"Watch" My Health
A Smart Mobile Patient-Centered Alert System Using a Smart Watch and Beacon Technology
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INTRODUCTION

"Nada is a young patient who is hypersensitive to latex protein (widely found in medical products such as gloves) and has just given birth to her first baby girl. She is under the effect of anesthesia, and so was unconscious, in the recovery room when the doctor on call on that busy day wanted to see her for a routine checkup. He was not aware of Nada’s allergy as it was not noted on her bedside medical chart and she looked fine at the first glance. While the doctor was washing his hands and wearing a fresh pair of gloves, he briefly skimmed through Nada’s paper-based record handed in by the nurse without spending much time reading through it. Then the minute he started examining Nada, it was obvious to everyone in that room that something went wrong that split of a second!"

Let us start by imagining a doctor who is on the run on a typical hectic hospital day from ward to ward and from patient to patient providing the best treatment possible...

* What if some of those patients have severe allergies from certain medications or skin-contact preservatives?
* What if other patients are diagnosed with conditions and multiple diseases that need special attention when under some circumstances to prevent them from interacting, of which the doctor must know right before interacting with the patient?

PROBLEM

Busy medical records with large information ranges of free text and doctor-centred alerting system make them ill-equipped to highlight sensitive patient-centred alerts in a user-friendly and time-critical manner.

OBJECTIVES

To achieve the aim using three interrelated elements, a wearable smart watch that balances between the confidentiality of patient sensitive information using a tailored patient-centred access control scheme, and speedy access to this information by utilizing wireless communication using Bluetooth signals embedded in a Beacon technology.

PROJECT AIM

To provide immediate access to the right information (i.e. alerts) to the right doctor at the right point of treatment.

SOLUTION

5.1 Smart Wearable Device:
Using a smart watch along with a developed application, where each doctor keeps wearing a watch and uses the application to access dedicated alerts for each patient he/she cares for while on the go.

5.2 Bluetooth wireless connection using Beacons:
Using Beacon technology with an embedded Bluetooth wireless connection the wearable device links the care team member with the patient’s treatment point, and the care team receives wirelessly a list of these patients’ names on the go, which they can select from to get immediate access to their alerts where patients’ identification will be stored.

5.3 Access Control Scheme:
The solution designs an information access control that classifies alerts based on rules for the following three key interrelated elements: the patient, the care team, and patient-centralized pool of alerts.

CONCLUSION:

Finally, this solution has the potential implication of improving care delivery by saving the time and effort it takes care team members to treat patient ions on a busy hectic day at the hospital. Moreover, it would guarantee confidentiality of patient information, as well as, the quality of the healthcare delivery through informed decisions that would save patients’ lives.