ICT & HEALTHCARE SYSTEM IN ALBANIA
Building the best patient focused IT infrastructure

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Abstract

Health information technology (HIT) is "the application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making" (Brailer, & Thompson, 2004) For HIT, technology represents computers and communications attributes that can be networked to build systems for moving health information. Informatics is yet another integral aspect of HIT. In Albania the tech market is relatively new and it's still on the growing and the developing process, but I need to stress in here that there have been satisfactory results compare to the timelines with other countries exposed to technology before. Computers now are introduced to hospitals where data are gathered and statistics are created in order to make decisions for providing better health care.

The steps taken though are very basic. There is information taken and reports filled and there is no central repository or warehouse where the databases of every single hospital and medical institution is taken and information is shared between them regarding the medical background of each individual, which would help decision taking and diagnosis to improve the healthcare system and healthcare services offered to the citizens. Doctors being unaware of the medical history of the patient often make mistakes on diagnose and prescription of the cure where being in the dark of medical history often prescribe pills that have counter effect on the patient's health. There is a third node in this cycle that is very crucial and until now is left aside, the pharmacist. There is no record taken on any of these institutions where patients take the oral prescriptions or suggestions and where in some cases even the prescription from the medical doctor is altered (with or without intention). There is no software or application, which would assist the medical doctor, or the pharmacist on prescription of the medicine for the patient based on exclusive rule of possible complications that could come from different pills or medication to the patient health. Therefore it should be suggested a system which would connect healthcare system nodes (Min of Health, Hospitals, Pharmacies etc) with assistant software and a centralized database, which would help cooperation of these institutions in order to offer better health services to the citizens.

Introduction

The World Health Organization (WHO) defines e-Health as the use of information and communication technologies (ICT) for health[1].
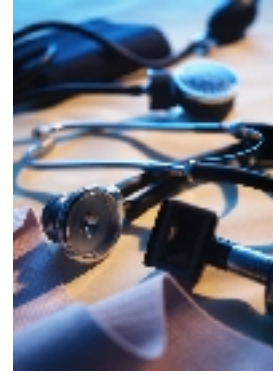
eHealth Overall Observation & HIT in Albania

Over the last years our government is recognizing that incorporating ICT is a priority for health systems development. Experience shows that this requires strategic and integrated action at the national level, to make the best use of existing capacity while providing a solid foundation for investment and innovation. Establishing the main directions as well as planning the detailed steps that are needed is crucial to achieving longer-term goals such as universal access to care, health sector efficiency, reform or more fundamental transformation. Central to this effort is the collaboration between the health and ICT sectors, both public and private. Our Ministry of Health plays a pivotal role, not only in meeting people's needs for care and protecting public health, but in preserving health systems through uncertain times. The Ministry of Innovation, Information Technology & Communication is essential to development in all spheres, and can make a vital contribution to the health sector. Common goals and a predictable ICT environment enable coordinated action: building consensus on policy, facilitating better use of shared resources and involvement of the private sector, and investment in ICT skills and infrastructure to improve health outcomes. eHealth strategies deliver direct national benefits. Advances in ICT in Albania have yielded substantial dividends to both individual health and public health. In health systems, information and communication technologies are being used to improve the timeliness and accuracy of public health reporting and to facilitate disease monitoring and surveillance. Strategic use of eHealth can support sector-wide planning as well as coordinating decentralized district health systems, and improving the ability to plan, budget and deliver services. From the local to the national level, ICT is changing how health care is delivered and how health systems are run. It supports critical functions by improving the ability to gather, analyze, manage and exchange information in all areas of health, from research on molecular genetics to large-scale humanitarian interventions and disaster relief.

e-Health has been described as a means to ensure that "the right health information is provided to the right person at the right place and time in a secure, electronic form to optimize the quality and efficiency of health care delivery, research, education and knowledge."[2]

Towards that end, information exchange such as through electronic health records, patient registries and shared knowledge resources is critical. Information systems and tools for diagnosis, prevention and treatment support health care at all levels. They also enable the efficient and accountable delivery of essential supplies, such as drugs, vaccines and equipment through the management of procurement, supply and distribution chains.

eHealth, Key Stakeholders & Drivers

Some examples of stakeholders and the direct impact of eHealth on them we can state as below:

1. Citizens
- Personalized care, throughout the health system and across the lifespan
- Makes healthcare available at home, work, school, not just the hospital or clinic
- Focuses on prevention, education and self-management
- Facilitates reaching out to peers for advice and support

2. Professionals in Medical Research
- Gives access to current, specialized, accredited knowledge for clinical care, research and public health.
- Enables communication between patients and providers.
- Makes high-quality distance learning for basic and continuing professional education readily available.

3. Hospitals, academia and public health
- Establishes hospitals as a virtual network of providers, connecting all levels of the system
- Monitors quality and safety; improves care processes and reduces the possibility of medical errors
- Assists mobility of citizens and their medical records – providing patient information when and where needed
- Opens new opportunities in basic and applied research; from health knowledge to policy and action
- Extends collaboration and shared computing power (e.g. grid and cloud computing)
- Delivers services despite distance and time barriers
- Standardizes ordering and delivery of drugs and supplies

Government
- Delivers more reliable, responsive and timely reporting on public health; as health becomes increasingly central to economy, security, foreign affairs and international relationships.
- Creates enabling environments rather than technology limitations.
- Offers new roles for stakeholders, health professionals, authorities, citizens and others.
- Identifies disease and risk factor trends; analyses demographic, social and health data, models, diseases in populations etc.

Let us sit and reflect for a while regarding the current situation in Albania in the aspects of ICT in general and the ICT related to eHealth. We are all conscious that even though

with a big boost of steps taken toward Technology we are still on early stages of development. At national level and context there are some eHealth projects, featuring some initiatives but they are seldom connected with each other. The projects taken are usually time-based, time-limited, and never all-embracing even though I must stress in here that the ICT project taken or designed are per se very innovative. The lack of integration with each other makes these project not that much sustainable. As we are still a developing country there is still no crucial role of government in funding and technological support for the eHealth, but the funding and support is done from NGO's, different aid agencies, donors etc. In this constraint environment our country cannot consistently meet the national and international obligations on public health reporting.

The health data keeps moving, due to consistent movement of citizens between cities, countries and different health providers. This makes it difficult for all the three components in the triangle (government, citizens, health sector) to continuously and accurately maintain all the information.
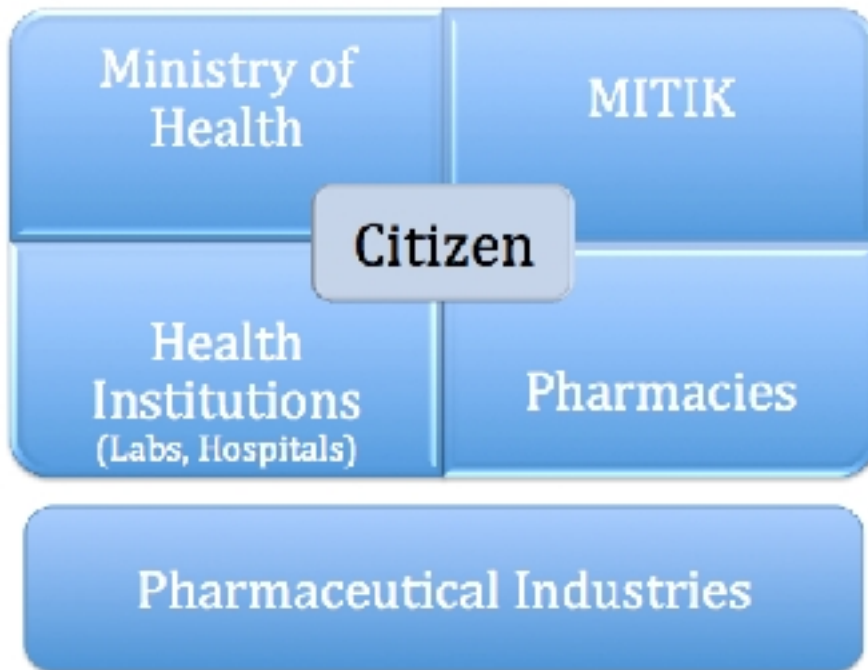
In this case a national plan for the country is needed in order to focus on eHealth creating awareness and establishing a foundation for investment, workforce education and adoption for eHealth in priority systems and services.

There is a common misconception that Albania can "leapfrog" to more advanced eHealth systems, but without a parallel focus on creating the enabling environment, innovations in ICT will stay isolated and have only limited impact on health.

In our country there is a broad use of ICT in the general population and general uptake in other sectors as e-government, e-banking and other commercial ICT services. The government interest is growing, and we have a lot of local vendors which have emerged and focused on various ICT projects, so there is a lot of activity, learning by doing, best cases implementation from other countries etc. But there is a lot of risk to the project significance due to lack of standardization, long-term investment and commitment.

Currently ICT is a driver for development with an increasing emphasis on competition and expansion of services by the private sector. The health sector lags behind other sector, with limited awareness and adoption of ICT on a systematic basis to meet health needs. Some eHealth appliciations such as telemedicine, mobile medicine etc, deliver valuable services to the citizens all over the country but typically in rural areas. However scaling is not possible so the health impact still remains limited. Major drivers for eHealth in our environment are access to care and quality care. Examples in here are various, including extensive of mobile medicine, tele-medicine, adoption of electronic medical record (EMR) systems on a limited scale, procurement and supply tracking systems and so on and so forth. A national plan for our country in this context should focus on strengthening the enabling environment for eHealth , creating legal certainty, establishing the policy context for delivering eHealth services more broadly and identifying the standards to be adopted.

Let us make a different approach on the matter and identify the current stakeholder and how they affect the eHalth strategy. In this case though we will put the citizen in the middle of the chart as is the key component in and the reason where all the idea for this research and paper.

Ministry of Health | MITIK

Citizen

Health Institutions (Labs, Hospitals) | Pharmacies

Pharmaceutical Industries

Leaders & Regulators

Data input / Output
Benefitioner

Data gathering &
Market need identify

Key Problems

So, if we take a look at the social background and social events that have taken place over the last 20 years we see a lot of movement between cities. There is a lose information of medical backgrounds, as well as with the freedom of movement, people do not stick to the same health institution but they change it very often. This information gap is recovered (or at least try to recover) from the medical staff through questions to the patient or the patient's relatives (anamnesis) but it is not always complete or accurate.

Secondly I would like to mention that in general practice in Albania people do not take their health backgrounds seriously. They tend to remember only the "big-serious illnesses" but if there is no serious pain everything goes with some aspirin or some alcohol. Most of the population does not practice a regular medical checkup so that they have updated information about their general health status, forgetting that in possible health complications even the small details can make a huge difference. I can even state as an example here that most of the citizens find out their blood type only when they have to take the driving license.

Information on traditional health institutions is kept on paper registers. There has been a few improvement in this step with both the initiative of government as well as private sectors, where we see now modern health institutions with health oriented systems implemented as well as projects from government to computerize the public health institutions, but there are still a lot of obstacles to pass and a long way ahead to see some obvious improvements. Information is still kept on paper from most medical staff, which makes it localized, hard to find, easy losable etc

Our first diagnostician is the pharmacist. Usually people ask their local pharmacists regarding the various pains or symptoms that they feel and they take the pills from the pharmacists without any prescription. I am not valuation this habit as good or bad neither in the position to judge whether is it correct or not. I just want to stress out that this information or even the execution of the prescriptions with all its exclusions is not entered in any system or database. Pharmacies do not keep track of their customers and the medical prescription records, they just execute the prescription and that's all.

And the last part that I want to mention in this part refers to the diagnosis. There are a lot of illnesses that have the same symptoms or let us put it this way: There are a lot of symptoms that are misinterpreted from people and they do approach the wrong specialist. On the specialist side, being specialized mostly on their field and not knowing most of the background are left with a lot of space for human error on diagnosis.

Need for Health Information Technology / e-Health system implementation

It is about time to implement a proper e-Health system which covers all the nodes mentioned above. The information should be gathered from all the nodes of the health institutions (hospitals, labs, clinics, pharmacies etc). The information should be accurate and added to the chronological background of the citizen.

All the nodes of the e-Health System should exchange relevant information with each other so that they have the most updated information on any given time.

Medical information is available on every given time and from all the nodes of the e-Health system. By creating the e-Health cloud, the information can be available once requested without any delay.

The information on the e-Health system is secured. All the information entered, stored and exchanged should be kept confidential, secured and encrypted.

Assistive information system should be available to doctors in order to help them with the valuable information which would help them find the accurate diagnosis regarding the patient's illness.

Benefits of implementing an e-Health System in Albania

Complete and updated medical background of every citizen

In all the situations the information is available from everywhere within Albania, and in no time, helping the patient in every possible way

Medical staff with not only benefit from the medical information but also with assistant artificial intelligent software which will make all the calculation of the data entry and come out with suggestions of the most probable diagnosis. This would improve the services offered to the citizens

Government Institutions will have the possibility to have the most updated and complete data which would help them on various analysis & statistics, information valuable on decision making & rule enforcement, which would help the citizen in the best of ways

By documenting and storing all the information & processes taken as well as all the medical services offered to the citizen and making this information available as well as auditable would make all the parties involved in the e-Health system (citizen, medical staff, pharmacists) more responsible of their action which would result at healthier population in our country

Objections

Most of the objections that may come up in this topic are concerning security. We have heard many cases of identity theft, social and medical insurance data theft and we are aware that these issues are always a concrete risk. As we have gone through the topic above we have also mentioned that the system will be based on the cloud, and we are all aware of endless discussions concerning cloud security and privacy issues.

The last but not list of objections that I have encountered during this study is about generating awareness of both citizens and medical staff. There are still baby boomers in the leading line of medical staff which are very professional on their field but not that familiar with the tech field as the primary of citizens in need of medical help are the senior citizens. As all the projects taken on advanced technology from all the nodes involved in the project and implementation of e-Health system should be organized also trainings customized for each of the segments of users, in order to help with the high tech fear as well as make them feel familiar with the services offered which are planned not to make their life more difficult but in the contrary to ease their everyday life and improve the citizens health.

Conclusion

To wrap up, from all the research conducted and the study that I took until now , it should be implemented an e-Health system in Albania which consists of Health Information Technology (HIT), Grid Computing & Artificial Intelligence , which would involve all the components of the health system in Albania to cooperate with each other in order to give to the citizens the best of health services and contribute to a healthier country for us, our children and the generations to come

Bibliography

1. *Building foundations for eHealth: progress of Member States: report of the WHO Global Observatory for eHealth*. Geneva, World Health Organization, 2006 (www.who.int/goe/publications)

2. *D*efinition of eHealth in: *National E-Health and Information Principal Committee. National E-Health Strategy, 30th September 2008*. Adelaide, Deloitte Touche Tohmatsu, 2008.