MedTemp

Helps to properly store and monitor medicine.

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iDevices Project
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The Problem:

According to drug manufacturers, certain vaccines and insulin need to be stored at a certain temperature range to maintain its' viability. Hospitals store their insulin and vaccines not only in a pharmacy, but in refrigerators on the floors. For compliance and regulations by the CDC the refrigerator temperatures are manually taken and recorded by the nurses in a log book each shift.

Insulin for home use is stored in the home refrigerator until used. At home, proper use of medicine rarely includes monitoring the temperature of medicine. The primary medication stored at home is insulin. Insulin's expiration date is directly correlated to the temperature at which it is stored.
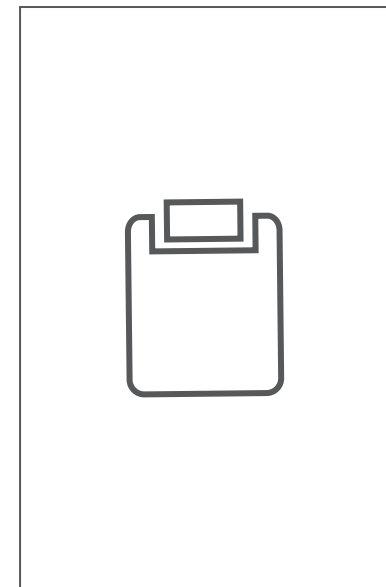
User Flow: Nurses in a hospital

The current procedure at a hospital is for the nurses to go into the refrigerator on their floor, open the door, look at the thermometer, and record the temperature on paper.
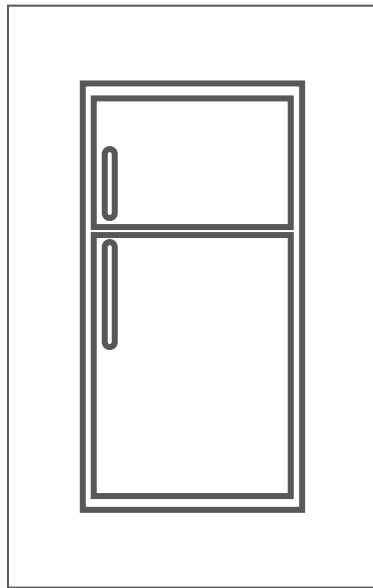
Nurse walks to fridge. This happens daily.
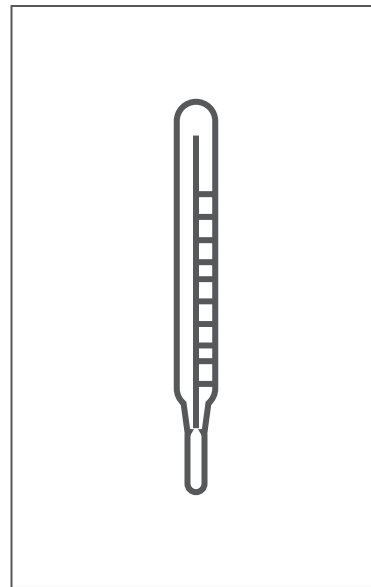
Opens door, reads thermometer. This is an ordinary thermometer that sits freely on the shelf.

Records the temperature of the fridge on paper. This needs to be recorded twice a day and the records need to be kept for three years.

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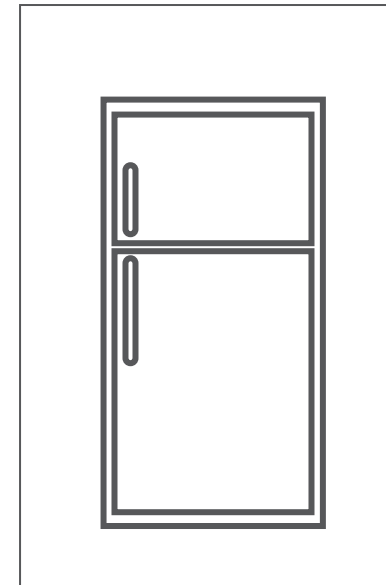
User Flow: Pharmacist in a hospital

The pharmacist at a hospital keeps track of the medicines in pill and liquid form. The pharmacist visits each floor daily and checks on the medication.
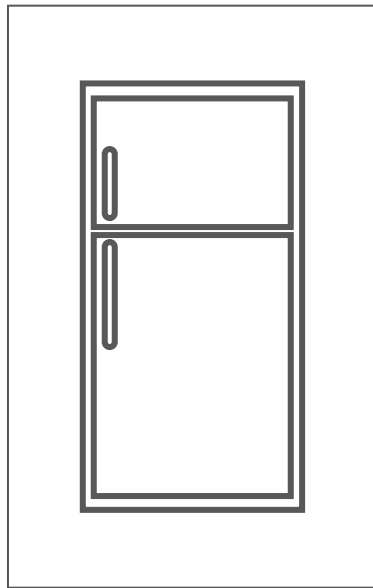
Pharmacist walks to individual floor in hospital, opens fridge.
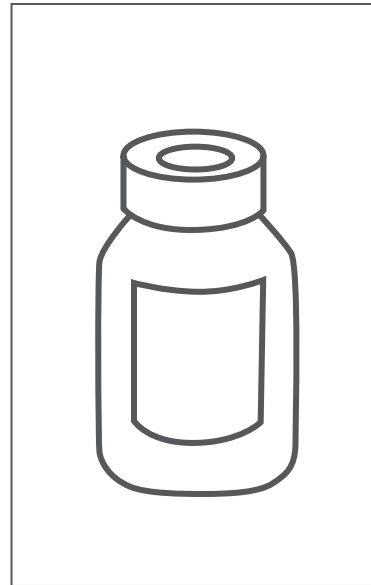
Visually checks which medicines to refill.

Medicines gets ordered and replaced in refrigerator.

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Opportunity Area: Hospital

The method for recording medication temperatures is inefficient. The process is time consuming for the hospital staff, it may also lead to inaccuracy.

Additionally, the method used by pharmacists must physically check the medicine prior to restocking is inefficient. While pill dispensing machines are available to monitor administration of medications, there is no system to track the storage of temperature sensitive medications.

The opportunity is to create a device that can track and monitor medications that are temperature sensitive to relieve the nurse and pharmacist of time intensive duties.
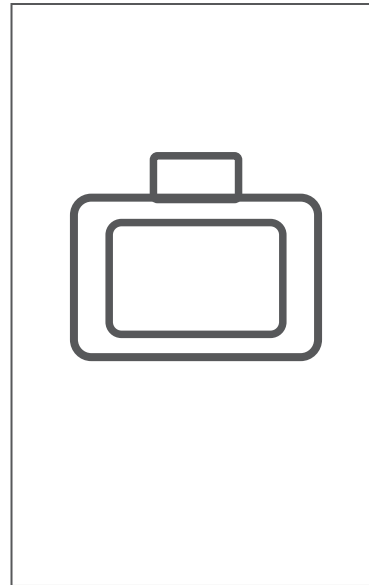
User Flow: Person at Home

Many adults need to carry insulin on them while at work. The solution is to keep insulin in their lunch box, but does not allow temperature to be monitored. People also do not keep track of when their insulin expires, which can be detrimental.
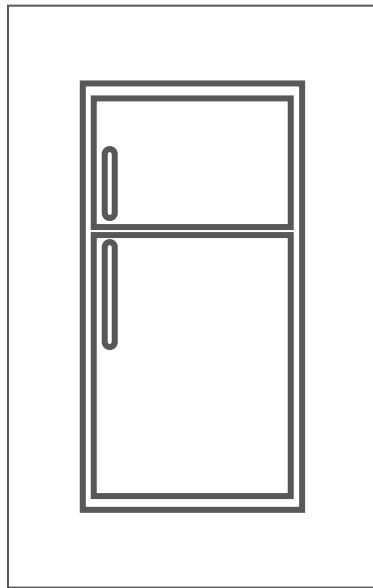
Adult take insulin out of refrigerator.

Puts into lunch box, which is not a controlled temperature container
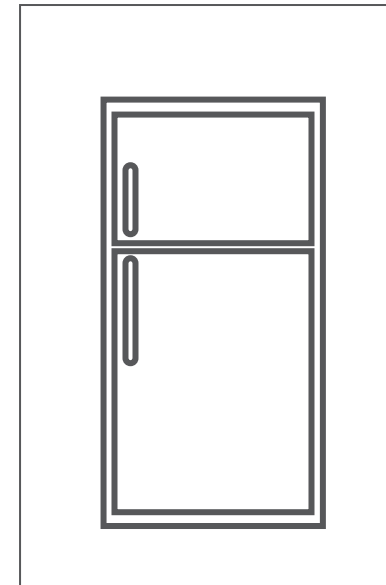
Insulin goes back into refrigerator, where it has been able to fluctuate in temperature all day.

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Opportunity Area: At Home

Diabetes is a drastically increasing disease that leads to people administering their own insulin levels at home. Insulin is a temperature sensitive medicine that is not effective if stored improperly. Depending on the type of insulin the storage temperature and expiration date varies. Many people do not realize how sensitive these medications are to temperature and tend to disregard the importance of storage.

The opportunity to is create a device that helps to alleviate the complicated instructions to storing insulin as well as provide a way for people to keep better track of their medication.
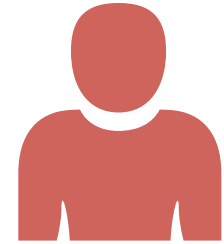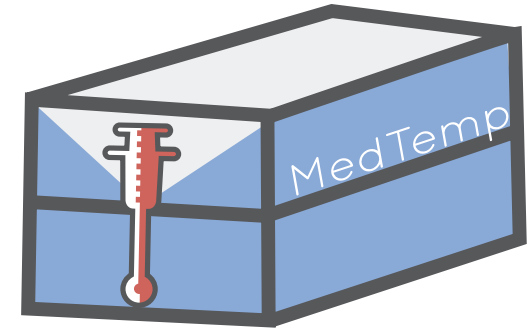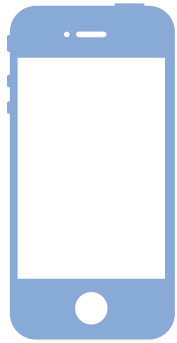
The Product:

An app that helps to properly store and remotely monitor medications that are temperature sensitive in the home and in the hospital.

What is the device?

App that connects to the MedTemp box to display current temperature, and track temperature over time.

Instructs for proper storage of each medicine when the information is input into the app.

Tracks and alerts users when their medication is about to expire. Provides the ability to call your pharmacist and order more.

Tracks dosage as you use it and provides the ability to call your pharmacist and order more.
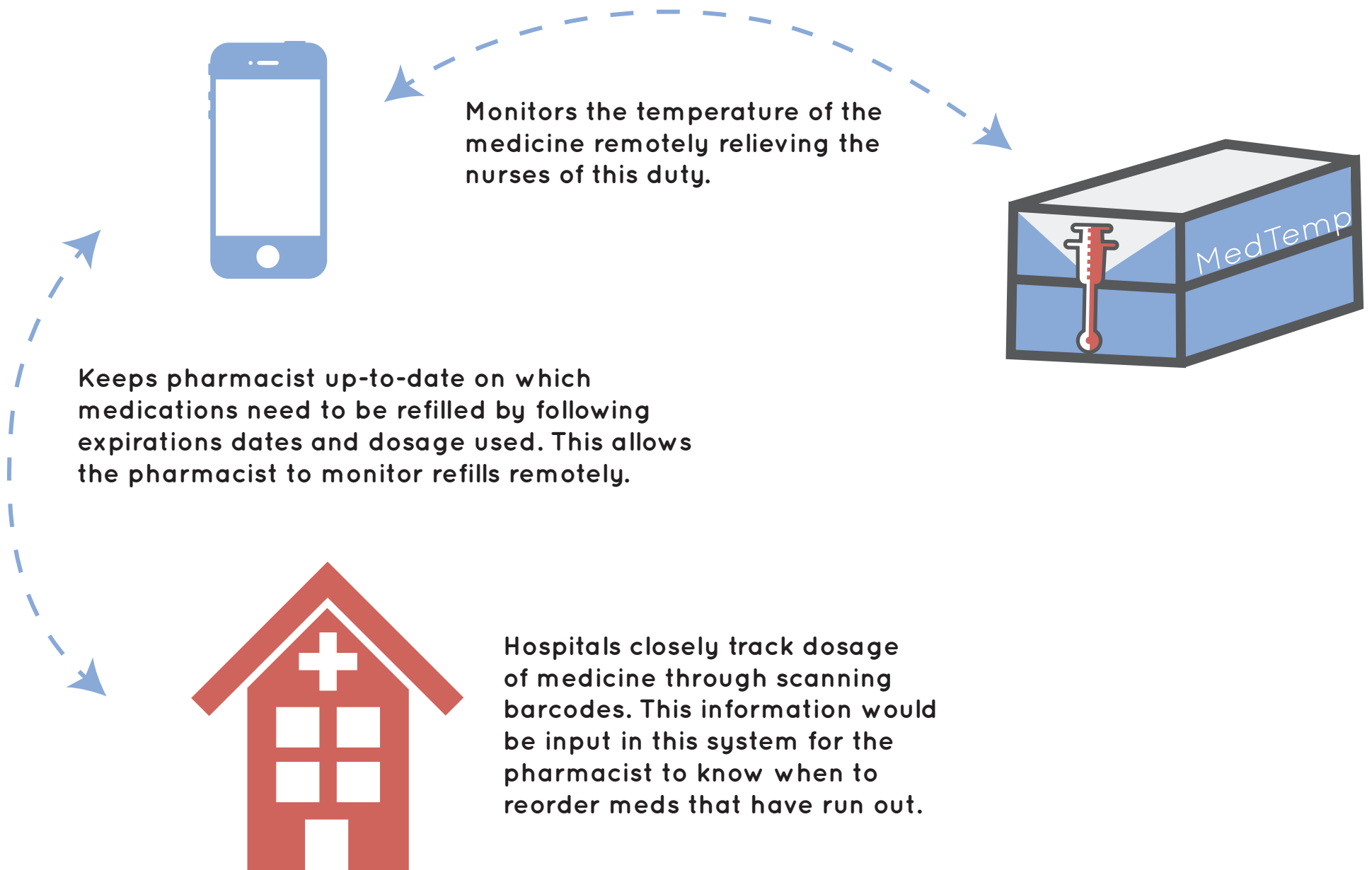
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Bluetooth connect box that is stored in either the refrigerator or home medicine cabinet.

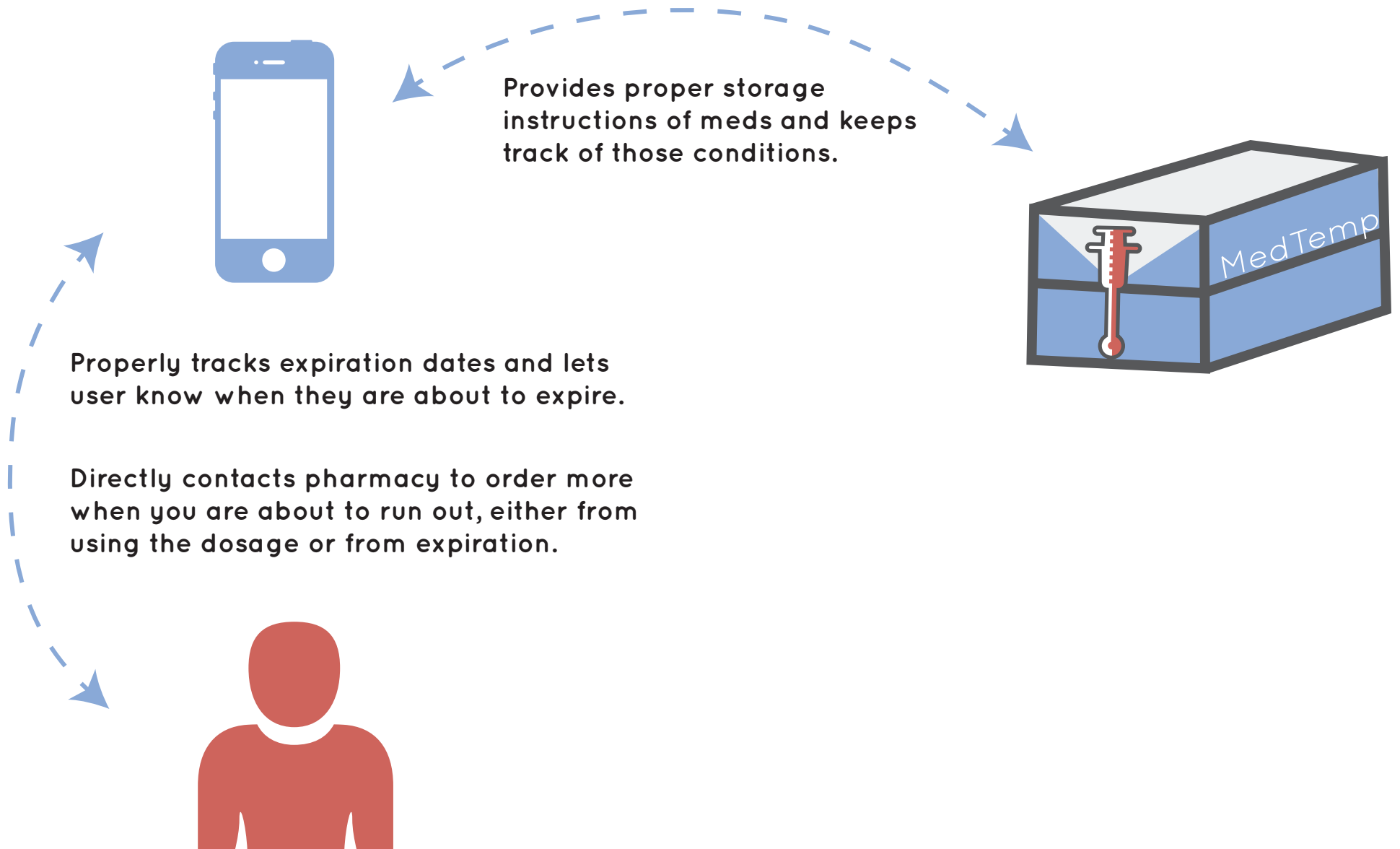Box tracks the temperature of the environment and reports to the app.

Purpose: store medications inside to know the temperature so that you can properly store medication.

Portable so that it can be stored in a fridge, medicine cabinet, or lunch box.

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How does it work in the hospital?

Monitors the temperature of the medicine remotely relieving the nurses of this duty.

Keeps pharmacist up-to-date on which medications need to be refilled by following expirations dates and dosage used. This allows the pharmacist to monitor refills remotely.

Hospitals closely track dosage of medicine through scanning barcodes. This information would be input in this system for the pharmacist to know when to reorder meds that have run out.

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How does it work at home?

Provides proper storage instructions of meds and keeps track of those conditions.

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Properly tracks expiration dates and lets user know when they are about to expire.

Directly contacts pharmacy to order more when you are about to run out, either from using the dosage or from expiration.
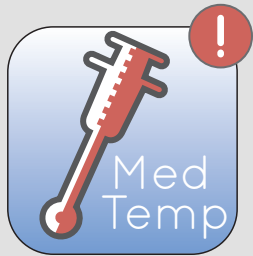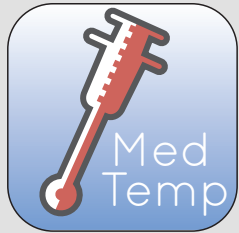
Other Scenarios

School nurses, and summer camp nurses, who have to monitor many childrens' medicines and are not provided a proper way to maintain these medications.
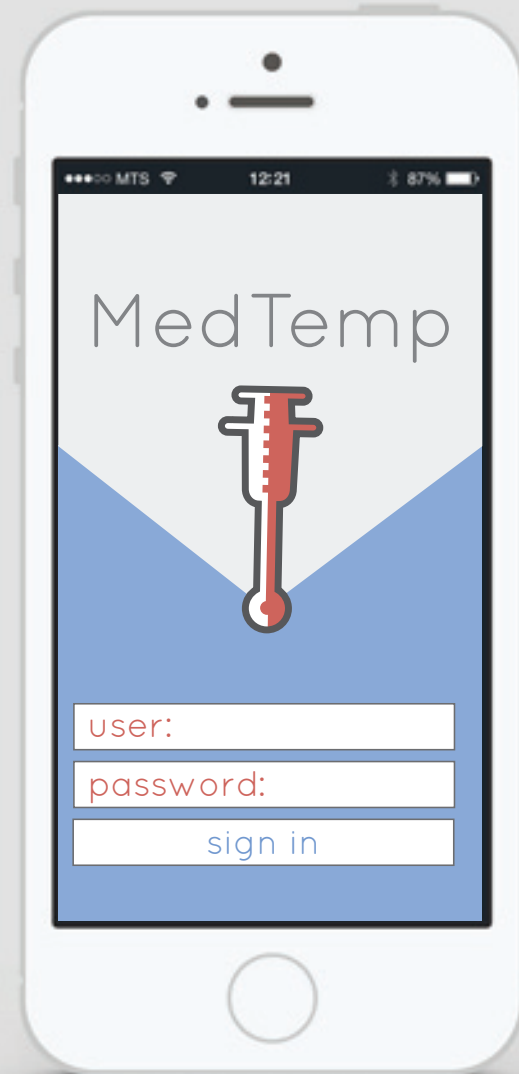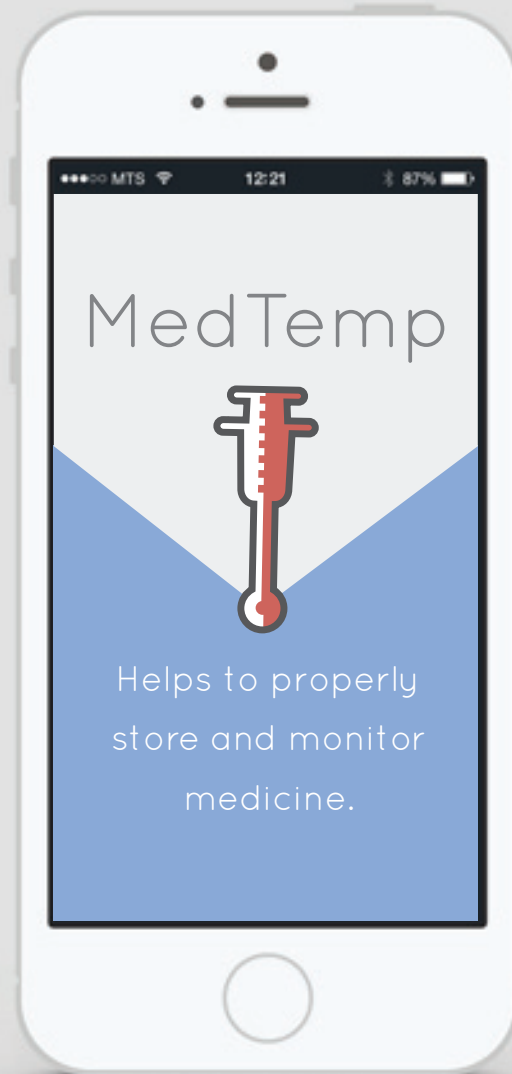
College students who have to keep track of their own insulin at dorms, which is a very inconsistent living environment. The student could be sharing a fridge with multiple roommates.

Scientists also need to keep careful track of HAZMAT materials in labs. Being able to monitor this remotely would be an extra layer of caution.

UI: Start Screen & Login

Apple Icons with and without alerts.

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Helps to properly store and monitor medicine.

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user:

password:

sign in

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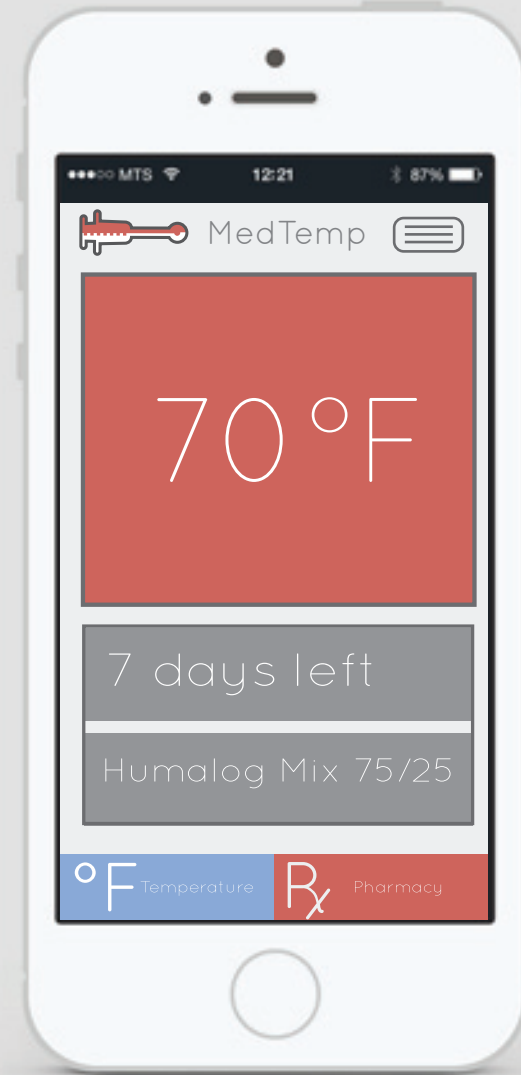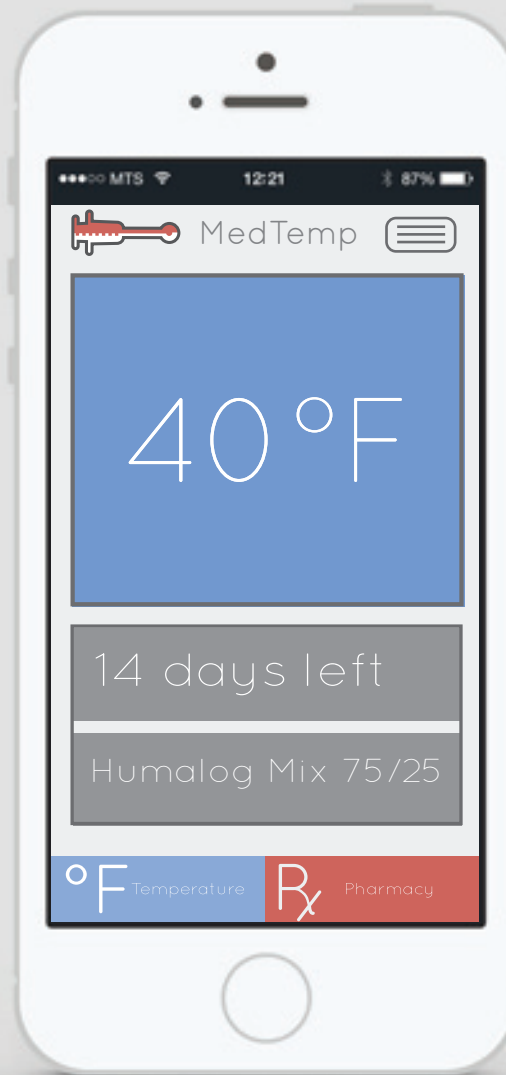
UI: Temperature & Medication Screen

Color indicated whether the devices is in range of proper temp.

Displays medication and days till expired.

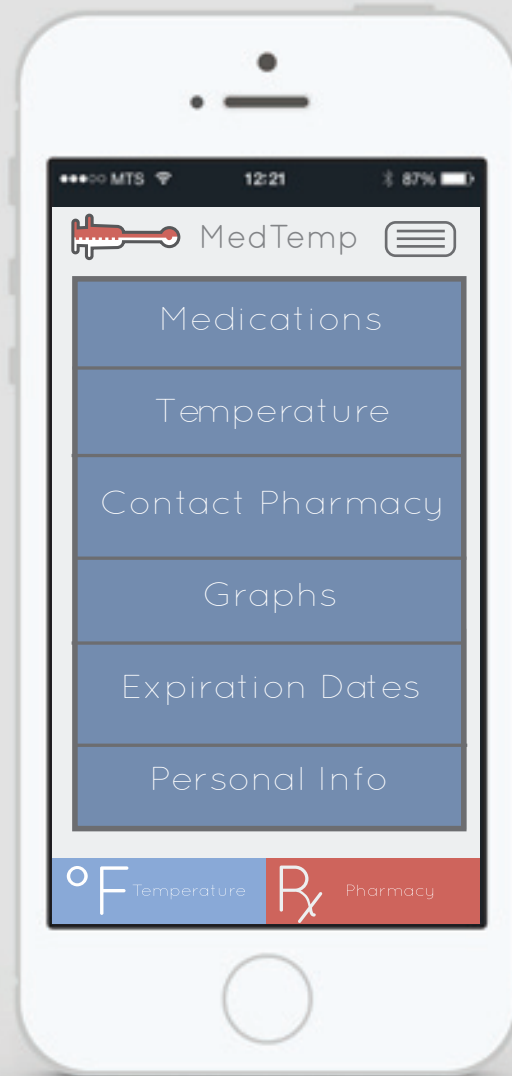**Easy access to the most important info. This page the 'temperature' pages, and access to medication info and pharmacy**

●●●○○ MTS   12:21   ✳ 87% ▭

MedTemp   ☰

40°F

14 days left

Humalog Mix 75/25

°F Temperature   ℞ Pharmacy

●●●○○ MTS   12:21   ✳ 87% ▭

MedTemp   ☰

70°F

7 days left

Humalog Mix 75/25

°F Temperature   ℞ Pharmacy

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UI: Menu Page

Menu tab bring you to this page, where all of the information the app holds is broken down.

Medications

Temperature

Contact Pharmacy

Graphs

Expiration Dates

Personal Info

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°F Temperature   Rx Pharmacy

MedTemp

40°F

Month

Humalog Mix 75/25

°F Temperature   Rx Pharmacy

Graphs temperature changes over a month. This helps to visualize fluctuations in temperature.

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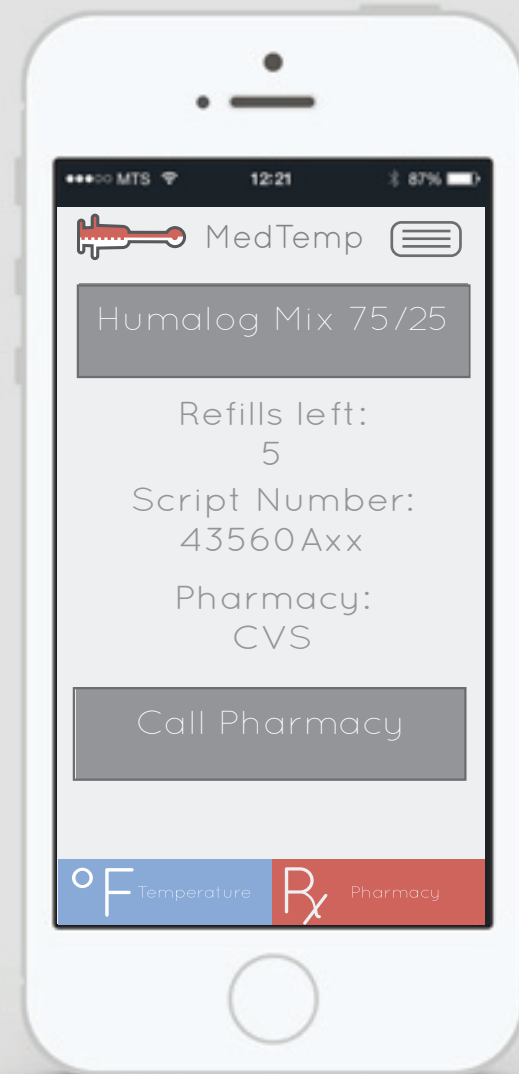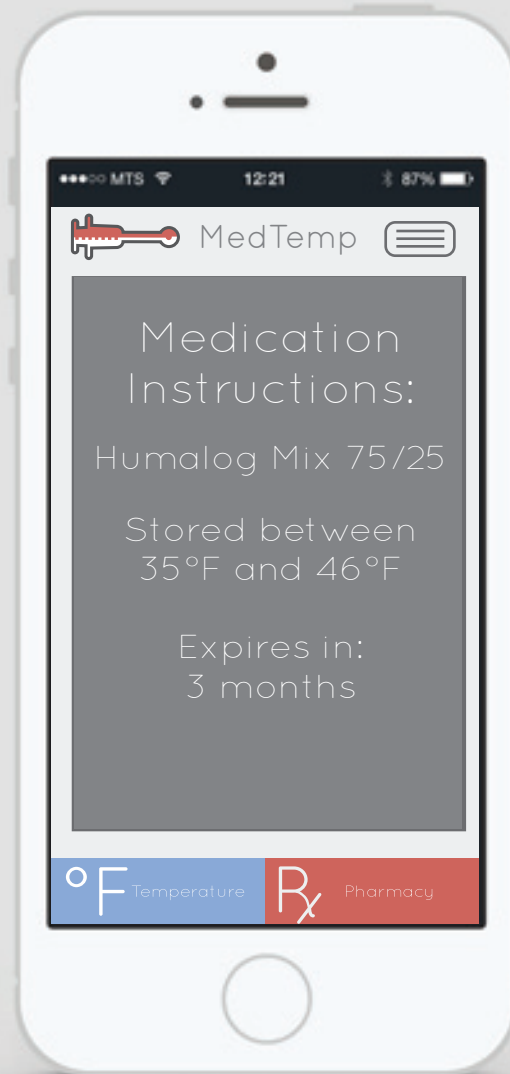# UI: Inputting medication using the barcodes.

When first starting the app, or when you may change your medication, the way to add the information is for the phone to read the barcode.
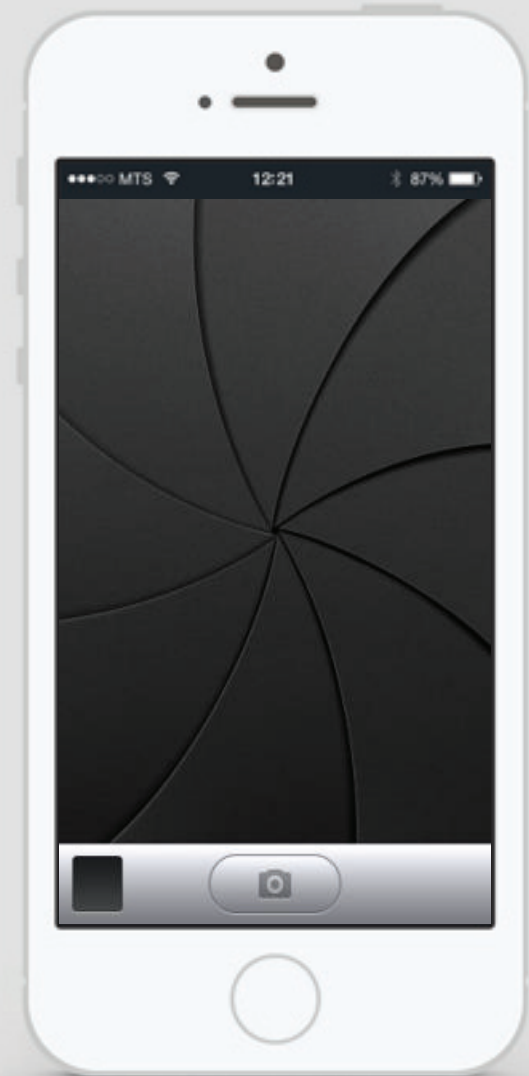
Access camera to take picture of barcode.

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UI: Medication Instructions & Information

App then bring up information of how to properly store medication.

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Medication Instructions:

Humalog Mix 75/25

Stored between 35°F and 46°F

Expires in:
3 months

°F Temperature   Rx Pharmacy

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Humalog Mix 75/25

Refills left:
5
Script Number:
43560Axx

Pharmacy:
CVS

Call Pharmacy

°F Temperature   Rx Pharmacy

Always have access to the "pharmacy" page where you can view all the medication info as well as directly access the pharmacy via phone.

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Thank You!