"Science, Technology and the Future of Uzbekistan"

Internet Healthcare Industry (IC card)

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Introduction

I think the most significant point of improving healthcare infrastructure with ITC is the best way to save people's lives. And I am from Uzbekistan which is located in Central Asia. Our healthcare system is not high as other countries and I am working IC card for the healthcare system in Uzbekistan, especially in Andijan city. In this research, I am working on a business module and structure of the IC card for the patient and hospitals, clinics. The aim of this research is to keep patient's health history in the card and any doctor can update it when it needed. It is fast, safe and efficient work of the clinics and hospitals as well.

Problems to be solved by the plan

The IC Card and system will provide broad information about the past condition of the patient and what diagnosis he or she was taken. On the other words, it will help to record past health issues and their cures, past diagnostics, all information related to patient's health condition. For example, when the patient is 45 years old, the IC card will contain 45 years information/data about patient's health condition. For further examination of patient's health condition, past data will be incredibly useful for doctors. Besides, by implementing this kind of the IC Card, doctors at any hospital will be able to access patient's past medical records. Those records would be key components for better evaluation of health conditions and will help to identify the illness background. This IC Card will be usable in any hospital where is card reader is installed.

In Uzbekistan and in Japan, most hospitals and clinics still use a paper-based system for the reception desk which means it takes a time and paperwork is not good for the patient when he or she feels not good. It reduces time-consuming, no paperwork and the most important one is no guarantee if fire accident or a strong earthquake happens in their office or storehouse. They can't find patients' health history records once some accident happens. But for the IC card we can install it local set which not connected to the internet then later we can improve it if a ministry of health in Uzbekistan and Japan permits to use it in local clinics. Why in Japan is because I went to several clinics in Japan and I filled out a sheet for my health diagnose then doctor will write it on his PC but If I don't go to his clinic after some year I can't see and find my health history record for my next health diagnose in different clinic. I think it is really important to our society to save our time and avoiding of paperwork.

Approach

The originality of this idea is from here - when my uncle was diagnosed with the serious illness in 2010, he dealt with the usual medical hospitals in Uzbekistan by contending with multiple doctors and healthcare facilities. According to his story, seven times he filled out forms listing personal and medical information. But one time, he forgot to list a drug allergy, which led to a problem during treatment. However, my uncle was successfully recovered, and his experimental story gave me an idea: why not put medical information on an electronic IC Card that patients could take with them wherever they go? And I tried to make it this card for real, but I could not get a fund for this project and here is some originality of this project.

Time – when we go to clinic or hospital we need to fill out a form and staff will prepare and send it to the doctor, it takes a time.

Safety – in developing countries such as Uzbekistan we have still problems with a natural disaster such as fire accident and earthquake which damage the clinic which we put our health record in the storehouse.

Effects and impacts on our society given by the plan

If I talk about the case of Uzbekistan, Internet Healthcare card is really useful especially for emergency patients, and because they can't speak and can't fill out the blank, in that case someone his or her friend can use his/her card and doctor can see what was wrong with patient's health condition in the past. Another reason is lack of healthcare services in the hospitals of Uzbekistan. Currently, in Uzbekistan, registration in the hospitals is based paper and ink. Keeping patient records, submitting medical claims, making referrals, writing prescriptions, and booking appointments are typically manual processes. None of doctors store patient data electronically. As the habit of former soviet-union, many doctors have a stubborn affinity for using paper-based media to collect and retain patient data. I think in Japan it's pretty good system, I think with this project we can improve healthcare patient record system in private clinics, before that it should be passed from ministry of healthcare in Japan.

My passion to make people's life better and solve many global issues by implementing IT technologies with my research project. Then I decided to make this project for real in our society and help to the people and make our healthcare system better. Nowadays we know that a cloud computing term in our society and it helps to keep safe and transfer, update our data through the internet.

Cloud Computing - many hospitals in Uzbekistan do not hold a large amount of database systems and equipment. By offering cloud computing with patient diagnose share system and patient IC card, I do believe that success will be right at the door.

My plans for implementing this research project will be basically in two areas;

☐ First is creation of patient IC Card for diagnosed data saves

☐ Second is creation of online database systems with applications

While we live in globalization are, human movement is very active, for instance, one person may be born in one small town and may move to the city for studying at the University and may transfer to another country for work. In this condition, we don't have any particular information about patient`s health condition and historical data.

In my viewpoint, implementation new technologies such as patient health diagnose recording IC Card and cloud computing system in the hospitals of Uzbekistan and Japan will be a significant improvement of Uzbek and Japanese people's life. At the same time, by creating applications for Tablets, doctors will be able to check patient`s condition in regularly. In addition, the IC Card and system will provide broad information about the past condition of patient and what diagnosis he or she was taken.

Besides, by implementing this kind of the IC Card, doctors at any hospital will be able to access patient's past medical records. Those records would be key components for better evaluation of health conditions and will help to identify the illness background. This IC Card will be usable in any hospital where is card reader is installed. At the same time, patient's diagnose records will be transferred into the BIG DATABASE System where can be accessible to other hospitals in the world (mainly in Asia). By doing so, similar illnesses could be cured in other parts of the world, especially in developing the world. I do believe that facilitating hospitals with ICT technologies and bringing know-how, we can save so many people's lives, especially in the second and third world countries.

On the start point, the IC Card will be applicable only for internal use, at this point domestic use, because many medical types of equipment and conditions are not in one standard in the world yet. Therefore, I think, many hospitals need to adopt similar standards.

Hospitals will be needed to register to the system for obtaining medical research projects and diagnoses for many illnesses. "Online Cure" System could contribute to the international society by sharing many facilitated research project results and diagnoses. Services on the system can be provided in several major world languages such as Chinese, English, Russian, Spanish, and Japanese. In terms of creating Medical Applications for measuring patient health condition by using wireless equipment and data will be sent directly to the computer and doctor. By using the internet and wireless equipment, the even patient is at home or other places, a doctor can check the health condition of the patient.

On the other hand, the IC card could be used for a personal record as well. Patients may use the IC card to collect data on their health condition by utilizing medical measurable types of equipment. Those data in the IC card could be backed up or transferable to other devices for certain research purposes as well.

Researchers and doctors also will be able to access online for getting necessary data. However, recently in Uzbekistan, lack accessibility into the internet and ICT infrastructure is still remaining crucial issues. Therefore, doctors can record medical diagnosis and treatments of patients without

access to the internet. In other words, this IC card system could be vastly applicable in domestically, countryside, remote areas or in developing countries where is lack of access to internet.

To sum up, I am planning to do research in the healthcare industry by applying IC recoding card and online application systems. By doing so, I wish that will be my contribution to better health diagnosis and solving problems of many patients in Uzbekistan and other parts of the world.

Internet Healthcare Industry

1. What is an Internet Healthcare Card (system)?

Internet Healthcare Card (IHC)- is for the patients, especially old people who can not remember their health condition in the past when they go to different clinic or hospital. The IC Card and system will provide broad information about the past condition of the patient and what diagnosis he or she was taken. On the other words, it will help to record past health issues and their cures, past diagnostics, all information related to patient`s health condition.

The aim of this research is to keep patient's health history in the card and any doctor can update it when it needed. It is fast, safe and efficient work of the clinics and hospitals as well.

1. What is the problem?

Paper work- When we go to clinic or hospital we need to fill out the blank for our health condition and past heath problems.

Time consuming – When we go to clinic or hospital, it takes a time for filling out a blank, what if we are in urgent and need to be seen by doctor in a short time and need the first aid?!

Accident (fire, earthquake) – this project is for both countries such as Uzbekistan and Japan. Japanese national disaster system is quite higher than Uzbekistan. But how about if fire happens in the clinic in Uzbekistan, can we save all patients health records at the same time?!

Why in Japan is because I went to several clinics in Japan and I filled out a sheet for my health diagnose then doctor will write it on his PC but If I don't go to his clinic after some year I can't see and find my health history record for my next health diagnose in different clinic. I think it is really important to our society to save our time and avoiding of paperwork.

3. What is your vision?

Japan and Uzbek Population's Accurate Health Statistics.

Avoid misdiagnose and mistreatment.

Anonymously use population's medical data for R&D purposes by pharmaceutical firms.

Quickly identify major health issues and illnesses.

Identify medical issues by region and cities.

Patient Registration Process - Hospitals in Andijan

- Paper base
- Hospital database
- Online

Hospital database, 7%
Online, 2%
Paper base , 90%

2. What is your solution?

It will help to record past health issues and their cures, past diagnostics, all information related to patient`s health condition. For example, when the patient is 45 years old, IC card will contain 45 years information/data about patient`s health condition. For further examination of patient`s health condition, past data will be incredibly useful for doctors. Besides, by implementing this kind of IC Card, doctors at any hospital will be able to access patient`s past medical records. Those records would be key components for better evaluation of health conditions and will help to identify the illness background. This IC Card will be usable in any hospital where is card reader is installed.

The IC card we can install it local set which not connected to the internet then later we can improve it if a ministry of health in Uzbekistan and Japan permits to use it in local clinics.

Internet Healthcare card is really useful especially for emergency patients, and because they can't speak and can't fill out the blank, in that case someone his or her friend can use his/her card and doctor can see what was wrong with patient's health condition in the past.

IHC allows traditionally paper-based medical documents to be converted to digital at the time of entry with substantially less cost overhead. The data can then be efficiently used for epidemiological analysis, including de-identified data at the national level.

4. What is the value of your solution?

Access to medical record in case patient is unconscious or heavily injured and check whether patient has any allergy to any drugs or chronic illness.

Access to entire lifetime medical record of patients

Immediately identify crucial diseases in case someone brings to the territory of Uzbekistan when certain disease is wide spreading in foreign countries (e.g. Ebola, HIV, etc.) [Common symptoms could help to detect effected patients].

Record annual health check-up results.

Allergy check to any drugs and others.

Digital formatting enables information to be used and shared over secure networks

Process

Patient

IC Data Card Reader (standard card reader, finger scan or PIN code) Verify Identity

Invoke patient record at System Application & access of historical data

Doctor`s diagnose will be recorded into the IC Card

How the patient ID card works

① When you go to a hospital, you are issued a personal health card (a contact smart card).

The card has your name on it and a digital picture. You are also given a personal PIN code.

What's stored on your ID card:
- Your insurance details
- A snapshot of medical events in your life
- The exact location of your full medical records
- Your primary care physician

② Inside the hospital, your ID card is inserted into a device that reads the information on the card.

③ You enter your individual PIN code.

This confirms your identity to the doctor, and lets you approve who can access your information.

- PIN code
- Finger scan
- No passcode

Merits

- Fire accident Safe data
- Time consuming
- local set (at the first step)
- Secure data, finger or digital passwords