



Leveraging Technology in Healthcare Provision for Developing Countries

**UNCTAD, Geneva, 7<sup>th</sup> November 2019**

# Leveraging Technology in Healthcare Provision for Developing Countries



Background



Trends



Mobihealth's MODEL



Challenges



Conclusion/  
Recommendations



**Mobihealth**

# WHY LEVERAGE TECHNOLOGY FOR HEALTHCARE FOR DEVELOPING COUNTRIES?

*Winner: Zenith Global Health Awards 2019*

## The Problems:

- 95% of 1.2bn people lack access to basic healthcare
- 25% global disease burden
- Only 3% world's doctors
- ~300k women die pa from pregnancy related Dx. 2/3 are from Sub Sahara Africa
- Doctor: People 1:25,000 vs 1:60 West
- Poor healthcare infrastructures
- Counterfeit medicines
- High cost of treatments
- >95% lack health insurance

## Mobihealth's Solution:

- ✓ Mobihealth's Integrated telemedicine app
- ✓ >100k multilingual doctors globally
- ✓ 24/7 access via smart phone/telehealth clinics
- ✓ Low cost subscription plans- all inclusive cost
- ✓ Telehealth clinics for rural areas
- ✓ Treatment speed up 6x, Waiting time down 99.8%
- ✓ Counterfeit medicine detector- RxAll
- ✓ POCT and Physical Exam
- ✓ Health education, local capacity building
- ✓ Free data

## The Opportunity:

- Explosive Mobile adoption
- ½ billion mobile users
- >300M smart phone users, 700m by 2025
- Nigeria: Spends \$8.8bn pa on airtime/data
- \$1.3bn pa on medical tourism
- High unmet need, untapped market

**TAM 1.2bn**

**SAM 456m**

**SOM 40m**



**Video Consultation**

Anytime Anywhere



ASUU opposes moves to incorporate lecturers' pay in IPPIS  
Minister queries N3.3 trillion overhead in 2020 budget  
Russia writes off \$20 billion of African debt  
Israel's Gantz tasked with forming coalition government

## Nigeria to import doctors from Europe, United States

**Plan to curb medical tourism, says minister**  
**Stop brain drain first, stakeholders advise**

Health Minister Chigochiora Nnamani said yesterday that Nigeria would employ the services of medical doctors from Europe and the United States to fill the gap in the country's health services.

Nnamani said the plan to import doctors is part of a broader strategy to curb medical tourism and improve the country's health services. He said the government would provide incentives for foreign doctors to work in Nigeria, including tax breaks and housing allowances.

However, stakeholders have expressed concern that the plan could exacerbate the brain drain of Nigerian doctors to other countries. They argue that the government should first focus on improving the local medical profession and addressing the reasons why doctors are leaving the country.



Minister Chigochiora Nnamani (left) and World Bank Group President David Malpas (right).

**Quick Banking**  
**\*326#**

ecobank.com  
180 The African Bank

## Doctors' exodus now more alarming, says NMA

- 60 doctors dump Lagos hospitals every six months – NMA
- 700 doctors leave Nigeria annually, says 1<sup>st</sup> Vice-President
- All my mates have left Nigeria – United States-based doctor



# Trends Latest Advances in Health Tech

- ❑ **Artificial Intelligence (AI) and Machine Learning (ML).**
  - ❑ **Internet of Medical Things (IoMT)**
  - ❑ Augmented Reality (AR) and Virtual Reality (VR)
  - ❑ **Blockchain and data security**
  - ❑ **Health-tracking apps**
  - ❑ **Therapeutic apps**
  - ❑ Smart hospitals
  - ❑ Robotics
  - ❑ **Electronic Health Records (EHR)**
  - ❑ **Telehealth**
- 
- Technology can help accelerate attainment of UHC for resource poor settings; start-ups identifying these challenges are creating solutions
  - There are 25K to 40K mobile applications currently being deployed or being worked on in Africa.
  - From drones to apps and computer-controlled vending machines —technology is helping to break down barriers and provide access to medical care and vital medicines for many more people.





# Health-tech Landscape in Africa: Flying Medical Aid



- A. **Flying Doctors:** 1st indigenous Air Ambulance in West Africa. 10yrs, 20 Aircrafts, 47 staff, 44 are medics.
  
- A. **Zipline:** California based start up started delivering blood and vaccines using drones in Rwanda since 2016. Expanded to Ghana in April. Reached 13mn people globally, plan to reach 700m in the next 5years. 30mins delivery timeline.
  
- A. **South African National Blood Service (SANBS)** to begin using **drones** to transport blood to tackle the high mortality rate among women during childbirth across the continent.



**FLYING DOCTORS NIGERIA**

*Air Ambulance & Medical Crews*

# Diagnostics & Remote care



- ❖ **MobihealthConsult (Nigeria-Global)** is Africa's 1<sup>st</sup> fully integrated App addresses multiple pain points.
- ❖ **Peek (Kenya):** a smart-phone based portable eye examination kit for comprehensive eye examinations in even the remotest of settings.
- ❖ **Babylon Health (UK, Rwanda):** Telemedicine Within 1year 2m subscribers. Local Patient to local doctors. 1500 doctors 12m people.
- ❖ **Hello Doctor** a South African app, provides essential healthcare information, access to advice and a call back from a doctor. \$5/m
- ❖ **Omomi (Nigeria)** helps pregnant women and mothers in Nigeria monitor their children's health and chat with doctors on a pay-as-you-go or subscription basis. \$5/m
- ❖ **Matibabu (Uganda):** App based malaria diagnosing tool. It clips on a finger, and by shining a red beam of light on the skin it can detect Plasmodium 83% Accuracy.
- ❖ **Ilara Health (Kenya):** Making low cost AI and tech-powered diagnostic test available to millions of people across Africa for common blood tests.



# Medication Apps

- **RxAll:** World 1<sup>st</sup> counterfeit medicine detector
- **Medsaf (Nigeria):** Enterprise medication supply chain solution to fight counterfeits and reduce cost.
- **Sehatuk (Morocco):** Provides huge database of drugs available in morocco, dosages and prices. Useful info on calling for ambulance service and medical insurance.
- **Pelebox (SA):** A smart locker system that dispenses medicine to patients with chronic illnesses. SMS with a unique code opens the locker. x13 machines operating in Gauteng, South Africa. Plan to scale to 50, to reach 1,000 communities over the next five years.



## Educational Apps



- ❖ The community tablet –is focused on five key areas: public health, digital access, family planning, banking and voting.
- ❖ Runs on up to six large, solar-powered LCD screens and is transported on a trailer, can be attached to anything from a car to a donkey, enabling it to reach even the most remote or isolated rural communities.
- ❖ 1m across 90 communities since 2015.





**TELEMEDICINE:  
A \$130bn Global  
Market Opportunity**

# **MOBIHEALTH LAUNCHES REVOLUTIONARY TELEMEDICINE APP IN AFRICA**



**VIDEO  
CONSULTATION**  
ANYTIME, ANYWHERE



For more information  
Contact us via email at  
[info@mobihealthinternational.com](mailto:info@mobihealthinternational.com)  
or call +447753656688



# Who are we?



## Mission

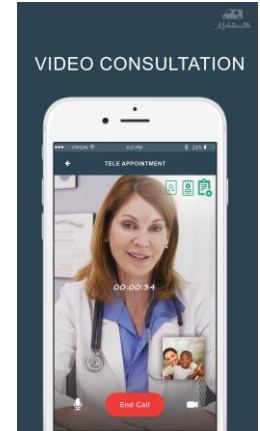
Our mission is to provide people in developing countries timely access to quality healthcare services from around the world when they need it in the most cost effective way through **telemedicine!**

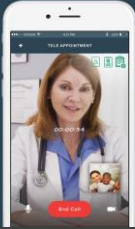
## Winner- Zenith Global Health Award 2019

- **Game changer in Telemedicine:** Africa's 1<sup>st</sup> fully Integrated Tele health company providing one stop portal to all user's healthcare needs.
- **Addressing multiple pain points:** Shortages of doctors and brain drain, exposure to counterfeits/unqualified personnel, lack of health insurance, high treatment cost, lack of infrastructure, distance and language barriers.
- **Increasing healthcare access** to millions of people with medical experts globally through mobile phones and telehealth clinics 24/7.
- **Offering On demand Consultations** – Access to **>100k board certified multi lingual medical Specialists worldwide** especially from Western Countries 24/7 as easy as they do mobile banking an flight bookings
- **Offering fast and secure** exchange of health records for better clinical outcomes
- Offering **Telehealth Walk-in clinics** to complement virtual services
- **Mobile and telehealth clinics** to serve those in rural, hard to reach areas
- Pharmaceutical chains and other value ads within 2<sup>nd</sup> year of operation.

# Mobihealth's Integrated App

- Video Consultation
- Diagnostics
- Prescription
- Referrals
- Follow up
- Home Health
- Home delivery of medications
- Health Education resources; Primary and Secondary Prevention.
- Local Capacity Building





## Mobihealth's integrated telehealth for resource poor settings



- ✓ **One stop solution**
- ✓ **Cloud enabled remote comprehensive physical Exam Tools (Tytocare, Medwand)** allows a doctor to obtain comprehensive Physical exam data remotely.
- ✓ **Point of Care Testing, POCT** : AI + blockchain powered diagnostic equipment. USS, Colposcope.
- ✓ Disease screening and Surveillance
- ✓ **Counterfeit Medicine detector: RX All, MedSaf**
- ✓ **SMS Reminders for maternal and child health**
- ✓ **Drug Inventory monitor**
- ✓ **ALL Inclusive low cost subscription plans**
- ✓ **Robotic Pharmacy chain**
- ✓ **R&D**





**EQUIPPED WITH APP COMPATIBLE REMOTE PHYSICAL EXAMINATION DEVICES SUCH AS STETHOSCOPE, OTOSCOPE, GENERAL EXAMINATION CAMERA, DERMO SCOPE, AN ULTRASOUND AND OR COLPOSCOPE.**



**WOMEN, INFANTS, AND CHILDREN, NUTRITION PROGRAMS, MANAGEMENT OF NCDS.**



**IMMUNIZATION, HEALTH SCREENINGS, HEALTH EDUCATION.**



**MATERNAL-FETAL MEDICINE SPECIALIST FOR WOMEN WITH HIGH-RISK PREGNANCIES. REDUCE PRETERM LABOR RATES.**



**REFERRAL TO LOCAL SPECIALTY SERVICES IF NEEDED**




**LOCAL CAPACITY BUILDING AND TRAINING FOR SUSTAINABILITY**


## **MOBILE CLINICS & TELEHEALTH UNITS FOR RURAL AREAS**








# Traction & Expansion


 >12K Followers on Facebook. Survey >80% will use telemedicine.

 Subscription based model, up to 6 members of a household


 Africans in the diaspora: A big target market for Mobihealth. For families in Africa and personal use when travelling to Africa.


 Projected 200K subscribers and 10% annual growth Target 2M subscribers by 2021.


 EOI from PHN (700+ LGA in Nigeria)

 Partnership discussions at National and State levels

 **Pilot schemes; Prisons, Market, villages (Nov-Jan 2019)**

 Traction from corporate bodies MOH, SMEs, HNWI, Diaspora

 Expansion into Kenya, Uganda, Sierra Leone, Ghana...other African countries, Asia, middle East.

 Europe: Irregular Immigrants and other underserved population

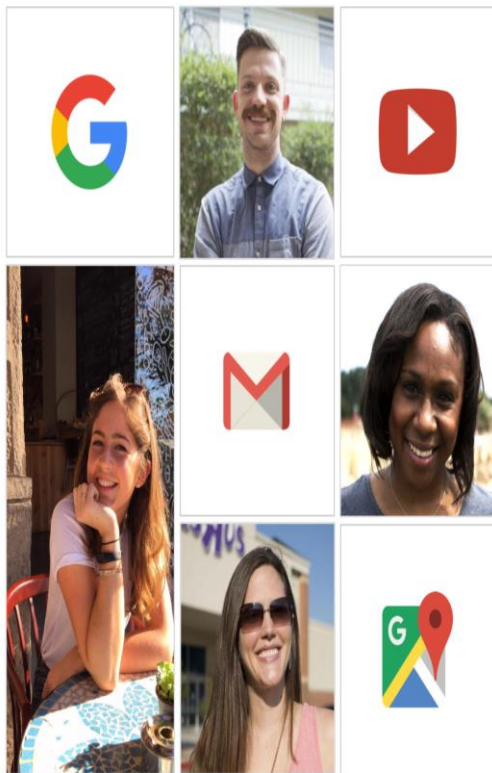
Google

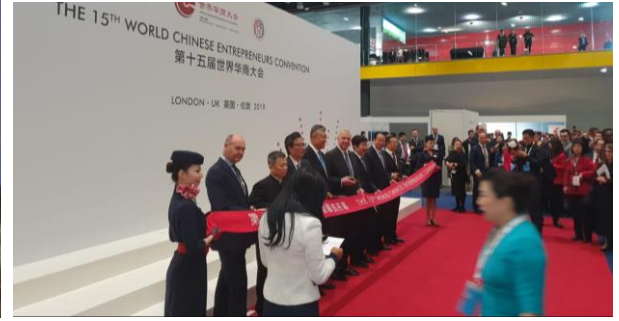


# Growing with Google

Google Digital Accelerator Programme

Rachel Fahey  
Digital Strategy Consultant  
rfahey@google.com





*15<sup>th</sup> World Chinese Entrepreneurs' Convention WCEC 2019, 21-23 Oct 2019, London Invited by HRH The Duke of York, Prince Andrew. Top left: Africa Pitchh@Palace 3.0 at St James' palace March 2019.*

*With Her Excellency Amira Elfadil, African Union Commissioner at the "Launch of the State of Social Assistance in Africa Report and Data Platform." African Union to the United Nations.*



FINANCIAL TIMES

SIGN IN

**Digital health**

**Medical start-ups across Africa aim to plug service gaps**

Leaders who seek treatment abroad should support ventures for all



Patient work: an ultrasound examination at a clinic in Ibadan, Nigeria

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L-R Mr Ade Adefeko, VP Corporate and Government relations OLAM, Dr Akinwumi- President of the Africa Development Bank, Prince Dapo Abiodun - Ogun State Governor and Dr Funmi Adewara, CEO of Mobihealth at AFD investment road show 75th UNGA 2019 in New York



CHANNELS BUSINESS GLOBAL  
Dr Funmi Adewara  
CEO, Mobihealth

**THE FUTURE OF HEALTH+ SUMMIT**

In association with **Forbes**

DISCUSSION & DINNER

**The future of HEALTHCARE IN NIGERIA**

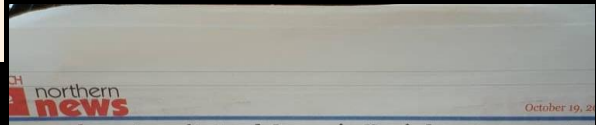
Limited Seating, RSVP TODAY



Dr Funmi Adewara is a prime example. Fifteen years ago she was one of the roughly 2,000 medical workers who leave Nigeria each year for the west. "I trained in Nigeria, and then I came to [the UK] ... but I'm very passionate about changing this poor narrative, because I've experienced it first hand," she says. "I've had relatives who have suffered from poor healthcare services and I've treated patients who



bihealth. It rely, in the phone app. of between testing to y not t travel to lth's



**Impeachment won't stand, I remain Kogi deputy gov - Adefeko**

October 19, 2019

... I left Lagos for Asoja, I was at Osoyigbo's area where one of the party's members who had not yet left called to tell me that one of his relatives had been appointed as the deputy governor last week.

... "I am not going to be removed from office," he said. "I will continue to work for the people of Kogi State."

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**'1,000 farmers affected by flooding in Borno'**

... The farmers called on the Federal and Borno State governments to provide relief for the affected farmers.

**Troops kill kidnapper, rescue victims on Kaduna-Abuja highway**

... The kidnapper was killed and the victims were rescued.

**Police, soldiers recover 930 cows, sheep from bandits**

... The police and soldiers recovered 930 cows and sheep from bandits.

**Niger ex-councillors threaten lawsuit over unpaid allowances**

... The Niger ex-councillors threatened to sue for unpaid allowances.

**THE FUTURE OF HEALTH+ FORBES**

**AGENDA – Thursday 17 OCTOBER 2019**

Transcorp Hilton Abuja  
Room: Mezzanine 2


TIME	REGISTRATION - ARRIVAL TEA / COFFEE	PROPOSED SPEAKERS
15H00	REGISTRATION - ARRIVAL TEA / COFFEE	
16H00	INTRODUCTION BY MC & MODERATOR	Chris Bishop, CNBC Africa Head of Programming Clare Omatsheye, President, Healthcare Federation of Nigeria (or PWC) Dr Osagie Ehanire, Minister of State for Health, Nigeria
16H05	SCENE-SETTER - THE STATE OF HEALTHCARE IN NIGERIA	
16h20	ONE ON ONE INTERVIEW WITH NIGERIAN MINISTER OF HEALTH <i>Play a video reel of Vox Pops of ordinary people at a hospital or such about their experience of health services in Nigeria (2 min video)</i> Look into Chiefs of Medical Services of the Army or Air Force or Senators to join a panel with (or before) the Minister	
16h50	PANEL DISCUSSION: BEYOND SURVIVAL – ENHANCING QUALITY OF LIFE FOR MOTHERS & CHILDREN Women in rural areas face extensive differences in access and coverage of maternal and child health services (such as antenatal) compared to those living in urban areas. Among urban populations, there are differences in the provision of maternal and child health services among the wealthy and poor people living in informal settlements.	Sanjana Bhardwaj, Head of Health, UNICEF Nigeria (confirmed) Dr Mary-Ann Elsiebet, Lead and ED, MSD for Mothers (confirmed) DG of the National Primary Care Development Agency ON


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**THE FUTURE OF HEALTH+ FORBES**


	What can be done to lay the foundations of optimum health, growth, and neurodevelopment across the lifespan from birth onwards?	Director of Family Health from the Ministry of Health
17H20	KEYNOTE ADDRESS – INTERNATIONAL HEALTHCARE FUTURIST	Michael Jackson (confirmed)
18H20	TEA BREAK	
18H40	PANEL DISCUSSION: OPTIMISING DIGITAL TECHNOLOGY TO EXPAND QUALITY HEALTH CARE Innovations in telemedicine and telehealth that improve access to medical expertise and delivery of healthcare services. The 4th Industrial Revolution as an enabler of healthcare innovation.	Jasper Westerink, CEO, Philips Africa (confirmed) L Nneka Mobisson, Co-founder and CEO, mDoc Vivian Nwakwe, CEO and Founder, MEDSAF Dr Funmi Adewara, CEO of Mobihealth.

# Challenges


 Slow Adoption: Lack of Awareness

 Africa is diverse; failure to recognise the unique contextual factors associated with tech deployment.

 Low internet and digital literacy especially women.

 Failure to tailor messages to local communities; cultural nuances, languages

 Poor Infrastructure- broadband, electricity, water, diagnostic centres, hospitals

 Policies - Privacy, security, Licensing

 Funding and Scalability

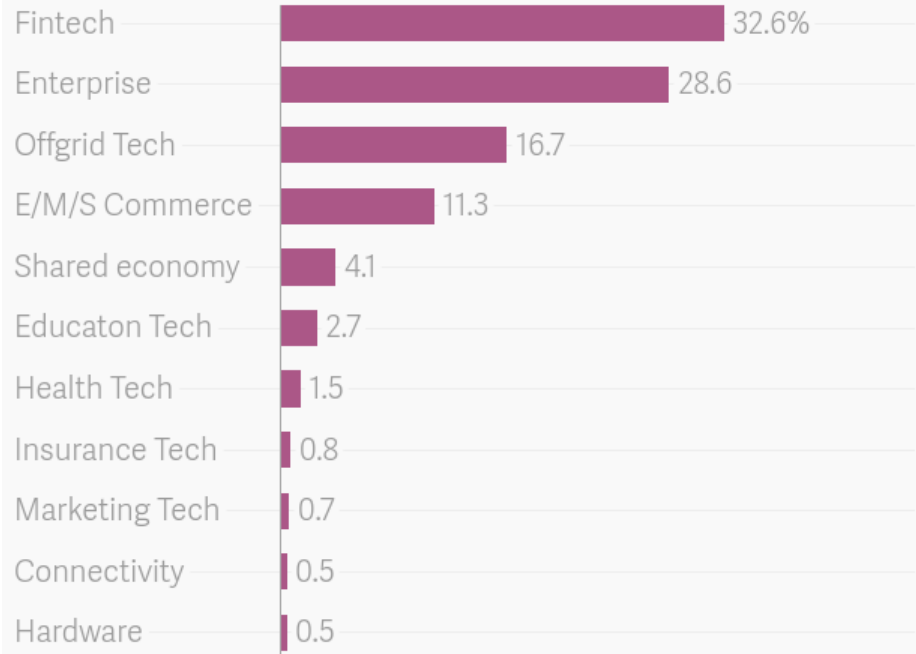
 Cost & Affordability



# Funding

- In 2018, \$1.16m was invested in African start-ups (108% compared to 2017), compared with £5.5bn UK start ups in 7months of 2019.

Share of total African startup funding (2018)



# Innovative Healthcare Funding – for UHC and inclusive growth!

- A healthy workforce are crucial to realign economies for inclusive growth. Gross underfunding of Healthcare budgets across LMIC.
- Abuja Declaration: In 2001, Nigeria, along with all African Union countries, pledged to spend 15% of their annual budget on health care.
- 18years after, not even close to reaching half of that goal. (Nigeria ~4.6%).
- This results in 70% of medical spending being OOP = debt or poverty.
- Nigeria needs to spend \$2bn pa on health; in 2017 total spend was \$920m only.



# AUC need to leverage Innovative Healthcare Funding – for UHC and inclusive growth!

**Mobile Levy:** Decentralized, transparent healthcare financing model

**Nigeria needs to spend \$2bn pa on health!**

- a) **Nigeria: 173m mobile users of a 200m population (87% penetration). \$5 pa levy= \$865m**
- b) **\$8.8bn pa spent on airtime/data. 10% deduction towards healthcare= \$880m. Total \$1.7bn that can be channelled towards healthcare.**

**Diaspora remittances:** Africans in the diaspora remitted **\$84bn in 2018.**

**Nigerians \$25bn. 20% (\$5bn) was for Healthcare needs of families; Unstructured!**

# Recommendations



Blueprint for the adoption of digital health in resource poor settings



Aggressive digital education; Local content adaptation



Africa is diverse: Need App programmed in African languages with local content adaptation to widen reach and expedite adoption



Need to engage developers to allow integration of other apps to reduce inconvenience for patients and medics.



Empower more Women & children with digital tools



More investment in Infrastructure



More investment in Female-led entrepreneurs and health tech



Policies- Privacy, security, licensing



Cost: AUC to consider innovative healthcare financing models



# Conclusion

- Tech space...A fast moving train- not slowing down.
- Africa, 54 countries, 54 different telecoms networks, 54 different ways to pay taxes- is cumbersome!
- Cohesive, single market is the fastest route to inclusive sustainable growth!
- ...technology itself is not enough. Need innovation to drive technology adoption through business model support, process innovation and building awareness.





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Thank you for listening!*