



# Ensuring data security

Data security is an integral part of the booming healthcare industry

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**H**ealth information technology is the area of IT that involves the design, development, creation, use and maintenance of information systems for the healthcare sector. In order to improve medical care, lower the costs, increase efficiency, reduce errors and improve patient satisfaction, health IT plays an important role.

The primary purpose of health IT is to ensure better healthcare outcomes for patients. Recording of patient data helps improve treatments and prevention of diseases. But, with the increased use of IT, the need for securing these data is imperative.

## Need for IT in healthcare

IT has become integral to the efforts to optimise costs and effectively manage operations. Technologies help with process management, patient care and management information systems (MIS) in hospitals. With the aim to grow, healthcare requires IT to store and retrieve information to cope with the tremendous pressure.

Integrated electronic medical records facilitate research as data is made available in a structured manner which helps track diseases and even provide the necessary medications. By digitizing patient records, each patient's blood group, known allergies, etc would be documented and made available at the click of a button, and thus prevent manual errors. Management is easier with IT, from inventory to store, to even laboratory management.

## Data analytics in Healthcare

Players in the healthcare sector generate huge amounts of data everyday and saving it in the form of a hard copy only complicates matters. Hence, different data analytics are used for the better functioning and for future reference.

**Electronic Medical Record (EMR):** It is used to systematically organise and store the data of a patient in a digital format, so that it can be shared with different healthcare settings.

**Patient flow:** Data analysis can help reduce the waiting period for a patient, giving

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them timely treatment by predicting a surge in patient inflow.

**Fraud analysis:** Data analysis can prevent any fraud or abuse when hospitals have a large number of insurance claims on a daily basis.

**Resource management:** With the help of technology, it gets easier to track and manage both patients and the staff involved in patient care, and in effective staff management.

**Patient profile analytics:** This advanced analytics when applied to patients' profiles can help identify any impending health risks and facilitate preventive care.

#### Use of Electronic Health Record

EHR was introduced to meet the demands in today's world where information on paper has completely been taken over by digitally-recorded data. In the healthcare sector, it gets very difficult if even a single paper is lost, and this is its primary drawback. Prompt decision-making is not possible in case the papers are misplaced, thus delaying work and risking the life of the patient in case of an emergency. Once lost, the information could be lost forever.

EHR provides accurate and complete information about a patient which involves recording a patient's current condition in the context of their medical history. During an emergency, it can provide quick information on the patient without delays. It also enables a family to play a part in taking decisions on the patient's health.

EHRs are built to share information with

other healthcare providers and organisations like laboratories, specialists, medical imaging facilities, pharmacies, emergency facilities, and school and clinics at workplace.

#### Predictive analytics

This form of analytics uses various techniques and lots of information to predict a patient's future health. This tool has gained importance because it helps to take the necessary decisions on improving patient care and also in administration of the hospital.

Such analytics help doctors to make accurate diagnosis and early interventions that can prevent many diseases. The prediction of future medical costs can also be obtained. Most importantly, the patients have potential benefits as they can receive treatment and medications that may work for them.

#### Improving revenue cycle management

Revenue management is something in which a healthcare sector suffers a lot. It is important to have a stable financial performance for the continuity of the care given to the patients. Since healthcare in India relies on end-to-end billing services, all data relating to patients should be well-prepared and stored in order to prevent any future confusions. The hospital has to incur expenses right from admitting patients till he/she is discharged.

Revenue cycle management takes care of the administrative functions, offering all healthcare and medical services. It is important to have a good service provider taking care of the medical insurance claims, medical billing and medical coding. It, therefore, helps boost the revenue from low-paid claims and also follow up with the insurance companies for faster settlement. This makes the hospital run with some profit.

#### Information privacy and security

The information shared by a patient with a doctor is highly personal. Therefore, it should be secured and considered confidential. Patients need to share everything they know because it helps the doctor decide

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which possible treatment would prove effective to the patient and also what type of drug would give better results. The patient's medical record consists not only of the medical history, but also his identification and personal information. Safeguarding these information becomes crucial with the growth of technology.

### Data breach

Healthcare sectors store information or the data of patients on cloud-based platforms for marketing or medical purposes. With numerous cases of data breaches, healthcare data breaches are also increasing in terms of size and frequency. Relying on age-old computers that lack the latest security features make it easier for hackers to gather large amounts of personal data, including not only the names, phone numbers but also the billing information. These could be later used for extortion.

In order to prevent this, EHR comes into play, saving all the necessary information. All the confidential information should be destroyed when they are no longer needed.

An annual security analysis is necessary to evaluate the potential threats to the IT systems.

### Threats to healthcare security:

#### Mobile devices

With such huge amounts of health advice, health projects and techniques being easily accessible on the cell phones, hospitals and clinical practitioners must know about the risk of security breaks and hacking of healthcare data. Doctors, nurses, and clinical staff use cell phones and tablets, and so do patients and visitors to the hospital. This implies a potential for security ruptures on both sides of patient care.

Network access control (NAC) arrangements can be a brilliant move so as to keep healthcare data information as secure as possible. NAC distinguishes each user and gadget, and has the ability to check for dangers or obsolete spyware protection. NAC ar-



rangements can likewise keep the different equipment and gadgets secure where such huge numbers of gadgets are associated.

### Insider misuse

According to Becker's Hospital Review, some 15% of security rupture incidents in the health sector in 2013 were due to insider abuse. This term refers to situations in which workers of the organisation steal information or commit other crimes. Shockingly, the reason for insider abuse is because that they can access the information of patients. They steal information for money or to commit tax fraud. To avoid insider misuse, organisations keep track of devices used by staff members.

Since the growth of digitisation in healthcare largely depends on the current data management system, the companies are obligated to invest in protecting data from breaches. Several firms have already adopted advanced methods to safeguard data. However, the industry overall has to ensure that the stored data is leak-proof. [IHR](#)



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