



Emerging models and opportunities in global health for Medical Physicists powered by information and communication technologies

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Disclosures: No conflict of Interest

Physics in Medicine & Biology
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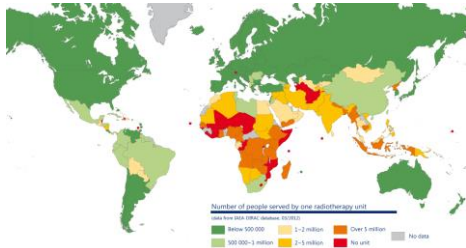
Proceeds support Global Radiation Oncology

Emerging Models for Global Health in Radiation Oncology

Wilfred Ngwa
Twalib Ngoma



Motivation: Global Cancer Disparities



Radiotherapy not available in over half of Africa's 54 countries
Whether you live or die from cancer depends on where you were born

Global Radiation Oncology defined

Global Health Defined:

*"An area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide...emphasizes transnational health issues, determinants and solutions: **involves many disciplines within and beyond the health sciences** and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual level care."* The Lancet, vol. 373, June 6, 2009



Introduction.

- Leaders in cancer policy from the USA and 14 economically diverse countries recently concluded that successful campaigns to control cancers will depend on concerted multinational collaborations (Varmus H, Kumar HS. Science translational medicine 2013)

- What are the greatest barriers to Radiation Oncology/Medical Physics Global health collaborations and outreach?

Barriers to global radiation Oncology?

Interviewing some of the global radiation oncology leaders during the 2015 Global Health Catalyst Summit @ Harvard



Barriers to Radiation Oncology global health collaborations

1. Interest?
2. Funding
3. Models
4. Culture
5. Space-time
6. Opportunities: including career development opportunities

Barriers to Radiation Oncology global health collaborations

1. Interest?

Upsurge in Global Health Interest:



- Consortium of Universities for Global Health: grown from 24 to 120 members
- Over 75% of Radiation Oncology residents want a Global health component
- Palpable interest at conferences,

Barriers to Radiation Oncology global health collaborations

2. Sustainability/funding?

Proliferation of institutions with the support structures needed for effective and sustainable collaborations.

E.g many *NCI designated comprehensive cancer centers* and hospitals with robust radiation oncology programs now share the vision to eliminate global cancer disparities and can support such collaborations in cancer care, research and education (CARE).

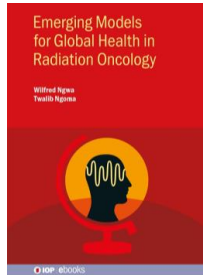


Barriers to Radiation Oncology global health collaborations

3. Models How do I go about?

Preliminary data:

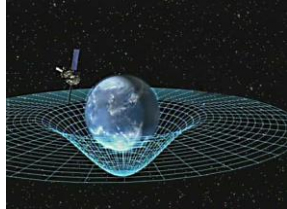
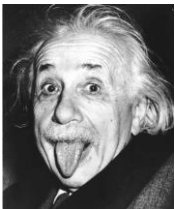
- Experience from HIV/AIDS
- Harvard-Botswana;
- IAEA
- AAPM
- ASTRO
- IOMP
- NCI-BIG-CAT
- Doctors + Medical Physicists without Borders
- Radiating Hope
- MEPHIDA
- UPENN-Tanzania-Harvard



Barriers to Radiation Oncology global health collaborations

4. Culture?

5. Space-time?



Facilitating Opportunities,

Global Health Catalyst: Harvard and growing list of partner institutions:

Leveraging ICTs to help overcome **space-time** limits to life-saving collaborations in Radiation oncology (including for many Medical Physicists who want to help but cannot travel due to space-time constraints)

Potential for Information and Communication Technologies to Catalyze Global Collaborations in Radiation Oncology

Red Journal, 2015

Global Health Catalyst: Catalyzing Collaborative Global Cancer Care, Research and Education

- Collaborative **Cancer Care**:
 - Telemedicine in Radiation Oncology; Harvard –Rwanda
 - Participating in international Chartrounds or tumor boards (Botswana-Harvard)
 - **Remote quality assurance, treatment planning and evaluation**, e.g. QARC, VelocityGRID



Global Health Catalyst (GHC) features

- **Collaborative Cancer Research**: Harvard Catalyst model:
 - **enable investigators to easily find collaborators/mentors across multinational institutions**,
 - Cloud-based collaboration, share tools and technologies, access free consultations and cross-cultural communication/interaction training,
 - find pilot/crowd- funding **supported by diaspora**



Global Health Catalyst (GHC) features

- **Cancer Education/training**: Harvard Catalyst model:
 - e-learning as a powerful way to enable teaching or access to training, continuing education, or sharing new knowledge. Such e-learning could employ ICTs such as IAEA PACT's VUCCnet, AORTIC
 - Goal: GHC-supported summer workshops and practical training, at LMIC centers of excellence



Global Health Catalyst (GHC)

Outreach

- Cultural training
- Policy makers
- Advocacy
- African Diaspora
- NGOs
- Industry
- Religious Organizations
- Churches
- Growing alliance



Emerging Opportunities powered by ICTs

- **Education:** Medical Physics online education courses for LMIC : opportunities for faculty and partners.
- **Research:** Microgrants/crowdfunding to be launched on Global Health Catalyst platform, opportunities to collaborate!
- **Care:** Grow telemedicine programs: International Chartrounds supported by ASTRO: First session on August 29, 2016
- Need for faculty!!!
- **Outreach:** grow partnerships including with AiD, private foundations and non-profits, industry, Athletes, Religious organizations

SUMMARY

- **Information and communication technologies (ICTs) represent the future and can elide space-time barriers to Medical Physics global health collaborations**
- Global Health Catalyst to make it easier for anyone interested in global Health to participate
- **Comprehensive approach: Clinical Care, Education, Research as for NCI comprehensive cancer centers**
- Reaching out beyond the Bunker for global impact www.Globalhealthcatalystevents.org



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Thanks for your
attention !



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