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

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?
   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,

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

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 VUCNet, 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
Thanks for your attention!