E-HEALTH (TELEMEDICINE) AND HEALTHCARE IN LAGOS STATE, NIGERIA

Dr. Ahmid O. Balogun

MB, Bs, PGDHA,FMCP,FNSEM,
Retired Permanent Secretary, Lagos Nigeria

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Introduction

After years of planning, the E-health project started as an interactive Hospital Management Information System (HMIS) in Lagos State on the 5th of January, 2009.

The E-health project is being implemented in phases to involve teaching hospitals, all the 25 secondary and about 60 primary health care facilities.

Types of E-health

The software is a broad based modular solution with the following 14 modules i.e.

1. Records (Electronic Health Records-EHR)
2. Consultation
3. Nursing
4. Pharmacy
5. Laboratory
6. Radiology
7. Physiotherapy
8. Dental Services
9. Human Nutrition
10. Mortuary Services
11. Facility Stock
12. Billing System
13. Emergency Services
14. Community Health

Present Performance

With the HMIS, any patient in a Lagos State Hospital that is registered on a Central Database and the doctors managing the patient will have access to update the medical records (including investigations and treatment) of the patient. As of today, only the following 5 modules are being utilized:

- Electronic Health records
- Consultation
- Nursing
- Pharmacy
- Physiotherapy

Present Performance (Cont.)

Results achieved by adaptation of the five modules:

- Fast access to patient's complete and reliable medical history. (i.e. those who register with us)
- Rural communities and patients from distant areas receive early diagnosis and report urgently for treatment.
- Late follow ups with worse morbidity and mortality are reduced, thereby, enhancing quality of care and cost effectiveness through the GSM phone.

Set Goals

We have yet to realize our set goals for the HMIS Project and need to make every effort to achieve the standard level of healthcare in advanced economies which includes the following aspects:

- Remote consultations
- Comprehensive diagnostic uploading (laboratory, radiological etc.)
- Synchronization with other healthcare facilities
- Telemedicine
- Home monitoring
- Real time treatment through the use of wireless devices
- Video technology to decrease patients transfer, etc.

Challenges

HUMAN

- Low literacy level of population (especially in computer literacy)
- Language / Cultural barriers / Privacy
- Human acceptance is poor amongst hospital staff – especially many senior ones who rose through the ranks on analogue (Generation clean-up)
- Minimal involvement of end-users of the HMIS at the developmental stages of the software
- Lack of E-health strategy which should serve as a policy guideline

Challenges (Cont.)

FINANCIAL

Millions of US dollars have been sunk on E-health by Lagos and some other states, the federal government and donor agencies. Timely release of committed funds are uncommon on most projects in Nigeria. The E-health budget has to compete with other projects and often not enough; even when there are no leakages. With worsening price of crude oil per barrel, adequate funding pose real threat.

Challenges (Cont.)

TECHNICAL

HOSPITAL MANAGEMENT INFORMATION SYSTEM (HMIS)

- Built to run on real time basis
- System availability and reliability must be in the five 9's (99.999%) i.e. 5.26 minutes downtime in a year. This is not achievable with the ICT infrastructure we have on ground.
- A system breakdown in any service area will put all activities on hold, unlike a web based system solution infrastructure.
- Hardware, software and power failures are major challenges (My country requires about 40,000 MegaWatts of electricity for its 170 million populace but still struggling to generate 5000 MegaWatts as of today).

Challenges (Cont.)

OLD MEDICAL EQUIPMENT

- Most hospitals have old equipment that are not computerized and so, cannot be synchronized with E-health devices.

LOCAL ADAPTATION (Reengineering - Biggest Impact)

- Due to low literacy and poor computer education levels of over 75% of our patients, use of telemedicine, emails etc. are not practicable. However, we are able to use **mobile health** (MHealth a subdivision of E-health) to reach out to our patients.
- **GSM phone** (Global System for Mobile Communication) has completely revolutionized the landscape of communication in Nigeria in over 12 years. As at the first week of January, 2016, the Nigeria Communication Commission said we have **148,427,043 active lines**.

Challenges (Cont.)

While admitting that some individuals and organizations could have 2 to 3 active lines, its use is prevalent amongst us in Nigeria with a population of about 170 million people. Our people often forget their appointment dates and rarely come early to review results of investigations.

These are the practices that enabled us to use what we have to partly get what we need:

- Text messages are sent to all registered patients about 3 days to their appointment as reminders.
- Laboratory results are communicated to patients so they can return to the hospital immediately

Challenges (Cont.)

LEGISLATION

Privacy protection laws are needed to guide E-health in Nigeria.

The Future

The Lagos state government is investing a lot on E-Governance (Citizen Relationship Management)

E-Governance would involve all the Ministries, Departments and Agencies:

- Calls on environmental pollution would go to the Ministry of Environment
- Calls for vehicular problems or gridlock go to the Ministry of Transportation
- Pounding headaches, fever, or anything on health would go to Ministry of Health etc.

E-Health would certainly benefit from this. A web based solution that uses smart devices with high processing ability, long lasting power, easy mobility and user friendliness would soon be launched in the State. It would leverage on existing infrastructure and database as designed by one of the world's software giants.

The Future

Infrastructural problems such as power, modern medical equipment, etc. are being tackled with hope in the new government.

It is also expected that more hospitals in the **private sector** would embrace E-Health. **A very few of them have surpassed** the government hospitals and have utilized more modules for managerial, technological and organizational benefits for better health care delivery.

Thank you!

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