
OLA Diabetes Care



Ian Holmes, Tang Zhang and Albert Chen

Overview

Ola is a system (smartphone application + pod) that provides real time context aware care for diabetic patients through smart wearable devices and advanced data analytics.

The purpose of experiment is to evaluate OLA's user interface design against user tasks to ensure a great user experience.

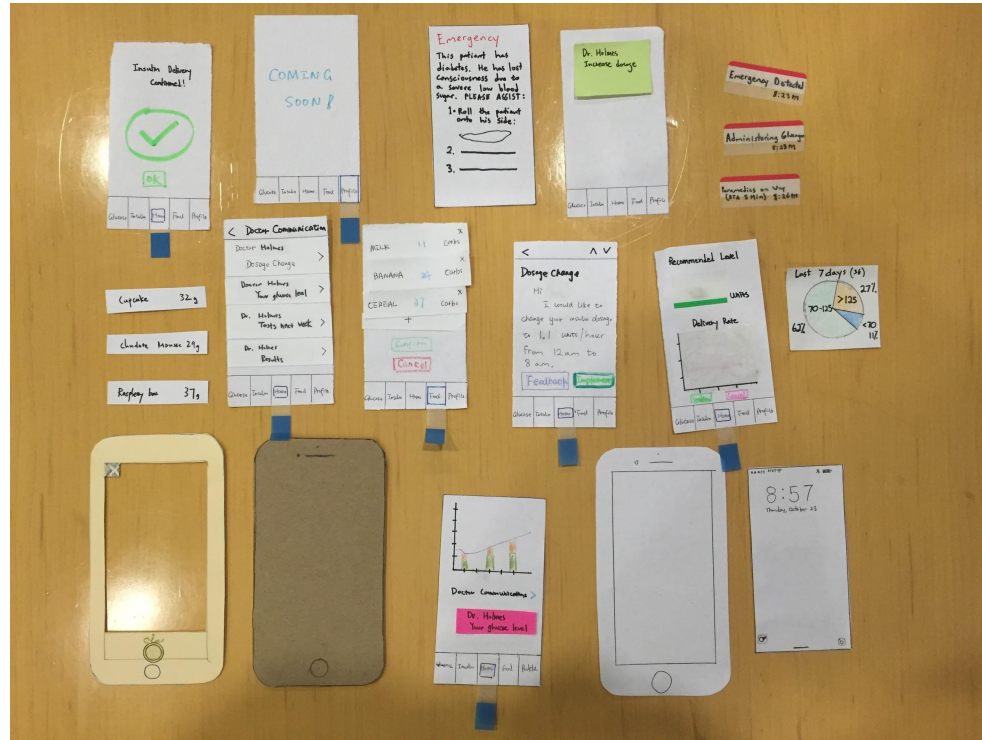
Team mission statement

Enable diabetics to live a normal life without having to worry about their conditions and medication.

Representative tasks

1. Eating a meal.
 - Counting amount of carbohydrates in food and determining amount of insulin to inject.
 2. Changing dosages.
 - Determine and implement optimal insulin dosage.
 3. Emergency care.
 - Emergency treatment and response when user suffers from severely low blood sugar.
-

Lo-fi prototype structure

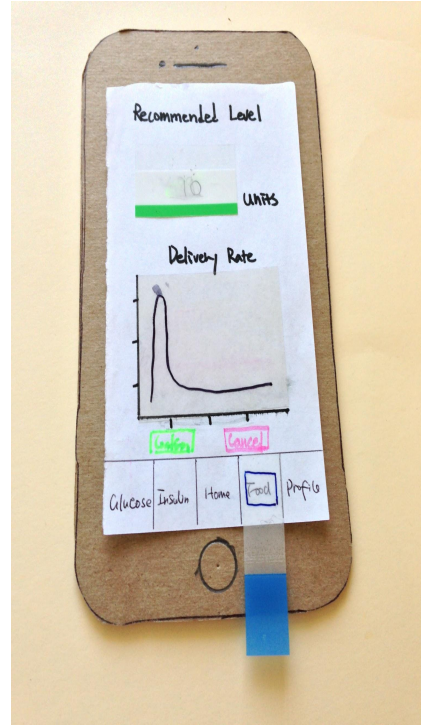
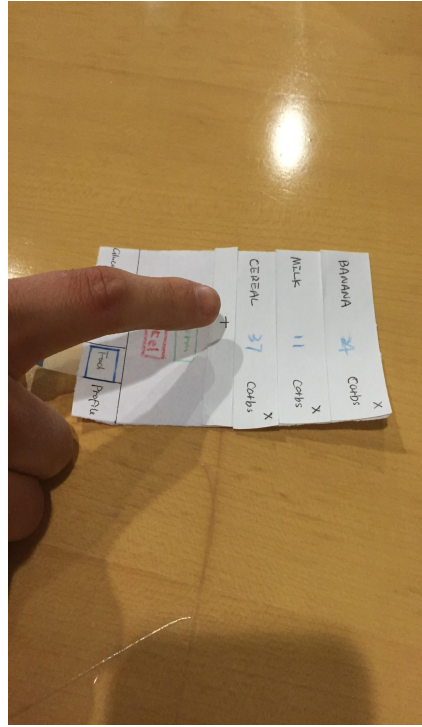


Scenario 1 - Eating a meal

Suppose you (the user) are just sitting down for breakfast (which your roommate/significant other just made for you).

How would you go about counting the amount of carbs and the associated insulin intake required?

Scenario 1 - Eating a meal

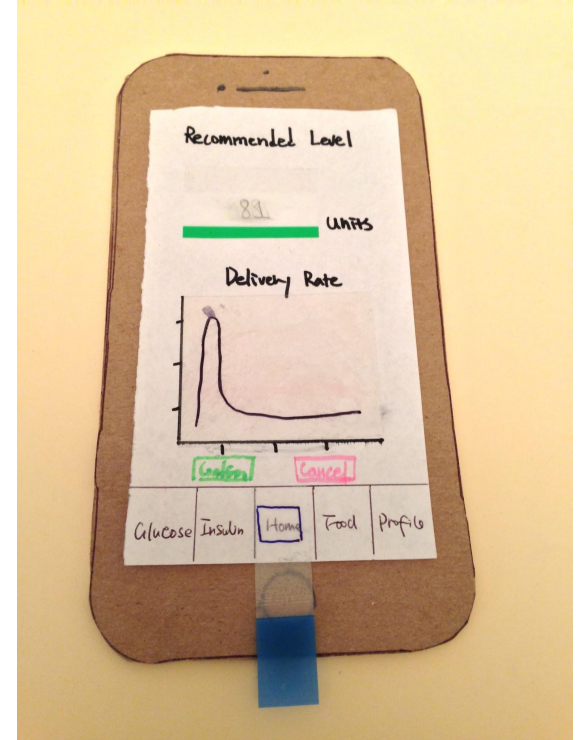
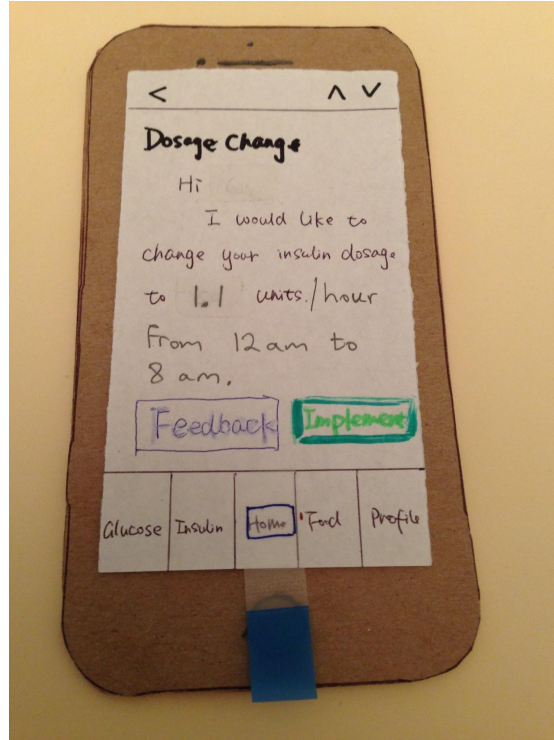
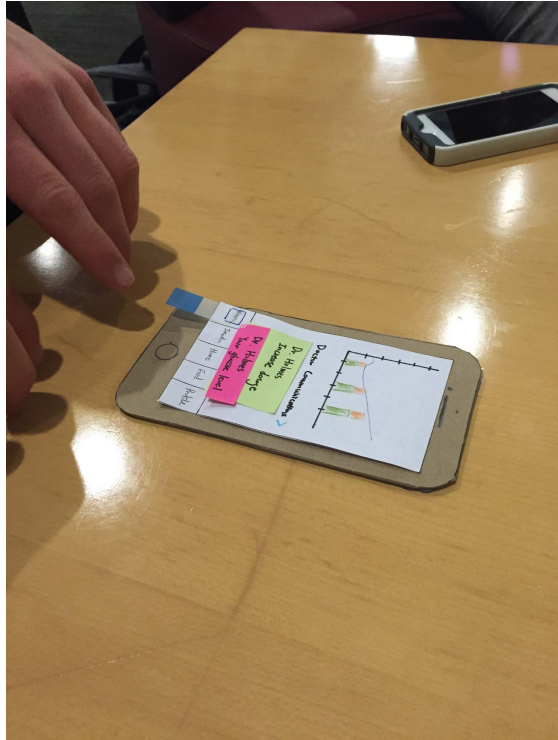


Scenario 2 - Changing dosage

Suppose you've changed your diet (e.g. became a vegetarian) and you've experienced a greater number of low blood sugar events during the past month.

Your physician noticed this and wants to make an adjustment to your basal rate.

Scenario 2 - Changing dosage



Scenario 3 - Emergency care

Suppose your friend who is diabetic experienced a severe low blood sugar event and has passed out in his room alone.

You came by his room and found him unconscious with his phone buzzing near by.

Scenario 3 - Emergency care



Experimental method

- Setup
 - Open area tables at Arrillaga dining.
 - Roles
 - Greeter + Facilitator: Ian Holmes
 - Observer: Tang Zhang
 - Computer: Albert Chen
 - Measurements
 - Error count
 - Time to completion
-

Experimental method

- Participant 1
 - Referenced from friend, offered raspberry bar.
 - Participant 2
 - Responded recruitment email, offered cupcake.
 - Participant 3
 - Referenced from friend, not compensated.
-

Experimental results

- Some UI adjustments are required for additional clarity and convenience.
 - Error count
 - Minimal
 - Time
 - Counting carb: ~50 seconds
 - Changing dosage: ~90 seconds
 - Emergency: ~40 seconds
-

Suggested UI changes

1. Give additional instruction on the usage of food camera.
 2. Showing the current active insulin level.
 3. Add buttons to call emergency contact and medical help in emergency care information screen.
 4. Provide a graph/table to compare glucose level over same day/hour of each week.
 5. Provide dosage change confirmation to the doctor.
 6. Disable “free-form modification” to insulin delivery rate.
-

Summary of talk

1. Our application supports all of the necessary day to day tasks for a diabetic.
 2. Most of our user interface are self explanatory and easily understood.
 3. However, some adjustments are required for additional clarity and convenience.
-

Questions?
