M-Health for Vulnerable Populations

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Objectives

At the completion of this presentation, participants will be able to:

- Identify the balance between NCD (non-communicable disease) and ID (Infectious Disease) prevention efforts in the developing world
- Project the potential impact of NCD in Central America on emerging economies and the US healthcare system
- Describe the pros and cons of mHealth in low resource areas & challenges of digital connectivity in LMIC (political, technical, financial)
- Debate the concept of a “digital ecosystem for health” in LMIC (low and middle income countries).
- Assess the impact of mHealth efforts at the grass-roots community level with field workers.
Geography is Irrelevant
Balancing: NCDs & ID

- Today 20-25% burden global disease from lifestyle & behavior – rocketing in LMIC
- 4/5 of world’s pop’ln in developing regions – where NCDs & MVA are quickly replacing ID & malnutrition – now leading cause of death.
- By 2020 – NCDs will be 7 of 10 deaths worldwide
- CVD - principal cause of death in the developing world, accounting for twice as many deaths as TB, malaria, and HIV combined

First – Orientation  Guatemala – Geopolitical Boundaries
Impact – Why Should the US Care?
Impact on US Healthcare

- By 2020, Hispanic ethnicities will comprise 30% of US population.
- “10% escalation CVD within the next 20 years with a 3-fold direct cost increase, directly attributed to an aging society and the growth of CVD-prone Hispanic populations in the US”

Guatemala Society & Health

- 131 out of 187 (UN Human Development Index)
- Mixed society—varying levels of poverty
- Indigenous
  - Marked childhood malnutrition
  - Stunting and anemia
  - High obesity & HTN
  - Primarily in Western Guatemala
  - Severe poverty
  - Marginalized
Indigenous Mayans
Similar to US Native American treatment
Non-Spanish speaking (Tzu'tzuhil)
84% illiteracy rate
Influence of Western lifestyles, Chinese/American goods and tuk-tuks
60% increase CVD in last decade
“Starving with a Full Stomach”
The Healthcare System

- Health Centers
  - Health Posts
  - Auxiliary nurses
  - 8th grade education
  - 9 months training in healthcare by MOH
  - Case load is 1500 to 2000 per AN
  - No training in chronic diseases
  - Low med availability
  - NO injectable insulin
The Promise - mHealth

- 92% of all Guatemalans have (and use) a cell phone
- Widespread digital connectivity
- Using cellular technology to:
  - Educate health workers
  - Connect with patients
  - Collect, organize, store, & manipulate data
  - Coordinate care – patients/communities/regions
  - Turn data to information
  - Influence behaviors
Ok Informaticians – What Are the Challenges?

- Money to support project? YES
- Connectivity? not so much
  - But what about electrical power??
- Illiteracy? You betcha
- Corruption in Telecom? Absolutely
- Standards? Always
- Compliance? Maybe
- Local IT Workforce? Definitely
- **Interoperability and avoiding “one-offs”** – CRITICAL & a “BHAG”
eHealth in LMIC - CommCare

- Case Management System

http://www.commcarehq.org/home/
eHealth in LMIC - MOTECH

- SMS “engine” with intelligence

http://www.grameenfoundation.org/what-we-do/technology/mobile-health
eHealth in LMIC - OpenMRS

- Open source medical record system

http://openmrs.org/
It takes a team – diverse skills, diverse thoughts, interdisciplinary mix

The “Ecosystem” – connecting silos to form a system
mHealth in Guatemala

- Train the ANs – via Android tablets
  - 2 weekend immersions with local SON – chronic disease, health promotion, behavior modification
  - Ongoing remedial sessions weekly (case studies) in community
  - Risk stratifier – more efficient use of scare resources
  - CHWs equipped with smart phones – data collection.

- Connect Health Posts and Health Centers with smart phones - referrals
- Connect ANs with patients – SMS’ing for Health
- Creating a digital ECOSYSTEM
- Empowering field workers & patients/families/communities
Systems-Level Thinking

From Silos to Systems: An Overview of eHealth's Transformative Power

Rockefeller Foundation Report
Making the eHealth Connection:
Global Partnerships, Local Solutions
Bellagio Center Conference Series

Conclusion

- The need is great & ICT is the “killer app”
- NCDs are stealthy grim reapers
- Geography is irrelevant – disparity is everywhere
- mHealth/eHealth – Health & Healthcare “Off the Mainframe”
- It is about data libre, empowerment, & social good

GRACIAS
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