

1 ASSIGNMENT-5

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3 Emerging Technologies in Healthcare

Although several medical technologies have been around since decades and are in the continuous process of development, some latest technologies are changing the way medicine would be practiced in the future. These technologies would allow medical practice from anywhere, any time and from any device. These include smart phones, Tablet PCs, Touch screens, digital ink, voice recognition, Electronic Health Records (EHRs), Health Information Exchange (HIE), Nationwide Health Information Network (NwHIN), Personal Health Records (PHRs), patient portals, Nanomedicine, genome-based personalized medicine, Geographical Positioning System (GPS), Radiofrequency Identification (RFID), Telemedicine, clinical decision support (CDS), mobile home healthcare, cloud computing, and social media, to name a few significant.

4 DIGITAL INK

This technology allows writing on a screen just like on a piece of paper and has been integrated into EMR/EHR. Microsoft Ink is one such technology. A charting system can accept stylus input and convert it into text. Its uses in healthcare

arena encompass:

Drawing images such as in surgery to communicate between the doctor and the patient.

Annotating diagnostic images such as X-ray and MRI scans to indicate important features.

Inputting text naturally, especially when the patient is unable to communicate and can write a note to the doctor to explain his/her situation.

Authenticating reports quickly and easily by placing signatures just like with wet ink.

5 VOICE RECOGNITION

The normal procedure of medical transcription includes dictating medical notes in some recording device to be translated by an expert transcriber followed by vetting and authentication by the Physician. This can take 1-5 days by the time it becomes a part of the medical record, and sometimes it never does if the Physician does not vet and authenticate the transcribed report. At times the Physician may not even read the report and signs it in hurry leading to incorporation of errors in the medical record.

Voice recognition is one such technology that resolves this issue. The Physician can dictate directly into a computer using microphone that recognizes the spoken words and translates them into text. The Physician can then proofread on screen and digitally sign it. The report can be

printed and placed in the medical chart or electronically in EMR/EHR making it a part of the electronic medical record.

6 PATIENT PORTALS

Patient Portals are healthcare-related online applications that allow patients to interact and communicate with their healthcare providers. Portal services are available on the Internet anytime and from anywhere. Most portal applications are integrated into websites of the healthcare providers or are independent modules linked to the providers' websites. In either case, patients can access their medical information and interact with providers through the Internet.

7 TELEMEDICINE

Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way video, email, smart phones, wireless tools and other forms of telecommunications technology.⁶ Telemedicine is named after the type of services it renders: telenursing, telepharmacy, telerehabilitation, teleradiology, teletrauma care, telepsychiatry, telepathology, and teledermatology. Major

benefits of Telemedicine include improved access to healthcare, cost effectiveness, improved quality and patient demand, especially in rural and remote areas while its constraints are lack of infrastructure and reimbursement from the third-party payers.