



**Presentation on
MedTech Solutions in Healthcare
Provision, EAC Perspective
during
The East African Community
Business & Investment Forum in
Stockholm
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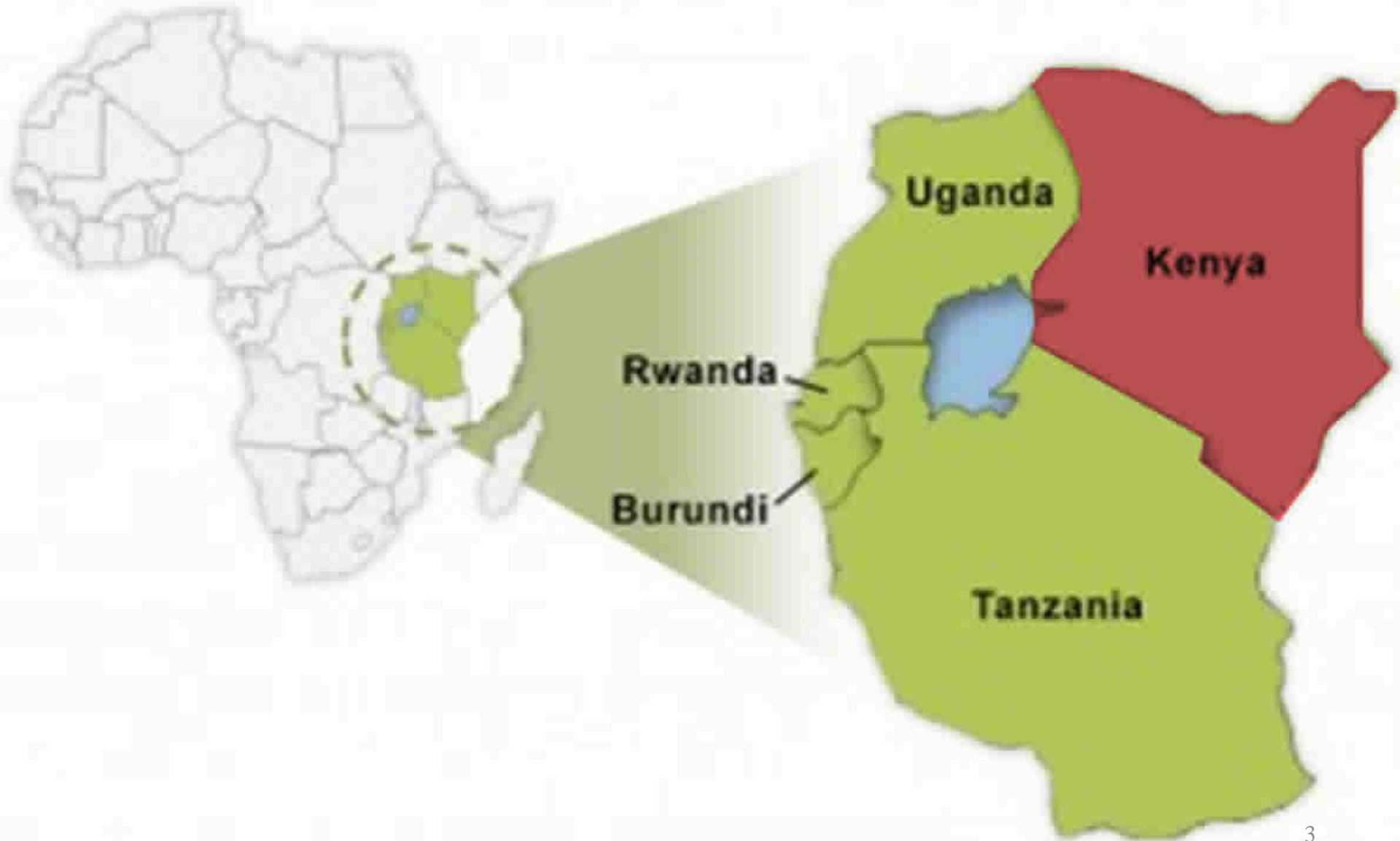
PRESENTATION OUTLINE



- Introduction – Kenya and EAC
- Innovations in Healthcare Sector in Kenya
- Kenya Health Regulatory Framework
- Mobile Technologies Penetration
- Kenyan e-Health strategy
 - Kenyan Perspective
- Kenya Medical Practitioners and Dentists Board & Other Health Regulatory Boards and Councils



East Africa Community





Kenya



- Kenya - founding member of the East African Community (EAC)
- Covers 581,309 km² (224,445 sq mi)
- Population , approx. 45 million people (2016 census)
- Capital city – Nairobi and a regional commercial hub.
- Has the economy largest in the East and Central Africa with a GDP of \$69.190bn (2016)



Innovations in Healthcare Sector in Kenya



- Innovations linked to mobile phones play vital role in Kenya's healthcare system.
- Health and ICT are interconnected in the EAC Region.
- Kenya- frontrunner in innovative ICT solutions in general and also in the health sector.
- Among the few countries in Africa with a comprehensive eHealth strategy

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Innovations in Healthcare Sector in Kenya



- The only country in the world with a multi-billion USD turnover of mobile money (MPesa) payments linked to paying for healthcare and other services.
- Mobile Money is widely accepted and trusted as a financing mechanism as many people use MPesa services to pay bills, save or take up small loans.



Opportunities related to the development of MHealth



- The entrepreneurial energy and skilled labour in the encourages innovation
- Increased mobile phone and internet connection-introduced 4G network by Mobile Network Provider e.g. Safaricom and Airtel.
- Initiatives are on going in the mHealth sector, opportunity to link up with successful initiative and scale up



Kenya Health Regulatory Framework



Kenyan e-Health strategy 2011-2017 is the e-Health specific policy tool and has 5 implementation pillars:

- **Telemedicine**
- **Health Information Systems**
- **Information for Citizens**
- **mHealth**
- **E-Learning**



Kenyan e-Health strategy 2011-2017



Pillar	Definition	Location	Users	Data entry
Telemedicine	The use of telecommunication and information technologies to provide clinical health care at a distance.	Public (MOH) and private sector	Healthcare providers	Healthcare professionals at provider
Health Information Systems	A comprehensive and integrated structure that collects, collates, analyses, evaluates, stores disseminates health and health related data for information and use by all.	DHIS – public (MOH and in the public facilities)	MOH, health providers, private sector (limited) and other interested parties	At Facility level (nurses/data clerks)

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Kenyan e-Health strategy 2011-2017



Pillar	Definition	Location	Users	Data entry
mHealth	Mobile Health used for the practice of medicine and public health with support of the mobile phone (system).	Public (MOH) and private sector	Kenyan citizens, NGOs, Private Sector, Public sector	Implementing partners or if MOH project MOH data clerks
eLearning	The effective use of technologies in learning and education systems.	Public (MOH) and private sector	Health workers, general public (potential)	N/A



1. Health Information Systems – Kenyan Perspective

a) **Regulatory Human Resources Information System (rHRIS) system:**

- Strengthened regulatory functions and improved efficiency in service delivery
 - regulation of training and practice
 - inspections
 - preliminary investigations and case settlement
- Website strengthening and e-communication
 - online services (indexing of students,
 - online retention register for active practitioners and licensed health facilities
 - Policies and publications on the website
 - Notifications to clients via short messages (Bulk SMS) and emails

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Kenyan e-Health strategy 2011-2017



- Improved revenue through improved compliance
- Reduced processing time (3 months to 10 mins for licenses)
- Enabled online license application

c) Master Facility List

- Kenya Master Health Facility List (KMHFL) – an application with all health facilities in Kenya identified with unique code and their details describing the geographical location, administrative location, ownership, type and services offered.

d) Cloud computing

a shared information platform for all health regulatory boards and councils

- improved data security
- for integration and interoperability
- Reduced maintenance cost



d) Joint online portals and services

- Data and reports warehouse for public, MOH and practitioners

e) Adopted cutting edge ICT innovations

- Short code USSD SMS **(20547)** functionality for verification of valid and bona fide practitioners and health institutions – **iCare Kenya Mobile**

Solution

- Quick Response (QR) code certificate authentication , useful for inspections
- Geo-coding of health facilities for joint inspection exercises
- Barcoding and smart card functionality on retention cards for added security
- Online Continuous Professional Development (CPD) systems –



f. Integrated Human Resources Information System (iHRIS)

- ensure human resources data for hiring, transferring, and retiring health workers are managed electronically
- support human resources functions in managing health care workers

g. County Health Information System

- A tool for collection, validation, analysis, and presentation of aggregate statistical data, tailored to integrated health information management activities

h. Electronic Medical Record (EMR)

- systems composed of the clinical data repository, clinical decision support, inventory, finance and pharmacy modules



2. MHealth: Mobile health

mHealth in Kenya primarily focusses on two core areas:

- a) **Data collection** – whereby mobile devices replace or compliment paper based data collection tools
- b) **Behaviour change** – whereby mobile devices are used to share key messages to a specific (or wide) target group.



Telemedicine

- 20% usage of telemedicine (*inter-hospital*)
- Lack of guiding policy documents and no legislation to protect the patient in terms of confidentiality
- Some private hospitals offer doctor-driven specialist telemedicine services.



E-learning

- E-learning technology has greatly transformed the landscape of learning and development in recent years.
- Resulted to increased supply of health workers with high skills
- E-learning equipment enables the delivery of continuous training and mentorship to health care workers using fewer resources.
- Technology provides avenue for the necessary trainings at lower cost and to many health care workers, at their convenient location.



Opportunities in mHealth



Health Management Information Systems (HMIS)

- Many facilities in both public and private sector operate largely with paper-based systems.
- The larger private hospitals in the main cities have developed HMIS systems.
- There is still a large un-tapped market in this region with opportunities for systems that are easy to use and affordable



Opportunities in mHealth



Big data and Monitoring and Evaluation

With the growing complexity of improved equipment and technology in the healthcare industry, there is need for:

- Well equipped Command Centre
- Monitoring and Evaluation systems
- Skilled personnel

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Kenyan e-Health strategy 2011-2017



Telemedicine

- There are opportunities to invest in telemedicine and its related applications that offer to bridge the geographical barrier in accessing affordable, quality healthcare services throughout Kenya.
- Several trials and pilots have been tested and many are ongoing (for example in Lamu between Huawei and Safaricom), but none of the solutions have made a national impact as yet.



Challenges of mHealth Technologies



- There are many eHealth technologies, seeking to address varying challenges, introduced every day, but the country is lacking a local tracking mechanism on who does what and how.
- Scale-up the eHealth innovations as only 44% of the initiatives have been able to scale. The challenge is to build solutions and products that make economic sense and meet a real need in the market.
- Many mHealth interventions are donor-driven and do not fit into the larger health and information technology systems. This is due to the absence of a clear scale-up strategy and lack of consensus on common requirements.



Challenges of mHealth Technologies



- Many mHealth applications rely on the use of smartphones. However, the majority of the phone subscribers are low-end and use basic mobile devices that do not support an advanced operation system (for example Android or iOS).
- Scarcity of a reliable power source. Electricity supply in Kenya is unreliable and regular electricity is mostly available only in semi-urban and urban areas. Since graphics-enabled smartphones are highly power-intensive, any mHealth project that relies on smartphones may face challenges if users struggle to keep their phones regularly charged.



Kenya Health Regulatory Framework



In Kenya, the health regulatory framework is anchored under the various Acts of Parliament where various Boards and Councils are established as below:

1. Kenya Medical Practitioners and Dentists Board (Cap 253)
2. Nursing Council of Kenya (Cap 257)
3. Kenya Medical Laboratory Technicians and Technologists Board (Cap 253 A)
4. Clinical Officers Council (Cap 260)
5. Pharmacy and Poisons Board (Cap 244)
6. Kenya Nutritionists and Dieticians Institute (Act No. 18 of 2007)
7. Public Health Officers and Technicians Council (Act No. 12 of 2013)
8. Radiation Protection Board (Cap 243)



Functions of Health Regulatory Authorities



- 1. Education & Training:** Approval and accreditation of training Schools, Core Curricula, Conduct Examination and CPD
- 2. Registration:** health practitioners and Health Institutions
- 3. Licensing :**health practitioners , Health Institutions and Clinics
- 4. Inspections:** training Schools, Internship Centers, Health facilities
- 5. Disciplinary:** handling cases against their members



Functions of Health Regulatory Authorities



6. **Database:** Maintaining a database of all registered and licensed health practitioners and health institutions
7. **Advisory**-Ministry of Health and other government agencies
8. **Collaboration & Partnership**
 - International, Regional and Local agencies – IAMRA,FSMB, HPCSA, General Medical Council-UK, AMCOA, EAC & National Boards/Councils , Professional Associations like KMA, KDA, KMPPDU
 - Donor Agencies –IFC/WorldBank, University of Nairobi, CDC/Emory Project, FunzoKenya among others
9. **Monitoring & Evaluation**- Performance contracting



KMPDB Registration Status



	<u>Registered</u>	<u>Active/Retained</u>
– Medical Doctors	10,786	6,716
– Dentists	1,239	699
– Specialists	2,586	2,201
– Foreign Doctors on Temporary License		
Medical	2,565	1,481
Dental	114	45
– Medical Schools in Kenya	11	11
– Dental Schools in Kenya	2	2
– Medical Schools in EAC	29	29
– Dental schools in EAC	7	7
– Medical Officers Interns	359	359
– Dental Officers Interns	30	30
– Internship Training Centers		
• Medical	75	75
• Dental	10	10
• Specialist Recognition	2	2
– Post graduate Teaching Hospitals	4	4
– Health Institutions (Various categories)	5,400	3,477



WHO recommended doctor patient ratio



Total Kenya Population

45,000,000

Kenyan Doctors

Active Doctors(Medical & Dental)

7,414

Thus

45,000,000/7,415

Kenyan Position

1: 6,069

All doctors(Including foreign doctors)

Thus

45,000,000/8,941

Including foreign doctors

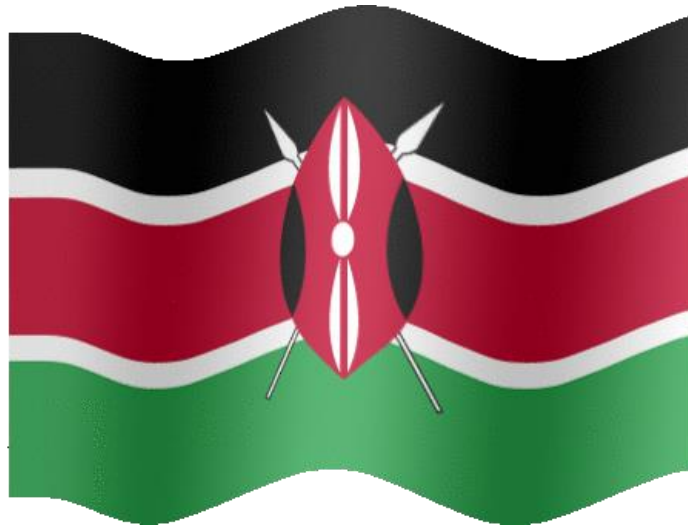
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- **WHO recommended doctor patient ratio**
 - 1 doctor per 1,000 population by 2015
 - 1 doctor per 600 population by 2020
- **Based on ever registered doctors medical (10,786) dentists (1,239)**
 - 1 doctor per 4,172 population
 - 1 dentist per 36,320 population
- **Based on retained (Active for year 2016) medical doctors (8197) dentists (744)**
 - 1 doctor per 5,033 population
 - 1 dentist per 60,484 population

“After climbing a great hill, one only finds that there are many more hills to climb”

Nelson Mandela



**Thank you
Asante
Tack**