

'Transforming Healthcare through Technology'



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If I can view my bank balance and order my bank statement sitting 5000 kilometers away from my bank online, then why do I need to personally visit the hospital a few kilometers away for the second time just to collect my blood reports. I can book a railway ticket sitting in the air conditioned comfort of my office or home but I have to trudge to the nearest hospital to get an appointment to see a doctor.

In fact, it is extremely important to make things easier for a person, who requires healthcare services, by offering such solutions, as he is already hassled because of his illness.

These are some of the few things that have led me to believe that if technology has changed people's lives in other areas, then it has the potential to bring about a paradigm shift in the delivery of healthcare in India, as well.

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Let us take for example a person, who while on a vacation, gets a severe bout of asthma. At the hospital he is subjected to a battery of

diagnostic tests and a long history taking session because he cannot reproduce his medical records in a distant location. If he had his own previous medical records in electronic form, it would have saved him considerable money and inconvenience of undergoing the tests and consultations by the clinicians.

Currently technology permits a patient to have his important medical records in a small card, of the size of a credit card, which can be carried by him wherever he goes. Companies like Google and Microsoft provide free space on the internet for a person to store his health records safely and confidentially which he can produce by him anytime and anywhere with basic internet connectivity. These advances in technology will bring about a revolutionary change in the patient health records in the times to come.

Twelve years ago when I was a fresh medical graduate I had noticed that all patients had to visit the hospital or a diagnostic centre for a second time just to collect their laboratory reports. I always found this to be very inconvenient. I thought why not have systems wherein the patient can be given an ID while collecting his sample and the freedom to view or print his report at home or at office. All that is required for this is a basic internet connection.

All at 21st Century Health, the company where I am currently the Lead Consultant,

passionately believe in transforming healthcare through People, Processes and Technology. Which is why I have joined the team and we have been successfully implementing web-based laboratory reporting for hospitals and chains of diagnostic centres.

At some hospitals, I have also noticed the patients undergoing repeated radiological investigations because they have misplaced their original films and reports or are not carrying them on that particular occasion. Having the same on a PACS (Picture Archival and Communication System) solves their problem to a small extent, because traditional PACS only stores and reproduces certain types of images, which are DICOM in nature. At 21st Century we have gone a step further and are not only able to store non - DICOM images like 2D echo cardiograms, C-arm images, and endoscopic procedures for example but also waveforms like ECGs with the DICOM images so the patient is not exposed to unnecessary repeated investigations including harmful radiations for want of his old investigation records.

All these are then stored in patient CD with valuable patient education material made on an innovative device called 21st Century IBox.

Let us see how technology would benefit the hospital in the long run. Firstly having the medical records in an electronic form would reduce their dependence on paper and make it possible for the hospital authorities to give the same to their patients whenever asked for. Now that the Apex Court and the MCI (Medical Council of India) have also issued directives pertaining to patient medical records, it becomes all the more important that hospitals address this issue effectively. The requirements of space to maintain conventional records are huge. These can be lost due to natural causes like floods, fire etc, or due to other causes like theft, pilferage, usage of poor quality of paper or ink. On the other hand if the patient records are in electronic format the space requirements for storing them is reduced considerably and it is no more prone to any sort of losses as backups can be stored in remote disaster plan sites.

Secondly, having web-based laboratory and radiology reporting and maintaining images of patient diagnostics can result in reducing the direct and indirect costs incurred to the patients, which ultimately results in patient delight. The patients will be happy to

recommend the hospital to others and thereby increase the hospital's image and patient base leading to higher profitability. Correct and accurate MIS can help the hospitals to plan more effective patient management and marketing strategies for the future.

I remember those days when as a medical student I used to turn the pages of my books to either confirm a diagnosis I had made for a patient or to look over for different treatment protocols that I could select for a given patient. If I had the technology that would have helped me to either confirm a diagnosis for a patient or inform me regarding different treatment protocols for a given disease, I could have saved the precious time of the patient to decide his course of treatment. Fortunately, now this is possible in the form of evidence based medicine and clinical decision support systems. This will come as a boon to young medical students.

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A CDSS can now help a medical student to arrive at the most probable disease condition of a patient by entering the various symptoms. After this he is also guided with different treatment protocols, which are available to treat the disease. I wish to stress here that this evidence based approach to medicine needs to go through regular updates to keep abreast with the latest medical protocols. This approach has taken the west by a storm and it will not take long before it establishes its credibility in India. All these systems use modern IT.

We need to accept the fact that those healthcare delivery institutes which use technology to amplify their medical skills will be able to scale their operations to a higher level and provide services to larger number of patients at lower costs. On the other hand, those who stick to age old practices, however well they have served them in the past, will be overtaken by those who adopt consumer oriented ICT enabled processes. While technology is not a panacea for poor medical skills, it is an invaluable innovation which can help good doctors and clinicians to reach out to remote places and serve more patients with less efforts. Hospitals need to seriously look at harnessing the effective use of technology to transform themselves into state-of-the-art 21st Century Healthcare Institutions ■