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\(^{th}\) 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. Zambian’s first president Dr. Kaunda launches our clinic.
432 consecutive cases...

- Respiratory
- Gastro
- Dermatology
- Musculoskeletal
- Gynaecology
- Urinary tract
- STI
- Rheumatological
- Cardiology
- Social
- Neurological
- Haematological
- Ophthalmic
- Psychiatry
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.