**Mobile Medication Management Application**

Members:

Jose Ronquillo rodriguez, Wei Cheng Lin, Che-Cheng Chu, Matthew Swircenskim, Brittany DePoi

This project is to develop components of a mobile medication management application on both iOS and Android platforms to increase functionality for the Patient and Provider using the Titanium framework. To existing application framework, we will focus on adding functionality to manage four major diseases: diabetes, obesity, chronic heart failure and asthma. To allow additional diseases to easily be incorporated in the future, the back end structure for the specific diseases and the information storage should be abstract enough to allow for future additions and modifications.

For each of these four diseases, specific screens will be made for the application for patient medical management. The information requested by the application will be specific to the disease and what the patient can accurately and easily track. Screens will be designed for usability and functionality and will tie in to back end processes for medical tracking and analysis. For both the specific data requested and the back end analysis processes, outside sources for health information regarding the disease will be utilized, specifically for the diabatic management tracking.

Currently, the application interacts with the personal health record Microsoft Health Vault, which lets you store health information from many sources in one secure online location. The disease management component will utilize this database and its security to safely store the information tracked. This stored information will be accessed, analyzed and displayed to both the patient or medical care provider upon request. If time allows, the team will then start to incorporate interactions with open mobile applications like Open mHealth, openEHR and the SMART Framework.

Throughout this project, on the patient end, the focus will be on providing an interface for recording disease management information both easily and accurately. Incorporating additional features of mobile devices will be necessary for certain patient monitoring such as recording steps for the obesity component. Additional functions include medicine tracking and reminders as well as possibly barcode scanning for medications and supplements. Storage of the personal healthcare information must be secure and healthcare information standards will be observed. Finally, backend analysis will process the information and display results to both the patient and health care provider upon request. The health care provider should also be able to access the patient’s medical records and other useful information for monitoring.

Some of the specifications for the patient app include:

* Tracking of medication usage, with possible reminders
* Tracking of nutritional information for diabetes management.
* Bar code scanning for medications and supplements.
* Add security options to a list of providers tied to the patient.

Specifications for the provider app include:

* Ability to manage personal information
* Gather patient information from various sources like SMART’s EMR, HealthVault, openEHR etc.
* Alert remotely to the patient’s app
* Tracking of patients history and detailed information
* See patient’s health as a grade collected from their Wellness Diary together with their information.

Possible Difficulties:

* Learning new health management and their architectures such as SMARTSync, openEHR, Open mHealth, to collect, store and process data from multiple sources.
* Calculate the correct data using Artificial intelligence algorithms from the patients data.
* Learn to develop the front end of the mobile application and structure of their operating systems.

In this project we are going to work closely with graduate students who are focusing in transitioning the existing app Titanium. The focus of this project is subject change depending on time limits, technical difficulties and the team’s knowledge scope.