Conclave: Ideas That Revolutionize Healthcare

Clinical Information System

IDEA:

The idea is to create a "*digital database"* which stores all the patient records which includes prescription letters, pathology reports, X-Rays, Ultrasound images, CT-Scans etc. which will be accessible to both the patient and the doctor.

It will allow the doctors to examine a particular patient's *previous reports and prescriptions* and provide access to patient records anywhere and at any time by using a unique authentication system i.e. Fingerprint, which will further prevent the misuse of important personal details of a patient by any non authorized entity.

For example, many people living in *rural areas* in the country don't know what reports (if at all preserved) are to be brought to a doctor when referred. Now imagine what if the patient has visited a hospital before and his/her records will already be available to the doctor via this unique software's database. Once authorized (by patient's fingerprint) the doctor has to simply look up the details saved in the database.

This database will also prevent any delay in treatment in cases of any *emergency* as all patient records are available instantly (provided the patient has visited a doctor before).

Moreover, this database will reduce the doctor's dependency on the patient's description of previous symptoms and treatment in case he/she does not have previous reports.

HYPOTHESIS:

The whole premise of this idea is based on the existence of a software that can recognize fingerprints and link them to a particular patient and his medical history which can be stored in a centralized database at any secure location. We have also assumed that all doctors working in Government hospitals, private hospitals and rural healthcare centres are registered with the Medical Council of India (MCI). It is also required that the doctor's fingerprints are available so that there is exclusivity. Existence of 24 hrs internet connectivity and biometric scanners are assumed in all major government and private hospitals (even in clinics at a later stage).

METHODOLOGY

In order to implement this idea, a step by step approach will be required:

- Government Body: We will need support from various Govt. Regulatory bodies and take permissions for implementation of such an idea at a large scale (Similar to AADHAR seeding)

- Data Centre (Infrastructure): For storing the huge amount of data of such a large set of patients a proper database will be needed and thus comes a need to maintain a datacentre which can be accessible at all times and can cater multiple requests.

- Software: Once the information is stored in a database/datacentre. We will need a method to display such information to the Doctor. We are not talking about any artificial intelligence over here as such and will just be concentrating on displaying the information saved by means of a proper interface which is easily understandable / readable by the doctor. This software will also provide an authentication mechanism as discussed earlier; and will display the information once it has been authorized using fingerprints of the patient as well as the doctor.

- Fingerprint Reading Machine: Implicit from the previous points this would be another piece of hardware needed for our Idea. Though various modern phones provide ways to read fingerprints (iPhone etc) we tend to stick to the traditional biometric sensor devices as of now.

- IT Professional: For every update in the database, we will require qualified professionals. Most test laboratories have their own employees who digitalize reports and upload them to organization specific databases. With minimal training, reports can be uploaded to the Central Database as well.

- Computer/Mobile device with Internet would be necessary given the need to access the information.

- The database can also be linked to a patient's AADHAR card/UID number. In the long run this will be able to save money, time and lives.

APPLICATION

Case 1. New patients who are visiting the doctor for the first time.

Case 2. Patients who have visited doctor but there are no records

- Facility was not available for uploading records.
- Record couldn't be uploaded due to human error
- Patient was unwilling to give personal information

Case 3. Existing patients whose records are already in the database.

Clearly the third group of patients will be benefitted as the doctors will be able to make diagnosis with more accuracy (while keeping in mind previous diagnoses). Thus increasing the efficacy of the treatment.

OBSTACLES

- Getting hospital management to setup this kind of infrastructure.

- People from rural areas and even urban areas might not agree to provide personal information.

- Time and Money involved with this project are huge.

FEASIBILITY

Mr. Nandan Nilekani gave the idea of ***AADHAR*** few years back. It is a living case study of how such an idea is feasible and can be applied to the whole country with proper planning and preparation. Without any doubt it has taken lot of time, effort, money and dedication of various people involved who believed in the idea but at the end people have accepted it and it is successful (with almost 90% AADHAR penetration as in Kerala). We are proposing a similar Idea in the field of healthcare which is the need of the hour.