

Free essay on technologies and strategic information systems plans

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Information technology has come to stay with us and their applications are beyond human imaginations. As IT increasingly penetrate healthcare industry, physicians and patients are experience the benefits of on-demand access to medical information, where, when and how it is required.

Facilitating the flow of information within a healthcare institution is becoming a quality differentiator among healthcare providers. A look back at the advancement of healthcare over the last two decades is amazing. No one could have imagined the introduction of computer axial tomography, magnetic resonance imaging, laparoscopic surgery using fibre optics, Teflon arterial graphs or the number of pharmaceutical treatments for various incurable diseases. Who could have imagined telemedicine, robotic assisted surgery among other advancements?

The impacts of information technology are imminent every day. From television sets that broadcast anything happen in the world to everyone's living room to healthcare information systems. It is through the management of information and especially dissemination that the population gets to address their health care challenges. We use information systems to provide physicians, patients, service providers and payors with the necessary information to produce anticipated cost-effective outcomes in healthcare. In the early 1970s and 1980s, many health providers utilized length of stay or severity indexing checklist to identify gross misuse of sources. Then comes utilization review companies that helped providers manage their resources more effectively. Although these companies and their systems were developed with questionable methodologies, they helped reduce resource waste. Quality and appropriateness remained an issue though and

by 1980 the need for quality increased as managed healthcare became widespread. Then came the development of standards and guidelines to manage quality and utilization of care. The Federal Agency for Healthcare Policy Research came up with research guidelines. The Centre for Disease Control and Prevention came up with immunization standards that have been adopted all over the world. Other medical organizations and institutions produced systems that can identify gross inappropriate care, poor quality of care and waste management. In the late 1990s advances in computer technology and information systems research allowed the development of expert systems that attempt to mimic clinical thinking. These knowledge engineering processes allowed the development of expert systems that provide assistances to physicians in making clinical decisions.

The use of IT and information systems has made it possible to quickly process inherent logic resulting in clinically valid recommendations that would have been cumbersome with flowchart s and even functionally unusable. Apart from the information itself, the mode of delivery of information is paramount to its usefulness. Only systems that deliver relevant information at the right time are useful. Physicians and other medical personnel do not strive for data; rather they seek information from these systems.

Technology has made it favourable to develop information systems that deliver quality and valuable health care. Through technology, development of huge health payment claims has been possible to measure performance of physicians. Claims data can be used to profile care provided by health care institutions, physicians, managed care networks and groups of physicians.

The integration of hardware and software developed in the previous years with data has made it possible to profile the patterns of quality and utilization.

Information technology has impacted on healthcare costs. It is estimated that 30% of the total cost of healthcare is duplicative Q&A costs and clinical inefficiencies. With the use of technology and internet, the costs have decreased substantially due to streamlined and merged administrative processes of plans and providers.

Access

Telemedicine and related technologies have made it possible to access medical attention anywhere in the planet. Electronic delivery of health information and services is significant for rural hospitals to receive consultative services from large and developed hospitals.

Healthcare challenges and threats range from internet security to the way data is categorized to information to privacy issues. There is a big difference between data and information. Whether using databases, guidelines, profiles or outcomes, the way in which information data is presented, packaged and delivered that turn it into information is important. For instance information about mycoplasma pneumonia is not very helpful to a physician who is examining arthritis. The inverse is also true. Data become information when only when they are relevant to the scenario at hand and are available at real time. Current medical systems lack behind in integrating relevant information and availing it at the right time to the right physician. Progress has been made in recent years to deliver the right information to the right person at the right time. A wearable medical device that record and transmit

patient data to relevant personnel in real time has been developed.

However, more needs to be done to make the devices available in large scale and at affordable prices.

The rapid digitalization of patient information has introduced data privacy concerns while trying to garner benefits. The privacy issues multiply when data needs to be published for secondary use. Most of the current research on protecting data privacy is centred on data de-identification and data anonymization which eliminates identifiable information from the published health data to prevent exploitation of private data. Both published and private data suffer from privacy issues. With lots of information that people voluntarily share on the Web, attackers that utilized sophisticated application that joint disparate amounts of information from multiple sources to make privacy concerns practical. Limited effort and resources have been devoted to studying these attacks and the only way out is government-private partnership to enact legislations, laws and policies.

Proliferation of mobile devices such as smartphones, tablets and iPads have presented a major risk to the management of healthcare information and data. Research indicates that over 80% of healthcare organizations store sensitive information on personal devices. These devices may be organization or personal. The increased use of Bring Your Own Device phenomenon adopted by organizations has made it difficult to manage healthcare information stored therein. Naturally, mobile devices are susceptible to loss or theft. Because mobile devices do not have a means of protecting against insiders forwarding sensitive information, it becomes a tall task managing them. Even with the employment of mobile device

management solutions, most of them have limited or no functionality to protect information residing on mobile devices. Such solutions may remotely wipe the device but will require the organization to manage it. Lack of encryption techniques to prevent removal of information from devices presents a major issue.

The future is optimistic since utilization of technology will mean that we will go to the doctor less often. Rather, we will send data more frequently derived from personal care devices. Point of care testing such as hand held blood and saliva analyzers will be available at home and in our work area. Patient communicating with physicians or monitored through the internet will eliminate 20% of office visits.

The next 20 years will witness the maturity of mobile communication where all the information about an individual will be self managed using mobile devices. Healthcare information record keeping is expected to benefit mostly because electronic health records would have developed into maturity. With the integration of mobile devices, greater communication and sharing of information among teams of medical specialists caring the patient at different times will be enabled. Gone will be the days of paper recording which introduces errors and inefficiencies.

Strategic information system planning begins with the identification of needs. This section outlines the mission and vision statements of the IS. Swot analysis is another component detailing benefits, challenges and expected opportunities. There are also the long term strategic objectives, short terms goals, action plans, score cards and financial assessments. All these components are essential for the development of an information

system strategic plan.

In conclusion, this paper has dealt with the evolution of technology and information systems in healthcare processes. Technology has played a major role in the provision of health care over the years and is expected to improve it further. The next two decades will see the accumulation and management of healthcare data at personal levels. However, the refinement of data into information, its form, of delivery and privacy remains the biggest challenges. Private and government partnerships are required to circumvent these hurdles and promote delivery of safe healthcare services.

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