



Loving Ties

KATHRYN COLTON | INTERACTION DESIGN WINTER 2018 | MULTI-PLATFORM APP PROJECT

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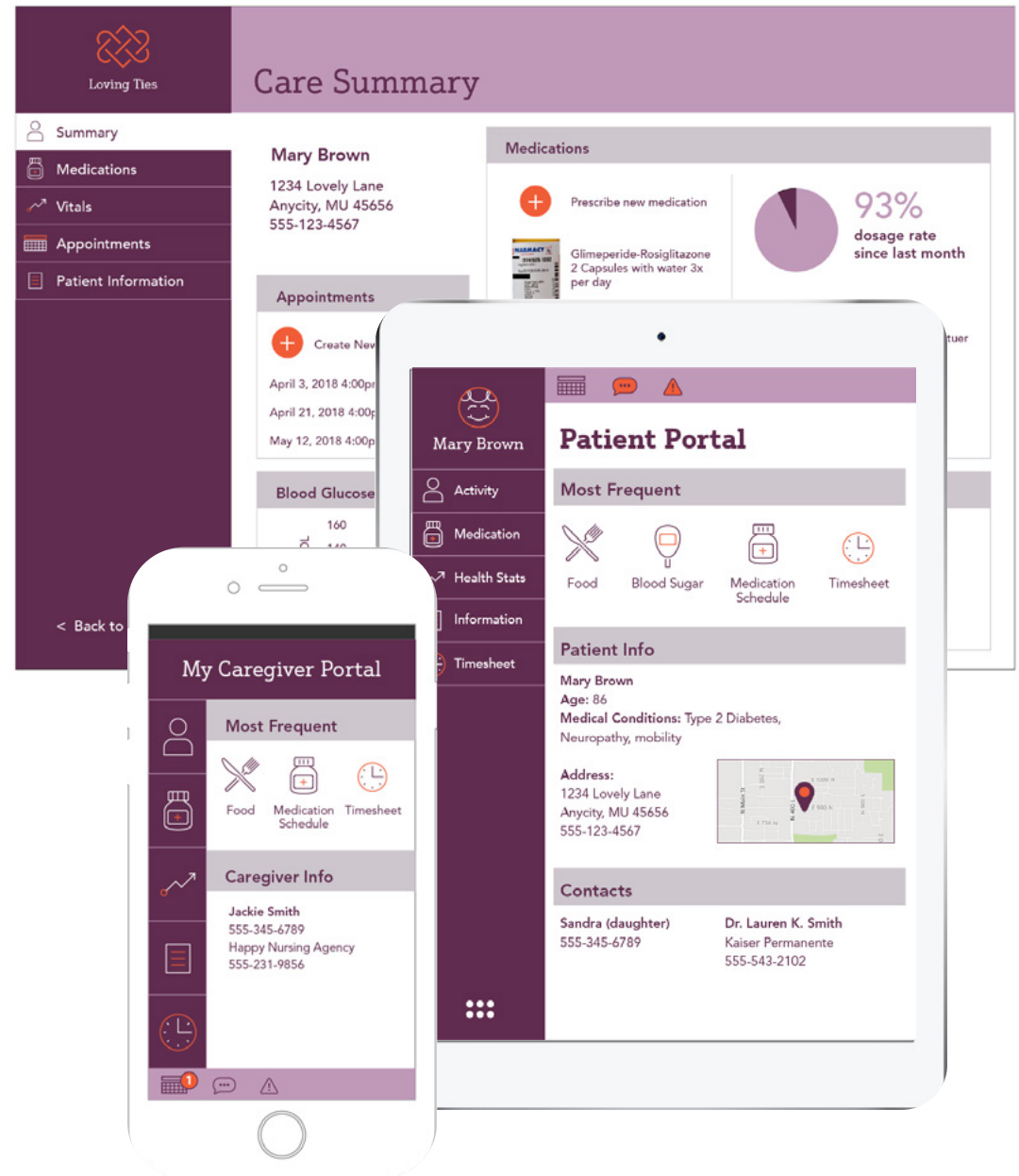
# 01 Project Introduction

Three integrated apps for three people working together

For this project, I was asked to develop a system of three integrated apps for an existing profession or life situation. Each app will target one of three devices (smart phone, tablet, and desktop browser). This assignment explores how people use technology to work together and how to design interface systems that can be applied to different platforms.

## PROJECT REQUIREMENTS

- Identify existing professions and life situations where smart phone technology could add substantial value
- Design for smart phone, tablet, and desktop screen sizes
- Design multiple screens for each environment to demonstrate functionality



# 02 Situation Brainstorming

## Who needs an app?

I started my research by brainstorming some businesses and situations that would be well-served with a set of integrated apps. My goal was to discover a situation that didn't already have many apps designed for it, and that would benefit from a useful set of apps and technology.

As you can see from this list, most of my ideas involved caretaking professions and families. I spend some time researching existing apps for each one, just so I could hone in on the subject that I felt had the best opportunity for fresh ideas.

### **CHILDCARE**

- App that allows caregivers to communicate the details of a child's day to the parents
- Keeps track of feeding, diapers, milestones, photos
- Allows parents to communicate instructions to childcare providers through their phone

### **ELDERLY CARE**

- Helps in-home caregivers communicate details of care to family members and doctors, track health, eating and behavior, etc.
- Gives elderly people who live alone a way to communicate quickly to caregivers and children
- Could utilize sensor/camera technology to alert caregivers when elders are in distress

### **DOG SITTERS/WALKERS**

- Allows owners and dog sitters to track care and communicate the details of care between each other
- Allows the owner to communicate remotely with the dog while it is home alone.

### **MUSIC TEACHERS**

- Music teaching app that provides a way for piano teachers to communicate lesson material to parents
- Gives kids a to-do list and practice activities they can do on a tablet
- Provides a way for parents and teacher to track the student's progress

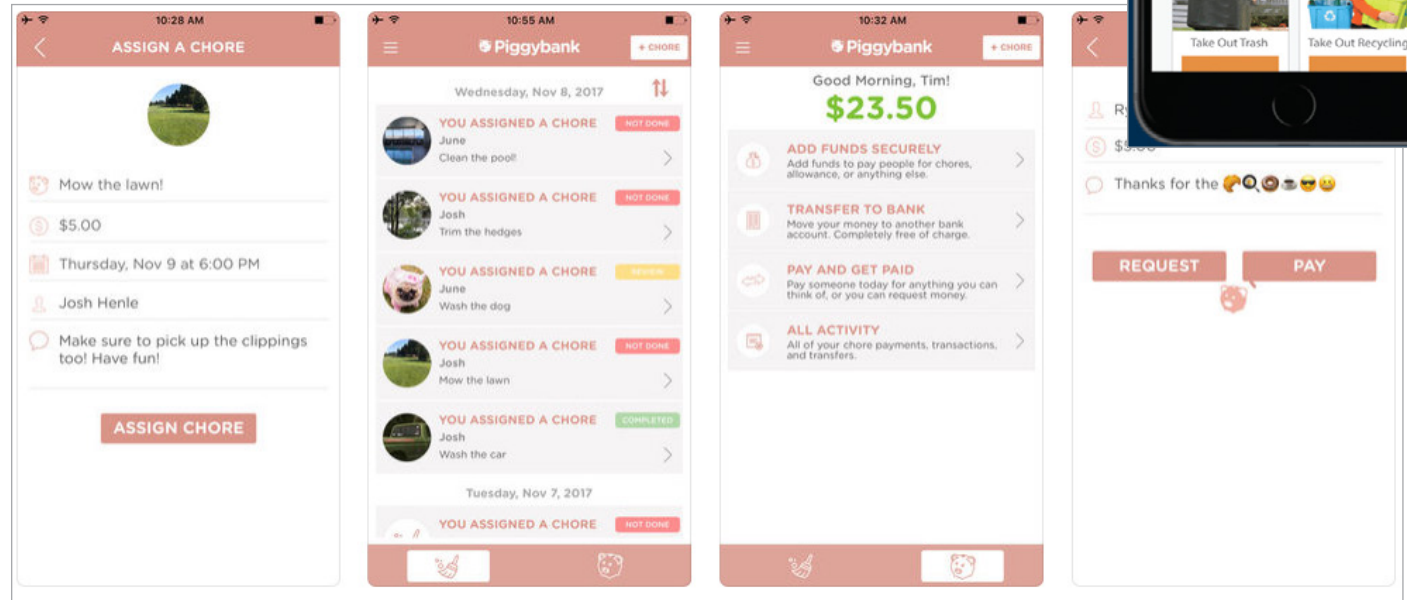
### **FAMILY CHORES**

- chore chart app that helps parents and their children keep track of what chores a child does and gives rewards for doing chores



# 03 Research

**DIGITAL CHORE CHARTS**  
My initial idea was to do a chore chart app. I found a few chore chart apps for families that have fun visuals. I especially liked the Chore Monster app. The parent can reward the child with games when their chores are completed.

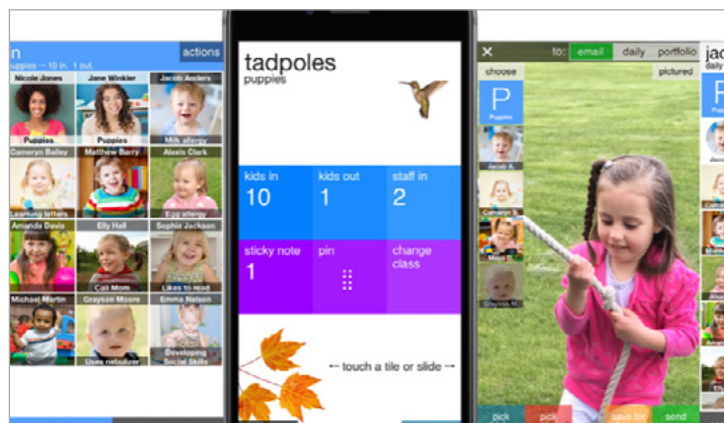
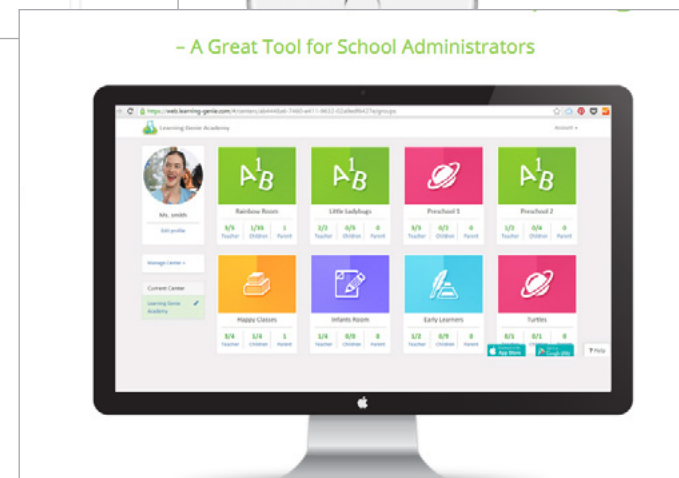
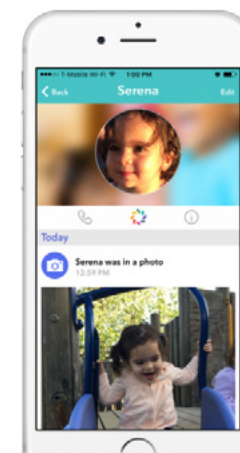
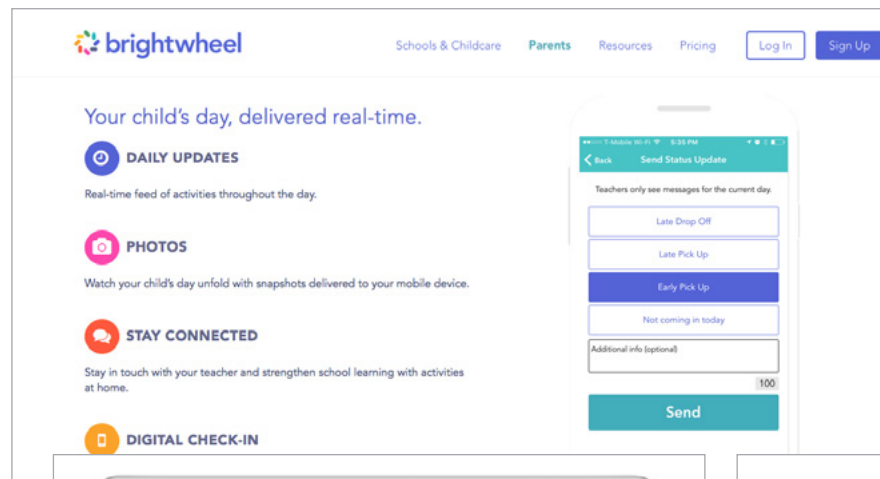


# 03 Research

## CHILDCARE APPS

I felt that a childcare app would have more opportunity to serve multiple people across multiple digital platforms, so I began to research them instead. I found there are several robust options already on the market. Brightwheel, Learning Genie, and Tadpoles are three of the most popular apps for daycares.

Some of the working moms I spoke with about daycare apps also mentioned that some centers use proprietary software tailored to the daycare center/school.



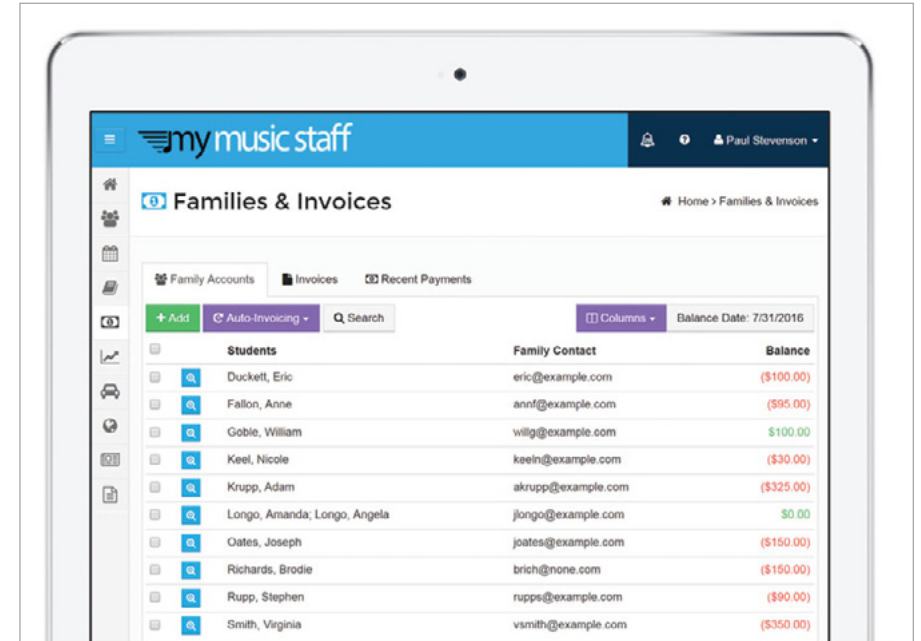
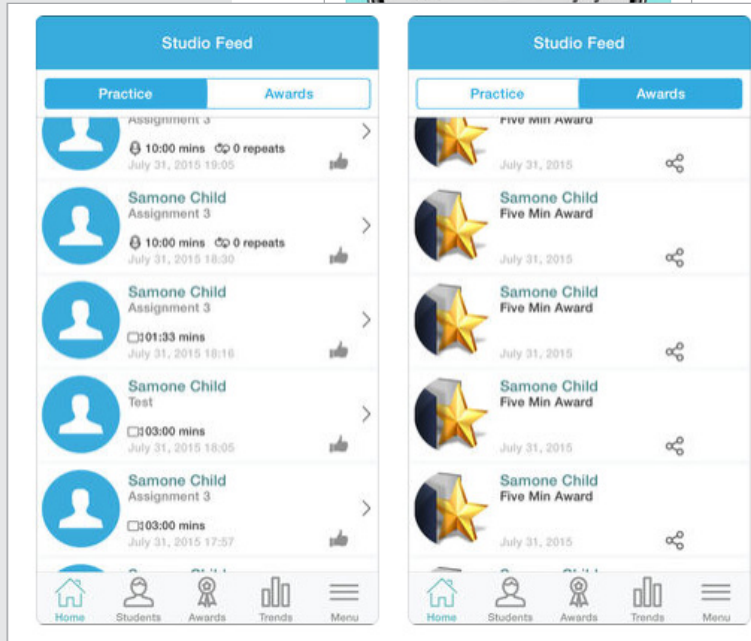
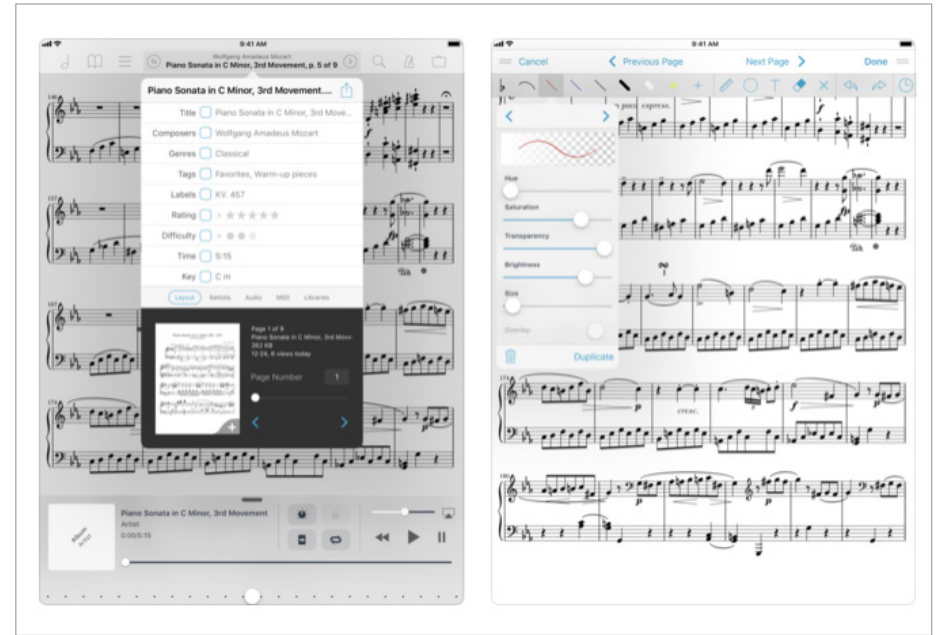
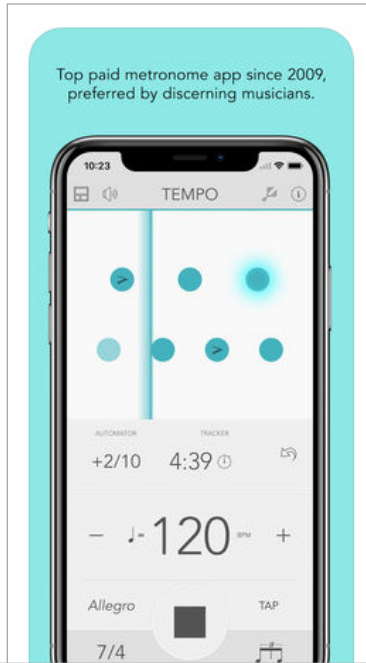
# 03 Research

## PIANO TEACHING APPS

There are many teaching aids for piano teachers and students.

Some of the features of these apps are:

- digital metronomes
- scanning/digitizing sheet music
- music studio management
- practice tracking and gamification
- memory games and quizzes





# 03 Research

## PET SITTING APPS

There are dog sitting and kennel apps that are similar to childcare apps. They help the caretakers communicate with the owners about the dog's care, as well as keep track of each dog in the kennel.

If an owner leaves their dog at home without a human there to care for the dog, there is technology that allows owners to check on their dogs remotely through a camera and microphone. It also serves treats at the touch of a button.

**PawsAdmin**  
Taking Care of Our Pets

Daily Tasks  
Daily Operations / Manage Daily Tasks [Setup Tasks](#)

Hello, admin!  
@ PawsAdminDemo

Admin Menu  
Programs

**Daily Operations**

- Today's Status
- Book an Appointment
- Boarding Facility View
- Today's Total
- Cash Sheet
- Water Management
- Today's Todos

**BOARDING TODO**

### Today's Pet Wellness Update

Use the first row to update all pets. Drop down selections are auto saved upon change. To view/update multiple days for one pet, click on pet name.

Show 25 entries Search:  [Copy](#) [CSV](#) [Excel](#) [PDF](#) [Print](#)

Showing 1 to 4 of 4 entries

Pet Name	Breakfast	Lunch	Dinner	Other Tasks	Urine	Stool	Energy	Notes
#1 Update All	Finished All	Finished All	Finished All	Finished	Normal			
Coco	Finished All	N/A	Finished All	med1 (10:00 AM)	Abnormal			
test10	Finished All	N/A	Finished All	N/A				
test5	N/A	Finished All	Finished All	N/A				

**Furbo**

Smart Dog Alerts Product Why Furbo? Support Reviews Blog [Buy Now](#)

Save \$50 on your Furbo + FREE shipping!

## NEW Furbo Dog Camera

See, talk, and toss treats to your dog even when you're not home.

[WATCH VIDEO](#)

[Buy Now](#)

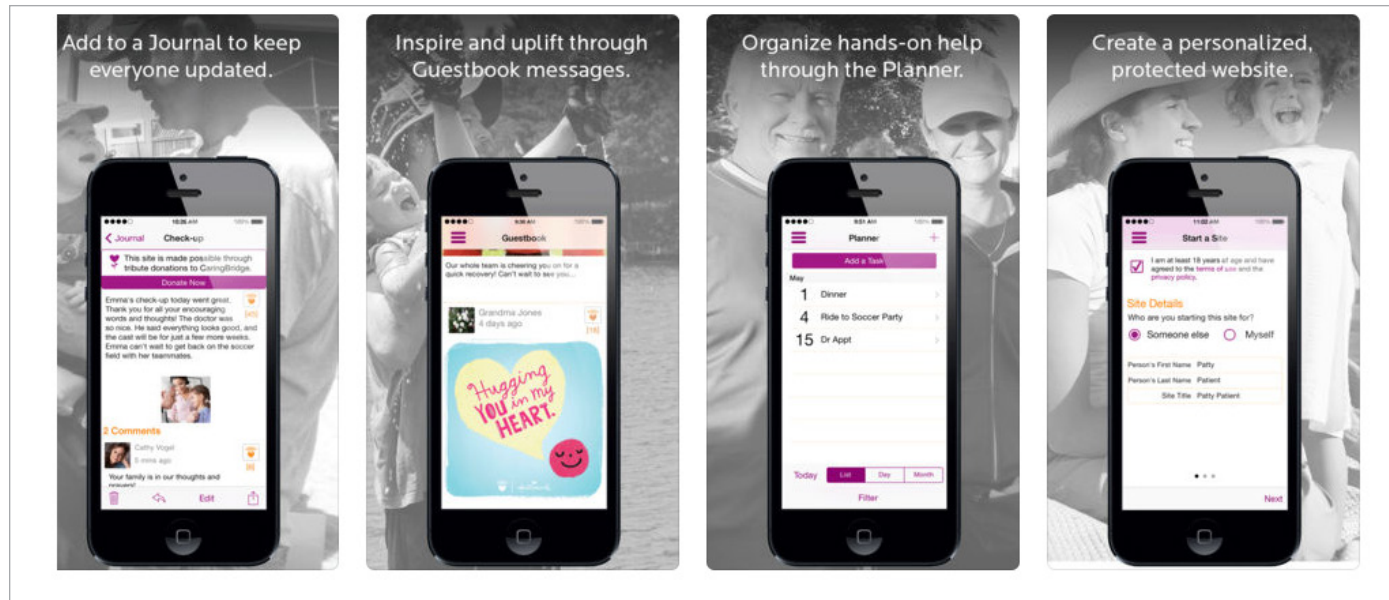
The advertisement features a white Furbo Dog Camera on a small white table with a potted plant. A smartphone in the foreground shows a live video feed of a dog. A real dog is also visible on the right side of the image.

# 03 Research

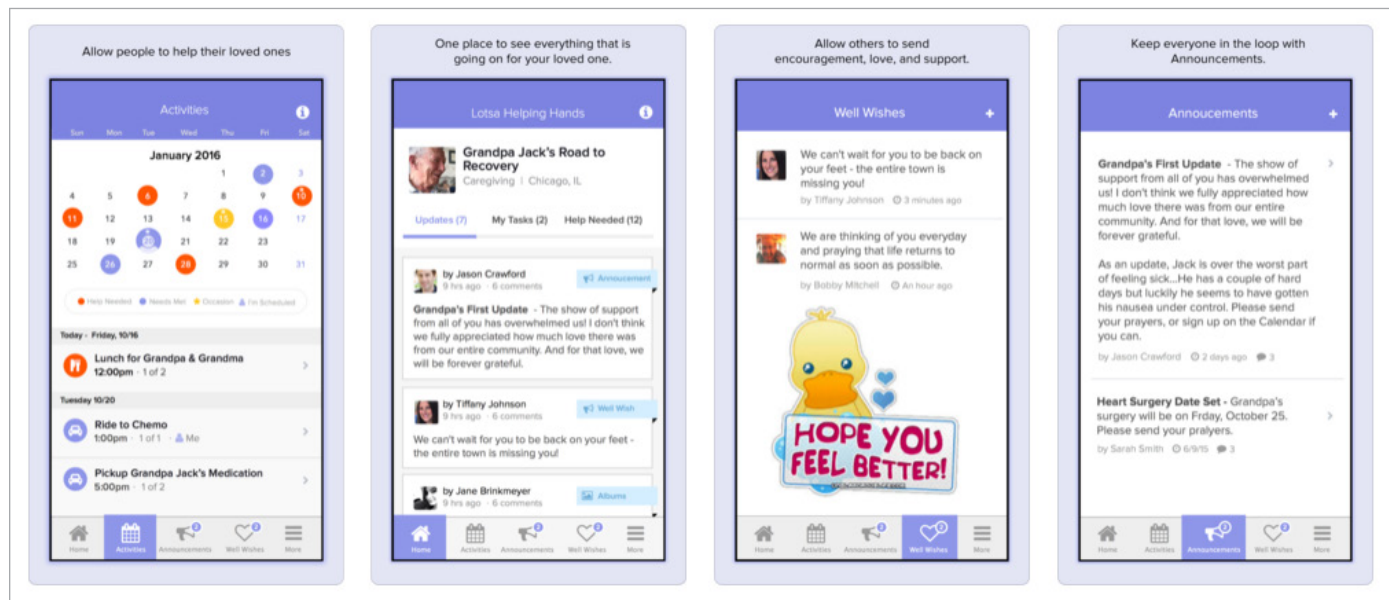
## ELDERLY CARE

Many of the apps related to elder care are for caregivers who need information and resources to aid them in their job. Some of these apps are general healthcare apps, and not just tailored to the elderly.

A large number of the apps I found are used for creating communication between caregivers and family members of the elderly person being cared for, such as CaringBridge and Lotsa Helping Hands. However, the communication is more social-networking in nature than a medical information sharing app.



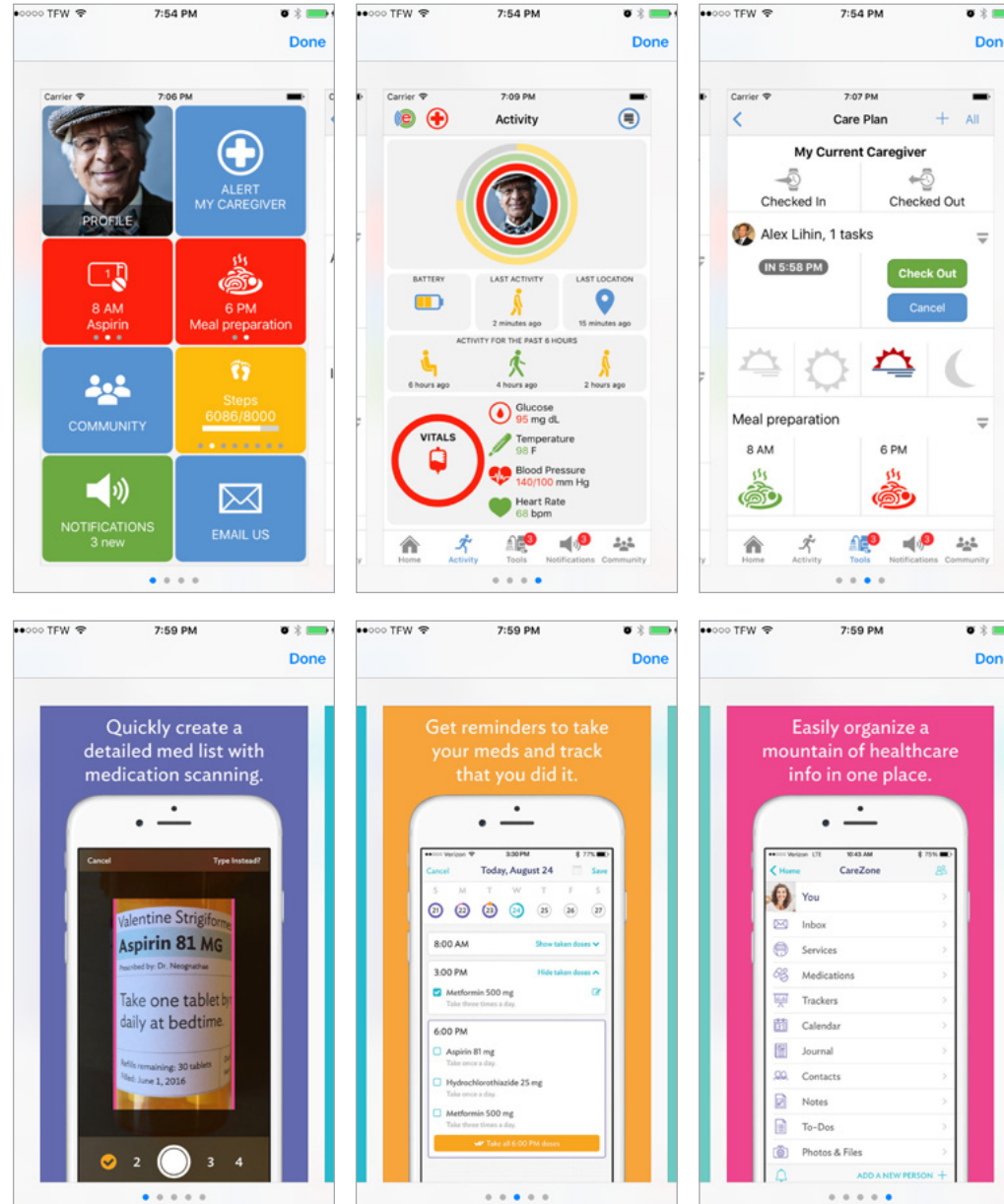
*CaringBridge and Lotsa Helping Hands provide a way for caregivers to communicate the details of someone's medical care situation with family members and friends. They have planning tools so multiple caregivers can coordinate care for a single person.*



# 03 Research

## ELDERLY CARE

The apps that seemed the most helpful and comprehensive in terms of actual care were eCare21 and CareZone. They have features for caregivers to track and record medication, meals, and general daily tasks. eCare21 also interfaces with sensor technologies like FitBit to monitor vital signs in real time.



eCare21 provides all-round monitoring through wireless and wearable devices such as a FitBit device, Bluetooth, or a smart watch.

This way, you can track the wearer's heart rate, glucose level, calorie intake, medication, and more even from a distance.

I personally love the concept, but feel the visuals and layout could be improved.

The CareZone app provides a way for users to keep track of medication types, dosages, and sounds alerts for dosage times. It has an medical information organization system that keeps important info at the users fingertips.



# 03 Research

I decided that my project would be a set of apps for elderly caregivers for several reasons:

1. There is a dire need for elderly care solutions, especially because as the baby-boomer generation ages, there will be a shortage of caregivers and facilities for the elderly.
2. There are relatively few apps that address the elderly care crisis, compared to what is available for childcare and pet care.
3. I believe that elderly care technology has the potential to become a billion dollar industry.



Care Coach is one of the most intriguing apps that I found. It works with a dog avatar that is controlled by a remote caregiver who checks on the patient with the iPad camera and talks to them through a computerized voice. Care Coach is still in the testing phase. Some test subjects have used it as an alternative to full-time, onsite caregivers.

<https://www.wired.com/story/digital-puppy-seniors-nursing-homes/>

Much of the smart home technology for elder care is still in the discovery and development phase. Hack-a-thons throughout the U.S. have focused on elder care solutions.

Some interesting articles I found on the subject of elderly care and "smart home" technology:

<https://techcrunch.com/2017/05/14/elderly-alexa-helps-family-care-for-their-remote-loved-ones-via-voice/>

<https://www.cnet.com/news/how-to-have-the-tech-talk-with-your-aging-parents/>



### 'Elderly Alexa' helps families care for their remote loved ones via voice

Posted May 14, 2017 by Sarah Perez (@sarahintampa)

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**Mirai**  
Acoustic noise-reducing glass. Drive change in complete comfort.

**TOYOTA**  
Let's Go Places

EXPLORE MORE

AdChoices


**Crunchbase**

**Alexa**

DESCRIPTION

# 03 Monitoring Technology Research

These devices monitor blood sugar levels.



## What Is Glucose Monitoring?

Without diabetes, your body tracks glucose levels all day and night to ensure the right amount of insulin is released at the right time. To successfully manage diabetes, a monitoring system is needed to consistently check your glucose levels.

The most common glucose monitoring solutions are blood glucose meters and continuous glucose monitoring (CGM) systems.

Sensor overlap not shown in depiction

## How Does CGM Work?

CGM is a way to measure glucose levels in real-time throughout the day and night. A tiny electrode called a glucose sensor is inserted under the skin to measure glucose levels in tissue fluid. It is connected to a transmitter that sends the information via wireless radio frequency to a monitoring and display device. The device can detect and notify you if your glucose is reaching a high or low limit. The latest Medtronic CGM systems can actually alert you before you reach your glucose limits.



glucowise Benefits Product FAQs Company Contact

### Imagine Living Pain-free

Glucowise™ is a non-invasive, 100% pain-free device that makes traditional blood sampling a thing of the past. Our unique sensor technology will allow you to monitor blood glucose levels without the need to pierce your skin.



### Imagine Living Safe

Simple yet highly reliable, Glucowise™ will exceed industry standards for self-monitoring blood glucose accuracy. You will be able to sample as often as you like and wherever you like, ensuring you avoid sudden hypoglycemic events.




This pulse reader also reads blood oxygen levels.



The Fitbit tracks fitness activity, sleep, and heart rate.



mobi health news PROVIDER PAYER PHARMA CONSUMER INVESTOR Search

**HITSS JobMine** Find top health IT talent  
 • Fill your health IT position faster  
 • Access thousands of health IT candidates [Start Now >](#)

## Thirty-six connected health apps and devices the FDA cleared in 2016

By **Heather Mack** | December 30, 2016 SHARE 499

Over the past year, MobiHealthNews has covered 36 devices that received clearance from the Food and Drug Administration. While connected blood glucose monitors and devices incorporating heart rate sensors dominate the list, we also saw more apps and software clearances, as the regulatory agency continues to evolve its position and expertise on how to regulate digital health tools. It's been an interesting year for FDA news, and we've put together an analysis of what's going on [here](#). Read on for the 36 FDA clearances of 2016.

Israel-based startup **Biogaming** received **FDA clearance** for its YuGo Microsoft Kinect-based physical therapy system. Physiotherapists can use the system to create personalized gamified routines for patients, which patients can then complete at home using an Xbox or a computer connected to a Kinect device. The system tracks patients' movements, automatically creating a record of the therapy. It appears that the company may have gone out of business while awaiting FDA clearance.

Also based in Israel, Labstyle Innovations **secured FDA 510(k) clearance** for its smartphone-connected glucometer called Dario. The glucometer syncs with a companion app and is small enough to fit in someone's pocket. Dario consists of a glucose meter, a disposable test strip cartridge, and lancine device. The companion app, available on iOS and Android devices, includes a nutrition guide.




The number of health monitoring apps and devices is quickly growing.

<http://www.mobihealthnews.com/content/thirty-six-connected-health-apps-and-devices-fda-cleared-2016>



# 04 Features Brainstorming

My project will have a set of integrated apps that connect the **caregiver** (professional or family) with the **client** (the children of the elderly in most cases) and their **doctor**.

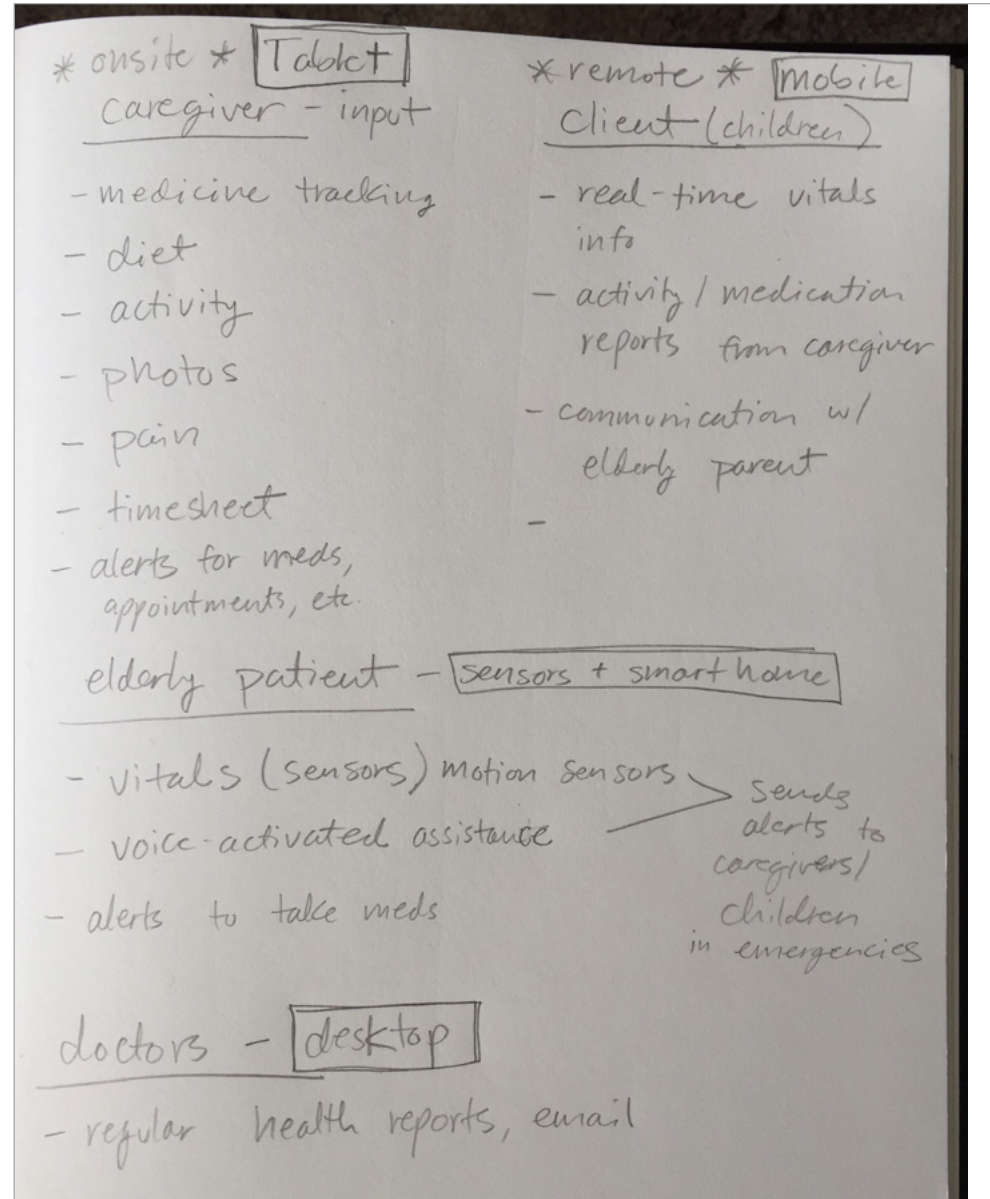
## THE PROBLEM:

An elderly person is unable to take care of themselves 100% of the time, but nursing homes and full-time caregivers are too expensive. Plus, the elderly person would like to stay in their home.

## THE SOLUTION:

The features of this app would allow the person to stay home with a combination of on-site care and remote supervision.

1. The caregiver would be able to quickly add updates about the activities of the patient, allowing the client to see exactly when medication was administered or what was served for meals.
2. Alerts could be programmed into the app that will automatically remind the caregiver about medication dosage times, doctor's appointments, and any other important information.
3. The elderly person could have a FitBit or other type of sensor device that monitors their current vitals and gives an alert to the caregiver when blood sugar levels or oxygen levels are too low, for example.
4. A device like Alexa or Echo Dot could be integrated into the app to allow the client to communicate with the elderly person when they are alone. Voice activated devices are easier for most elderly people to use. Cameras could also allow the client to see what is happening in the home and make sure their elderly parent was being taken care of properly.
5. The caregiver could send regular reports to the elderly person's doctor via email so the doctor can monitor the health of the patient and make recommendations when needed.



# 05 Scenarios - Caregiver

## SITUATION

All of the following scenarios are designed around Mary, an 86 year-old woman with diabetes and mobility issues who lives alone. She is cared for part-time by Jackie, a 35 year-old professional elderly care assistant. Mary's daughter, Sandra, works full-time and is unable to care for her mother during the weekdays. Sandra and Jackie are using the Loving Ties app system, along with smart home security devices, to log Mary's activities, health, and ensure her safety.

## SCENARIO 1 - MEDICATION ALERT

Mary's doctor has prescribed several medications for Mary to take each day at certain times. The doctor send pictures of the pills and the dosage information for each medication to Jackie's iPad app.

The iPad app sounds an alert at the exact time that the medication should be administered. Jackie hears the alert sound and sees the notification on her iPad screen which reminds her to give the medicine to Mary. She confirms that the medicine has been given, and the app logs the time it was given.



## SCENARIO 2 - MEAL LOG

Sandra has asked Jackie to keep track of every food she serves to Mary, and how much she eats. Jackie logs Mary's breakfast of scrambled eggs and toast on her iPad, and the information is automatically saved in Sandra's phone app where she can view it.

## SCENARIO 3 - GLUCOSE TEST

Jackie is required to take regular blood sugar readings on Mary. She uses a bluetooth-enabled glucometer that automatically sends the blood sugar data to the app where it is logged for Mary's doctor and Sandra to review.



# 05 Scenarios - Client

## SITUATION

Sandra has hired Jackie to help care for her elderly mother, Mary. So, Sandra is the “client”.

## SCENARIO 1 - MEAL LOG

Mary is diabetic, so Sandra would like to monitor her diet closely. She uses the app to see what Jackie is feeding Mary each day and is reassured that it is healthy for diabetics.

## SCENARIO 2 - MESSAGING

Sandra needs to tell Jackie that Mary needs to be bathed today, so she uses the app to relay the message. The app will automatically ask Jackie if she would like to list the bath in the activities log.

## SCENARIO 3 - ALERT

Mary is home alone during part of the day. Sandra receives an alert on her phone when the smart home device in her mother’s home detects loud noises that could be a sign of distress. Sandra uses the app to see what is happening in the home via a security camera, and talks to her Mary through the device to see if she is ok.



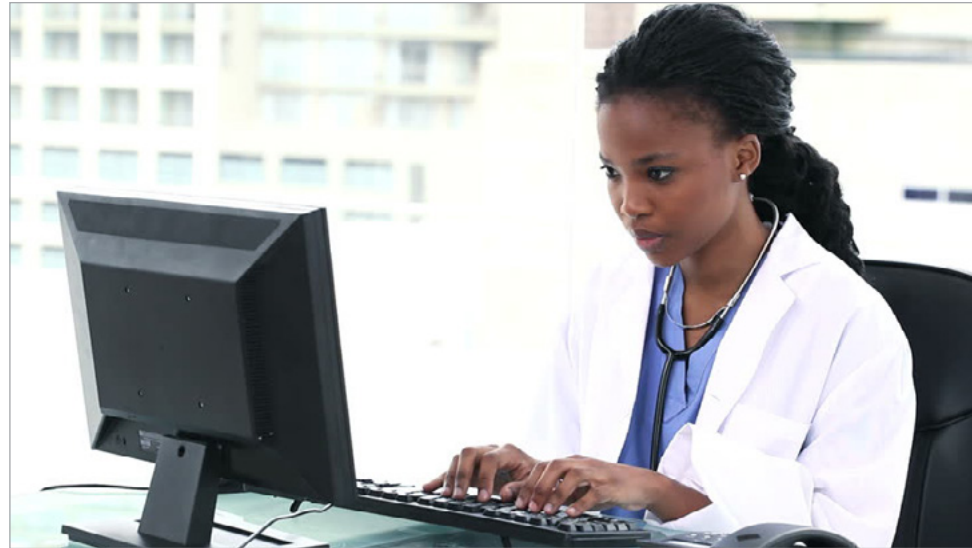
# 05 Scenarios - Doctor

## **SCENARIO 1 - HEALTH SUMMARY**

Mary's doctor receives regular updates on Mary's medication dosages, glucose levels, and general care automatically. The doctor pays especially close attention to Mary's blood glucose levels. This helps the doctor make changes to care recommendations if needed.

## **SCENARIO 2 - MEDICATION INSTRUCTIONS**

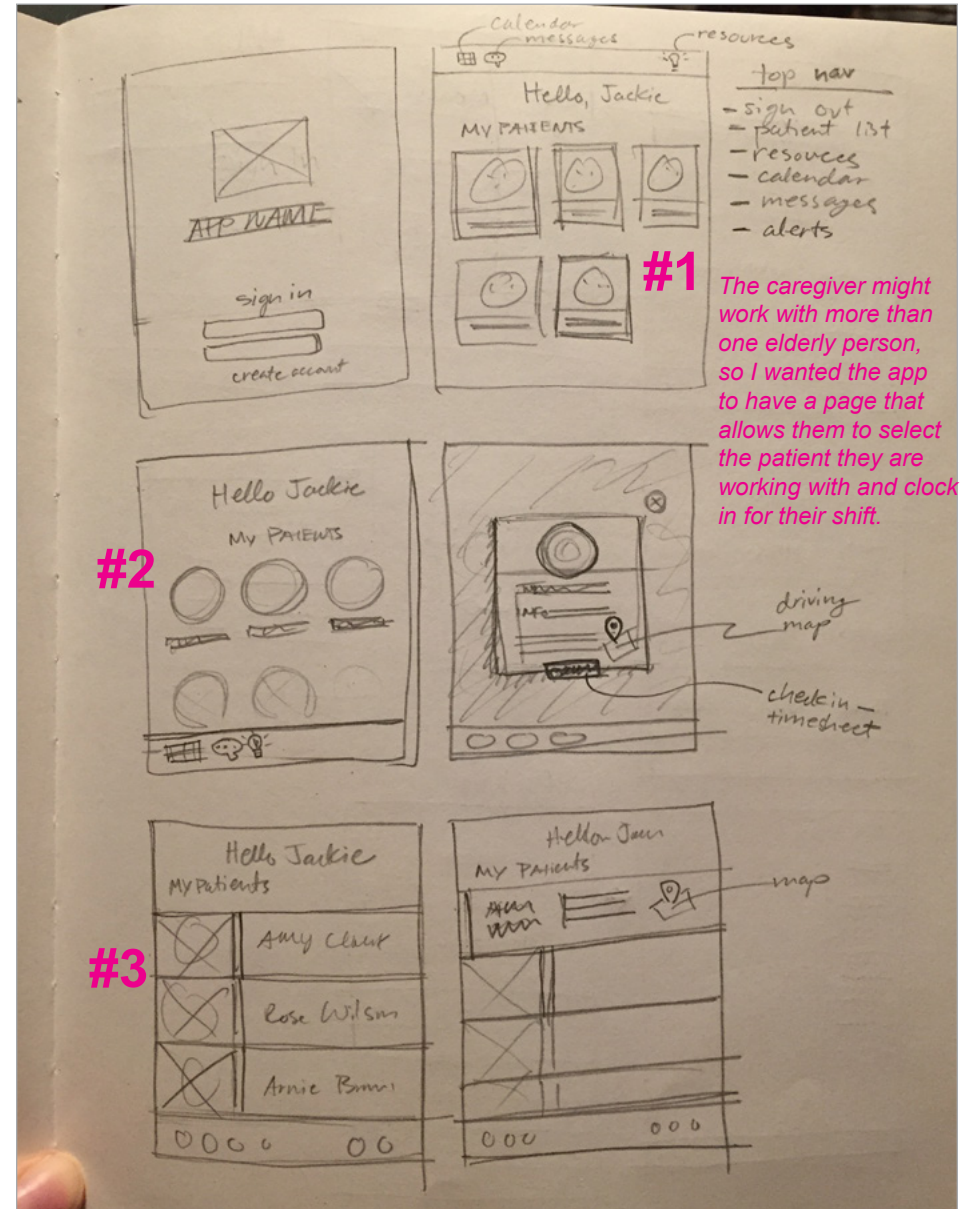
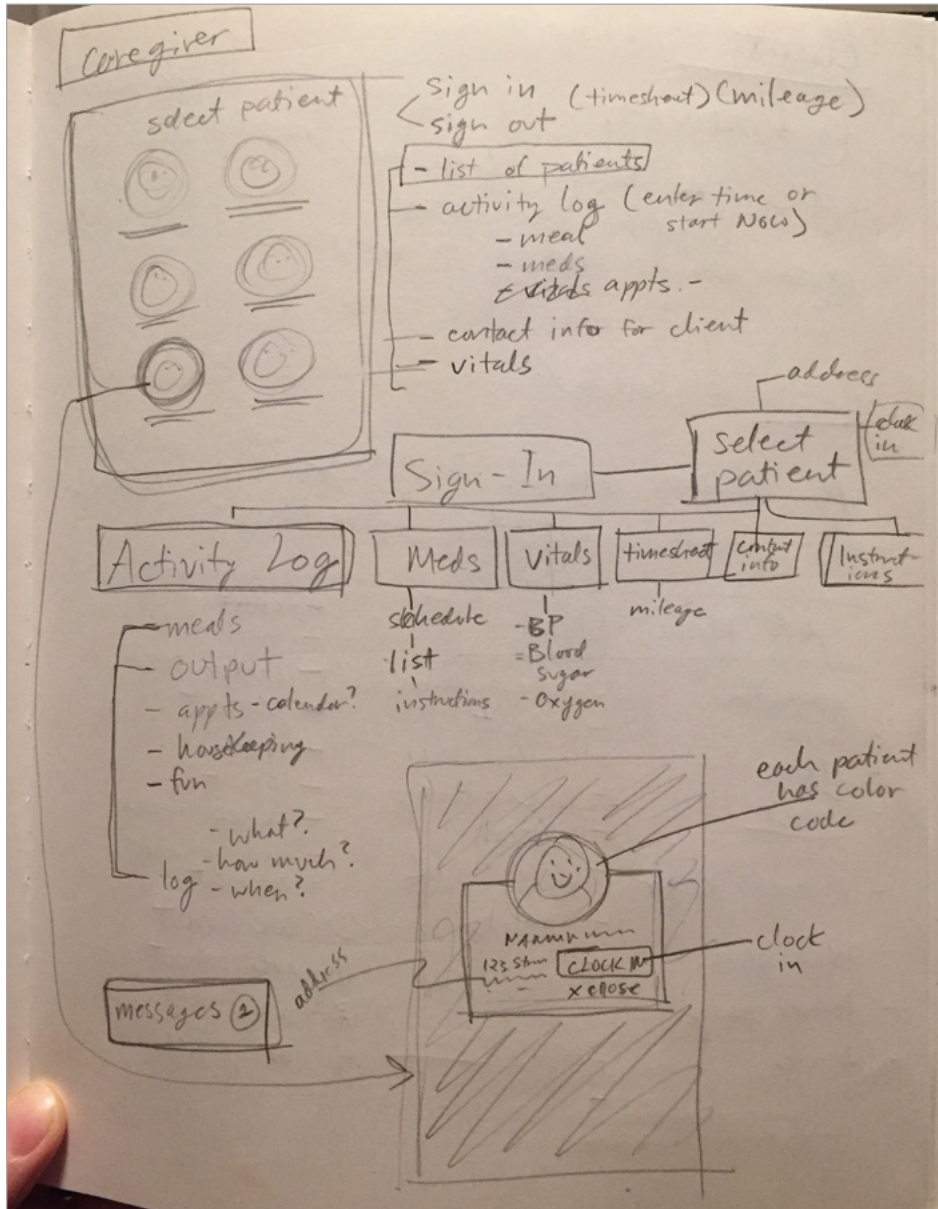
The doctor sends dosage and general info for each medication to Jackie's app so she knows how much and when to administer the medication.





# 06 Initial Sketches

I began by sketching the main interface for the caregiver's iPad. I explored **three different ways** the elderly patients and portal pages could be layed out. I also began mapping the elements of the app.

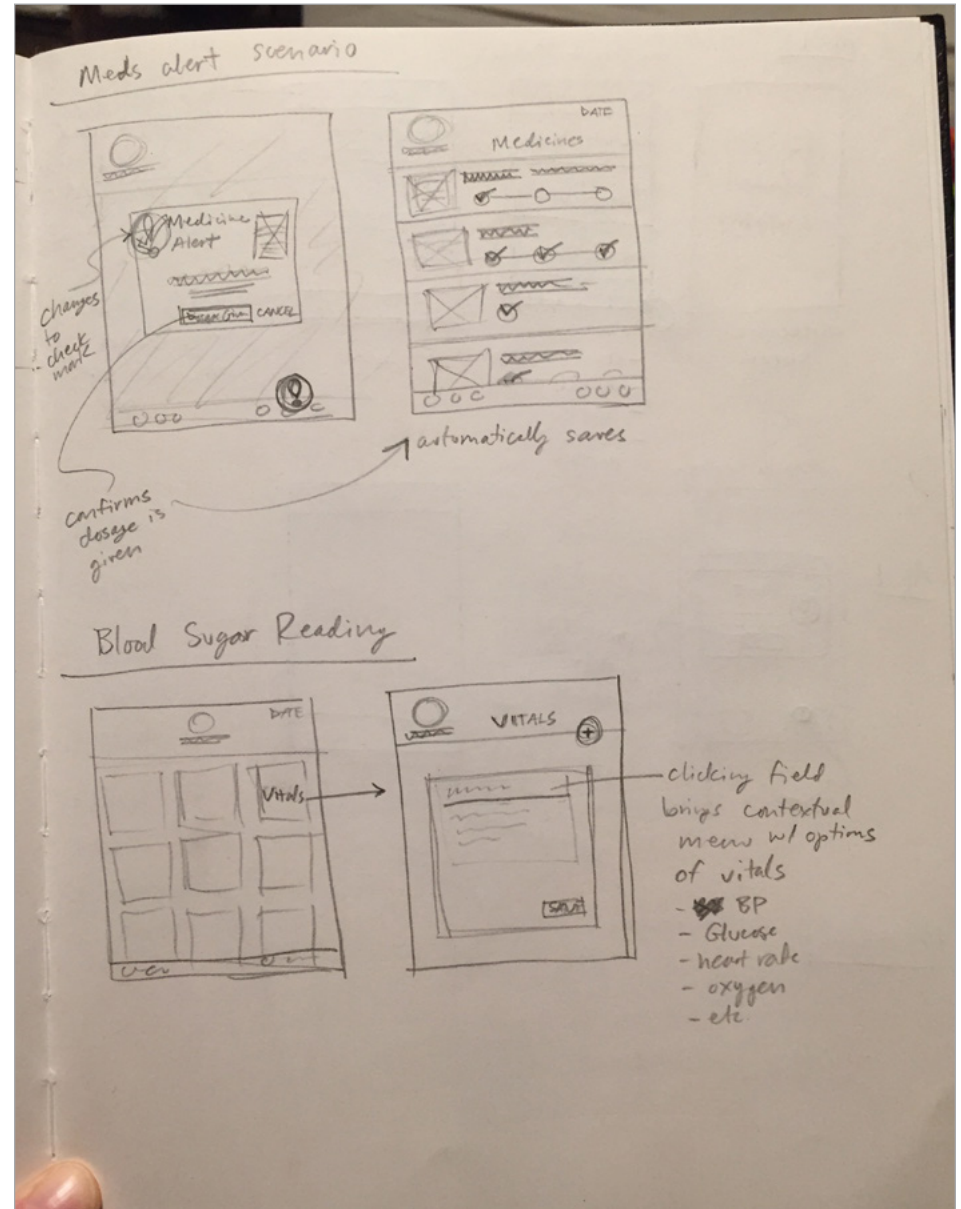
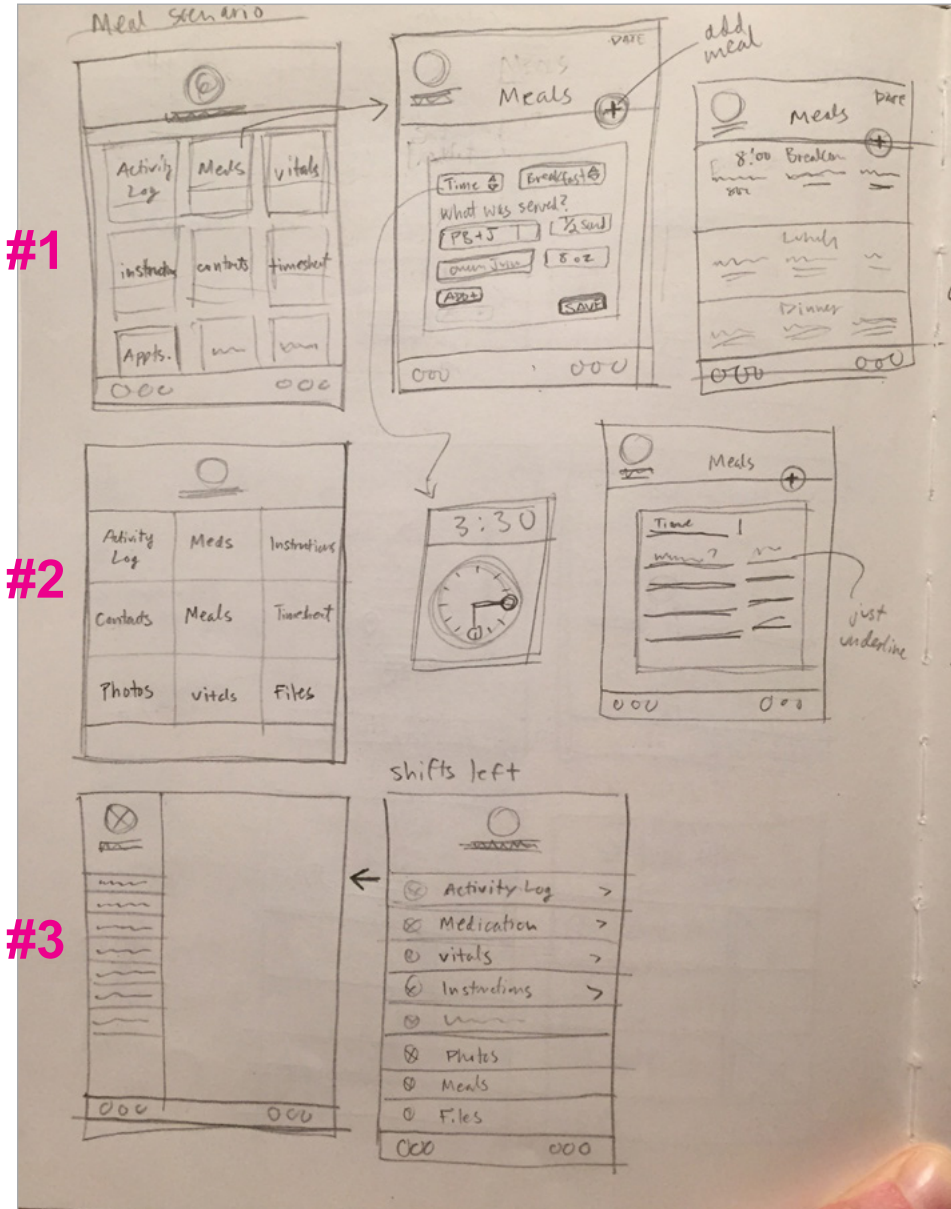


**#1** The caregiver might work with more than one elderly person, so I wanted the app to have a page that allows them to select the patient they are working with and clock in for their shift.

# 06

## Initial Sketches

Exploration of the caregiver **main portal**, meals, medication alert, and glucose reading screens.

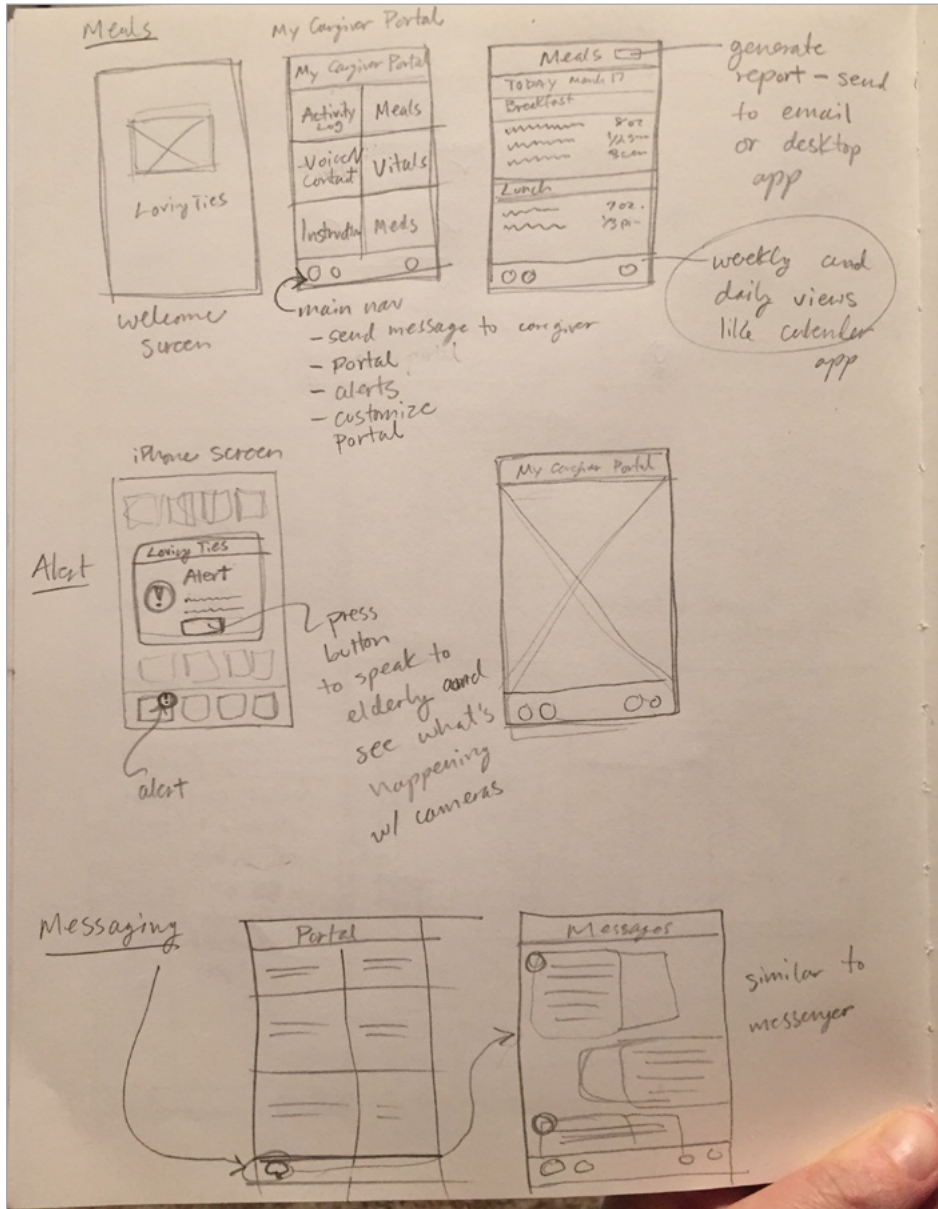




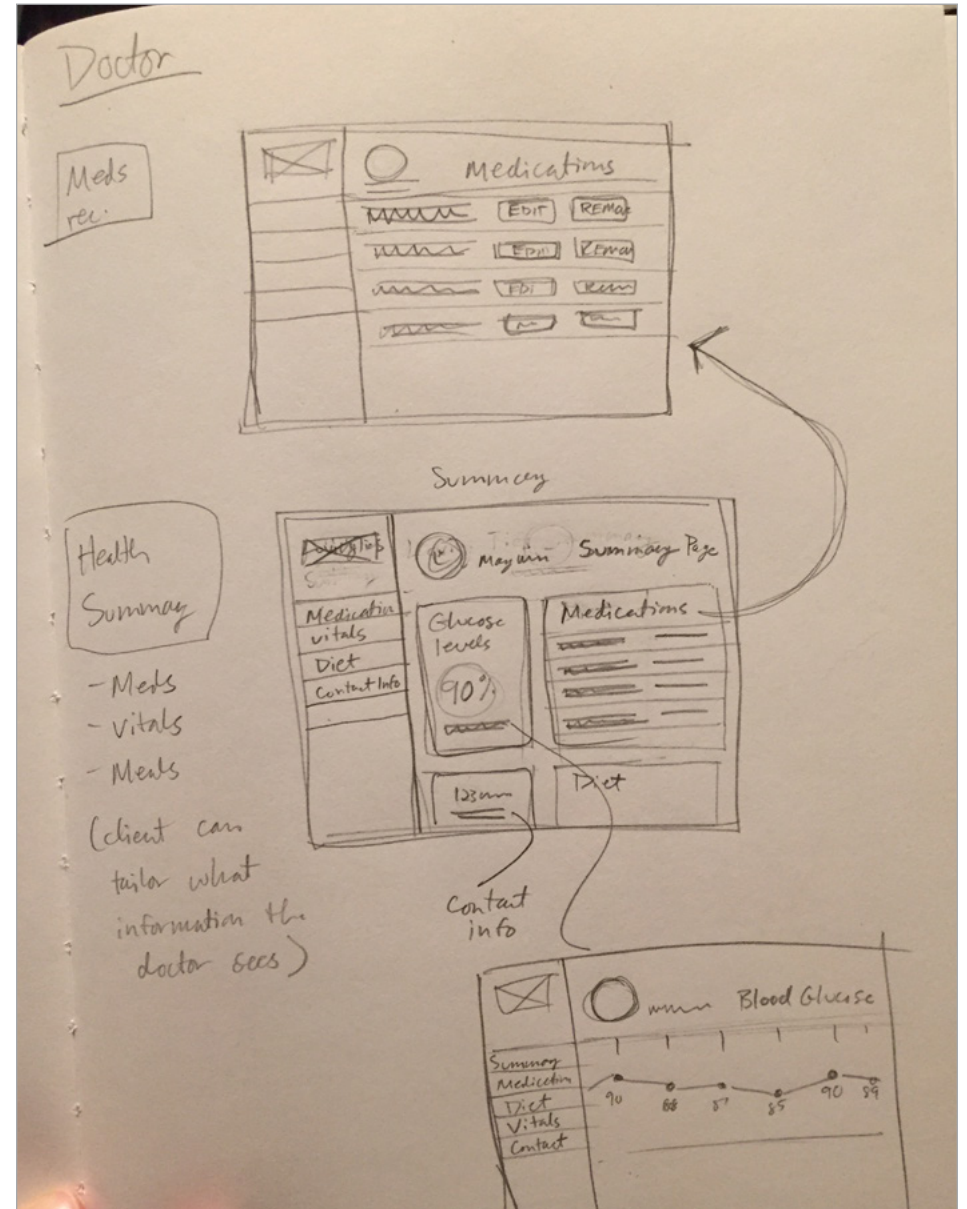
# 06

## Initial Sketches

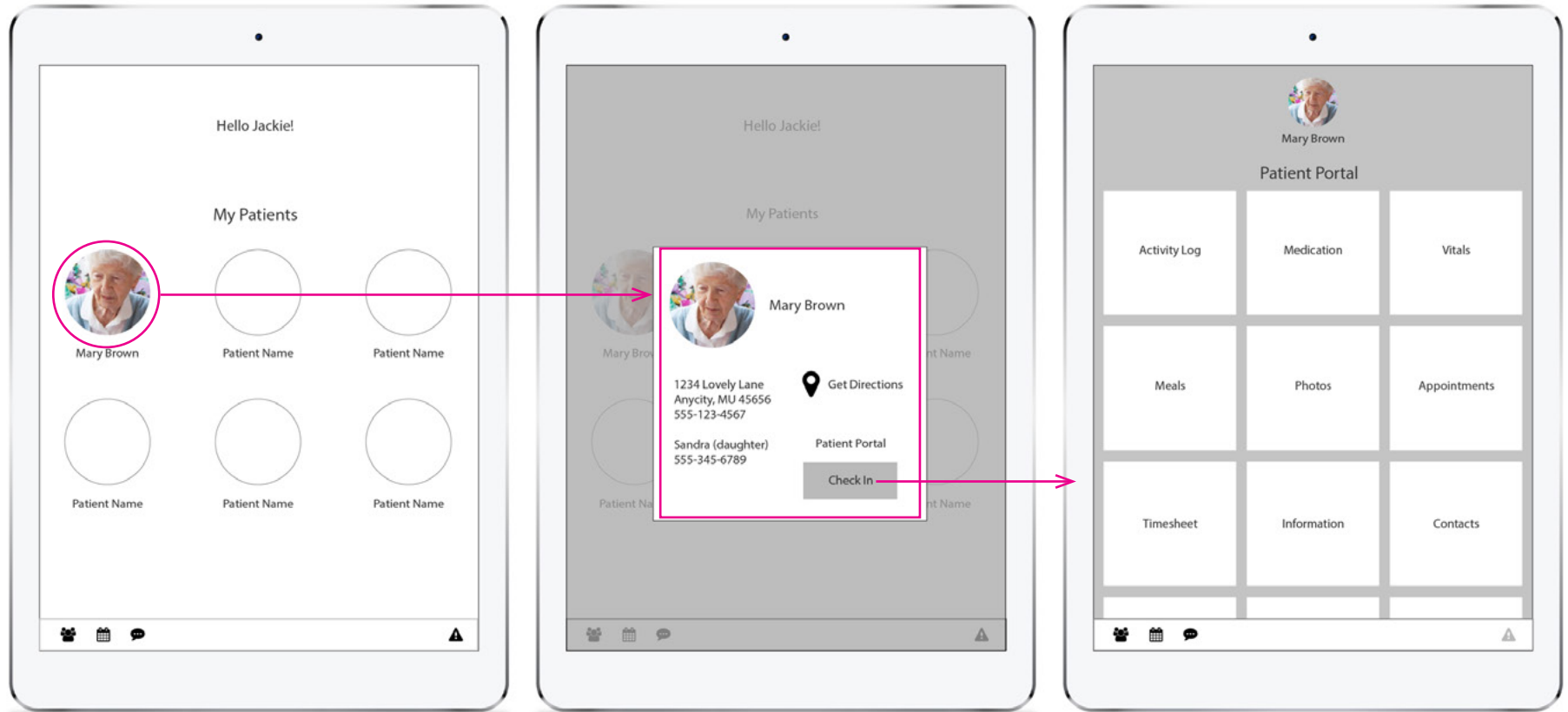
Exploration of the client iPhone main portal, alert/voice contact, and messaging screens.



Exploration of the doctor desktop app, which includes a main summary screen and screens specific to vitals, diet, medication, or whatever information the client chooses to share with the doctor.



# 07 Wireframes - Caregiver



Caregiver home screen - select patient

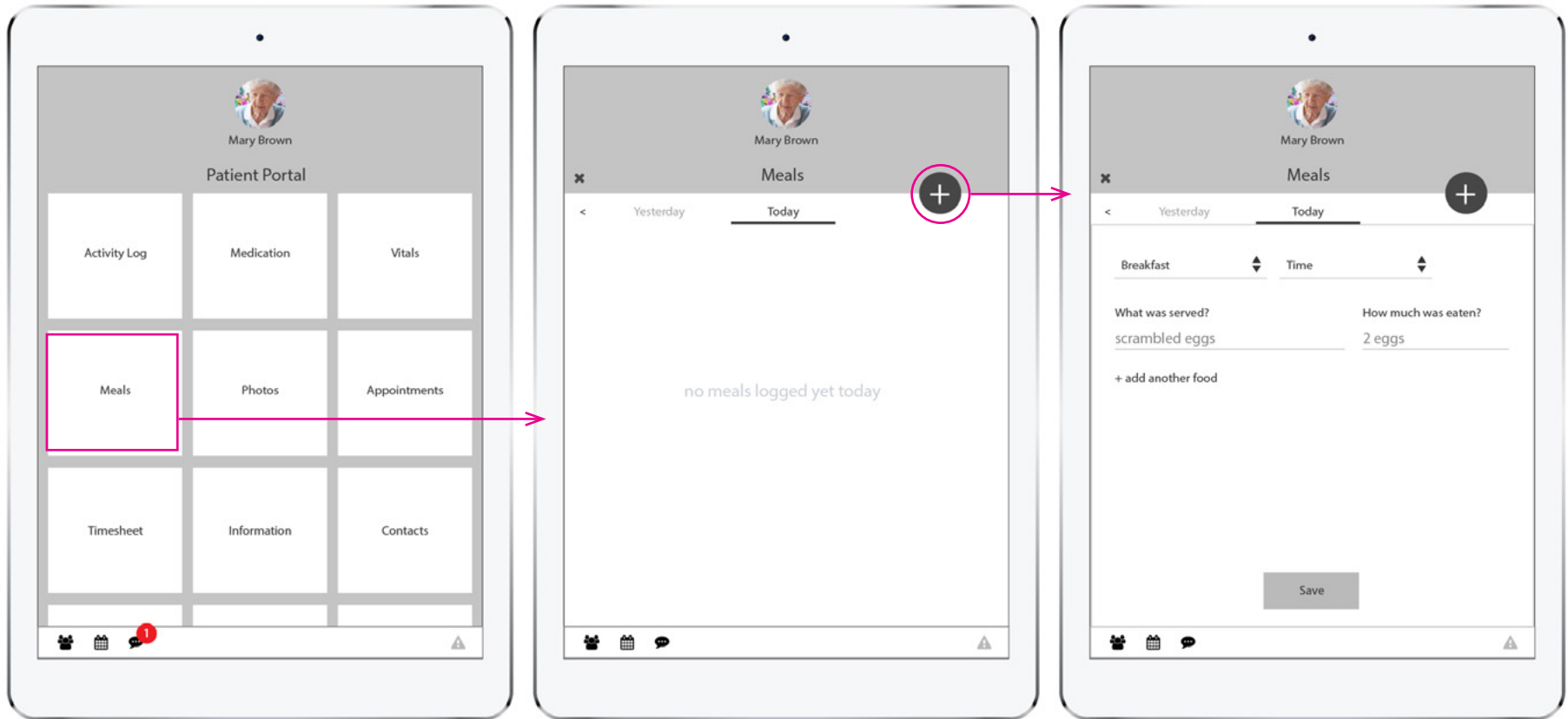
Selected patient - shows address and map option.

Patient Portal screen

Clicking "Check In" locks in the caregiver on their timesheet.



# 07 Wireframes - Caregiver

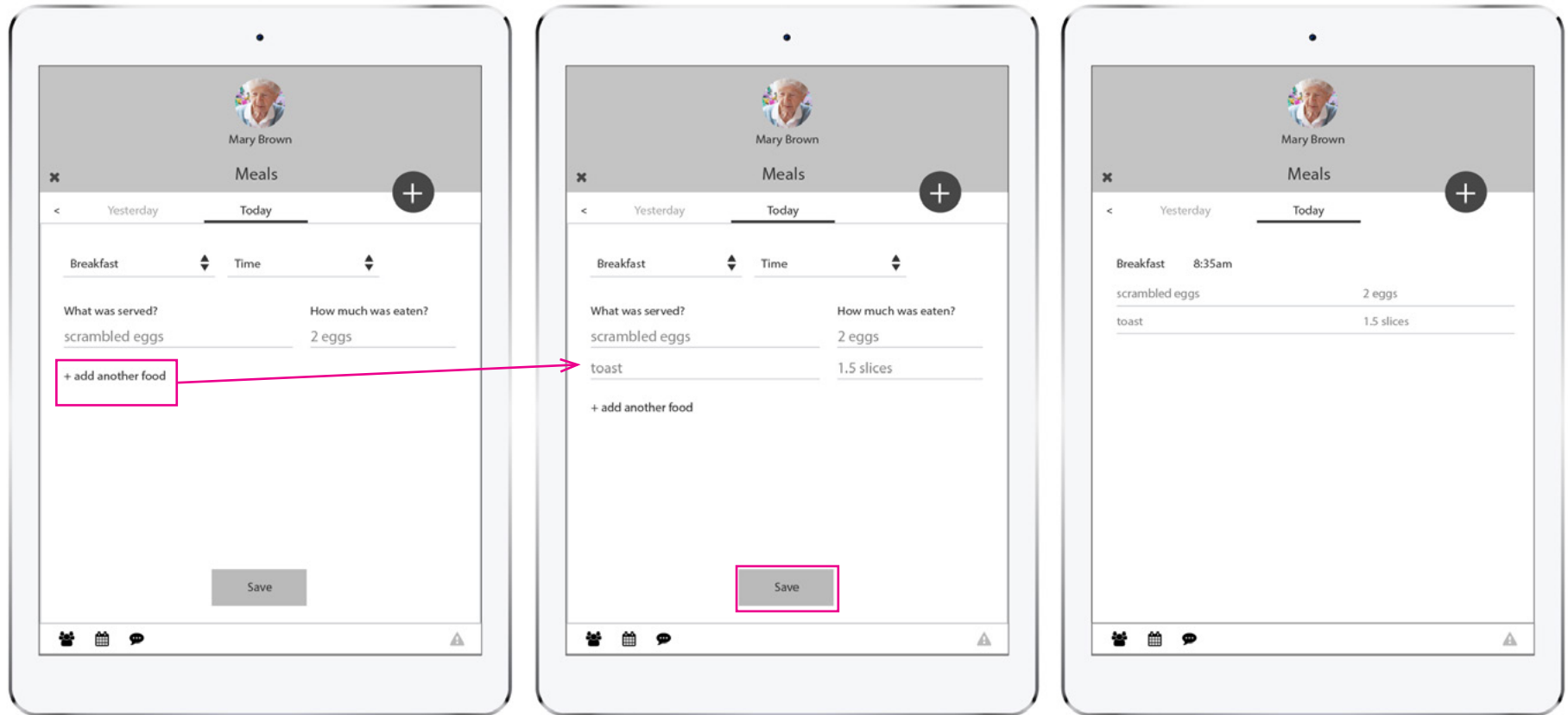


*Patient Portal screen*

*Caregiver adds meal info by touching "Meals"*

*Touching the "+" button brings up a form screen where the caregiver can select the meal, time, and add foods.*

# 07 Wireframes - Caregiver

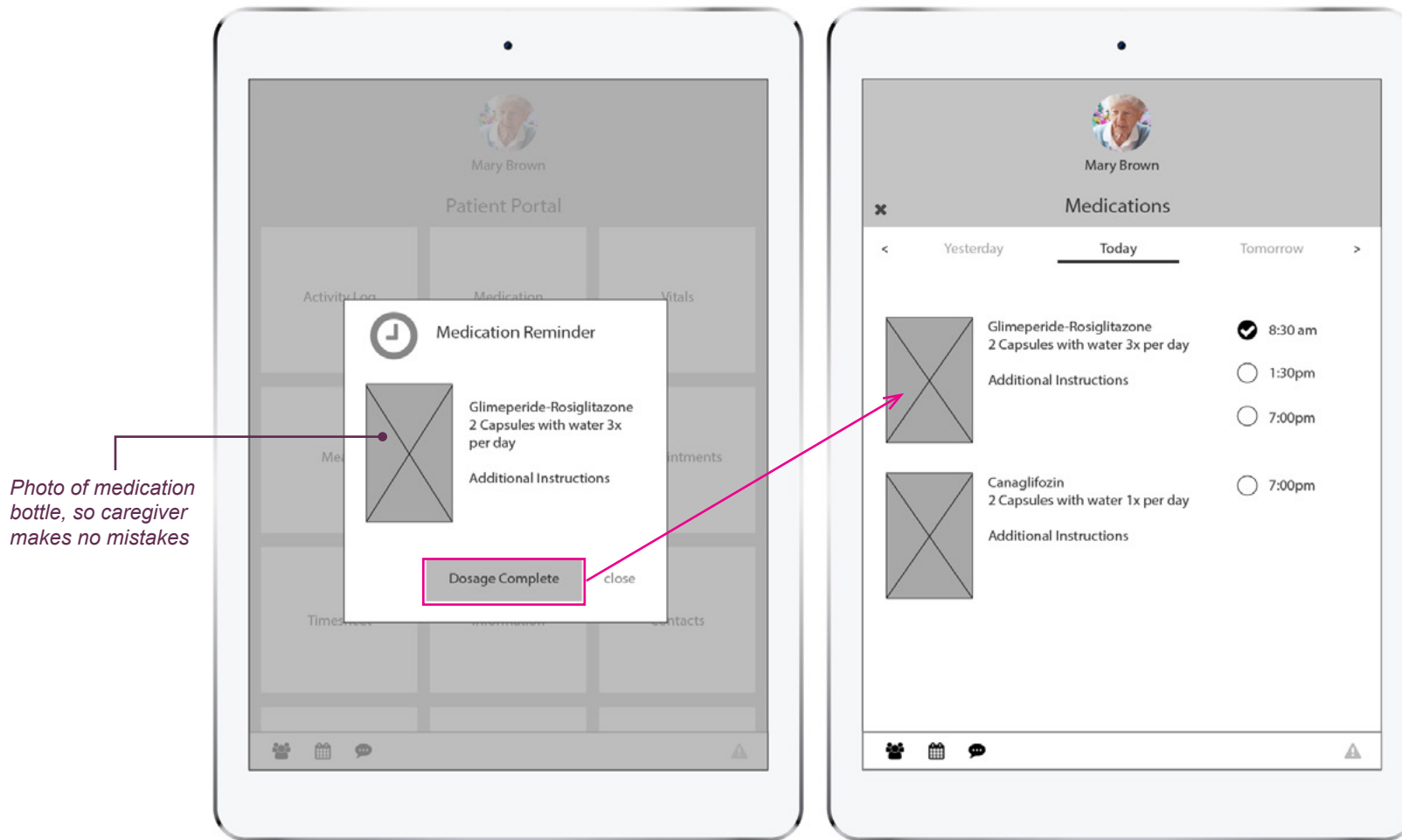


*Adding food to meal list*

*Touching "Save" logs the meal*

*Finished meal log screen*

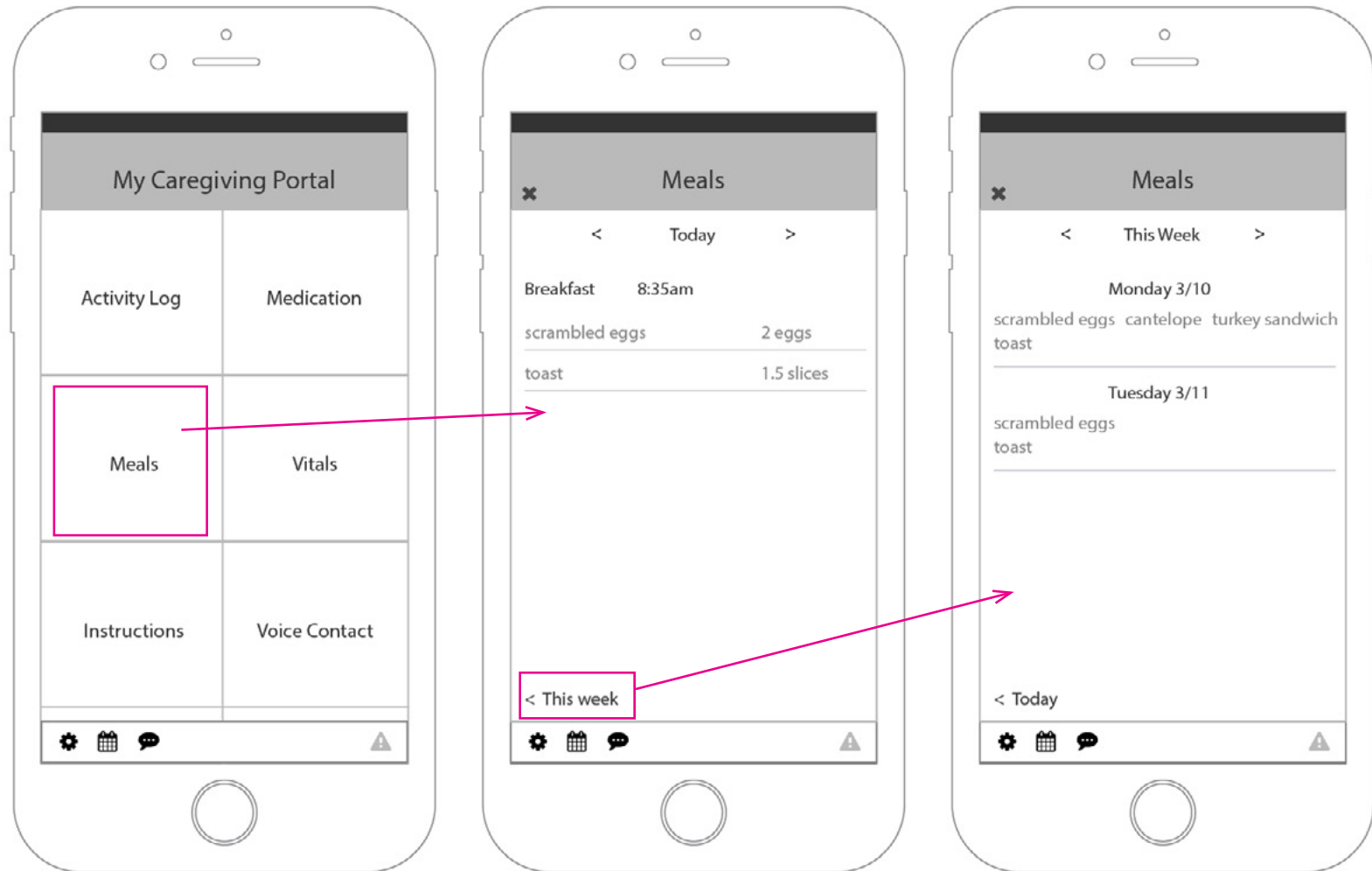
# 07 Wireframes - Caregiver



*Automatic medication reminder*

*Touching "Dosage Complete" logs the medication dose.*

# 07 Wireframes - Client

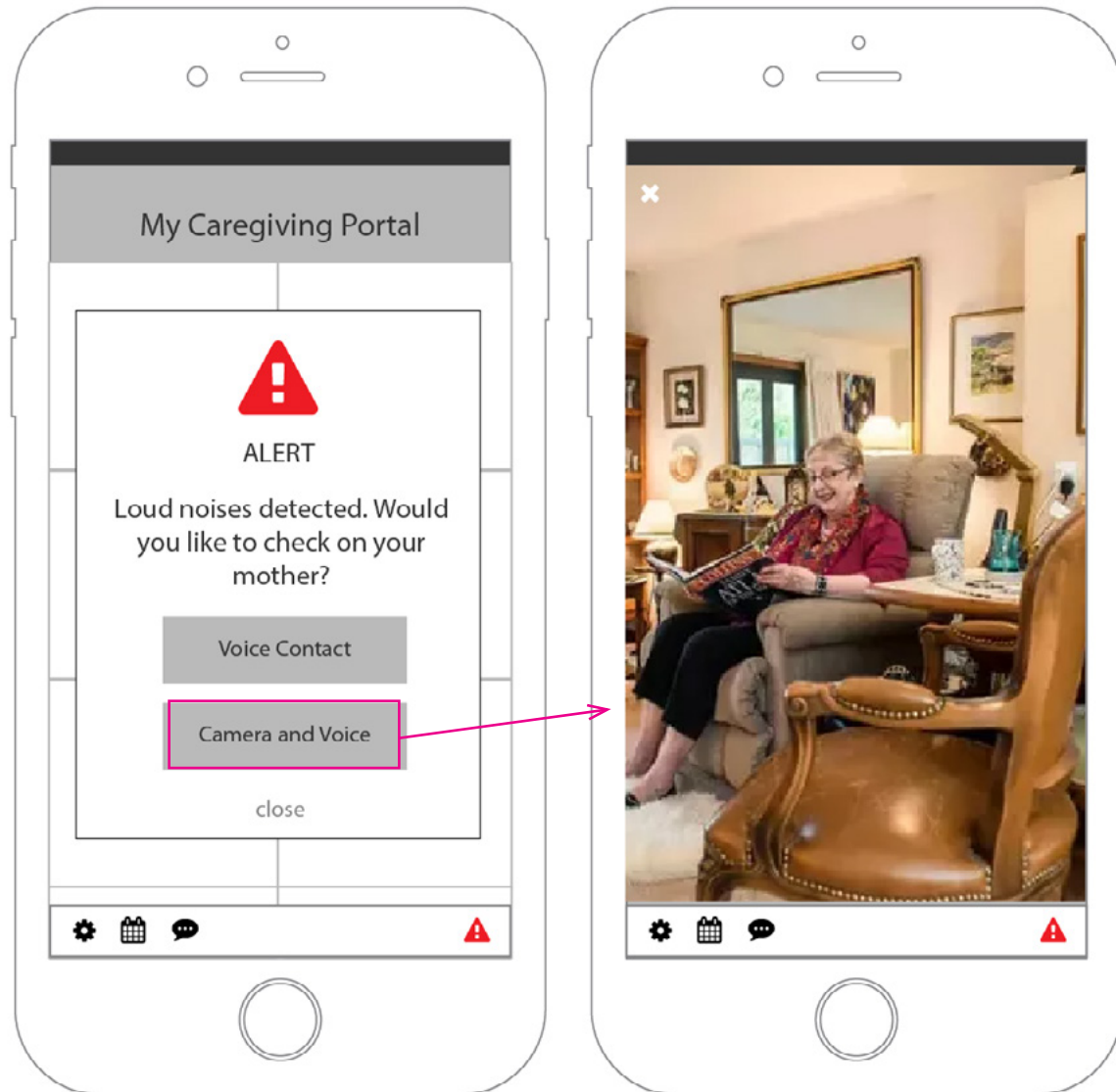


*Meals button leads to a meals log screen with both detailed daily logs as well as a weekly view.*

# 07 Wireframes - Client

*Automatic alerts triggered by a smart home device can let the client know if there are unusual sounds or movement in the home.*

*The client can contact the elderly person through the smart home device and view the home with security cameras.*



# 07

## Wireframes - Doctor

**Summary**

**Medications**

**Vitals**

**Diet**

**Contact Info**

**Care Summary**

**Blood Glucose**

Day	Glucose Level
1	1.0
2	0.5
3	0.8
4	0.9
5	0.8
6	0.7

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim

**Medications**

- Glimeperide-Rosiglitazone  
2 Capsules with water 3x per day
- Canaglifozin  
2 Capsules with water 1x per day

**Contact**

1234 Lovely Lane  
Anycity, MU 45656  
555-123-4567

Sandra (daughter)  
555-345-6789

**Diet**

*The doctor's care summary screen. The doctor will be able to edit medications, view vitals, and view any other information that the client chooses to share.*

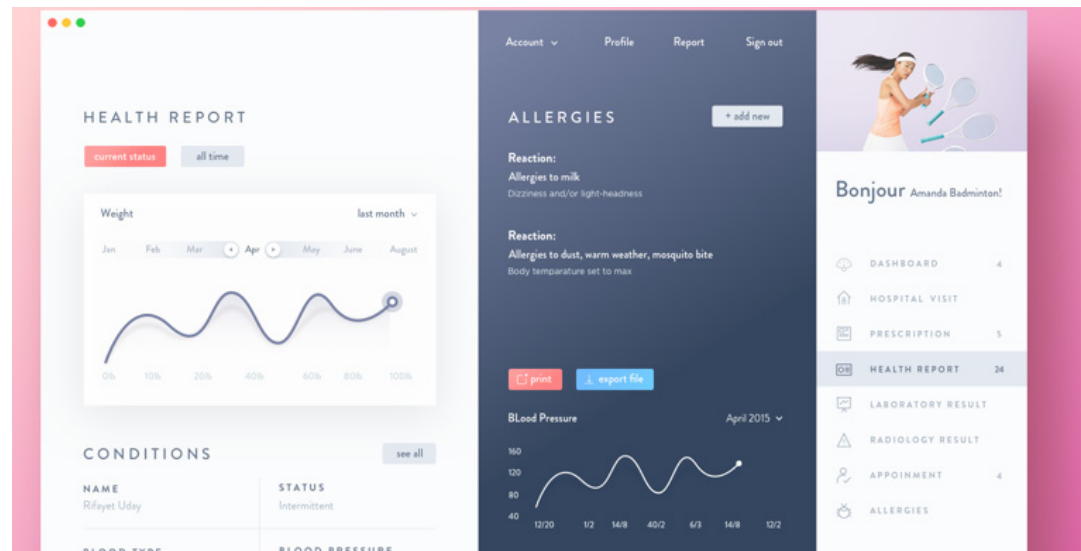
# 08 Visual Inspiration

Overall, I liked the bright, flat colors of the apps I found.

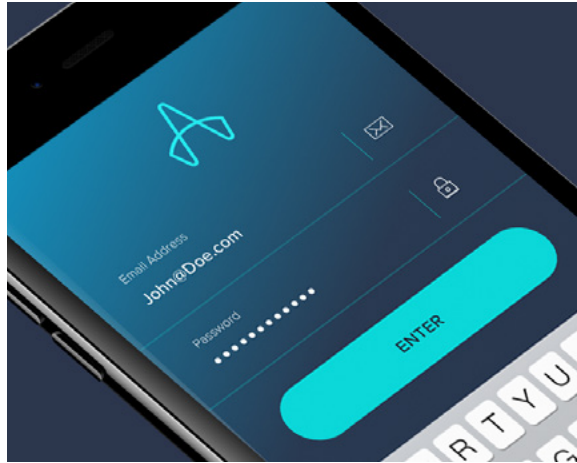
I also found inspiration for fields and health care apps.



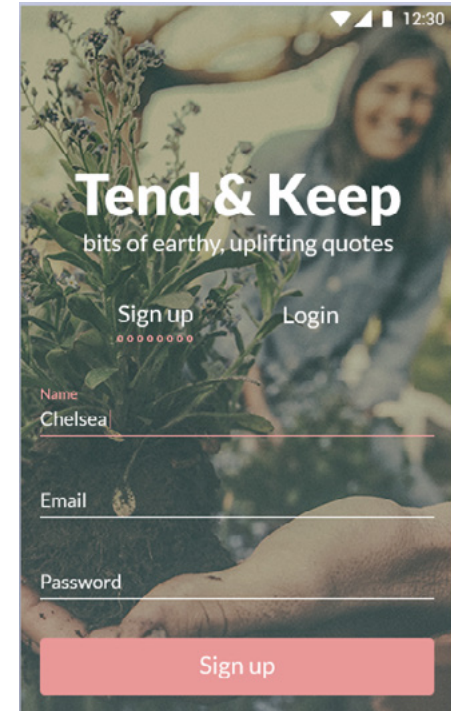
*Inspiration for medical and vital statistics*



# 08 Visual Inspiration

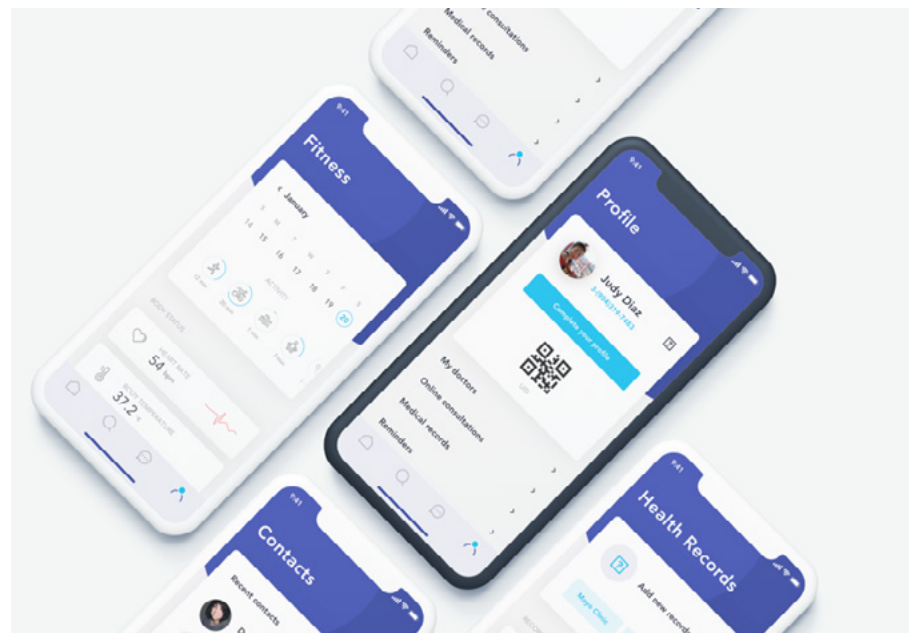
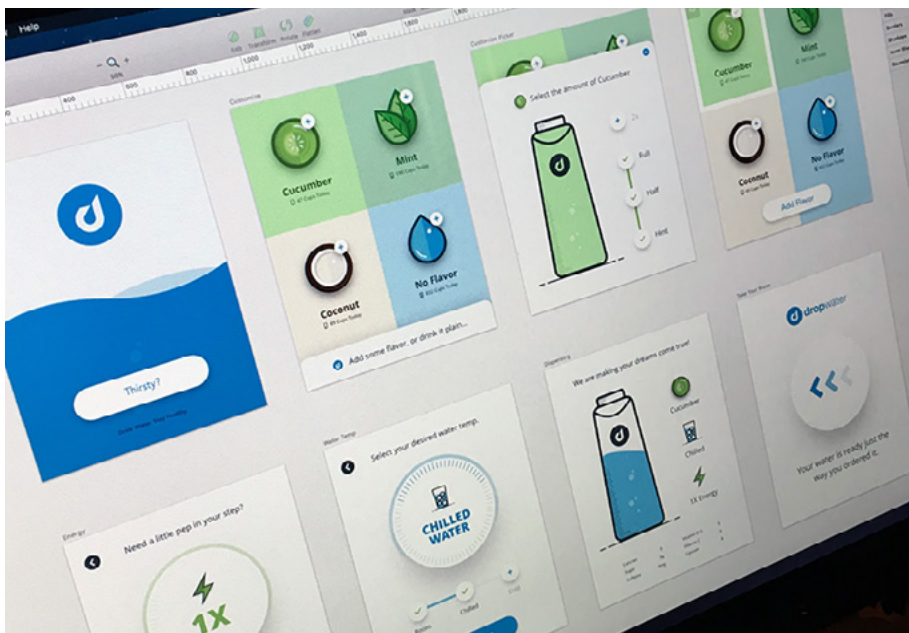


*Fields and forms design inspiration*

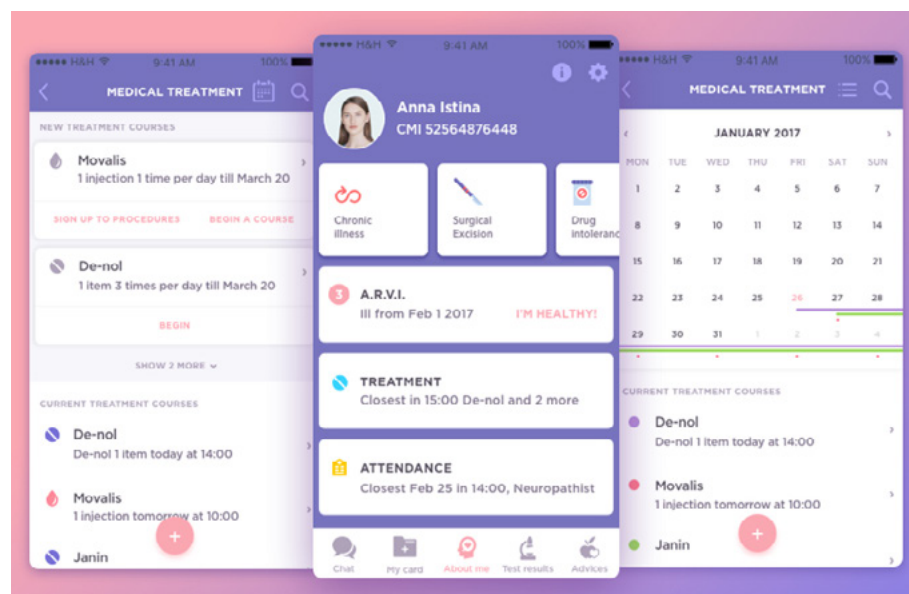
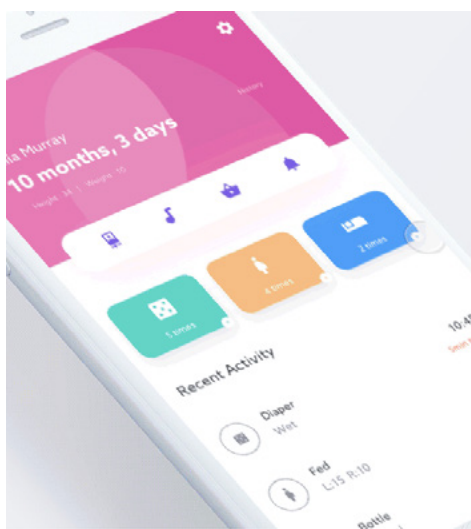
A screenshot of a mobile application form titled "New York State Request for Contact". The form is white with a blue header. It contains four main sections: 1. "First Name" with the value "Jonathon" and a blue checkmark icon. 2. "Last Name" with the value "Ende" and a blue checkmark icon. 3. "Email Address" with a grey circular icon containing the number "3". 4. "What is the best time to contact you?" with two radio button options: "Monday 3pm" and "Tuesday 3pm".



# 08 Visual Inspiration

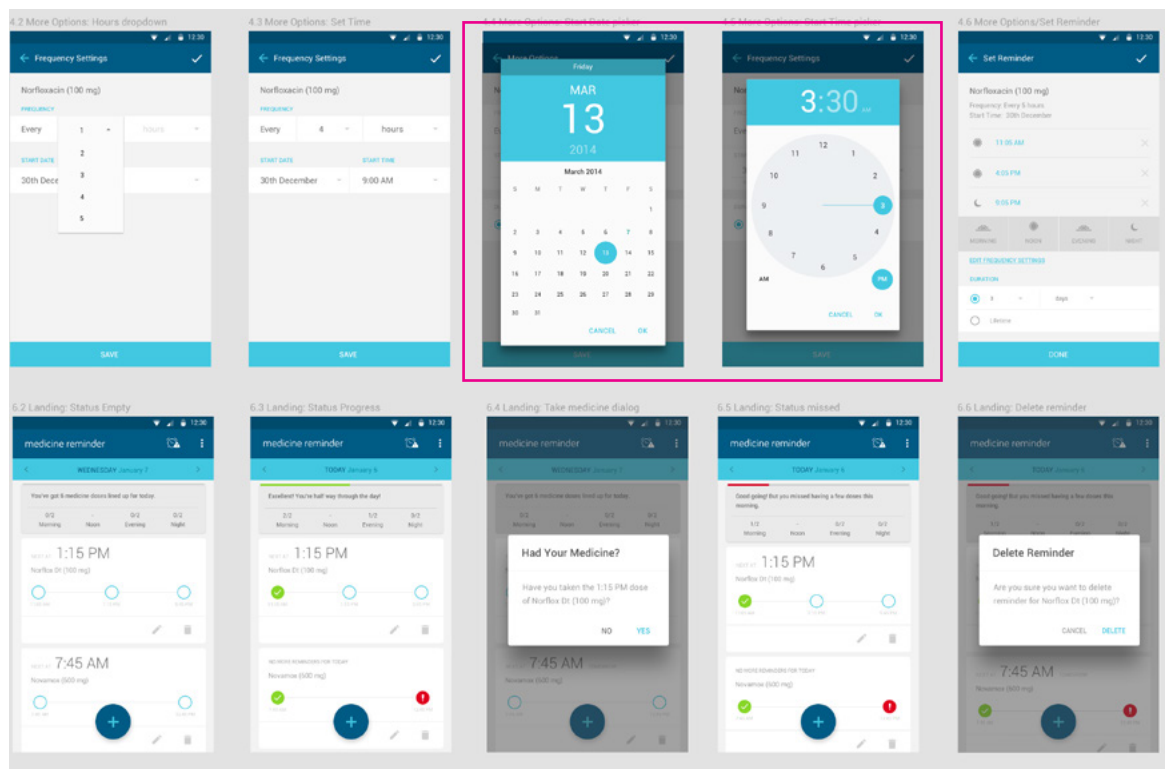


I really like the supporting visuals in this water app



# 08 Visual Inspiration

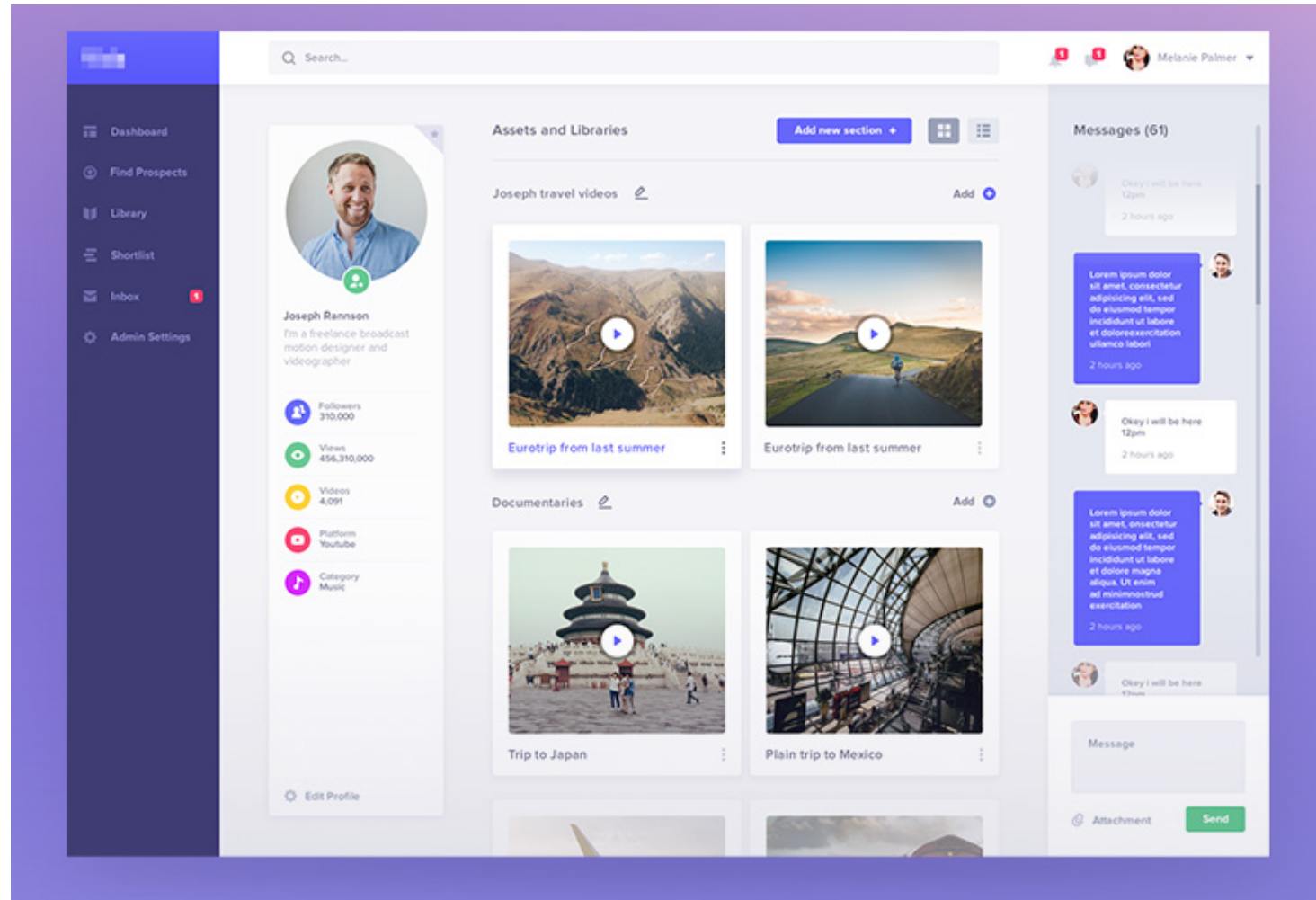
*The date and time popups in this medication reminder app are creative and fun*



*The icon tiles in this app are arranged in an interesting way. This could make an interesting portal page for the iPhone user of my app.*

# 08 Visual Inspiration

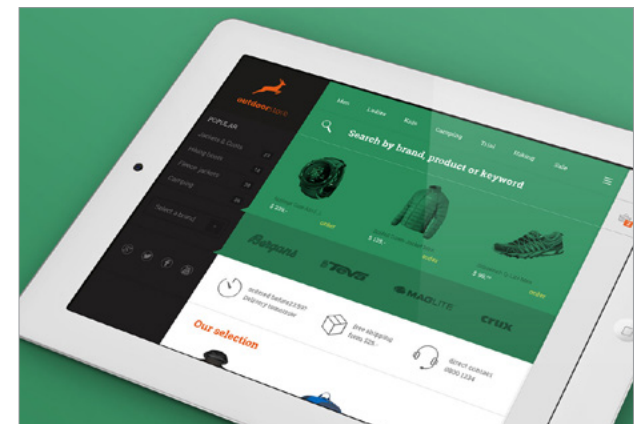
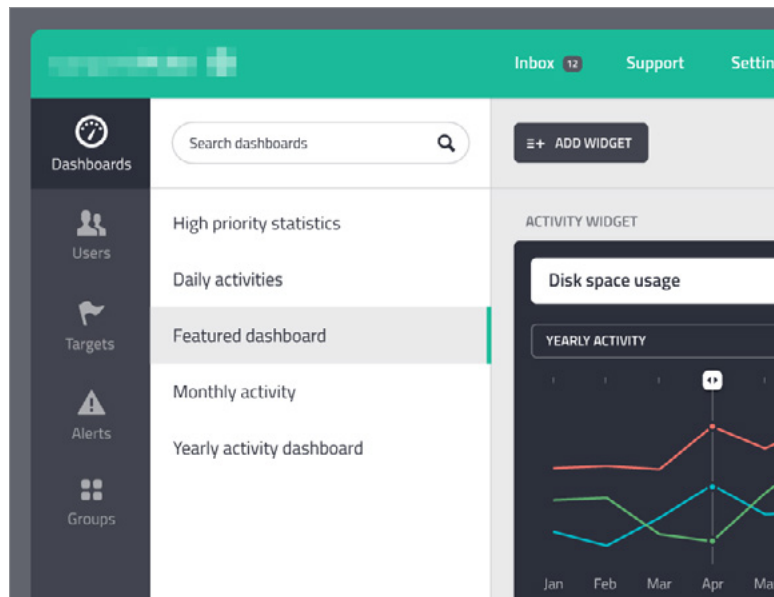
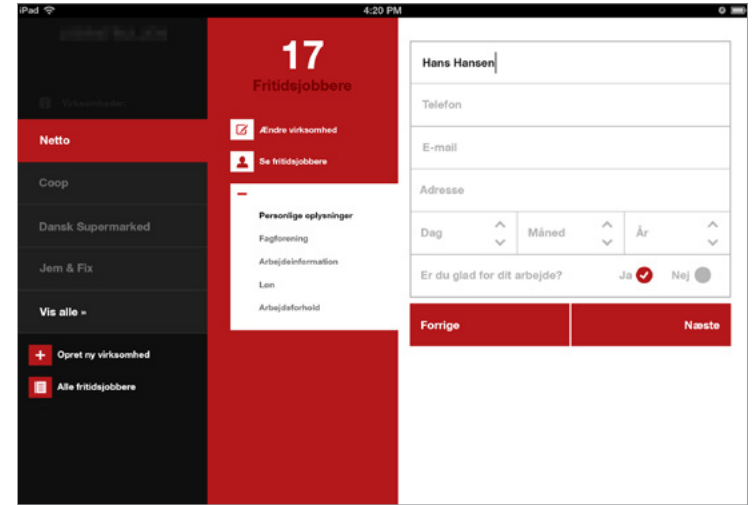
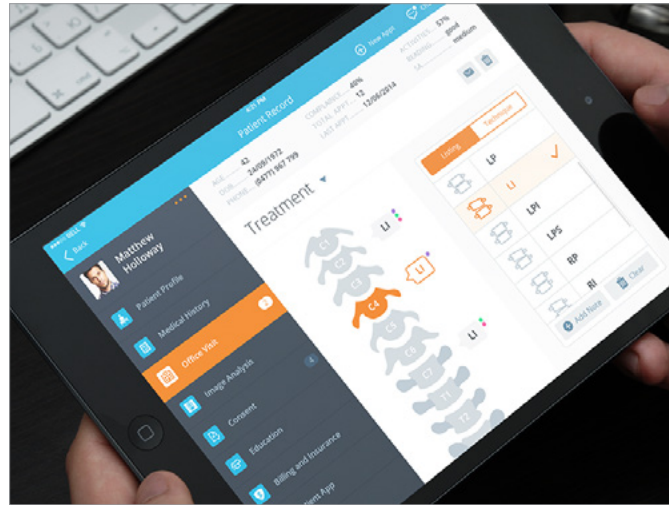
Inspiration for the layout of the Doctor's desktop app portal screen



# 09 Main Navigation Inspiration

Based on the feedback I received on my first wireframes, I decided to explore more main navigation options. I also needed to make the user input fields less laborious to fill out.

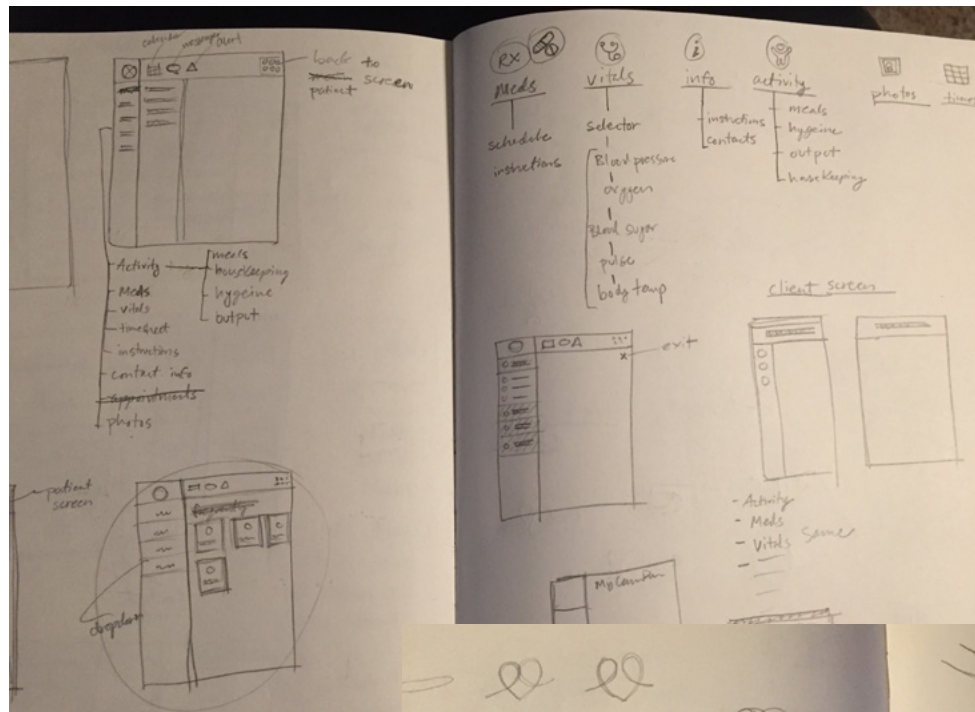
I decided to proceed with a sidebar navigation design.





# 09 Sketches - Main Navigation and Branding

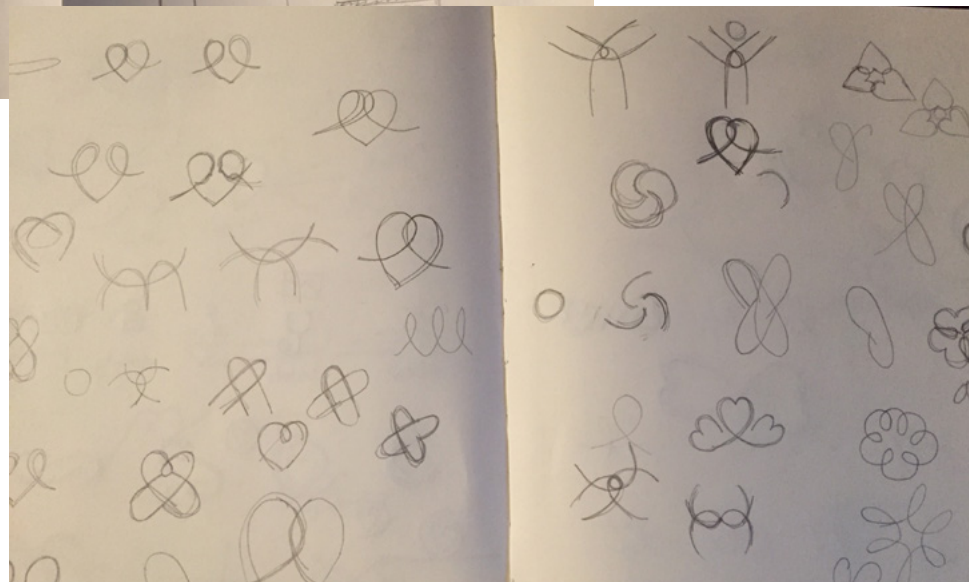
I also did a little logo design and color selection, trying to incorporate the ideas of caring and tying together. I found an image of a Celtic symbol for love that was the inspiration for my logo.



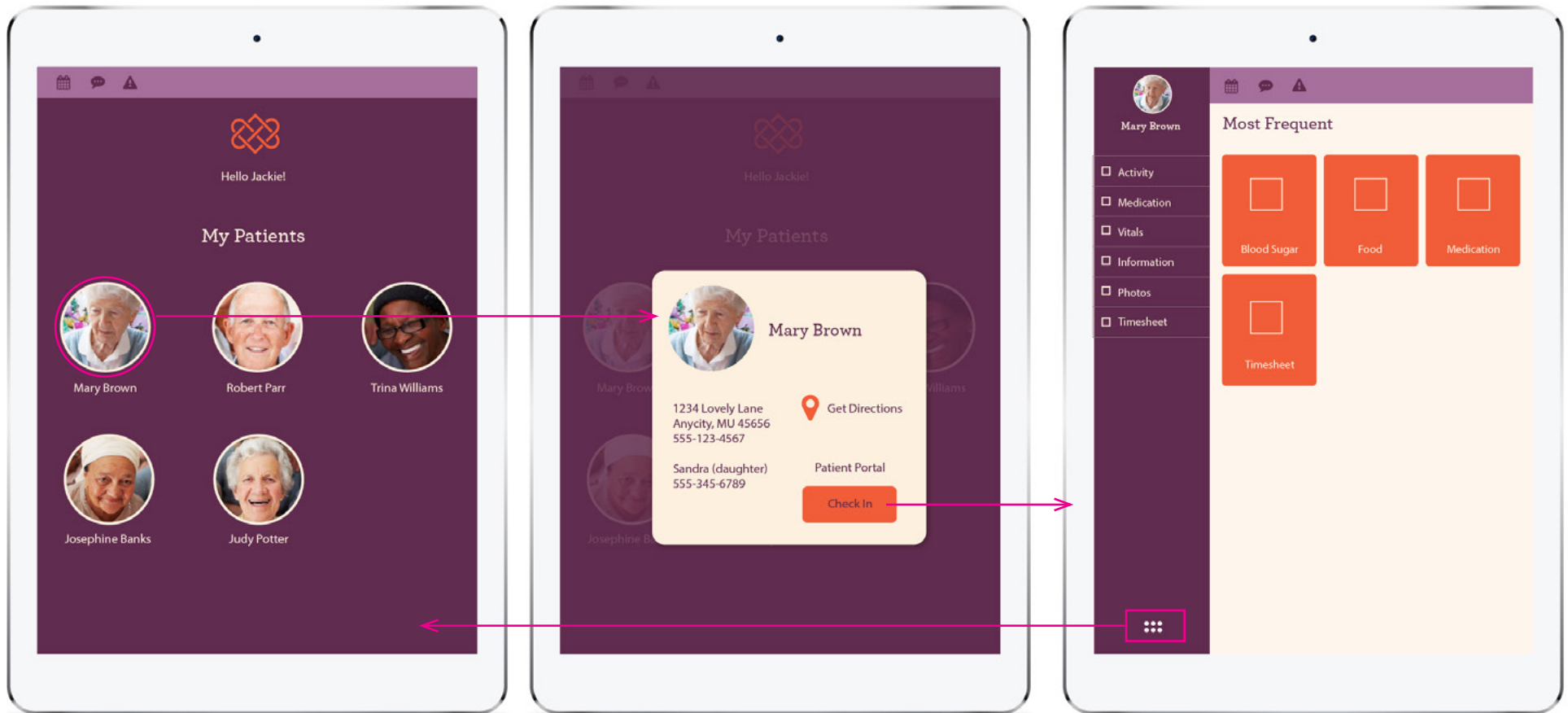
Main nav sketches



Loving Ties



# 10 Wireframes - Caregiver Main Screen



Caregiver home screen - select patient

Selected patient - shows address and map option.

Clicking "Check In" clocks in the caregiver on their timesheet.

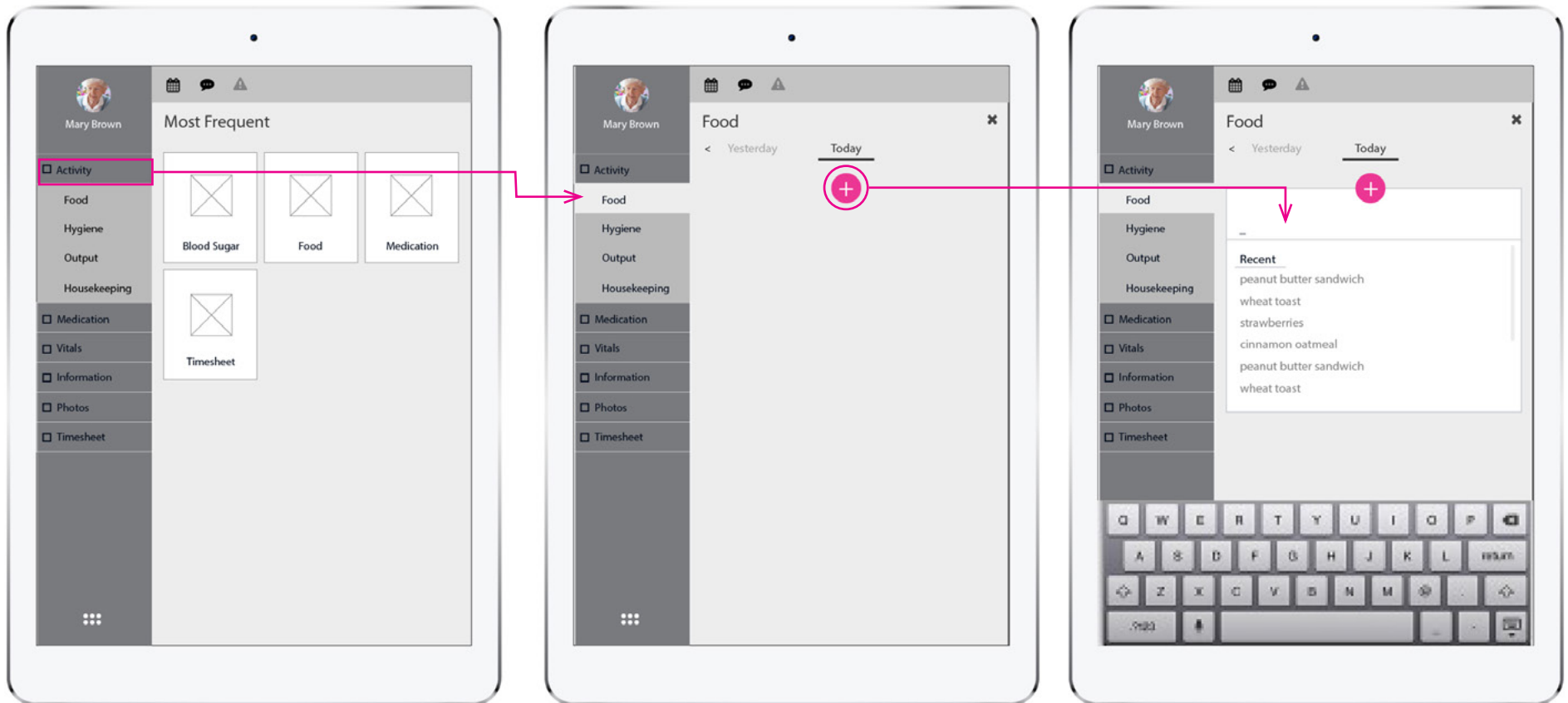
Patient Portal screen

Has main side nav with most frequently used features as tiles.

Multi-circle button brings user back to "My Patients" screen.

(Nav icons still pending design)

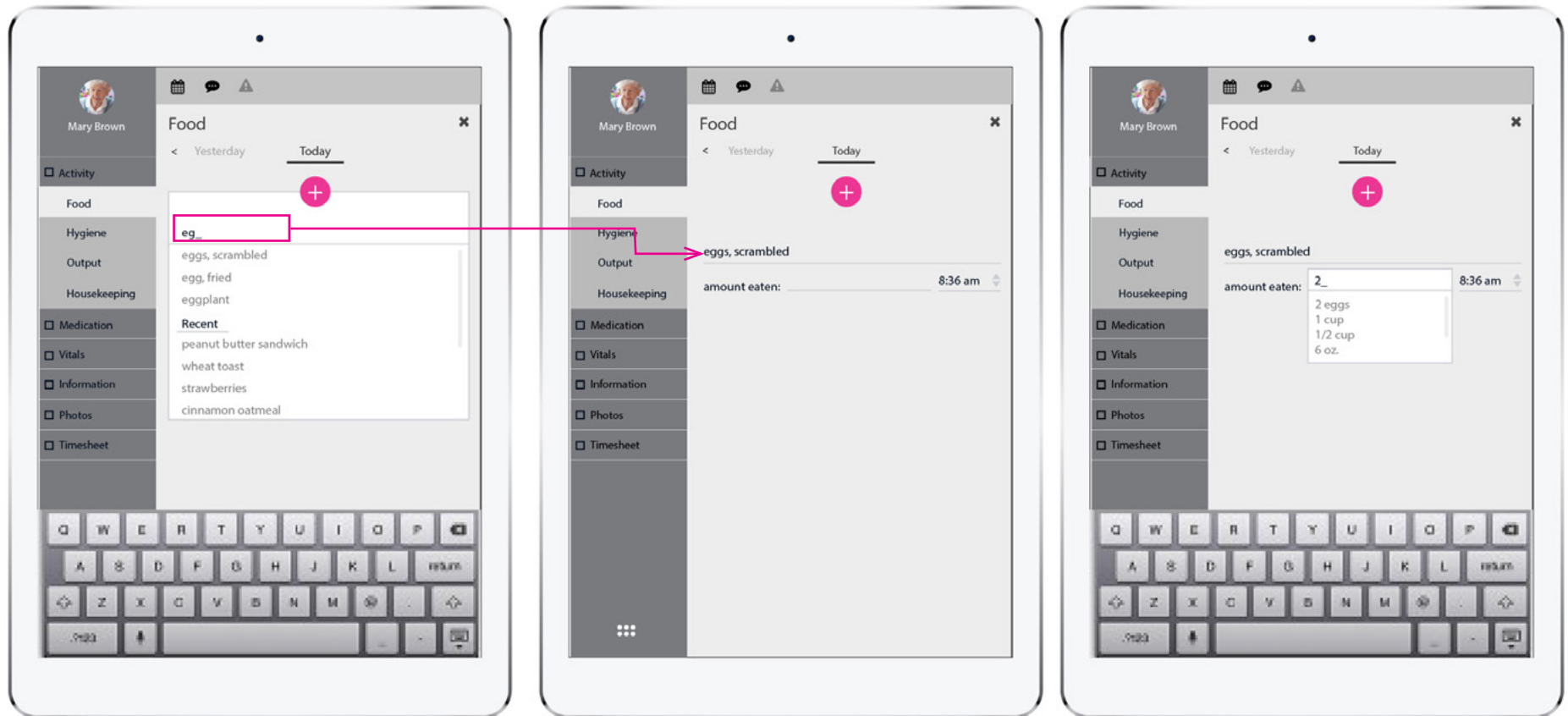
# 10 Wireframes - Caregiver Food Entry



Caregiver presses "+" button to add a food

An entry field pops up, as well as recently added foods.

# 10 Wireframes - Caregiver Food Entry



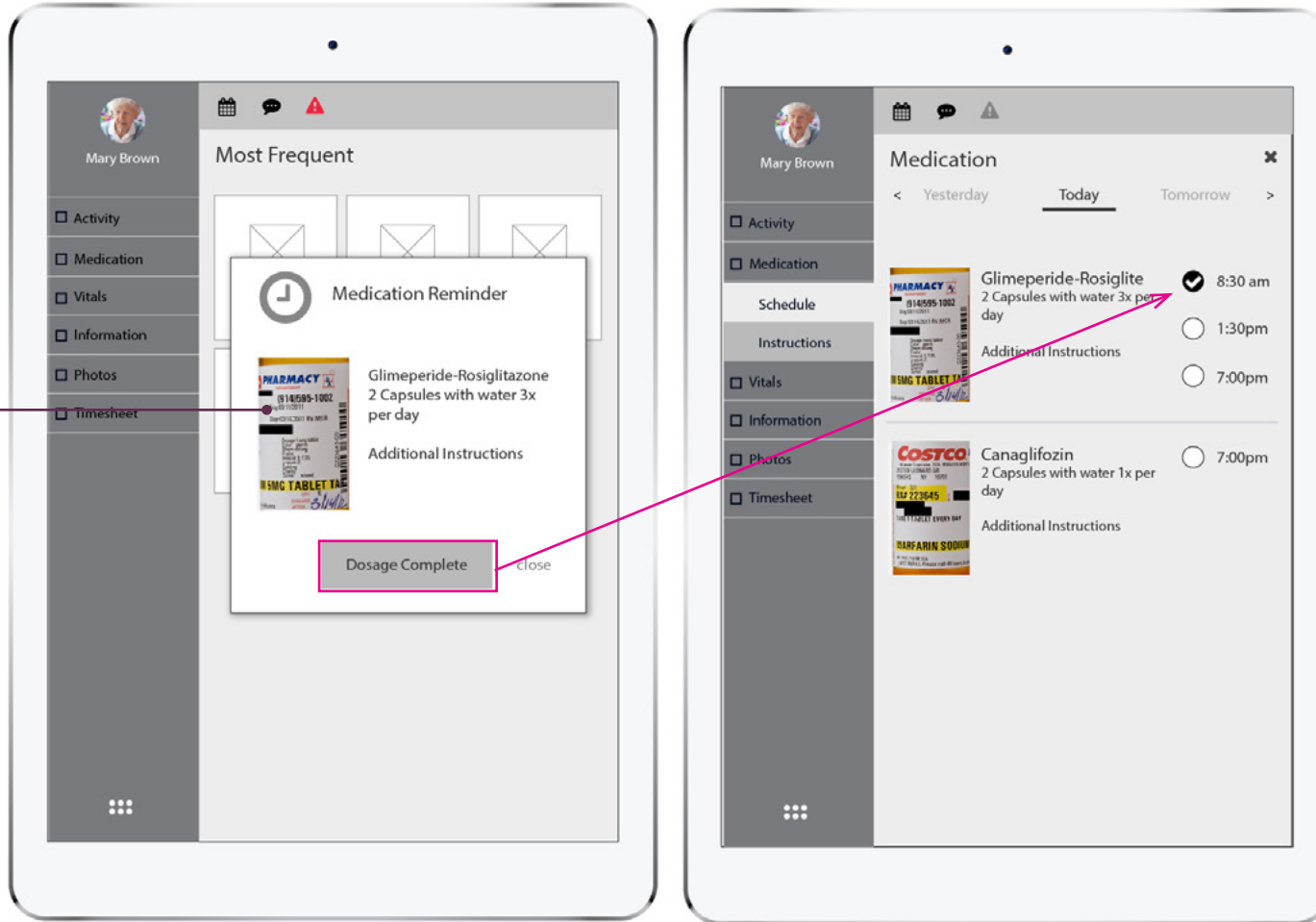
*App auto-fills text as the caregiver types, so likely entries will appear and make entering the information less time-consuming.*

*Caregiver also has the option of entering how much food was consumed.*

*The time automatically fills with the current time, but is also editable.*



# 10 Wireframes - Caregiver Medication Alert

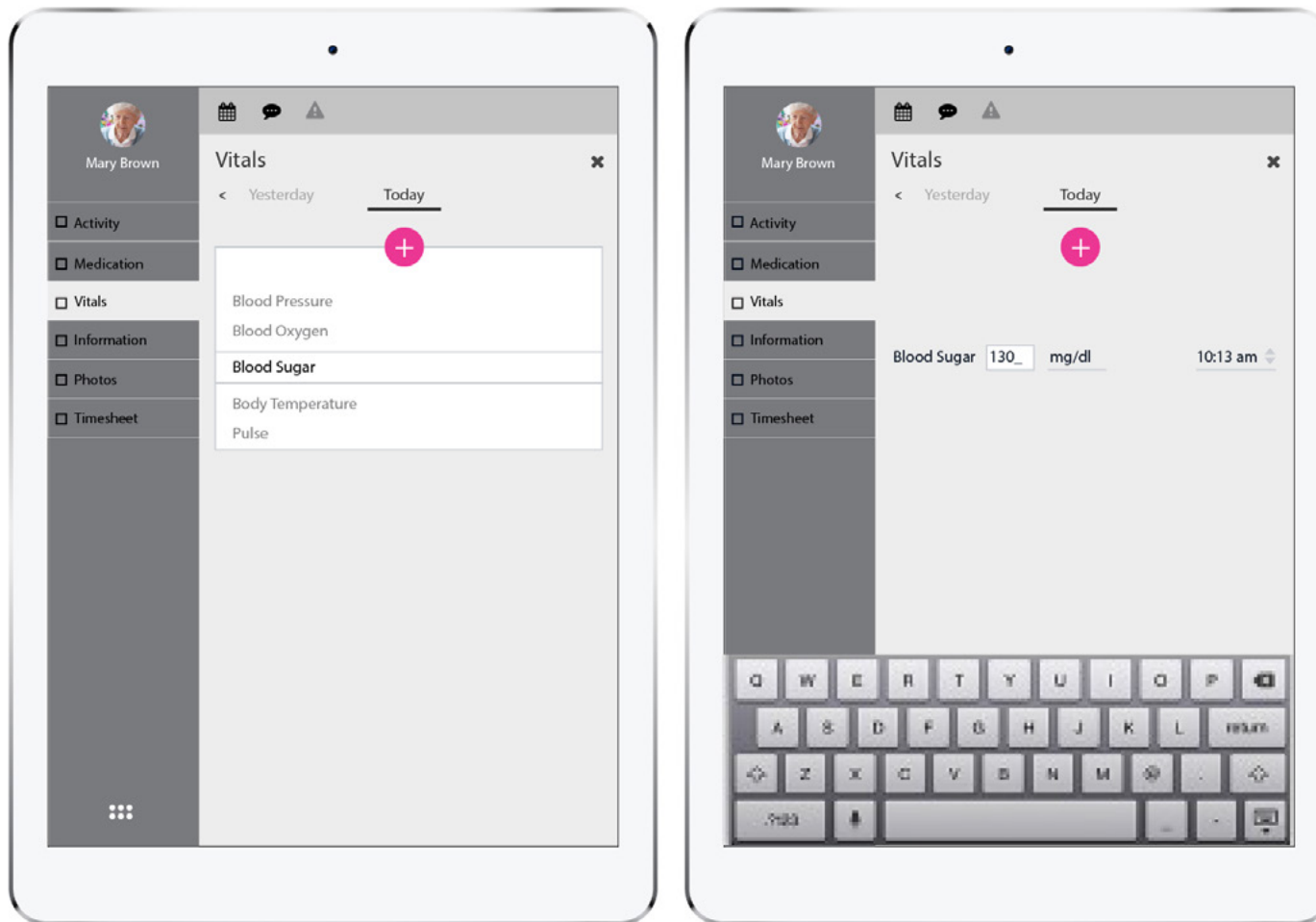


*Photo of medication bottle, so caregiver makes no mistakes*

*Automatic medication reminder*

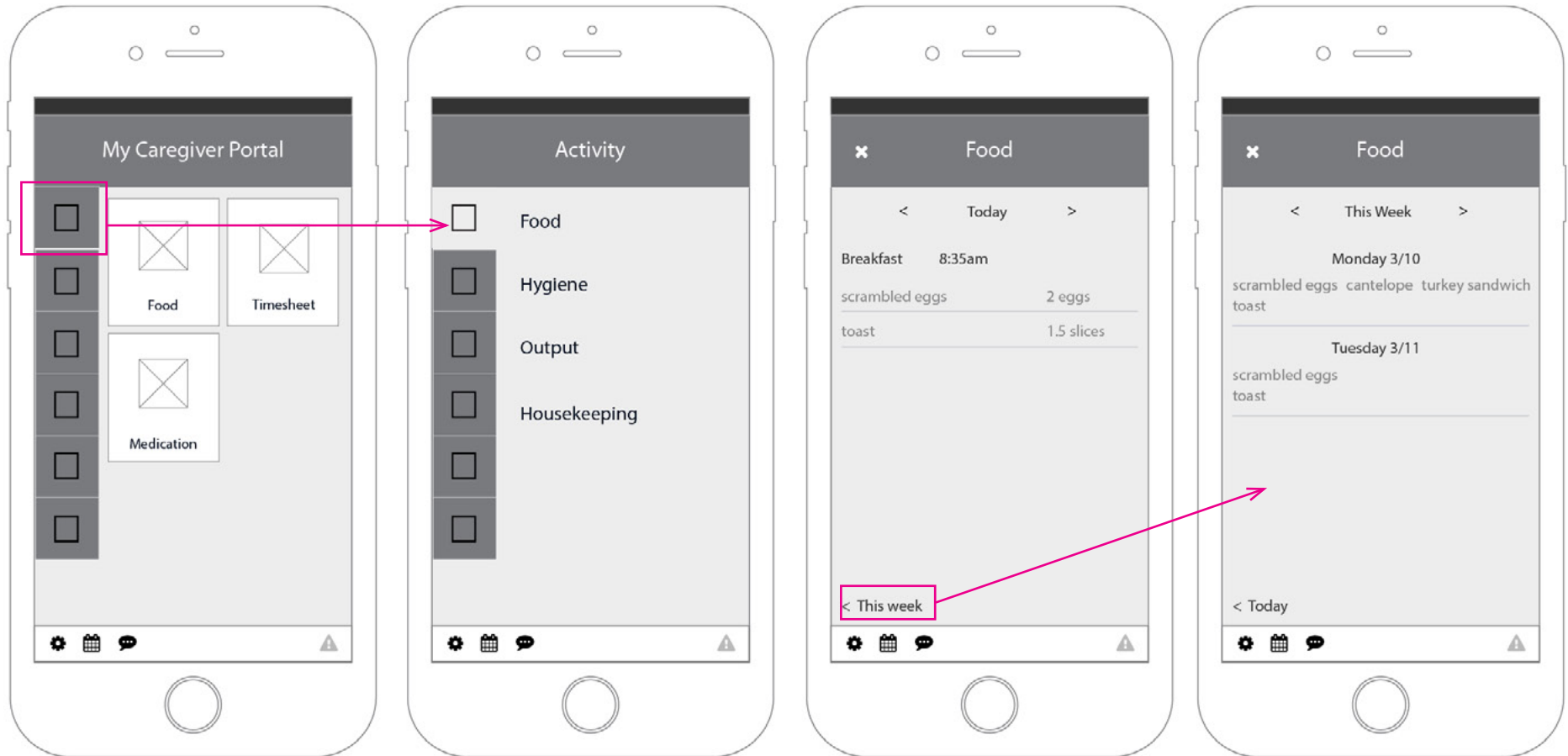
*Touching "Dosage Complete" logs the medication dose for the time of day.*

# 10 Wireframes - Caregiver Vitals Entry



*Vitals entry works much the same way that the food entry screen does, but in this case a contextual menu appears with different vital signs options to choose from.*

# 10 Wireframes - Client Main Screen and Food Log



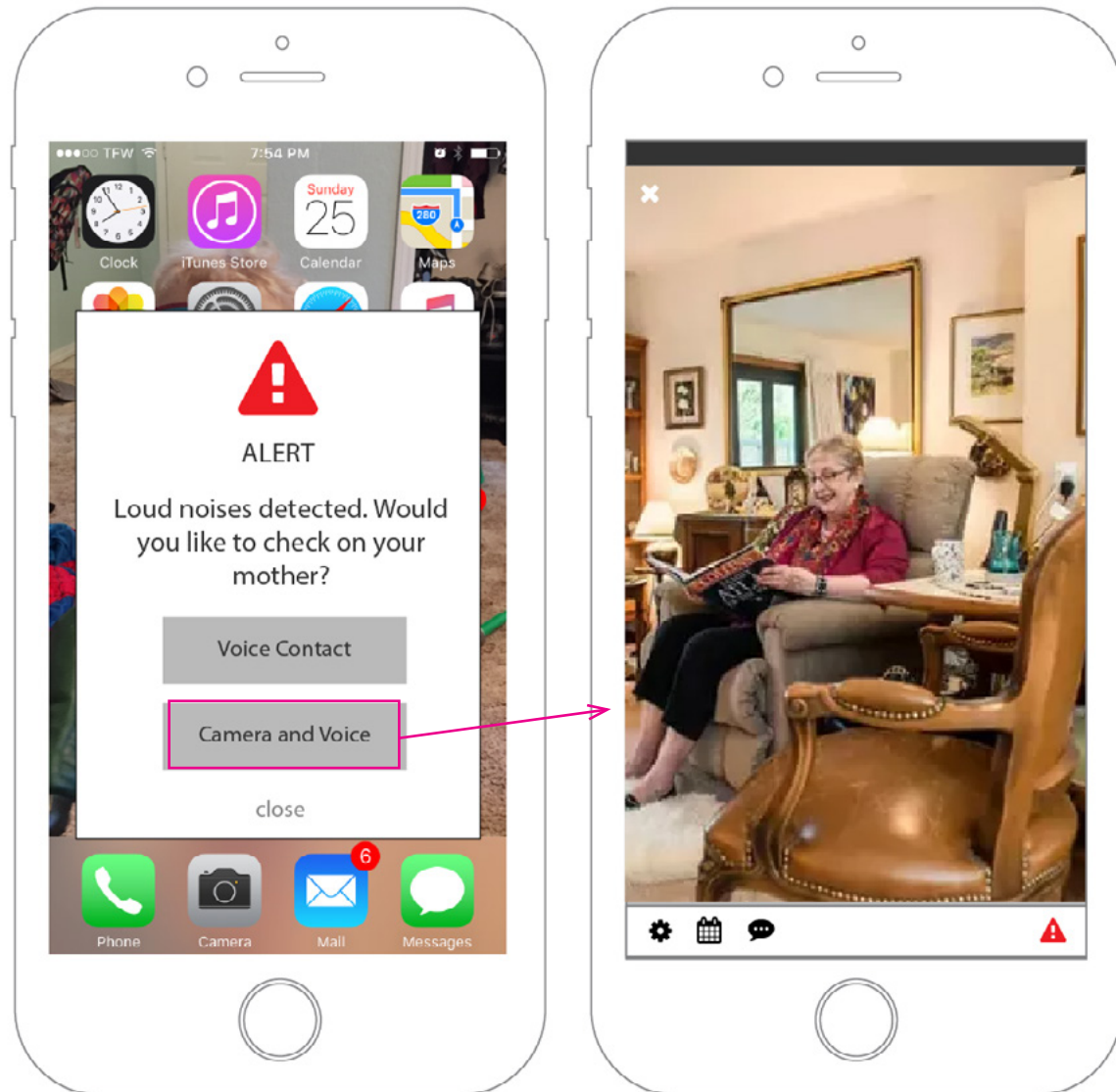
*Main nav on mobile screen reduces to icons only.*

*When icon is pressed, options for that category appear.*

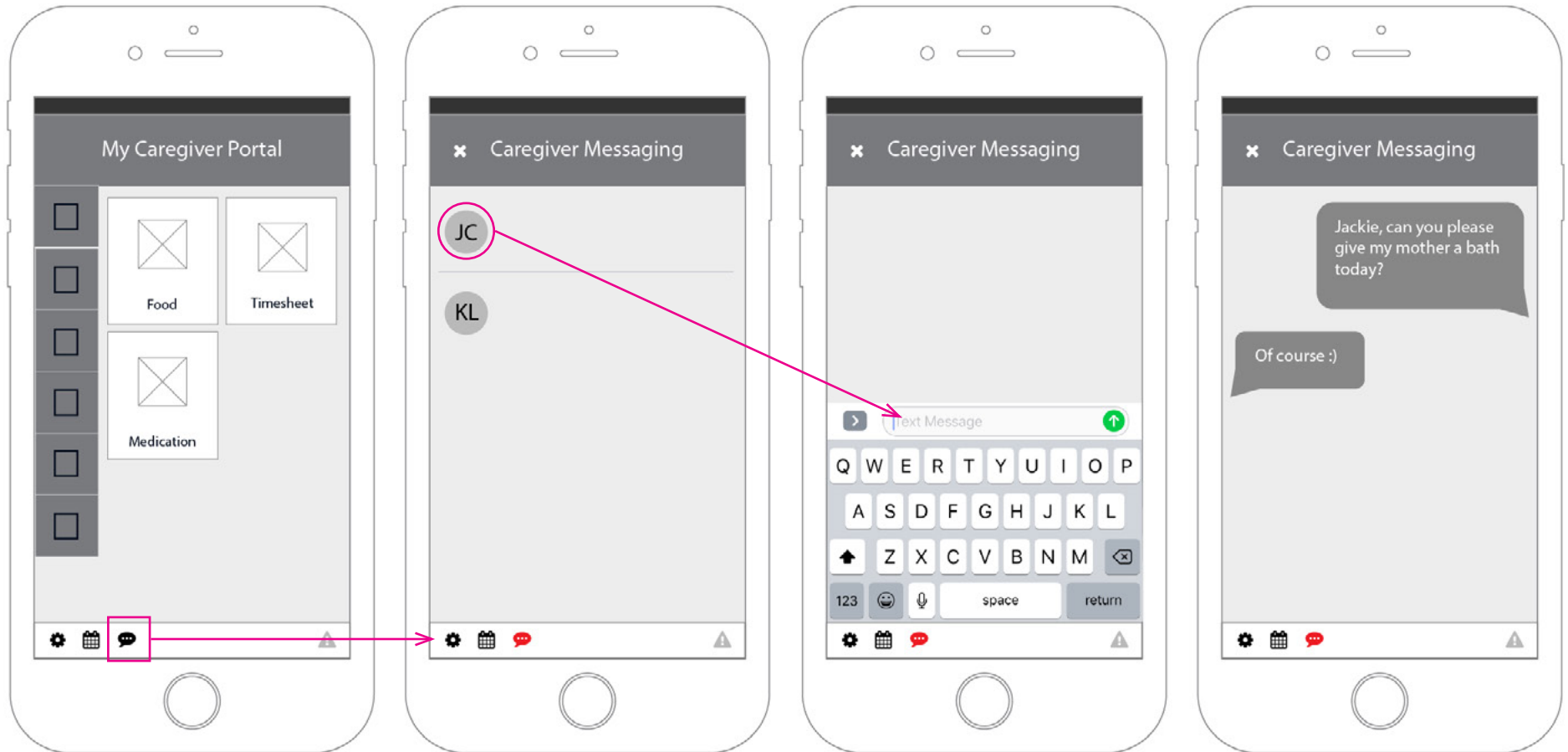
# 10 Wireframes - Client Alert

*Automatic alerts triggered by a smart home device can let the client know if there are unusual sounds or movement in the home.*

*The client can contact the elderly person through the smart home device and view the home with security cameras.*



# 10 Wireframes - Client-to-Caregiver Messaging

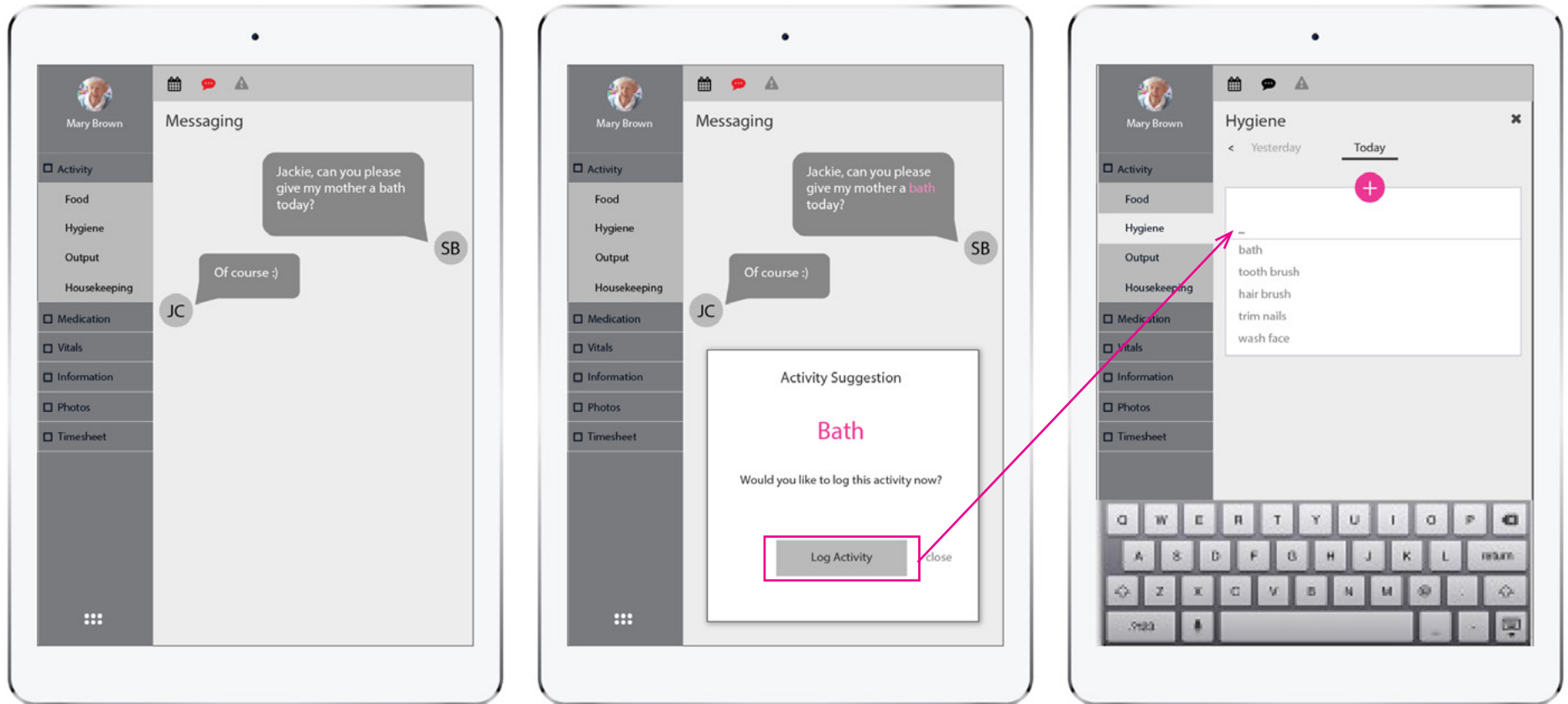


*Client presses messaging icon to send an instant message to caregiver.*

*There may be more than one caregiver.*

# 10

## Wireframes - Caregiver Messaging and Activity Suggestion



*When the client requests a bath, the app asks the caregiver if they would like to log the activity.*

*When "Log Activity" is pressed, it brings the caregiver to the Hygiene screen where a contextual menu allows them to select a likely activity.*

# 10

## Wireframes - Doctor Summary Screen (Desktop)

**Care Summary**

Mary Brown

1234 Lovely Lane  
Anycity, MU 45656  
555-123-4567

Sandra (daughter)  
555-345-6789

**Summary**

**Medications**

**Vitals**

**Appointments**

**Patient Information**

**Appointments**

+ Create New Appointment

April 3, 2018 4:00pm

April 21, 2018 4:00pm

May 12, 2018 4:00pm

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim

**Medications**

**Prescription Information**

Glimeperide-Rosiglitazone  
2 Capsules with water 3x per day

edit

**Pharmacy**

Canagliflozin  
2 Capsules with water 1x per day

edit

556 Some Street  
Anycity, MU 45656

+ Prescribe New Medication

**Blood Glucose - last 10 days**

MG/DL

160

140

139

120

100

3/22 3/23 3/24 3/25 3/25 3/26 3/27 3/28 3/29 3/30

The doctor's care summary screen. The doctor will be able to edit medications, view vitals, and view any other information that the client chooses to share.

Mousing over the glucose chart will reveal that day's number.



# 11 User Testing

I asked two users to complete the caregiver meal entry scenario, and these were the results:

## USER ONE

Was able to determine that “Activity” was the correct button for food entry. Had no complaints about the navigation in general.

## USER TWO

User two is a professional elderly caregiver, and was able to give me several insights into some details of the job that I had no idea about. She shared her paper activity log with all the possible activities that she completes with her patients. She really liked the app and wondered if it would be made fully functional.

She mentioned that she is not allowed to take pictures of her patients due to HIPPA laws, but that she does take pictures of anything that might be a health concern, such as bedsores. She is also required to record bathroom activities, as well as any vomiting the patient may have.

**Weekly Charting**  
 Client Name: VIRGINIA CURREY Dates: 3/10/18 To 3/16/18

Tasks	Sa	Su	M	T	W	Th	F
<b>Hygiene</b>							
Bed bath							
Tub bath							
Shower							✓
Shampoo							✓
Comb/set hair							✓
Skin care							✓
Oral hygiene							✓
Denture care							✓
Shave							✓
Assist to dress							✓
Dementia				✓			✓
<b>Ambulate</b>							
Independent				✓			✓
Assist							✓
Devices (cane, walker, etc.)							✓
Transfers							✓
Turn & position							✓
Assist with exercise							✓
<b>Toileting</b>							
Bathroom assist							✓
Commode assist							✓
Other SELF				✓			✓
<b>Homemaker Services</b>							
<b>Bedroom</b>							
Make bed				✓			✓
Change linens							✓
<b>Bathroom</b>							
Wash tub/shower							✓
Scrub toilet							✓
Wipe mirrors							✓
Wipe faucets							✓
<b>Kitchen</b>							
Meals prep/serve							✓
Wipe appliances				✓			✓
Wipe counters				✓			✓
Dishes				✓			✓
Clean refrigerator (inside/out)							✓
<b>General</b>							
Vacuum/sweep							✓
Mop							✓
Empty trash							✓
Laundry				✓			✓
Grocery shopping							✓
Errands							✓
Other							✓

**Instructions for filling out visit report form**  
 1. Top info section must be filled out completely. Daily Charting form must be signed below by client.  
 2. "Personal Care" and "Homemaker" sections above must be filled out with "✓" for services provided.  
 Report forms are due by the end of every week on Fridays.

Date	Time In	Time Out	Client Signature (Daily)	Mileage
Saturday / 2018				
Sunday / 2018				
Monday 3/12/2018	11:30 AM	3:30 PM		
Tuesday / 2018				
Wednesday / 2018				
Thursday / 2018				
Friday 3/16/2018	11:30 AM	3:30 PM	Virginia Currey	
Reviewer Comments:				

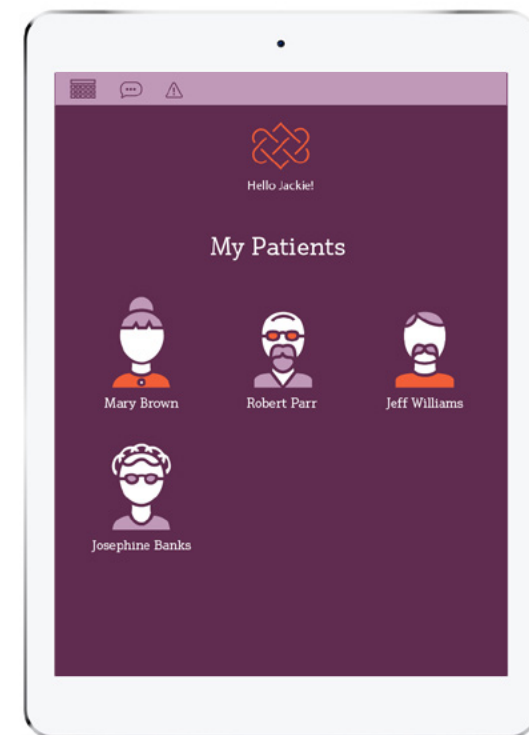
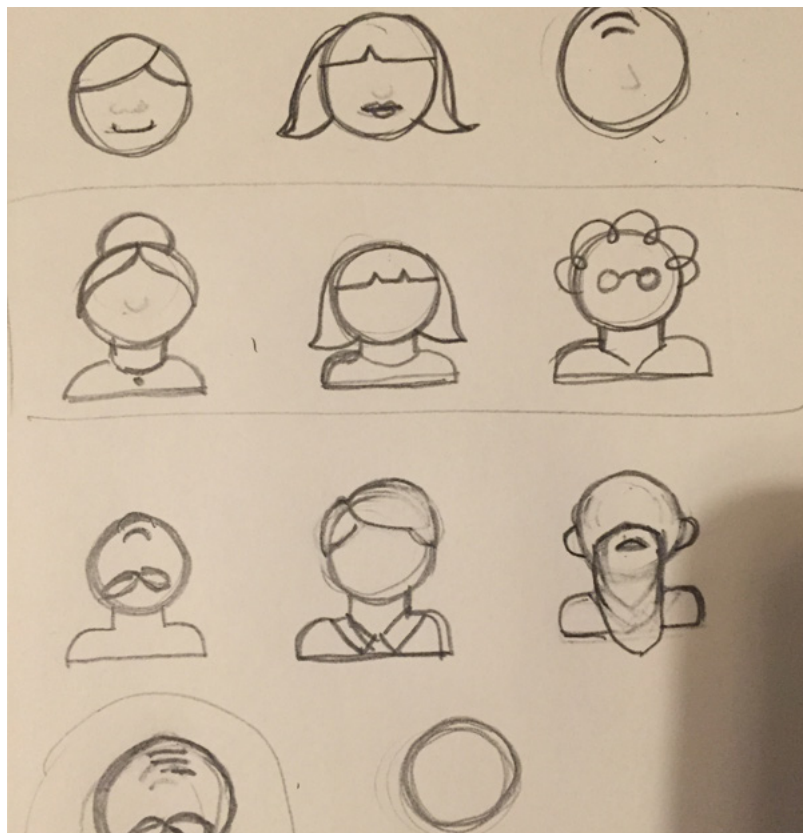
Reviewer Signature \_\_\_\_\_ Date \_\_\_\_\_

Example of an actual caregiver activity log page.



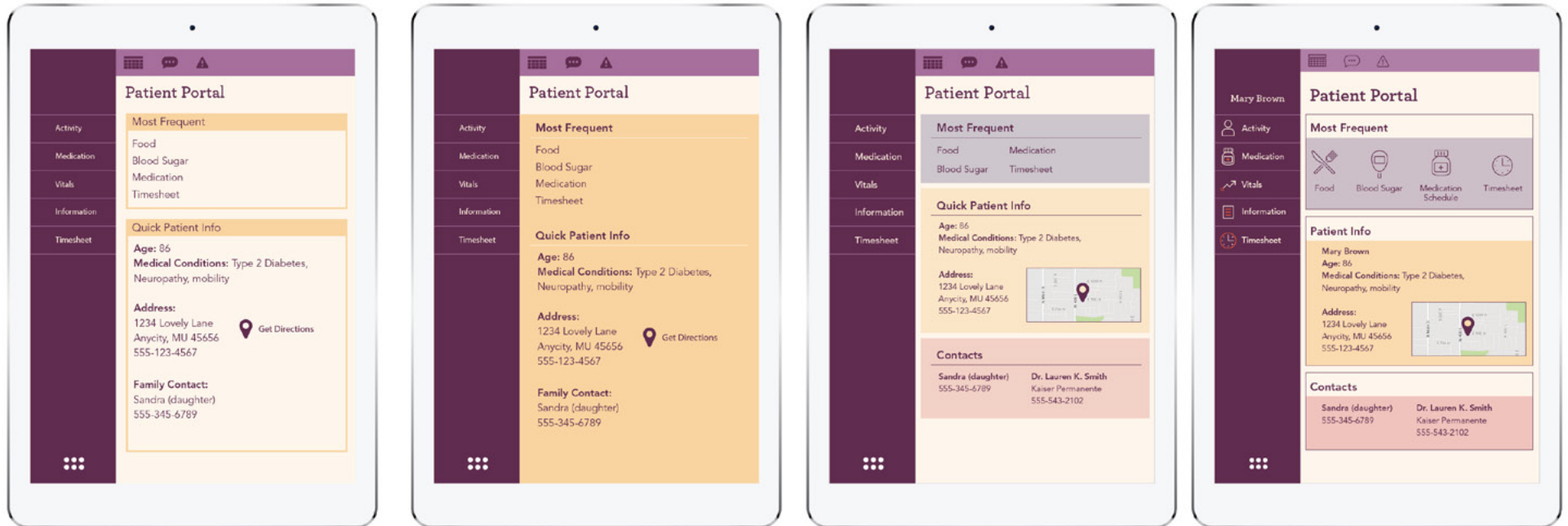
# 12 Visual Design - Icons

I created a set of icons to represent the main navigation, as well as any features that might appear in the “frequently used” section of the portal screen.



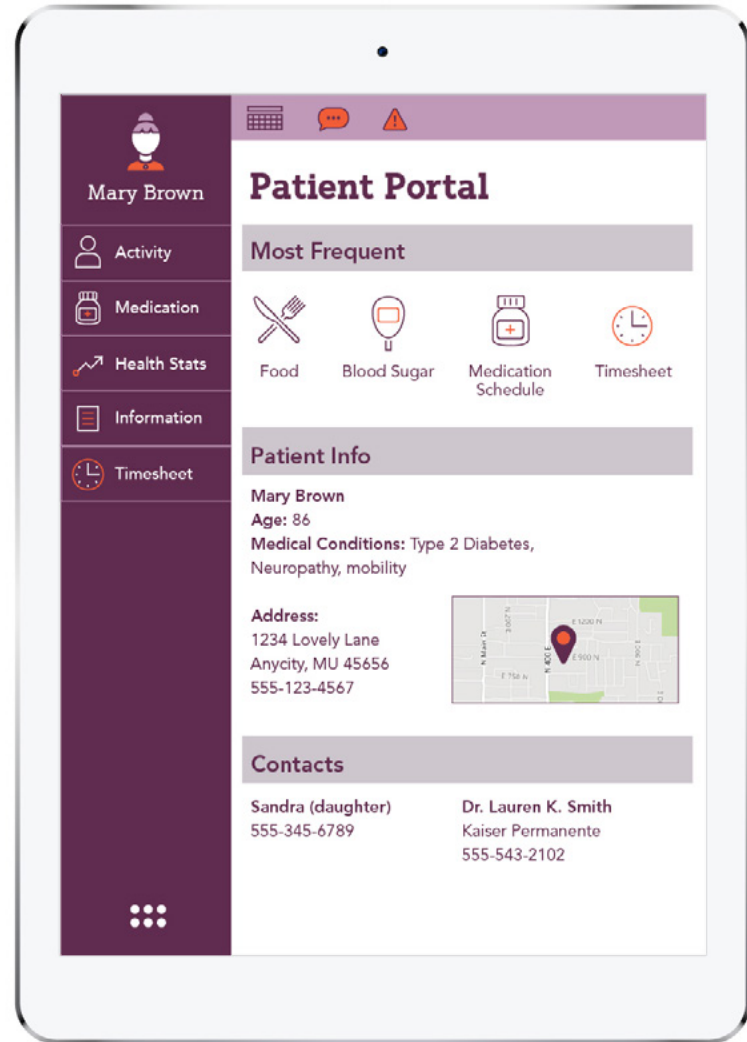
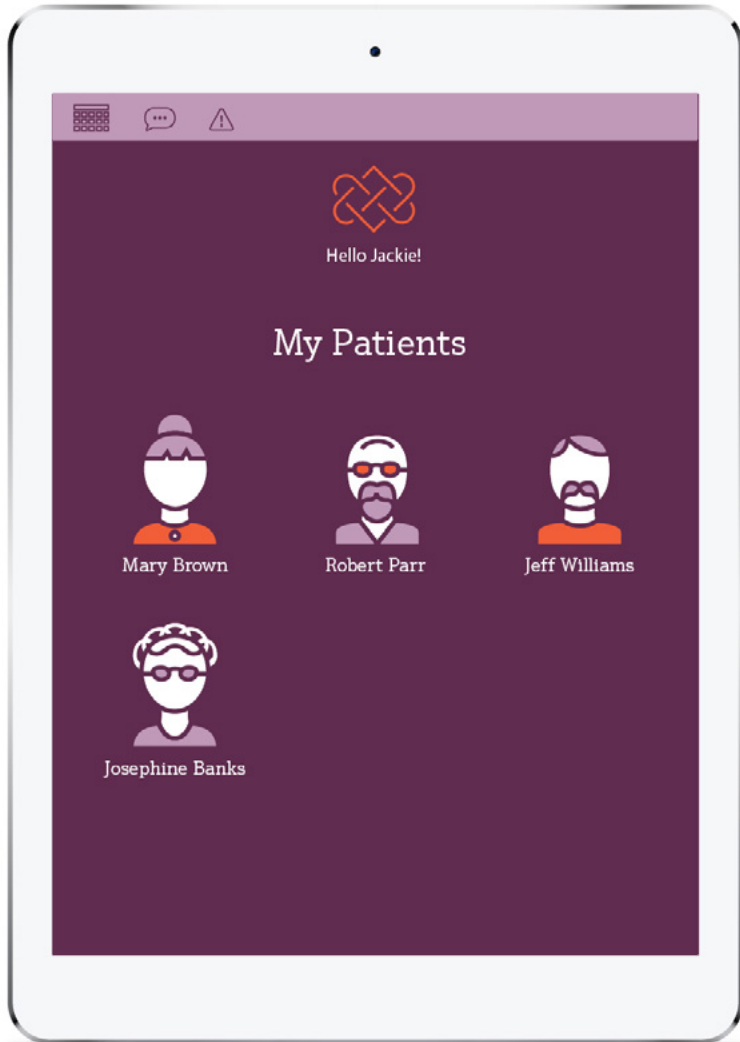
*Because it is against the law for healthcare providers to take photos of their patients, I created some avatars that the patient or client can select to represent the patient on the patient screen.*

# 12 Visual Design Iterations



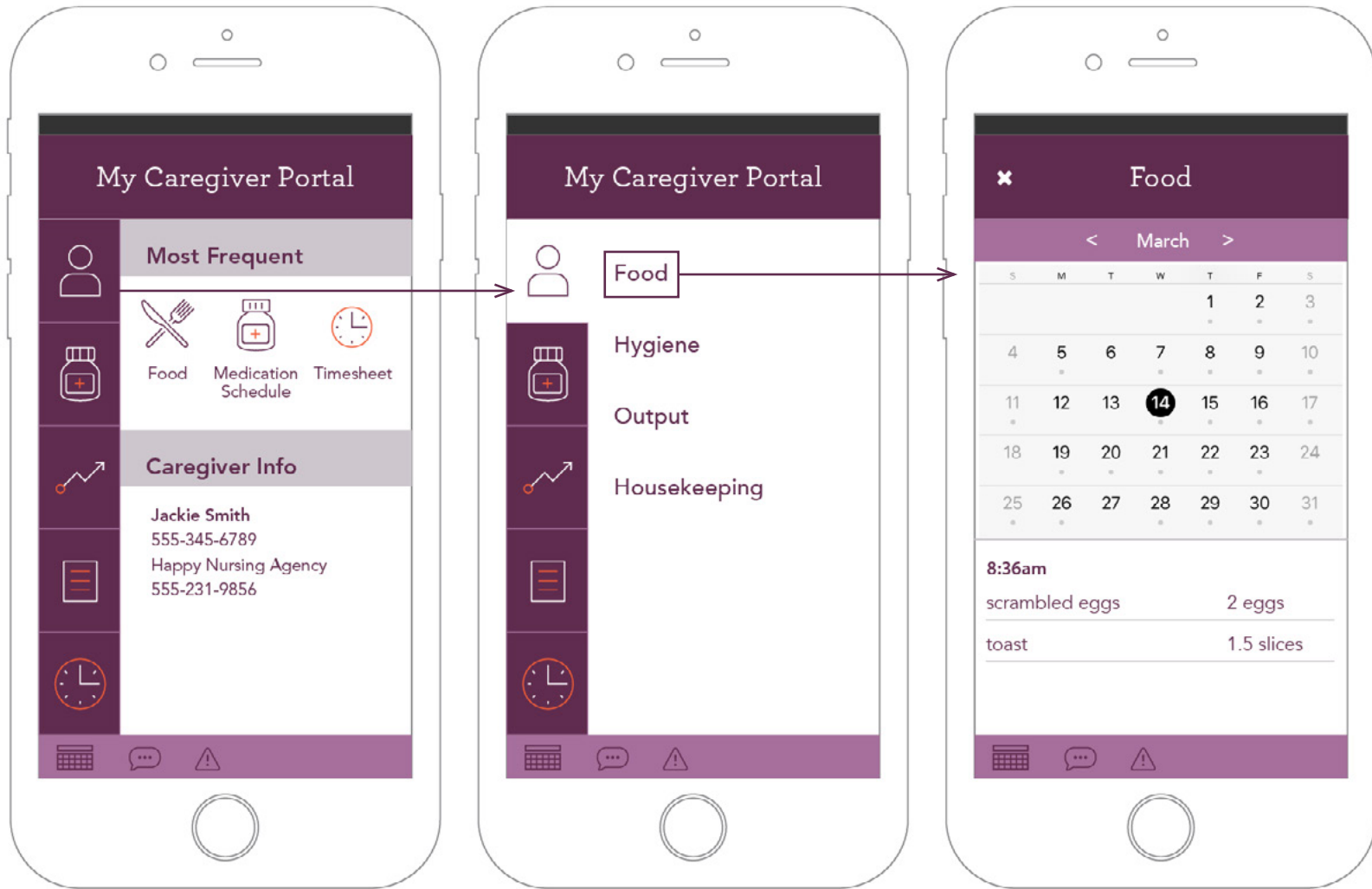
*Part of the feedback I received on the Patient Portal screen was that it was too empty, and put too much focus on the frequently-used buttons. I made the portal screen more of a summary screen and did several iterations of the colors and container treatments.*

# 12 Visual Design - Final Direction



*I simplified the color scheme and opted for a white main background.*

# 12 Visual Design - Client Mobile



Mobile client main portal

Activities

Daily food entry, in calendar format. The client selects the day and the foods served/time served displays underneath.

# 12 Visual Design - Doctor Desktop



Loving Ties

## Care Summary

- Summary
- Medications
- Vitals
- Appointments
- Patient Information



### Mary Brown

1234 Lovely Lane  
Anycity, MU 45656  
555-123-4567

#### Appointments

- Create New Appointment
- April 3, 2018 4:00pm
- April 21, 2018 4:00pm
- May 12, 2018 4:00pm

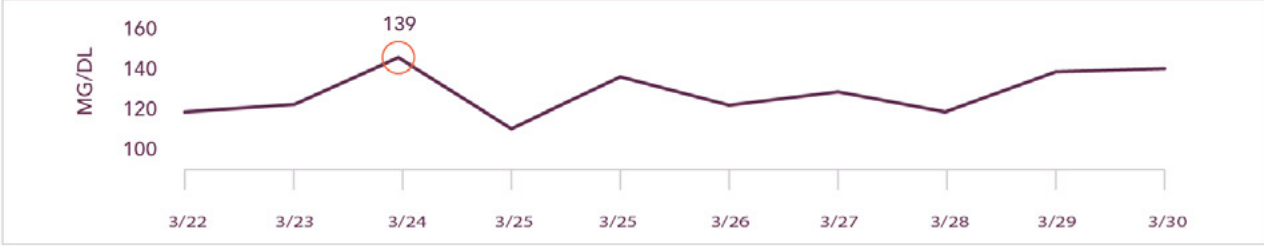
#### Medications

- Prescribe new medication
-  Glimeperide-Rosiglitazone  
2 Capsules with water 3x per day  
[edit](#)
-  Canagliflozin  
2 Capsules with water 1x per day  
[edit](#)

#### 93% dosage rate since last month

**Pharmacy**  
Lorem ipsum dolor sit amet, consectetur adipiscing elit  
556 Some Street  
Anycity, MU 45656  
555-123-4567

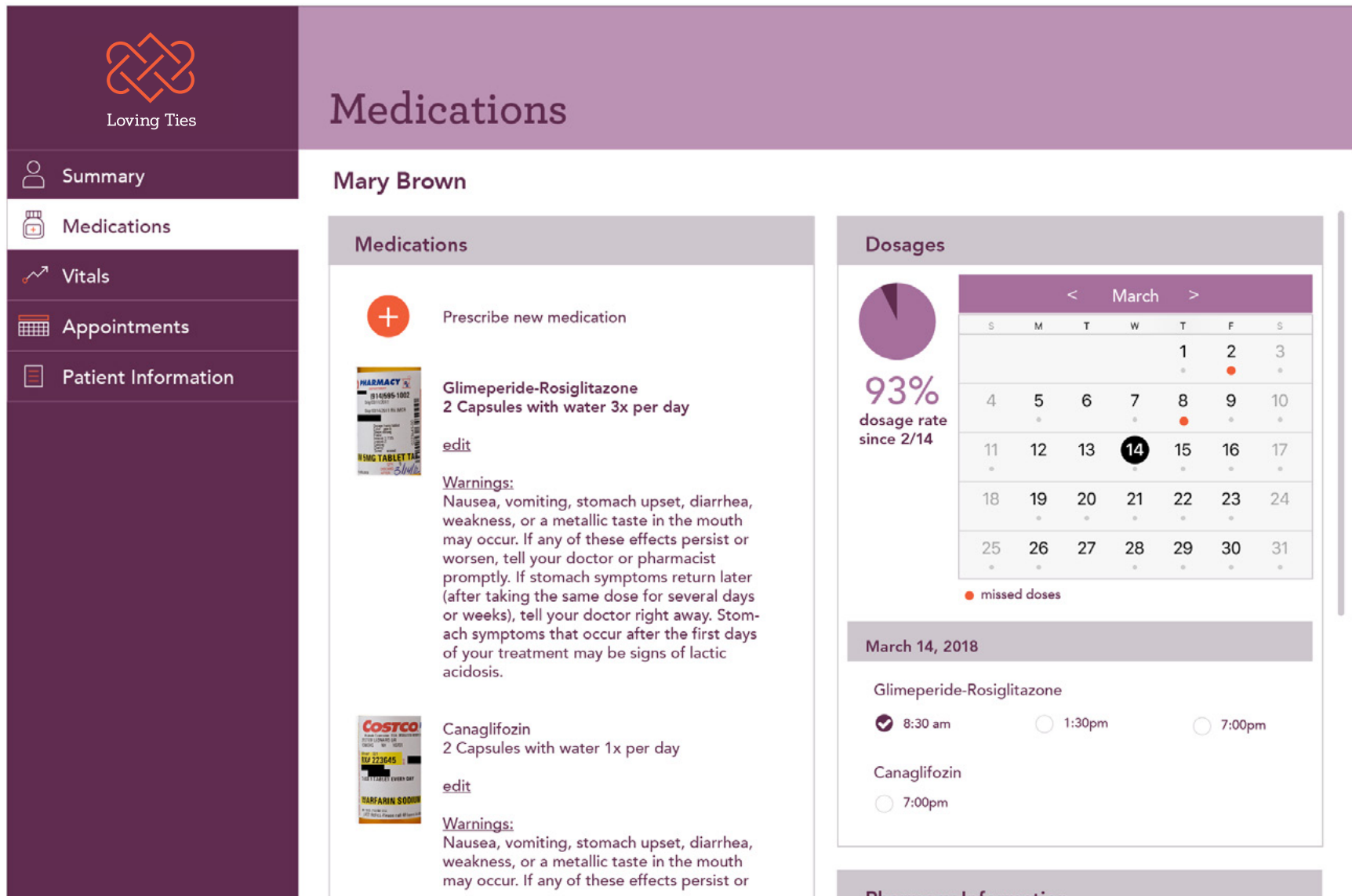
#### Blood Glucose - last 10 days



Date	Blood Glucose (MG/DL)
3/22	120
3/23	122
3/24	139
3/25	110
3/25	135
3/26	122
3/27	128
3/28	120
3/29	138
3/30	138

Doctor's Summary Screen

# 12 Visual Design - Doctor Desktop



Doctor's Medications screen

Doctor can view daily medication dosages by clicking on the days on the calendar, and quickly see when doses were missed with the red dot indicator.



# 13 User Testing

For my user tests, I had three people test a digital version of the caregiver app:

## USER 1

I love this design and layout! Love how you can quickly access Contacts and important information, and the left column is organized in a way that is easy to know where to go to record info.

After entering her breakfast, I looked for a “save”, “continue” or some sort of confirmation button that told me it had been entered or saved correctly. I knew I needed to get to the medication screen next, but I hesitated in clicking the “x” button to close the “food” screen, because I didn’t know if it would erase what I just entered. And then same with recording on the medication screen when I got there.

## TAKEAWAYS

I really appreciated the thoughtful feedback from my users this time around, and plan to implement the following suggestions:

- Adding an indicator that shows the user that their information has been saved. It’s interesting to me that two of my users felt that they needed a “save” button, as it has become more and more common for apps to automatically save information (i.e. GoogleDocs)
- Using pictures of the actual pills in the medication section
- Changing the “vitals” button to something more inclusive of other monitoring tests

## USER 2

The app is great. My biggest confusion was likely related to the app being in prototype phase but I’ll list a few suggestions here in hopes that I understand what you’re looking for:

- I would remove the initial + click. Instead I would just have the food selection/amount/time options and add a save button as a way of confirming that data is entered. This is just to decrease the number of clicks since this app would be used very frequently and every click takes time

- Medication: if the goal with this is to record medication given I’d recommend just having the app scan the medicine bar code when given and have it auto-populate details. Maybe that’s not an option for this exercise?

## USER 3 - ACTUAL CAREGIVER

I like it! The only part that was confusing was that the blood sugar was under “vitals”. Vitals are usually only BP, pulse, temperature, O2, and respirations.

Also, this is a picture of my patient’s pill box:



If you could put a pic of the front & back of the pill, then the caregivers will know better which pills they are giving.

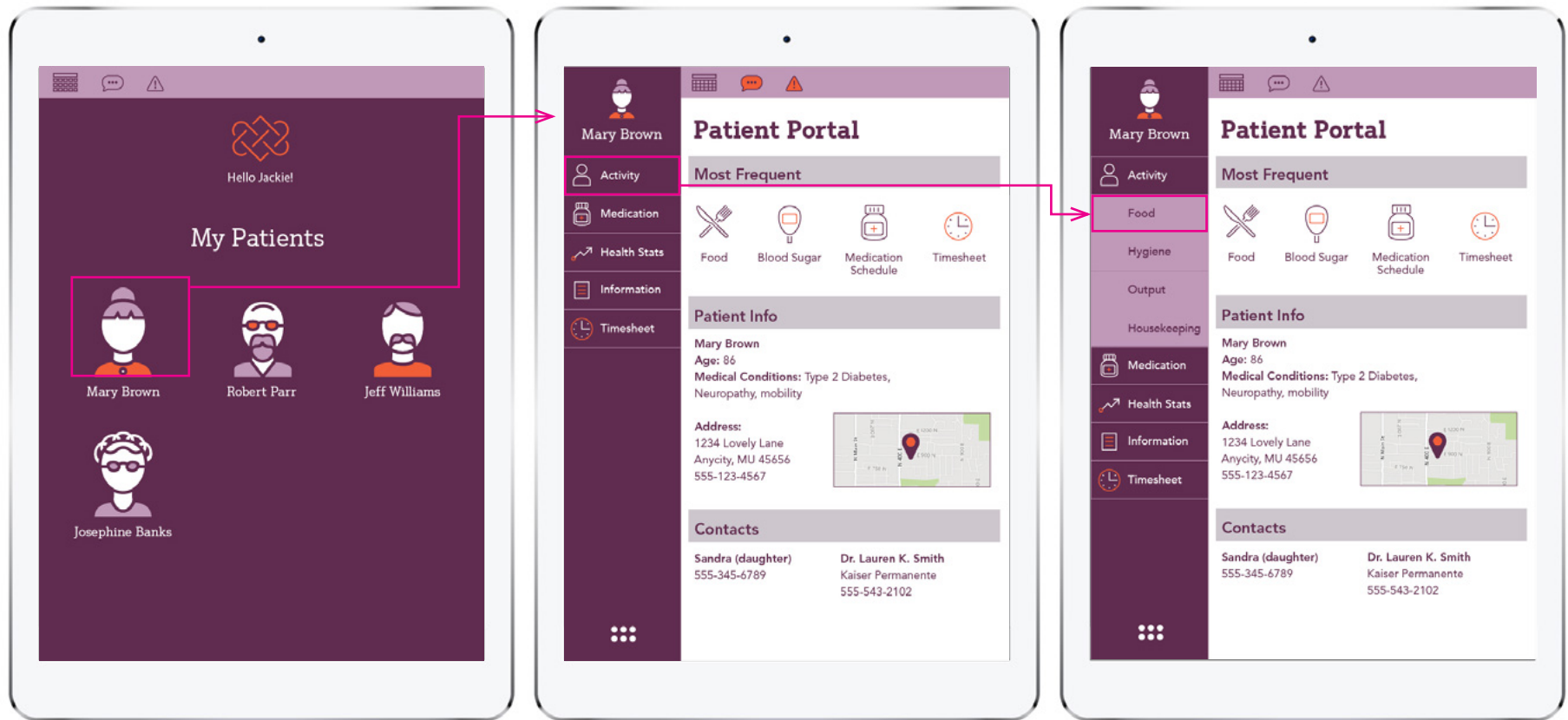
For example:



In between vitals and information on the left hand side, I’d just put a category for blood sugar or “glucose monitoring” because I don’t think caregivers would know to check under vitals.

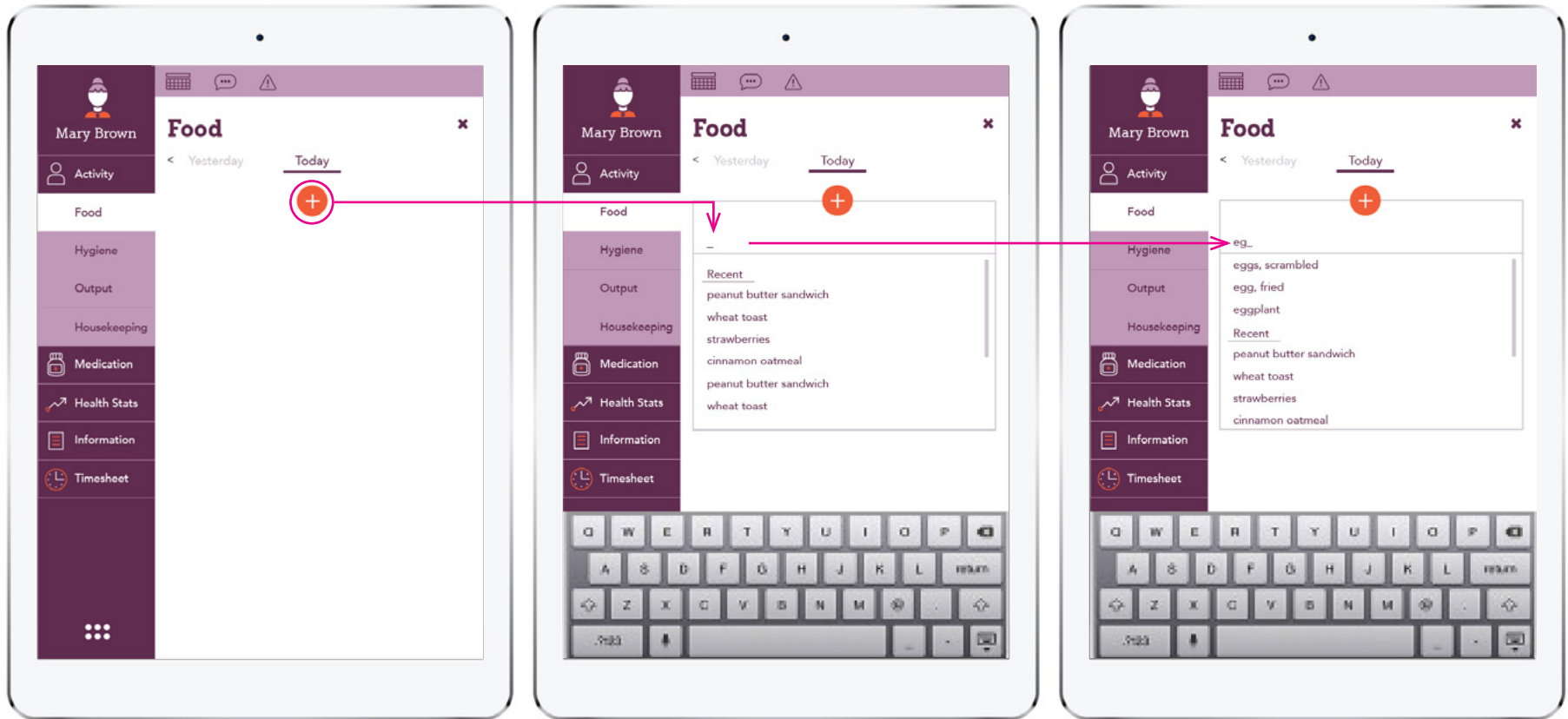


# 14 Final Wireflows - Caregiver Food Entry



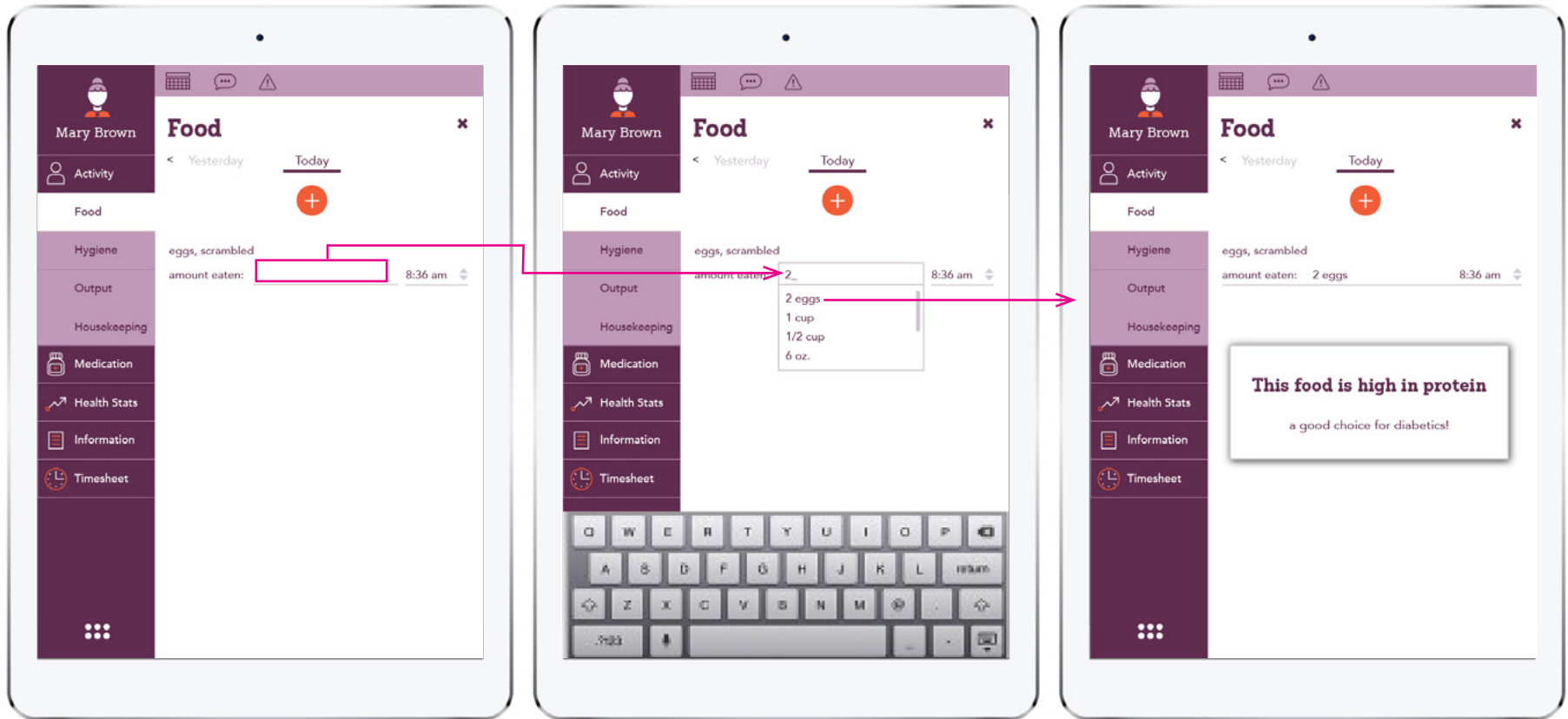
*Patient Portal Screen: has most frequently used features at top, as well as general info about the patient*

# 14 Final Wireflows - Caregiver Food Entry (cont.)



*Contextual menus have "Recent" as well as auto-fill features to reduce the amount of data-entry for the user.*

# 14 Final Wireflows - Caregiver Food Entry (cont.)



*Current time appears upon food entry, but can be edited.*

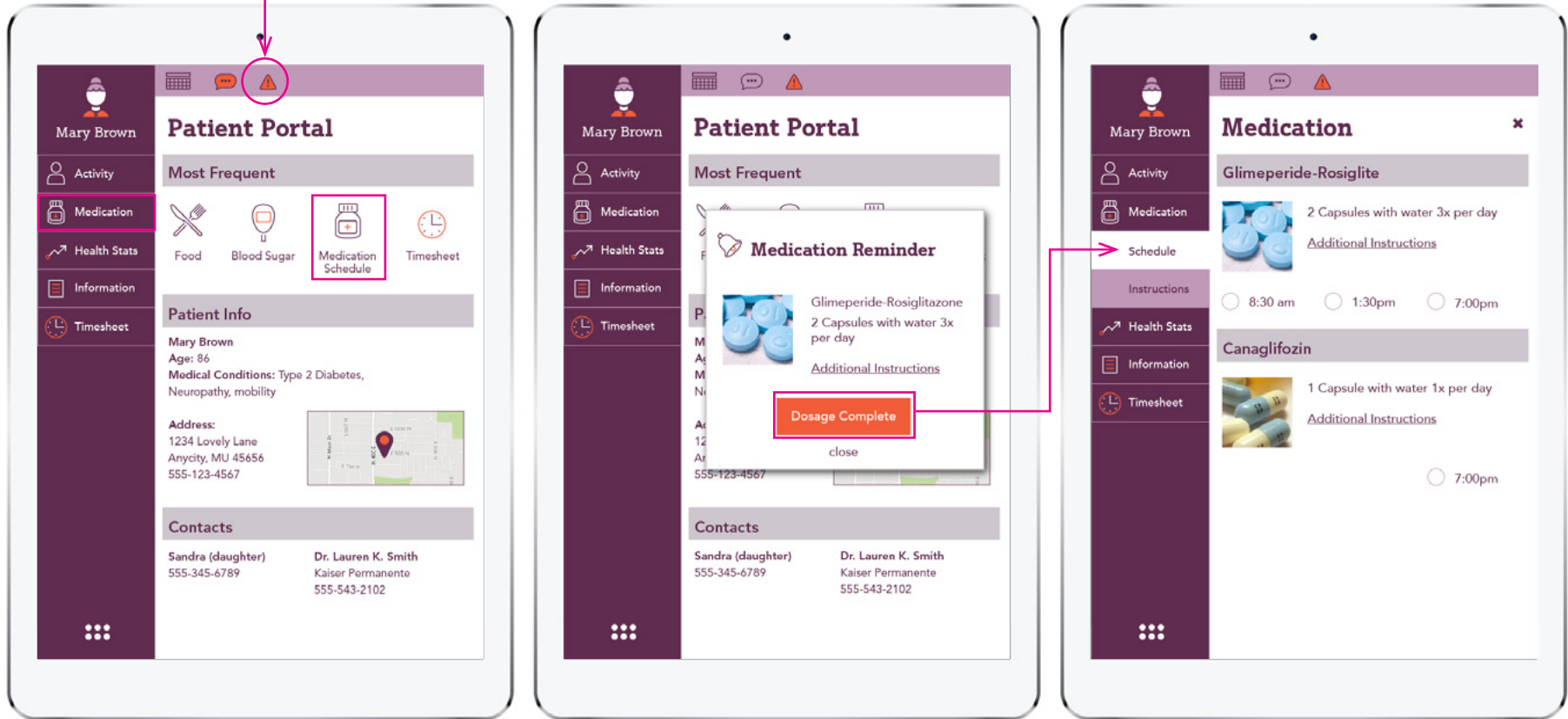
*A notification appears and serves two purposes:*

*1) to give the caregiver information about the food entered as it pertains to the patient, and 2) to serve as an indicator that the information has been saved in the app.*

# 14

## Final Wireflows - Caregiver Medication Schedule

Alert icon is highlighted during medication alerts, as well as other alerts.



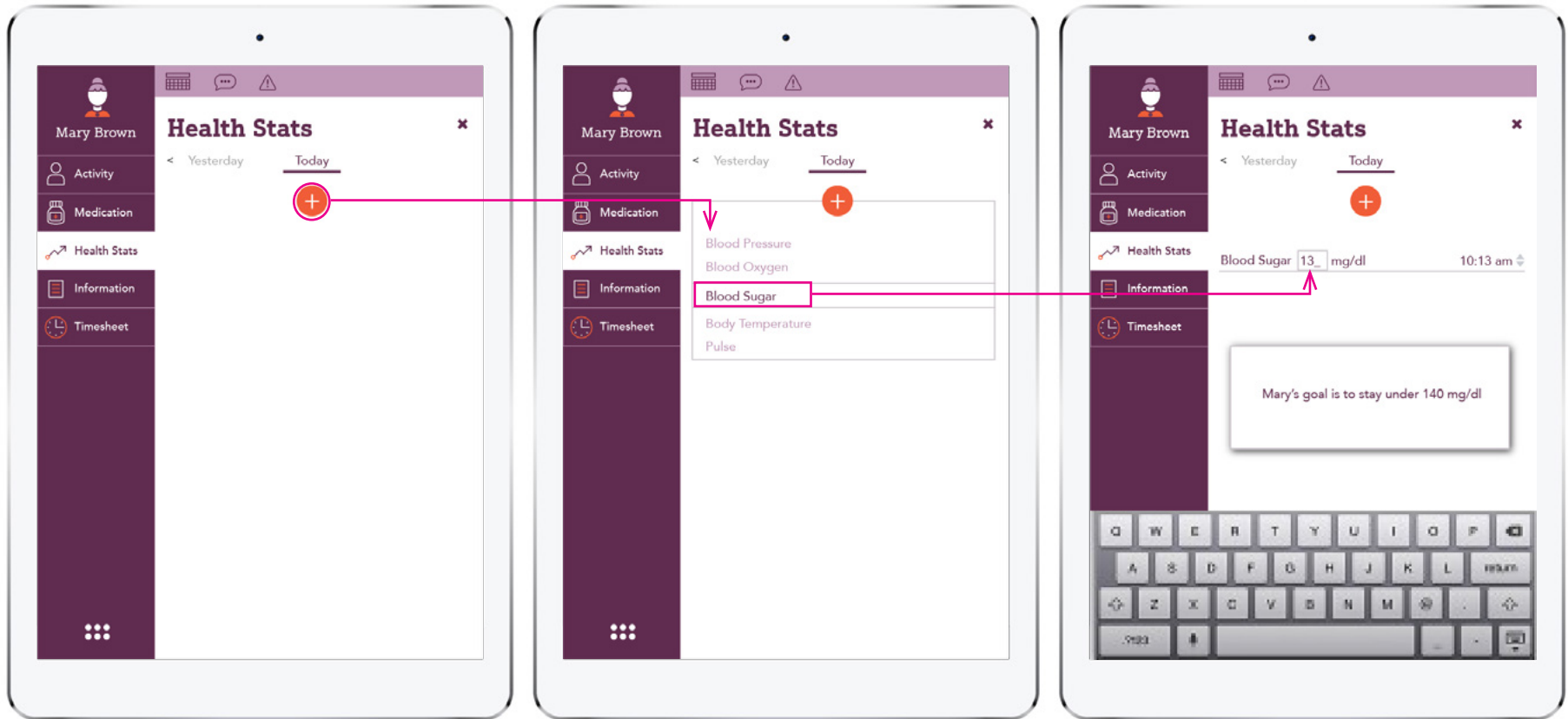
Medication can be entered from the main navigation, but the caregiver is also automatically alerted with an alert box and sound when a medication dose is due.

The alert includes a picture of the pill, so the caregiver can be sure to administer the correct medication.

When the caregiver presses "Dosage Complete", the dose is automatically recorded in the Medication Schedule screen.



# 14 Final Wireflows - Caregiver Glucose Test Entry



All vitals and health monitoring tests are located in "Health Stats".

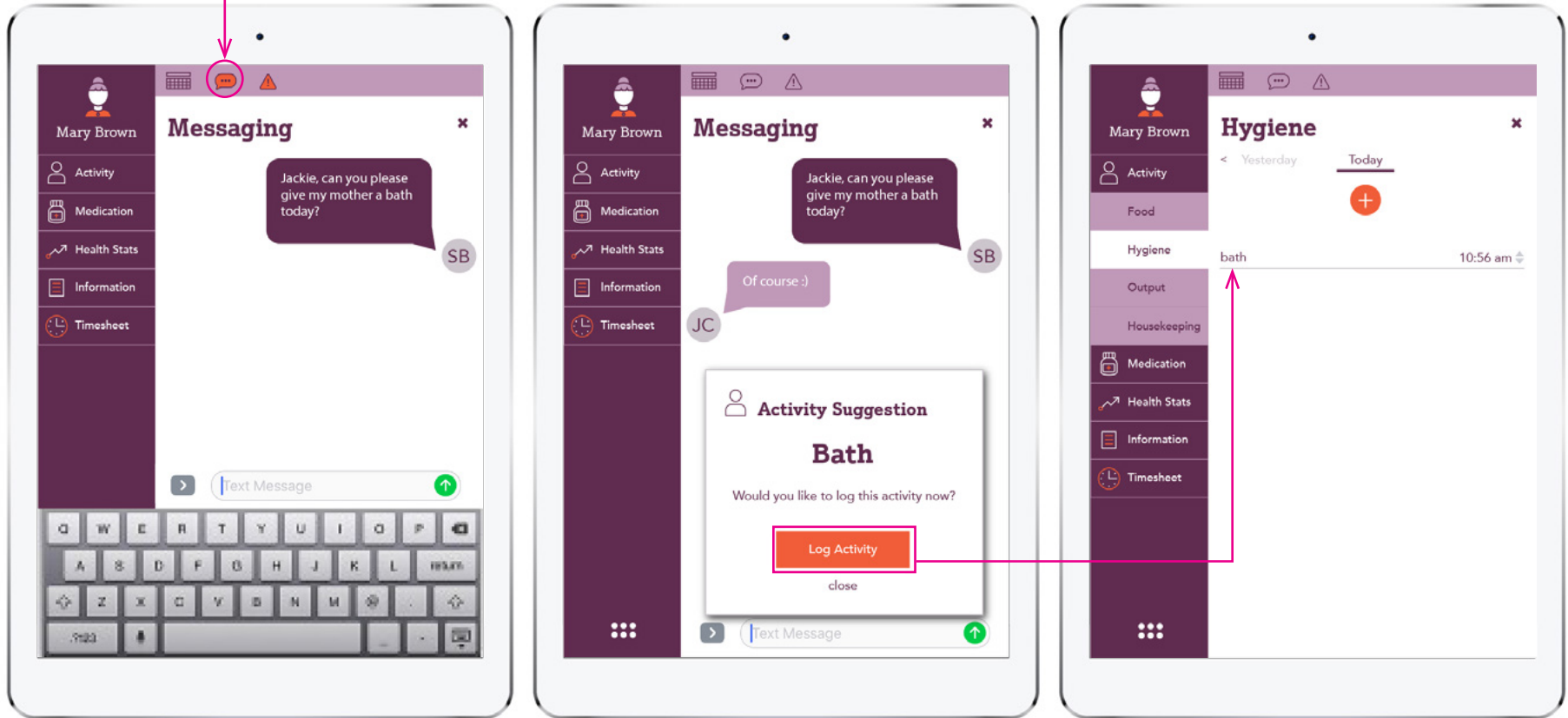
When the caregiver presses the "+" button, a contextual menu of possible monitoring tests appears.

The caregiver enters the blood sugar numbers and receives a confirmation with an information pop-up.

# 14

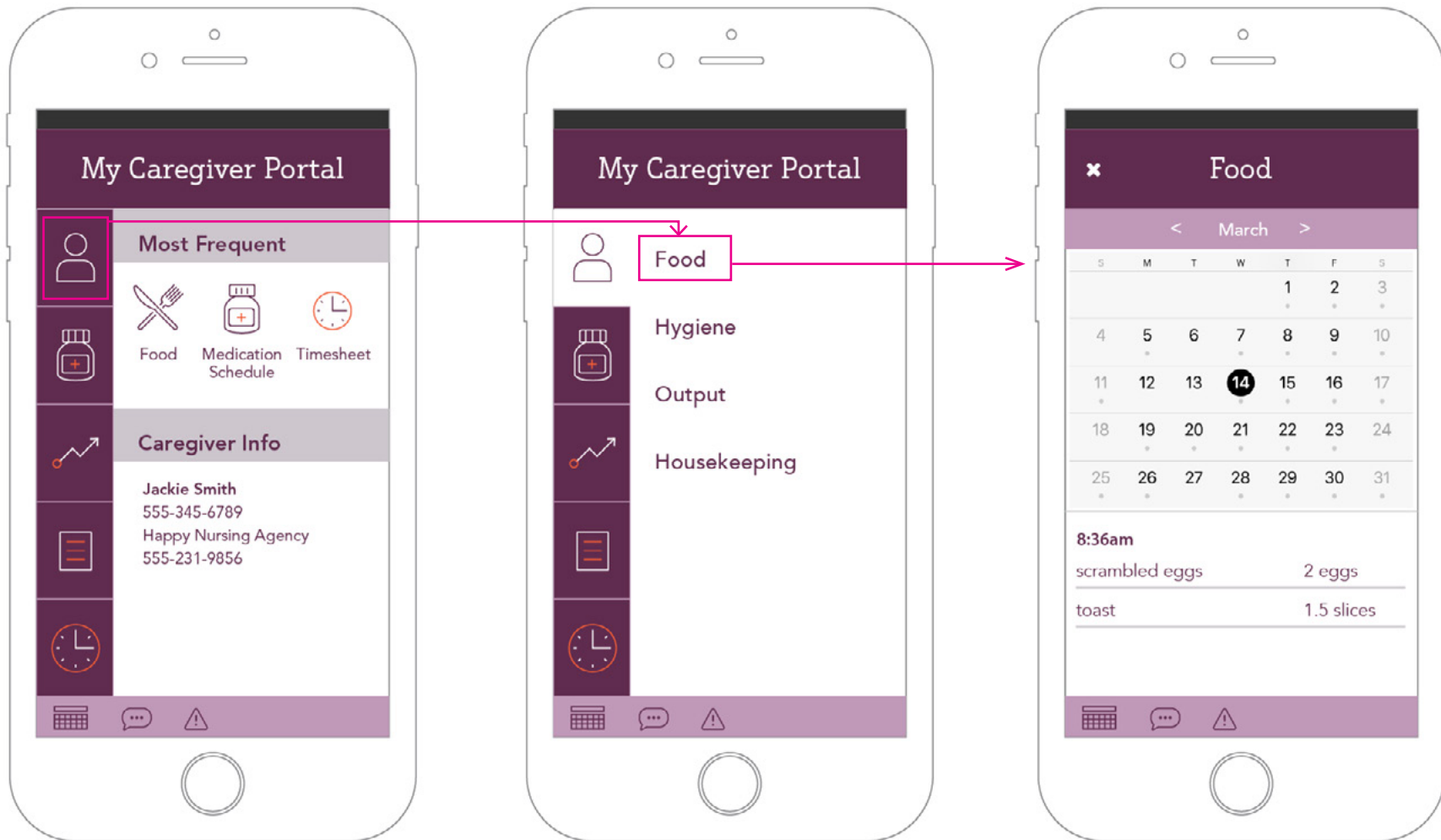
## Final Wireflows - Caregiver Messaging and Activity Suggestion

Messaging icon is highlighted when there is a new message from the client.



The app automatically suggests an activity of "Bath". The caregiver can log the activity instantly with the current time, or close it and log it later.

# 14 Final Wireflows - Client-Side Food Log

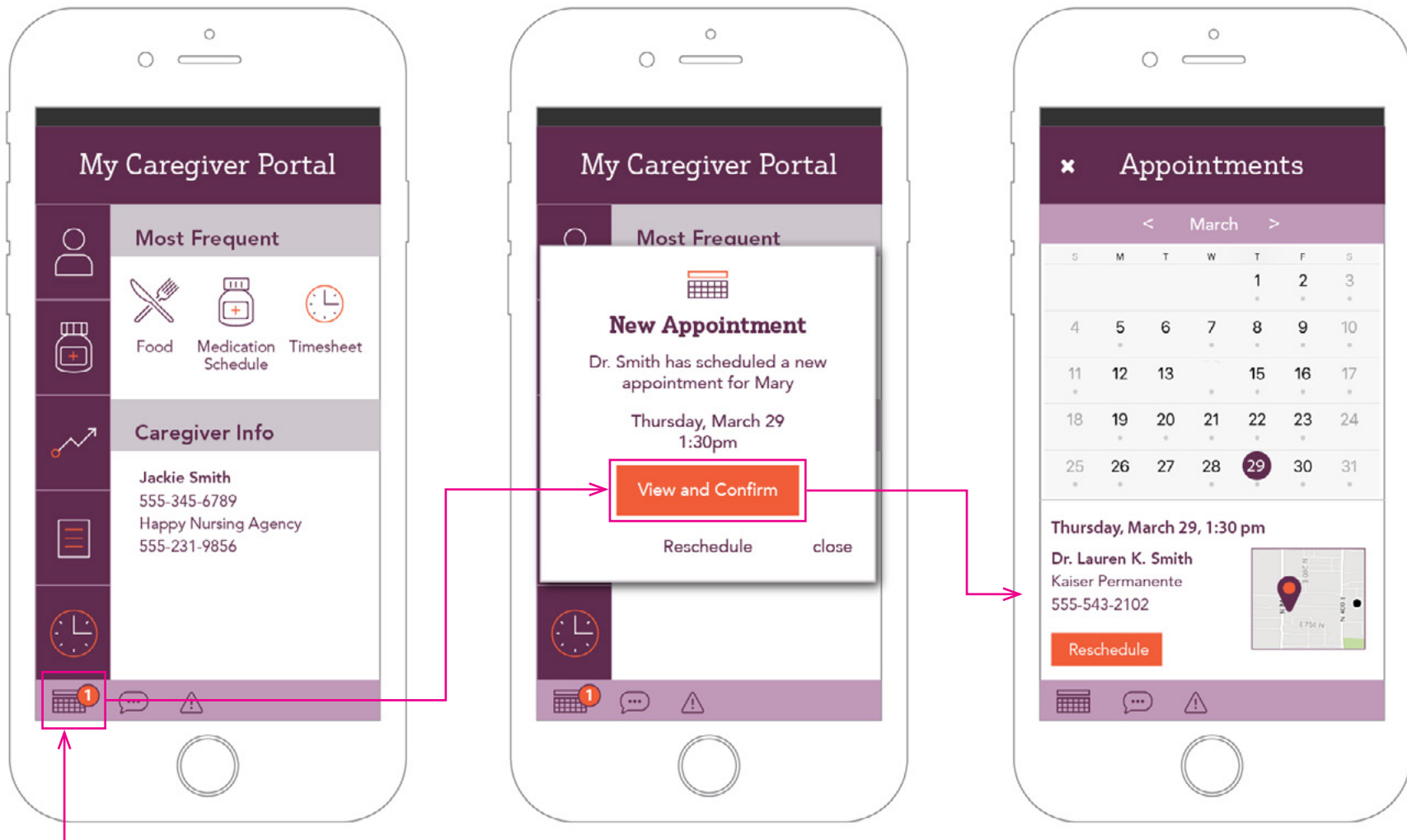


Caregiver Info Portal

Navigation is reduced to icons on mobile.

Client can view the foods given to the patient by clicking on a day of the calendar. Foods, amounts, and time is displayed.

# 14 Final Wireflows - Client New Appointment Alert



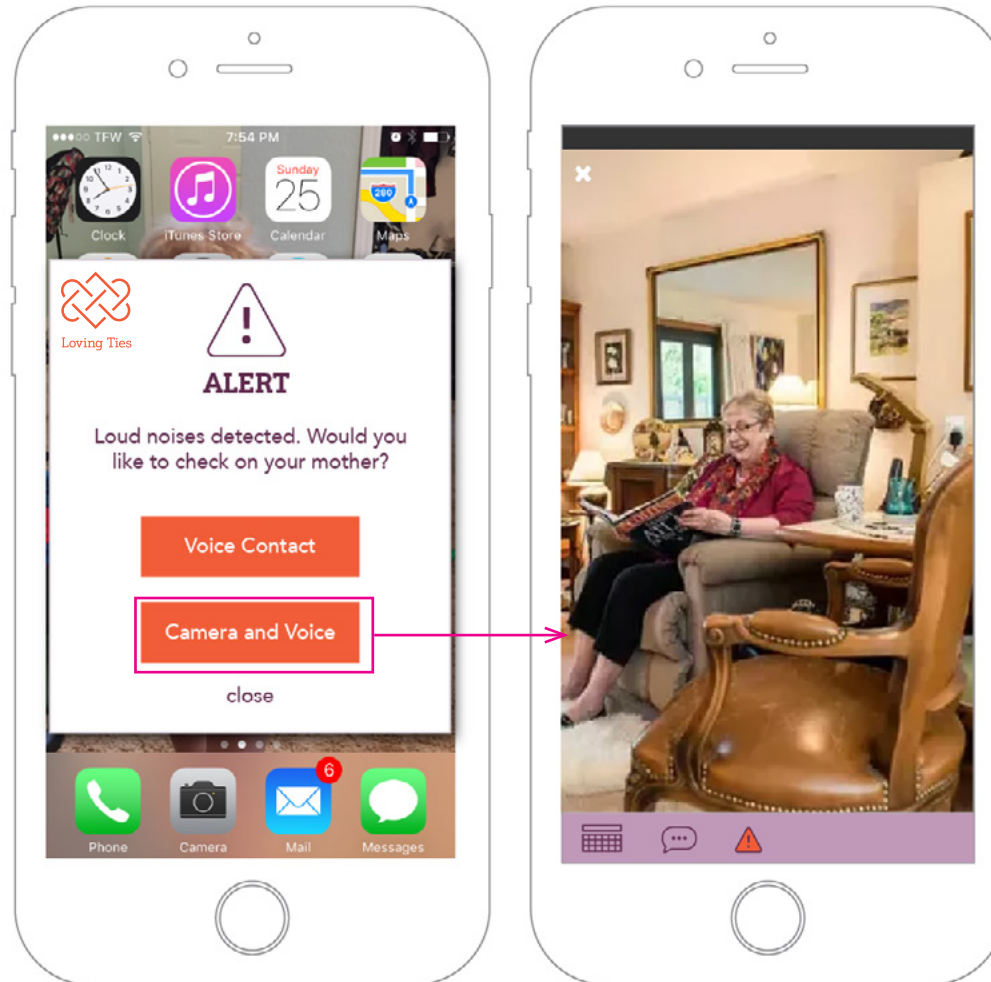
Schedule alert indicator appears when doctor has scheduled a new appointment for the patient.

Client can confirm the appointment, or reschedule.



# 14

## Final Wireflows - Client Alert



*Smart home device sends an alert notification to the Client when noises that could be a sign of distress are detected. Client can check on the patient with the smart home device(s). This feature would be especially helpful when patient is home alone.*

# 14 Final Wireflows - Doctor Desktop Portal

The wireframe illustrates a doctor's desktop portal interface. On the left, a 'My Patients' section features a table with columns for Name, Age, Medicare, and Next Appointments. A patient, Mary Brown, is highlighted in the list. A sidebar menu on the right contains options for Summary, Medications, Vitals, Appointments, and Patient Information. A red arrow points from the 'Medications' menu item to the 'Care Summary' for Mary Brown. The 'Care Summary' includes patient contact information, a list of appointments, a 'Medications' section with a 'Prescribe new medication' button and a 93% dosage rate indicator, and a 'Blood Glucose - last 10 days' line graph.

Name	Age	Medicare	Next Appointments
Bailey, Kim	78	HMO	
Barajas, Juan & Jennifer Marie	63	PSA	
Barber, Shane	57	POS	
Barney, Gary J	65	MSA	
Barrera, Rene & Madison	58	PFFS	
Bartee, Carol	99	NA	
Bateman, John & Heidi	56	POS	
Bates, Juanita Osuna	78	HMO	
Bean, Jeff & Jill	63	HMO	
Bean, Richard Anthony	57	PSA	
Bennett, Michael & Camille	65	POS	
Bennion, Brian & Oretta	58	MSA	
Blackwell, Jonathan & Kimberly	99	PFFS	
Blackwell, Zachary David & Megan Rae-Ann	56	NA	
Blea, John William & Doreen Ann	78	POS	
Bohler-Talley, Vern & Linda Sue	63	HMO	
Boselly, Kenneth	57	HMO	
Bozek, William Allen & Teresa Ann	65	PSA	
Brown, Arne Harrison & Pei Chen	58	POS	
<b>Brown, Mary</b>	<b>99</b>	<b>MSA</b>	
Brown, Rex & Linda	56	PFFS	
Brown, Steve & Celeste	78	NA	
Bunker, Jason Robert & Annah	63	POS	
Burch, Jeffrey	57	HMO	
Burgess, . & Bridgette	65	NA	

**Care Summary for Mary Brown**

1234 Lovely Lane  
Anycity, MU 45656  
555-123-4567

**Appointments**

- Create New Appointment
- April 3, 2018 4:00pm
- April 21, 2018 4:00pm
- May 12, 2018 4:00pm

**Medications**

- Prescribe new medication
- Glimeperide-Rosiglitazone  
2 Capsules with water 3x per day
- Canagliflozin  
2 Capsules with water 1x per day

**93% dosage rate since last month**

**Pharmacy**

556 Some Street  
Anycity, MU 45656  
555-123-4567

**Blood Glucose - last 10 days**

Date	Blood Glucose (MG/DL)
3/22	120
3/23	122
3/24	139
3/25	115
3/26	135
3/27	125
3/28	120
3/29	138
3/30	140

< Back to Patient List

Doctor clicks on patient from sorted list, and is brought to the Care Summary screen.

# 14


## Final Wireflows - Doctor New Medication Prescription

The image displays a multi-step user interface for a doctor's new medication prescription. It starts with a 'Care Summary' for a patient named Mary Brown, showing her address and contact info. A '+' button in the 'Medications' section is highlighted. This leads to a 'Medications' page for Mary Brown, which includes a 'Prescribe New Medication' section. A '+' button in this section is also highlighted, with an arrow pointing to a list of medication suggestions. A red box highlights this list, which includes options like 'Acalabrutinib Capsules (Calquence)- FDA' and 'ACAM2000 (Smallpox (Vaccinia) Vaccine, Live)- FDA'. To the right, 'Already Prescribed' medications like 'Glimeperide-Rosiglitazone' and 'Canagliflozin' are listed with their respective dosages and warnings.






Doctor clicks on “+” button in Medication summary window, which brings them to the Medications page and a contextual menu of medications with an auto-fill feature as the doctor types.

# 14

## Final Wireflows - Doctor New Medication Prescription



Loving Ties

# Medications

-  Summary
-  Medications
-  Vitals
-  Appointments
-  Patient Information

### Mary Brown

Prescribe New Medication




**Acarbose (Precose)- FDA**

Enter dosage:  x per day

⌄ 8:30 am
⌄ 7:00pm

[Send to Pharmacy](#)

**Medication Information**




PRECOSE® (acarbose tablets) is an oral alpha-glucosidase inhibitor for use in the management of type 2 diabetes mellitus. Acarbose is an oligosaccharide which is obtained from fermentation processes of a microorganism, *Actinoplanes utahensis*, and is chemically known as O-4,6-dideoxy-4-[[[(1S,4R,5S,6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino] α-D-glucopyranosyl-(1 4)-O-α-D-glucopyranosyl-(1 4)-D-glucose. It is a white to off-white powder with a molecular weight of 645.6. Acarbose is soluble in water and has a pKa of 5.1.

**WHAT ARE THE POSSIBLE SIDE EFFECTS OF ACARBOSE (PRECOSE)?**

Get emergency medical help if you have any of these signs of an allergic reaction: hives; difficulty breathing; swelling of your face, lips, tongue, or throat.

Call your doctor at once if you have a serious side effect such as:


**Already Prescribed**



**Glimeperide-Rosiglitazone**  
2 Capsules with water 3x per day

[edit](#)

Warnings:  
Nausea, vomiting, stomach upset, diarrhea, weakness, or a metallic taste in the mouth may occur. If any of these effects persist or worsen, tell your doctor or pharmacist promptly. If stomach symptoms return later (after taking the same dose for several days or weeks), tell your doctor right away. Stomach symptoms that occur after the first days of your treatment may be signs of lactic acidosis.



**Canagliflozin**  
2 Capsules with water 1x per day

[edit](#)

Warnings:  
Nausea, vomiting, stomach upset, diarrhea, weakness, or a metallic taste in the mouth may occur. If any of these effects persist or worsen, tell your doctor or pharmacist promptly. If stomach symptoms return later

Once the Doctor has made a medication selection, they can enter the number of doses per day, the times, and submit the prescription to the pharmacy.

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Link to Prototype:

[https://invis.io/42GJMEWG5R9#/288686146\\_Screen\\_Shot\\_2018-04-02\\_At\\_10-57-11\\_AM](https://invis.io/42GJMEWG5R9#/288686146_Screen_Shot_2018-04-02_At_10-57-11_AM)

Link to Video:

<https://youtu.be/U-ln2OgGe4w>