



American
Heart
Association®

CASE STUDY #1

HeartBeat - an app for the Apple Watch that is designed as a first-level heart monitoring application for people with heart conditions.



CASE STUDY #1

OVERVIEW

This was a **2 week** project completed in December of 2015 at General Assembly. Working in a team of 2, my partner and I were tasked with partnering with an existing company to design a solution to a problem using the capabilities unique to a wearable device.

OBJECTIVE

With little constraints and free reign to create any product we wanted, we set out to create an app that could help people and possibly save lives. The opportunity was in Apple Watch's heart rate sensor, and the challenge was to create a unique product in an already saturated market.

SOLUTION

We partnered with the American Heart Association to design *HeartBeat*, an App for people with pre-existing heart conditions. *HeartBeat* allows users to: 1) **record symptoms** they may be experiencing (along with the date, time, bpm & rhythm), 2) **set alerts** for when their heart is behaving irregularly, and 3) **store longterm heart data** which would be valuable for their physicians.

MY ROLE

My role was UX strategy and Interaction Design. I also focused on tech research, competitor analysis, user flows, and mobile screen mock-ups and user testing.



DISCOVERY

Tech Research



We began the project by researching the tech capabilities of the Apple Watch. I was very interested in the **heart rate sensor**. Could we potentially design an app that could **save lives**?

Competitor Analysis

I did a competitor analysis to see what apps already existed on the market for people with heart conditions. I identified the features of each app and looked for opportunities.

	AliveCor	HeartWatch	Apple Health	AirStrip	PulsePro
Syncs with smart watch	✗	✓	✓	✓	✓
Measures Heart Rate	✓	✓	✓	✓	✓
Measures Heart Rhythm	✓	✗	✗	✓	✓
Record Symptoms	✓	✗	✗	✗	✗
Alerts/Notifications	✗	✓	✗	✗	✗
Stores Longterm Data	✓	✓	✓	✓	✗
Constant Monitoring	✗	✓	✓	✗	✓



I found **AliveCor** to be the best product on the market, but it still did **not** meet all of the needs of our users.

User Research

We spoke to **3 doctors** (cardiologist, ER, IM) and **4 people with heart conditions** to see what the current standards were for monitoring and caring for heart patients.

Cardiologist:

"A lot of patients experience symptoms, but they are not always heart related. It would be good to know the facts, to be able to associate symptoms with heart data."

"It might be useful to have thresholds, parameters for patients who want to exercise but not over do it."

Patients:

"Irregular palpitations, shortness of breath, dizziness. If I'm feeling those symptoms, I'm supposed to immediately stop whatever I'm doing, and go monitor my pulse rate. If it's not better within a few minutes, then I should call (the hospital)."

SYNTHESIS

Personas

We created a primary and secondary persona based on the doctors and heart patients that we interviewed.

Secondary Persona



Dr. Rachel



Carlos Martin, 53

Primary Persona

Carlos is recovering from a recent heart operation. It's important for him to exercise and to carefully monitor his heart rhythm and symptoms. At home, Carlos checks his own heart rate and rhythm by feel, in the way that his nurse taught him. He has a chest monitor at home, but doesn't usually wear it because it is too uncomfortable.

- His pulse should not go above 150 bpm, or below 40 bpm
- He is taking beta blockers, which can also have an affect on his BPM
- If he feels dizzy or lightheaded, he is supposed to stop whatever he's doing and check if his heart is beating irregularly.

Problem Statements

- 1) Monitoring heart rate and rhythm is important for people with heart conditions but can be very inconvenient
- 2) Patients might not always know their heartbeat is behaving irregularly.
- 3) Doctors would like longterm data on their patients, but it's unrealistic and hard to get

MSCW Method - Feature Prioritization

Must Have

- Heart rate monitor
- Heart rhythm monitor
- Heart Data & Charts
- Alerts Irregular Rhythm
- Symptoms Log

Should Have

- Alerts for high/low BPM
- Alerts based on Symptoms & heart
- Charts

Could Have

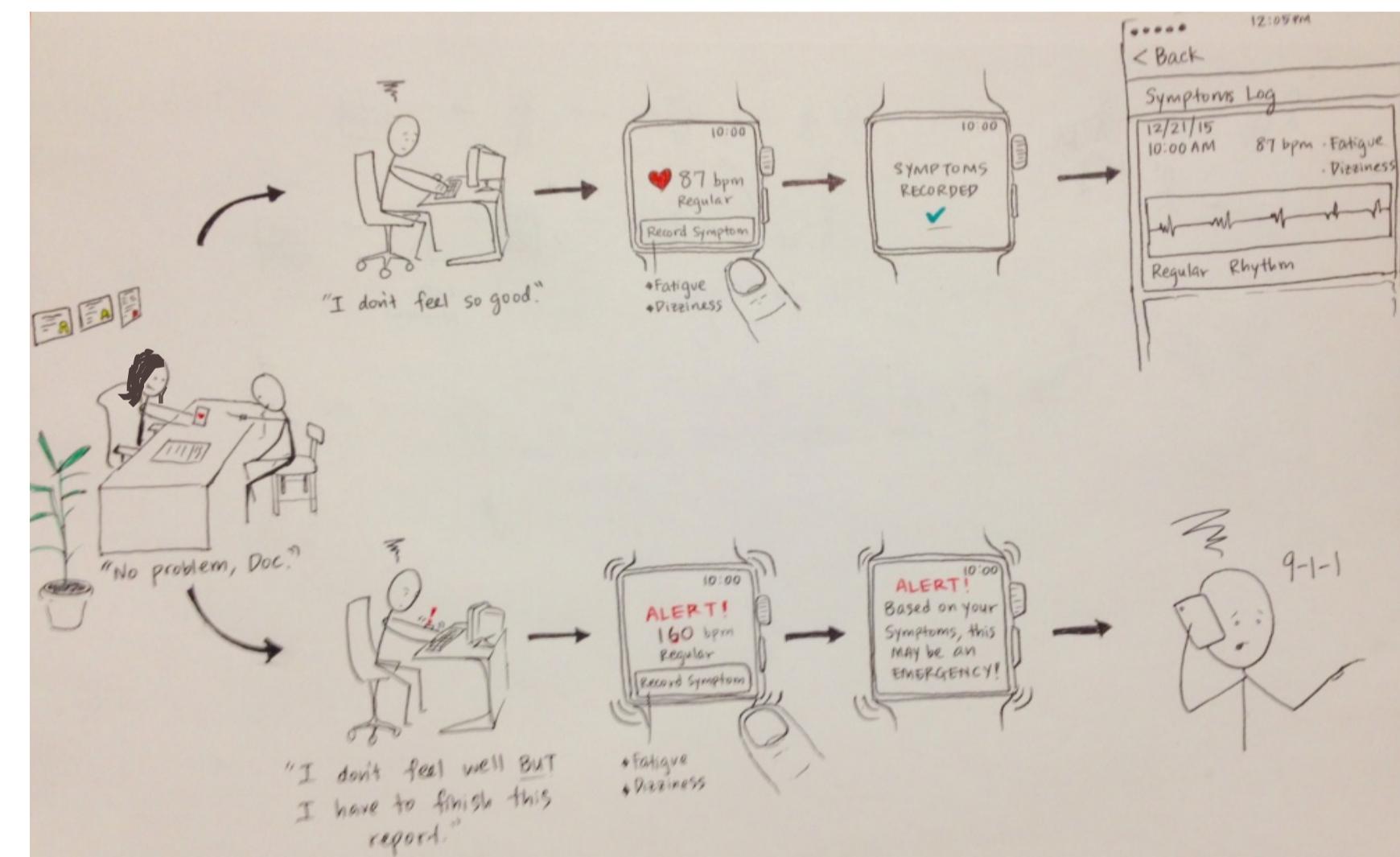
- Integration with Apple's Medical ID
- Movement
- consideration for heartrate

Won't Have

- Movement Data
- Automatic Emergency Call
- Custom Charts

Storyboard

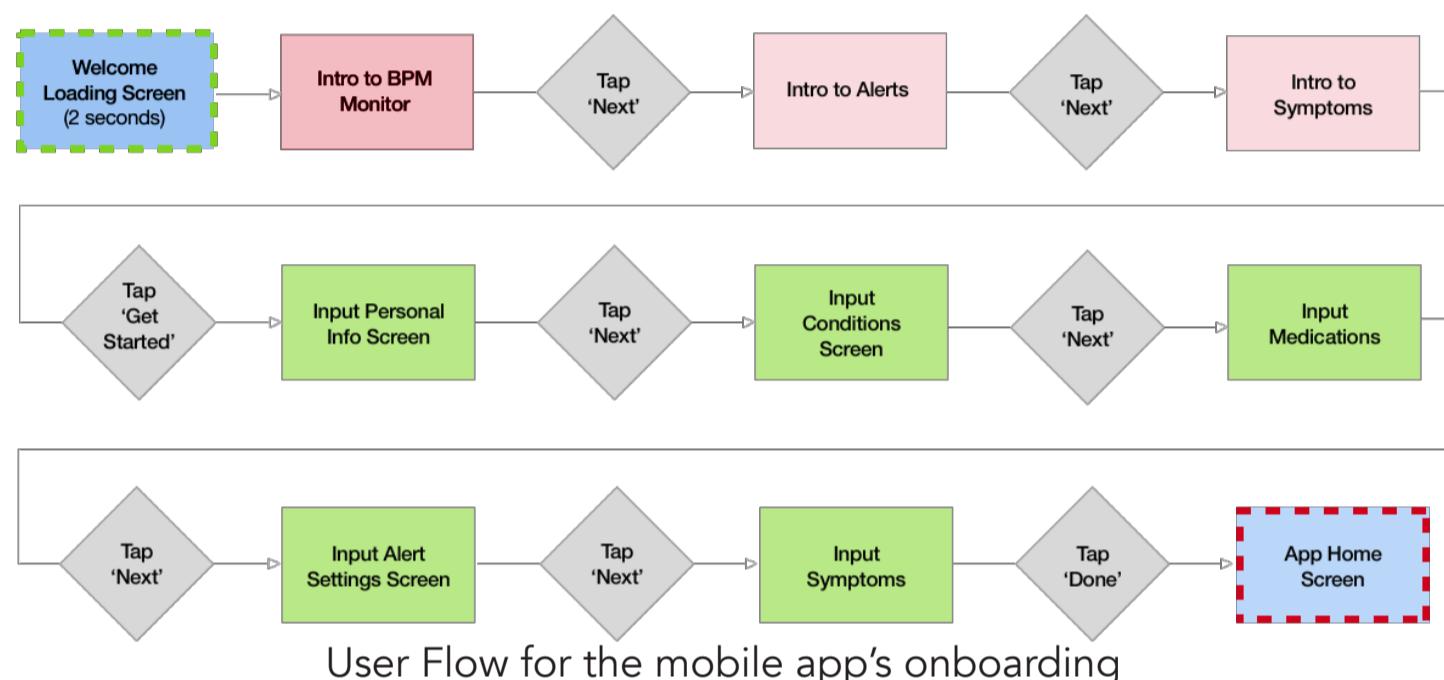
I sketched a visual Storyboard to highlight two use cases for our app. It was great to visualize how our persona would interact with the product.



DESIGN

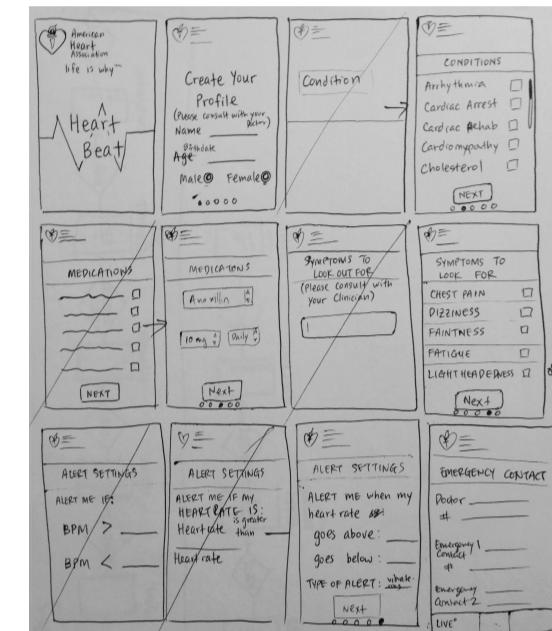
User Flow

I created user flows for the Watch and Mobile screens to map out the path our user must follow to accomplish their objective

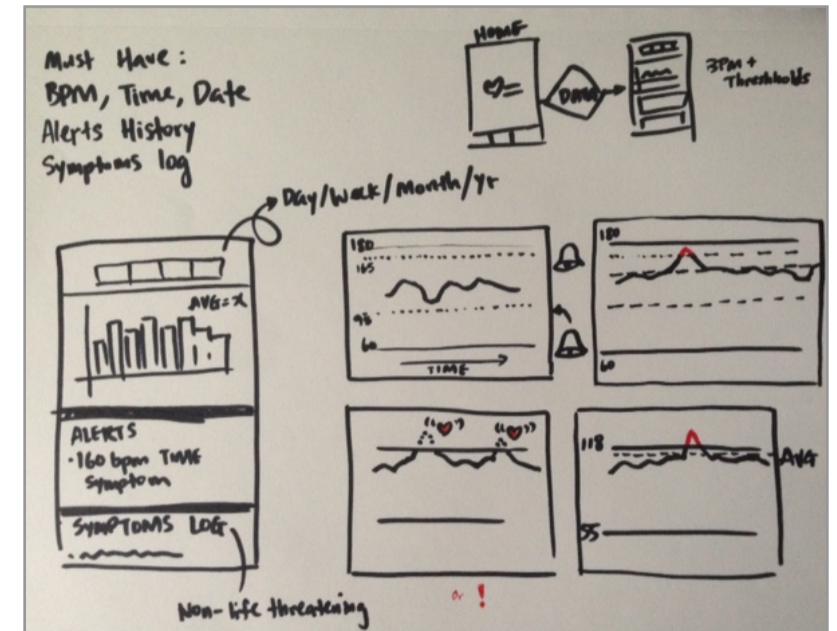


User Flow for the mobile app's onboarding

Paper Sketches



Ideating the Onboarding screens for mobile



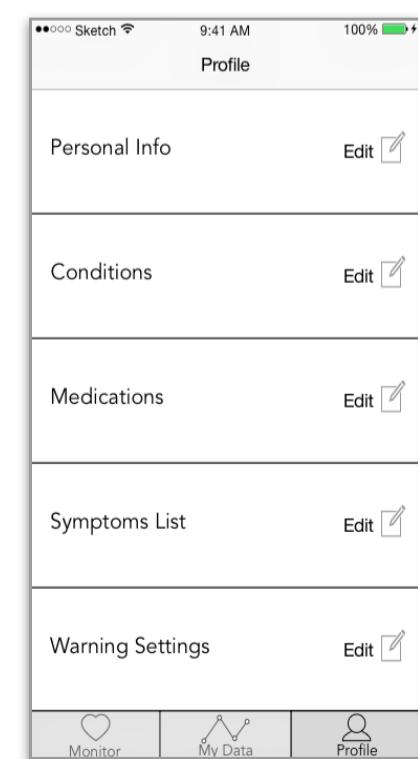
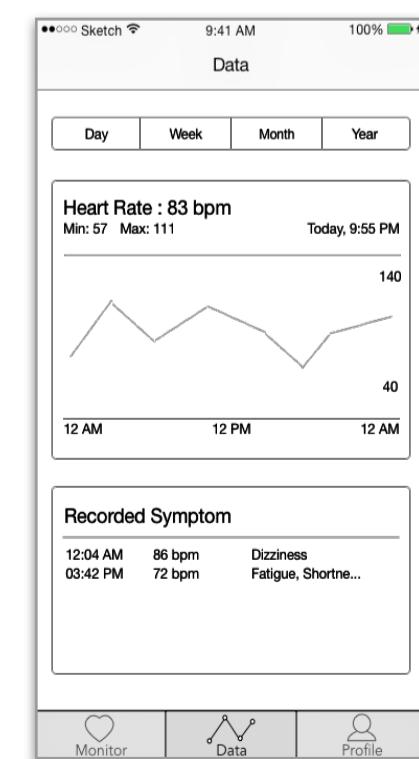
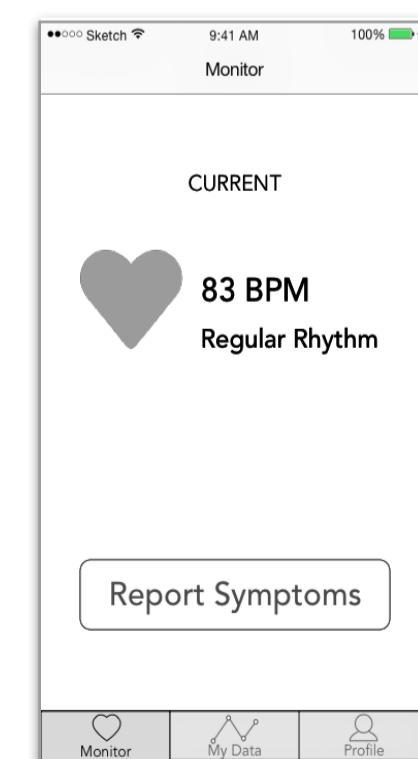
Ideating the data screen for mobile - which would display the most content

Low Fidelity Wireframes (mobile)

For mobile, we were able to fit all content into 3 key screens - the heart monitor, the data, and user's settings.

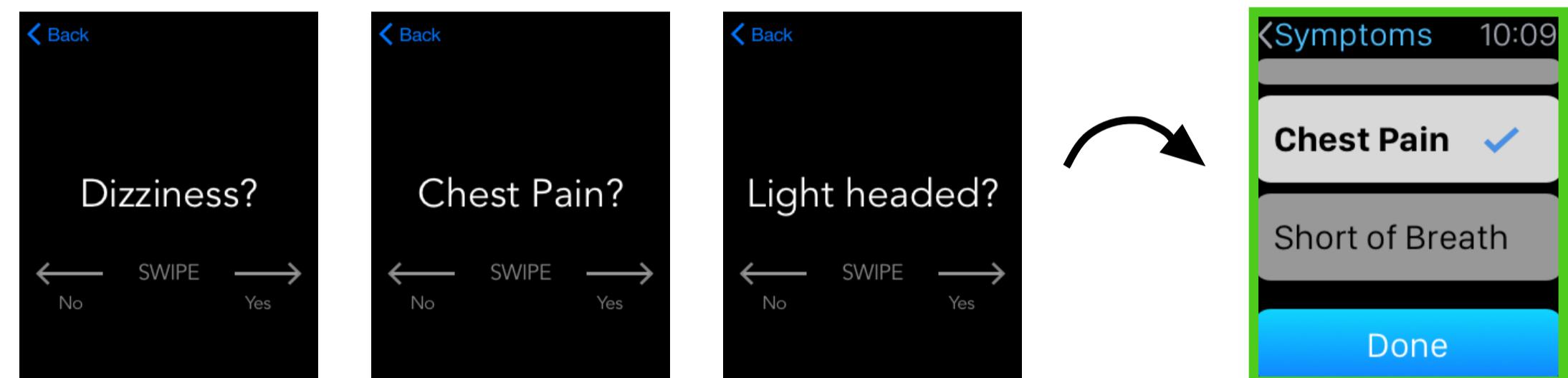
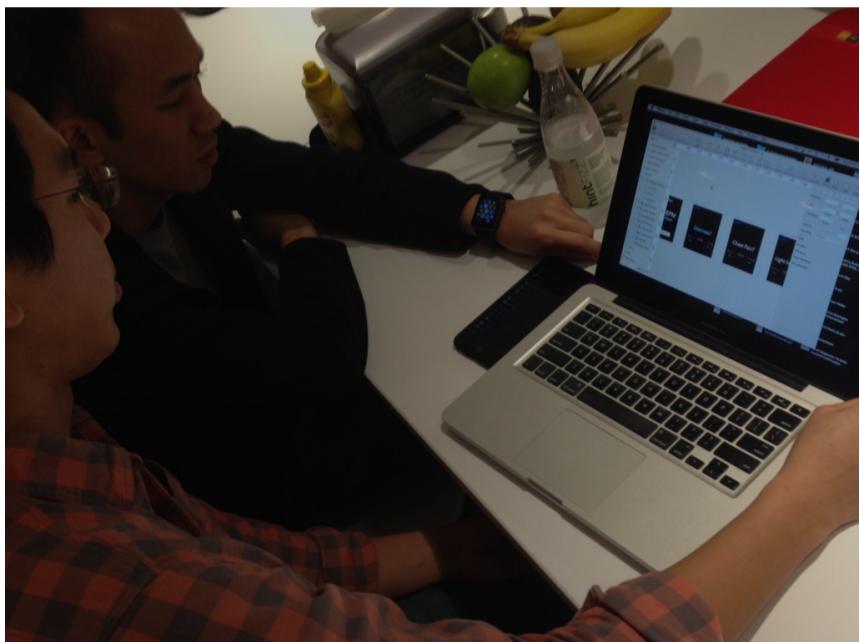


User Flow for Watch app



User Testing - Watch Mock-ups

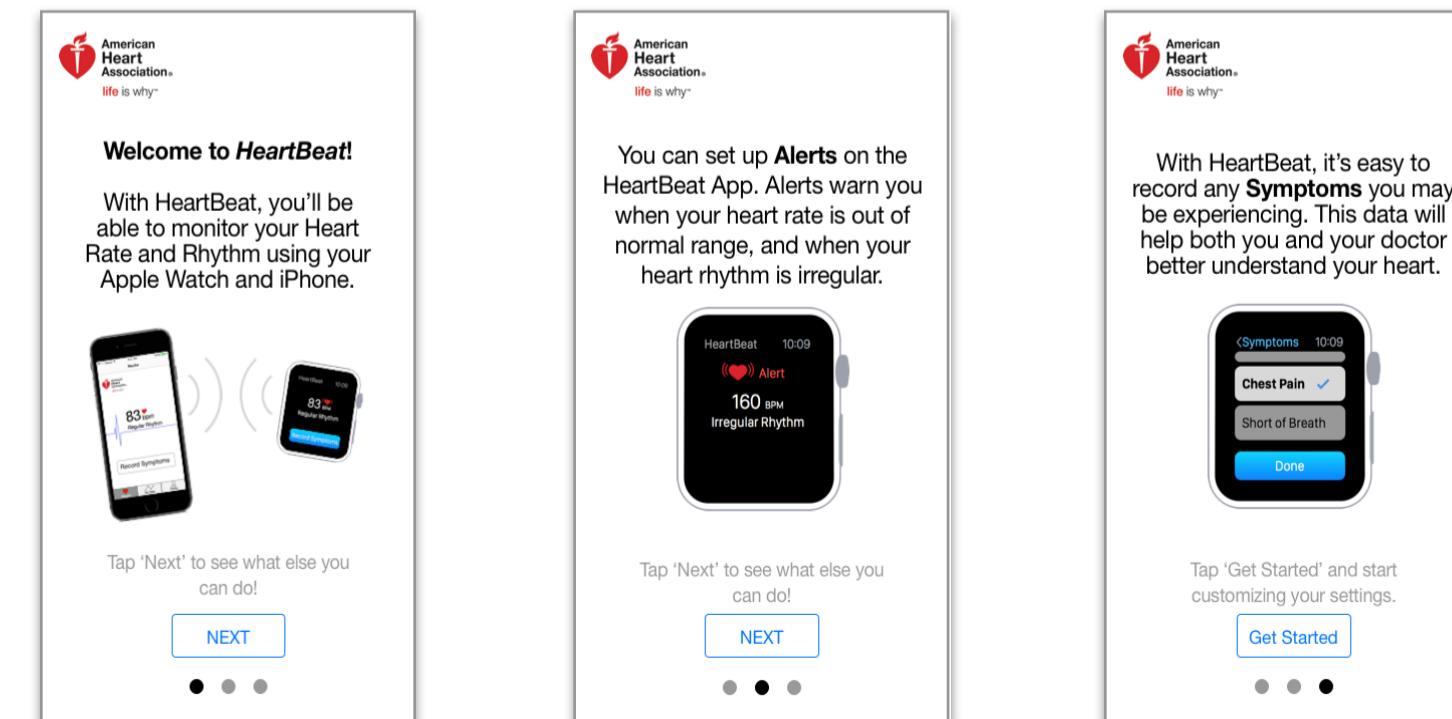
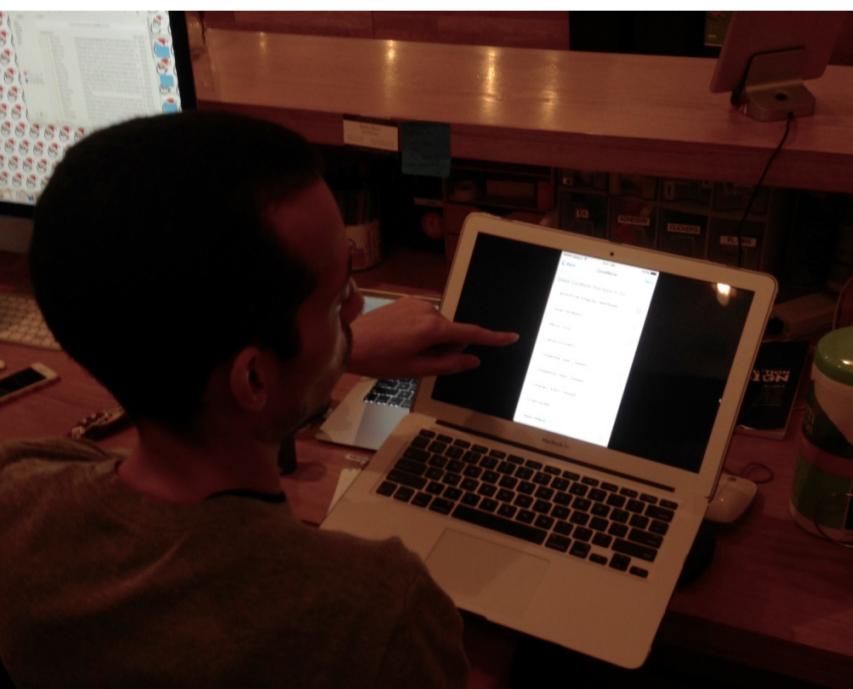
User Testing with actual Apple Watch users highlighted inconsistencies our design had with Apple's HIG, as well as the need to reduce the number of screens for a more fluid interaction.



Instead of swiping between symptoms, we listed all symptoms on a vertical scroll.

User Testing - Mobile Mock-ups

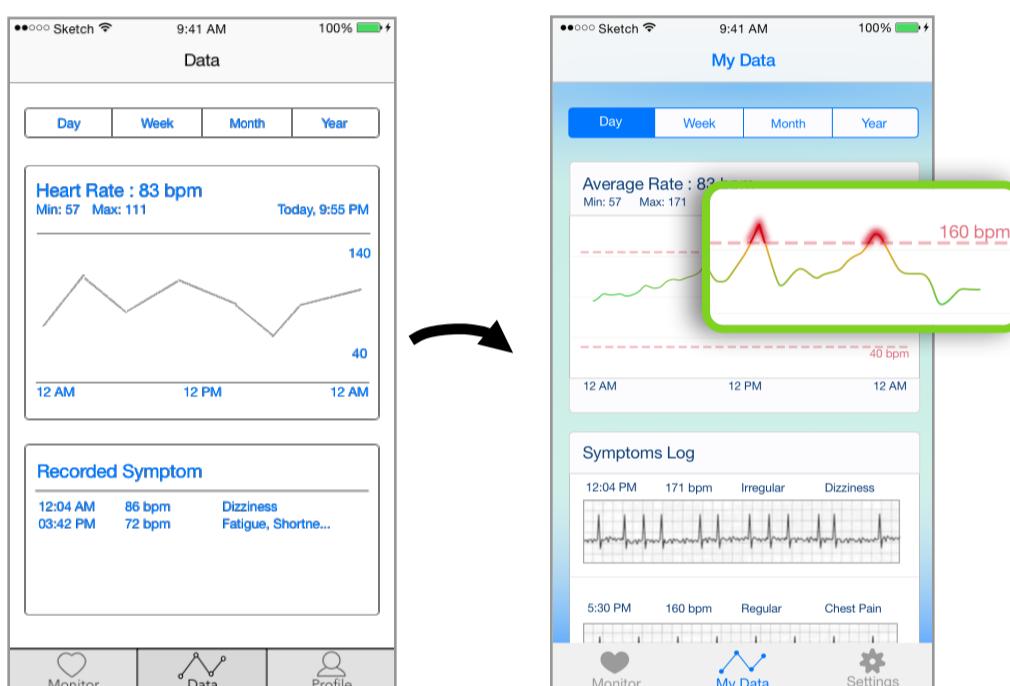
Testing the mobile onboarding process identified confusions participants had with understanding all of the features of the app. I created an onboarding Tutorial Screen that would educate new users about the all of the features of the app.



ITERATE

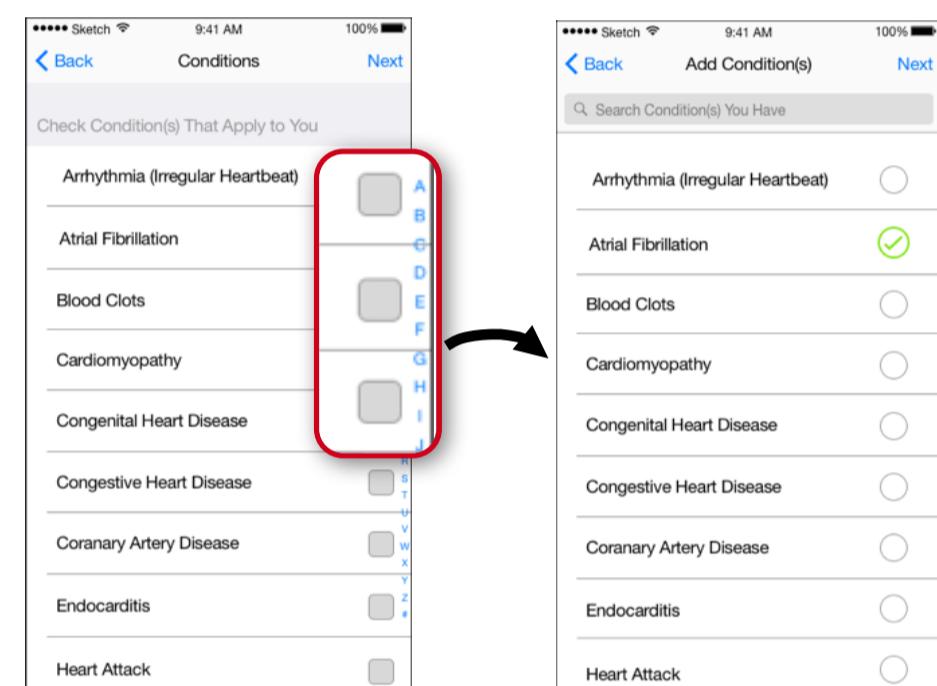
Efficiency

The new graph communicates more information but uses the same amount of space as the previous design.



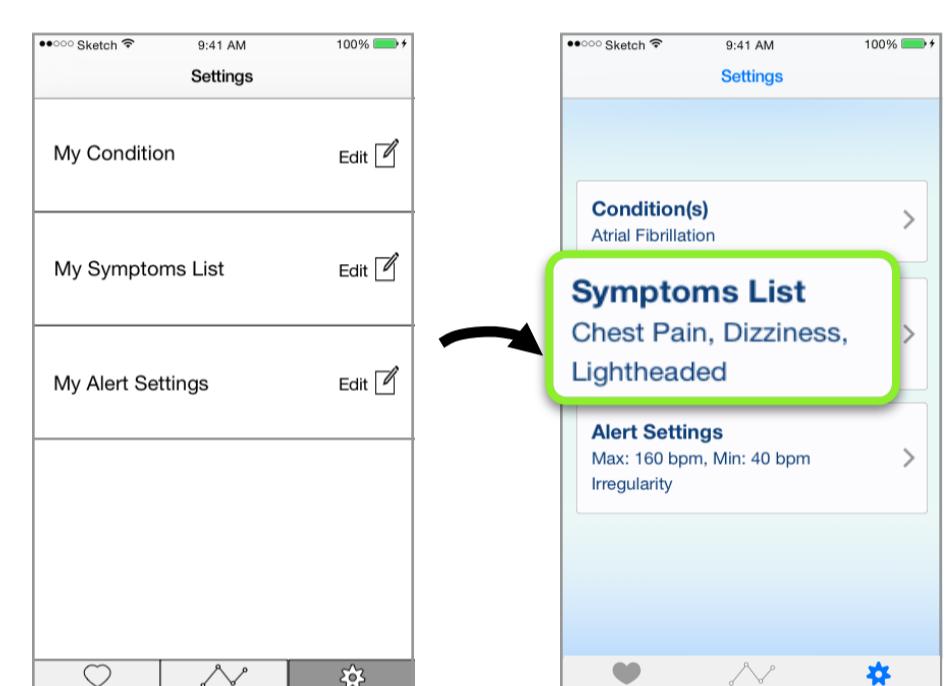
Error Prevention

Accounting for “Fat-Finger Syndrome”, we removed the alphabetical scroll list and added a search bar.



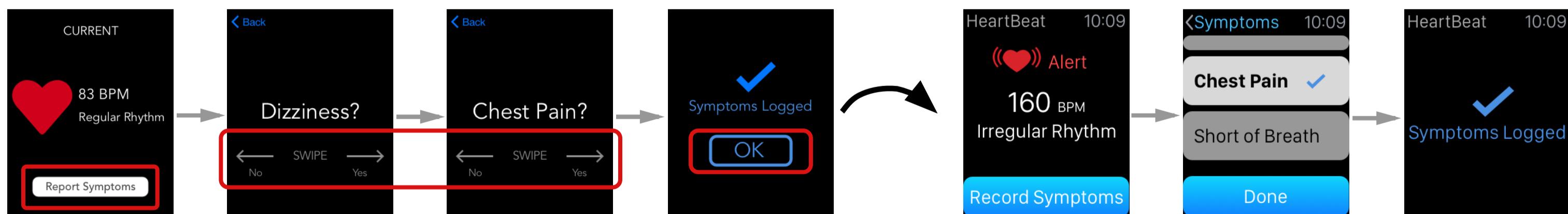
Recognition vs Recall

We provided more visibility upfront - allowing users to view their settings without having to tap into each section.

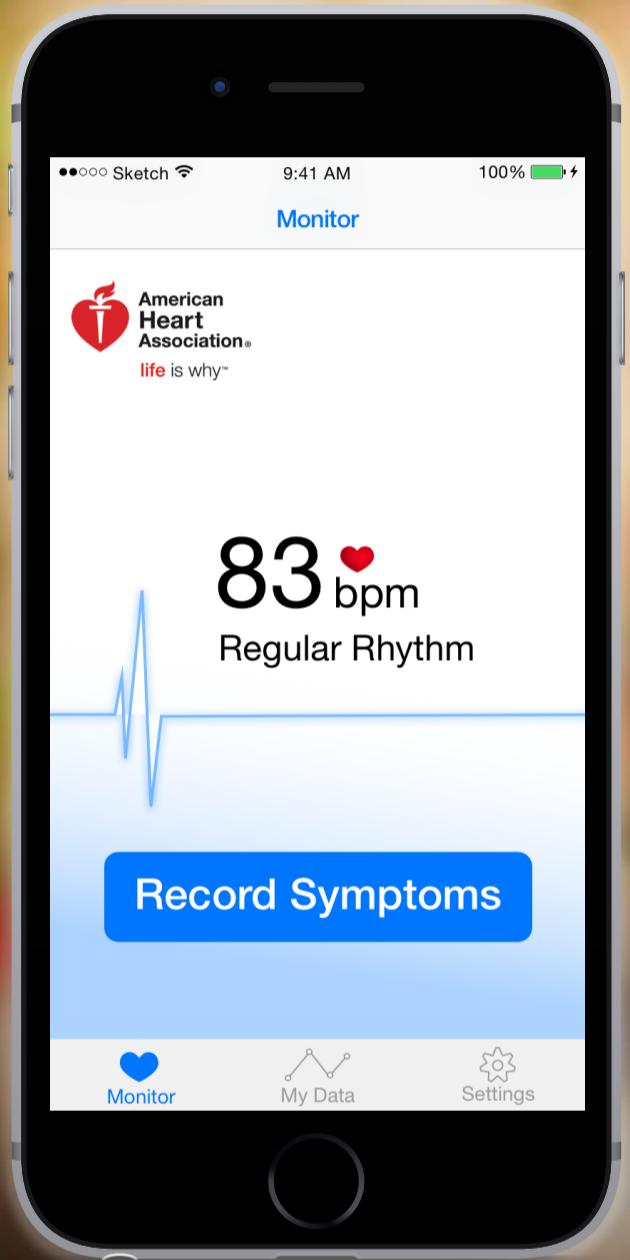


Accessibility

We replaced the swiping between symptom screens with a vertical scroll that listed all symptoms on a single screen. We also reduced the number of buttons and made buttons larger and more visible.



PROTOTYPE



iPhone App

<https://vimeo.com/166764990>

Apple Watch App

<https://vimeo.com/160791926>