“Watch” my Health

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ABSTRACT

Modern e-Health services are all about deploying IT into modern e-Health services are all about deploying IT into healthcare systems to facilitate information exchange and transmission for healthcare providers to easily and seamlessly access medical information. However, most Personal Health Record (PHR) solutions concentrate on the provision of the whole record to paint the full picture, like MTBC PHR [1], Sehaty [2], and Doctor's Alert [3] solutions. However, these solutions do not suit mobile healthcare needs in the provision of critical alerts that are patient-centered and not doctor-centred in a readable and speedy manner.

First, PHRs mostly contain a mixture of lengthy free text in both paper and electronic formats doctors used to record accumulated medical history records over years, which is often not mobile and require a time-consuming reading task that the doctor cannot afford spending sometimes in order to save the patient’s life in emergency life-threatening situations when time is their worst enemy. Especially when those systems require the doctor to log into each designated patient’s record to have access to their critical information for which they care for, like in Sehaty [2]. Second, although there is a shift towards a patient-centred care, a lot of PHR solutions still deploy off-the-shelf general alert systems that are designed to meet traditional doctor-centred alert systems that do not meet the complex needs of modern patient-centred care. This renders such systems ill-equipped with convenient alert systems to highlight critical medical information for the patient being treated in a visual and speedy manner. Finally, although Doctor's Alert [3] solution is one of the very few ones today that fully adopts a patient-centred approach, it only allows patients to handle their records with full control over them. This, however, compromises on the availability of critical information to doctors at life-threatening situations if the patient is unconscious.

"Watch” My Health aims specifically to use state-of-the-art technology to balance between the availability of critical information to care team members in a speedy and readable manner, also maintaining its confidentiality. This is to enable immediate access to the right information (i.e. critical alerts) to the right care team member at the right time of treatment in a highly complex and demanding domain like healthcare. This project proposes a solution that can achieve this aim using a developed application on a smart watch that utilises wireless communication via embedded Bluetooth signals in a Beacon [4] device that is physically attached to each patient's room, which broadcasts its ID that is linked to a single patient ID, to retrieve the patient’s alerts from the database, as illustrated in Fig 1.

This solution would come in handy to busy doctors to achieve this goal. This is mainly for the fact that alerts could be shown to doctors on the go on a wearable mobile device that is attached to them at all times for accessibility and easy to use while freeing doctors hands for treatment provision. This also maintains the privacy of patient’s information as each smart wristwatch is meant for doctor’s personal use and has a better chance of protecting the confidentiality of such sensitive information than having it displayed on a desktop with a 15-inch wide flat screen in a room full of other healthcare providers, supporting personnel, and even patients. Finally, “Watch” my Health would help provide the best treatment possible based on informed decisions at the right time to the patient while avoiding complications and life-threatening situations because of lack of information availability.

References


1 Ghada Aldayel, Maha Alqahtanni, and Shaden Alsabti, KSU, CCIS, IT Department, Riyadh, Saudi Arabia (433202286, 433201879, 433200161)@student.ksu.edu.sa