A Risk-Based Classification of Mobile Applications in Healthcare

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ABSTRACT

Mobile devices and applications are becoming popular in today’s society. The number of applications available to both the patient and the healthcare provider is changing the way healthcare is being delivered and consumed. The integration of mobile devices into everyday lives is driving the changes in healthcare. While all areas of medicine are being impacted, changes are mostly of chronic care, long term care and any place that causes a need for constant data, monitoring or training. The acceptance of mobile devices by healthcare consumers within wide range of age and socioeconomic circumstances is reason to look at mobile technology as the future of healthcare. While increased use of mobile applications are welcomed by most providers and consumers alike, there is a need to systematize the study of its use. The authors provide a framework for considering mobile applications in healthcare, based on their risk-profile. They accomplish this by first identifying and classifying the mobile healthcare applications.

Keywords: Classification, Healthcare Application, Healthcare Providers, Mobile Applications, Mobile Devices, Mobile Healthcare Applications, Risk-Profile

1. INTRODUCTION

In a mobile world, many people are expecting any information to be only a few moments away. The healthcare field is no different and in fact it is on the cutting edge of this growing trend. Mobile technology is transforming the way healthcare is delivered around the world (Banderker & Van Belle, 2009). As the number of applications continues to grow, users are presented with an ever-growing array of applications to choose from. MobiHealthNews reported that from February to September of 2010, Google’s Android smart-phone saw a 156.6% increase in health-related apps. This is compared with a 66.6% increase in Apple’s health-related apps. BlackBerry applications increased by 141.4% over the same period of time. Apple however, is still leading in terms of the absolute total number of health-related apps available on any platform (“The fastest growing and most,” 2010). The drive for more
and better applications among competing hardware companies is just heating up. No longer is the hardware assessed by customers for the look, design or plan, but rather by the number of applications that are available. Healthcare is no different in terms of the need for newer and better applications. However it appears that healthcare applications have only skimmed the surface in terms of potential possibilities for the future. Healthcare may be the area that experiences the most growth in coming years as a result of the current economic conditions and the price of healthcare.

This paper will first enumerate some medical uses of mobile technology and also discuss demographics of people using mobile healthcare applications to change the way that healthcare is delivered to many patients. A major benefit to mobile apps is that they can strengthen the ties between patients and healthcare providers to extend treatment more thoroughly into their daily lives (Dunham, 2011). This integration into the lives of patients is the way in which mobile apps will redefine healthcare, as we know it. The capabilities of mobile devices and the versatility of the software applications (apps) as well as their popularity as a communication and information method will only continue to grow (Dunham, 2011). Some of the areas that these apps are growing are in the area of learning (i.e., junior doctors), diagnosis, long term care, psychological apps and disease management apps such as speech language, diabetes and smoking cessation.

2. TRAINING

Training applications are the next major class of applications in healthcare used by both by patients and providers. Junior doctors are using mobile electronics application knowledge sources as steppingstones in building up their professional confidence (Axelson et al., 2007). This is helping younger doctors to be better at delivering care while not having to have every dosing size and medical fact memorized. Mobile devices are serving as pocket-sized tutors that are helping the learning curve of these young doctors to be more accurate and make fewer potential mistakes (Axelson et al., 2007). On the patient side, training is essential to the success of telehealth. In one study, patients training took between 30 and 60 minutes to complete. A short manual with information on the system was provided as well. Overall, patients were enthusiastic about the benefits that telehealth systems offered that complimented their primary care (Turner et al., 2009). As doctors are able to use mobile devices to find answers more quickly, they are more likely to have the needed information at the crucial time to diagnose, treat or educate a patient about the diagnosis or treatment that is best for them. The handheld computer with the use of mobile applications may be a panacea for finding medical knowledge. The trends that we are seeing show that as more doctors coming out of medical school rely on mobile technology for training and information at their fingertips, it will be a new culture of having mobile technology in every doctors office.

On a clinical study that involved using a mobile app called iResus, junior doctors who participated said it increased their confidence in making decisions and that they could be prepared to use it in clinical emergencies as well. The aim of the study was to find out if the app could provide prompts in a portable manner that would ultimately be beneficial for the medical professional as opposed to relying solely on memory (Low et al., 2011).

3. SPEECH LANGUAGE PATHOLOGY

Speech language pathologists are using mobile applications. Engaging tools such as books, toys, games and stimulus cards are used all the time to facilitate the work of Speech Language Pathologists (SLPs). In this area, it has been suggested that these applications should not be used in place of parental involvement, but only to enhance the time spent together to make it easier and more productive. Using apps
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