Organization of Cancer Services in Western Kenya

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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
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 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
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Ampath-oncology
Using an HIV/AIDS backbone

- Access to patients
- A system for follow-up
- Existing basic laboratory infrastructure
**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
Background of AMPATH Oncology Palliative Care

- Started in late Sept, 2010
  - Growing needs for palliative care (over 60-80% of cancer patients)
  - IU Palliative Care Physicians, Drs Greg Gramelspacher and Colleen Brown visited MTRH and AMPATH

- Recommendations: Kenyan champions, accurate prognostication & good communication

AMPATH-Oncology
Capacity Building for patient care – treatment protocols

• WHO List of Essential Drugs

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

Table 1. Cancer drug priority list.

<table>
<thead>
<tr>
<th>Priority 1</th>
<th>Top 10 cancers</th>
<th>Category 1-2</th>
<th>Generic</th>
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<tbody>
<tr>
<td>Bleomycin</td>
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<td>Chlorambucil</td>
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<td>Cisplatin</td>
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<td>Cyclophosphamide</td>
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<td>Daunorubicin</td>
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<td>Epothilone</td>
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<td>5-Fluorouracil</td>
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<td>Methotrexate</td>
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<td>Paclitaxel</td>
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<td>Procarbazine</td>
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<td>Tamoxifen</td>
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<td>Vinblastine</td>
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<td>Cytarabine</td>
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<td>Daunorubicin</td>
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<td>Dacarbazine</td>
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<td>Etoposide</td>
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Together with two antiemetics – a dopamine receptor and a 5-HT\textsubscript{3} receptor antagonist as well as dexamethasone

Sikora, Annals of Oncology, 1999
AMPATH-Oncology:
*Key Questions for Patient Care*

- **Is it cancer?**
  - Is there a biopsy, can we biopsy, do we need a biopsy (does it really change treatment?)

- **Is it staged?**
  - Can we stage, can we afford to stage, will staging really make a difference in treatment?

- **Can we treat?**
  - Is there a surgeon able to do the operation, do we have the drugs, can the patient get to radiation?

- **Can the patient and/or the system afford any of this?**
<table>
<thead>
<tr>
<th>Research Area</th>
<th>Subtopics</th>
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<tr>
<td><strong>Cervical Cancer Screening</strong></td>
<td>“see and treat”</td>
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<td>HPV serotyping</td>
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<td><strong>Pediatric cancers</strong></td>
<td>Childhood Leukemia</td>
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<td>Treatment Compliance in Childhood Cancers</td>
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<td>Epidemiology</td>
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<td>Molecular profiling of Wilm’s Tumor</td>
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<td><strong>Kaposi’s Sarcoma</strong></td>
<td>Treatment outcomes in HIV + patients</td>
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<td>Gem vs BV</td>
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<td><strong>Pharmacogenomics</strong></td>
<td>Etoposide in KS patients</td>
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<td>Vincristine and neuropathy</td>
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<td><strong>Breast Cancer</strong></td>
<td>Komen Proposal</td>
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<td>Behavioral</td>
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AMPATH- Oncology: 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 Curriculum
- 2012 ASCO MCMC course in Eldoret
- Cancer and Chronic Care facility including radiation
Barriers to Cancer Control in LMCs

- Lack of infrastructure
- Poorly trained and Limited workforce
- Patient care costs
- Insufficient palliative care
- Education Deficits
Kenya: A Sustainable Approach for Cancer Control

- Premorbid Conditions
- Cancer Prevention
- Screening and Early Detection
- Treatment and Palliative Care
- Survivorship
- Health care Policy

Patient Care

Education

Research
Final reflections on global health

• Care must lead the way
• Strategic partnerships
• Need to listen, before you listen
• LMCs can teach high income counties how to deliver more cost effective cancer care
• The Academic tripartite mission (service, education and research) works
• AMPATH-Oncology is one such model
Acknowledgements

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