

# Mobile computing and social networking

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Mobile Computing and Social Networking CIS 500: Information System for Decision Making February 24, 2013 Introduction Social media is playing a big role in the health care industry. A study compiled by Demi & Cooper Advertising and DC Interactive Group shows that more than 90% of people ages 18-24 said they would trust health information they found on social media channels. One in two adults uses their smart phone to look-up health information. Patients are also taking to the Interwebs to talk about the care they received: 44% of people said they would share positive or negative experiences of a hospital or medical facility, and 42% said they wouldn't hesitate to post comments about a doctor, nurse or healthcare provider on social media (Freeman, 2012).

Monitoring Patient Vital Signs via Mobile Computing Versus In-Patient Visits The Internet provides an opportunity to the public and healthcare professionals to access medical and health information, improve the efficiency and effective, timely healthcare. The rise of mobile systems and the widespread adoption of the cell phone mean that mobile applications are an exciting and rapidly expanding domain for such applications. Vital signs include the heart beat, breathing rate, temperature, and blood pressure. These signs may be watched, measured, and monitored to check an individual's level of physical functioning. Typically, a nurses and clinicians would oversee and be responsible for the taking and recording of the vitals manually documenting them with a mobile computer or the results were written on paper and the clinician left the patients room to manually document into the electronic chart using computers. At times, this documentation happened hours later when time permitted. The vitals were hard to take in some cases and errors were not uncommon. These stats are

a tool used to communicate patient deterioration to healthcare providers and sadly it also was not uncommon for clinical decisions regarding a patient's care to be made using outdated vitals. With today's technology, patient care can be a lot more effective. The use of smart phones and broadband-enabled devices has allowed patients to do their own monitoring of vital signs and body functions and upload them to their medical provider's clinical servers. They even have the ability to do videoconferencing via their phones for remote consultations with their doctors. Using technology to take advantage of remote monitoring systems is allowing patients to take a very active approach in prevention and care. A wireless monitoring of patient's vital signs, presenting a new telemedicine software using GPRS (General Packet Radio Service) and Bluetooth technologies that adds the idea of ubiquity to the medical area, innovating the relation between doctor and patient through wireless communication and bringing security and confidence to a patient being monitored in homecare (Riberio, & Maiteli, & Valentim, 2012).

#### Advantages and Disadvantages of Using Mobile Computing Technology to Monitor Patients

The world of mobile technology is dominating the healthcare field. iPads and tablets are becoming standard within a medical office and electronic medical records software is overtaking the healthcare sector. Applications are being developed for consumer and medical providers. Mobile health also allows for physicians to implement applications such as body sensors that will transmit the status of the patient directly to the medical office. This will clearly become a vital part of the healthcare industry in due time, as doctors would be able to respond and give more accurate diagnosis directly to the patient. The use of mobile technology allows doctors

to assist patients with early symptoms before acute attacks occur. It enhances the patient-doctor interaction because doctors now have the ability to provide patients with information about their treatment and medication that is not normally provided in a normal in office consultation because of lack of time or the reserved attitude of the patient. There is also the added benefit in some cases because patients can save time and money by avoiding in office visits because they can consult with their medical care providers via the internet. Patients with non life threatening illness experience benefits because the new ways of health monitoring means they no longer have to deal with hospitalizations. They now have the benefit of having their monitoring done via a mobile system that can detect abnormalities and alert them and their doctors when urgent care is required. In some circumstances, wireless-enabled computing devices have caused interference with medical monitoring equipment. Special care is required in the placement of the wireless infrastructure in order to minimize the potential for interference (Wireless Opportunities, 2004). Another disadvantage, it can also mean more technical emphasis which can be a stress factor for patients as well as medical staff. The input of data needs to be secured and stored. The infrastructure may not be able to offer the same standards as with wired infrastructures. The radiation issue is still unclear and needs to be clarified. Security Concerns Regarding Transmission Patient Data over Wireless Network With the Health Insurance Portability and Accountability Act (HIPAA), healthcare organizations are required to protect the health information of individuals against access without consent or authorization. Wireless applications used in a distributed environment

therefore require a high degree of security to meet the federal mandates, including authentication and encryption. Deploying wireless systems requires the simultaneous development of privacy and security policies and procedures to guarantee HIPAA compliance (Wireless Opportunities, 2004). Regulatory demands placed on the health-care environment are requiring that these wireless networks ensure the confidentiality, integrity, and availability of patient information. This is because if the wireless network is not properly secured, it could be used as a launching point for an attack on the hospital's internal systems (Tharp, 2008). Strong authentication, as well as communication to patients and families about an organization's security policies, should also be part of a healthcare provider's security arsenal to protect mobile devices. Authentication can be ramped up, too. New biometrics capabilities, such as face recognition, fingerprint or retina scanning--frequently used in government settings--is still rare at most healthcare organizations, but it's starting to pop up in some places, said Garzone. As those technologies evolve and become more affordable, they're likely to be used more frequently in healthcare, too (Tharp, 2008).

### Social Networking for Group Support for Patients with Similar Medical Concerns

Support groups play an important role in helping individuals cope with their health conditions by providing members with a network of information and social support. Online social networks allow users to connect with each other by overcoming geographic and time boundaries. Patients or their caregivers often turn to the Internet to seek support. An online community such as a social networking site is a place where registered users create profiles about themselves, upload photos, keep in touch with friends and make new friends

with common interests. Twitter, YouTube, Facebook, MySpace and various other social networks are powerful platforms for those with relevant information that could be used between individuals to educate and comfort those who need them. This interaction allows participants to feel less lonely, isolated or judged. It gives them a sense of empowerment, improved coping skills, and a clearer understanding of what to expect from their situations.

**Conclusion** The mobile systems can determine which medications adversely interact with one another and can then be put together to create a regimen for patients to follow. By tracking metrics such as blood sugar levels on their devices and by leveraging gaming applications to help educate themselves, the program has been considered a big success. So although there are still some advances to be made, such as relaying information about the side effects of new drugs, mobile technology is truly changing the way health care professionals work.

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