CASE 2 | Healthcare IS

Healthcare information systems are systems that facilitate the collection and processing of data related to healthcare activities. Historically, such systems were largely focused on the operational needs of healthcare institutions like hospitals and doctor's offices. Mirroring the deployment of information systems in other businesses, systems were developed for accounting, billing, insurance claim processing, human resources, and other business functions. In recent years, however, there has been a push to bring the benefits of information technology to the provision of care itself. Systems are being developed to better generate and track data that are useful to improving health outcomes. A key part of this process is the electronic health record (EHR). An EHR is a comprehensive record that includes your medical and immunization history, laboratory results, and other data such as medical imagery.

When properly maintained and handled, EHRs can have many benefits. Up-to-date, complete, and accurate data makes providers more knowledgeable and better able to work with you to make informed decisions about your health. EHRs can enhance patient safety and provide safer care in several ways. EHRs can offer a more complete picture of your health than paper records. Doctors can evaluate your current condition in the proper context of your health history and other treatments you are receiving. EHRs can allow those providing care in an emergency faster access to information they need about your history, allergies, and prescriptions. EHR systems can flag potential conflicts in medication and help pharmacists verify dosages and avoid dispensing the wrong medications. EHRs can also help avoid the need to repeat risky tests and procedures by tracking them better and ensuring the results are available when and where they are needed.

In addition to benefits to individuals, EHRs can lead to better collective health information. Safety hazards, disease outbreaks, high pollution levels, and other risks can be identified more rapidly by analyzing health data in aggregate. Government services and research dollars can be allocated more efficiently focusing on actual community needs. Healthcare processes and procedures can be improved by utilizing modern data analysis techniques on aggregate health data as well. Overall, there is great potential to both improve health outcomes and reduce healthcare delivery costs by utilizing EHR systems.

However, there are also downsides and risks associated with EHR systems. Data privacy and security become even more important when the data in question have to do with such potentially sensitive topics as your health. Records must be properly protected from the same sorts of cyberthreats that other businesses face. Hackers and other malicious actors may seek to steal personal health data in order to make illicit use of it. In addition, now that they are more readily accessible, there is the concern that health data could be used for improper or undesired purposes. Most people feel that health history should not be used in the making of hiring decisions in general, but there may be acceptable exceptions such as public safety workers or airline pilots. The role of health history in the availability and coverage of insurance is also a highly controversial topic.

It has also proven exceptionally difficult to implement EHR systems. Many hospitals and medical facilities rely heavily on paper forms and records. The deployment of EHR systems requires more than simply digitizing the existing forms; in many cases, entire business processes must be redesigned and new information systems developed. There are great opportunities when it comes to healthcare information systems, and there are many great challenges. The benefits for society from improved health and reduced costs must be offset against the potential risks of increasing the amount of our personal and private data available online. The increasing availability of new sources of health data such as activity trackers and other Internet of Things devices will also generate a new set of benefits and risks. Activity trackers can provide data ranging from the number of steps you take each day to vital statistics like heart rate and blood glucose levels. Researchers are even using smartphones to collect data for health studies and clinical trials. Such technologies as Apple's Research Kit, Care Kit, and Health Kit allow millions of people to participate in medical research studies quickly and easily. This type of data collection promises to transform large-scale health research. In summary, IS professionals have a great opportunity to assist in the transition to IT-based health systems and in helping to balance the associated risks and rewards.