

Models of International Capacity Building in Cancer Care

Chaired by Dr. Robert Bell, President and CEO, University Health Network

The Kuwait Cancer Control Centre and University Health Network Partnership

- Ms. Fatima Sheriff
International Health Program, University Health Network

Organization of Oncology Services in Western Kenya

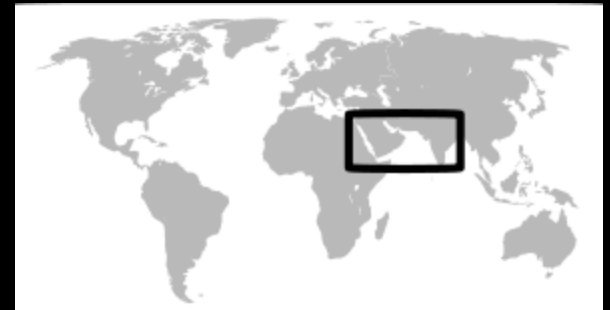
- Dr. Patrick J. Loehrer
Indiana University Simon Cancer Center

Development of the Gynecologic Oncology Program in Kenya

- Dr. Barry Rosen
Department of Gynecology-Oncology, Princess Margaret Cancer Centre,
University Health Network

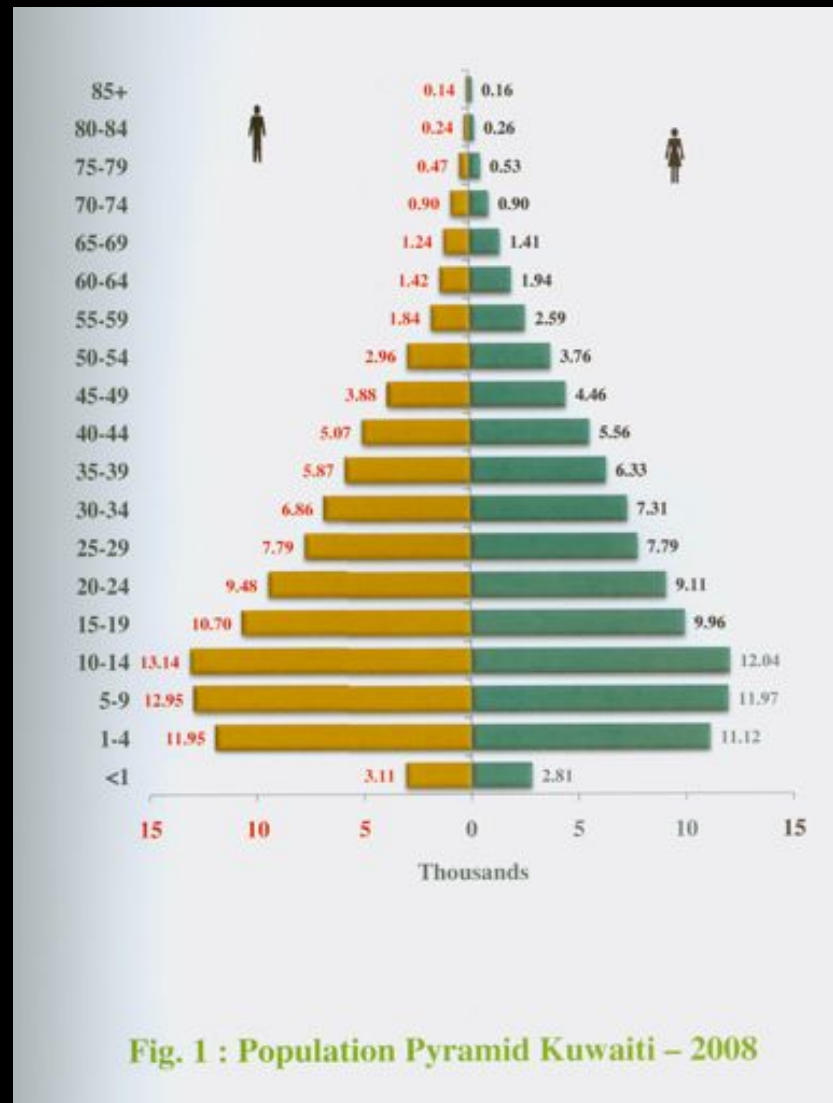
**The Kuwait Cancer Control Centre
and
University Health Network
Partnership**

Kuwait





Kuwait Age Breakdown



Leading Cancer Sites Among Kuwaiti Nationals

Male

Site	%
NHL	11.8
Colorectal	11.5
Leukemia	9.0
Trachea, bronchus & lung	7.6
Prostate	7.6
Bladder	5.4
Other	47.1

Female

Site	%
Breast	38.1
Thyroid	8.7
Colorectal	7.6
Leukemia	6.8
Ovary	4.9
Corpus uteri	4.4
Other	29.5

Kuwait Cancer Control Centre

- Vision
 - KCCC will achieve the best cancer care and control regionally and internationally
- Mission
 - KCCC provides integrated, professional cancer care for patients, their families and society including prevention, early detection, treatment and palliative care
 - Research, training and continuing education are integral to comprehensive health promotion and cancer care in Kuwait
- Values
 - Outcome Focused, Education, Teamwork, Respect, Safety, Excellence, Leadership

Shikha
Badriya
Medical
Oncology

KCCC
Building

Faisal Sultan
Center (FSC)

Hussain
Maki Juma
Center

Hussain Maki Juma
Specialty Center

Kuwait Cancer Control Centre

- Bed capacity (2010) – 254 Beds (4 buildings)
- Bed utilization (2009) – 71% (used beds/total beds available)
- Number of employees (2010) – 833
 - 132 Doctors
 - 402 Nurses
 - 144 Technicians
 - 15 Labourers
 - 143 Administrative staff

University Health Network

- Vision
 - Achieving Global Impact
- Mission
 - Exemplary patient care, research and education
- Purpose
 - We are a caring, creative and accountable academic hospital, transforming healthcare for our patients, our community and the world
- Values
 - Caring, Integrity, Teamwork, Respect, Innovation, Excellence, Leadership

Our Four Hospitals



Toronto General



Princess Margaret



Toronto Western



Toronto Rehab

1,310 beds

332,232 inpatient days

982,192 clinic visits

91,781 ED visits

\$1.8 B Revenue

\$260 M External Research Funding

~15,000 employees, 1,200 MDs

\$150 M from our Foundations

Clinical Services

Arthritis Program

Joint Department of Medical Imaging

Krembil Neuroscience Centre

Laboratory Medicine Program

Medical and Community Care

Multi-Organ Transplant Program

Peter Munk Cardiac Centre

Princess Margaret Cancer Centre

Surgical Programs & Critical Care

Toronto Rehabilitation Institute

- Admitting
- Adult Clinical Genetics
- Allied Health
- Pathology
- Anaesthesia
- Clinical Bioethics
- Cystoscopy
- Day Surgery Units
- Dentistry
- Endoscopy
- 2 EDs
- Hyperbaric Chamber
- Infection Control
- Laboratories
- Med/Surg ICUs
- Medical Imaging
- Operating Rooms
- PMH Lodge
- Pre-admission
- Psychiatry
- Psychology
- Same Day Admission
- Women's Health
- Rehabilitation

Project Timeline

- January 2010 – Kuwait MOH Delegation visited UHN. MOU signed
- September 2010 – Kuwait Cancer Control Centre Partnership Agreement signed
- January 2011 – Official Launch of the Project
- September 2011 – Full Project Team of 8 on the ground and official opening of UHN offices at the KCCC

This kind of partnership requires visionary leadership...



Drs. Ahmad Al Awadhi and Mary Gospodarowicz

Kuwait Cancer Control Centre

Strengths:

- Engaged leadership
- Dedicated and committed staff
- MOH commitment to improving cancer services
- Focus on continuous learning
- Relatively rapid access to high quality diagnostic services and latest chemo and biologic therapy
- Ample nursing
- Strong charitable and community support

Opportunities:

- Sub-specialization especially in low volume cancers
- Medical Records and IM/IT
- Multidisciplinary/interprofessional care
- Mechanisms for cross-departmental; hospital wide planning, policies and procedures
- Supply chain management
- Referral processes

Elements of the Partnership

- Strategic Plan for Kuwait Cancer Centre
- Clinical Specialization and Knowledge Transfer
- Education and Training
- Palliative and Psychosocial Supportive Care
- Laboratory Medicine and Pathology
- Technology
 - Radiation Medicine Program
 - Information technology
- Quality Improvement
- Public Relations Strategy
- International Patient Care

Focus in Year 1

- Building relationships
- Information gathering
- Knowledge transfer
- Modelling inter-professional, multi-disciplinary care
- Performing consultations
- Assessing and planning (11 planning documents submitted on December 31, 2011)

Year 1 Site Visits

Site Visit	Date
UHN-PMH Leadership Team	3 visits
UHN IT Assessment Team	2 visits
Clinical Teams	4 visits
UHN-PMH Laboratory Medicine Team	4 visits

Permanent UHN team of 8 in Kuwait to ensure continuity in-between site visits and to provide day-to-day project management to ensure progress against joint objectives.

Team is growing to 15 in Year 2

Year 1 Statistics

Deliverables	Statistics
Patient Consults	580
Interviews Conducted with Staff	570
Complex Surgeries Conducted	30
Rounds/Case Reviews	1007
Specimens Evaluated/Studies Reviewed	21
KCCC Consultations to UHN	30
Clinics Attended	70
Education Sessions/Presentations	150
Tools and Resources Discussed / Provided	544
Improvement Initiatives Provided	125









Year 1 Site Visits

Site Visit	Date
UHN-PMH Leadership Team	3 visits
UHN IT Assessment Team	2 visits
Clinical Teams	4 visits
UHN-PMH Laboratory Medicine Team	4 visits

Year 2 Site Visits

Site Visit	Date
UHN-PMH Leadership Team	2 visits
Clinical Teams	4 visits
UHN-PMH Laboratory Medicine Team	4 visits

Focus in Year 2

- Implementing plans formulated in Year 1
- Quality Improvement (preparing for Accreditation)
- Helping form KCCC's management system
- Knowledge transfer
- Modelling inter-professional, multi-disciplinary care
- Performing consultations

Successes

- First year completed
 - UHN Kuwait team formed
 - Visits completed
 - Plans delivered on time
 - High-level strategy and conceptual model created
 - Vision, mission, values formulated
- Kuwait & KCCC
 - Increasing relationships and trust
 - Clearer understanding of client needs
- UHN – PMH Cancer Program
 - Excellent staff engagement
 - Bringing innovation back home
 - Team building
 - Increased communication between clinical service areas and increased effectiveness
 - Personal and professional development
 - Development of clinical guidelines
 - Journey towards cancerpedia
- UHN International
 - Presence in the region and enhanced international reputation
 - Infrastructure for International Health Program
 - Building competency to work in the region as international consultants




Key Lessons

- Contract Formulation Lessons
 - Include a ramp-up period
 - Be clear on roles of permanent team vs. visiting teams (affects composition and size)
 - Identify dependencies up front and ensure commitment (on both sides) to address them
 - Factor-in capacity building at home
 - Clarify language and meaning for specific words and phrases
- Project Execution Lessons
 - Managing different perspectives
 - Setting realistic timelines
 - Assessing readiness for change
 - Consulting vs. managing: the importance of having “receptors” on client side and staff available in order to transition and sustain projects
 - Including partners in developing solutions and assigning responsibility early on
 - Balancing Canadian “politeness” with the need for being clear on where the gaps are
 - The importance of one-on-one discussions and commitment before tackling issues in a group setting
 - Show metrics and be specific about next steps
 - Use templates and processes where possible to help project work (e.g. SOPs)
- Budget Lessons

Why International Work?

- Vision of Achieving Global Impact
- Enormous assets and expertise – moral/ethical obligation
- Potential to generate resources for UHN's key priorities aimed at improving health care for Ontarians
- Create capacity to engage in health care consulting in an international context (e.g. develop sustainable models that are culturally congruent)
- Create partnerships that allow UHN to share knowledge and to set a new international standard for collaborations aimed at improving health care service delivery, education and research
- Learn from our international partners in order to expand our knowledge and improve health care for our diverse patient population in Toronto, one of the world's most multicultural cities.

A photograph showing the silhouettes of several trees against a clear blue sky. The trees are dark and their branches are visible. The sky is a deep blue with some light clouds. The overall scene is a natural landscape.

Organization of Oncology Services in Western Kenya: The AMPATH Model

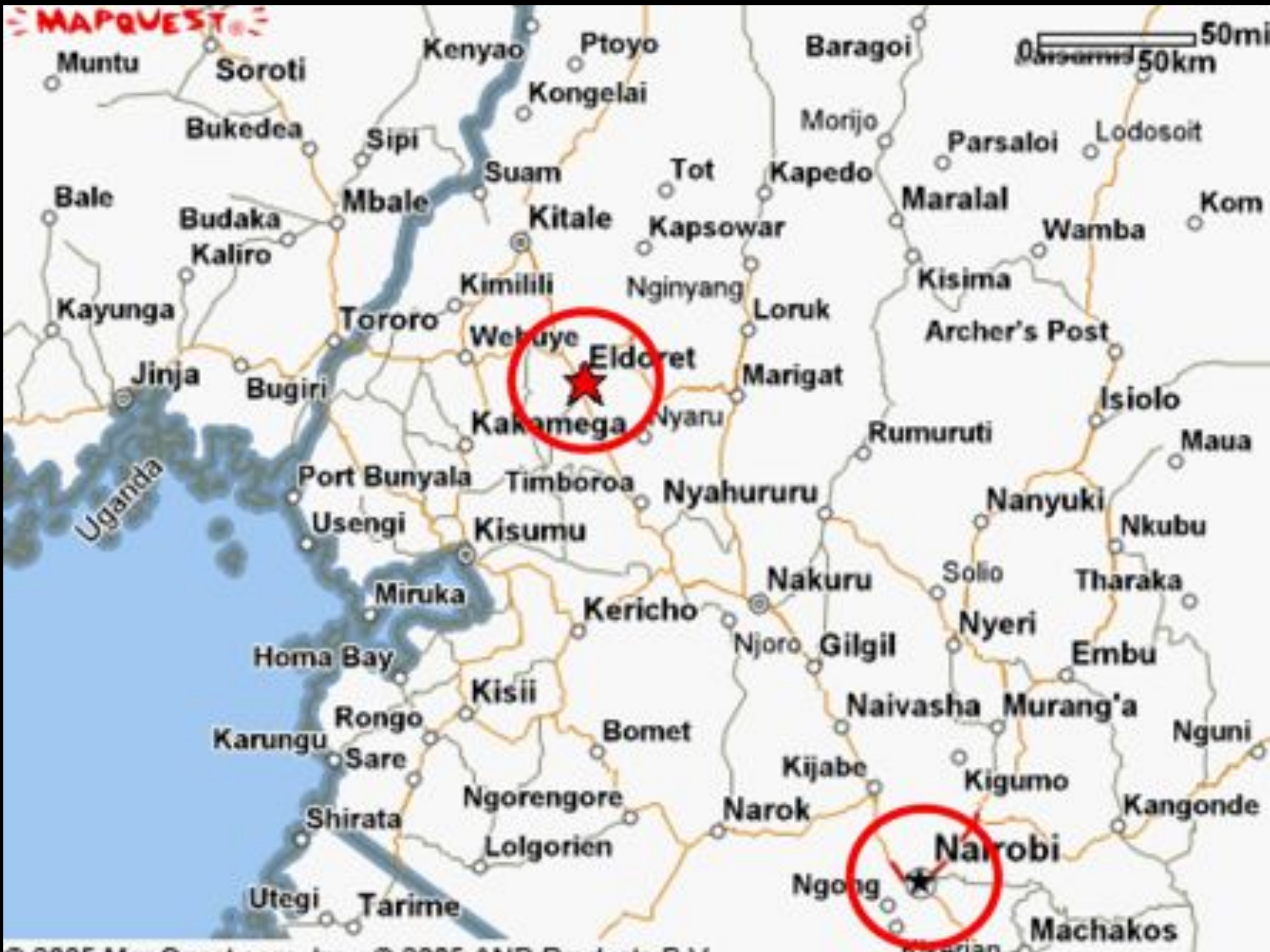
Patrick J. Loehrer Sr., MD

Indiana University Melvin and Bren Simon Cancer Center

The beginnings of a sustained
partnership...

**Development of a HIV/AIDS
care program**







Moi University

Moi Teaching and Referral Hospital is the second largest Public and Referral University Hospital in Kenya serving western Kenya where about 50% of Kenya's population live.



AMPATH

Academic Model Providing Access To Healthcare

(formerly Academic Model for the Prevention and Treatment of HIV/AIDS)

An organizational construct consisting of Moi University, Moi Teaching and Referral Hospital, and a consortium of American medical schools led by Indiana University that aims to deliver essential primary care services, control HIV, and mitigate the social and economic consequences of HIV/AIDS

ASANTE Consortium

- Indiana University
- Purdue University
- Brown University
- University of Utah
- University of Toronto
- Duke University
- George Washington University
- Lehigh Valley Health System
- Portland Providence Medical Center













Health Indicators and Outcomes

- 40,000 pregnant women screened for HIV
- 3,361 HIV infected pregnant women enrolled into pMTCT
- >110,000 other persons screened for HIV
- 30,000 food insecure persons fed weekly
- 10 tons food grown weekly on AMPATH farms
- 4615 orphans and vulnerable children served
- Home counseling and testing successfully demonstrated in Turbo and Kosirai (pop 160,000)
- Riley Mother and Baby Hospital completed
- IU docs provided services in Medicine, Pediatrics, Medical Oncology, Anesthesia, Surgery, Orthopedics, ENT, Ob/Gyn, Pathology

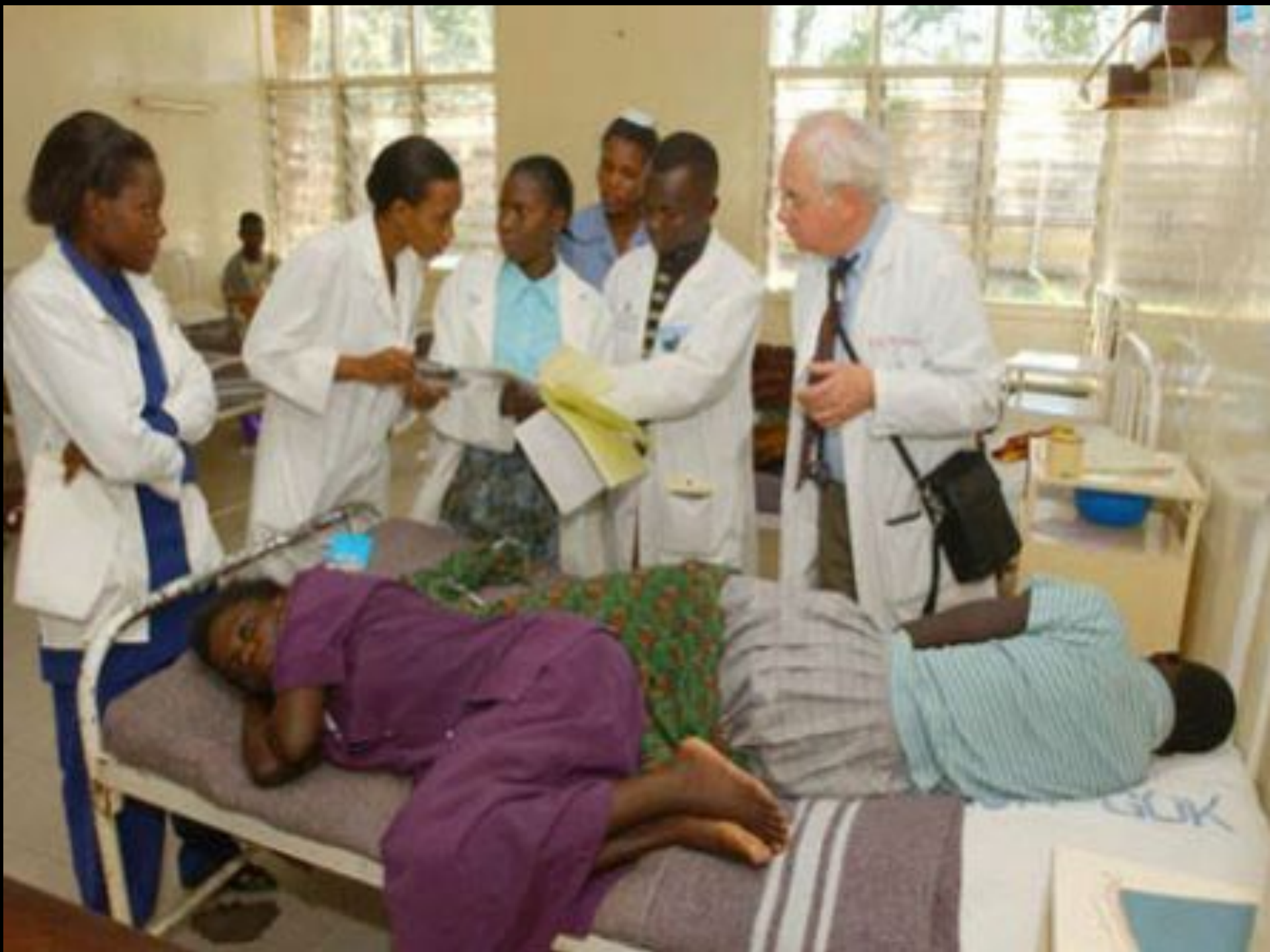
The beginnings of a sustained
partnership...

Development of a Cancer Care Program

Cancer: *The other epidemic*

Cancer is the 1st or 2nd leading cause of death in LMCs, and a large proportion of these cancer deaths are preventable.

However, LMCs are poorly equipped to deal with this ever increasing burden due to financial, social, infrastructure, and workforce constraints.



Cancer care infrastructure

Kenya



- **No National Cancer Registry**
- **No National Screening for Breast, Cervical, or other Cancers**
- **2 Cobalt 60 Radiation Units in Public Sector**
 - Older, in need of frequent repair
- **Oncologists**
 - 3 (or 4) Oncologists
 - 4 (or 5) Radiation Oncologists

AMPATH-Oncology

Capacity Building for patient care – nursing & Pharmacy



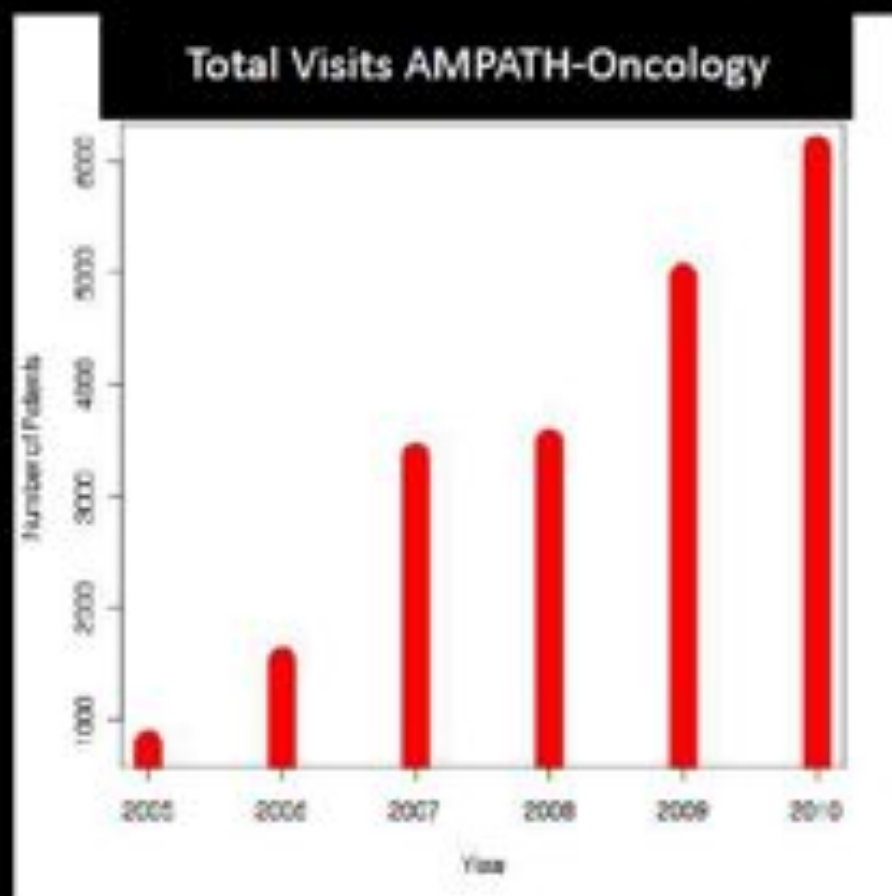
AMPATH-Oncology

Capacity Building for patient care – nursing & Pharmacy



AMPATH-Oncology

Increasing Patient Volume



- Rapid rise in non-HIV malignancy referrals
- Over 9000 visits in 2012
- Early attempt to offer treatment to all-comers
- Frequent lack of biopsy-proven diagnosis
- Lack of standardized protocols
- Potential for unsustainable costs

AMPATH-Oncology

Capacity Building for patient care – Pathology infrastructure

Pre-2008

- Visual diagnosis of most cancers
- Turn-around time for biopsies of 6-8 weeks
- Morphologic diagnosis only
- Lack of a functional cancer registry

2009- present

- Pathologic diagnosis as accepted standard
- Turn-around time for biopsies 2-4 weeks
- Basic, but developing, immuno-staining capabilities
- Up-to-date population-based cancer registry

AMPATH-Oncology

Capacity Building for patient care – treatment protocols

- WHO List of Essential Drugs

Table 1. Cancer drug priority list.

	Top 10 cancers	Category 1-2	Generic
Priority 1			
Erlotinib	+	+	+
Cisplatin	+	+	+
Cyclophosphamide	+	+	+
Doxorubicin	+	+	+
5-Fluorouracil	+	+	+
Methotrexate	+	+	+
Docetaxel	+	+	+
Procarbazine	+	+	+
Temozolomide	+	+	+
Imatinib	+	+	+
Vincristine	+	+	+
Cytarabine	+	+	+
Dactinomycin	+	+	+
Dexamethasone	+	+	+
6-Mercaptopurine	+	+	+

Together with two antiemetics – a dopamine receptor and a 5-HT₃ receptor antagonist as well as dexamethasone

- Research protocols that use these drugs
- Minimize toxicity
- Importance of creating a standard, recording data, and re-assessing at regular intervals

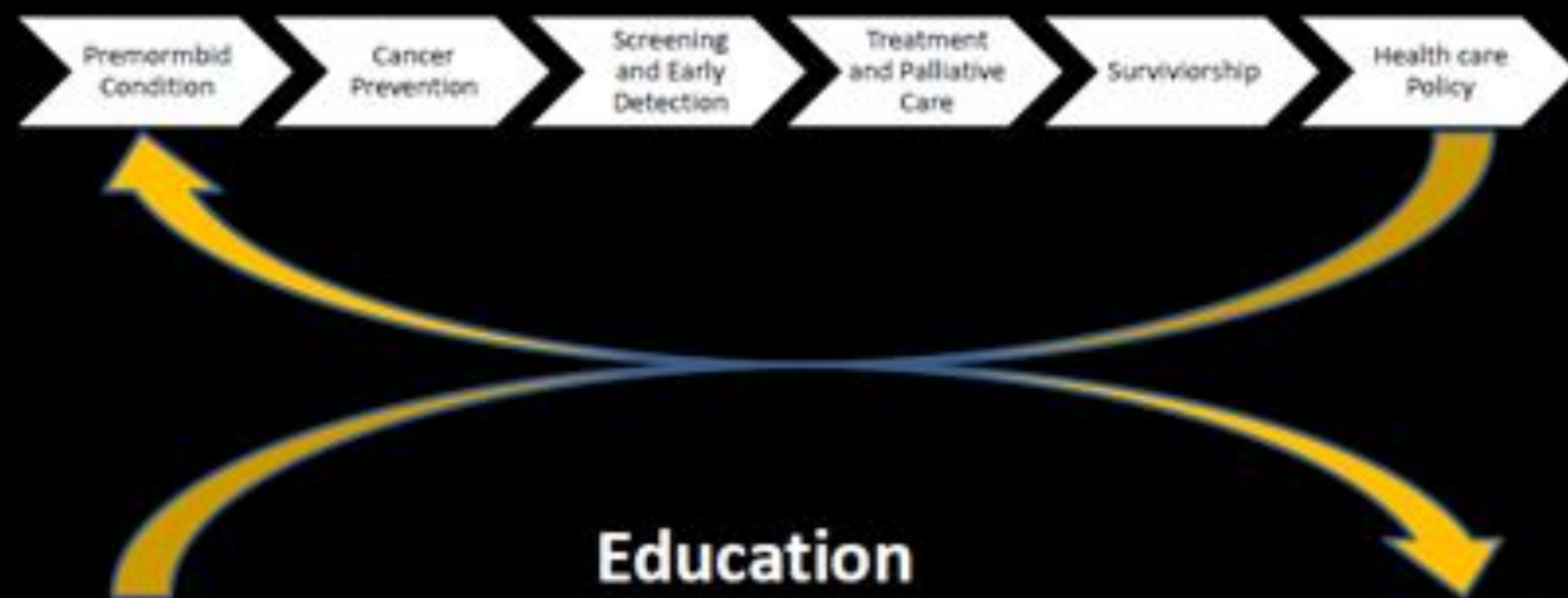
Cancer Research

- Cervical Cancer Screening
 - “see and treat”
 - HPV serotyping
- Pediatric cancers
 - Childhood Leukemia
 - Treatment Compliance in Childhood Cancers
 - Epidemiology
 - Molecular profiling of Wilm’s Tumor
- Kaposi’s Sarcoma
 - Treatment outcomes in HIV + patients
 - Gem vs BV
- Pharmacogenomics
 - Etoposide in KS patients
 - Vincristine and neuropathy
- Breast Cancer
 - Komen Proposal
 - Behavioral

Progress

- Patient volume increased over 10 fold
- Strategic academic partnerships
- Dedicated North American and Kenyan faculty and staff
- Guidelines and EMR initiated
- Creation of a Department of Oncology
- Chosen by AMC to be one of first four sub-Saharan Sites
- Increasing workforce (nurses, medical officers, oncologists)
- Gyne-Oncology Training including novel curriculum
- 2012 ASCO MCMC course in Eldoret
- Cancer and Chronic Care facility including radiation

Kenya: A Sustainable Approach for Cancer Control



Patient Care

Research

Acknowledgements

- Moi University
- Moi Teaching and Referral Hospital
- Indiana University
- Brown University
- University of Toronto
- Vrei University
- University of Massachusetts



Developing Gynecologic Oncology Program in Kenya

Dr Barry Rosen

Professor Department of Obstetrics and Gynecology

University of Toronto

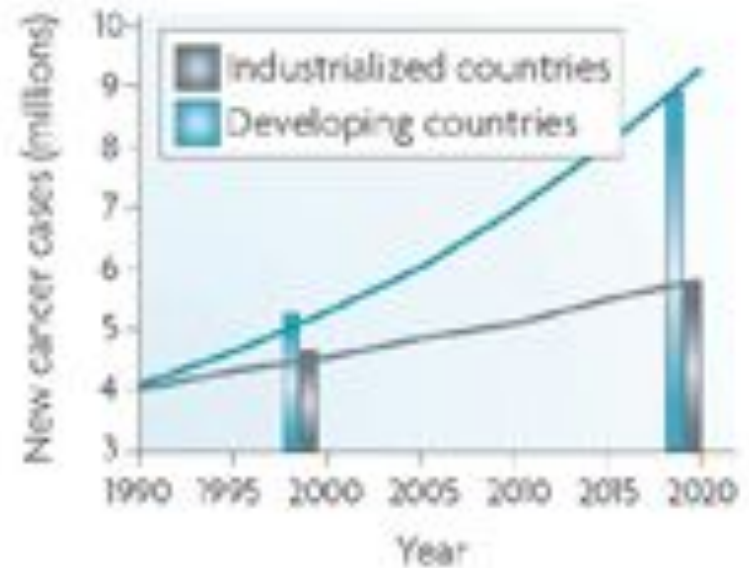
Head Gynecologic Oncology University Health Network

Outline

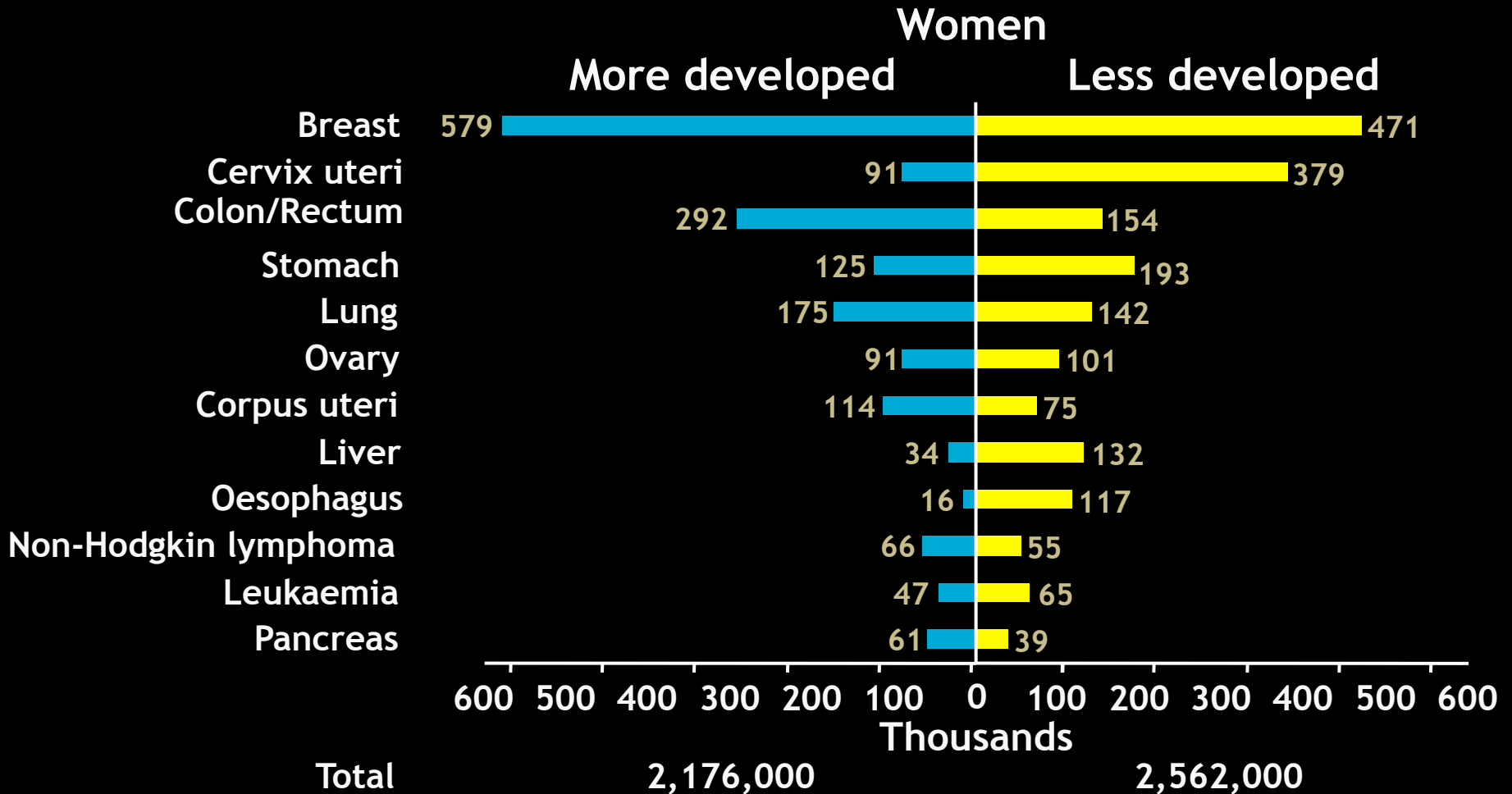
- What is the extent of gynecologic cancers in Kenya?
- What has been done at Moi University/MTRH about this?
- Is sustainability possible?
- Role of AMPATH, UHN, University of Toronto, GOC

Impact of Cancer in Africa

- WHO predicts 16 million new cancer cases per year in 2020
 - 70% of these will be in the developing world
- 80% resources currently going to 5% of worldwide cancers



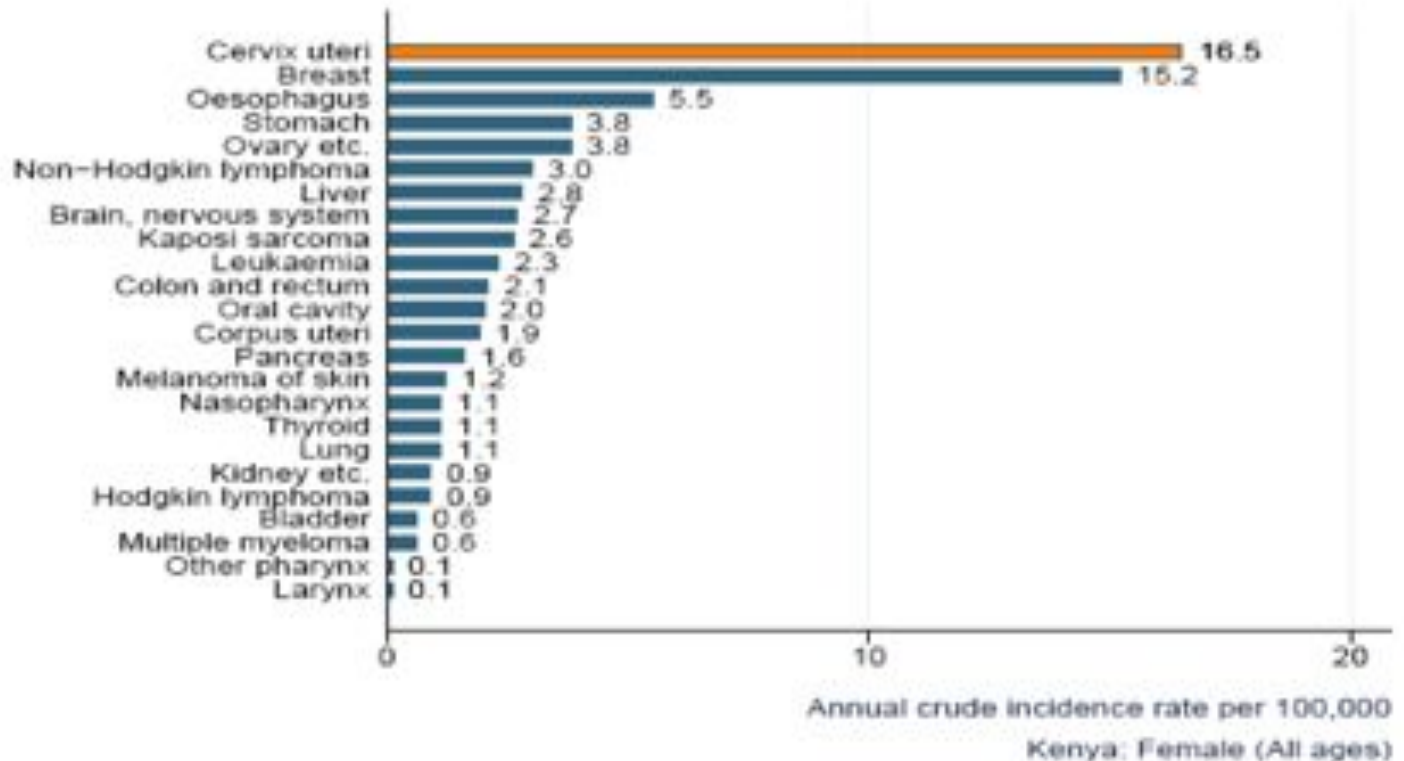
Worldwide Cancer Burden*



*New cases in 2000

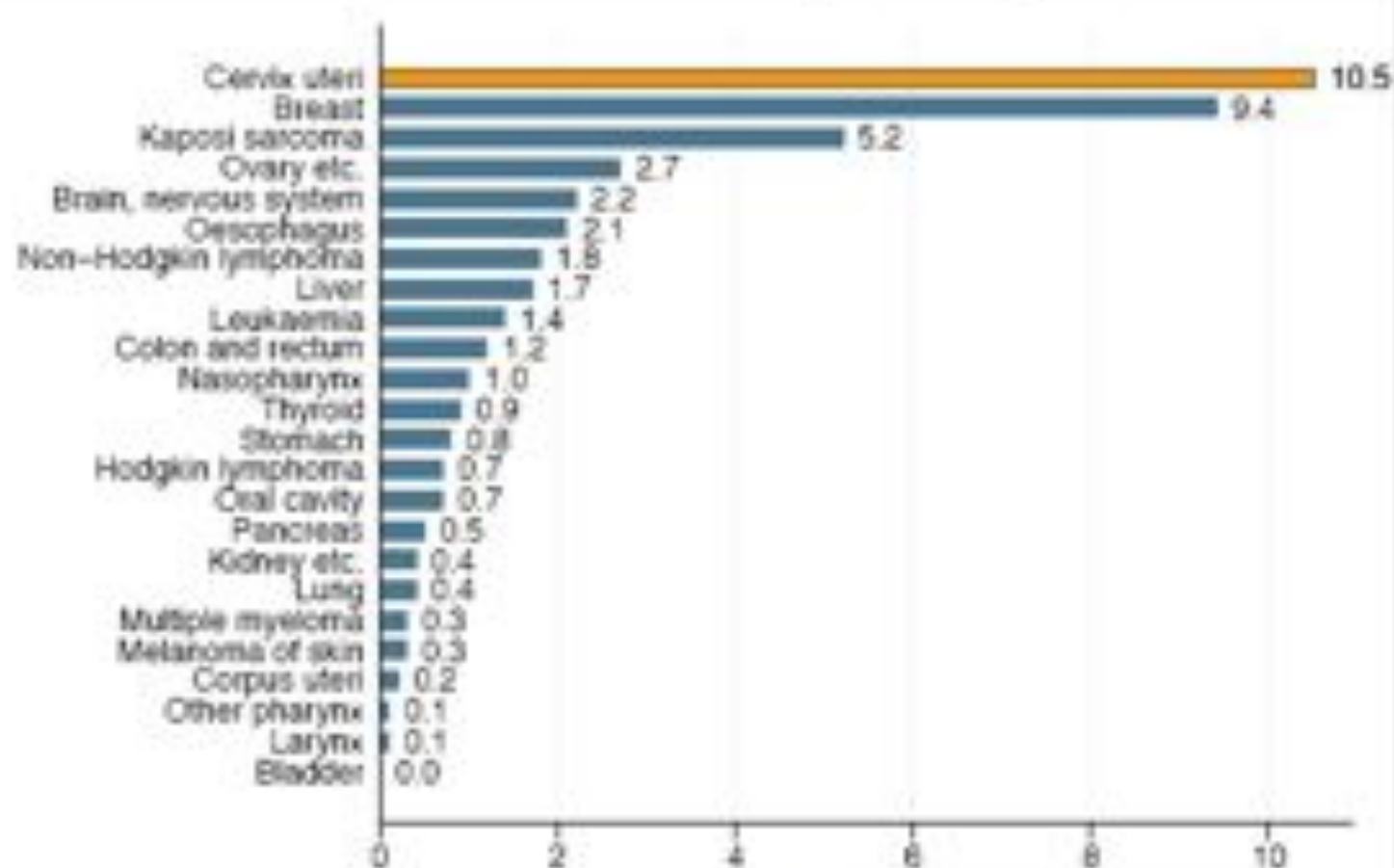
Parkin DM. *Lancet Oncol* 2001; 2(9):533-543.

Cancer Rates in Kenya: IARC



Data source: IARC, Globocan 2002

Figure 10: Specific cervical cancer mortality in Kenya compared to other cancers in women of 15-44 years of age

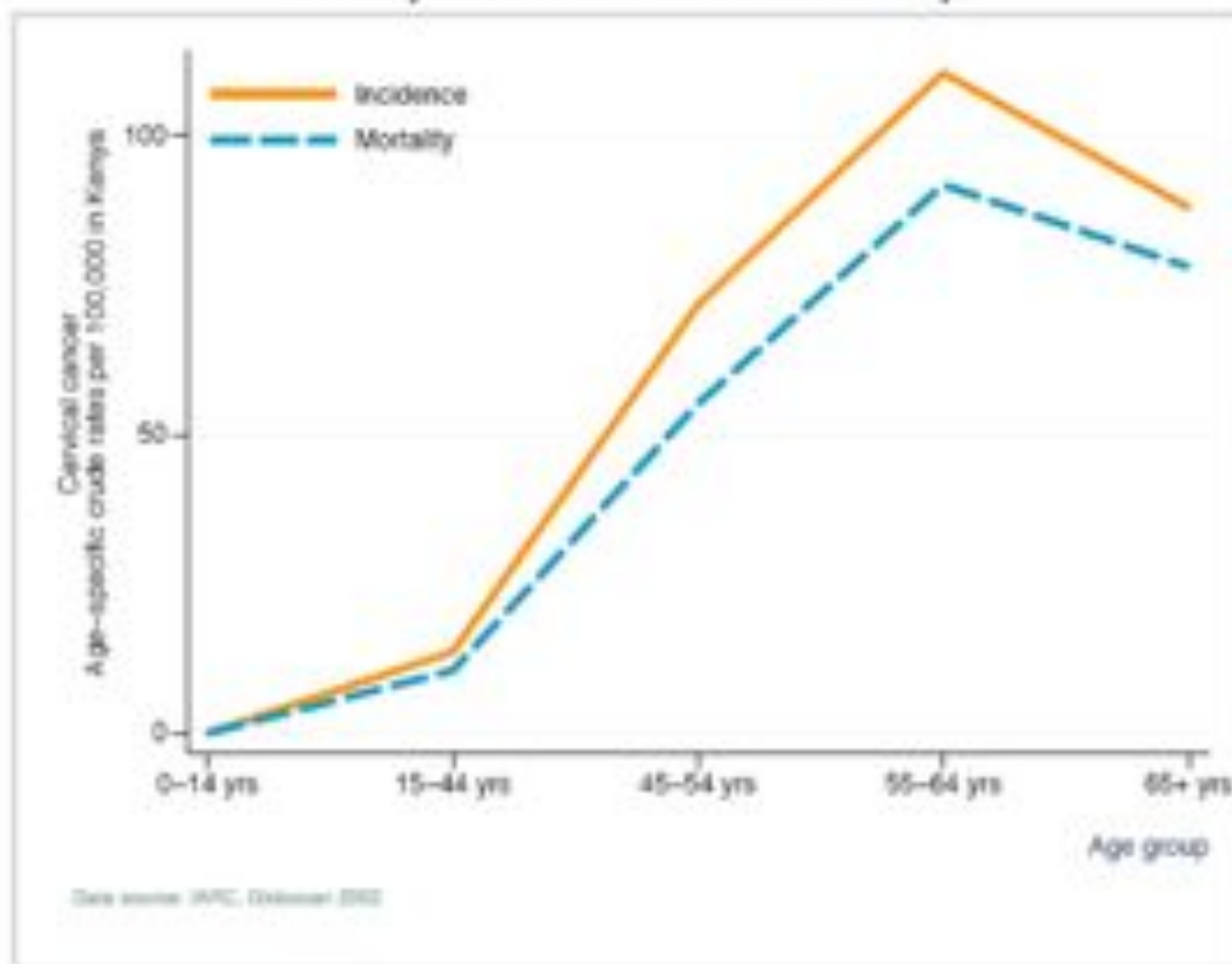


Annual crude mortality rate per 100,000

Kenya: Females aged 15-44 years

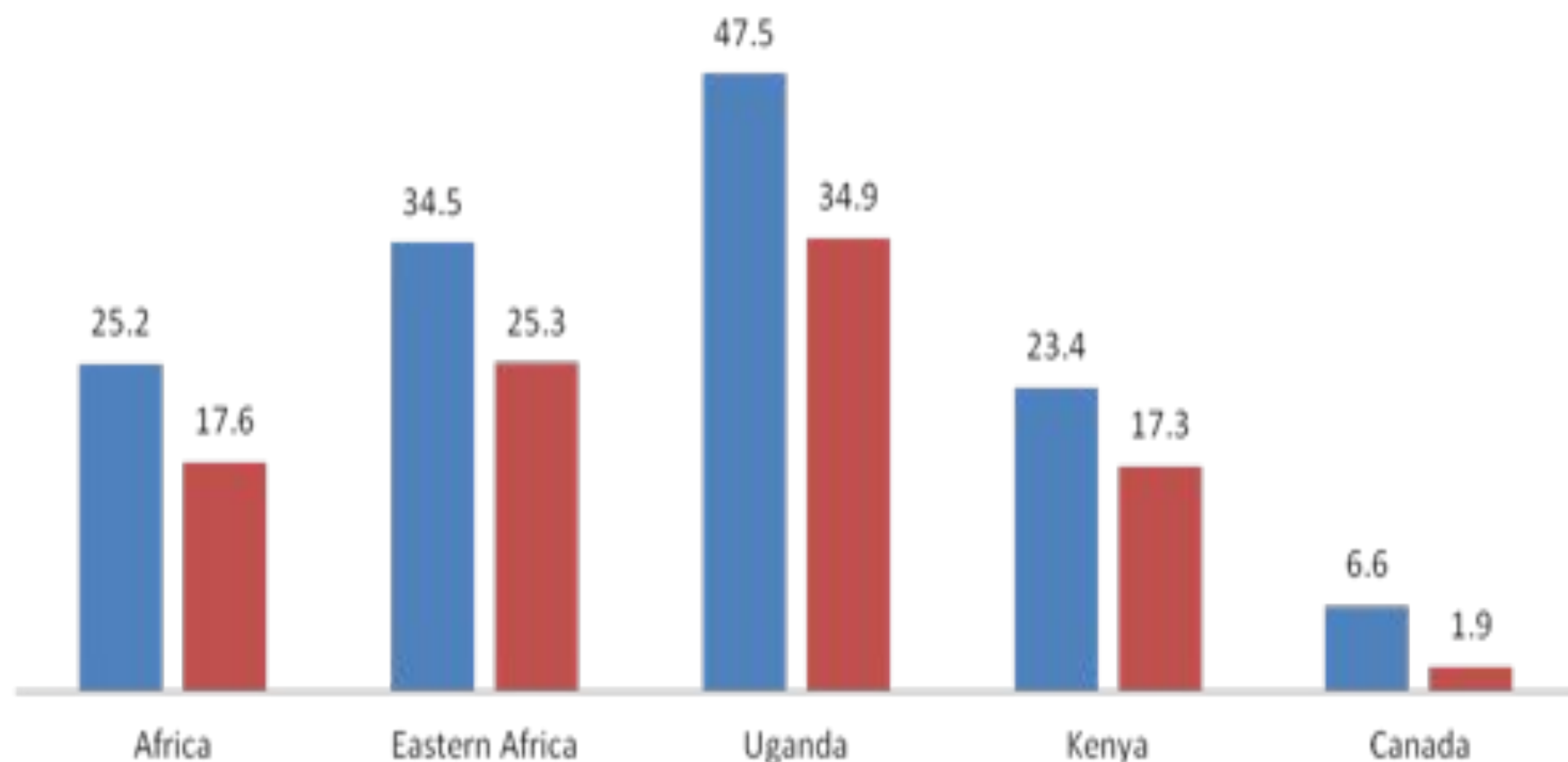
2.3 Comparison of incidence and mortality

Figure 14: A comparison of age-specific incidence rates and age-specific mortality rates of cervical cancer in Kenya



Age-Standardized Rates for Incidence and Mortality of Cervical Cancer (2008)

■ Incidence ■ Mortality



What is the Gap?

2009

- Gynecologic cancers are the biggest cancer killer in Kenya
- Cervix cancer is the individual biggest killer
- Virtually no access to radiation
- Limited access to chemotherapy and limited number of drugs
- Is it possible to bridge this GAP?

What has been done at Moi University

Reproductive Health Partnership

*Partnership between the Departments of Obstetrics & Gynecology of
Moi University, in Eldoret, Kenya,
University of Toronto and
Indiana University.*

What is it trying to accomplish? Capacity building to care for women by

- 1) direct clinical care where it is most needed*
- 2) training and education of young Kenyan doctors, nurses and midwives,*
- 3) facilitating relevant, needs-based and clinically-oriented research.*

What are the main areas of focus?

- 1) obstetrical care,*
- 2) fistula services,*
- 3) Oncology/ cervical cancer*

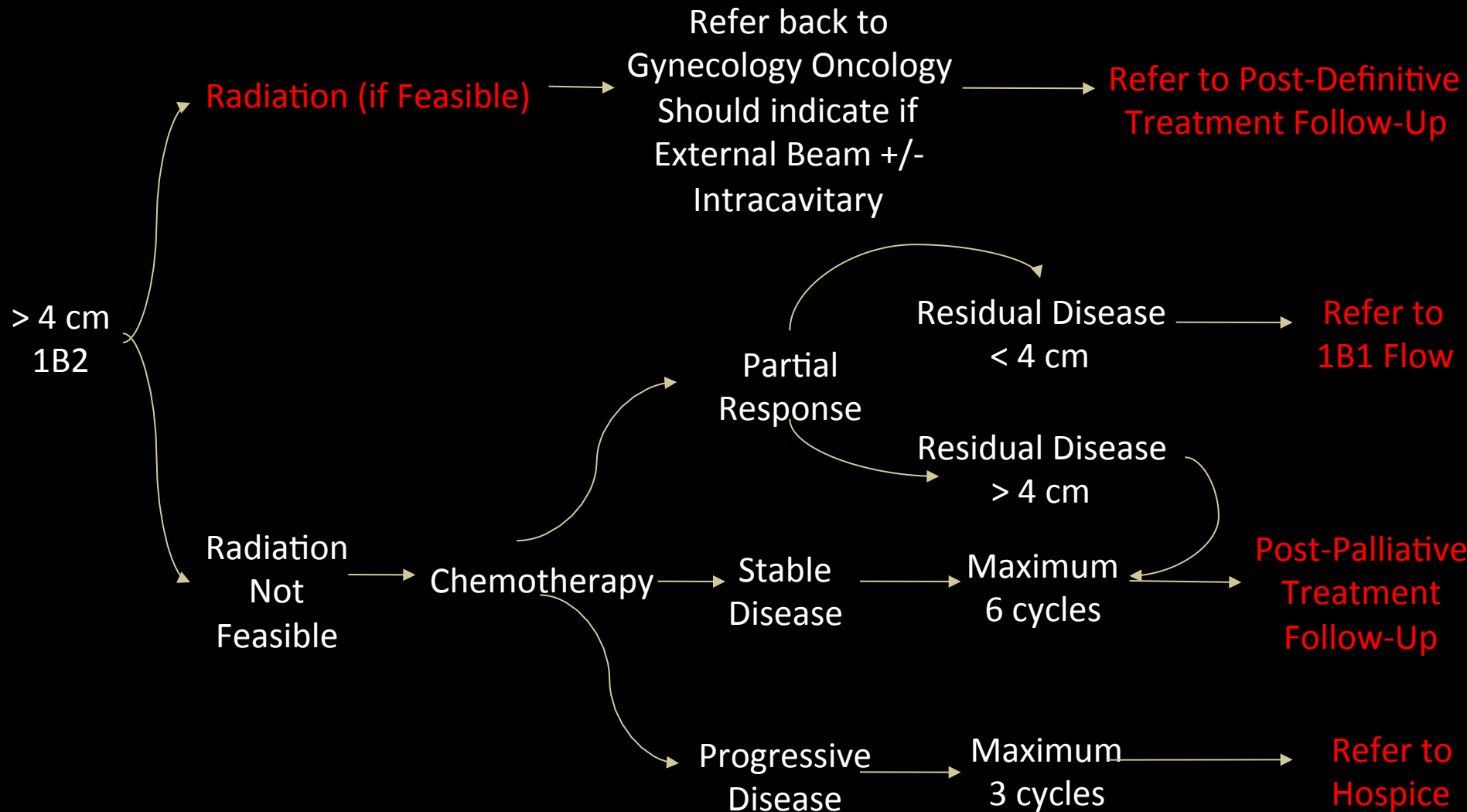
Initial Steps

- Visit to North America
- Kenyans expressed a strong interest to develop better prevention and treatment standards of care for cervix cancer
- Faculty visits to Kenya

Achievements

- Started a cervix cancer screening program
 - First year screened 150
 - Second year expanded to 1000
 - Third year 8000, this year > 12,000
- Started a gyn oncology clinic
 - Established written treatment protocols
 - All gyn onc patients filtered through this clinic
 - Established relationship with radiation oncology in Nairobi to facilitate referrals

Low Stage Cervical Cancer (1B2) Treatment



Achievements

- Surgical
 - Donated equipment and taught LEEP for preinvasive cervical dysplasia
 - > 450 LEEP completed to prevent development of cervical cancer
 - Taught two gynecologists how to do a radical hysterectomy (high risk/high reward)
 - In two years > 50 patients treated surgically

Achievements

- Started to treat women with advanced cervical and ovarian cancer as well as Gestational Trophoblastic Disease with chemotherapy based on evidence based protocols using drugs that are available
- Established databases to record outcomes, response rates, complications and survival

Papers and Presentations

- 2 papers published
 - Rad hyst training
 - Chemotherapy treatment for ovarian cancer in low resource country
- GOC
 - Two poster presentations 2011 and 2012
- IGCS
 - Oral presentation, poster 2010
- APOG
 - Oral presentation
- SGO
 - poster
- KOGS
 - Two oral presentation by Kenyans
- UICC
 - 3 papers accepted 2012
- ASCO
 - Poster 2012
- Pelvic surgeons
 - Oral presentation
- Bethune surgical roundtable
 - Oral presentation
- IGCS 2012
 - 5 abstracts accepted for poster presentation

Gyn Oncology Plan

- Integration of gyn oncology into the AMPATH Oncology program
- Develop a comprehensive approach to care for gyn onc patients
- Screening expansion for cervix cancer
- Surgical training
- Including chemotherapy treatment protocols for ovarian, cervical cancers and GTN

What about sustainability?

Sustainability

- Initiation of change and some support for change is not enough
- We need to bring together our **experience** and knowledge with **guidance** from Kenyans to determine how to develop a sustainable program
- **This is the most important goal!!!!**

Gyn Oncology Fellowship

- Concept was developed to start a gyn oncology fellowship in Kenya so that they could get the expertise and the credential needed to manage all gyn oncology patients, to administer a program in gyn oncology and then to train others
- Dept of RH at Moi University and MTRH supported the concept after a great deal of discussion
- Support to proceed was obtained from KOGS, Kenyan Medical and Dental Board, Stakeholders, AMPATH Oncology, Dept of Ob Gyn at both U of T, and Indiana University , UHN/PMH
- Subspecialty training is not universally accepted in Sub Saharan Africa
- **First subspecialty training program at Moi University**

Curriculum

- 2 year curriculum/ comprehensive approach
- Courses
 - Introduction to Gyn Oncology 4 wks
 - Clinical Gyn Oncology 48 wks
 - Medical Oncology 12 wks
 - Radiation Oncology 8 wks
 - Pathology 5 wks
 - Palliative Care 6 wks
 - Epidemiology 4 wks
 - Communication 2 wks
 - Research project

Training

- 6 wks in Toronto
 - Radiation Mike Milosevic
 - Palliative Care Subrata Banerjee
 - Pathology Marjan Rouzbahman
- 4 wks at Aga Khan Hospital in Nairobi
 - Radiation Farook Karsan
 - Pathology Dr Moloo
- 2 wks at Kenyatta hospital in Nairobi
 - Radiation Dr Nyongesa

Certification

- Completion of research project
- Satisfactory evaluation of each rotation
- Exam after first year
- Final exam: Dianne Miller will travel to Kenya to conduct an exam that will include evaluation of clinical activity and an oral exam
- MSc will be issued by Moi University

Sustainability

- Program directed at a need with local support from Moi University/MTRH
- Support from Aga Khan/Kenyatta Hospital
- Leadership of AMPATH and support from AOI
- University of Toronto and Indiana University
- UHN/Princess Margaret Hospital
- National Specialty Society (GOC)

SUMMARY

- Vision
 - To help Kenyan physicians develop a comprehensive high quality sustainable program to prevent, treat and palliate gynecologic cancers in their setting, Western Kenya.
- Goal
 - To develop a program that will become sustainable and completely managed by Kenyan physicians
 - To align with other oncology programs that will provide greater access to prevention and care (breast screening family planning, prenatal care programs)
 - To develop a strong research program which aligns with the clinical problems of women at risk of and diagnosed with gynecologic cancers