The Development of a Virtual Sensor in Glucose Monitoring for Non-Insulin Dependent People

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Objectives

Overall Objective:
• To create a virtual sensor that acts as a continuous-time monitor of glucose levels for people with Type II diabetes
• The sensor takes several factors into account, including blood glucose readings and meal size, and gives the user a continuous response of blood glucose concentration over time from a few lancet meter readings per day

Our Objectives:
• To get information from a glucose lancet meter to automatically upload via Bluetooth into an Android application
• Learning the programming language of Java to use in the Android software developer to implement the Bluetooth application
• This Bluetooth component is important to the final development of the project

Methods

• Learned about what research has been done regarding continuous blood glucose monitoring
• Read and researched ways to connect an Android’s Bluetooth component to the glucose meter
• Applied for and received a grant allowing us to purchase an Android tablet and ForaCare glucose meter
• Used Android software developer and the language of Java to input meter readings into an app
• Researched how to convert the programming language of the lancet meter into an understandable value for glucose in the app

Results

Once Bluetooth information is added to the app, a button similar to this will be shown to retrieve readings from meter

Conclusions

• Our objective was to get information from a glucose lancet meter to automatically upload via Bluetooth into an application. This will allow a user to automatically upload their glucose readings from their meter to the app, making insulin measurement management simpler for the user.
• Currently, the readings upload into a separate app from the main app. The next step will be to transfer the code from our app to the main app.