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# CANCER CARE AND CONTROL SOUTH-SOUTH KNOWLEDGE EXCHANGE

DISCUSSION PAPER

NOVEMBER 2015

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*Joanne Jeffers*

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**WORLD BANK GROUP**  
Health, Nutrition & Population



**CANCER CARE AND CONTROL**  
**SOUTH-SOUTH KNOWLEDGE EXCHANGE**

Miriam Schneidman, Joanne Jeffers, and Kalina Duncan

November 2015

## HEALTH, NUTRITION AND POPULATION (HNP) DISCUSSION PAPER

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# HEALTH, NUTRITION AND POPULATION (HNP) DISCUSSION PAPER

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## CANCER CARE AND CONTROL

### SOUTH-SOUTH KNOWLEDGE EXCHANGE

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This document synthesizes the main themes covered during a South-South Knowledge Exchange (SSKE) on Cancer Care and Control in Africa that aimed to increase knowledge and uptake of effective strategies, and bolster regional collaboration through peer-to-peer learning. The SSKE was funded by the Africa South-South Experience Exchange Trust Fund (SEETF), supported by multiple donors and managed by the World Bank.

#### Abstract:

Worldwide, deaths from cancer exceed those caused by HIV/AIDS, tuberculosis and malaria combined. Seventy percent of deaths due to cancer occur in low-and middle-income countries, which are often poorly prepared to deal with the growing burden of chronic disease. In Africa, cancer rates are projected to double by 2020, due in large part to changing lifestyles, increasing urbanization, and aging populations. Countries throughout Africa face similar challenges, and can learn from regional successes and experiences in trying to identify cost effective ways to organize, deliver and finance critical cancer care and control interventions. Over a period of 18 months, the **Cancer Care and Control South-South Knowledge Exchange** brought together a group of stakeholders from five countries in Africa -- Botswana, Kenya, Rwanda, Uganda and Zambia-- to share experiences, lessons and good practices through a set of video conferences and a site visit to Zambia. All five countries have demonstrated commitment, initiated various cancer control and cancer screening programs, and expressed interest in sharing their experiences. The Knowledge Exchange on cancer care and control aimed to raise awareness, increase knowledge of effective strategies, and strengthen regional collaboration in cancer control planning and expanding equitable access to cancer treatment.

This paper presents highlights of the country experiences shared, common challenges discussed, and innovative solutions explored during the Knowledge Exchange. Topics addressed include population-based surveillance and data collection to better document the burden of cancer; strategies for designing and implementing successful national cancer care and control programs; innovative approaches for strengthening cancer prevention efforts such as HPV vaccination programs; task sharing and other strategies to build capacity and increase access to services; analytical tools for understanding the costs of programs; financing models, including public private partnerships, to increase cancer prevention and care; policy reforms needed to improve access to palliative care; and opportunities for regional collaboration.

**KEYWORDS:** Cancer care and cancer control in Africa, disease burden, prevention, treatment, palliative care, financing, surveillance, peer-to-peer learning.

**DISCLAIMER:** The findings, interpretations, and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, or its member countries.

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## LIST OF ACRONYMS

AFCRN	Africa Cancer Registration Network
APCA	Africa Palliative Care Association
ART	Antiretroviral Therapy
CANREG	Cancer Registration Software
CCC	Cancer Care and Control
CDC	US Centers for Disease Control
CEA	Cost Effectiveness Analysis
CGH	NCI Center for Global Health
COPECSA	College of Pathologists of East, Central and Southern Africa
C4P	Comprehensive Cervical Cancer Costing and Planning Tool
DALY	Disability Adjusted Life Years
DCP3	Disease Control Priorities Project
DNA	Deoxyribonucleic Acid
DfID	Department for International Development
EAOI	East African Oncology Institute
FHCRC	Fred Hutchinson Cancer Research Center
Hep B	Hepatitis B
HIV+	Human Immune Deficiency Virus Positive
HIV/AIDS	Human Immune Deficiency Virus / Acquired Immune Deficiency Syndrome
HPV	Human Papilloma Virus
GAVI	Global Alliance for Vaccine and Immunization
GHIS	Ghana National Health Insurance Scheme
GICR	Global Initiative for Cancer Registries
GDP	Gross Domestic Product
GSK	Glaxo Smith Kline
IAEA	International Atomic Energy Agency
IACR	International Association for Cancer Registries
IARC	International Agency for Research on Cancer
KCR	Kampala Cancer Registry
KEMRI	Kenya Medical Research Institute
LEEP	Loop Electrosurgical Extension Procedure
LMICs	Low and Middle-Income Countries
MOH	Ministry of Health
MOU	Memorandum of Understanding
MTRH	Moi Teaching and Referral Hospital
NCCPP	Botswana National Cervical Cancer Prevention Program
NCD	Non-communicable Disease
NCI	National Cancer Institute
NGO	Non-governmental
Pap	Papanicolaou
PBCR	Population-based Cancer Registry
PC	Palliative Care
PEPFAR	President's Emergency Plan for AIDS Relief
PPP	Public Private Partnership
PLHA	People Living with HIV/AIDS
SRH	Sexual and Reproductive Health
SSKE	South-South Knowledge Exchange
TWG	Technical Working Group
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization
UHC	Universal Health Coverage
UN	United Nations
UNDP	United Nations Development Program



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We would like to recognize the high quality presentations and contributions from participating countries (Botswana, Kenya, Rwanda, Uganda and Zambia). This Knowledge Exchange would not have been possible without the leadership and commitment of these highly dedicated individuals. We would like to acknowledge both the quality of the presentations and the discussions which enriched the Knowledge Exchange and provided new insights.

The Knowledge Exchange also benefitted from the excellent contributions made by various technical experts from the National Cancer Institute of the National Institutes of Health, African Palliative Care Association, Academic Model for Prevention and Treatment of HIV (AMPATH), Nairobi University Pathology Department, and Zambia Cancer Diseases Hospital.

The authors also wish to acknowledge the collective effort of health care providers in Africa working to make a difference in the lives of those afflicted by cancer.

Finally, the authors wish to express their appreciation to the World Bank for publishing this report as part of the HNP Discussion Paper Series.

## EXECUTIVE SUMMARY

### I. Context

Currently 80 percent of the disability-adjusted years of life (DALY) lost to cancer is in low- and middle-income countries (LMICs), but only 5 percent of global cancer resources are spent in these countries. This disparity will grow dramatically as changing lifestyles, increasing urbanization, and aging populations lead to a projected doubling of the incidence of cancer in Africa in the next five years. In 2010, the economic costs of productivity losses combined with treatment costs for cancer were estimated to be US\$1.6 trillion, approximately two to four percent of global Gross Domestic Product (GDP). If action is not taken now, future costs will be exorbitant. While some cancer control programs have been initiated, including cervical cancer screening, human papillomavirus (HPV) vaccination, and cancer specialty care centers, comprehensive coverage with the full range of services remains low across Africa. Cancer control programs should be rolled out to advance progress towards the *WHO non-communicable diseases (NCD) Global Targets for 2025*, that call for a 25 percent reduction in premature mortality from NCDs, including cancer, a 30 percent drop in tobacco use, and 80 percent availability of affordable drugs and technology. Given that African countries face common challenges and can benefit from sharing knowledge and learning from one another's experiences developing and implementing critical interventions to address the growing burden of cancer, a South-South Knowledge Exchange (SSKE) was initiated by the World Bank.

### II. The Cancer Care and Control South-South Knowledge Exchange

The **Cancer Care and Control (CCC) South-South Knowledge Exchange** was a collaborative effort of the World Bank and the United States National Cancer Institute (NCI)/National Institutes of Health (NIH), designed to support knowledge sharing and networking among participants and global technical experts through a series of knowledge exchange activities. Botswana, Kenya, Rwanda, Uganda and Zambia were selected to participate in the **CCC SSKE** because they are each at a different stage in the development and implementation of CCC programs, have different strengths, and have much to learn from one another's experiences.

### III. Effective Cancer Care and Control Interventions

Comprehensive CCC programs provide a range of services that meet the evolving needs of patients along the cancer continuum, from prevention to treatment to palliative care, as noted below.

- **Primary Prevention** - HPV and Hep B vaccination campaigns; behavior change campaigns to promote healthy lifestyles; anti-tobacco and no smoking campaigns; and "sin" taxes to curb tobacco and alcohol use.
- **Secondary Prevention (screening)** - information and education campaigns to encourage breast and cervical cancer screening; cytology (Pap) screening; visual inspection with acetic acid (VIA); and HPV DNA testing.
- **Secondary Prevention (treatment)** - increased access to cryotherapy; loop electrosurgical excision procedure (LEEP); and cone biopsy.
- **Cancer Treatment** – provision of specialized care for early and late stage treatment, including standard surgical techniques, radiation, and chemotherapy.
- **Palliative Care** – palliative, home based or institutional care programs and expanded access to opioids and radiation.

Effective systematic implementation of these interventions requires a health system in which surgery, radiotherapy, chemotherapy, and pain management are well integrated at both clinical and community levels. Virtually no country in Africa, save South Africa, has capacity at all these levels. However, several have initiated promising programs to address selective aspects that were covered during the **CCC SSKE**.

Intervening early in the continuum of care will save lives and resources. There is growing evidence that many of the interventions in the continuum of care are cost effective. Immunization with the HPV vaccine and cervical cancer screening can reduce deaths from cervical cancer by 80 percent. Early stage treatment of most cancers increase long-term survival by 50 percent, and palliative care can reduce suffering of terminally ill patients.

#### **IV. Common Challenges and Innovative Solutions**

Participants shared innovative approaches to common challenges in the planning, management, implementation, and financing of CCC initiatives. The main themes, key issues, and good practices covered during the **CCC SSKE** are summarized below.

##### **➤ Improving Surveillance to Better Understand the Burden of Disease**

Levels of knowledge about the magnitude of the cancer burden remain inadequate in most countries in Africa. Lack of comprehensive, timely data, and information impedes effective program planning and service delivery. Population-based cancer registries (PBCRs) are vital components in comprehensive CCC programs and document the nature and scope of the cancer burden. PBCRs are used to collect data on new cancer cases in geographically defined populations. Planners, policy makers, and researchers use this information to better understand the cancer burden and improve treatment and prevention options.

Uganda has one of the longest standing and most comprehensive population-based cancer registries in Africa. A number of key lessons have emerged, including the importance of:

- **Ensuring ongoing political commitment, and mobilizing resources** to make population-based cancer registration a key component of the national cancer control program.
- **Strengthening data reliability** by enhanced data verification; standardization; improved hospital data systems, including electronic patient records; and promotion of new technologies such as smart phones for more rapid data transmittal.
- **Increasing population coverage** to capture data from rural areas with the Kampala Cancer Registry linking its work with four regional cancer registries to expand coverage to almost 30 percent of the population, a representative sample that can be used to estimate the national cancer burden.

##### **➤ Identifying National Leaders to Champion the Program**

Highly motivated, visible champions can mobilize support and create opportunities for CCC initiatives. The Zambia program received strong political support from former Zambian First Lady Dr. Christine Kaseba-Sata, a gynecologist by training. Dr. Kaseba-Sata hosted the *6th Stop Cervical Cancer in Africa Conference* and generated a great deal of visibility and political support for CCC initiatives in Zambia, as well as throughout Africa. Similarly, the *Kenya Cancer Control*

Program benefited from the support of Ministers of Health who had personal experiences with cancer.

- **Identifying champions and influential stakeholders is critical** - Key stakeholders need to be mobilized, including Ministries of Health, advocacy groups; cancer survivor and patient support groups; cancer experts; NCD experts; tobacco control experts; and private sector representatives. Additional allies include officials from Ministries of Finance.

### ➤ **Designing Successful National CCC Plans and Programs**

Cancer planning is critical to obtaining political support, prioritizing and costing key interventions, and identifying opportunities for strategic partnerships. Successful national plans are evidence-based and informed by locally-relevant research; developed in a participatory fashion by a diverse group of stakeholders; comprehensive in nature, with a full range of activities that strengthen prevention, diagnosis, treatment, palliative care and survivorship; and include a strong monitoring and evaluation component. A number of common lessons have emerged from the design and implementation of national cancer plans and programs:

- **Creating linkages between cancer-specific programs and broad national health programs at the central, regional and district levels as well as between public and private sectors taps potential synergies and efficiencies** - Effective linkages need to be established with sexual and reproductive health, maternal and child health, NCD and HIV/AIDS care and treatment programs. Partnering with the private sector and leveraging their expertise and resources is critical to increasing access and improving quality of care.
- **Demonstrating economic impact can facilitate support** - Ministries of Health need to make the economic case for investing in cancer, in order to mobilize support and resources.
- **Overcoming lack of awareness, stigma, discrimination and denial about cancer is critical to generating broad-based support for the program** - While support for CCC initiatives is growing in many countries, as increasingly everyone knows someone who is affected by the disease, much more needs to be done to improve knowledge and awareness and early detection.

### ➤ **Innovative Approaches for Strengthening Cancer Prevention, Early Detection, Diagnosis and Treatment**

With the rapidly growing number of cancer cases, many countries have initiated programs to strengthen prevention, promote early detection, and establish capacity to diagnose and treat early stage cancers. The **CCC South-South Knowledge Exchange** permitted countries to share their individual successes and promising approaches, inspiring each other to expand the range of interventions along the cancer continuum of care. A number of generic lessons and country specific examples emerged.

- **Generating demand for HPV vaccination and cervical cancer screening services is critical to improving uptake of these services and ensuring cases are prevented or found at earlier stages** - Countries draw on their national resources and use unique approaches to accomplish this goal in their respective settings. Zambia uses chiefs, churches, traditional marriage counselors and other community leaders to raise awareness of the importance of HPV vaccination and cancer screening. Botswana uses census data strategically to target program activities, and is in the midst of implementing a national HPV

vaccination program. Rwanda has used its extensive network of Community Health Workers (CHWs) to educate women about the importance of cancer screening and improve uptake.

- ***Raising awareness through innovative social mobilization efforts to reach a younger target population and to overcome misperceptions and traditional beliefs concerning cervical cancer*** - The Zambia program found that the best advocates are women returning to their communities after receiving care. The program also introduced health clubs at the secondary education level to raise awareness of cervical cancer screening among younger people.
- ***Using innovative telemedicine and mobile phone communication strategies can increase access to services in sparsely populated areas*** - One notable example is the innovative use of mobile phone technologies in Zambia to communicate and follow-up with patients and of telemedicine to ensure quality of care and accuracy of diagnoses.
- ***Promoting innovative human resources strategies is key to building capacity and addressing the acute shortages of trained health personnel*** – Given the acute shortages of qualified oncology specialists it is critical to not only expand training but also identify opportunities for task sharing. Rwanda, Zambia and Botswana have effectively used task sharing to expand the role of nurses in the provision of cervical cancer screening and introduced quality assurance programs, training, and supervision to enhance their performance. Zambia increased its capacity to provide cervical cancer screening by piggybacking upon an existing, well-functioning infectious disease platform.
- ***Building pathology capacity can serve as an entry point for cancer care*** - Pathology capacity and manpower is limited but essential for the provision of quality CCC services. In the absence of accurate diagnosis it is difficult to make informed decisions about treatment options. Several countries have now placed emphasis on establishing pathology services. Kenya has equipped pathology labs at selected sites while a roving pathologist travels from site to site to provide services. The University of Nairobi has developed pathology training programs that are benefitting individuals from both Kenya and neighboring countries. Zambia is using telemedicine to extend its pathology capacity to rural areas. Uganda, Kenya and Rwanda have developed twinning arrangements with medical schools in developed countries and put in place quality assurance schemes to strengthen their pathology capacity.
- ***Strengthening the referral system and ensuring patient follow-up is important for quality care*** - Given the complexities of providing cancer treatment across the continuum of care, it is important to establish a sound referral system. Zambia has implemented a mobile patient tracking system that is effectively used by nurses to remind patients of follow-up appointments. Rwanda uses its network of Community Health Workers to follow up with patients, and Botswana has strengthened its monitoring and evaluation system to ensure patient follow-up and referral work effectively. However, referral systems and patient follow up remain a challenge for most countries in Africa.
- ***Reducing the time between diagnosis and treatment is key to minimizing risk of loss to follow up*** – Both Zambia and Botswana have introduced the Visual Inspection with Acetic Acid, “See and Treat” services, because they allow immediate treatment of

precancerous lesions on the cervix and represent a cost effective treatment option in low income settings.

- ***Leveraging ongoing platforms can generate cost efficiencies and contribute to sustainability*** – Given both cost and physiological considerations it is sensible to piggyback cancer interventions onto existing primary health or communicable disease platforms that are well established. Zambia has strengthened the sustainability of its cervical cancer screening program by integrating the service into the MCH program of the Ministry of Health. Botswana has also strengthened linkages and leveraged resources from other parts of the health system (e.g. HIV/AIDS program) to enhance chances of sustainability. Similarly, Kenya has built an oncology program from health system infrastructure and specialty care centers originally dedicated to HIV/AIDS.

➤ ***Increasing Access to Palliative Care (PC)***

Access to urgently needed palliative care for terminally ill patients is very limited and constrained by legal, regulatory, and procurement issues. Several countries are beginning to tackle this constraint by:

- ***Mobilizing both public and private sector support and resources for PC*** - Kenya has increased access to PC by offering services through a range of public and private sector providers and raising awareness of the importance of PC for all life threatening illnesses.
- ***Increasing access to cost effective drugs*** - Rwanda and Uganda procure a more cost effective solution of morphine that is dispensed by trained pharmacists and use public private partnerships to increase access to services.
- ***Authorizing trained nurses to prescribe and better utilizing pharmacists to dispense opioids*** - Outdated regulations and practices for procuring and dispensing drugs limit access to PC in most countries. Uganda has authorized trained nurses to prescribe morphine thereby increasing access.

➤ ***Increasing Access to an Essential Cancer Care Package***

While most countries in Africa are focused on designing an essential health care package towards Universal Health Coverage, cancer care and control planners and policymakers have largely not been active partners in this process. To this end, there is a need to:

- ***Identify the most cost-effective essential cancer care package and determine the cost of its implementation as well as its potential impact*** - Research conducted under the Disease Control Priorities, Third Edition (DCP3) has determined that HPV vaccination programs, tobacco control measures and tobacco taxes are cost effective interventions in cancer control in many country contexts. For example, Kenya has implemented tobacco control measures and Rwanda has successfully achieved national coverage of HPV immunization.
- ***Use economic analyses to make the case for investing in cancer and mobilize additional resources to support cancer interventions*** - Economic analyses are effective tools for making the economic case to support CCC programs. Several countries (i.e. Ghana and Tanzania) that did not participate in the Knowledge Exchange had valuable

experiences with economic analyses to inform public policy. Ghana has conducted a cost effectiveness analysis to determine the most cost effective way of expanding its breast cancer prevention program and is using the results to mobilize national health care resources to expand the program. Tanzania used a WHO toolkit to assess the cost effectiveness of alternative strategies for providing HPV vaccination to young girls. Uganda has recently conducted an economic analysis of their cancer registry with the US CDC.

➤ ***Increasing Engagement of the Private Sector, Including through Public Private Partnerships (PPPs)***

While governments need to ensure financing of cancer programs, they do not necessarily need to deliver the services. It may be more cost-effective for governments to purchase services from private sector hospitals and clinics through public private partnerships. In countries with a vibrant private sector, the public sector needs to remove barriers that impede private sector provision of cancer care and establish a strong enabling environment; create incentives to encourage private sector provision of cancer care; and explore opportunities to form public private partnerships.

AMPATH Oncology and Chronic Care Program in Kenya is an example of an innovative public private partnership between government agencies, academic institutions and private companies that provides access to cancer care for a population of 18 million. Several key lessons have emerged from the success of AMPATH.

- ***Public Private Partnerships function best when they have a flexible structure that allows public, private and academic partners to each play to their strength*** - In the AMPATH PPP, government agencies, at all levels, ensure oversight and stewardship, support research, and provide an enabling environment; academic institutions contribute scientific and research expertise and negotiate agreements; and private organizations provide in-kind resources such as bioassays, targeted funding, and resource personnel.
- ***Ongoing education of patients, service providers, policymakers and the community is needed to maintain political support for the program; address misperceptions and increase demand for services; and improve understanding of side effects to enhance treatment compliance and improve quality of care*** - AMPATH conducts community and patient education and supports the formation of patient support groups; conducts continuing education and other forms of multidisciplinary provider training to improve quality of care; disseminates research findings and best practices; and provides technical expertise to the MOH to improve policies, guidelines and treatment protocols.
- ***Increasing access to cost effective drug supplies is critical to improving affordability and sustainability of services*** - AMPATH has worked with pharmaceutical companies to access generic drugs at lower prices; explored the cost implications of including chemotherapy as a benefit in the National Hospital Insurance Fund; researched willingness and ability to pay; formed Public Private Partnerships; and raised awareness among decision makers of the urgent need to prevent and control cancer to mobilize resources and advance philanthropic efforts of groups such as pharmaceutical companies.

➤ **Sharing Knowledge, Experiences and Collaborating to Expand Access to CCC**

There are important opportunities for countries to collaborate by sharing knowledge and experiences. The **CCC SSKE** provided an effective platform for sharing information about the design and implementation of various programs and learning what works and what does not work. **CCC SSKE** participants reported improvements in knowledge and gains from networking with one another as they continue their efforts to mobilize resources and increase access to services in their countries. Participants reported the knowledge gained would enhance policy and program design in their own countries. Beyond sharing information there are also important opportunities for countries to collaborate on joint activities. During the culminating face-to-face meeting in Lusaka, participants discussed possibilities for collaboration in addressing the shortage of qualified personnel; mobilizing resources by making a better economic case for investing in cancer care and control; and conducting joint research to inform policy and generate knowledge of science of delivery. Several countries have developed regional training programs to build capacity for pathology, oncology, and radiation therapy. Participants plan on building on these nascent efforts to continue networking and support one another to tackle the growing cancer burden.



## INTRODUCTION

Currently 80 percent of the disability adjusted years of life (DALY) lost to cancer is in low-and middle-income countries (LMICs). However, only 5 percent of global cancer resources are spent in these countries. This disparity will grow dramatically as changing lifestyles, increasing urbanization and aging populations lead to a projected doubling of the incidence of cancer in Africa by 2020. Each year, 50 percent of new cancer cases and 77 percent of cancer deaths occur in LMICs. Global health leaders are calling for greater attention to non-communicable diseases (NCDs), including cancer care and control. At the 63<sup>rd</sup> World Health Organization (WHO) Regional Committee for Africa meeting, Ministers called for action to address cancer. While some programs, including cervical cancer screening, HPV vaccination, and cancer specialty centers are getting underway, much more needs to be done in Africa. Given that African countries face common challenges and can benefit from sharing knowledge and learning from one another's experiences developing and implementing CCC programs, a South-South Knowledge Exchange was initiated by the World Bank.

The **Cancer Care and Control South-South Knowledge Exchange** aimed to: (i) raise awareness of the growing importance of CCC in Africa, (ii) encourage cross-fertilization of experiences, with an emphasis on cervical and breast cancers, and (iii) facilitate access to information among participating countries. The **CCC SSKE** was a joint effort of the World Bank and the US National Cancer Institute (NCI)/National Institutes of Health (NIH), designed to support knowledge sharing and networking among participants and global technical experts through a series of knowledge exchange activities.

The countries that participated in the **CCC SSKE** include Botswana, Kenya, Rwanda, Uganda and Zambia. They were selected because they are each at a different stage in the development and implementation of CCC programs, have different strengths, and have much to learn from one another's experiences. They have also learned important lessons while addressing HIV/AIDS that can inform their efforts addressing cancer. During a period of 18 months, from August 2013 to February 2015, **CCC SSKE** stakeholders from the five participating countries attended nine videoconferences during which they benefited from presentations on key issues, discussed common challenges and shared relevant experiences. The **CCC SSKE** program was developed in collaboration with participants, so that it responded to their needs and concerns and connected them with technical experts who presented current information on evidence-based interventions and recent global developments. The virtual meetings were then followed by a regional workshop in Lusaka, Zambia in February 2015 at which participants learned firsthand of the achievements of Zambia's **Cancer Diseases Hospital** and the **African Center of Excellence for Women's Cancer Control at the Center for Infectious Disease of Zambia**; and identified future opportunities for collaboration. This document summarizes the highlights of the **CCC SSKE** presentations and discussions. It provides a brief overview of cancer in Africa and synthesizes participating country experiences, common challenges, and innovative solutions.

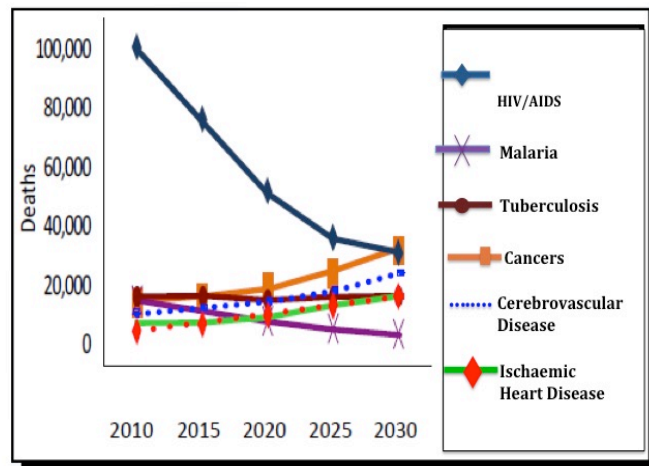
***"Thank you for inviting me to the CCC SSKE Taking a Regional Approach Workshop - It was an eye opener in many ways. I believe there is a lot of potential in Africa and we should maximize it. Money alone is not the only solution."***

***Dr. Zipporah Ali, Executive Director, Kenya Hospices and Palliative Care Association***

## OVERVIEW OF CANCER IN AFRICA

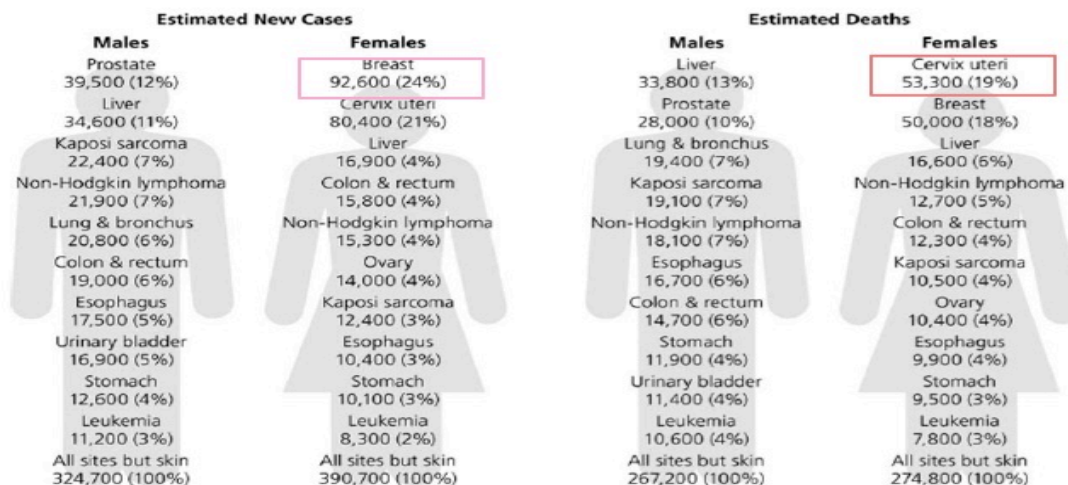
LMICs in sub-Saharan Africa are shouldering a double burden of disease. While they continue to face high levels of infectious and reproductive health diseases associated with poverty and under development, they are also experiencing rapidly increasing incidence of NCDs. Worldwide, deaths from cancer exceed those caused by HIV/AIDS, tuberculosis and malaria combined, and 70 percent of cancer deaths occur in LMICs. Estimates show that by 2030, LMICs will bear the brunt of the estimated 27 million new cancer cases and 17 million cancer deaths. Much of this morbidity and mortality can be avoided if steps are taken today to strengthen CCC programs.

### KENYA MORTALITY PROJECTIONS



In addition to presenting a significant burden in terms of morbidity and mortality, cancer also has tremendous economic consequences. Cancer care imposes very high direct costs on health systems, communities, and households. Cancer also exacts very high indirect costs of income foregone by patients, families and caregivers; lost productivity of patients; and premature death and disability. The World Economic Forum lists the burden of chronic disease as one of three leading global economic risks based on potential impact on global productivity and economic growth. In 2010, the economic costs of productivity losses combined with treatment costs for cancer were estimated to be US\$1.6 trillion, approximately two to four percent of global Gross Domestic Product. If action is not taken now, future costs will be exorbitant.

## Women's Cancer in Africa

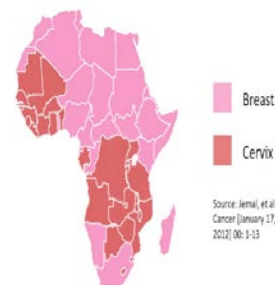


Source: Jemal, et al. Cancer [January 17, 2012] 00: 1-13

In 2012, approximately 715,000 new cancer cases and 542,000 cancer deaths occurred in Africa. Breast cancer contributed roughly 24 percent and cervical cancer 21 percent of all female cancers in Africa. The continent has the highest incidence and mortality from cervical cancer in the world. The most prevalent male cancers are prostate and liver cancers.

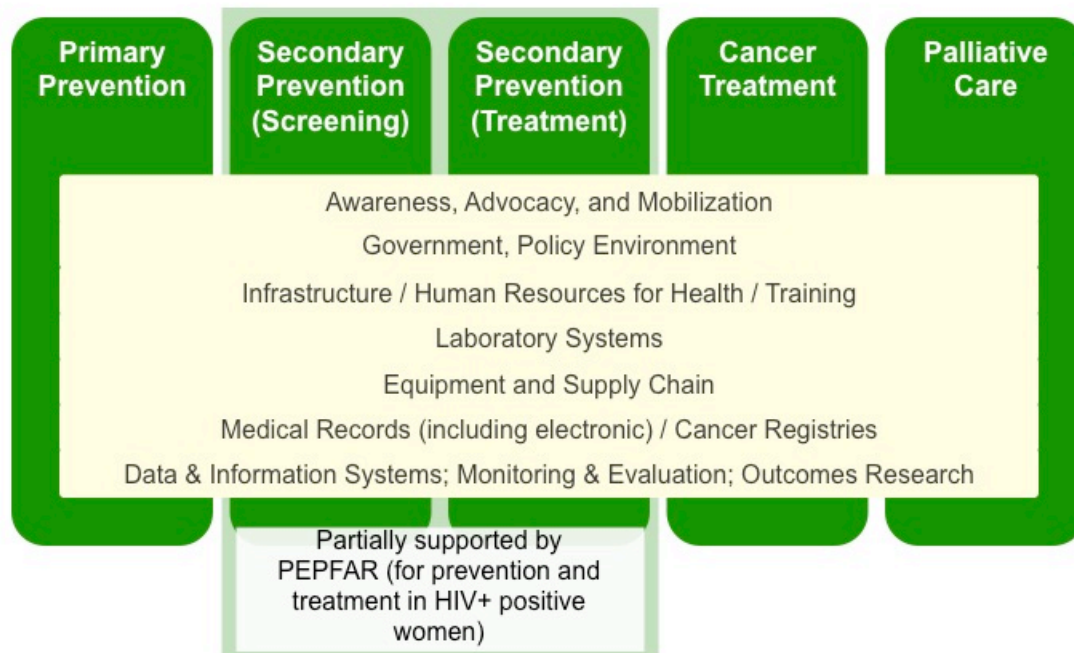
There are proven interventions that can prevent some cancers and improve survival. An estimated fifty to sixty percent of cancer mortality in LMICs can be avoided. Most cases of cervical cancer are caused by a viral infection that is sexually transmitted and can be prevented by the HPV vaccine. Liver cancer is often caused by a virus and can be prevented by the Hepatitis B vaccine. Lung cancer is caused primarily by smoking and can be prevented by implementing policies and programs to curb smoking and promote healthy lifestyles. Early detection programs, strengthened care and treatment, and better palliative care can extend cancer survival and improve quality of life. Programs need to be developed to advance progress towards the **WHO NCD Global Targets for 2025** that call for a 25 percent reduction in mortality from NCDs, including cancer, a 30 percent drop in tobacco use, and 80 percent availability of affordable drugs and technology.

Most Common Female Cancers in Africa



## CANCER CARE AND CONTROL CONTINUUM

### The Zambian Model



Source: Kapembwe, S., A Zambian Approach to Cervical Cancer Prevention. Presented to the CCC SSKE VC, October 29, 2013

Comprehensive CCC programs provide a range of services that meet the evolving needs of patients along the cancer continuum. Cancer prevention and control is crucial because early detection and treatment can cure 30 percent of cancers; prolong survival in another 30 percent; and improve quality of life through adequate disease management and palliative care. As illustrated by the Zambian model above, CCC initiatives can be designed to intervene at different stages of the disease as well as to strengthen specific building blocks of the health system, thereby addressing not only cancer, but also other NCDs. The WHO health system building blocks include information systems; leadership and governance; service delivery; medical products, vaccines, supplies and technology; trained medical personnel; and financing. CCC initiatives can also be integrated into programs that address other aspects of health and/or promote economic development.

Potential areas of intervention along the CCC continuum include:

- **Primary Prevention** - HPV and Hep B vaccination campaigns; behavior change campaigns to promote healthy lifestyles; anti-tobacco initiatives and no smoking campaigns; and “sin” taxes to curb tobacco and alcohol use.
- **Secondary Prevention (screening)** - information and education campaigns to encourage breast and cervical cancer screening; cytology (Pap) screening; visual inspection with acetic acid (VIA); and HPV DNA testing.

- **Secondary Prevention (treatment)** - increased access to cryotherapy; loop electrosurgical excision procedure (LEEP); and cone biopsy.
- **Cancer Treatment**- effective linkages with specialized care providing early and late stage treatment, including standard surgical techniques, radiation, and chemotherapy.
- **Palliative Care** - linkages with palliative care programs and expanded access to opioids and radiation.

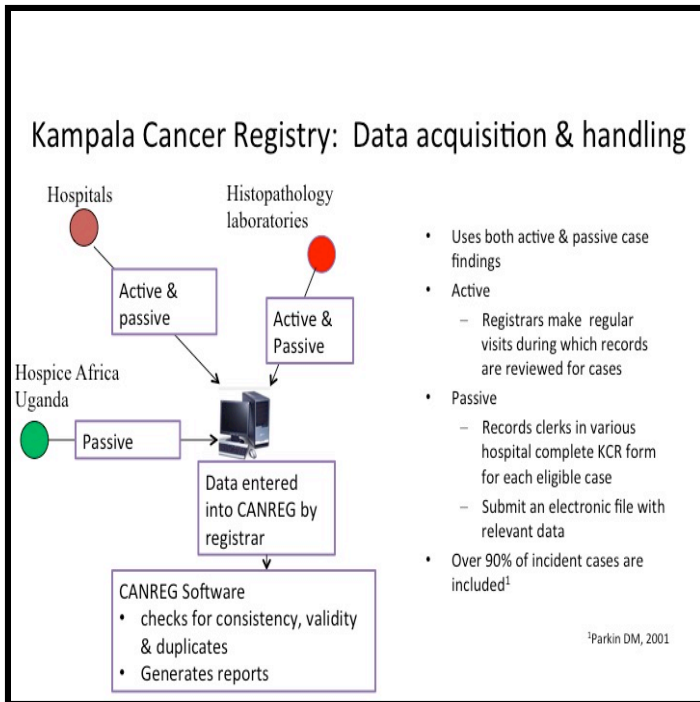
There is growing evidence demonstrating that many of these interventions are cost effective; make a significant impact on cancer prevention; prolong survival of cancer patients; and improve quality of life of both patients and their families. To be effective, these interventions require a health system in which surgery, radiotherapy, chemotherapy, pain management and outpatient and acute care services are well integrated. Immunization with the HPV vaccine and cervical cancer screening can reduce deaths from cervical cancer by 80 percent. Early stage treatment of cancer can increase long-term survival by 50 percent and palliative care can reduce suffering in 100 percent of late stage patients.

The five countries participating in the **CCC SSKE** are at different stages of developing and implementing CCC programs and have a range of experiences. The **CCC SSKE** activities addressed common challenges and innovative solutions to various aspects of designing and implementing CCC initiatives. Topics included data collection to better document the burden of disease; strategies for designing and implementing successful national CCC programs; innovative approaches for strengthening cancer prevention efforts such as HPV vaccination programs; task sharing and other strategies to build capacity and increase access to cancer screening and treatment; analytical tools for understanding the costs of CCC; financing models, including Public Private Partnerships, to increase access to CCC treatment and care; policy reforms needed to increase access to palliative care; and opportunities for regional collaboration. Highlights of the country experiences shared, common challenges discussed and innovative solutions explored during the **CCC SSKE** activities are synthesized and presented in the following sections.

## CANCER REGISTRIES AND INFORMATION SYSTEMS

Population-based cancer registries (PBCRs) are vital components in comprehensive CCC programs and document the nature and scope of the cancer burden. PBCRs are used to collect data on new cancer cases in geographically defined populations. Planners, policy makers, and researchers use this information to better understand the cancer burden and improve treatment and prevention options.

Cancer surveillance provides information on the burden of cancer - incidence, prevalence and survival; identifies priorities for preventive and curative programs; supports investigation into causes of cancer; and can be used to evaluate the effectiveness of cancer control activities. Coverage of population-based cancer registries needs to be expanded, particularly in LMICs, in order to obtain more complete and reliable data and improve understanding of both current and future cancer burdens as well as site-specific patterns of incidence. There are few population-based cancer registries in Africa. One notable example is the Kampala Cancer Registry (KCR) described below.



## UGANDA'S EXPERIENCE WITH THE KAMPALA CANCER REGISTRY

The Kampala Cancer Registry (KCR) was established in 1951 and is based at the Makerere Medical School. It has collected a unique data set that has been instrumental in improving understanding of cancer in Uganda and informing health policymaking and planning. The registry collects: (i) demographic information – name, age, gender; (ii) diagnosis information; and (iii) the source of the data. The KCR has contributed data to global publications; catalyzed collaboration and research opportunities with universities and other organizations;

supported training; and guided design of cancer control programs. Currently, the KCR is located in the Department of Pathology at Makerere College of Health Sciences and is staffed by a director and two registrars. It is supported by record clerks at six collaborating hospitals, laboratories and a hospice center and has computerized its data management using the cancer registration software, CANREG5. While other cancer registries have been established in Uganda, none has had the ongoing success of the KCR. This success results from its governance structure as part of Makerere University; its collaborative relationships with the International Agency for Research on Cancer (IARC) and African Cancer Registry Network (ACFRN); continuous effective and committed leadership; a defined mission and clear agenda; and focused approach.

## COMMON CHALLENGES AND INNOVATIVE SOLUTIONS IN INFORMATION SYSTEMS

- **Ensuring ongoing political commitment and mobilizing resources** - Uganda has made cancer registration a key component of the National Cancer Control Program and charged the Uganda Cancer Institute with its implementation. Recognizing the importance of sustainable population-based data collection to inform their cancer control program, Zambia has partnered with NCI and UICC to hire and train a registry director to develop a PBCR. In Kenya, the MOH, in coordination with the US Centers for Diseases Control and Prevention (CDC), has developed a tool to determine the cost of registering one case of cancer that it will use to advocate for resources to strengthen and expand the national cancer registry.
- **Ensuring reliability** - The KCR data collection system has control points for review and verification by both the CANREG5 software and by manual comparison of data entries with hard copy records. KCR staff members maintain collaborative working relationships with clinicians, pathologists, as well as private sector health providers in order to obtain high quality data. They also work to standardize and improve hospital databases, and, when possible, link



to electronic patient records. Other strategies to ensure data reliability include using new technologies such as smart phones.

- **Increasing population coverage, particularly of rural populations** – Uganda increased the personnel and infrastructure of the KCR registry and linked it with four regional cancer registries and a registry at a community cancer treatment center to reach coverage of 30 percent of the population. This level of coverage is sufficient for estimating the national cancer burden. The community cancer registry is at a cancer treatment center in Eastern Uganda and collects information about a rural population that is less dynamic than the urban population of Kampala. The Center aims to collect a time series of information about individual patients so that it can improve its treatment interventions and gain insights into site-specific incidence of cancer in a rural community.

## CANCER CONTROL PLANNING AND PROGRAMMING

National health systems need to address the growing challenge of cancer by: (i) strengthening evidence-based planning to maximize program impact and efficiency; (ii) forming strategic partnerships to leverage resources and expertise; (iii) building capacity; and (iv) developing sustainable cancer control programs. Experience demonstrates that successful national plans are evidence-based and informed by research; have been developed by a diverse group of stakeholders; are comprehensive and include a range of activities that strengthen prevention, diagnosis, treatment, palliative care and survivorship; and include a strong monitoring and evaluation component.

### THE KENYA CANCER CONTROL PROGRAM

Kenya has developed and implemented several landmark policies and strategies to advance its *National Cancer Control Programme*. These include passage and implementation of the 2012 *Cancer Control Act*, the 2007 *Tobacco Control Act*, the 2012 *Alcoholic Beverages Control Act*, the 2011 *National Food and Nutrition Security Policy* and the 2013 *National Occupational Safety and Health Policy*. In addition, Kenya has a number of official planning documents that guide their national strategy, including: *2011-2016 National Cancer Control Strategy*; *National Cervical Cancer Programme Strategic Plan (2012 – 2015)*; *National Guidelines for Cancer Management (2013)*; *Palliative Care and Training (2013)*; and *Prevention and Management of Cervical, Breast and Prostate Cancers (2012)*. These milestones were achieved because the Ministries of Health (MOHs) provided strong leadership and stewardship and mobilized a diverse group of stakeholders, including representatives from academia, the private sector, hospitals, faith-based organizations, civil society organizations and patients' groups, who developed, reviewed, disseminated and implemented comprehensive policies, plans, and roadmaps.

The *National Cancer Control Strategic Plan* is comprehensive and provides a sound framework for action. Significant strides have been made in each of its seven strategic areas:

- ✓ **Promote cancer prevention and early detection** – Interventions have focused on lowering risk factors by: (i) reducing access to tobacco through smoking bans, increased taxation and advertising limitations; (ii) promoting healthy lifestyles, including improved diet and reduced alcohol use, through behavior change programs; (iii) reducing environmental exposure to carcinogens; and (iv) preventing infectious diseases associated with cancer through HIV prevention and HPV and Hep B immunization programs.

- ✓ **Improve diagnosis and treatment, including palliative care** – Screening interventions have focused on cervical, breast and prostate cancers. Cervical cancer screening programs (VIA and Pap smear) have been expanded and HPV testing, while expensive, is available through private providers. Diagnostic and treatment services are available primarily in Nairobi and large towns and capacity is being expanded to increase geographic access. Since over 80 percent of cancer cases present late, the MOH has established 11 palliative care centers in public regional referral hospitals and several faith-based and private sector organizations provide hospice.
- ✓ **Promote cancer surveillance, registration and research** – Two sites, the Kenya Medical Research Institute (KEMRI) and the Moi Teaching and Referral Hospital (MTRH), have cancer registries and the MOH has developed a cancer registry tool that will be disseminated to expand these efforts. Efforts to develop population-based registries are also underway in Kisumu and Nyeri Counties.
- ✓ **Promote partnerships and collaboration in cancer control** – To ensure that all providers are working toward common goals, they work collaboratively to develop guidelines and conduct joint training programs. Additional work will be done to develop treatment protocols and joint drug procurement systems.
- ✓ **Advocate for cancer prevention and control legislation** – To operationalize the *National Cancer Act* a National Cancer Institute is being established.
- ✓ **Integrate cancer prevention and control activities with national health and socio-economic plans** – Recently developed strategies and guidelines are being disseminated and implemented at the service delivery level.
- ✓ **Promote community involvement and participation in cancer control and prevention** – Including a diverse group of stakeholders in the development of policies and strategies has ensured buy-in and community participation.

## **THE UGANDA COMPREHENSIVE NATIONAL CANCER CONTROL PROGRAM**

The Uganda Cancer Institute (UCI) and Ministry of Health are implementing the *Uganda Comprehensive National Cancer Control Program*. The central strategy of this program is a comprehensive cancer service network comprised of UCI, as a National Centre of Excellence, supporting highly specialized Regional Cancer Centres staffed by multidisciplinary teams. UCI's mandate is to research the cause, treatment and prevention of common cancers in Uganda; provide high quality, evidence-based cancer care; provide cancer training using common cancers as models; and reduce the risk of cancer through awareness raising and information. UCI provides oncology services, including chemotherapy and radiation; gynecology and surgery services; cancer screening services; specialized oncology pharmaceutical services; hematologic clinical care; laboratory and imaging services; physiotherapy services; psychosocial support and training. Both the *2010 Uganda National Development Plan* and the *2010 Uganda National Health Policy* state the need for increased capacity to address cancer through a specialized unit such as the UCI. A draft cancer policy and a draft bill to establish the UCI by an Act of Parliament are in place.

UCI has collaborated effectively with Makerere University, Mulago Teaching Hospital and the Fred Hutch Cancer Research Center in its efforts to research and treat childhood lymphoma and other malignancies; research pathogens and their role in causing cancers; and improve strategies for



cancer prevention and treatment. UCI also provides countrywide cancer consultation services and trains oncologists. UCI is responsible for many ground breaking scientific discoveries that have enriched the understanding of cancer and led to innovative strategies for more effective prevention and treatment of the disease. It is governed by a board and is a self-accounting government entity under the Ministry of Health. UCI has recently built a six-story facility and its funding has increased from about 5.4 billion Shillings in 2009/2010 to roughly 13.5 billion Shillings in 2013/2014. It was accorded the status of a *WHO Regional Centre for Cancer Research in Africa* and is currently being reviewed to have that status renewed.

Two outreach regional clinics have been established in Western and North Western Uganda and land has been offered to establish two more. The *Comprehensive National Cancer Control Program* also includes a *Comprehensive Community Cancer Program* comprised of community outreach efforts to provide health education and screening for breast, cervical and prostate cancers; cancer awareness and screening at the UCI Centre; continuous medical education for lower level health care workers; television and radio talk shows about cancer; and development and production of information, education and communication materials. The *Program* also includes satellite surveillance centres that promote cancer research and registration; conduct community level surveillance; raise awareness to promote prevention and early detection; and provide simple treatment and patient follow-up.

The key elements for the success of the UCI and the *Comprehensive National Cancer Control Program* are effective partnerships, strong coordination, high level leadership, resources and research. UCI collaborates and partners with many international organizations and agencies, including International Atomic Energy Agency, International Agency for Research on Cancer, National Cancer Institute and Fred Hutchinson Cancer Research Center to achieve several national cancer control goals. Working in partnership with civil society groups, such as the Uganda Cancer Society and the Uganda Non-communicable Disease Alliance, has also been critical for success.

## **THE RWANDA NATIONAL STRATEGIC PLAN FOR CANCER DISEASES**

*Rwanda's National Strategic Plan for Cancer Diseases* aims to improve primary and specialized health care and treatment; increase prevention and control of risk factors; and sensitize the community to change risk behaviors and promote early detection. The *Plan* focuses on reinforcing primary and specialized health care and treatment by: (i) *decentralizing services and training* and mentoring lower level health workers to improve screening and early diagnosis; (ii) *increasing access to NCD services* by strengthening procurement and logistics systems for drugs, medical supplies, and equipment, and building capacity of one regional hospital to provide radiotherapy and chemotherapy; and (iii) *improving quality of NCD services* by establishing cancer units inside five regional hospitals, adding radiotherapy services to one regional hospital and increasing the number of pathology units to a total of three nationwide.

Rwanda has five specialized facilities to treat cancer. In the country there is one clinical oncologist, one hemo pathologist, 1 surgical oncologist and one gynecologic oncologist. General practitioners provide most cancer care. There are thirty dedicated oncology nurses and ten dedicated histotechnologists. Rwanda has developed national protocols for treating twelve adult cancers, including breast, colon, rectal, gastric, cervical and prostate cancers; and five pediatric cancers, including Burkitt's lymphoma and Hodgkin's lymphoma. There are thirty-one recommended cancer medicines on the Rwanda List of Essential Medicines and in 2014 the country spent close to US\$ 630,000 for them.

Rwanda has built the capacity of its cancer program with funding, training and other types of support from many organizations including the Government of Rwanda, Partners in Health, GSK, DfID, CDC, WHO, and GAVI. Over a three-year period, the program has trained 241 doctors on topics such as baseline cancer training, LEEP and VIA/cryo; 406 nurses on baseline cancer training and in-service chemotherapy; and 40 pathology technicians on topics such as pathology outreach. Two pathologists have attended international training. The *Rwanda Cancer Program* runs monthly inter-facility cancer care symposia to increase cancer awareness among health care providers and enable them to share experiences and harmonize cancer management. To further promote cancer prevention and early detection the *Program* conducted the National Breast Cancer Symposium, the Breast Cancer Public Awareness Campaign, and the HPV/VIA screening campaign. Finally, the *Program* has integrated early cancer detection into annual community medical check-ups. To address current gaps the program aims to: extend the cancer registry at the five referral hospitals to also include district hospitals; ensure availability of essential medicines; conduct training in cervical and breast cancer prevention and management; procure screening and diagnostic equipment for additional district-level facilities; and complete expansion of radiotherapy infrastructure.

## **CANCER MANAGEMENT IN ZAMBIA**

In 2009 the Ministry of Health developed the *National Cancer Control Strategy* that aims to provide a comprehensive and coordinated national response to strengthen prevention, awareness, diagnosis, treatment and care of cancer. The strategy focuses on cervical, breast, and prostate adult cancers and retinoblastoma, a childhood cancer. They are currently in the process of renewing and revitalizing this strategy. The next iteration will include policies to prevent cancer, including incorporating HPV vaccination into national policy and developing and implementing a national tobacco control program. The program also aims to strengthen prevention and early diagnosis of cancer by building capacity to conduct cervical cancer screening. Zambia has developed the Center of Excellence for Women's Cancers as well as the Cancer Diseases Hospital, a Regional Center of Excellence for Cancer and Oncology Training. Currently cervical cancer screening is available at all provincial hospitals and 31 clinics. Fifteen of these sites provide LEEP and will serve as referral sites at the provincial level. The program has also built breast cancer screening capacity with ten mammography machines, one in each province in the public sector and three in the private sector. Staff members are being trained to conduct breast cancer screening and capacity is being expanded. Finally, the program is beginning to build capacity to provide PSA tests and to perform colonoscopies for early diagnosis of prostate and colon cancers.

Zambia has established the Cancer Diseases Hospital (CDH) to be a regional Centre of Excellence by 2025 and to clinically drive implementation of the national program as well as serve as a hub for workforce training. CDH's mission is to "*provide equitable access to cost effective and quality cancer care services as close to the family as possible in order to save, prolong, and contribute to improvement in the quality of life.*" CDH aims to increase cancer cure rates by 15 percent and reduce late stage presentation of cancer cases in Zambia by 2016. The state-of-the-art facility will include the latest equipment for treatment of cancer with radiotherapy and chemotherapy. To achieve program goals the hospital provides timely, quality care to reduce morbidity and mortality; develops and implements a cancer early detection and prevention program; effectively manages and develops human resources; mobilizes financial resources to deliver and expand services; provides logistical and administrative support to the program; and develops and implements a comprehensive Health Management Information System to plan, monitor and evaluate program implementation. The hospital developed its *2011-2015 Human Resources for Health Strategic Plan*

in which it has set the following goals: (i) increase the number employed of specialized personnel and ensure the health workforce is equitably distributed; (ii) increase training outputs and harmonize them to respond to the health sector's needs; (iii) improve performance and productivity of health workers; and (iv) strengthen health systems and structures to support expansion and performance of personnel. Since inception the number of trained health workers has increased and currently the hospital has 35 staff specialized in oncology. The government has been supportive of the program and has funded the hospital to conduct training programs for Radiation Therapy Technology, Clinical Oncology, Radiology and Oncology Nursing.

## **COMMON CHALLENGES AND INNOVATIVE SOLUTIONS IN CANCER CONTROL PLANNING AND PROGRAMMING**

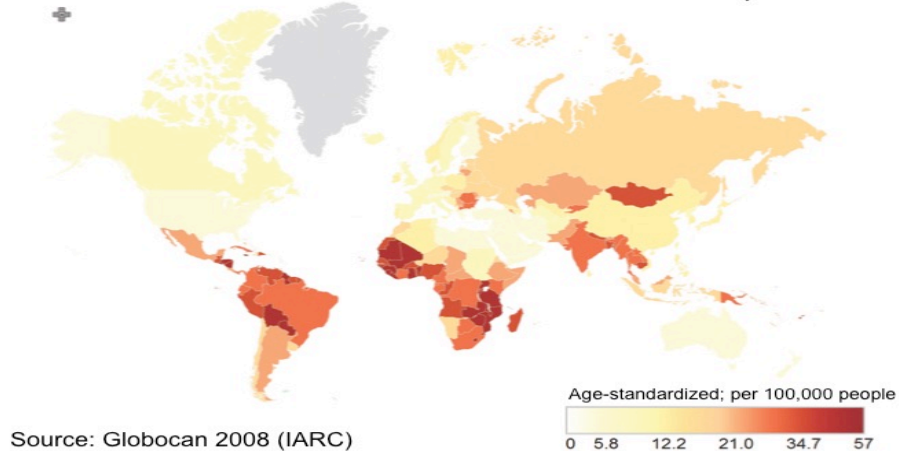
- **Identifying champions, allies, and influential stakeholders who need to be at the table for successful program planning and implementation** - Key stakeholders include advocacy groups; cancer advisory boards; survivor and patient support groups; cancer experts; NCD experts; tobacco control experts; private sector representatives; as well as civil society. Other allies can be found in government ministries in many sectors (i.e. education and labor), not to mention, in key Ministry of Health units (i.e. NCD, oncology, family health, and, sexual and reproductive health) at the district, regional and central levels. Finally, it is essential to involve Ministry of Finance officials. The *Kenya Cancer Control Program* benefited from the support of two very visible champions -- Ministers of both Ministries of Health had personal experiences with cancer and were active supporters of the program.
- **Creating linkages between cancer-specific programs and broad national health programs at the central, regional and district levels as well as between public and private sectors** - Effective linkages need to be made with sexual and reproductive health, maternal and child health, NCD and HIV/AIDS care and treatment programs. Also, opportunities to partner with the private sector and leverage their expertise and resources are critical to increasing the impact and effectiveness of CCC interventions.
- **Demonstrating economic impact can facilitate support** - Ministries of Health need to make the economic case for investing in cancer in order to mobilize support and resources. The Government of Kenya supported the *Tobacco Control Program* because it recognized that the savings resulting from reduced future expenditures for cancer-related health services, not to mention reduced productivity resulting from disease, far exceed the tax revenues lost from fewer tobacco sales as well as the cost of the program. While there has been some interference from industry, the government has been very supportive in the implementation of the tobacco control program.
- **Overcoming lack of awareness, stigma, discrimination and denial about cancer to generate broad-based support for the program** - Increasingly, Kenyans have experience with cancer or know someone who has cancer and misperceptions are being dispelled. Continued research, including population-based surveys, such as a module in the Demographic and Health Survey, can help programs track changes in awareness and knowledge; contribute to better designed programs; assist in targeting resources; and help develop effective behavior change and communication programs. Highly motivated visible champions can also mobilize support for programs. While broad base support for CCC initiatives is growing in many countries much more needs to be done to improve knowledge and awareness and early detection.

## CANCER PREVENTION IN AFRICA WITH A FOCUS ON CERVICAL CANCER

*“Cervical cancer is an African holocaust. Many women in Africa suffer and die from this preventable and treatable disease.”*

*Dr. G. Parham, Co-Director of the Cervical Cancer Screening Programme of Zambia*

### Cervical Cancer Incidence Worldwide, 2008



More than 85 percent of the global burden of cervical cancer occurs in developing countries. Cervical cancer accounts for 21 percent of all female cancers in Africa. Cervical cancer is caused by infection with the HPV virus that is transmitted sexually. There are two vaccines that protect against the HPV virus, Gardasil and Cervarix. HPV vaccination programs have been difficult to implement and scale up in LMICs because vaccines and immunization programs are complex and costly when considering the full cost of delivery; social stigma hinders uptake of the vaccines; and reaching adolescent girls is challenging.

### ***RWANDA’S EXPERIENCE PROVIDING THE HPV VACCINE***

The Ministry of Health spearheaded a Technical Working Group (TWG) to prepare and implement a comprehensive strategy for the HPV vaccination program. The TWG included technical experts, such as clinicians and health professionals engaged in cancer care, and representatives from the Ministry of Education, Ministry of Gender and Family Promotion, the Center for Treatment and Research on AIDS, Tuberculosis, Malaria and other Epidemics, and other key development partners. The TWG formed technical subcommittees to address key issues such as monitoring and evaluation; cold chain requirements; strategies for reaching the target populations of girls in and out of school; capacity building for nurses and community health workers; procurement and logistics; financing; education; and social mobilization. A key component of the program was the comprehensive communication strategy. It included a nationwide sensitization campaign that involved all stakeholders; was supported by political and religious leaders; used newspaper, radio and TV; and trained teachers to discuss cervical cancer and the HPV vaccine. The program received support and technical assistance from the Rwanda MOH, the United States Centers for Disease Control and Prevention and the International Center for AIDS Care and Treatment

Programs at Columbia University. Local leaders, community health workers and teachers worked together to implement the program in a “public-private community partnership.”

The MOH chose a school-based strategy because 98 percent of Rwandan girls attend school. It included: (i) targeting girls enrolled in Primary 6 to receive the full 3-dose course; (ii) a catch-up phase targeting girls in Secondary 3; and (iii) targeting out-of-school girls age 12. Vaccinations were provided at “health days” and other educational activities at the school. All vaccinations were voluntary and parents provided consent when their daughters received the first dose.

Challenges of the program include adhering to the eligibility requirements and tracing girls who were absent from school. To address these impediments, the program conducted further education to explain the eligibility requirements; used community health workers to trace the girls who were 12 but not enrolled in school; and used the local health center to vaccinate out-of-school girls. Additionally, there were concerns about the high cost of the program and possibly diverting scarce resources from other priority health programs. To make the program more affordable, Rwanda developed a tiered pricing agreement and negotiated a Memorandum of Understanding (MOU) with Merck pharmaceutical company. By 2012, the program had vaccinated 97 percent of the target population with the required three doses.

The success of the program can be attributed to: (i) a well-established vaccine delivery system with a cold chain, transportation, human resources, and monitoring capacity; (ii) strong national leadership and ownership, including excellent collaboration between public and private institutions; and (iii) a health system with strong outreach capacity. To continue the program, Rwanda developed a favorable pricing agreement with Merck so that each dose of Gardasil cost US\$5. It is also increasing access to the vaccine through the private health sector.

## **COMMON CHALLENGES AND INNOVATIVE SOLUTIONS IN HPV VACCINATION**

- ***Debunking myths and misperceptions about cervical cancer and the HPV vaccine*** - Prior to developing the communication campaign, Rwandan health education experts conducted focus groups to learn about people’s knowledge and attitudes towards the vaccine and cervical cancer. There was a great deal of fear that the vaccination could cause sterility and even that it was a plot by the government to slow population growth. There were also questions about why the program targeted only 12 year old girls. This information was invaluable in developing the comprehensive communication campaign that addressed misperceptions and explained cervical cancer and the vaccine at the launch of the program.
- ***Reaching 12 year old girls, in and out of school*** - The program was integrated into school-based programs such as health education, hygiene and reproductive health and sought other opportunities throughout the school year during which the second and third doses could be provided. Reaching the entire target population required identifying absent students, vaccinating them, and following up to ensure they received all three doses. It also required close coordination between schools, teachers, and community health workers.
- ***Monitoring the vaccination campaign*** - When the first dose was administered, girls received a card to keep and bring back in order to receive the second and third doses. A copy of the card was also kept at the school. Monitoring is important not only to track



coverage but also, so that as countries strengthen their cancer surveillance registries, they can measure the impact of the immunization program over time.

## **EARLY DETECTION, CANCER DIAGNOSIS AND TREATMENT**

### **ZAMBIA'S EXPERIENCE STRENGTHENING CERVICAL CANCER SCREENING -- USING NURSE-LED SCREENING TO INCREASE ACCESS**

In 2005, health officials determined that it would be feasible to introduce a nurse- led VIA-based, "Screen and Treat" program with a referral system of LEEP centers. To ensure quality, the program added digital cervicography. The program initially focused on HIV+ women and was supported by external resources from the United States President's Emergency Plan for AIDS Relief (PEPFAR). To ensure sustainability the services were subsequently integrated into the Maternal Child Health program of the Ministry of Health. Currently, services are provided as part of the gynecology exam, providing an opportunity to screen for both cervical cancer and HIV. A strong quality assurance system has been put in place, whereby digital images taken by nurses from different areas of the country are systematically reviewed in Lusaka. The MOH pays for staff and facilities and provincial-level MOH staff plan special "gyne" days. While 80 percent of women accepted being treated by nurses, follow-up has been difficult, especially in rural areas. The program added mobile patient tracking so that nurses can remind patients of appointments and follow-up with text messages. Community health workers, marriage counselors, traditional chiefs and church leaders conduct outreach. The program received strong political support from former Zambian First Lady – Dr. Christine Kaseba-Sata. Dr. Kaseba-Sata is a gynecologist who has been a highly visible champion for CCC activities, including hosting the *6th Stop Cervical Cancer in Africa Conference* that generated a great deal of visibility and political support for the program, not only in Zambia, but throughout Africa.

***"I was especially impressed by the organization of the clinic, starting with no missed opportunity for screening. The data managers plus case managers is also an excellent idea." Dr. Anne Nganga, Program Manager Reproductive Tract Cancers Program, MOH, Nairobi, Kenya***

The comprehensive program has all of the key components and provides care nationwide through 31 centers in all provinces. In addition, the program serves as a regional training center. To date, over 200,000 women have been screened for cervical cancer. Key challenges facing the program include the need to screen more women, faster; decreasing overtreatment rates; improving compliance of patients who have been referred to LEEP; enhancing capacity to perform radical surgery; and transitioning the program to government.

The program's success can be attributed to: (i) piggybacking on an existing, well-funded and well-functioning infectious disease (HIV/AIDS) platform to build capacity for the treatment and prevention of an NCD (cervical cancer); (ii) adapting interventions to the local environment; (iii) assessing all phases of the program during implementation through a rigorous process of quality control and monitoring and evaluation to quickly identify and correct any weaknesses; (iv) investing heavily in surgical excision (LEEP) infrastructure and expanding histology diagnostic services to facilitate management of complex cervical lesions that exceed the therapeutic limitations of cryotherapy; and (v) strengthening the existing healthcare delivery system when weaknesses are identified during program implementation in order to innovate, enhance sustainability, and strengthen long-term success.

## ***BOTSWANA'S EXPERIENCE STRENGTHENING CERVICAL CANCER PREVENTION - USING DATA AND TASK SHARING TO STREAMLINE SERVICES***

Cervical cancer is the second most diagnosed cancer in women 15-49 years old, and the number one cancer killer in Botswana. From 2004 – 2009 the national screening program was Pap-based and suffered from a backlog of PAP smear slides that needed to be read, weak referral services and poor program monitoring and evaluation. In 2012, the National Cervical Prevention Program (NCCPP) developed a new strategy that includes: (i) education and HPV vaccinations; (ii) screening and treatment of pre-cancer; and (iii) cervical cancer treatment. The screening and treatment component continued Pap screening, but also introduced “See and Treat” services at ten locations and in demonstration projects of both HPV DNA testing and the HPV vaccine.

Unlike other countries in the region, awareness of the need for cancer screening among the population of Botswana is high. In order to ensure that the program did not suffer delays, the MOH strengthened planning and used recent census data to estimate the number of women ages 30 – 49 in the different regions and asked political officials and community leaders to inform them of the screening service. The MOH introduced VIA, cryotherapy and LEEP and used task shifting so that women who have been screened with Pap smear and are awaiting cone biopsy treatment by specialists can access treatment at outpatient LEEP clinics run by non-specialized medical officers. Since 2012, the first of eleven “See and Treat” centers has become operational, twenty healthcare workers have been trained at the regional training center in Lusaka, cryotherapy and LEEP machines have been procured, the program has formed the Botswana-University of Pennsylvania Partnership, and cervical cancer prevention variables have been added to the MOH health management information system.

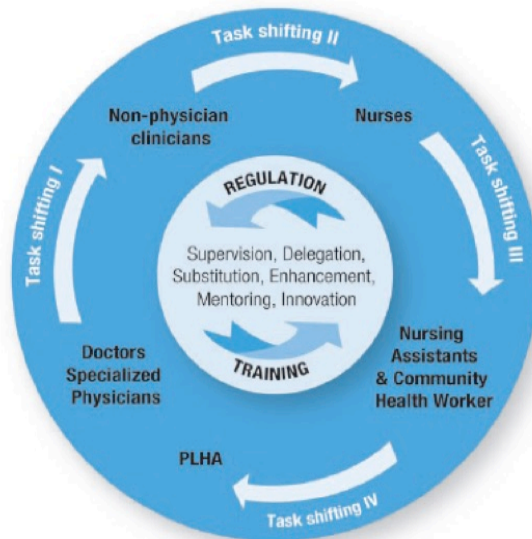
Current challenges include developing new reporting indicators, streamlining the cumbersome paper-based monitoring system, improving the tracking of referrals, and ensuring staffing and funding. Lessons learned include the importance of leveraging resources and strengthening linkages with other parts of the health system such as Sexual and Reproductive Health, HIV Prevention, the Expanded Program on Immunization and the Infectious Diseases Care Clinic; strengthening planning and strategy development; involving key stakeholders; continuing education and advocacy at all levels of the health system; and strengthening monitoring and evaluation to track performance.

## ***RWANDA'S EXPERIENCE WITH BUILDING CAPACITY OF COMMUNITY HEALTH WORKERS AND THE TASK SHIFTING PROGRAM***

The Rwandese health system consists of:- (i) five regional hospitals; (ii) 42 district hospitals in 30 districts; (iii) 474 health centers in 416 health sectors; (iv) 2,148 health community posts; and (v) 14,873 villages with one male and two female community health workers -- one of whom is responsible for maternal and infant health. CHWs are trusted, literate, community members between the ages of 20 and 50 who are elected by the community. They provide community-based prevention, screening and treatment of malnutrition; integrated community case management for malaria, diarrhea, acute respiratory infection, and malnutrition; community-based maternal and neonatal care; community-based provision of family planning; community direct observation and treatment for tuberculosis; and community behavior change communication. CHWs report health information about their village through a health management information system (HMIS) called RapidSMS. The information is aggregated from all villages on a monthly basis through the SISCom

system. The CHW program uses performance-based financing to create incentives for CHWs to report quality information in a timely manner and support thirteen maternal child health interventions. It also provides community-based health insurance for CHWs. The CHWs are organized into cooperatives that provide opportunities to generate additional income through activities such as pig and poultry farming. The challenges facing the CHW program include need for continual training; providing support and supervision; and ensuring timely supplies of medicines and other commodities. The CHW program has increased coverage of key MCH interventions; benefits from strong political commitment at all levels; has contributed to the empowerment of women; and has helped to implement innovative health financing systems.

Rwanda has developed and implemented a *Task Shifting Program* to fill the gap of trained medical



#### TASK SHIFTING AT ALL LEVELS OF THE SYSTEM

transmission. The *Task Shifting Program* was approved by the Minister and scaled up in 2009. The *Program* shifted responsibilities at every level of the system: from specialized doctors to non-physician clinicians; from non-physicians to nurses; from nurses to nursing assistants and community health workers; and from community health workers to people living with HIV/AIDS (PLHA). The *Program* required revision of the regulatory framework, a strong quality assurance system, and involvement of service users. Its ongoing success depends upon coordination of all stakeholders at all levels of the health system as well as effective supervision; delegation of authority and responsibility; empowerment; and strong mentoring. Lessons learned include: task shifting and task sharing can strengthen the overall health system; require both a comprehensive regulatory framework that defines tasks and competencies, as well as a coordinated and standardized training program; and requires a quality assurance system that features ongoing supervision. Task shifting and task sharing are not cost savings strategies but rather strategies for increasing access to services.

### **KENYA'S EXPERIENCE TRAINING PATHOLOGISTS**

The **2013-2018 Kenya Health Sector Strategic and Investment Plan** has set the following 5-year targets for indicators tracking progress towards its objective of "halting, and reversing the rising burden of non-communicable conditions": (i) 75 percent of women of reproductive age are screened for cervical cancer; and (ii) 2 percent of patients are admitted with cancer. Key strategies of the



national cancer screening programme are: (i) target diseases should be a common form of cancer with high associated morbidity or mortality; (ii) effective treatment, capable of reducing morbidity and mortality should be available; (iii) test procedures should be acceptable, safe, and relatively inexpensive; and (iv) facilities that can undertake subsequent diagnosis and treatment and follow-up should be available and accessible. The service package includes breast cancer screening and fecal occult blood testing for bowel cancers and breast cancer screening and annual prostate examination for all men over 50 years of age.

Pathology services play a key role in several stages of cancer care and control, including accurate surveillance, reliability of cancer registries, primary prevention, cancer screening, diagnosis and staging, treatment planning, and detection of recurrence. Historically, Kenyan pathologists received their training in 5-year programs in the UK and were able to specialize in anatomic pathology, cytopathology, haematopathology, chemical pathology, immunopathology, and clinical microbiology. Pathology training capacity has been developed at the University of Nairobi (UON) that now offers a 3-year Master of Medicine General Pathology Training program, experiential mentorship training at the sub-speciality level, as well as professional certificates as a Specialist Pathologist. Since 1986, the UON program has trained 70 pathologists who now work in four teaching hospitals, provincial and district level hospitals, and private hospitals, as well as in other hospitals in the East Africa region. In 2006, the Aga Khan University Hospital developed a 4-year pathology residency program that has tracks in anatomic pathology, histopathology, cytology and forensic, as well as clinical pathology (haematology, chemical pathology, immunopathology and clinical microbiology). To date, the program has trained twelve anatomic pathologists and 11 clinical pathologists. In addition, postgraduate cytology programs have been developed and UON now offers a Master of Science in Clinical Cytology. Trainees include technologists and clinicians. This program has built regional capacity and trained pathologists from Malawi, Zimbabwe and Zambia.

UON has collaborated with regional and international professional associations such as the Kenya Association of Clinical Pathologists; the Kenya Society of Haematologists and Oncologists; the Association of Pathologists in East, Central and Southern Africa; and the International Association of Pathologists to develop post MMed Training, fellowships, continuing education seminars and workshops, and teleconferences. Currently, the College of Pathologists in East, Central and Southern Africa (COPECSA) is forming the Regional College of Pathologists and aims to establish standards of pathology training for the region and offer pathology fellowships. UON is also collaborating with the University of Stellenbosch to develop a training and research program.

Kenya is making significant efforts to increase human resources capacity to support cancer diagnosis and treatment follow-up in the region. Several regional opportunities are being developed, however, they face several challenges, including lack of space and infrastructure; shortages of resources and supplies, including teaching microscopes, staining supplies, and reference books; lack of quality assurance schemes; and limited research funding.

### ***ZAMBIA'S EXPERIENCE TRAINING RADIATION THERAPY TECHNOLOGISTS***

Zambia has developed a cost effective regional training program in Radiation Therapy Technology. The program uses a mixed model approach that emphasizes both clinical and academic training. It is implemented by the Cancer Diseases Hospital Training College and provides hands on experience through training that is integrated into clinical operations. The program conducted a Training of Trainers in 2010 and developed its curriculum through a collaborative participatory process that involved all key stakeholders. The program has developed an evaluation and quality

assurance system and has been accredited. The program graduated two cohorts of students in 2014, including 17 Zambians, 1 Malawian, 2 Eritreans, and 3 Ethiopians.

## **COMMON CHALLENGES AND INNOVATIVE SOLUTIONS TO EARLY DETECTION AND CANCER DIAGNOSIS AND TREATMENT**

- **Generating demand for services** - Zambia uses chiefs, churches, and traditional marriage counselors as advocates and other community leaders to conduct community outreach and educate women about the importance of cancer screening. Botswana used census data to plan outreach efforts and target program activities towards women between the ages of 30 - 49. Finally, Rwanda has used its extensive network of Community Health Workers to educate women about the importance of cancer screening.
- **Raising awareness through innovative social mobilization efforts to reach a younger target population and to overcome misperceptions and traditional beliefs concerning cervical cancer** - The Zambia program found that the best advocates are women returning to their communities after receiving care. The program also introduced health clubs at the secondary education level to raise awareness of cervical cancer screening among younger people.
- **Using innovative telemedicine and mobile phone communication strategies to increase access to services in sparsely populated areas** - Zambia uses mobile phones to communicate and follow-up with patients and telemedicine to ensure quality of care and accuracy of diagnoses.
- **Building capacity and addressing shortages of trained health personnel** - Zambia increased its capacity to provide cervical cancer screening by piggybacking upon an existing, well-functioning infectious disease platform. Countries have used a wide range of strategies for increasing the capacity of their health system staff including: **on-the-job training** to build capacity for job specific tasks; **task shifting and task sharing** that reassign tasks to different levels of personnel and, as in the Rwanda experience, require reorganizing policies and procedures throughout an organization or system; **reviewing and revising curricula** of existing degree programs; and **developing new training programs** to train nurses, doctors and other levels of health care personnel. Rwanda, Zambia and Botswana have effectively used task shifting and task sharing and developed new training programs to expand the role of nurses in the provision of cervical cancer screening and support their work with quality assurance programs, training and supervision.
- **Building pathology capacity** - Countries have used several strategies to build their pathology capacity. Kenya has equipped pathology labs at selected sites and uses **roving pathologists** to travel from site to site and provide services. The University of Nairobi has also **developed training programs** to train pathologists and now students can pursue a 3-year Master of Medicine General Pathology Training program; a Master of Science in Clinical Cytology; participate in mentoring programs at the sub-speciality level; or receive a professional certificate as a Specialist Pathologist. Since 1986, the University of Nairobi program has trained 70 pathologists who now work in four teaching hospitals; provincial and district level hospitals; private hospitals; as well as hospitals in the region. In 2006, the Aga Khan University Hospital developed a 4-year pathology residency program that offers tracks in anatomic pathology, histopathology, cytology and forensic, as well as clinical pathology (haematology,

chemical pathology, immunopathology and clinical microbiology). Zambia is using **telemedicine** to extend its pathology capacity to rural areas.

Increasing capacity and quality of pathology services is critical to the expansion of CCC services. Many countries have developed **twinning arrangements** with cancer programs and medical schools in developed countries. For example, Uganda has been working with the Fred Hutchinson Institute in the United States to build its pathology capacity and improve the quality of diagnoses. Kenya, in the AMPATH Program has developed many **institutional partnerships** with academic and research institutions, including Indiana University and Toronto University. AMPATH is emphasizing quality control during its training to improve the accuracy of its pathology testing. While international collaboration has been critical to the development of pathology capacity, **strong quality control during training** has been essential to assuring that Kenyan and Ugandan pathologists develop good skills and arrive at diagnoses that are comparable to those of internationally trained pathologists. A recent study showed that 56 percent of diagnoses made by Ugandan pathologists matched those made by US pathologists.

- **Strengthening the referral system and ensuring patient follow-up** - Zambia has implemented a mobile patient tracking system that enables nurses to remind patients of the need for follow-up appointments. Rwanda uses its network of Community Health Workers to follow up with patients and Botswana has strengthened its monitoring and evaluation system to ensure patient follow-up.
- **Reducing the time between diagnosis and treatment** - Both Zambia and Botswana have introduced VIA “See and Treat” services because they allow immediate treatment of precancerous lesions. Zambia has been tracking the stage of disease of patients presenting for treatment and has recently seen an increase in the number of stage two women presenting, indicating that the referral and screening programs are making an impact.
- **Leveraging ongoing platforms can generate cost efficiencies and contribute to sustainability** - Zambia has strengthened the sustainability of its cervical cancer screening program by integrating services into the MCH program of the Ministry of Health. Botswana has strengthened linkages and leveraged resources from other parts of the health system, including Sexual and Reproductive Health, HIV Prevention, the Expanded Program on Immunization and the Infectious Diseases Care Clinic in order to strengthen sustainability of its cancer-screening program.

## INCREASING ACCESS TO PALLIATIVE CARE

Palliative Care is “an approach that improves the quality of life of patients and their families facing problems associated with *life-threatening illness*, through prevention and relief of suffering”. PC begins at diagnosis and continues through and beyond treatment. Issues related to palliative and hospice care include limited access to appropriate symptom management and support to sustain function and prolong survival. Appropriate palliative care requires family support; a holistic approach; maintenance of hope and dignity; and open communication for informed decision making.

Opioids are indispensable for the relief of pain and suffering and appropriate policies need to be in place to ensure they are both available for medical use and not abused. Since the early 1960s the United Nations and WHO have worked to develop policies and frameworks that both *prevent abuse*

*and diversion* and *ensure availability* of the drugs for medical purposes. In the mid-1980s pharmaceutical companies began manufacturing opioids in sustained release forms that are easier to administer. There is tremendous disparity in the availability and consumption of opioids. In 2010 it was estimated that 16 percent of the world's population living in high-income countries consumed 90 percent of the morphine used globally. In Africa, South Africa has the highest per capita opioid consumption followed by Kenya, Ghana, and Zambia.

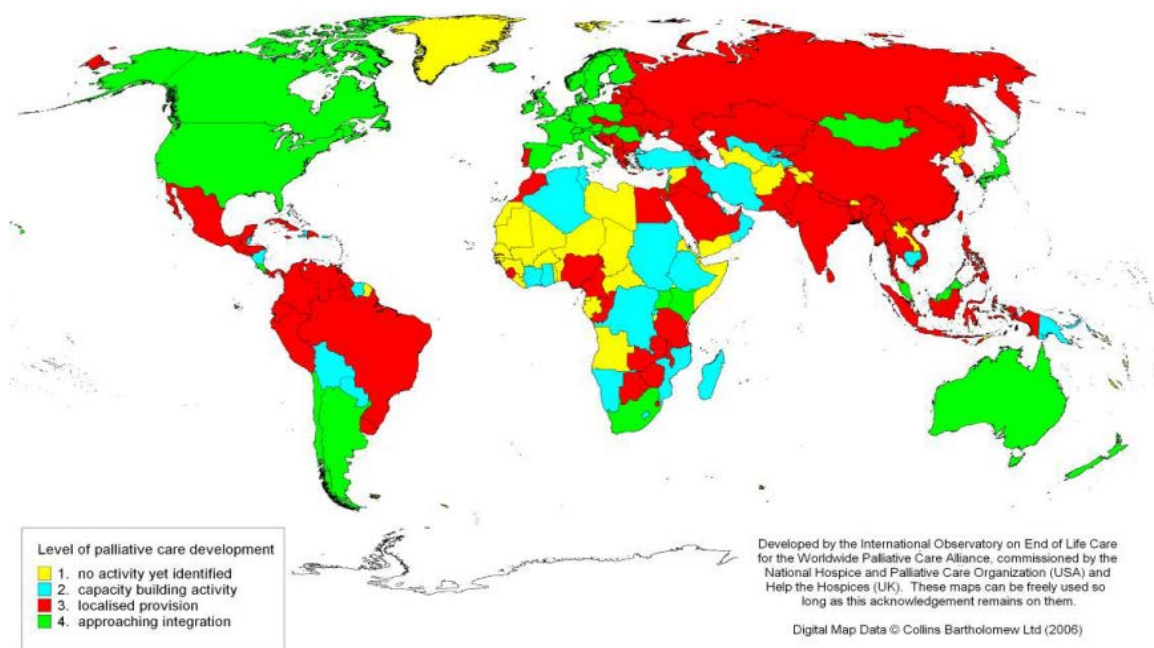
In 1990, WHO developed guidelines for using opioids to relieve cancer pain. Despite published guidelines, a 1994 study published in the *New England Journal of Medicine* found that 42 percent of cancer patients received inadequate cancer pain treatment and minorities, women and older patients were more likely to receive inadequate cancer pain treatment. Barriers to accessing PC and medication to manage pain include lack of knowledge among patients and providers; myths and misperceptions; provider bias; lack of coordination of care and services; procurement policies and supply chain issues; eligibility restrictions limiting facilities authorized to dispense the drugs and health care providers authorized to prescribe them; additional prescription requirements hindering access, such as specialized prescription pads, limits to the length of prescriptions, and referral requirements; general laws that limit access; and lack of accountability.

There are several global and regional frameworks that aim to increase access to PC including the **WHO Guidelines for Cancer Pain Relief**, the **WHO May 2014 PC Resolution** that focuses on integration, education, research and funding; and the **International Narcotics Control Board** efforts to strengthen control and access to narcotics. There are also several North-South Initiatives that are working to develop and advance PC integration as well as expand the evidence base.

## **INTEGRATING PALLIATIVE CARE INTO AFRICAN HEALTH PROGRAMS AND POLICIES**

African countries are gaining experience with the integration of PC into existing health services. For example, Uganda formed a Public Private Partnership to provide free access to liquid oral morphine; authorized nurses to prescribe opioids; integrated PC into the curricula for health workers, as well as for diploma, bachelors and masters level students; formed a Country PC Team comprised of both public and private sector stakeholders; and integrated PC into national HIV, Cervical Cancer and Health Sector Strategic Plans. Facilities providing PC services can now be found in 70 percent of Uganda's districts. Swaziland has also made rapid progress in developing a national PC policy and implementation guidelines; developing and implementing a national training curricula and setting up a procurement system for oral morphine with a corresponding monitoring system.

## Level of Palliative Care Development



African countries with national PC Policies and Strategies include Tanzania, Botswana, Mozambique, Malawi, Swaziland, Zimbabwe, Uganda and Rwanda. The key components of a PC policy and program include: (i) leadership and governance that include locally appropriate and sustainable policy guidance, information and oversight, collaboration and coalition building, regulation, system design and accountability, especially as pertains to morphine procurement and prescription; (ii) service delivery packages and models that are sustainable, equitable and evidence-based; (iii) financing that promotes sustainable access to an effective mix of preventive, curative, rehabilitative and palliative services; (iv) development of human resources for health that promotes task sharing as well as task shifting; (v) health information systems that are used to inform programming and improve health outcomes; and (vi) access to quality medical products, vaccines and technologies.

The African Palliative Care Association (APCA) is a pan-African organization founded in 2004 that works to improve access to PC in all of Africa and to ensure that PC is well-understood and integrated into health systems at all levels and underpinned by evidence. The APCA works collaboratively with local, national, regional and international partners to: (i) increase knowledge and awareness; (ii) facilitate integration of PC into national policies and education; (iii) ensure access to essential medicines and existing health services; (iv) build the evidence base for PC in Africa; and (v) increase sustainability of programs.

## **IMPLEMENTING PALLIATIVE CARE – KENYA’S EXPERIENCE**

Increasing access to PC has been a key component of the Kenya Cancer Control Programme because over 80 percent of cancer cases present late when PC is the only treatment option. To address this growing need and make the best use of scarce resources, Kenya has strategically linked PC to cancer prevention, early detection and treatment for both adults and children. It has also mobilized both public and private sector partners and formed partnerships with key

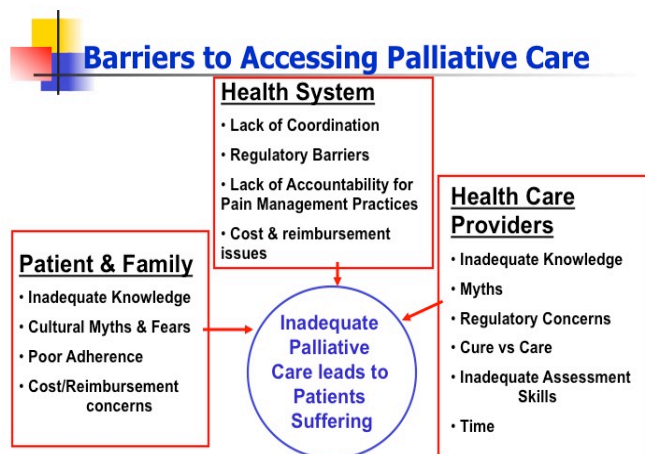


international organizations. The *Kenya Hospices and Palliative Care Association* has been instrumental in initiatives to establish PC centers and train public and private sector health workers. To date Kenya has established 11 PC centers in public regional referral hospitals; 25 PC centers in county public hospitals; 9 PC centers in hospitals operated by faith-based organizations in various regions; and, established 17 free-standing hospices. PC has been integrated into training provided by most medical and nursing schools, including the Kenya Medical Training College. Five thousand health workers have participated in one-week training courses and 52 health workers have received advanced PC training. Kenya has also mobilized political leaders to support PC and has integrated PC into the *2011-2016 National Cancer Control Strategy* and the *2013 National Guidelines for Cancer Management*, and promulgated the *2013 National Palliative Care Guidelines*. Finally, Kenya is the first African country to have the health minister, a cabinet secretary, include PC in his performance contract in order to ensure continued government action to increase access to PC.

## IMPLEMENTING PALLIATIVE CARE – BOTSWANA’S EXPERIENCE

In 2003, Botswana participated in a WHO-supported five-country project aimed to improve PC initiatives and the quality of life of people living with HIV/AIDS and cancer. As a result, Botswana developed a comprehensive *National Palliative Care Strategy*. Its key components include: ensuring access to pain and PC medications at facility and community levels; building local capacity for PC provision in health care settings, hospices, day centers and homes; providing psycho-social support and wrap around care; and improving end-of-life care and bereavement support. The program was launched in 2013.

The MOH is currently implementing the *PC Strategy* by: (i) addressing misperceptions and improving understanding; (ii) developing guidelines and protocols for PC, as well as for pain management; (iii) implementing 5-day training programs and integrating PC into the undergraduate health curricula; (iv) increasing availability of opioids; (v) forming the Botswana Hospice and Palliative Care Association to improve coordination; (vi) improving continuity of care by strengthening linkages between acute care and PC providers; and (vii) mobilizing resources. Next steps include incorporating PC implementation plans into the *National Cancer Control Plan*; increasing access to opioids and training health personnel to prescribe them; and reviewing opioid regulations.



## IMPLEMENTING PALLIATIVE CARE – RWANDA’S EXPERIENCE

In 2006, Rwanda’s MOH developed a PC program and introduced PC training for hospital and non-governmental organization (NGO) staff. In 2007, PC was added to the clinical care package. In 2008, an advocacy workshop was conducted to strengthen PC delivery and morphine was added

to the Essential Drugs List. In 2011 a *National Palliative Care Policy* was approved, district level hospital workers were trained and the Palliative Care Center at Kibagabaga was created. In 2013 the *National Palliative Care Policy* was integrated into the *National Strategic Plan*. PC is implemented at all levels of the health system and referral, provincial and district hospitals, as well as health centers and health posts provide a clinical care package while community health workers follow-up with patients and support treatment compliance and home-based care. The program uses multidisciplinary teams from provincial and district hospitals and the community to coordinate care.

Priority areas for the PC program include strengthening PC at all levels of the health system; educating health care workers and conducting refresher training of district hospital staff in morphine use and pain management; raising awareness of both patients and health care personnel; improving access to services and quality of care; and conducting research to inform and improve care. Strategies used to expand the program include: (i) gaining government ownership to expand a program initially led by civil society; (ii) using the national health plan to integrate PC into services at all levels of the health system; (iii) using a core team of national trainers at the Provincial Hospital level and a cascade system of training staff throughout the system; (iv) relying on the national supply chain system to procure and distribute drugs; and (v) establishing a technical working group to advise the Ministry of Health and advocate for continued program support.

## **COMMON CHALLENGES AND INNOVATIVE SOLUTIONS IN INCREASING ACCESS TO PALLIATIVE CARE**

- ***Mobilizing public and private sector support and resources for PC*** - Public and private sector policymakers need to be educated in the strategic link between PC and cancer prevention, early detection and treatment for adults and children as well as the risks of opioid addiction. In Kenya, the PC program began as a cancer-related program and then raised its visibility by demonstrating that PC services can benefit persons facing all kinds of life-threatening illnesses. It further expanded its services by working with hospice-providers; by improving linkages with cancer prevention and treatment and mobilizing MOH resources to integrate PC into hospital care, and by collaborating with donor organizations interested in improving access to PC.
- ***Increasing access to drugs*** - Rwanda and Uganda have procured morphine in an inexpensive solution form and trained compounding pharmacists to dispense it. Both countries have also used Public Private Partnerships to increase access. Finally, global efforts to negotiate with pharmaceutical companies for lower price drugs, as has been done for ART, are needed.
- ***Authorizing trained nurses to prescribe and better utilizing pharmacists to dispense opioids*** - It is essential that policy assessments and situation analyses be conducted in each country to understand the laws, policies and guidelines on the books, how they are implemented, and what their impact is on hindering access to PC. Once this information is collected, it is important to involve all stakeholders in the review and revision of regulations and policies to build consensus among doctors, nurses and pharmacists for new prescribing practices that can increase access to PC. Uganda has authorized trained nurses to prescribe morphine.

## INCREASING ACCESS TO AN ESSENTIAL CANCER CARE PACKAGE

Because cancer care is costly, complex and chronic, identifying strategies for financing the continuum of CCC interventions is challenging and efforts must be made to identify cost-effective interventions. The ***Disease Control Priorities, Third Edition (DCP3)*** has for the first time a volume on cancer that provides the state of the art evidence on cost effectiveness of various interventions. As part of ***DCP3*** a framework has been developed to first analyze the cancer burden in a country; then determine the cost effectiveness of specified health interventions within the country context, and finally estimate the feasibility and potential impact of scaling-up the interventions. This information is then used to identify the *most cost effective essential cancer care package and determine the cost of its implementation as well as its potential impact*. Global financing to support cancer programs in Africa is limited and programs are typically financed through large out-of-pocket payments with some public sector support. To design a cost effective essential cancer care package the disease burden must be understood; cost effective interventions identified; and the feasibility of scaling up interventions in the specific health care setting assessed.

Cost effectiveness analyses of selected cancer control interventions conducted for the ***DCP3*** demonstrate that HPV vaccination; comprehensive tobacco measures; and tobacco taxes are very cost effective. Similarly, high quality treatment of selected paediatric cancers for patients below age 15 can significantly reduce mortality and be cost effective. The ***DCP3*** estimates that the marginal per capita cost of a comprehensive essential cancer package that includes these interventions ranges from about US\$1.7 in low-income countries to roughly US\$5.7 in upper middle-income countries.

***DCP3*** provides a strong economic rationale for financing selected cancer interventions and presents several potential sources of funding the addition of an essential cancer package into current health programs. If the essential cancer package were provided to approximately 5.8 billion people, approximately 3.2 million cancer deaths in people below age 70 would be averted. This would cost 3 percent of public spending for health in upper- middle-income countries; 5 percent in lower- middle-income countries; and 14 percent in low-income countries. Since the per capita income in these countries is growing, more money will become available and cancer interventions can be domestically financed. Funds can also be generated through tobacco taxes. Another important source of funds is international donor support. Currently, global priorities for reducing the costs of the essential cancer package include: (i) lowering the cost of key inputs, such as drugs and vaccines, through large scale purchasing and/or negotiated drug prices; (ii) providing technical assistance; (iii) formalizing communities of practice; and (iv) conducting research. Research priorities include: registries to better understand the disease burden; implementation science; biology; and economics, including costing.

Health system reforms being implemented in many African countries that provide opportunities for increasing access to CCC include: (i) Universal Health Coverage (UHC) to ensure financial protection through pooled, publicly-financed health care; (ii) performance-based financing programs that provide financial incentives to providers and community workers, based on the quantity and quality of services delivered; and (iii) Public Private Partnerships that involve contracts between public and private entities for the provision of services, facilities and/or equipment. When developing strategies for financing CCC programs within the context of these broader health system reforms, it is essential to ensure that all people can obtain health services without suffering financial hardship.



## **INTRODUCING CCC INTO UNIVERSAL HEALTH COVERAGE PROGRAMS**

*“for cancer to be part of Universal Health Coverage, we need to start building the evidence base. There is urgent need for more information on the burden of disease, on priority interventions, and on the most cost effective ways of delivering services, bearing in mind value for money. This information will be critical to defining benefit packages, and determining what is affordable.”*

*Karima Saleh, Senior Health Economist, World Bank*

The World Bank is working with many African countries to support progress towards Universal Health Coverage; a process that depends upon a thorough understanding of the country and its capacity to collect revenues, pool funds, and purchase services. Key considerations for the design of programs to introduce cancer care into UHC programs include: clearly defining the population of beneficiaries who will receive services; determining which services to include in the benefit package; estimating the cost of services to be covered; and developing a strategy for shifting to prepayments and reducing out-of-pocket payments for care. When making these choices it is important to ensure that coverage and use are based on need; to maximize benefits and cost effectiveness by prioritizing policies that generate the greatest sum of health-related well-being in a given population; ensure that contributions are fair and based on ability to pay; and ensure accountability through robust monitoring. Additional research is needed to inform these decisions and better understand the disease burden; the cost effectiveness of interventions; household out-of-pocket spending; and the incidence of catastrophic spending, especially among the poor.

Key lessons from the experiences introducing cancer care coverage into UHC programs in Thailand, Mexico, Columbia, and Peru are: (i) strategies to include cancer care coverage into national health insurance programs need to focus on improving survivorship and reducing out-of-pocket payments for the poor; (ii) separate catastrophic illness funds can be established and revenues can be generated from “sin taxes”; (iii) introduction of benefits needs to be *slow, sequenced and structured*, focusing first on selected interventions for high incidence cancers and targeted populations and gradually expanding to include additional services and beneficiaries; (iv) solid data on costs and burden of disease, and efforts to ensure that entitlements translate into effective coverage are essential to success; and (v) political will is key.

## **COSTING OF COMPREHENSIVE CERVICAL CANCER PREVENTION – THE COMPREHENSIVE CERVICAL CANCER COSTING AND PLANNING TOOL**

Reducing the burden of cervical cancer requires a comprehensive approach that includes vaccination; screening and treatment of precancerous lesions; detection and treatment of early to mid-stage cancers; and provision of palliative care. To plan for and provide these services it is essential to know both the financial and economic cost, including the cost of training programs; procurement and distribution of vaccines; social sensitization; delivery of services; supervision; monitoring; and program evaluation. To better understand these costs, WHO has supported development of a **Comprehensive Cervical Cancer Costing and Planning (C4P) Tool**. The tool can be accessed at: [www.who.int/immunization/hpv/en/](http://www.who.int/immunization/hpv/en/)

The **C4P Tool** facilitates the process of estimating costs and designing a cervical cancer prevention program. It helps decision makers understand the components of various service delivery strategies; compare their costs; estimate their anticipated impact; discuss trade-offs; and clarify policies. It uses population data from the United Nations Development Program (UNDP), vaccine cost data from the Global Alliance for Vaccines and Immunizations (GAVI), data on the number of

schools from Ministries of Education, and data on costs of other inputs such as per diem, transport, and allowances from Ministries of Finance. The **C4P Tool** estimates both investment and recurrent costs; predicts outputs in terms of health systems strengthening and population coverage; and allows users to compare the costs of various strategies and scenarios such as facility-based versus community-based service delivery and school-based versus community-based immunization campaigns.

The **C4P Tool** has been applied in 12 countries and has shown that: (i) even though financing through GAVI has reduced costs and Gardasil is now available for \$4.5 per dose the cost of the vaccine remains significant; (ii) vaccine delivery costs (excluding the cost of the vaccine) are more expensive than those of routine vaccinations largely due to the challenges of reaching girls ages 9 - 13; (iii) costs for vaccine delivery per fully immunized girl range from \$3.9 - \$5.8 across countries; and (iv) factors contributing to cost differences include variations in country settings (geography, population etc.) and strategies for administering the vaccines. The **C4P Tool** has also demonstrated that effective and timely interventions can reduce morbidity and mortality from cervical cancer, however, successful programs require planning and a comprehensive approach.

## ***COST EFFECTIVENESS OF BREAST CANCER PREVENTION - GHANA'S EXPERIENCE***

In 2012, Ghana's breast cancer diagnosis and treatment program covered ten percent of the population, cost \$1.6 million and averted 437 DALYs (disability adjusted life years). The average cost effectiveness ratio was estimated to be \$3,745. Currently, the Ghana National Health Insurance Service (GHIS) covers breast (and cervical) cancer diagnosis and treatment for its beneficiaries. However, GHIS only covers 34 percent of the Ghanaian population. Policymakers conducted a cost effectiveness analysis (CEA) to identify the most cost effective way to deliver breast cancer diagnostic services and treatment and explore strategies for increasing financing and expanding access. To conduct a CEA the DALYs resulting from a health condition in a population that can be averted by the health intervention are measured; then the cost of the health intervention is determined; and, finally, the CEA ratio (DALYs averted by the program ÷ the cost of the program) is calculated. The CEA ratios are then used to compare the cost effectiveness of several different health interventions.

Ghanaian policymakers used CEA to compare three components of the breast cancer program, namely, mass media awareness, clinical breast exams, and mammography screening. The CEA indicated that in Ghana, both mass media awareness with a CEA ratio of \$1364 and the clinical breast exam if provided with continuity of care with a CEA ratio of \$1299 were cost effective. Mammography screening with a CEA ratio of \$12,908 was not cost effective in Ghana. The CEA demonstrated that increasing the coverage of the program to 100 percent of the population would cost \$16 million and would avert 12,560 DALYs annually. It also demonstrated that a package of interventions that includes mass media awareness, diagnosis, treatment and care is more cost effective than a single intervention for treatment.

Priorities for expanding the breast cancer program in Ghana include: (i) strengthening evidence of the disease burden; the costs and cost effectiveness of key interventions; and the benefits of investments in prevention and early detection; (ii) initiating a dialogue with health finance reformers to expand access to effective interventions and GHIS coverage; (iii) exploring possibilities of purchasing services from established private treatment centers; (iv) continuing to integrate breast cancer and cervical cancer screening into key programs (Maternal and Child Health, Sexual

Reproductive Health, and HIV/AIDS prevention) and new initiatives (*Every Women, Every Child*); and (v) continuing to build service delivery capacity.

## **Common Challenges and Innovative Solutions in Financing Cancer Care**

- **Identifying the most cost effective essential cancer care package and determining the cost of its implementation as well as its potential impact** - the **DCP3** research project has developed a framework for analyzing the cancer burden in a country and determining the cost effectiveness of interventions within the country context. The most cost effective interventions in many country contexts are HPV vaccination programs, tobacco control measures and implementation of tobacco taxes. Kenya has successfully implemented tobacco control measures. Additional research is needed to expand the evidence base.
- **Using economic analyses to make the case for investing in cancer and mobilize additional resources to support cancer interventions** - Economic analyses can be effective tools for generating political support and mobilizing both global and national resources to support CCC programs. Rwanda has mobilized global resources in the form of reduced costs for HPV vaccines. Ghana has conducted a cost effectiveness analysis to determine the most cost effective way of expanding its breast cancer prevention program and is using the results to mobilize national health care resources to increase access to breast cancer screening.
- **Introducing cancer care into Universal Health Coverage** - strategies to include cancer care coverage into national health insurance programs need to focus on improving survivorship and reducing out-of-pocket payments for the poor. Coverage of cancer care benefits needs to be introduced in a *slow, sequenced* and *structured* manner that focuses first on selected interventions for high incidence cancers and targeted populations and gradually expands to include additional services and beneficiaries.
- **Assessing the cost effectiveness of alternative delivery strategies**—tools can be used to determine the cost effectiveness of delivering critical services using different delivery modes (for example, school-based versus community-based programs to provide the HPV vaccination to girls). This type of analysis is instrumental to making smart decisions in resource-constrained environments.

## **PUBLIC PRIVATE PARTNERSHIPS - THE EXPERIENCE OF AMPATH ONCOLOGY IN ELDORET, KENYA**

The AMPATH Oncology and Chronic Care Program is an innovative partnership between: government agencies, academic institutions and private companies. Its flexible structure allows each partner to play to its strength: government agencies support research, provide an enabling environment, and ensure oversight; academic institutions contribute scientific and research expertise and negotiate agreements; and private organizations provide in-kind resources such as bioassays, targeted funding, and resource personnel.

AMPATH is based in Western Kenya and provides CCC services to a population of 18 million. It combines care and research to pursue its mission of “*Care Leads the Way*.” To better meet the

increasing needs of its patients, AMPATH expanded its original platform of HIV/AIDS services to provide a range of integrated services. As of 2013, AMPATH Oncology and Hematology Outpatient Clinic provides a variety of services for men, women and children, including for Kaposi's sarcoma, breast cancer, lymphoma, head and neck cancers, gastro intestinal cancers, leukemia both acute and chronic, breast, cervical and ovarian cancer, and screening for cervical, prostate and breast cancers. AMPATH has developed collaborative relationships with nine academic institutions; multiple US and Kenyan government agencies; several pharmaceutical companies; foundations and research organizations.

Strategies AMPATH is implementing to address CCC barriers include:

- ✓ **Improving infrastructure** - AMPATH is strengthening pathology infrastructure since cancer treatment can only be as good as the diagnosis. It has improved chemotherapy services by installing chemo prep hoods, improving chemo storage facilities, and installing both hardware and software programs designed to improve management and administration of chemotherapy treatment. AMPATH is also building radiotherapy bunkers in its new cancer treatment center. Since the majority of patients present with advanced cancers, AMPATH has established a palliative and hospice care unit. To strengthen surveillance, AMPATH has provided hardware and software support and developed a reliable cancer registry. Finally, AMPATH is collaborating with Moi Teaching and Referral Hospital to develop surgery resources dedicated to oncology cases.
- ✓ **Supporting research and clinical training** – AMPATH is supporting collaborative arrangements between Moi, Indiana and Toronto Universities to develop curricula, train trainers, and train medical personnel through both long- and short-term research and clinical training courses.
- ✓ **Improving affordability and sustainability of services** –AMPATH has worked with pharmaceutical companies to provide generic drugs for lower costs; explored the cost implications and possibility of including chemotherapy in the benefits provided by the National Hospital Insurance Fund; researched willingness and ability to pay; formed Public Private Partnerships; and raised awareness of the importance of controlling cancer to mobilize resources and advance philanthropic efforts of groups such as pharmaceutical companies.
- ✓ **Increasing access to palliative care** – AMPATH has improved the acceptability and use of morphine for pain management; explored the possibility of including narcotics on the essential drug list to make them more affordable; developed and conducted multiple short-term trainings on palliative care; and promoted the use of multidisciplinary teams to improve coordination and quality of care.
- ✓ **Educating patients, service providers, policymakers and the community** -Patient education is essential for **addressing misperceptions** to increase demand for services and **improving understanding of side effects** to enhance treatment compliance. AMPATH has developed materials on chemotherapy for patients; held multiple meetings and conferences; and disseminated research findings. Provider education through **continuing education** is essential for improving quality of care. AMPATH has supported chemotherapy administration courses and tumor boards -- multidisciplinary meetings of medical personnel to discuss current cases, to disseminate and promote best practices. AMPATH has also supported the formation of **patient support groups** that have been

very effective in raising awareness and generating demand for cancer screening services. Finally, AMPATH has provided technical expertise to the MOH in support of efforts to develop policies, guidelines and treatment protocols.

Additional areas of capacity building that AMPATH has supported include conducting and disseminating research and using new technologies to improve service delivery and quality of care. Ongoing challenges AMPATH faces include: generating continued political leadership and goodwill; consistent funding; collaboration at all levels in country, especially within the decentralized system; and maintaining access to cost effective drug supplies.

## **COMMON CHALLENGES AND INNOVATIVE SOLUTIONS IN PPPs**

- ***Improving coordination of public and private sector CCC providers and increasing engagement of the private sector, including through PPPs*** - While governments need to ensure financing of cancer programs, they do not necessarily need to deliver the services. In countries with a vibrant private sector, it may be more cost effective for governments to purchase services from private sector hospitals and clinics. In some countries, however, there are impediments to private sector provision of cancer care, such as high costs and low demand for services. Policymakers need to explore these issues and work with the private sector to identify ways to increase private sector engagement, including opportunities for Public Private Partnerships. Zambia has used a traditional PPP in which a mining company has sponsored gynecology days for the wives of employees. Currently Zambia is hoping to form a PPP to add six satellite centers for radiology.
- ***Advancing research and ensuring that it is relevant and informs local programs*** - Strengthening the capacity of local Institutional Review Boards for both scientific and ethical reviews is essential to ensuring that research is relevant and useful. Also, including health care providers at all levels of the system, policymakers and other stakeholders in the review of research proposals helps to both ensure its relevance and build ownership of research results.

## **OPPORTUNITIES FOR REGIONAL COLLABORATION**

There are important opportunities for countries to join together and collaborate to address the shortages of qualified personnel and limited training; serious underfunding of programs and the need to make a better economic case for investing in cancer care and control; and the limited attention to research to inform policy and generate knowledge of science of delivery. Already countries have developed regional training programs to build capacity for pathology, oncology, radiation therapy, and other needed skills. Countries are also building important regional networks of resources to support one another in addressing cancer. Zambia has developed the *Center of Excellence for Womens' Cancers* and is rolling out nationwide the HPV screening program. **CCC SSKE** participants were inspired after seeing the Zambia program in action and commented, "*I wish my Minister of Health could visit Zambia and learn from the Zambian government what it takes to allocate resources for cancer care.*" Another stated, "*the Cancer Control Programme for Zambia is a shining example as it has components of prevention at the African Center of Excellence for Women's Cancers and another Center of Excellence in Cancer Treatment at the Cancer Diseases Hospital.*" Rwanda has established the Butero Center of Excellence on Comprehensive Cancer Care, the first cancer facility in a rural area in Africa. Botswana aims to excel in pediatric cancers. And with support of the African Development Bank, additional centers of excellence are being established. Kenya is developing a Center of Excellence in renal medicine and Uganda in

developing the *East Africa Oncology Institute*, an East African Center of Excellence for oncology training and tertiary education in biomedical sciences. These institutions will collaborate with one another to conduct research, train staff and build CCC capacity in Africa.

## **CCC SSKE - SHARING KNOWLEDGE, EXPERIENCES AND COLLABORATING TO INCREASE ACCESS TO CCC**

The **CCC SSKE** provided a platform for technical experts and policymakers to share experiences, discuss common challenges and explore innovative solutions to address the rapidly rising burden of cancer in Africa. The World Bank served as convener and organizer of the knowledge exchange. The Bank mobilized the United States National Cancer Institute (NCI)/National Institute of Health (NIH) to participate in the initiative, leveraging technical expertise in highly specialized areas (for example, cancer epidemiology, planning, treatment, pathology). The Knowledge Exchange is in line with the World Bank's role as a knowledge institution, facilitating the sharing of promising approaches and providing a platform for learning. Given the modest technical capacity, limited training and meager funding allocated to cancer care and control in Africa, the Knowledge Exchange played an important role in inspiring participants to scale up interventions in their own countries, using domestic resources or donor funding when available.

Common challenges discussed during the Knowledge Exchange include: serious shortages of trained specialists; few facilities that provide care; and underfunding of CCC services that leaves families shouldering, not only the tremendous burden of illness imposed by the disease, but also the high costs of seeking care. The **CCC SSKE** participating countries, Botswana, Kenya, Rwanda, Uganda and Zambia are at different stages in the development and implementation of CCC programs, are gaining experience and have many lessons to share. As one **CCC SSKE** participant stated: *"Regional partnerships are key...countries need to put efforts into supporting each other to ease the patients' burdens."*

Many important strides are being made. As has been seen throughout the **CCC SSKE** discussions, countries are designing and implementing programs and learning what works, and what does not work. **CCC SSKE** participants said the knowledge they gained through the exchange will enhance policy and program design. As one participant noted, *"I have shared the information with my colleagues at work and also with the Ministry of Health....when engaged at the policy level, I will share the knowledge that I gained with the hope that it will help influence policy in my own country."*

**CCC SSKE** participants reported improvements in knowledge and gains from networking with one another as they continue their efforts to mobilize resources and increase access to CCC in their countries. As one participant noted, *"I intend to advocate for increased regional capacity for laboratory diagnosis for cancer in Kenya"* and another stated, *"I plan to hold a stakeholders' workshop to share the experience of Zambia. I will lobby for government support in setting up a cancer treatment center in Kenya. We are hosting the First Ladies Conference in Kenya this year and we shall use the platform to lobby government for more resources for cancer care."* **CCC SSKE** participants aim to continue sharing and exchanging knowledge and to work together to curb the cancer disease burden in their countries.

## **CCC SSKE – Main Results, Lessons Learned and Next Steps**

In the short to medium term, the SSKE generated important results in terms of learning from promising experiences and identifying opportunities for future collaboration. Most importantly, it

established a platform for clients to continue sharing tools, experiences and lessons. While not easy to measure or monitor, in the longer term, the Knowledge Exchange also will contribute to improved policies, greater collaboration, and expanded programs, funded by governments and partners. To summarize, the main results to date are as follows:

- *Shared knowledge and experiences on the main building blocks of cancer care and control programs* with a full range of topics covered, including:
  - Innovative approaches for strengthening cancer prevention efforts.
  - Strategies for implementing successful national CCC programs.
  - Task shifting and task sharing to increase access to care.
  - Tools for analyzing CCC costs.
  - Financing models, including public private partnerships, to increase access to CCC treatment and care.
  - Data collection to better document the burden of disease.
  - Policy reforms needed to increase access to palliative care.
- *Established a platform for cross country collaboration.* The organizers facilitated communications across countries, to enable continual sharing of tools, experiences and latest research findings.
- *Identified opportunities for collaboration* (for example, join training, technical support, research) with one another and with institutions in the region such as the Center of Excellence for Women's Cancers in Zambia, the Butaro Center of Excellence on Comprehensive Cancer Care in Rwanda and the East Africa Oncology Institute in Uganda. International activity in South-South collaboration was also spurred with coordinating partners like Pink Ribbon Red Ribbon, The National Cancer Institute, and US academic institutions.

## **Lessons Learned**

- *Peer-to-peer learning* through a client-oriented, participatory process offers a collegial and collaborative environment for sharing insights, experiences, and lessons. This type of learning is highly valuable, relevant, and timely as reflected in feedback from participants.
- *Face-to-face interactions* between practitioners and policymakers from the participating countries strengthened understanding of how innovative programs were spearheaded, resources were mobilized, and political commitment was bolstered.
- *A demand-driven approach* was critical to soliciting views of participants about the most relevant topics to be covered and ensuring the knowledge exchange responded to client needs.
- *Strong collaboration* with other technical partners was requested by participants and proved highly effective. Technical partners brought a global perspective and offered complementary information which was appreciated by all stakeholders.
- *Regional partnerships* are key to maximizing learning, tapping comparative advantages of different players, and promoting specialization in delivery of training programs, cancer services and research.
- *Strong preparation* is essential to success. The knowledge exchange activities need to be well organized, materials need to be concise, and communication channels need to run smoothly, to maximize learning for busy practitioners and policymakers. Soliciting regular feedback from participants is critical to ascertaining views and ensuring that the knowledge exchange is tailored to country demands.

## **Next Steps**

The knowledge exchange established a platform for collaboration and information sharing which continues beyond the formal closing date. Participants are in the process of incorporating lessons learned into their national programs, continuing to exchange information and materials with peers in other countries, and deepening their collaboration with technical partners on several aspects covered during the period (cancer planning, cancer registries). Examples worth noting include: the Bank-funded East Africa Public Health Laboratory Networking Project, which will be used as a vehicle for strengthening the availability of pathology services at project-supported laboratories in Kenya and Uganda; progress in Zambia, Kenya, and Uganda on national cancer control planning, facilitated in part by the regional lessons learned and collaborations highlighted in this paper; progress on cancer registration in Kenya and Zambia, drawing from expertise from Ugandan colleagues and from bi-lateral exchange between the two countries, supported by international organizations like the NCI, CDC and PRRR; and the formation of research networks on niche cancers like Burkitt Lymphoma or esophageal cancer across countries more heavily affected in this region.



## Annex 1

### CCC SSKE Presentations

**Videoconference 1: Cancer Care and Control Knowledge Exchange Launch  
September 17, 2013**

*South South Knowledge Exchange: Cancer Care and Control* presented by Miriam Schneidman, Lead Health Specialist, World Bank

**Videoconference 2: National Cancer Screening Programs – Experiences of Zambia and Botswana  
October 29, 2013**

*The National Cancer Institute and Cervical Cancer Screening in Africa, Overview* presented by Dr. John Flanigan, Center for Global Health, National Cancer Institute

*A Zambian Approach to Cervical Cancer Prevention* presented by Dr. Sharon Kapambwe, CIDRZ Programme Head, Cervical Cancer Prevention Programme

*Cervical Cancer Secondary Prevention Programming: Experience and Lessons Learnt from Botswana* presented by Dr. Heluf Medhin, Head Non-communicable Disease Division, Department of Public Health

**Videoconference 3: Developing National Cancer Strategies: The Kenyan Experience  
December 4, 2013**

*Operationalizing the Kenya Cancer Control Program* presented by Dr. Izaq Odongo, Head Oncology Unit, Division of Internal Medicine, Ministry of Health and Dr. Mary Wangai, Head National Cancer Prevention and Control Unit, Ministry of Health

*The National Cancer Institute and Cancer Control Planning and Implementation* presented by Dr. Brenda Kostecky, Center for Global Health, National Cancer Institute

**Videoconference 4: The Rwanda HPV Vaccination Experience  
January 24, 2014**

*The Rwanda HPV Vaccination Experience* presented by Mr. Maurice Gatera, Director, Vaccine Preventable Diseases, Rwanda Biomedical Center, Ministry of Health

*Cervical Cancer Global Research/Training Priorities and Opportunities at the National Cancer Institute (NCI/NIH)* presented by Dr. Luis Salicrup, Center for Global Health, National Cancer Institute

**Videoconference 5: Cancer Registration in Uganda  
March 4, 2014**

*Cancer Registration in Uganda* presented by Dr. Innocent Mutyaba, Fellow, Hutchinson Center, Research Institute of Uganda and Senior Officer, Department of Medicine, Makerere College of Health Sciences

*National Cancer Institute Center for Global Health's Efforts to Build Capacity in Cancer Registration in LMICs* presented by Ms. Kalina Duncan, Center for Global Health, National Cancer Institute

**Videoconference 6:   Public-Private Partnerships - the Experience of AMPATH Oncology  
June 20, 2014           in Kenya**

*AMPATH Oncology: Global Collaboration in Cancer* presented by Dr. F. Chite Asirwa, Director of AMPATH Oncology and Assistant Professor of Medicine and Field Director for Cancer Programs in Kenya at Indiana University

*An Innovative Model for Partnerships: Government Encouraged, Investigator Initiated, Private Sector Participatory Partnerships* presented by Dr. Linda Kupfer, Fogarty International Center at the US National Institutes of Health

**Videoconference 7:   Palliative Care - Programs to Manage Pain and Other Symptoms  
July 24, 2014**

*Implementation Challenges in Palliative Care Service Delivery in Botswana* presented by Dr. Babe Eunice Gaolebale, Implementation Specialist

*Challenges Related to Mobilizing Support and Resources (Public/Private) for Palliative Care* presented by Dr. Zipporah Ali, Executive Director of Kenya Hospices and Palliative Care Association

*NCI Support for Research in Palliative Care* presented by Dr. Ann O'Mara, Head of Palliative Research in the Division of Cancer Prevention, National Cancer Institute

*Integrating Palliative Care in to National Health Programs and Policies* presented by Dr. Emmanuel Luyirika, Executive Director, African Palliative Care Association, Uganda

**Videoconference 8:   Key Policy Issues and Challenges in Designing and Managing  
September 16, 2014   Palliative Care Programs**

*The Palliative Care Experience in Rwanda* presented by Dr. Marie Aimee Muhimpundu, MD, MSc of the NCI Division of the Rwanda Ministry of Health

*Key Policy Issues and Challenges in Designing and Managing Palliative Care Programs* presented by Dr. Jim Cleary, Associate Professor of Medical Oncology at the University of Wisconsin School of Medicine and Director, Pain and Policy Studies Group WHO Collaborating Center for Pain Policy and Palliative Care

**Videoconference 9:   Financing of Cancer Care and Control Programs  
October 27, 2014**

*Financing Cancer Care and Control in Africa* presented by Miriam Schneidman, Lead Health Specialist, World Bank

*Breast Cancer Financing – A Case Study of Ghana* presented by Karima Saleh, Senior Health Economist, World Bank

*Costing Cervical Cancer Programmes - an Application of the Comprehensive Cervical Cancer Costing and Planning Tool* presented by Winthrop Morgan and Ann Levin, Independent Health Finance Consultants

**Presentations at the Taking a Regional Approach Workshop  
Lusaka, Zambia  
February 10 - 12, 2015**

*Strengthening Regional Collaboration to Improve Cancer Care and Control*  
Miriam Schneidman, Lead Health Specialist, World Bank

*Uganda Cancer Institute: Progress on the East Africa Oncology Institute*  
Dr. Jackson Orem, Director, Uganda Cancer Institute

*Strengthening Regional Cancer Initiatives Research - the Experience of Zambia's African Center of Excellence for Women's Cancer Control at the Center for Infectious Disease of Zambia (CIDRZ)*

Prof G Parham, Co-Director Cervical Cancer Screening Programme of Zambia

*Cancer Care and Control Financing: Prioritizing Non-communicable Disease (NCD) Control on the Path Toward Universal Health Coverage (UHC)*  
Karima Saleh, Senior Health Economist, World Bank

*The Rwanda Experience in Financing Cancer Programs and Mobilizing Resources*  
Jean Paul Balinda, Cancer Diseases Senior Officer, NCDs Division, Rwanda  
Biomedical Center

*Financing Cancer Control in Low and Middle-Income Countries*  
Professor Prabhat Jha, Centre for Global Health Research, St. Michael's Hospital

*Building Capacity of Community Health Workers and Strategies for Task Shifting – Rwanda Experience*  
Jean Paul Balinda- Cancer Diseases Senior Officer, Ministry of Health Rwanda

*Training of Pathologists*  
Dr. Angela Amayo, Pathologist, University of Nairobi

*Cancer Care and Control Programs Public Private Partnerships*  
Josephine Mugai, Investment Officer, IFC





Worldwide, deaths from cancer exceed those caused by HIV/AIDS, tuberculosis and malaria combined. Seventy percent of deaths due to cancer occur in low-and middle-income countries, which are often poorly prepared to deal with the growing burden of chronic disease. In Africa, cancer rates are projected to double by 2020, due in large part to changing lifestyles, increasing urbanization, and aging populations. Countries throughout Africa face similar challenges, and can learn from regional successes and experiences in trying to identify cost effective ways to organize, deliver and finance critical cancer care and control interventions. Over a period of 18 months, the **Cancer Care and Control South-South Knowledge Exchange** brought together a group of stakeholders from five countries in Africa -- Botswana, Kenya, Rwanda, Uganda and Zambia-- to share experiences, lessons and good practices through a set of video conferences and a site visit to Zambia. All five countries have demonstrated commitment, initiated various cancer control and cancer screening programs, and expressed interest in sharing their experiences. The Knowledge Exchange on cancer care and control aimed to raise awareness, increase knowledge of effective strategies, and strengthen regional collaboration in cancer control planning and expanding equitable access to cancer treatment.

This paper presents highlights of the country experiences shared, common challenges discussed, and innovative solutions explored during the Knowledge Exchange. Topics addressed include population-based surveillance and data collection to better document the burden of cancer; strategies for designing and implementing successful national cancer care and control programs; innovative approaches for strengthening cancer prevention efforts such as HPV vaccination programs; task sharing and other strategies to build capacity and increase access to services; analytical tools for understanding the costs of programs; financing models, including public private partnerships, to increase cancer prevention and care; policy reforms needed to improve access to palliative care; and opportunities for regional collaboration.

## ABOUT THIS SERIES:

This series is produced by the Health, Nutrition, and Population Global Practice of the World Bank. The papers in this series aim to provide a vehicle for publishing preliminary results on HNP topics to encourage discussion and debate. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent. Citation and the use of material presented in this series should take into account this provisional character. For free copies of papers in this series please contact the individual author/s whose name appears on the paper. Enquiries about the series and submissions should be made directly to the Editor Martin Lutalo (mlutalo@worldbank.org) or HNP Advisory Service (healthpop@worldbank.org, tel 202 473-2256).

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