

# Primary Care in the Developing World

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# Outline

- **1. Introduction**
- **2. Background** : Zambia and the developing world.
- **3. Primary Healthcare** in an impoverished suburban Zambian township a look at Neri Clinic & our work.
- **4. Challenges to implementing technology to improve healthcare...** a look at a rural population near the border with the DRC.

**\* All Photos or media used are with the consent of the individuals or their guardians**

# Closer look at Indicators of health.

- Maternal Mortality
- Under 5 Mortality
- Life Expectancy

# Maternal mortality

Map showing maternal mortality is highest in countries of Sub-Saharan Africa and South Asia removed due to copyright restrictions.

# Under 5 mortality

Map showing under-5 mortality is highest in countries of Sub-Saharan Africa and South Asia removed due to copyright restrictions.

# Developing World -Burden of Disease.

- **7.6 million** children die worldwide every year before their 5<sup>th</sup> birthday.
- The developing world is home to **99%** of these deaths with the vast majority (**over 60%**) in Sub-Saharan Africa.
- That is **15 children** under the age of 5 dying **every minute**.

Figures from UNICEF 2010 & Lancet 2003

# That figure:

- 15 children under 5 die every minute.

What are they dying from?

# What are the children dying from?

Pie chart showing primary causes of death for children under 5 has been removed due to copyright restrictions. Causes include pneumonia (21%), malaria (18%), and diarrhea (16%).

# Zambia

- **13 million** population
- **Life expectancy is 46 years**  
Ireland is 80 years
- **15%** (official figures) of the population are **HIV positive**
- **64%** live on **less than a dollar a day**
- **Maternal Mortality is 590/100,000**  
Ireland is 2/100,000
- **Under 5 mortality is 110/1000 -**  
Ireland is 4/1000

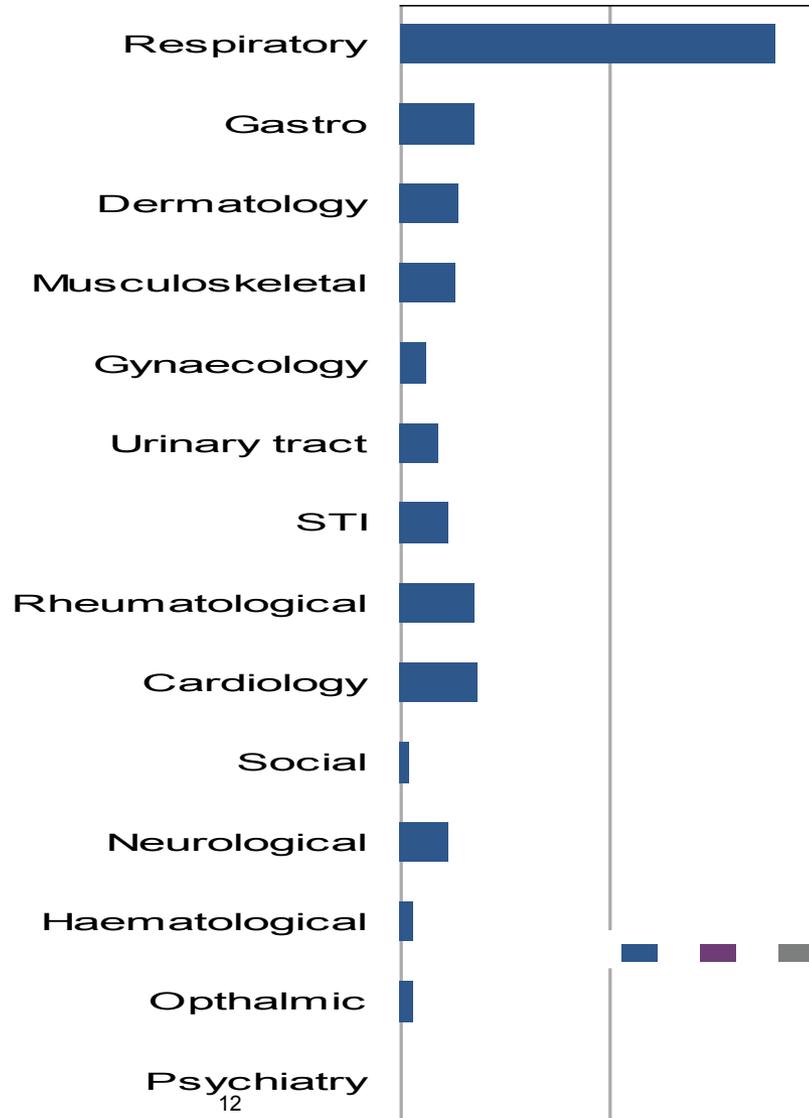
# Neri Clinics

- Established 2008 chance meetings between like minded committed individuals.
- Accessible community healthcare staffed by local Zambian professionals.
- All in Partnership with local community/NGO/Government.
- No administrative costs to our charity in Ireland.
- Population of over 30,000 people identified with no healthcare structure.



- Clinic opening day- a day for the community. Zambia's first president Dr. Kaunda launches our clinic.

# 432 consecutive cases...



Young man, my age.









# Volunteer Physio at work



# Zambian Physio at work





RL a 10 year old  
with severe spinal  
disorder  
kyphoscoliosis. –  
No specialist  
orthopaedic  
opinion.



# Neri Clinic Service in 2012

- Primary Care day to day run exclusively by Zambian staff with over 15,000 patients
- Under 5 clinic
- Antenatal Service
- Physiotherapy
- HIV service (approx 35% positive)
- Referral Emergency
- Specialist clinics (ENT twice year, Orthopaedics, Dentist, Paediatrics/ Public health specialists.)

# Neri Clinic Services

- Vegetable garden & Educational talks
- Nutritional programme.
- Sports Teams for soccer & netball.





# Neri as a component of the Zambian health service

- All of our services are implemented in accordance with the Zambian Ministry of Health or the relevant NGO specifications.
  - Our statistics are entered into the Zambian national database.
  - Our workers' salaries are going to be paid by the Ministry of Health.
  - Our medications are part funded by the Ministry of Health.

# Rural Zambia near Serenje

- Location – Rural Zambia in the bush 5km from the Democratic Republic of Congo.
- 6-7 hours walk to nearest healthcare facility.
- Population of subsistence farmers and their families approx 500.
- Needs are vast. Closest Government clinics testing 50 febrile patients mainly children for malaria per day 47-49 positives out of those tested.

# Challenges to the introduction of technology in healthcare

# The world by night

Satellite image showing the earth and night removed due to copyright restrictions.

# Challenges to the introduction of technology in our clinics

- Electricity
  - None in Serenje (Vaccine cold chain/technology)
  - Power outages in Lusaka (back up generator)
- Computers
  - Training
  - Maintenance
  - Repair

# Challenges to the introduction of technology in our clinics

- Poor Road Network
  - Inaccessible in rains in Serenje
- Staff resistance to change.
- Cell phones
  - No 3G in Lusaka
  - No coverage of any kind in Serenje

# Challenges to the introduction of technology in our clinics

- Internet
  - None in Lusaka or Serenje currently
  - Available in Lusaka
  - Expensive satellite Internet connectivity is the only option in Serenje.
    - (\$3000 set up and \$500 per month for 3GB/month at speeds of 512kbps)

# eHealth, mHealth & other technology.

- Technology has made possible the support, management and communication with the clinic from Ireland to Zambia
  - Skype
  - E-mail
  - Online banking (e.g. staff salaries)
- Audit of the service using EMRS

# eHealth, mHealth & other technology.

- Informal specialist opinion currently.
- Structured specialist clinics & interventions are in their infancy
  - Oto-rhino-laryngology surgery
  - Public health clinics
- Use of remote Ultrasound in Antenatal clinic screening

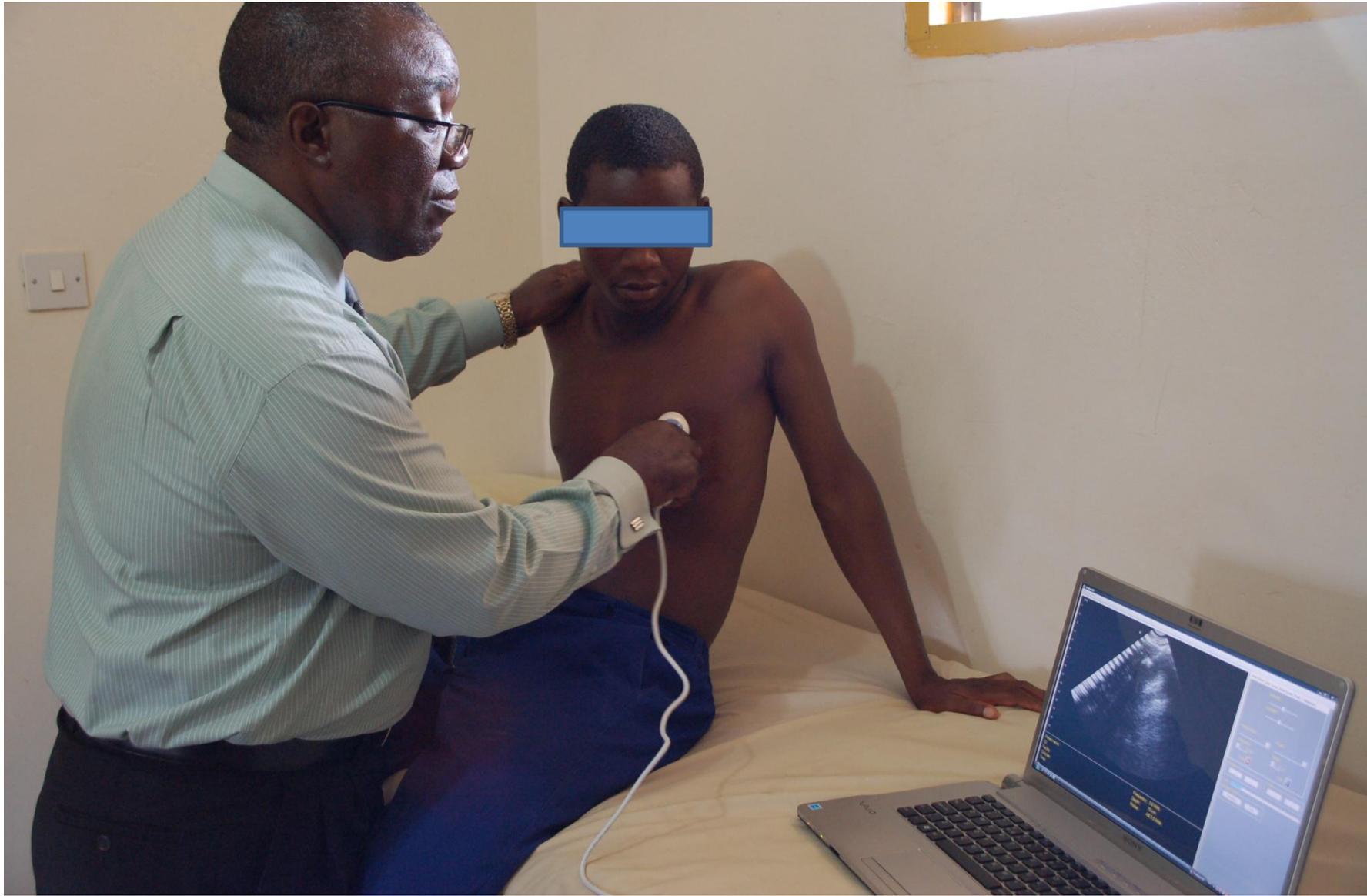
# Potential Initiatives

- Specialist care to the most remote areas can only be achieved with eHealth/ mHealth.
- We currently have informal limited access to:
  - ENT surgeon
  - Cardiothoracic
  - Dentistry
  - Pulmonologist
  - Paediatrician
  - Orthopaedic

# Potential Initiatives

- Coordinated registry of specialist referral options for patients who need it in the most remote areas
- We would like for a child in rural Zambia to have access to the best medical opinions in the world if needed
  - Achievable with information technology/ eHealth

There isn't a shortage of the specialists willing to give their expertise for free.



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