development of effective strategies towards cancer control. Annual evaluation and data management shall be made at district, regional, zonal/referral and national level. Annual reports would be used to reflect achievements, failure to meet objectives, constraints and future plans. Regular implementers meetings will be used as a platform for reviewing strategies and coming up with recommendations for future activities.

CHAPTER 6

ACTION PLAN

The National Cancer Control Strategy includes 30 objectives to support the 9 goals, along with broad areas for action to achieve the objectives. After this strategy is done, the next step will include the development of an implementation plan that identifies evidence-based priorities for action, who is responsible for action in the government and non-government sectors, what can be undertaken with existing resources, and where additional resources will be needed. Stakeholder input will be an integral part of this process. Implementation planning will also involve defining the processes to manage, monitor and review the implementation process.

PURPOSE OF ACTION PLAN

The National Cancer Control Strategy provides a high-level framework for reducing the incidence and impact of cancer in Tanzania and reducing inequalities with respect to access to cancer care. This Action Plan outlines in detail how the Strategy's objectives can be achieved.

The actions identified in the Action Plan extend across the cancer control continuum, which includes primary prevention, screening, early detection, diagnosis and treatment, rehabilitation and support, and palliative care. They also include workforce development, research, data collection and analysis.

The Action Plan will have particular relevance to government and non-government agencies whose work impacts on the delivery of services and activities across the continuum of cancer control, individuals involved in the management and delivery of services, and those with cancer and their family.

The National Cancer Control Strategy and its Action Plan together provide an integrated approach to the planning, development and delivery of existing and new cancer control activities and services. The Action Plan incorporates and builds upon existing activities which contribute to cancer control. In many cases the recommended actions are designed to:

i. Close existing gaps in services, or reduce duplication
ii. Ensure greater coordination of services being developed
iii. Ensure that scarce and finite resources are used efficiently and effectively.[19]

IMPLEMENTING THE ACTION PLAN

The complex field of cancer control covers the work of a wide range of organizations and health professionals. Agencies from both the government and non-government sectors are involved in the many aspects of cancer prevention, detection, screening, diagnosis, treatment, support and rehabilitation, and palliative care. By promoting an integrated approach to the control of cancer in Tanzania, the National Cancer Control Strategy aims to encourage and assist government and non-government service providers to work more closely together, and to enable all providers to have a common understanding of where they fit into the overall spectrum of cancer control.

19 http:www.moh.govt.nz/moh.nsf/238fd5fb4fdo51844c256669006aed57/abed0ba681a637e1c006f22d7?OpenDocument September 14,2007

Leadership for Implementation

The implementation of the ten-year action plan will be through the National Cancer Control Program. The National cancer control program team will meet every six months and will have technical working groups/subcommittee which will meet monthly.

Working in Partnership

Cancer control is a multi-sectoral function which should not be confined to the health sector alone. Thus, Tanzania Cancer Commission will be established under the Prime Minister's Office. The main role of the commission will be to coordinate national response to cancer burden in the country. The need to involve other sectors originates from the fact that there are shared responsibilities in solving health problems related to cancer. The National Cancer Control Program team as well as Tanzania Cancer Commission will collaborate with internal and external institutions.

Internal institutions include - NIMR, MNH, MUHAS, NGOs, other medical school institutions, Health education. The Cancer control program will collaborate with them in such fields as training, research, awareness, treatment, screening and early detection, supervision, monitoring and technical advice.

External institutions include - American Cancer Society, BC cancer society (Canada), C-change, IARC, INCTR, UICC, NCI-USA, INCA-France, MDS Nordion, Open Society Institute, TATA Memorial Hospital, WHO. These international agencies are expected to support the cancer control program in soliciting and acquiring funds for program implementation, providing technical assistance, training of manpower at all levels, support to acquire materials and equipments, support in transport, support in program evaluation and any other assistance when need arises.

THE ACTION PLAN

The actions in the following plan are directed towards achieving the goals and objectives of the National Cancer Control Strategy. The objectives are grouped under the goals of the Cancer Control Strategy which cover the cancer continuum starting with primary prevention and ending with research and surveillance. For each objective (or group of objectives, where these are closely related) there is a template which identifies desired outcomes/ results, specific actions, Indicators, key stakeholders, inputs and timeframes.

All of the actions in the Action Plan are worthwhile contributions to cancer control. It is acknowledged that not every action within the Action Plan will be able to be tackled at once. Some can be implemented in the short to medium term. Other actions, perhaps of greater impact, will take longer to initiate.

The Steering Committee has considered all of the actions in the Action Plan and determined that the themes and actions annexed at the end are high priority intended for immediate implementation.

Table 1: National Cancer Control Strategy Goals, Targets and indicators

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
PRIMARY PREVENTION: Reduce the incidence of cancer through primary prevention													
Objective: Reduction by 20% of cancer incidence by 2022													
Establishment of cancer control policies and increase in public education	i. Advocate for policies that promote and increase physical activity and healthy food choices in schools and at homes											**MoHSW**	d Number of Tanzanians smoking or giving up smoking Overweight and obesity rate Average quantity of vegetables and fruits consumed by individual Average amount of alcohol consumed by individual HBV and HPV vaccination rate Cancer incidence data
	ii. Raise school awareness about their role in primary prevention and engage schools in primary prevention education efforts by making materials and resources available for teachers												
	iii. Conduct targeted, planned outreach activities to educate health care professionals, the media, the public and policymakers about cancer risk factors Encourage development and implementation of model curricula for medical schools, nursing programs and other health profession schools												
	iv. Advocacy for provision of vaccines that prevent infections that may lead to cancers												
Reduction of number of people who develop cancers due to tobacco use	i. Reduce exposure to tobacco smoke and prevent the uptake of smoking through a comprehensive tobacco control program that includes increased health promotion, advocacy, cessation services, legislation, and support for international tobacco control efforts.												
	ii. Increase and normalize smoke-free environments (this requires stronger legislation, display and sales restrictions, and restrictions on promotion of tobacco).												
	iii. Support further development and implementation of strategies and activities directed towards lowering tobacco consumption among Tanzanians												
	iv. Monitoring effectiveness of programs and further tobacco research.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Reduction of number of people developing physical inactivity and obesity-related cancers	i. Foster increased physical activity through safe and accessible environments, active transport, workplaces, schools, communities and the mass media, and develop evidence and a rationale for interventions to address obesity as a risk factor for cancer ii. Provide and support comprehensive mass media campaigns that promote and support lifestyle change, physical activity, the development of safe and accessible public environments that encourage people to use more physically active means of transportation, such as walking, and advocate for and support workplaces that encourage employees to be physically active.											**MoHSW**	
	iii. Further build the evidence base for interventions addressing obesity as a risk factor and encourage action to prevent the development of obesity in children.												
	iv. Support appropriate interventions for the prevention of obesity, and to increase rates of physical activity for all Tanzanians												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Reduction of number of people developing nutrition-related cancers	i. Make the healthy food choice the easy choice by improving access to and availability of healthy foods.												
	ii. Reduce the promotion of unhealthy food choices to children (for example, through advertising).												
	iii. Support a comprehensive campaign to raise awareness of healthy food choices.												
	iv. Research into emerging nutrition issues.												
Reduction of number of people developing infectious disease-related cancers	i. Continue to promote safe sex practices.											**MoHSW**	
	ii. Promote Hepatitis B and HPV vaccination, particularly for high-risk populations												
	iii. Protect blood product supplies from all possible infectious disease contamination.												
	iv. Increasing health promotion around infectious disease-related cancers												
Reduction of number of people developing alcohol-related cancers	i. Raise awareness on harmful effects of alcohol and its relationship with cancer.											**MoHSW**	
	ii. Reduce exposure to alcohol advertising. iii. Promote health warnings on alcohol beverages about the relationship between alcohol and cancer.												
	iv. Increase taxation on alcohol products.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Reduction of number of people developing occupational-related cancers	i. Strengthen and enforce the legal framework designed to protect workers against carcinogenic compounds in occupational settings and raise awareness of, and reduce exposure to, carcinogenic compounds in the workplace. This will include promoting smoke-free work plans and actions, and promoting physical activity in the workplace.												
	ii. Supporting occupational safety and health research into occupational exposures and improving the reporting of occupational cancers.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
EARLY DETECTION (Screening And Diagnosis): Ensure effective screening, early detection and diagnosis to reduce cancer incidence and mortality													
Objective: All zonal and regional hospitals with effective screening, early detection and diagnostic services by 2022													
Provide at a national level a systematic approach to cancer screening and early detection to ensure quality, acceptability and effectiveness	i. Establish a cancer screening committee at the national level to provide high-level strategic oversight of existing and potential cancer screening											**MoHSW**	Number of Tanzanians aware of cancer screening Number of cancer-specific screening guidelines
Establish a process to assess the value of early detection of cancer other than that obtained through organized screening	i. Identify and implement strategies to reduce delays in diagnosis and treatment where these are shown to be effective in reducing mortality and morbidity from selected cancers.											**MoHSW**	Number of cancer screening training courses - cervical, breast, prostate and childhood cancers
Educate health care providers about strategies to encourage patients about the importance of yearly physical examination.	i. Develop simple manuals to train health care providers											**MoHSW**	Number of health workers with trained/ with skills on early detection of cervical, breast and prostate cancer in regional hospitals
	ii. Disseminate manuals to targeted persons												
	iii. Facilitate providers to advocate the strategies												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Develop and disseminate educational material on the importance of screening and early detection targeted at entire population with more emphasis rural and vulnerable groups.	i. Develop simple posters/leaflets to advocate the importance of screening and early detection of cancers											**MoHSW**	Number of hospitals with teams for basic cancer screening, detection and diagnostic services Number of Tanzanians screened for cervical, breast, prostate and childhood cancers Incidence of cancer -cervical, breast, childhood and prostate Percentage of patients with early stage presentation Number of regional hospitals with histopathology services
	ii. Disseminate materials to targeted population												
	iii. Facilitate advocacy of cancer screening												
Adopt available local/ international Cancer Screening Programs to create a National Cancer Screening Program for early detection of cancers for which treatment exists.	i. Develop a National Screening model for early detection of cancers												
	ii. Develop a National Screening Program for early detection of different cancers												
	iii. Facilitate process of program approval												
	iv. Disseminate materials to targeted Institutions												

STRATEGY		TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Collaborate with employers to promote cancer early detection, screening and treatment among their employees.	i. Enforce National Screening program at work place												
	ii. Monitor and evaluate the effectiveness of the program at the sectoral level												
Implement patient and provider reminders and prompts to increase breast and cervical cancer screening rates	i. Develop comprehensive guidelines for patient and provider reminders												
	ii. Disseminate guidelines to targeted person												
	iii. Facilitate providers to implement the guidelines												
	iv. Facilitate easy accessibility of guidelines and reminders to the patients												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
TREATMENT: Ensure effective treatment of cancer to reduce morbidity and mortality													
Objective: All zonal and regional hospitals with effective treatment services by 2022													
Provide optimal treatment for those with cancer	i. Ensuring availability of treatment facilities in zonal consultant hospitals												Number of cancer-specific treatment guidelines Number of zonal hospitals offering radiotherapy, surgical and medical oncology services,
	ii. Expanding the use of multidisciplinary management (tumour boards)												
	iii. Ensuring timely access to treatment currently recognized as providing optimal outcomes												
	iii. Ensuring establishment of pediatric oncology services												
	iv. Systematically assessing new treatment approaches.												
Develop defined standards for treatment and care for those with cancer	i. Develop, implement and continuously refine regional and national standards, guidelines and protocols												Number of qualified cancer specialists at zonal and regional level Number of patients treated at zonal and regional levels
	ii. Multidisciplinary approaches to treatment and care												
	iii. Development of a minimal data set to measure performance and outcome.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Provide people experiencing cancers access to the best available drugs, surgery and treatment procedures	i. Develop a nationally coordinated and consistent process for introducing new treatment technologies and drugs for cancer treatment.												Quantity of cancer medicines used Frequency of cancer medicines stock-outs
	ii. Develop a process to prioritize management of specific cancers with new treatment approaches.												
	iii. Continue to develop standards for the utilization, replacement and addition of radiation oncology equipment.												
	iv. Establish an expert working group of surgeons, including gynecologists, to identify major areas of surgical management which require discussion with a view to producing recommendations for surgical management.												Number of treatment machines installed at ORCI and zonal hospitals
Improve quality of life for those living with, recovering from and dying of cancer and their families through support, rehabilitation and palliative care	i. Ensure policy formulation for palliative care services in the country												
	ii. Ensure availability of training program for palliative care for health workers												
	iii. Ensure availability of palliative care teams and services in all regional and district hospitals												
	iv. Ensure availability of home-based palliative care services												
Ensure availability of oral morphine and other symptoms control medicines for patients with care in all regional and district hospitals	i. Ensure policy formulation for oral morphine availability in the country												
	ii. Ensure training on the use of oral morphine among primary health care workers												
	iii. Ensure oral morphine is accessed by all patients in need												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Improve return to work and quality of life of cancer patients through systematic assessment and appropriate multidisciplinary intervention for their social and vocational needs	i. Develop initial screening tool with 'triggers' to assess the vocational rehabilitation needs of cancer patients.												
	ii. Develop a vocational plan that includes realistic goals, timelines and outcomes for all participants.												
	iii. Undertake a campaign of public education and dissemination of information to address issues relating to discrimination and other potential barriers to returning to work.												
Ensure all survivors of childhood cancer receive timely and ongoing support and rehabilitation, including early identification of and intervention in late effects	i. Oversee the development of national guidelines for the support and rehabilitation of children and adolescents with cancer.											**MoHSW** **MoEVT**	
	ii. Appropriate educational and non-government services should implement these guidelines.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	"18	'19	'20	'21	'22		
Target: i. Institute hospital-based cancer registry at all consultant hospitals and population based cancer registry at all zones by 2022 **ii. Routine annual national cancer reporting**													
Establish hospital-based and **population-based cancer registries in consultant hospitals and regions respectively.**	i. Establish training center and curricula for cancer registration in Tanzania												Number of zonal hospital-based cancer registries Number of population-based cancer registries Tanzania data in the IARC document on annual cancer incidence in five continents
	ii. Develop protocol for establishment of hospital-based cancer registries in consultant hospitals and regions												
	iii. Establish a committee to oversee the implementation of a pilot model project for PBCR for Dar es Salaam region												
	iv. Assessment and mobilization of resources needed to improve data collection for Kilimanjaro PBCR												
Establish a national cancer data collection and reporting	i. Ensure establishment of policy for cancer notification in the hospitals/ country												Number of reports and dissemination workshops
	ii. Develop a nationally coordinated minimum clinical data set that links with cancer registries.												
	iii. Improve Cancer Registry processes for data collection, analysis and reporting.												
	iv. Establish monitoring and reporting of cancer incidence and mortality.												
	v. Develop systems for ensuring the quality and accuracy of data.												
	vi. Develop additional performance indicators to monitor cancer care services.												

STRATEGY	ACTIVITY	TIMEFRAME											RESPONSIBLE	INDICATORS
		'13	'14	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Target **Enable ORCI to fulfill its role as a national cancer institute in training, education and research by 2022** **Public health education programs on cancer control developed and implemented** **Cancer awareness and sensitivity raised among health professionals by 2022**														
Extend and enhance research across the continuum of cancer control	i. Develop a strategic and regular process for facilitating research relevant to cancer control in Tanzania													Number of cancer research projects conducted in Tanzania Number of cancer research outputs from Tanzania published Funds allocated for cancer research in Tanzania Number of cancer control intervention improvements/ innovations based on national research findings Number of public health programs developed and delivered Level of cancer awareness in the community Number of health Professionals sensitized on cancer control each year Number of cancer patients presenting with early stage disease
	ii. Ensure government funding for cancer research, training and education													

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Establish cancer education and training programs	i. Facilitate trainings for candidates interested in the fields of oncology in overseas universities and colleges												
	ii. To develop training curriculum for oncology in Tanzanian colleges and universities												
	iii. To establish oncology departments in Tanzanian colleges and universities												
	iv. To expand cancer field practical works in the training/learning institutions and to include internship rotation in cancer institute												
	v. To develop educational packages for media personnel and the general public												
	vi. To develop basic cancer education material for schools												
HUMAN RESOURCES DEVELOPMENT: Instill appropriate knowledge and skills to strategic staff in all areas of cancer control in Tanzania													
Target **Have multi-disciplinary cancer management teams at all consultant hospitals by 2022** **Tanzanian institutions with accredited postgraduate programs in oncology and oncology-related fields**													
Identification and Rationalization of cancer control activities at different levels of Health system in Tanzania.	i i. Agree on which tasks of cancer control can be carried out at what level of Tanzanian health system.												Number of trained staff skilled to provide cancer management Number of University accredited oncology training programs conducted in Tanzania
	ii. Determine the manpower capacity and requirements at each level.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Identification of the training capacity (curriculum and human resource) of all health training Institutions.	i. Conduct survey of the different health Training Institutions in the country.												Number of oncologists trained Number of approved curricula and training programs for cancer control
	ii. Evaluate their syllabuses and staffing against Cancer control Management training needs.												
	iii. Updating the Syllabuses and human resources requirements to cater for the needs of the cadres involved in cancer control and management.												
Training and posting of the required workforce at each level	i. Conduct Training Needs Assessment.												Approved scheme of service for health care staff including cadres in cancer control
	ii. Develop short and long term training approach and budget for each cadre.												
	iii. Carry out capacity and competence building for training institutions, and referral Hospitals.												
	iv. Jointly between training institutions and referral institutions carry out phased in service training for each cadre.												
	v. Develop incentives for young doctors and other cancer care personnel to be motivated to go for further training.												

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Ensuring Recruitment and Retention of most of the trained personnel	i. Rationalize scheme of service for Health Personnel to include all cadres specific for Cancer control and management, (e.g. Medical Physicists, Radiotherapists etc)												
	ii. Provide attractive performance based remuneration to the trained staff.												
	iii. Improve the working environment.												
	iv. Provide and ensure availability of properly planned continuing education training schemes for cancer control and management professionals.												

TANZANIA CANCER SOCIETY: Establish cancer society that will advocate for and effectively participate in sustainable cancer control initiatives													
Target: To become a leading advocate and fundraiser for cancer control by 2022													
Mobilize resources	Mobilize resources for re-building the Tanzania Cancer Association, a non-governmental organization dedicated to community based cancer control, including prevention and early detection to access treatment and palliative care.											**MoHSW** **American Cancer Society (ACS)**	Cancer society leadership
Community participation	Promote good health practices among Tanzanian communities through community sensitization and mobilization												Number of members Level of awareness of cancer among the general population

STRATEGY	ACTIVITY	TIMEFRAME										RESPONSIBLE	INDICATORS
		'13	'14	'15	'16	'17	'18	'19	'20	'21	'22		
Provide seed grants	Provide a comprehensive seed grant to members of the Tanzania Cancer Association to lunch activities aimed at mobilizing improved coordination in cancer control and building the grassroots and community-based response to the fight against cancer												Amount of funds raised Number of cancer control activities done Number of research projects supported Number of publications

INTEGRATION OF CANCER CONTROL INTO EXISTING HEALTH SYSTEM: Integrate cancer control interventions and services at all levels of the existing healthcare delivery system													
Target: Cancer services integrated into the existing healthcare delivery system by 2022													
Integration and Coordination of Cancer control into existing policies and health services	i. Revise and upgrade national level policies that reduce inequalities in respect to access to cancer care												National Cancer Control Program (NCCP) and Tanzania Cancer Commission (TACC) Funds for NCCP and TACC Number of cancer control activities and projects incorporated Number of cancer control coordination tactivities and reports at all levels Number of regional and district hospitals offering the minimum cancer services package Amount of funding allocated for cancer control by each regional and council/district health management team Number cancer patients receiving cancer care at each level
	ii. Integrate cancer control services into all levels of healthcare delivery iii. Integrate cancer services into other health care services												

CHAPTER 7

THE NATIONAL CANCER CONTROL PROGRAM FRAMEWORK

Tanzania will need to design and implement a national cancer control program in order to realize goals and objectives stipulated in this strategy. The prime objectives of a cancer control program are a reduction in cancer mortality and cancer-associated morbidity. Reduction of incidence is thus an essential prerequisite for cancer control. The WHO in its document on Managerial Guidelines of National Cancer Control Program (NCCP) has identified and classified cancers which are preventable, easily detectable, and effectively treatable and those for which only palliative care is available. This provides the cornerstone for formulation of NCCP in different countries depending on their cancer load and pattern. It is a known fact that a well-conceived, well-managed national cancer control program lowers cancer incidence and improves the life of cancer patients, no matter what resource constraints a country faces. This is in line with vision and mission of our national cancer control strategy

In essence it is a public health program designed to reduce the number of cancer cases and deaths and improve quality of life of cancer patients, through the systematic and equitable implementation of evidence-based strategies for prevention, early detection, diagnosis, treatment, and palliation, making the best use of available resources. The program will evaluate various ways to control disease and implement those that are the most cost-effective and beneficial for the largest part of the population. It will promote the development of treatment guidelines, place emphasis on preventing cancers or detecting cases early so that they can be cured, and provide as much comfort as possible to patients with advanced disease.

The National Cancer Control Programs, policy and managerial guidelines, published in 2002, provide an updated framework for policy development and program management that can be adapted to socioeconomic and cultural contexts in all countries. This document provides information on planning, implementation, management and evaluation to help policy-makers and program managers make the most efficient use of the available resources, develop feasible, equitable, sustainable, and effective national cancer control programs.[20]

NATIONAL CANCER CONTROL PROGRAM COMPONENTS

The strategy recommends the following to be included in the National Cancer Control Program:

1. Cancer Prevention focusing on
   (a) School anti-tobacco curriculum for Ministry of Health and Ministry of Education for all primary and secondary students;
   (b) Mass public cancer awareness campaign to de-stigmatize cancer and reduce equating of a cancer diagnosis with death, driving patients to primary care providers (this links to early detection/ diagnosis below);
   (c) Cancer continuing education for all primary care practitioners
   (d) HPV vaccination program for girls aged 9-13 years (e) other behavioral risk factor reduction.

20 http://www.who.int/cancer/nccp/en/September 14,2007

2. National Early Detection and Cancer Screening program:

   (a) Awareness creation among public through mass cancer awareness campaign;

   (b) Education for primary care practitioners and public health workers, as well as traditional healers, to refer patients upon certain clinical presentations and to de-stigmatize cancer and reduce fear of treatment;

   (c) Increase early referral for early diagnosis and treatment to Ocean Road Cancer Institute (ORCI);

   (d) Development and distribution of a tailored cancer awareness and education module to such areas as mosques and churches, again focusing on de-stigmatization and advocating patient awareness and early self-referral.

3. Cancer palliation: funds should be included to expand and execute a model cancer palliation service in Tanzania, based on state-of-the-art learning and experience in other African nations (e.g., Uganda), and building upon the existing initiatives of the Tanzania Cancer Association, the Tanzania AIDS commission, and the International Association for Hospice and Palliative Care.[21]

4. Integration of cancer control services into all levels of the existing healthcare delivery system.

5. Monitoring and Evaluation Unit.
   i. Epidemiological research into risk factors for cancer in order to determine the baseline parameters upon which the success/ evaluation of the program can be based;
   ii. Population-based Cancer Registration to track the pattern of new cancer patients.

6. Human Resource Development to ensure availability of required workforce for cancer control activities

7. Expansion of cancer treatment facilities in the country

8. Training, education and research into cancer control activities

21 ORCI (2006), Comprehensive Cancer Control Capabilities in Dar es Salaam, a Project Proposal

APPENDICES

APPENDIX 1: THE NATIONAL CANCER CONTROL STRATEGY STEERING COMMITTEE

Name	Position, Institution
Dr Margaret Mhando	Chairperson, Director of Curative Services MOHSW - DSM
Dr Twalib Ngoma	Secretary, Executive Director ORCI - DSM
Dr Peter Mmbuji	Member, Head of Epidemiology, MOHSW- DSM
Dr Godfrey Kiangi	Member, Head of Health Education, MOHSW - DSM
Dr Marina Njelekela	Member, Chairperson MEWATA and Lecturer MUHAS - DSM
Dr Hassan Chande	Member, Pathologist MUHAS/MNH - DSM
Mr Abraham Nyanda	Member, Executive Director TAEC-ARUSHA
Dr Charles Majinge	Member, Executive Director BMC- MWANZA
Dr Joseph Mbatia	Member, Acting Director of Non-Communicable Disease and Mental Health, MOHSW -DSM
Prof Manoris Meshack	Member, Vice Chancellor, St. Johns University - DODOMA
Dr Mohamed Amri	Member, Disease Prevention and Control Officer, WHO Tanzania - DSM
Dr Abdulla Saadala	Member, Director of Mnazi Mmoja Hospital and acting Director of Curative Services, MOHSW -ZANZIBAR
Prof Leonard Lema	Member, Executive Director MNH - DSM

APPENDIX 2: THE NATIONAL CANCER CONTROL STRATEGY SECRETARIAT MEMBERS

Name	Position, Institution
Dr Twalib Ngoma	Executive Director, ORCI - DSM
Dr Julius Mwaiselage	Chief of Division for Cancer Prevention Services, ORCI - DSM
Dr Charles Matiko	Program Officer, FHI Tanzania - DSM
Dr Diwani Msemo	Director of Medical Services, ORCI - DSM
Ms Lilian Mosha	Executive Secretary ORCI - DSM

APPENDIX 3: THE NATIONAL CANCER CONTROL STRATEGY WORKING GROUPS

Group	Members
Primary Prevention	Dr Godfrey Kiangi Dr Mohamed Amri Co-opted members - Dr Marina Njelekela
Early Detection and Diagnosis	Dr Hassan Chande Dr Charles Majinge Dr Abdulla Saadala
Cancer registration	Dr Peter Mmbuji
Treatment	Prof Leonard Lema Mr Abraham Nyanda Co-opted members - Dr Diwani Msemo
Palliative Care	Dr Twalib Ngoma Co-opted members - Dr Diwani Msemo
Training, education and research	Dr Joseph Mbatia
Human resource development	Prof Manoris Meshack Co-opted member- Ms Melanie Swai
Tanzania Cancer Association	Dr Marina Njelekela Co-opted members - Mr Erastus Mwilike, Dr Florence Temu, Dr Dominista Kombe

APPENDIX 4: STAKEHOLDERS' WORKSHOP PARTICIPATING INSTITUTIONS

Institution	Town
MOH&SW- Mainland	Dares Salaam
Mewata	Dares Salaam
MUCHS/MNH	Dar es Salaam
MNH	Dares Salaam
Dodoma University	Dodoma
WHO Tanzania	Dares Salaam
MOH&SW -Zanzibar	Zanzibar
Mwanga Distrist	Mwanga
Mbeya Referral Hospital	Mbeya
Cancer Survivors	Dares Salaam
Lindi Regional Hosp	Lindi
RMO office -Arusha	Arusha
RMO office - Mbeya	Mbeya
Peramiho Hosp	Songea
TPCA	Dares Salaam
CDC	Dares Salaam
RMO office - Morogoro	Morogoro
Axios	Dares Salaam
RMO office - Songea	Songea
DMO office - Sumbawanga	Sumbawanga
ORCI	Dar es Salaam
TTCF	Dares Salaam
DMO - Temeke	Dares Salaam
TFDA	Dares Salaam
HKMU	Dar es Salaam
TFNC	Dares Salaam
APHFTA	Dar es Salaam
IMTU	Dares Salaam
RMO Office	Dares Salaam
DMO office	Muheza
RMO office - Dodoma	Dodoma
NHIF	Dares Salaam
ICPA	Dares Salaam

APPENDIX 5: STRATEGY DEVELOPMENT PROCESS

Preliminary Planning Phase

The NCCS was developed by a broad partnership of public and private stakeholders whose common mission was to develop a national strategy to reduce the burden of cancer in Tanzania. A steering committee made up of 15 individuals guided the work of preparing this strategy document. The result of this process was to establish a strategy document which will enhance the infrastructure for cancer control activities.

The strategy is designed to promote a nationwide coordination of public and private cancer control efforts, provide a framework for action to reduce the burden of cancer, and increase communication and collaboration among all those involved in working with cancer care.

Formation of the Steering Committee for National Cancer Control Strategy

Following a commitment from the Minister of Health and Social Welfare, the Steering Committee for NCCS, with expertise in the various aspects of cancer control, was formed in May 2007 to oversee development of the strategy. The PACT funded the development of the strategy. Working groups were established to advise the Steering Committee and to recommend priorities for the strategy.

Engaging a Consultant

The development of the NCCS was facilitated by a secretariat made up of public health specialist, oncologist and an external consultant. The engagement of secretariat to assist the development of the strategy was approved by the inaugural meeting of the national cancer control steering committee. The secretariat collaborated with several governmental as well as non-governmental organizations, stakeholders and other interested individuals in formulating the strategy.

Comprehensive Literature Review

Working groups of the steering committee as well as the secretariat did extensive literature review to inform the strategy. Literature reviewed range from other countries' national cancer control strategy documents, related national documents, WHO and PACT resources.

Consultation with Other Key Stakeholders

A national workshop was organized to solicit comments and inputs from a broad range of stakeholders; national and government officials, regional and district authorities, development partners, cancer survivors, national and international NGOs, and community representatives.

Strategy Review and Approval

The draft strategy document was thoroughly reviewed by each member of the steering committee. The final NCCS was approved by the Minister of Health and Social Welfare.

Glossary

Access	The ability of people to reach or use health services. Barriers to access may be influenced by: (1) a person's locality, income or knowledge of services available; (2) the availability or acceptability of existing services.
Cancer	Cancer is a generic term used to describe a group of over 100 diseases that occur when malignant forms of abnormal cell growth develop in one or more body organs. These cancer cells continue to divide to produce tumors.
Cancer Registry	It maintains a register of people who develop malignant diseases. Registrations are based on single primary cancer cases that are distinguished by differences in topography or histology. Each case of cancer is registered just once, in the year the cancer is first diagnosed.
Chemotherapy	The treatment or control of cancer using anti-cancer drugs.
Community	A collection of people identified by their common values and mutual concern for the development and wellbeing of their group or geographical area.
Consumers	Users of services.
Coverage	The proportion of all eligible people screened by the program, calculated as the total number screened divided by the number of those who are eligible.
Early detection	The detection of cancer prior to the development of symptoms, or as soon as practicable after the development of symptoms.
Effectiveness	The extent to which a specific intervention, procedure, regimen or service when implemented, does what it is intended to do for a defined population.
Epidemiology	The study of the distribution and determinants of health-related states or events in specific populations.
Equity (in health)	Fairness.
Evaluation	Assessment of a service or program against a standard. Evaluations can be: (1) *formative* (informs the development and improvement of a program); (2) an assessment of the *process* (describes the program and helps to explain why it produces the results that it does); (3) an *outcome* evaluation (an assessment of the ultimate effects of a program).

Goal	A high-level strategic action.
Health promotion	The process of enabling people to increase control over and improve their health. It is a comprehensive social and political process.
Health status	A description and/or measurement of the health of an individual or population.
Incidence	The number of new cases or deaths that occur in a given period in a specified population.
Intervention	A program or series of programs.
Monitoring	The performance and analysis of routine measurements aimed at detecting changes.
Morbidity	Illness.
Mortality	Death.
Objective	The expected changes resulting from an activity or program.
Oncology	The study, diagnosis, treatment and management of cancerous tumors.
Oncologist	A specialist in the treatment of cancer.
Outcomes	The anticipated overall effects of an intervention or program, especially in relation to whether the overall program goal has been achieved.
Pathologist	A doctor who specializes in the examination of normal and diseased tissue.
Palliative care	The total care of people who are dying from active, progressive, diseases (such as cancer) when curative or disease-modifying treatment has come to an end.
Prevalence	The level of disease or other health related condition present in the population at a given time.
Protocol	A defined program for treatment.
Prophylaxis	Use of medical procedures or treatments to prevent or defend against a disease.
Principle	A fundamental basis for action.
Psycho-oncology	The study, understanding and treatment of social, psychological, emotional, spiritual, quality of life and functional aspects of cancer as applied across the cancer control continuum.

Public health services	Goods, services or facilities provided for the purpose of improving or promoting the health of the public.
Radiation oncologist	A specialist in the treatment of cancer using X-ray techniques.
Rate	In epidemiology, the frequency with which a particular type of health event (e.g., cancer) occurs in a defined population.
Risk Factors	An aspect of a person's condition, lifestyle or environment which increases the probability of occurrence of a disease.
Screening	Cancer screening is the early detection of cancer, or precursors of cancer, in individuals who do not nave symptoms of cancer. These interventions are often directed to entire populations or to large and easily identifiable groups within the population.
Stage	A description of how widely a cancer has spread to adjacent lymph nodes and distant spread.
Stakeholders	Organizations/ groups with a direct interest and involvement in aspects of cancer control.
Strategy	A course of action to achieve targets.
Support and rehabilitation	At the broadest level, the provision of the essential services to meet the physical, emotional, nutritional, informational, psychological, spiritual and practical needs throughout a person's experience with cancer.
Surveillance	The ongoing assessment of an individual for the purpose of instituting appropriate intervention to reduce their risk of death from a specific cancer. Also the continuous collection of data for public health decision-making.

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