What is telemedicine?

- Remote delivery of healthcare services and clinical information using telecommunications technology.

- Clinical services using internet, wireless, satellite, and telephone media.
How technology is used

• Store and forward- Dermatology, radiology, pathology.

• Remote monitoring- Chronic disease management, remote ICU monitoring, remote nursing home monitoring, EEG, Sleep studies.

• Real time interactive- Physical examination, health screening, diagnostic tests(EKG, pulse oximetry, spirometer, ultrasound, Robotic surgery)

• Health apps
Why telemedicine in Ghana?

• Only 3000 doctors for a population of 27 million.

• Mal-distribution of healthcare professionals(Over 50% in Greater Accra and Ashanti regions)

• Inadequate healthcare infrastructure and geographic barriers to care.

• Improved IT infrastructure( Broadband,4G LTE data), 127% cellphone penetration.
Is Ghana ready for telemedicine?
What can telemedicine do?

• Increase access to healthcare.

• Decrease congestion in tertiary institutions.

• Reduce delay to care (A stitch in time saves nine)

• Reduce cost and time of transportation.

• Create platform for healthcare education for patients and providers.
Where Ghana use telemedicine?

- Can be incorporated into any type of clinical practice
- Tele ICU, Psychiatry, Pathology, Dermatology, Neurology
- Prisons, ambulance
- Public health-Teaching hospitals for education, research
- Disaster preparedness and management
- Any health facility-CHPS, health centers, clinics, hospitals, maternity homes, private hospitals.
Telemedicine in Ghana

- By 2014 international organizations have initiated 21 pilot projects
- Bisaapp - healthcare education platform
- District Health Information System -2 (DHIS-2)
- Use of Whatsapp to spread health messages and read imaging studies
WHAT THE COLOR OF YOUR URINE SAYS ABOUT YOUR HEALTH:

TRANSPARENT
Sign of overhydration. A person has been drinking a little too much water.

BROWNISH ORANGE
Sign of dehydration or a possible sign of liver disease.

PALE YELLOW
Means a person is healthy and hydrated.

PINKISH RED
Possibly a sign of kidney disease, UTI or tumor.

TRANSPARENT YELLOW
Normal.

BLUE OR GREEN
Sign of a rare genetic disease.

DARK YELLOW
Normal but needs to drink more water.

FOAMY
Sign of kidney disease.

Source: Salamat Dok
Healthcare message-via whatsapp
Comprehensive Telemedicine program

- Telemedicine assessment
- Infrastructure
- Training
- Telemedicine services
- Professional education
South Dayi

- Population- 51606 (2014)
- Hospitals- 1
- Other Health facilities-10
- Clinics-6, CHPS-4

- Number of doctors 2
- Physician assistants-3
- Nurses-48
- Pharmacists-1
- Specialist-0
- EKG equipment-0
- Ultrasound-0
South Dayi 2014

- Out patient visit -93446
- Malaria (27%)
- Respiratory (17)
- Rheumatologic (8.6)
- Helminthiasis (6.5)
- Anemia (6)

- Hospital ADM-3489
- Malaria (31%)
- Delivery (24)
- Anemia (12.6)
- HTN (7.1)
- Diarrhea (5.6)
South Dayi 2014

- Total recorded death-78
- Cardiac failure (15%)
- CVA (14%)
- AIDS (14%)
- Multi organ failure (11%)
- Anemia (8)
Bisabox
Training US-Ghana

Presentation on Telemedicine from US to UHAS
Remote home visit.
Sample of images from Bisabox

Throat exam

Ultrasound of kidney
Sample images at patient location.

3-lead EKG and vitals

12 lead EKG
Sample images

Impacted ear canal with wax

Ear canal after cleaning
Telemedicine

Ghana-Greater Accra

Kasoa- Ghana
In a Farm in Ghana

Hotel in Ghana
Recommended Minimum bandwidth

• For one to one video calling: 600kbps (up/down) for HQ video
• For screen sharing only (no video thumbnail): 50-75kbps
• For audio VoIP: 60-80kbps
• Optional Additional Recommended bandwidth requirements (for additional functionality):
  • 1.2 Mbps (up/down) for HD video
  • For group video calling: 600kbps/1.2Mbps (up/down) for HQ video. For gallery view: 1.5Mbps/1.5Mbps (up/down).
  • For screen sharing with video thumbnail: 50-150kbps
Challenges

• Infrastructure-Electricity and Internet
• Legal-governance
• Change management
• Budget(not budgeting) for sustainability
• Reimbursement( Current NHIS )
How can Diaspora help with Telemedicine

• Education and Training
• Advisory group to advise stakeholders on Telemedicine tech/best practices
• Use of telemedicine in “Medical fiesta”
• Help shape policies in Telemedicine
• Specialists bank- donate 2-3 hrs a month to consult remotely.
Contact information

Dr Kwaku Amexo  drkamexo@bisadoc.com, 6095065544
Joe Zeiger    zeigerj@bisadoc.com  2539058140
Aminul kahn   aminul@bisdoc.com  9177473730