

# TELE-AUDIOLOGY IN AFRICA: *REACHING THE UNDERSERVED*

## COLLABORATION:



Kenya Ear Foundation

Children's Foundation, Sweden

University of Umea, Sweden

University of Pretoria, South Africa

GeoAxon, South Africa

# WHY TELE-AUDIOLOGY IN AFRICA?

1. BURDEN OF  
HEARING LOSS

2. CURRENT HEARING  
HEALTHCARE REACH



4. OPPORTUNITIES  
WITH TELEHEALTH

3. CHALLENGES TO  
SERVICE PROVISION

# 1. BURDEN OF HL IN AFRICA

- Prevalence in Africa (SSA) - estimates:
  - ❖ WHO estimate:
    - Children (<15yoa)  $\geq 31$  dBHL: **15.3 mil**
    - Adults ( $\geq 15$ yoa)  $\geq 41$  dBHL: **20.9 mil**
  - ❖ Proposed revised estimate:
    - Adults & children  $\geq 35$  dBHL: **65.6 mil**
  - ❖ Infants - 6/1000: **182 938** (correcting for < mortality: **165 745**)
  - ❖ Daily rate: **500** (correcting for < mortality: **455**)
- **Burden overwhelming** (numbers + economic burden)
- **A growing problem** (aging population)



## 2. REACH OF HEARING HEALTH

- Less than **1** in **40** people receive HA's in developing countries (**2.5%** penetration)
- Africa – 53 countries. Two offer professional education in Audiology (1 in SSA)
- **Mismatch** in **need** and **supply** and **unequal distribution** globally/regional
- Ratio of ENT's/audiologists to people:
  - Developing World **1 : 0.5 – 6.25 million**
  - Developed World **1 : 20 000**
  - Africa **1 : 1 million**



A photograph of a desert landscape. In the foreground, there are sand dunes with distinct, wavy patterns. The background shows a range of dark, rocky mountains under a clear blue sky. The overall scene is arid and open.

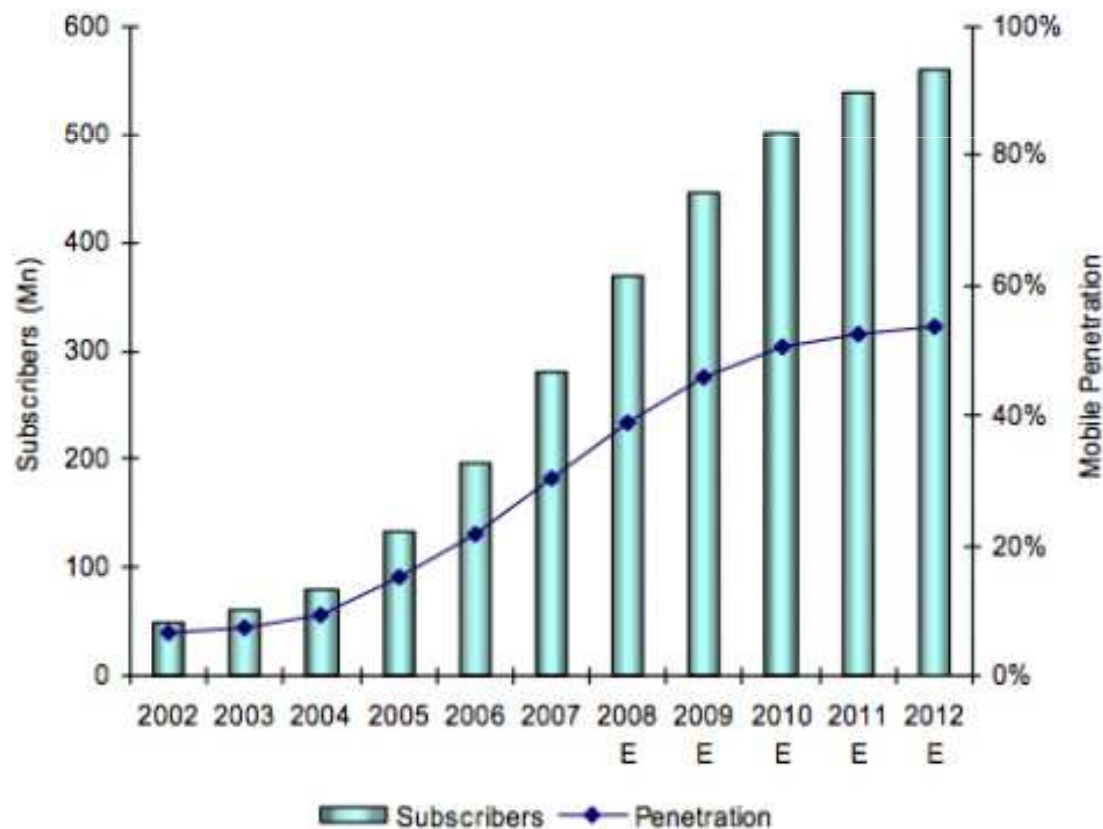
## 3. CHALLENGES TO SERVICE DELIVERY

- Geographical obstacles and distance
- Expensive referral pathways

## 4. OPPORTUNITIES WITH TELE...

- Services **penetrating remote** areas (internet growth)

Figure 1: Africa – Mobile Subscribers and Penetration (2002-2012)



# 4. OPPORTUNITIES WITH TELE...

- Services **penetrating remote** areas (internet growth)
- **Distances** can be **bridged**
- **Distribution** of professionals locally/globally
- **Asynchronous** protocols – automation of basic procedures
- **Integrated** data management



Wet Swanepoel

Current user: MP393924, registered with the HPCSA

Kgomeotso

Personal Info Clinical notes KUDUwave Pure Tone Audiometry

Export patient data for backup, email or Skype  
Print 'Personal Info' Delete this patient

AC BC UCL MCL L R Noise in ear canal compliant Keyboard mode (F12): Loudest

Talk forward mode (Testing disabled)

Masking 1000 Hz 40 dB  
Pure tone

Automatic  
 bone  
 air  
 max mask

Mute

Max for 1000 Hz  
-10

-10 dB

40  
90

Show responses on graph  
Masking: -10 dB  
Last test performed  
Hz: 125 dB: 0  
AC L dB: -10  
Noise in ear was too loud

Show on audiogram  
L AC BC UCL MCL R

Notes

30:32



The screenshot displays a teleaudiology session with the following components:

- Top Window (Clinical Software):** Titled "Wet Swanepoel", it features a menu bar (File transfer, Actions, View, Extras) and a patient list. A clinical note titled "KUDUwave Pure Tone" is open, showing a graph of hearing levels. The graph has a logarithmic x-axis (125, 250, 500, 750, 1k, 1.5k, 2k, 3k, 4k, 6k, 8k) and a linear y-axis (-10 to 100). Data points are marked with red circles and blue crosses, connected by lines. A "CamStudio" window is overlaid on the bottom of this window.
- CamStudio Window:** A recording application window with a menu bar (File, Region, Options, Tools, View, Help) and a toolbar. The main area displays the "RenderSoft CamStudio" logo and "OPEN SOURCE" text.
- Left Video Call Window:** Titled "Wet Swanepoel", it shows a large video feed of a man wearing a headset and a smaller inset video feed of a woman.
- Right Video Call Window:** Titled "Dirk Koekemoer (GeoAxon)", it shows a video feed of a man on a mobile phone.
- Bottom Windows:** A Facebook window is visible at the bottom, showing "16,878,446 people online" and navigation options like "Call phones", "Directory", and "Shop".

# DEMONSTRATION

