

**Challenges and Opportunities for Improving  
Early Detection and Treatment of Cancer in  
Resource-Poor Settings:  
Lessons Learned from Collaborative Work in Uganda**

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# Challenges and Opportunities in Cancer Prevention/Treatment in Resource-Limited Settings

## Challenges

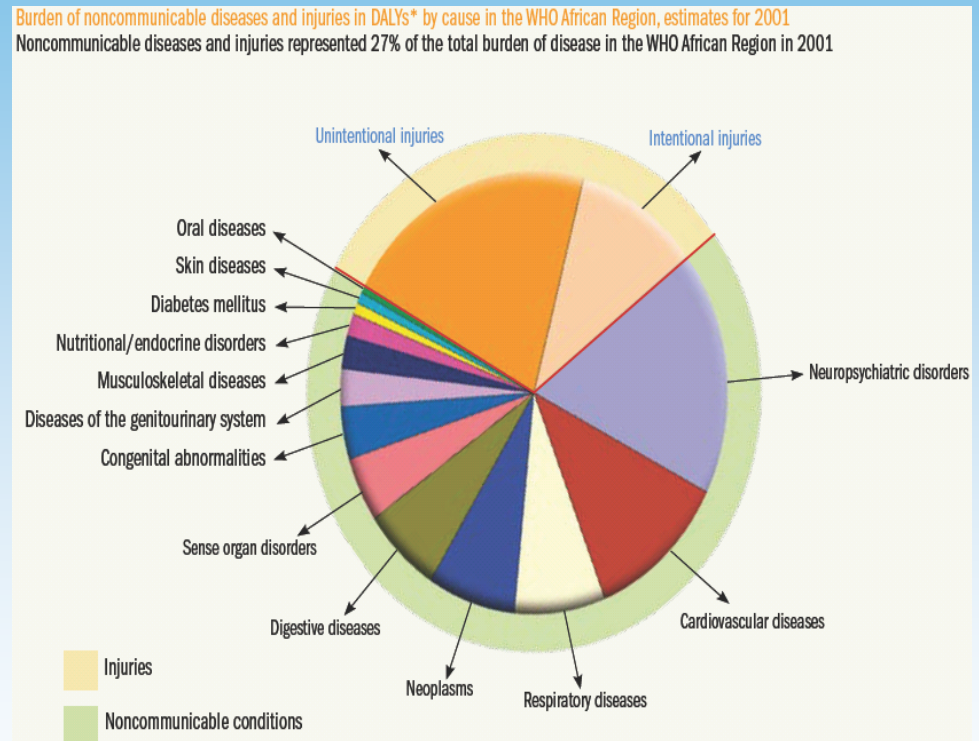
- Lack of recognition that cancer is a significant public health problem in resource-poor regions
- Few healthcare dollars to devote to the problem of cancer
- At present, deficits in both physical infrastructure and human capacity for cancer care
- Absence of comprehensive cancer control programs

## Opportunities

- Increasing recognition of cancer as a “global health” issue
- Modest investments are likely to lead to significant changes in outcomes
- Current cancer delivery models are often “simple”, meaning strategic partnerships can lead to rapid advancements

# Challenge: Cancer Not Recognized at Important Threat to Public Health

- WHO Report on African Health, 2006
  - “Non-communicable diseases and injuries constitute a growing public health problem in the African Region”
  - “Donor agencies and research institutions are neglecting the growing burden of non-communicable diseases in Africa”
- In 2008, Ugandan government dedicated less than \$10K to treatment of cancer, and \$250M to combating HIV



# Opportunity: Growing Calls for Global Cancer Discipline

- “Few problems are more daunting - or more tempting – than alleviating disease in poor countries”
  - Dr. Harold Varmus, Former Director NIH, President MSKCC
- “For us to make true progress in cancer research, we must address cancer as a global phenomenon and extend our efforts to emerging and developing countries.”
  - Dr. John Niederhuber, Director, National Cancer Institute

Comments on the future of Cancer Research, NIH,  
December 16, 2008

# Challenge: Lack of Human Resources for Cancer Care

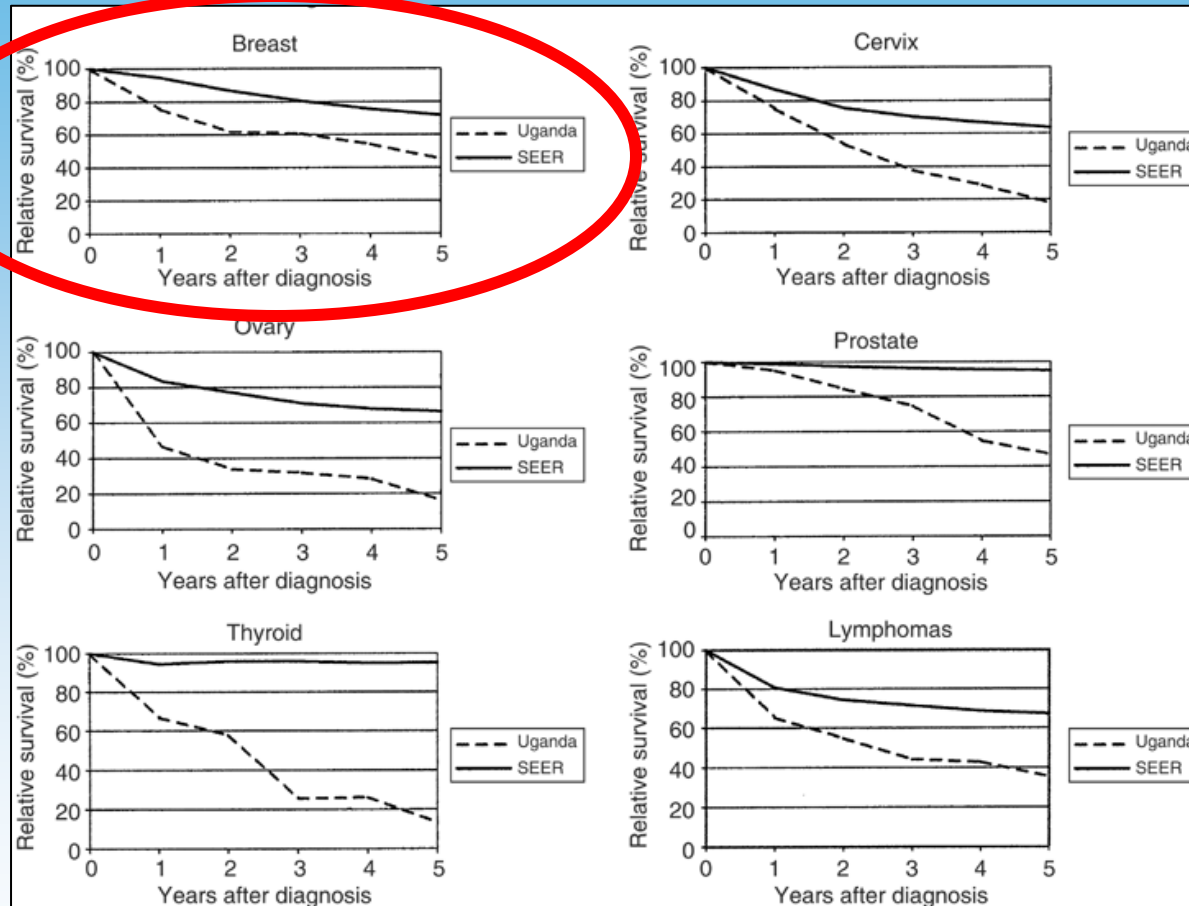
## Disturbing Cancer Statistics

- Uganda population: 32 million people
- Among the highest rates of cancer in the world
- 1 oncologist, 1 cancer clinic / treatment center
  - No oncology training programs in Uganda
  - Very limited opportunities for training in pre-oncology specialties
    - Cost >\$8K per year (x 2 years), competitive
  - Salary of Ugandan Oncologist: \$818 USD per year
  - Low opinion of working in cancer care (futility, etc.)

# Challenge: Lack of Physical Resources for Cancer Care



# Cancer Survival in Uganda vs. US



“The very poor prognosis of Ugandan patients is most likely explained by the lack of access to early diagnosis and treatment options in the country.”

Source: Gondos A, Brenner H, Wabinga H, Parkin DMI. Br J Cancer. 2005 May 9;92(9):1808-12.

# Opportunities: Seeing the “UPCID” (Uganda Program in Cancer and Infectious Diseases)



- Partnership between Uganda Cancer Institute and Fred Hutchinson Cancer Research Center
  - Mission: Research, Training, Clinical Care
- Initiated in 2005
- Significant Progress to Date

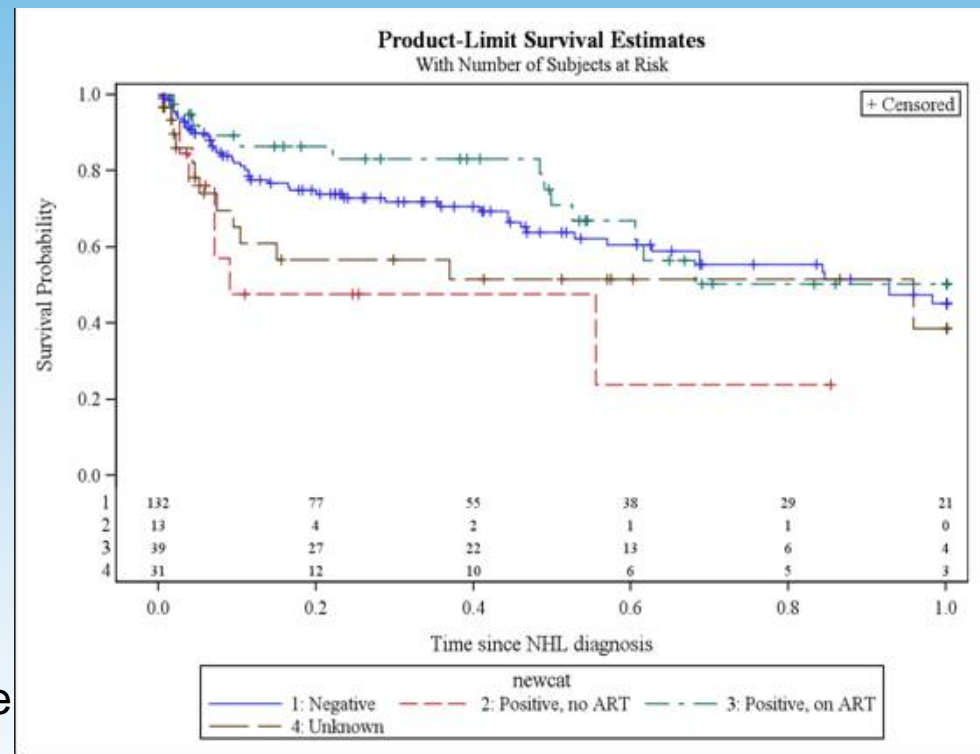


# Opportunities: Collaborative Research

- Built, staffed and maintained clinical trial site, research staff, and state-of-the-art laboratories in **Uganda** to support research projects
- Accrued over 500 patients in clinical trials with <5% loss to follow-up in 18 months
- Collected nearly 50,000 specimens in shared FHCRC-UCI specimen repository and shared these with “best and the brightest” at FHCRC for collaborative work
- Completed studies identifying factors behind poor response of the two most common cancers in Uganda to treatment (Kaposi sarcoma and lymphoma), the role of chronic viral infections in the development of cancer, the epidemiology of cancer in Uganda, and factors associated with poor survival

# Opportunities: Research Findings with Immediate Public Health Import

- Breast cancer incredibly common in Uganda and increased 40% in 10 years
- 90% of patients present with Stage III or IV disease
  - 25% believed cancer couldn't be treated and therefore failed to seek care
- Important factors in the surviving cancer:
  - BMI > 18.5 (only 60% of cancer patients)
  - Receipt of each additional 10% of recommended chemo course associated with 5-fold increase in survival (median: 18%)
  - HIV

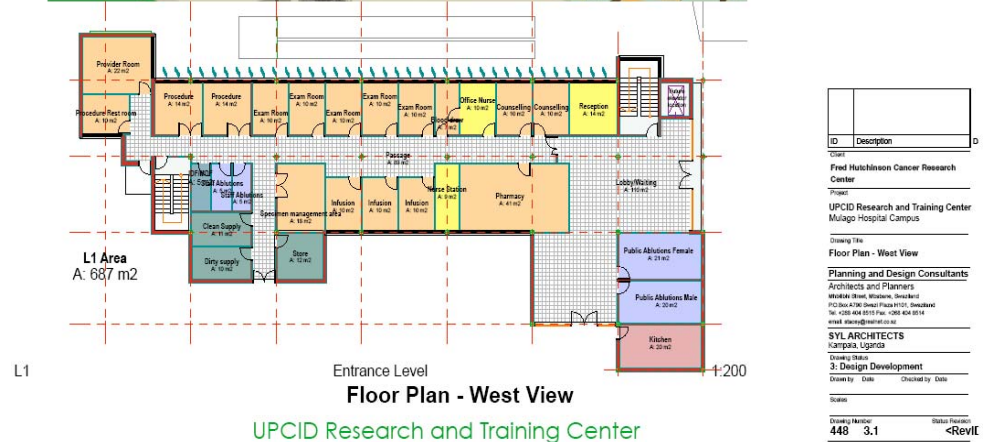


# Opportunities: Building Human Capacity

- Trained 49 Americans and Ugandans in a variety of disciplines and at all levels
- Developed novel training program in HIV-related cancers for Ugandan physician scientists and received funding from NIH
- Secured funding for construction of new training center



# Opportunities: Modest Investments In Physical Infrastructure Make Big Differences



# Conclusions

- Awareness of cancer as a global health problem needs to be raised
  - Resource-rich settings: policymakers, funders, lay public
  - Resource-Poor settings: policymakers, healthcare workers, lay public
- Strategic partnerships between cancer centers in resource-rich and resource-poor settings can lead to effective and efficient research, training, and clinical care
- Modest investments in human and physical capacity reap large rewards



[www.upcid.org](http://www.upcid.org)