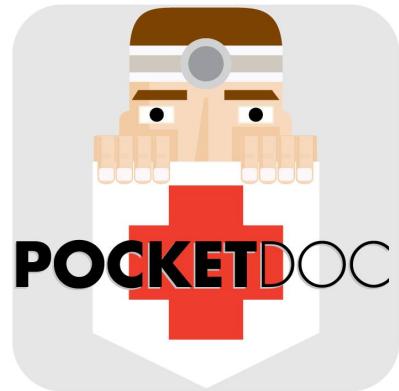


# Pocket Doc

## Team

- Michael Tang - Researcher
- Gus Glover - Researcher
- Will McNamara - Researcher
- Jordan Heier - Researcher



## Problem and Solution Overview

Last year in the United States alone over eighteen million adults living outside of nursing homes and other assistance giving facilities reported they had trouble with mobility. These adults, many of which require greater than average medical assistance, have trouble reaching a doctor's office or hospital. Although there are programs in place such as Life Alert which aid these adults in case of emergency, there is no solution to the problem of regularly scheduled checkups and procedures. There is no way to replicate the doctor's office through a long distance service, but we believe there should be a program which lowers the number of visits to a medical facility by connecting the doctor and patient from a distance. Routine checkup procedures, such as a filling of a prescription, taking blood pressure, temperature or heart rate should not require the patient to visit a doctor. Patients need a platform to better record and advocate for their own health. There already exists hardware to check blood pressure, temperature, weight, etc. By implementing a program that can connect with these devices and give patients a way to connect to their doctor in a simple, electronic manner, we could limit the number of cumbersome trips made by patients and better connect the doctor to his/her patient.

## Contextual Inquiry Participants/Results

We conducted our inquiry at The North Auburn Rehabilitation and Health Center. The facility is mainly for the elderly and the disabled. Some are there for post-surgery recovery and rehabilitation.



### **Contextual Inquiry Participant One**

Our first participant was a lady who appeared to be in her early 60s or 70s. She was recovering from a recent leg surgery and, as a result, was visiting the doctor more often than ever. She enjoyed seeing the doctor and had a reliable source of transportation from her boyfriend. She expressed interest in being able to fill prescriptions remotely but was not particularly tech savvy. We decided that we might need to revise our user group to one that was more interested about remote check ups and had access to more technology.

### **Contextual Inquiry Participant Two**

This was a man in his mid-50s, he recently had back surgery and was recovering. He visited the doctor 4-5 times a year to check his weight / vitals and fill prescriptions. This participant expressed a great interest in graphing health progress and being able to view it on your own time. As a whole, he wanted to track his health in a more organized fashion.

### **Contextual Inquiry Participant Three**

Our final participant was a staff member in her mid 50s struggling with diabetes. She had a car and was able to easily get to the doctor but still wanted to stay in more frequent contact. To track her glucose levels she had a mobile phone app. The app shared some graphing and recording functionality with ours but didn't address the issue of connecting with a doctor.

### *Design Implications: Users and contextual inquiry participants*

Because Pocket Doc targets mobility challenged adults, the platform should be easy to access. A mobile device would allow a patient to carry the platform with them, regardless of mobility challenges. For example, one contextual inquiry participant, who spent his day in bed, needs the platform to be accessible from his bedside. Similarly, another participant, who uses a wheelchair to get around, needs a platform that will be easy for her to keep with her.

Like many older adults, a good portion of our participants needed glasses or had trouble seeing. In addition to being lightweight and convenient, our platform must cater to those that may have visual impairments using large, readable buttons and a clear, simple interface.

It is noted that older adults likely did not grow up in the era of modern computing technology. Many of them have little to no experience with personal electronics or have trouble

using them, requiring a simple, self-explaining interface. The lack of experience our users have with electronics may very well be the most important design implication, since it is a main point of friction in user adoption.

### *Design Implications: Contextual Inquiry Results*

Our first participant was very uncomfortable with using any kind of screen interface, raising the concern that, for some, the perceived effort in learning a new interface may outweigh the effort it takes to travel to the doctor. Luckily, we observed a spectrum of comfort among older people and many are certainly willing, at least, to try to use a mobile interface. For this reason, we will attempt to make interactions relatively obvious and straightforward with little abstractions. For example, an icon like a gear, for settings, may not be obvious to non-technologically experienced users<sup>1</sup>, so a good compromise would be to have large buttons with readable text to make the right button to push more straightforward and plain.

Our interviewees at the rehabilitation center suffered from very diverse ailments, all of which came with their own complications and data pieces to monitor. We should be able to tweak the application to cater to many sets of conditions for many different patients. Right now, we intend to have a unified graphing interface that will take in a variety of numerical data. Our second user expressed interest in this concept saying that he's only able to view graphs of his progress at checkup time (roughly every three months). This would use the same system that is already in place for manual checkups except the data is broadcasted and shared between doctor and patient, to be seen and analyzed by either at their leisure.

The closest application in terms of services offered was *MyChart*, a system used by Swedish shown to us by our second interviewee. It has a phone and web interface and allows you to “review test results, view current medications & allergies, request medical appointments, request prescription refills, communicate electronically and securely with your clinic's medical care team” according to its [FAQ page](#). The app is strong when it comes to keeping records of your previous visits to the doctor and providing a rich database of contact information. Unfortunately, it only really

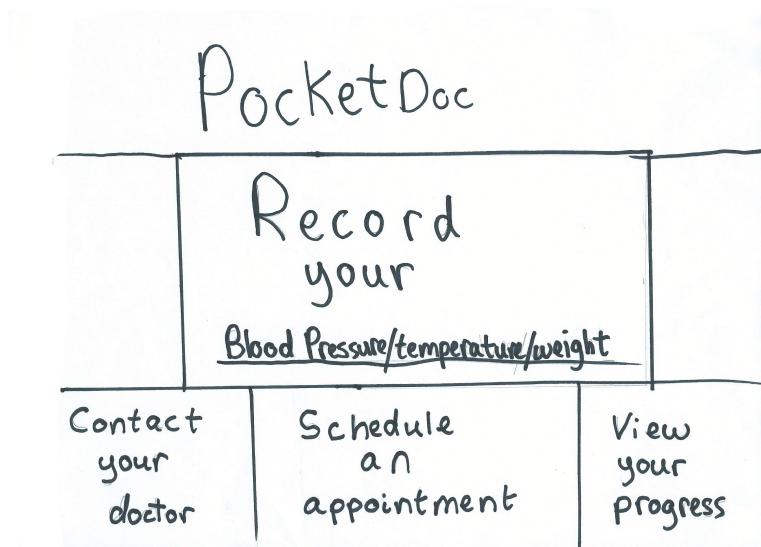


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<sup>1</sup> Susan Wiedenbeck (1999) The use of icons and labels in an end user application: An empirical study of learning and retention, *Behaviour & Information Technology*, 18.2, 100-102, DOI: 10.1080/014492999119129

supports a one way dataflow where your hospital provides you with their information. Our application would provide functionality for data entry and an improved view for the data itself. Despite being named *MyChart* the actually charting is done by comparing numerical logs between individual appointments and there is no support for creating graphs.

### *Initial Sketches*



The Blood Pressure/Temperature/weight line is a placeholder for the device attached to the phone (Thermometer, sphygmomanometer, scale). These devices would have to be made compatible with the particular phone.

September 23 <sup>rd</sup> -30 <sup>th</sup>							
Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Time
							9am
							10am
							11am
							12pm
							1pm
							2pm
							3pm
							4pm
							5pm

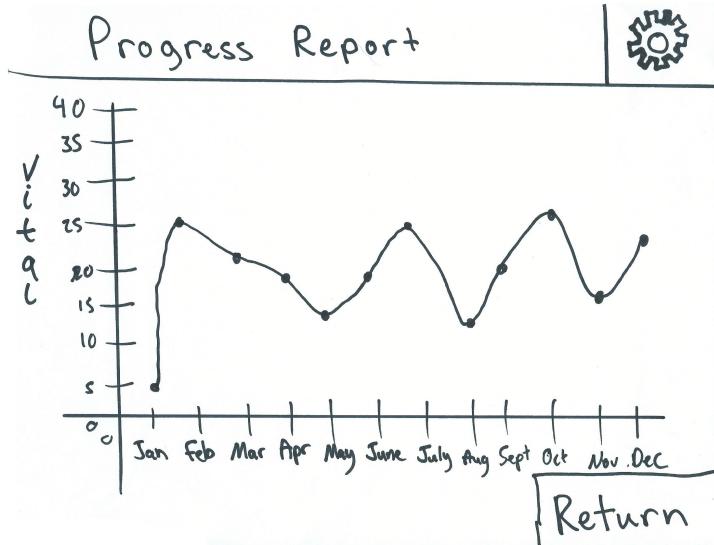
This is an example schedule page which would appear after the “Schedule your appointment” button was clicked. This would display the doctor’s schedule and allow the patient to quickly schedule a time.

Record vitals

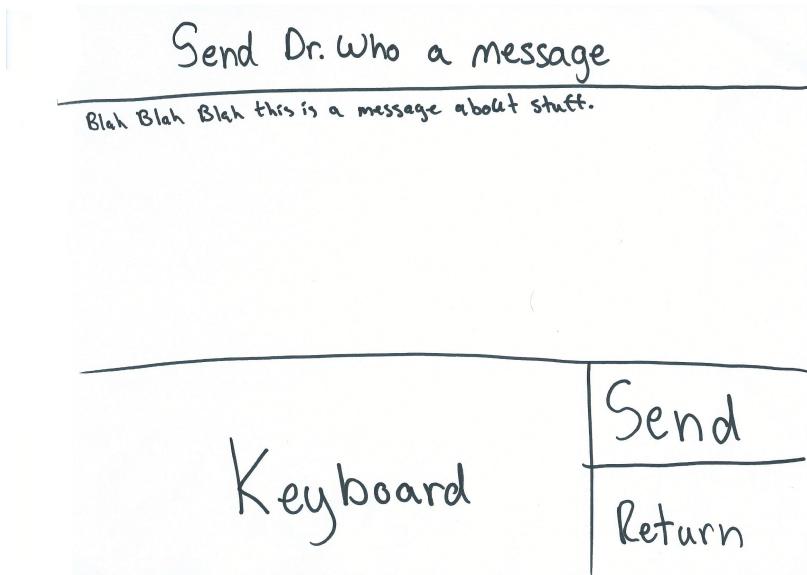
hold still recording...



This is an example screen of after the “Record your \_\_\_\_\_” button was pressed. This screen gives the user feedback and displays how much more time is required for the action.



This is an example screen of when after the “View Your Progress” button is clicked. It shows a graph of vitals over a period of time.



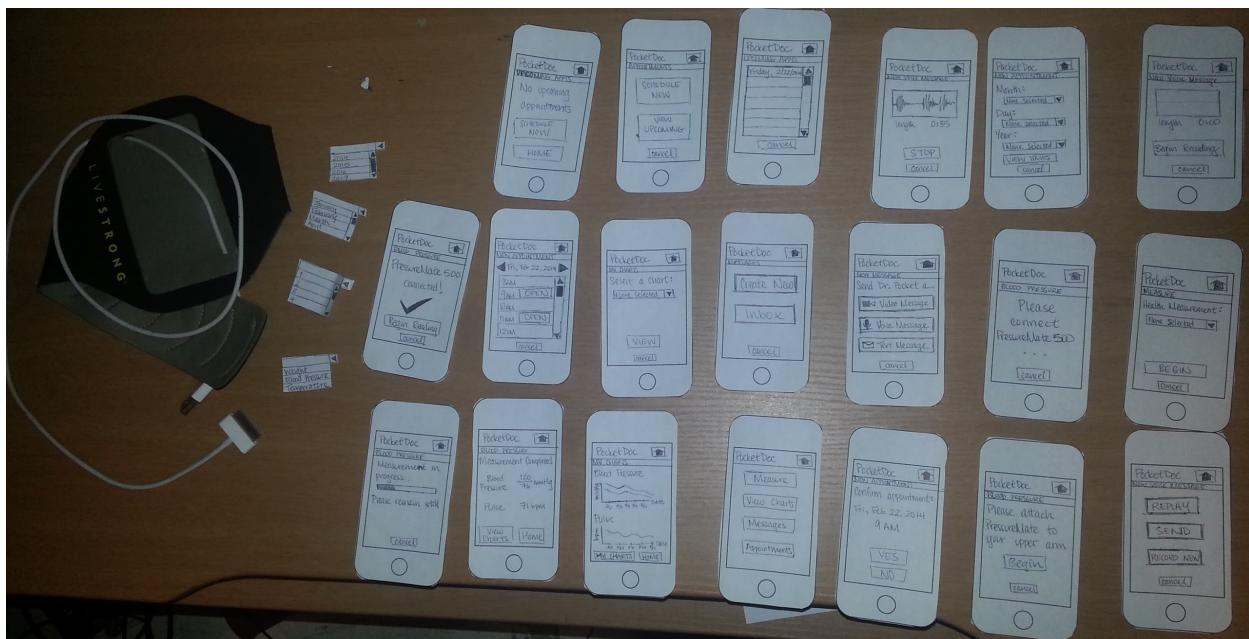
This is a screen after the “contact your doctor” button is pressed. This screen allows you to quickly communicate with your doctor via message.

### Design Choice

The design choice that we have decided to move forward with will be a mobile application. We believe that a mobile app is the best choice for our targeted user group because

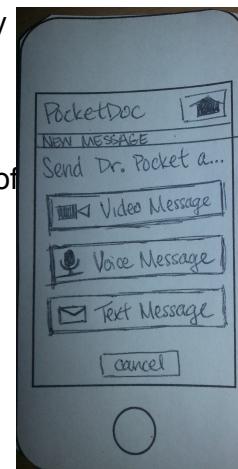
people who have mobility problems can carry their phones with them and do not have to stay close to their computers or land lines to use our app. Two of our three contextual inquiry participants had cell phones they carried with them at all times. Although one those participants didn't have mobility issues, most people today have mobile phones whether they are mobility impaired or not. The ability to take our app with them everywhere would be perfect to give them greater access to their doctors.

### Paper Prototype



*components of PocketDoc's prototype*

Our prototype was designed to resemble an iPhone application. Users were able to interact with the prototype by pressing down with their fingers. The prototype also provided a way for users to mock measure their vitals. We used the armband (seen on the left of the contents image) to simulate a blood pressure measurer which could be 'attached' to the prototype with the cord. To make the prototype as simple as possible, we decided to rely on large buttons for screen navigation. For example, the screen on the right utilizes four main buttons which allow the user to select a message type or to cancel. Also visible on this screen is the home button, located at the top right of the screen, which allows users to quickly return to the home screen. In an effort to keep the user from getting lost, we included a bar at the top of each



screen which reminds the user of the context. For example, the header bar on the screen to the right says ‘New Message’ to remind the user that they are composing a new message.

### *Evaluation Method*

#### **Tasks:**

1. *Contact your doctor about non-emergency issues or concerns and provide the relevant health information.*

When a patient has issues or concerns about their health, they want to be able to contact their doctor to see if anything could cause any problems. Currently there is no standard way for a person to contact their doctor and a lack of a response could cause uneasiness as to whether or not the doctor received the message. Attaching relevant information that can help the doctor reach a diagnosis faster can be a difficult task; the average untrained individual may not know which pieces of information are useful and what is noise. This task adds value to the current practice of calling or emailing a doctor about concerns with one’s health. Doctor’s have access to patient’s medical records as well as patient’s recent messages in one place with PocketDoc.

2. *Coordinate an appointment by scheduling a time which works for both you and your ride to the doctor’s office.*

When remote medical care is not enough, we want the patient to have an intuitive way to schedule appointments with their doctor. We would like the patient to have access to the doctor’s schedule and have the ability to schedule an appointment instantly based on the doctor’s availability. This will allow patients to quickly view all available times and schedule any buses or rides needed to get to the office without having to play phone-tag with the ride and the doctor’s office. This task replaces the common practice of calling a nurse or doctor’s assistant to schedule an appointment. This task could help save time on both the doctor office and patient ends by allowing doctors to easily display their available times and allowing patients to quickly and easily view these times.

3. *Record your standard health measurements and send it to your doctor.*

We want to have a unified process to record all relevant numerical health information in a

way that's easy to see and sort through chronologically for both doctors and patients. We also want the user to be able to interact with and manipulate the data easily. This data could be, for example, blood pressure, glucose levels, temperature, pain levels or any other numerical data that our interviewees identified as measurements important in standard check-ups.

#### **Environment:**

The testing took place inside the patient lounge at the North Auburn Rehabilitation Center. Each participant was individually brought into the lounge which had the paper prototype set up at a wheelchair accessible table (The appendix has images of our setup). The participant and ourselves were the only ones present while the testing was conducted.

#### **Participants:**

All three of our participants were mobility impaired and came to the testing in their wheelchairs. We tried to select participants with varying levels of experience with technology. The first was a man about sixty-five who had no previous experience with smartphones and very little experience with computers. The second participant was a woman about fifty-five who claimed to have some experience with phones, but did not own one herself. The third participant was also a woman around fifty-five who owned both a phone and a tablet and claimed to be very familiar with mobile devices.

#### **Procedure:**

Jordan worked as an observer and computer while Will facilitated the testing. Each participant was brought into the lounge where we introduced ourselves and explained that we were user testing an initial paper prototype for PocketDoc. After allowing time for questions, we asked them to sign the consent form. After they signed, we explained the prototype's material and how to operate them. We then instructed them to complete the first task. We allowed the users to navigate the prototype uninhibited unless they asked for help or clarification. After the completion of a task we directed them to the next one. After the user had completed all of the tasks, we handed them a survey and asked for any additional thoughts and feedback. After the survey was complete, we thanked the participant and escorted them back to their caregivers.

## **Measures:**

During the evaluation we kept track of how many times the users incorrectly selected a choice in the prototype. For example, if we expected a user to click a button to navigate towards the goal, but they instead did another action we marked this as an error. In addition to this measurement, we kept track of which elements in the design seemed to confuse the participant. For example during the testing all three participants were confused with the drop down menu used in one of the screens. When errors were made we also noted how the participants tried to interact with our design in unexpected ways. (more about measurements in the appendix)

## *Evaluation Results*

### **Participant Number 1:**

Our first participant was an older male with no smartphone experience. He wore glasses and was also in a wheelchair. He consistently was picking the incorrect buttons. Several times he became stuck and we needed to give him a hint or direct him where to go. His mistakes made us realize we needed to make the button labels on some screens even more clear.

This participant had problems with most of the interface. He couldn't put together which icons were meant to do what actions. The home icon he mistook for an arrow and we had to explain what it did. He didn't understand what a touch screen was or how to use it. Whenever he was faced with a drop down menu he just clicked it and did not select an option once the menu was open. Overall he became very confused and frustrated so he did not finish all of the tasks.

During his questionnaire he had some useful feedback. He told us that things need to be explained to him three or four times before he could do them himself. This suggested that we might want to incorporate a tutorial feature if this is a common problem. The clearest result from this user's experience was that our homescreen needed to be made even more simple.

### **Participant Number 2:**

Our second participant was an older woman, who also wore glasses and was in a wheelchair. She was a little bit more alert than our first participant. Since our last participant couldn't figure out how to connect the blood pressure device to the phone, we explained this beforehand (there wasn't an actual port on the paper prototype so we saw how it could be confusing).

The first problem she ran into with our interface was that she tried to begin her measurement before she actually selected from the drop down menu what to measure. After she fixed this mistake she finished the first task with ease. Her second mistake was during the second task she clicked the wrong button from the home screen. She was however able to get herself back to the home screen and click the right button without our interference. The next mistake was not understanding how to make a voice message. She clicked begin message but was not sure what to do next. When trying to select a day to make an appointment she only set the day, not the month or year before trying to advance. Once she had booked an appointment she didn't think the appointment was showing up in her schedule either which confused her.

This user was for the most part able to use our interface correctly. When we asked if screens were what she was expecting she would quickly reply yes. There were a couple problems that this user's test helped to uncover. Since she also made mistakes from the home screen it was even more clear we needed to make this screen simpler. Recording a voice message was not as simple as it should be, we needed to give some indication that a recording is in progress. As far as scheduling appointments, our interface for selecting a day to have an appointment could be greatly simplified by including a pop up calendar. The last thing this user's test suggested that we needed to fix was the upcoming appointments screen. It was difficult for her to understand it.

### **Participant Number 3:**

Our third participant was also in a wheelchair. She could use one arm, which we knew would make it difficult to attach the blood pressure device. We told her she could just pretend, but it also made us concerned whether this would be a common problem. This participant was very quick after we read each one of the tasks. She did great with the drop down menus and understood all of the buttons.

She did make some mistakes during her use of our interface. One mistake she made was putting the blood pressure device on before she actually needed to. She understood her readings, but was a little unsure how to interpret the graphs. On task two she accidentally clicked the wrong button from the home screen, which made it even more clear we needed to relabel our buttons. This participant wasn't able to figure out what the home icon was, so we had to bring her to the home screen to get her back on track. After that she went through task two without any more problems. While she was working on task three, when she got to picking a time she was curious about what if the available times didn't work. The fact that we had to explain how to go the next day made us think we should simplify that feature. When she got to the end of task three and was viewing her appointments she noted that she couldn't see the time of the appointment, just the day, which was another thing we definitely needed to fix.

## Revisions and Refined Design Sketches

**Home Screen:**

Help button is added to every screen. This allows for a safe "escape route" on any page if a user is stuck.

When selecting the "help" option, a brief message is displayed explaining the feature and the interface becomes dim, highlighting all interface icons that provide a tutorial

**Help Screen:**

Help

Tap on a button or widget to view a description and additional information about it.

OK

**Appointment Selection Screen:**

Picking a date to schedule an appointment on has been changed from several menus to a familiar calendar design that will seem more intuitive to users.

**Upcoming Appointments Screen:**

Viewing appointments has been simplified to viewing the soonest appointment in a large screen. Previously there was a list when users likely only had one outstanding appointment at any given time.

**Voice Message Screen:**

The video/sound recorder provides more feedback as to when it is recording and when a user should speak. The "stop" button label has been changed to "I'm done", for the user to indicate to themselves that they are finished with their message.

## *Interactive Prototype*

### **Overview of Implementation:**

When designing our prototype we emphasized making the interface as simple and clear as possible. We went back and visited our lo-fi prototype feedback and eliminated confusing elements in the prototype. For example, our participants had difficulty operating the drop down menus, so in the Hi-Fi prototype we eliminated these completely. Also some of the participants were confused as to what the main buttons on the home screen led to, so we relabeled the home screen's buttons, as well as added descriptions detailing what each button leads to. To help keep the user from getting lost and frustrated while using the application, every screen has the same consistent header which gives users the ability to return to the home screen as well as ask for help. This way if the user gets confused on a screen they can return back to the home screen quickly or go through a short tutorial on how to use the screen they are viewing. We also had unified placement of a "cancel / home" button in the bottom right corner that acted as a quick undo or exit from the current screen.

Additionally, we designed the prototype to allow the user to quickly go from one task to another related task. For example, after a user takes their vitals a typical next task would be to view his/her recent vital readings. So after taking a vital reading, the user has the ability to view their charts directly from the vital results screen in our design. This way the user does not have to navigate back to the home screen and through the chart options, but can instead immediately view their charts.

Finally, because our design is intended for use on mobile phones we used large fonts and buttons so that users could easily view and select options on a smaller interface. For example, on the home screen we have four large buttons which direct the user to all of the application's features. It was challenging to condense information enough to fit the screen size whilst still including enough feedback so that the user would understand what the application was doing. In our lo-fi design some of the participants became confused with the application due to a lack of feedback. In the hi-fi design we tried to fix these feedback issues with more verbose but precise instructions.

## Storyboards for Three Tasks:

1. Contact your doctor about non-emergency issues or concerns and provide the relevant health information.

**Home Screen:**

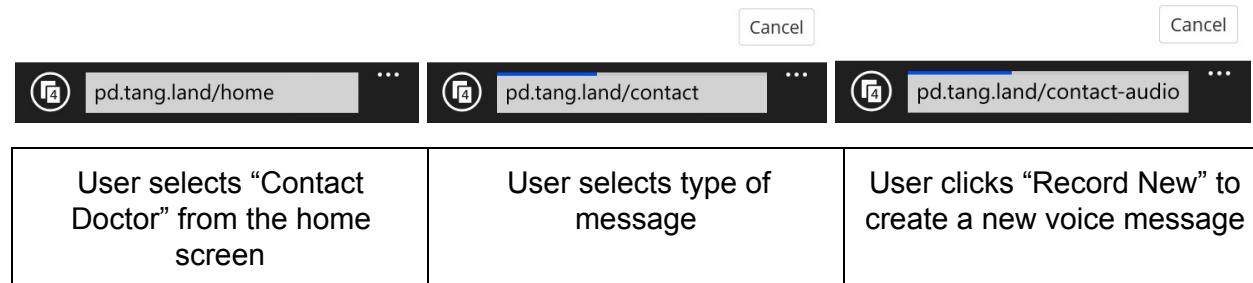
- PocketDoc logo
- Home button
- Help button
- New Measurement**: Record a new measurement to your chart
- View Charts**: Look at your previous measurements and health trends
- Contact Doctor**: Record a video, voice, or text message and send it to your doctor
- Appointments**: Review future appointments and schedule new ones

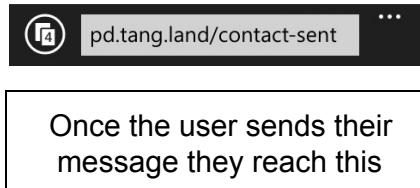
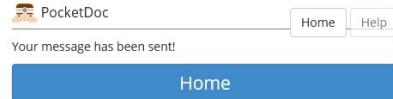
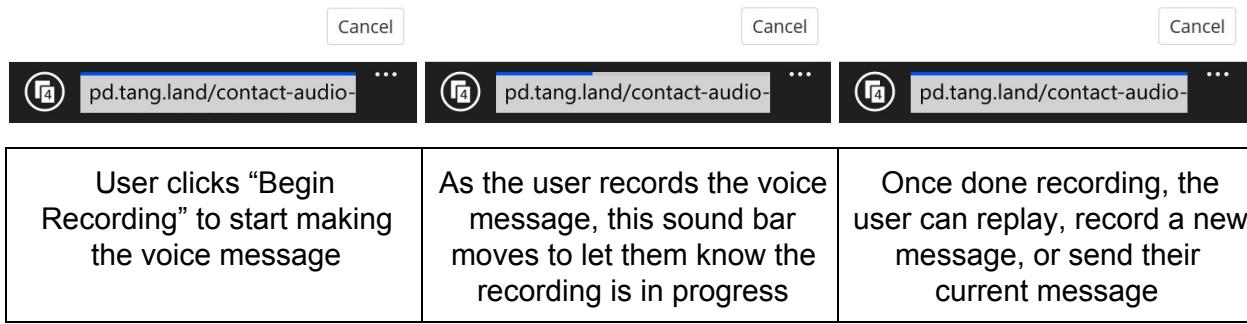
**Contact your doctor Screen:**

- PocketDoc logo
- Home button
- Help button
- Contact your doctor**
- Send Dr. Pocket a... (dropdown menu)
  - Video Message
  - Voice Message
  - Text Message

**Send your doctor a voice message Screen:**

- PocketDoc logo
- Home button
- Help button
- Send your doctor a voice message**
- Replay button
- Send button
- Record New button





confirmation screen

- Coordinate an appointment by scheduling a time which works for both you and your ride to the doctor's office.

The figure consists of three screenshots of the PocketDoc mobile application:

- Home Screen:** Shows "New Measurement" (Record a new measurement to your chart), "View Charts" (Look at your previous measurements and health trends), "Contact Doctor" (Record a video, voice, or text message and send it to your doctor), and "Appointments" (Review future appointments and schedule new ones). Buttons for "Home" and "Help" are at the top right.
- Your Appointments Screen:** Shows the message "You have no upcoming appointments." with a "Schedule New" button. The "Home" and "Help" buttons are at the top right.
- Pick an Appointment Date Screen:** A calendar for March 2014. The days are arranged in a grid. Blue boxes highlight specific dates: 8 (Sunday), 9 (Monday), 24 (Wednesday), 25 (Thursday), and 31 (Sunday). The "Home" and "Help" buttons are at the top right.

Below the screenshots is a diagram showing three browser tabs:

- Tab 1: pd.tang.land/home
- Tab 2: pd.tang.land/appointment-v
- Tab 3: pd.tang.land/appointment-r

Buttons for "Home" and "Cancel" are positioned above the tabs. Below the tabs is a table with three columns:

User selects “Appointments” from the home screen	They are taken to a page which shows their upcoming appointments and an option to schedule a new one	The user picks an available date (marked in blue)
--	--	---

**Pick an appointment time**

Times open on Thu, Mar 20, 2014

- 9 AM
- 10 AM
- 1 PM
- 3 PM

**Confirm appointment**

Confirm scheduling an appointment on

**March 20th, 2014**  
at  
**1pm**

**Confirm**

**Your appointments**

You have an appointment coming up on

**March 20th, 2014**  
at  
**1pm**

Cancel	Cancel	Home
pd.tang.land/appointment-p ...	pd.tang.land/appointment-c ...	pd.tang.land/appointment-v ...

Once a date is chosen the user is prompted to pick an available time	They have a chance to view their date and time before they confirm	Once they have confirmed the appointment appears in their upcoming appointments
--	--	---

### 3. Record your standard health measurements and send it to your doctor.

**Home**

**New Measurement**  
Record a new measurement to your chart

**View Charts**  
Look at your previous measurements and health trends

**Contact Doctor**  
Record a video, voice, or text message and send it to your doctor

**Appointments**  
Review future appointments and schedule new ones

**Take measurement**

Health Measurement

- Blood Pressure
- Weight
- Temperature

**Connect device**

Please connect PressureMate to your upper arm.

**Okay, It's Connected**

**Cancel**

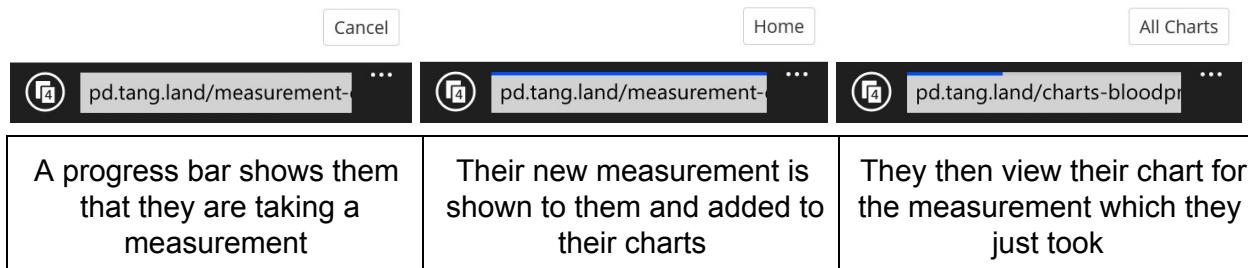
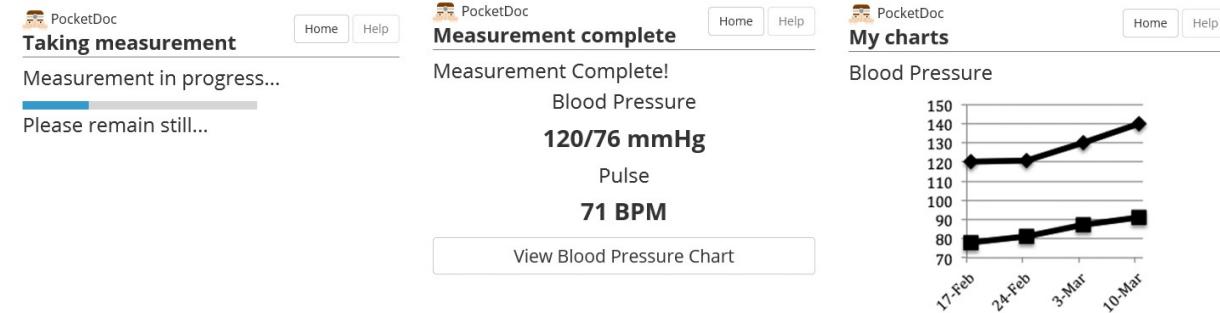
**Cancel**

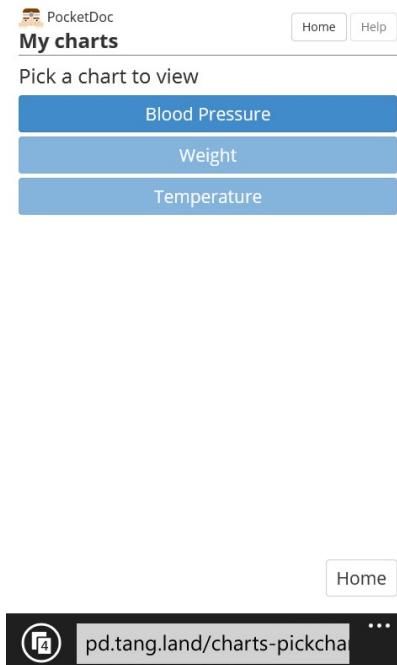
pd.tang.land/home ...

pd.tang.land/measurement ...

pd.tang.land/measurement-c ...

User selects “New Measurement” from the home screen	They choose what they need to measure	They attach the appropriate device and begin their measurement
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They can then view any chart they want to

#### Feedback about the Prototype:

To get feedback on our interactive prototype, we returned to North Auburn Rehab and Health Center to ask two of our participants from user testing to look at our design. These participants were the second and third participants from our user testing for our paper prototype. We opened the website on Jordan's phone and had each of them walk through and try each one of our tasks again with our updated interface. As they worked through the tasks we would ask questions to get feedback. When they had completed the tasks we asked for recommendations and any additional questions we didn't have the chance to during their use of the application.

Participant 3 from our paper prototype testing was the first stakeholder to give feedback on our new prototype. As she walked through each one of the tasks she didn't have any problems, but she did give us a lot of great feedback. She said she wanted to see her doctor's name on every screen that it was relevant to make sure that her information wasn't being sent to the wrong place. This came up for instance when she sent a message and wanted to be able to see whoever was getting the message, whether it was the doctor or a receptionist. This stakeholder also had some great ideas of how to improve the scheduling an appointment feature. She wanted the calendar to include the days of the week at the top and also wanted there to be a key to show what blue days (available days) and white days (unavailable days) meant since it was not obvious. This participant also had the idea that when an appointment was scheduled it would be nice to see the address and a map of how to get to the doctors office. We had not implemented the help button yet and she recommended that it should give step by step

instructions of how to do what you want to do. She was happy with our new updates and had some great feedback to improve on in the future.

Participant 2 from our user testing was the second stakeholder we reached out to for feedback. We also had her walk through each of our tasks with the interactive prototype. As she went through each screen she said that the app “made sense” and was simple to use. Making the application easy to use for older people was one of our big concerns and it seemed as though we had made some progress. She did however have a problem still with how to start the voice message. She tried to talk before clicking to begin the message but after we corrected her and she saw the sound bar moving she could understand what she had done wrong. She recommended that we add more back buttons to all screens to make it easy to undo a mistake. We noticed that her hands were shaky, so it would be easy to click the wrong button and we would need to add support for these mistakes. Overall this stakeholder was very happy with the application.

## Appendix

### Forms Handed to Participants:

#### Consent Form

The PocketDoc application is being produced as part of the coursework for the University of Washington Computer Science & Engineering course "CSE 440: Introduction to Human-Computer Interaction". Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of PocketDoc. Data will be collected by interview, observation, and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Jordan Heier, Will McNamara, Gus Glover, and Michael Tang) or with Professor Maya Cakmak, the instructor of CSE 440:

Maya Cakmak  
Computer Science & Engineering  
University of Washington  
mcakmak at cs.washington.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the researchers and their supervisors.

I acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my usage and opinions in relation to the PocketDoc experiment. I understand I may withdraw my permission at any time.

Name \_\_\_\_\_

Date \_\_\_\_\_

Signature\_\_\_\_\_

Witness Name \_\_\_\_\_

Witness signature\_\_\_\_\_

*These consent forms were handed to and signed by all participants. We have not included their signed copies in this report in order to keep participants' names private.*

(1)

## User Testing Questionnaire

Please circle or write in your answers.

1. How easy was it to use PocketDoc?  
a. Very Easy   b. Easy   c. Medium   d. Hard   e. Very Hard
2. How likely would you be to use PocketDoc?  
a. Very Unlikely   b. Unlikely   c. Maybe   d. Likely   e. Very Likely
3. Would PocketDoc make it easier to manage your health?  
a. Yes  
b. No
4. Do you think PocketDoc would help to reduce your doctor visits?  
a. Yes  
b. No
5. What was confusing about our interface?  
A lot.

6. What additional features would you expect an application like PocketDoc to have?

Please write any additional comments or suggestions here:

*User Test Number 1 Questionnaire*



## User Testing Questionnaire

Please circle or write in your answers.

1. How easy was it to use PocketDoc?

- a. Very Easy    b. Easy    c. Medium    d. Hard    e. Very Hard

2. How likely would you be to use PocketDoc?

- a. Very Unlikely    b. Unlikely    c. Maybe    d. Likely    e. Very Likely

3. Would PocketDoc make it easier to manage your health?

- a. Yes

- b. No

4. Do you think PocketDoc would help to reduce your doctor visits?

- a. Yes

- b. No

5. What was confusing about our interface?

6. What additional features would you expect an application like PocketDoc to have?

Please write any additional comments or suggestions here:

application good . It might be  
Confusing for some -

User Test Number 2 Questionnaire

(3)

## User Testing Questionnaire

Please circle or write in your answers.

1. How easy was it to use PocketDoc?

a. Very Easy   b. Easy   c. Medium   d. Hard   e. Very Hard

2. How likely would you be to use PocketDoc?

a. Very Unlikely   b. Unlikely   c. Maybe   d. Likely   e. Very Likely

3. Would PocketDoc make it easier to manage your health?

a. Yes

b. No

4. Do you think PocketDoc would help to reduce your doctor visits?

a. Yes

b. No

5. What was confusing about our interface?

Times

6. What additional features would you expect an application like PocketDoc to have?

Dr Name:

Please write any additional comments or suggestions here:

*User Test Number 3 Questionnaire*

## Raw Data:

Notes taken during testing (originally handwritten):

**Participant 1:** Had some initial confusion as to what our paper prototype was and how to use it. Wearing glasses and in a wheel chair. No cell phone experience.

### Task 1:

- Clicked view chart when trying to measure bp.
- Said the screen he reached was not what he expected
- When we pointed out the home icon he thought it was an arrow and was unsure what it would do.
- We took him back to home screen and he then clicked appointment which was also wrong tab.
- He forgot his task after that, once we reminded him he clicked the measure button from the home screen (correct choice).
- Couldn't figure out drop down menu. He clicked the drop down arrow and tried to advance
- Couldn't connect the bp measurer to the phone
- Had continuous problems understanding the touch screen, didn't understand pushing buttons
- He did know what was happening when he actually took the measurements, but was then confused by the graph afterwards

### Task 2:

- Clicked appointment (wrong choice)
- We brought him to the right screen
- Didn't complete sending message, he was becoming frustrated so we let him stop.

### Task 3: Didn't make it to this task

#### Notes during his questionnaire:

- He kept trying to push the Ipod button to select options
- He said that if we went over how to use it 3 to 4 times it would be useful (possible solution, include tutorial)
- Home screen was not clear enough for him

**Participant 2:** Female with glasses and in a wheelchair. We explained plugging in the pressure device before tasks.

### Task 1:

- Initially pressed wrong button but was able to figure out our home icon to correct mistake.
- Once in measure screen she tried to begin before selecting what to measure from a drop down menu
- Connected the bp device correctly
- Did very well navigating interface compared to participant 1.
- When asked if screens were as she expected, replied yes

### Task 2:

- Clicked wrong button from home screen (view charts)

- Made correct choice from home screen on second attempt
- Became stuck after she clicked to begin a voice message, we had to explain that she would need to talk

Task 3:

- Made correct choice from home screen
- Took a little while to figure out what to do with the month, day, and year menus
- She only set the day, not the month and year (maybe we should add a pop up calendar)
- Understood how to select a time, but was confused when she went to view her appointments. She didn't think there was any scheduled on the screen

Notes during her questionnaire:

- Liked taking measurements, had concerns about how other measurements such as weight would work
- Charts were understandable and would be helpful for her
- During her testing she thought she needed to click ipod button along with the touch screen

**Participant 3:** Also in a wheelchair with glasses. Only could use one arm.

Task 1:

- Went very quickly through interface
- First problem was putting on the bp device before she needed to
- Seemed unsure how to read/understand the graphs

Task 2:

- Clicked wrong button from home screen (view charts)
- Didn't notice home icon, we had return her to the home screen manually
- From there she finished task without problems

Task 3:

- She had no problems here
- Was curious about what to do if the available times didn't work (we had to explain how to go to the next day)
- Wanted to see the time when viewing her appointments

Notes during her questionnaire:

- Scheduling appointment was most confusing for her
- Wanted more confirmation when messaging her doctor

Log of Critical Incidents:

Problem navigating from home screen:

- User one had 4 problems with this
- User two had 1 problem selecting wrong option
- User three had 1 problem selecting the wrong option

Problem understanding home icon:

- Only user two understood the home icon and what it did.
- User three understood after using it once
- User one never figured it out

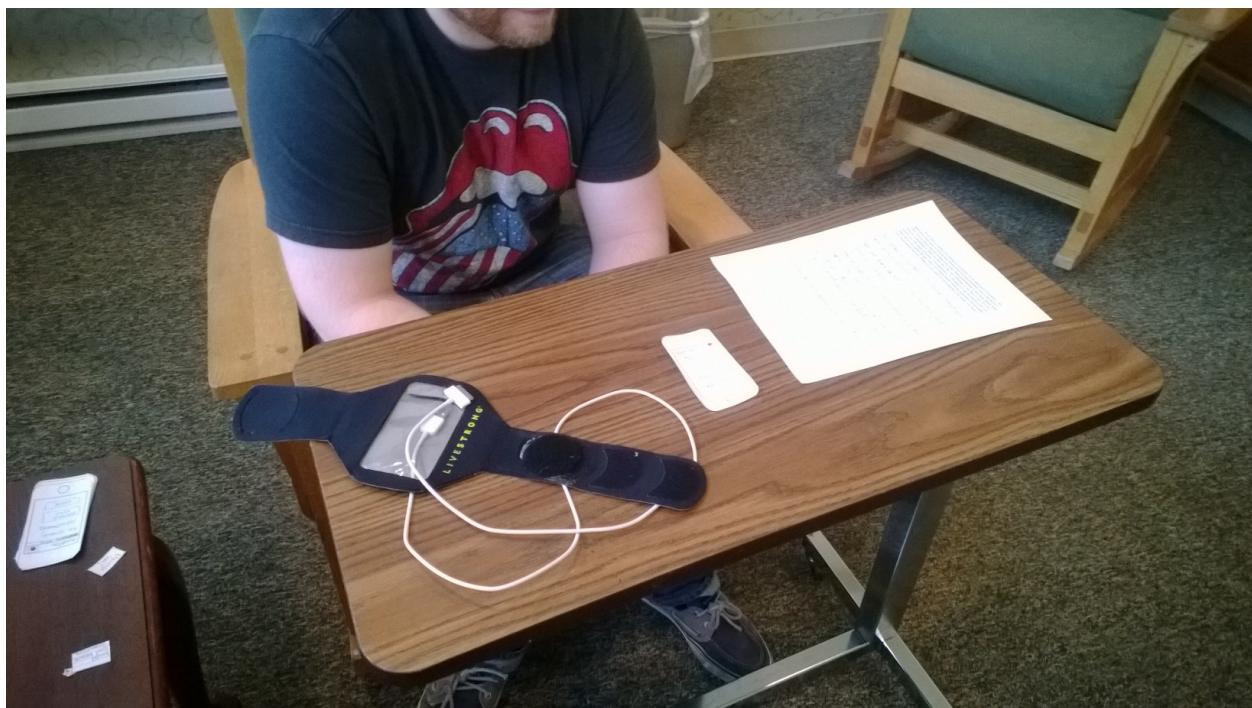
Problems with drop down menus:

- Only user three understood and used the drop down menus correctly.
- User two was able to figure them out pretty quickly after some mistakes (would pick options for some drop down menus, not all)
- User one never figured them out (he would open them but didn't do anything from there)

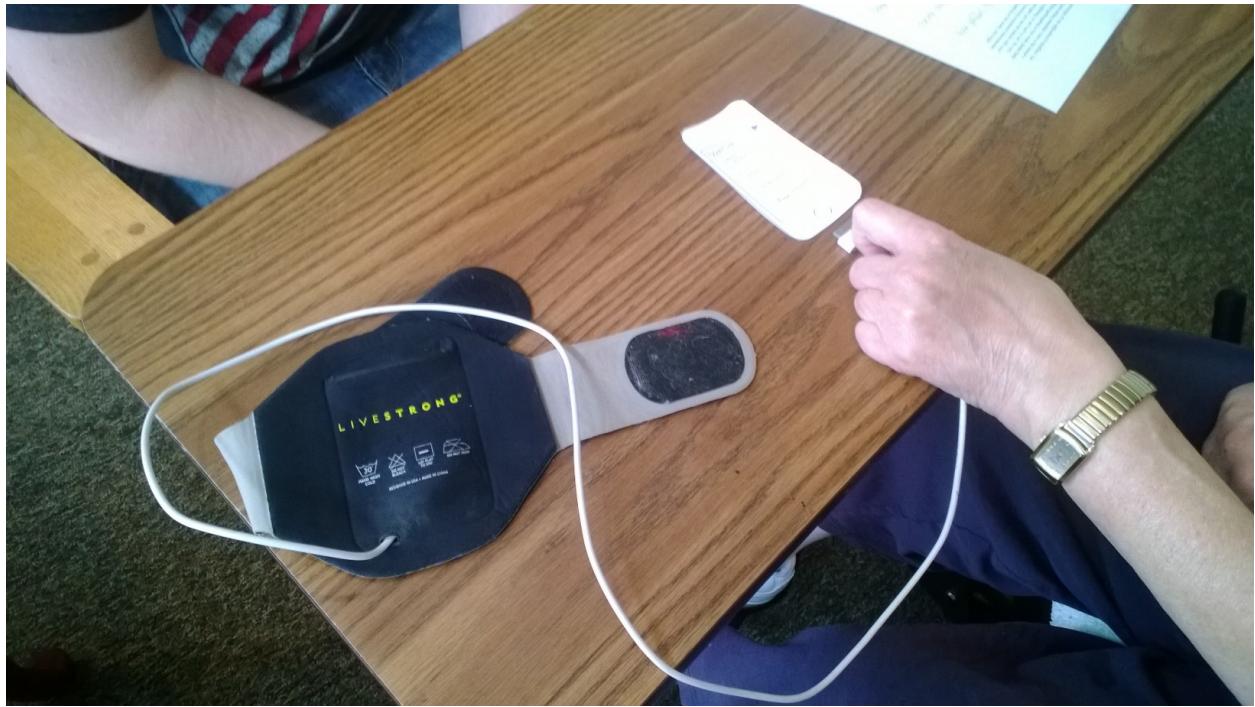
Problem picking date to schedule appointment:

- User one didn't make it this far
- User two only selected the day, not the month and year
- User three did fine

Additional Sketches, Figures, or Photos:



*Initial Setup Before User Enters*



*Picture During a User Test*

Script for Hi-Fi prototype:

Task 1: *Contact your doctor about non-emergency issues or concerns and provide the relevant health information.*

Scenario: You as the user have a concern about your health and would like to contact your doctor to ask for advice using a voice message.

Script:

- 1) Enter mock username and password then Select “Sign In”
- 2) Select “Contact Doctor”
- 3) Select “Voice Message”
- 4) Select “Record New”
- 5) Select “Begin Recording”
- 6) Select “Done”
- 7) Select “Send”
- 8) Select “Home”

*Task 2: Coordinate an appointment by scheduling a time which works for both you and your ride to the doctor's office.*

Scenario: You as the user wish to schedule an appointment with your doctor on March 20th at 1p.m.

Script:

- 1) enter mock username and password then Select “Sign In”
- 2) Select “Appointments”
- 3) Select “Schedule New”
- 4) Select “Click on March 20th”
- 5) Select “Select 1p.m”
- 6) Select “Confirm”
- 7) Select “Home”

*Task 3: Record your standard health measurements and send it to your doctor.*

Scenario: You as the user want to record your vitals, in particular you wish to record your blood pressure using a device which can be attached to the phone. Afterwards you would like to view your blood pressure charts which have been logging your progress

Script:

- 1) enter mock username and password then Select “Sign In”
- 2) Select “New Measurement”
- 3) Select “Blood Pressure”
- 4) Pretend you connected a blood pressure reader and Select “Okay, It’s Connected”
- 5) Wait for measurement to complete
- 6) Select “View Blood Pressure Chart”
- 7) Select “Home”