

Title: honestCare

Team Members:

Eugene Oh: Writer, user studies, UI design

Maggie Robinson: Writer, editor, artist

Sylvia Johnson: Writer, editor, website designer

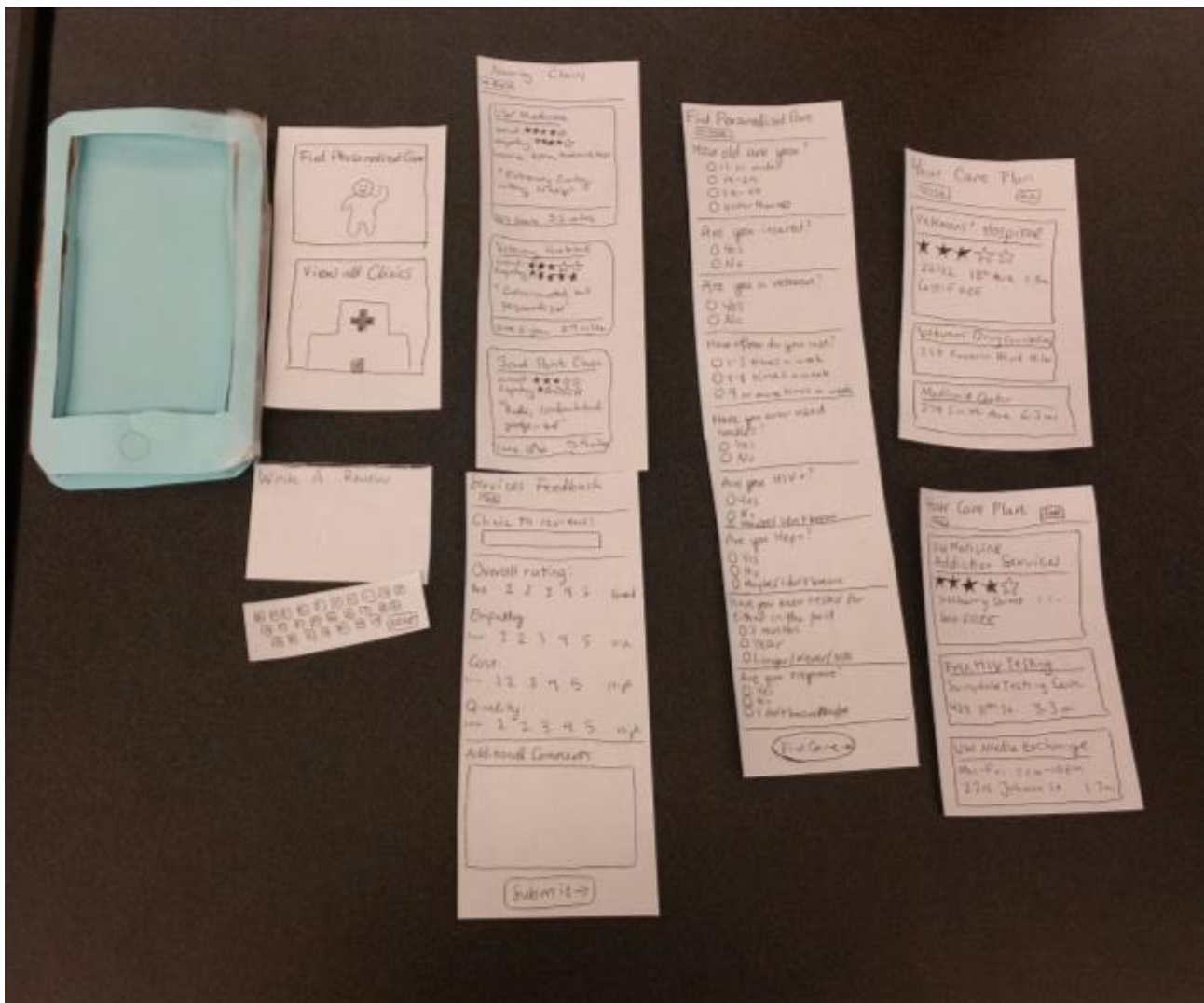
Neil Abburi: Writer, editor, website designer

Problem and Solution Overview:(1 paragraph)

The opioid use population often faces much stigma from the general public. This is especially challenging, considering the high efficacy of medical treatment in said populations. Our vision for this tool, specifically, is that it can help bridge the gap between users who are interested in seeking care and those who have found good, well-reviewed (and as such, hopefully non-stigma-ridden) facilities from which to receive treatment. After speaking to many different individuals who have worked with the opioid population we found that there is a large issue in opioid user finding reliable health care where they can access treatment without fear of being judged or treated with stigma. We believe that a smartphone app that can rate clinics on their treatment of opioid users and provide information on how to find and access treatment these clinics can help to remedy this problem. The app would allow users to review clinics on their treatment of opioid users and thus allow other users to be able take advantage of these reviews to find highly rated clinics in their area. Also, the app would provide information on how to find these highly rated clinics and see what treatment options are offered there to find the best clinic that meets their needs as well as accessory treatments (like needle exchanges) when relevant.

Initial paper prototype

Paper Prototype Overview:

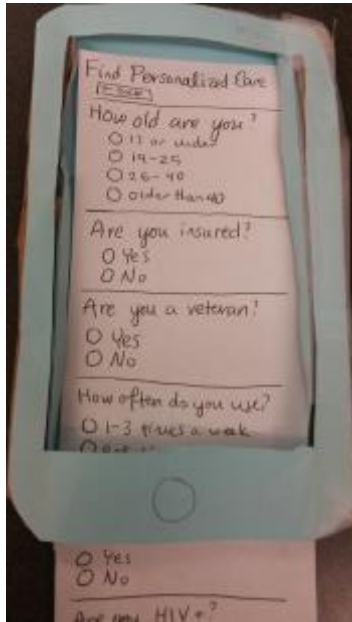


Task 1:

Screen 1.0: Care Questionnaire. The user can fill out the questions in order to find care that is personalized to their needs. Once they fill out the form they click on "Find Care" in order to arrive to their care plan screen.

Screen 1.2: Your Care Plan: The user can view the clinics and services they are recommended from their care questionnaire. They can also choose to write a review if they have been to any of the clinics recommended to them. In addition, users can click on the address of the clinic in order to open up google maps to navigate to the clinic they wish to visit.

Screen 1.0



Screen 1.1



Task 2:

Screen 2.0: From the Nearby Clinics/Your Care Plan screens users can write a review for a clinic by clicking on "Write a Review"

Screen 2.2: Users can fill out a Services Feedback form to write a review. Once they click on "Submit Review" they complete the review.



Screen 2.0



Screen 2.1

Testing Process

Method Overview

For each of our user tests, we first provided an overview of our product and the purpose that it would serve. We provided context behind why we thought that this product was necessary and the process in which we came to the current design that we had at the time. Afterwards we provided information about what the primary tasks of the product too and the reasoning behind them. Then we had the user walk through the the different tasks and asked them to comment and give suggestions on how we could improve. For the first and third tests, Sylvia was the computer, Maggie was the facilitator, and Eugene was the recorder. For the second test, Sylvia was the computer, Neil was the facilitator, and Maggie was the recorder

Participants:

Frank Dominick: Frank Dominick, 3rd year pharmacy student.

Why this participant:

Frank has lots of experience working with those who are opioid-dependent, as such he has a good perspective on what sorts of questions will be easier/harder/relevant to ask in our personalized care portion. Furthermore, he knows quite a bit about the ways in which these clinics function, and we presumed might have useful feedback on what sorts of content should be visible for reviewing. We conducted this test at the CSE labs as it was a convenient place for both parties to meet as Frank was on his way home from work and the labs were a destination that was most convenient for him.

Jane Doe: young experienced drug user (non-opioid)

Why this participant:

Jane has experience using a variety of recreational drugs for the past several years. She is younger and is computationally-savvy. Furthermore, she was more than comfortable helping with this test. Jane was a great target user for our design because of her familiarity with computing technologies and also her background as a recreational drug user. Also, although Jane was not a opioid user, she has connections with the opioid user community and thus we thought she would be a good fit for our user test. We conducted this test at Neil's apartment where it was convenient for us to meet Jane as she lived close to where Neil did.

Nikita Milani, bioengineering grad

Why this participant:

Nikita has experience with many different scientific tools and was available for the test. We thought her feedback would be valuable in seeing how our tool could reliable gather information and give suggestions to our users as she has had experience with creating tools that give suggestions to users. We conducted this test at the dorm as Nikita was a friend of Maggie and thus it was convenient for her to meet us there.

How we refined our testing process

As we moved through the testing process we refined our testing process by making changes to how we introduced the application and the motivation behind the design decisions that we made. In particular, as we received feedback about some ambiguity in our questions in the care questionnaire, we made adjustments as we moved forward to introduce the questionnaire with more context about why we asked specific questions in order to get more targeted feedback on the effectiveness of the questions that we chose.

Testing Results

Heuristic Evaluations

Throughout our heuristic evaluations we were able to identify several issues in our navigation. The major issues were:

1. Difficulty navigating the app.
2. Language used in the app that was confusing
3. The review's page was difficult to navigate and use.

We have listed the Modifications and changes below with the changed photos that are applicable.

Issue:

“How often do you use?” question in the survey was confusing. Evaluators did not know what “used” referred to.

Heuristic: consistency & standards.

Revision:

Removed the question as irrelevant



Issue

Issue:

Difficult to return to home screen. Had to press “back” twice.

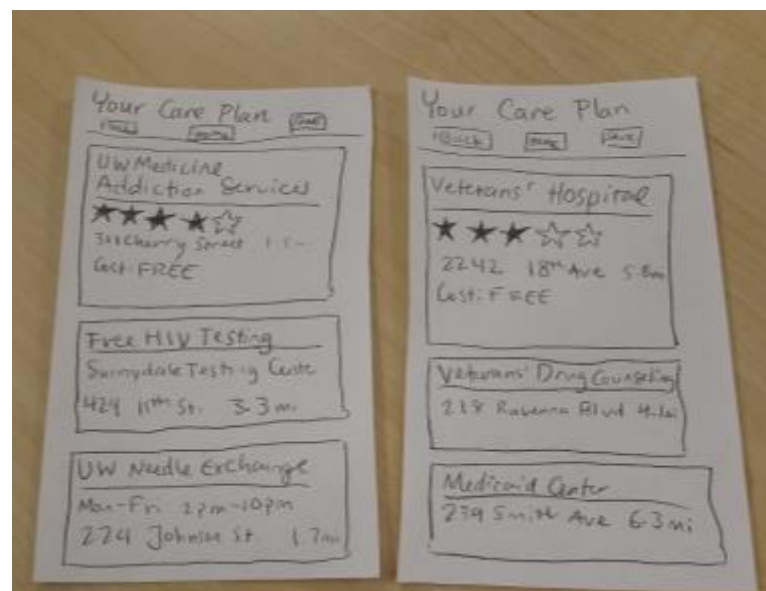
Heuristic: flexibility & efficiency of use

Revision

Added a home button



Issue



Resolution

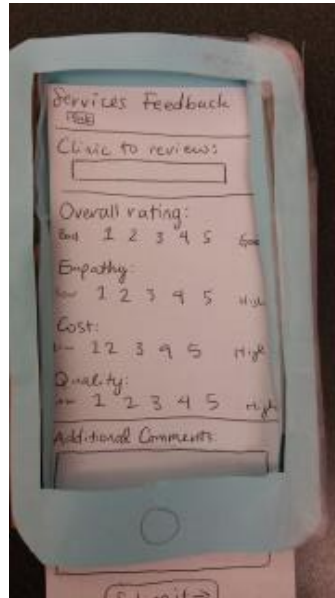
Issue:

Users might have trouble remembering name of clinic in the review screen and might want a reminder of recently viewed clinics.

Heuristic: Recognition rather than recall

Resolution:

Users can leave reviews by clicking on "leave a review on the clinic screen which will automatically lead them to a populated field that in the reviews that they can fill out.



Issue

Resolution

Issue:

User wanted to review a clinic by clicking its name in the view all clinics page.

Heuristic: flexibility & efficiency of use

Resolution

Made it possible for users to leave reviews from the view all clinics page.

Updated Design Image: see issue #3



Issue

Issue:

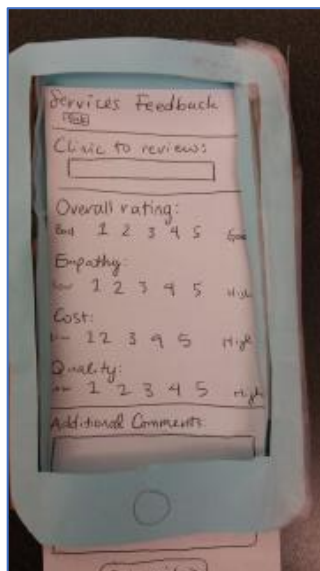
There is no confirmation of successful review.

Make it clear that we received the review.

Heuristic: Visibility of system status

Resolution:

Added a confirmation popup.



Issue



Resolution

Issue:

Handle issue of updating old reviews or avoiding multiple reviews of the same clinic from one user

Heuristic: visibility of system status

Resolution:

Updated Design Image: No design image, just a functionality change

How we changed: Each phone Id gets 1 review per clinic, and if they try to write a new one, we will have them edit their previous review

User Testing

Test 1:

The user gave good feedback on the types of words to avoid ('addiction') and also gave helpful information such as the fact that some clinics can be investigated by the FDA and that notices of such investigation could be useful.

Incidents:

Issue # 1

Screen 3.a [Review Screen]

Problem:

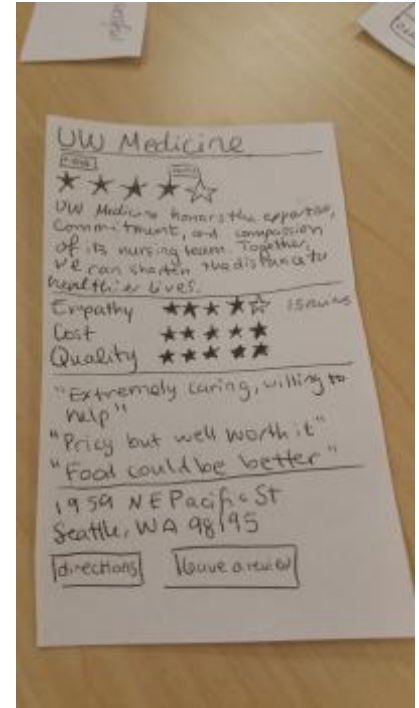
User assumed they could view all of the reviews separately by clicking on the displayed star rating

Severity: 3/4

This issue caused considerable confusion and delay. Furthermore, the user expected functionality where there was none, and as a result was unable to get the specific information they sought.

Revision implemented as result:

Added a screen with all information of a clinic with reviews



Resolution

Issue

Issue # 2

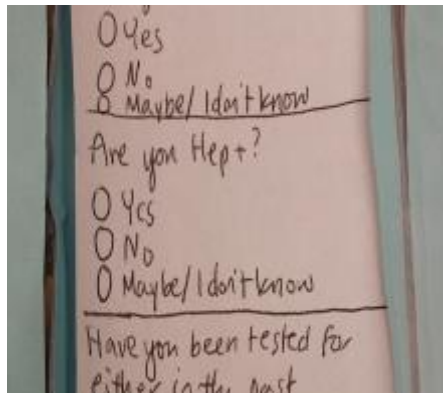
Problem:

There are 3 kinds of Hepatitis (which vary drastically in treatment) yet the survey asks binary 'Hep+'.

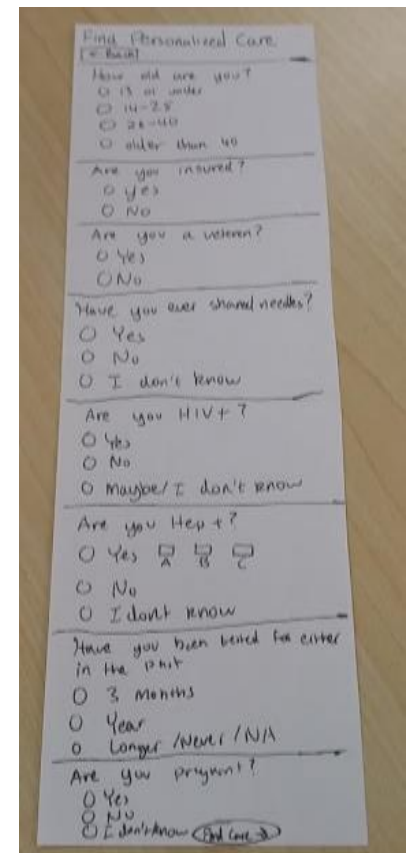
Severity: 4. Users unable to accurately answer question, usefulness of previous answer low.

Revision implemented as result:

Added checkbox options for types of Hepatitis



Issue



Resolution

Issue #3

Problem:

Survey has following issues:

Unclear how to determine if user is opioid-dependent.

How often user uses is not useful metric

Perhaps should ask about frequent sex

Image of the problem:

[See image for issue #2]

Severity: 2

Revision implemented as result: Survey modified

Image of Revision: See image for issue #2

Issue #4

Problem:

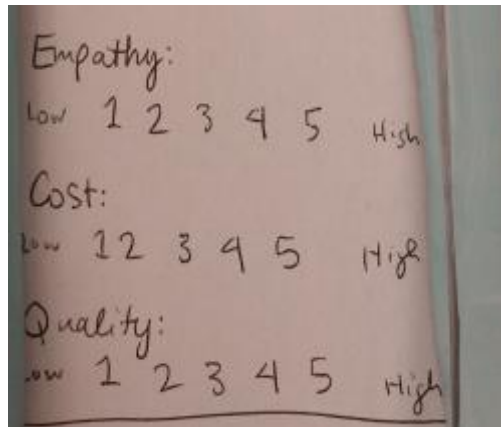
When creating a review, the user was confused about difference between 'quality' and 'empathy'. Furthermore, at this point, the user was concerned whether their information was being saved (HIPAA concerns).

Image of the problem:

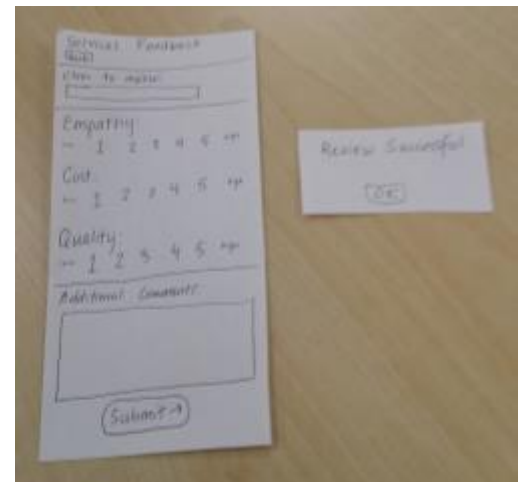
Severity: ¼

Revision implemented as result:

"Overall" score removed, will be generated based off of other ratings



Issue



Resolution

#5

Problem:

User was concerned that some of the clinic feedback they saw was fake.

Image of the problem:

[See image for issue #1]

Severity: ¾ If the users cannot trust our data, we are of little use.

Revision implemented as result:

Same no duplicate reviews functionality

Image of Revision: N/A

Test 2

Issue #1

Problem:

Buttons are too small

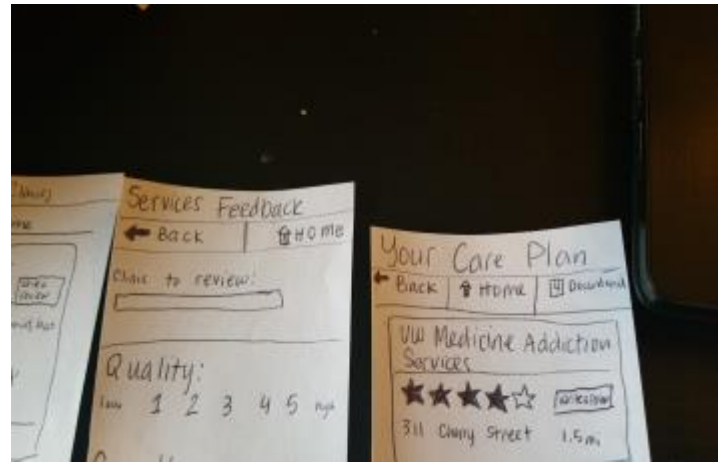
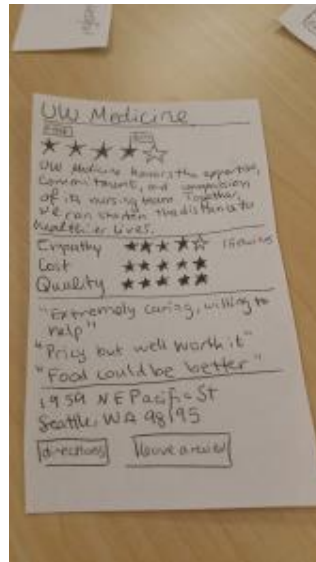
Image of the problem:

Severity: 3 / 4

Revision implemented as result:

Added navigation bar to all screens

Image of Revision:



Resolution

Issue

Issue #2

Problem:

Clinic result from personalized care quiz has no interactivity

Image of the problem:

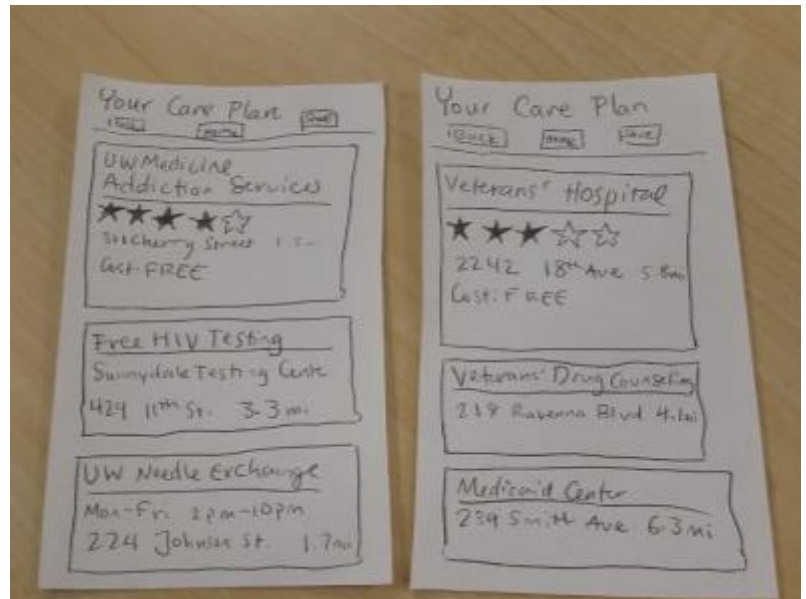
[See photo for image #1]

Severity: 2 / 4

Revision implemented as result:

Added "write a review" button to clinic blurb tiles and clinic blurb tiles in the quiz results link to the full information page (the same as from the full list page)

Image of Revision: [see photo for #2]



Resolution

Issue #3

Problem:

Didn't understand how saving the results worked

Image of the problem: [same as for problem #2]

Severity: 2 / 4

Revision implemented as result: Changed to download and made a popup to describe the action

Image of Revision:



Resolution

Issue #4

Problem:

"Cost" metric unclear

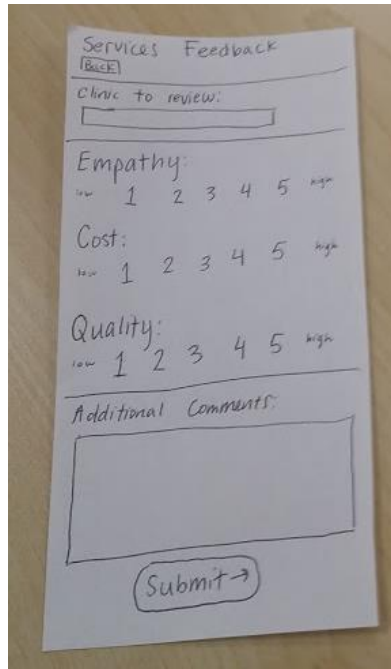
Image of the problem:

Severity: 2 / 4

Revision implemented as result:

Removed "cost" as a metric for services

Image of Revision:



Issue



Resolution

Test 3

Issue #1

Problem:

Links to websites of the clinics not found.

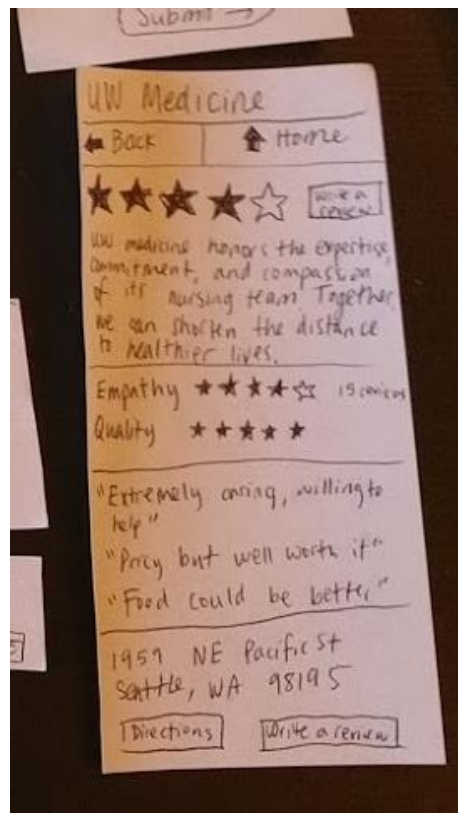
Image of the problem:

Severity: 2 / 4

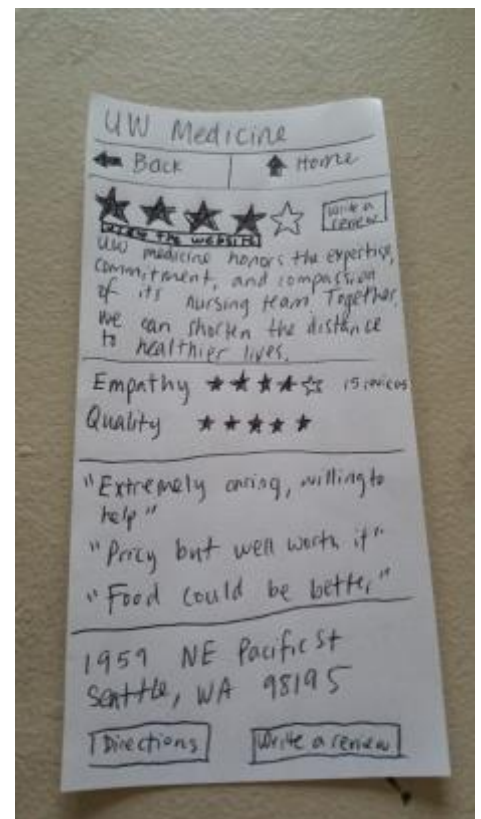
Revision implemented as result:

Adding links to websites under each listing

Image of Revision:



Issue



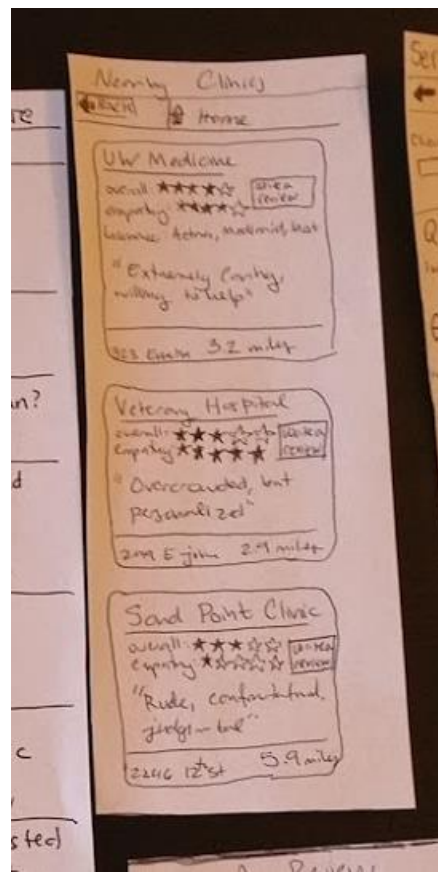
Resolution

Issue #2

Good thing:

Insurance listed under clinics

Image:



Image

Issue #3

Problem:

Goals of the app

Image of the problem:

Severity: 1 / 4

Revision implemented as

result: Added a goals

section that users can

click into and view

Image of Revision:

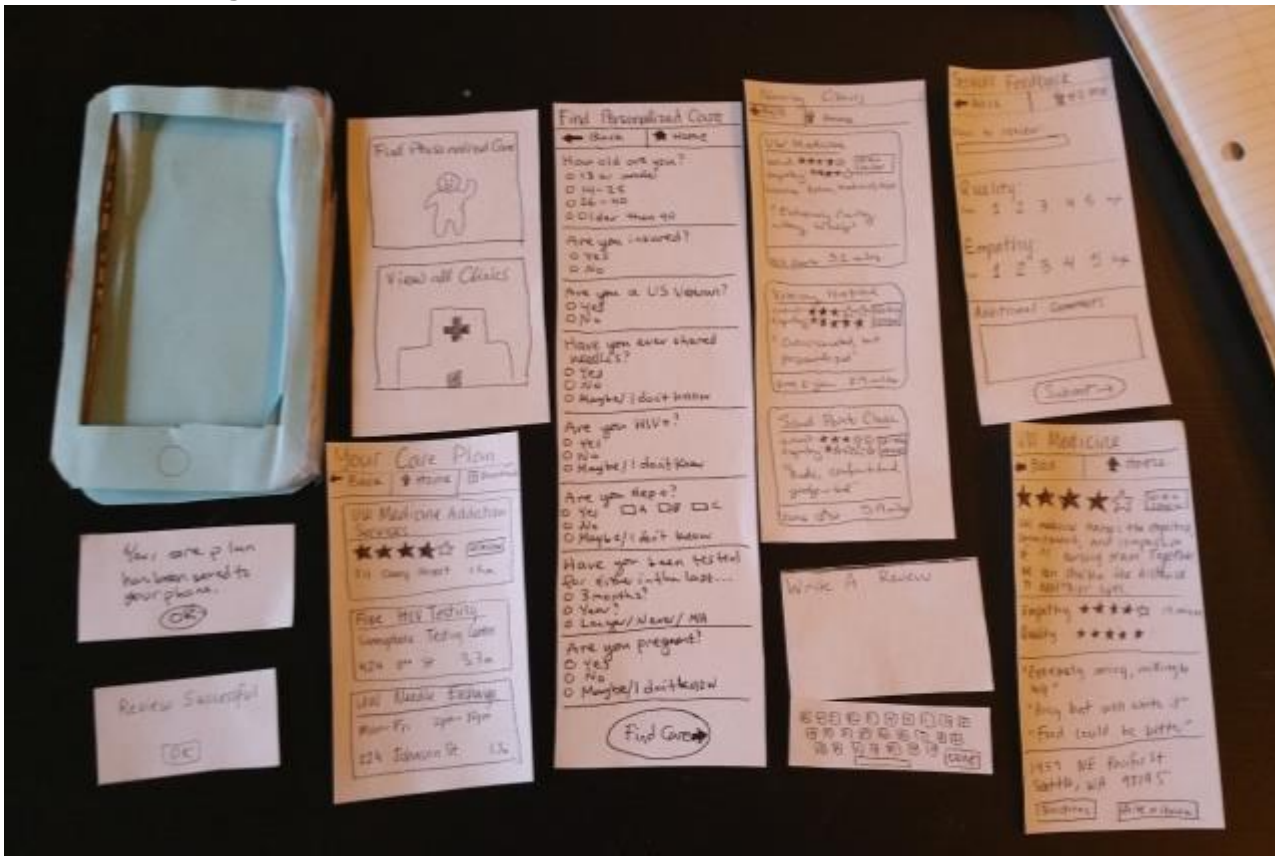


Issue



Resolution

Full revised image:



Most Important issues found:

#1 "Hep+" issue

Previously we discussed how our original questionnaire prompted users to divulge their status as "Hep+ or Hep-", however, after speaking with those more informed on the realities of Hepatitis we found that this question was not only improperly phrased, but also somewhat irrelevant. To address this, we changed our question to prompt users for their status as positive for Hepatitis A, B, or C. If this issue had gone on unseen, it could be a potentially fatal error and could result in absolutely incorrect clinic advice being given. This is perhaps one of the most fatal errors we have encountered thus far for this reason. It is one thing to have a usability error that prevents users from getting all the relevant information they could use. It is another, however, to provide incorrect information (and potentially cause harm).

#2 Buttons too small

Navigation is an issue that we have been debating for a long while. The happy medium we found surrounds a notion where the user navigates through our system in a tree-like fashion, using "home" and "back" comfortably (and necessarily) to use all functionality. However, it became clear with our "Jane Doe" test that the buttons were too small even though, according to Jane Doe, they were sensibly placed. Jane expressed an interest also in seeing a symbolic representation of 'home' and 'back' alongside the text. While this error was eventually overcome, in Jane's test we saw the largest delay of all of our tests when she was prompted to navigate away from that screen. As such, while this error did not cause any potentially harmful or incorrect information to be offered, it made the system near impossible to use.

Final Paper Prototype

Paper Prototype Overview:



All changes from initial paper prototype:

- Task 0
 - Added an “about” page to help explain what the app is for
- Task 1
 - Changed the wording on some questions to get more useful information about the user
 - Added back/home buttons at top of questionnaire
 - Made “find care” button at bottom of questionnaire larger
 - Made back/home/download bar more clear for the individual care plan
 - Added button to review a clinic from the individual care plan
- Task 2
 - Added button to review a clinic from the “all clinics” list
 - Removed link to review any clinic from the “all clinics” list (clinics are selected, then reviewed, not searched through the review page)
 - Simplified the review metrics to just empathy and quality
 - Added links to website and directions for driving to the individual clinic page
 - Added back/home bat at the top of pages

Task 1:

Screen 1.0: Care Questionnaire. The user can fill out the questions in order to find care that is personalized to their needs. Once they fill out the form they click on "Find Care" in order to arrive to their care plan screen.

Screen 1.2: Your Care Plan: The user can view the clinics and services they are recommended from their care questionnaire. They can also choose to write a review if they have been to any of the clinics recommended to them. In addition, users can click on the address of the clinic in order to open up google maps to navigate to the clinic they wish to visit.

Find Personalized Care

← Back | Home

How old are you?

- 13 or under
- 14-25
- 26-40
- Older than 40

Are you insured?

- Yes
- No

Are you a US Veteran?

- Yes
- No

Have you ever shared needles?

- Yes
- No
- Maybe / I don't know

Are you HIV+?

- Yes
- No
- Maybe / I don't know

Are you Hep+?

- Yes A B C
- No
- Maybe / I don't know

Have you been tested for either in the last...

- 3 months?
- Year?
- Longer / Never / N/A

Are you pregnant?

- Yes
- No
- Maybe / I don't know

Find Care →

Screen 1.0

Your Care Plan

← Back | Home | [?] Disorders

UW Medicine Addiction Services

★★★★☆ [Review]

311 Curry Street 1.5 mi

Free HIV Testing

Sunnydale Testing Center

424 11th St 3.3 mi

UW Needle Exchange

Mon-Fri 2pm-10pm

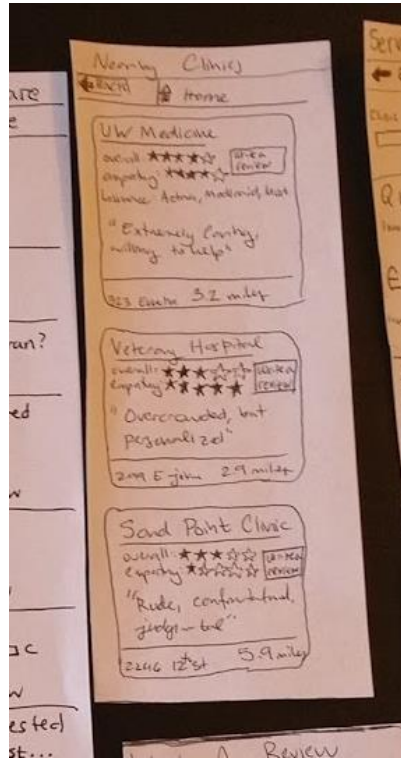
224 Johnson St 1.7 mi

Screen 1.1

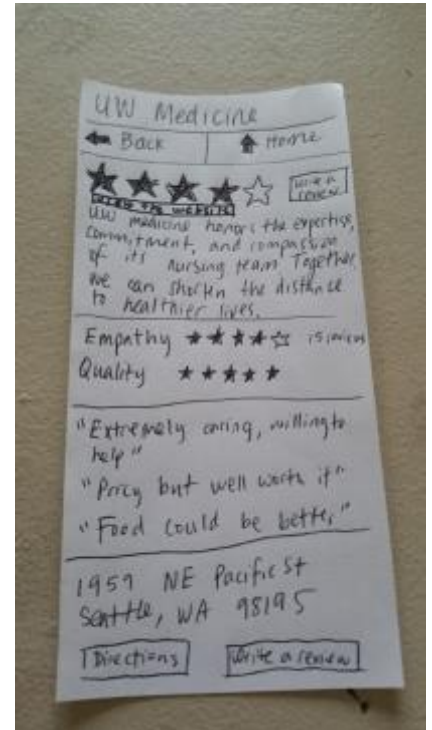
Task 2:

Screen 2.0: From the Nearby Clinics/Your Care Plan screens users can write a review for a clinic by clicking on "Write a Review"

Screen 2.1: Users can fill out a Services Feedback form to write a review. Once they click on "Submit Review" they complete the review.



Screen 2.0

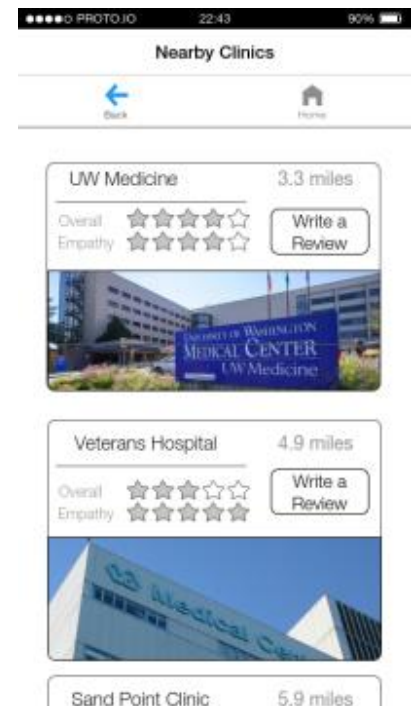
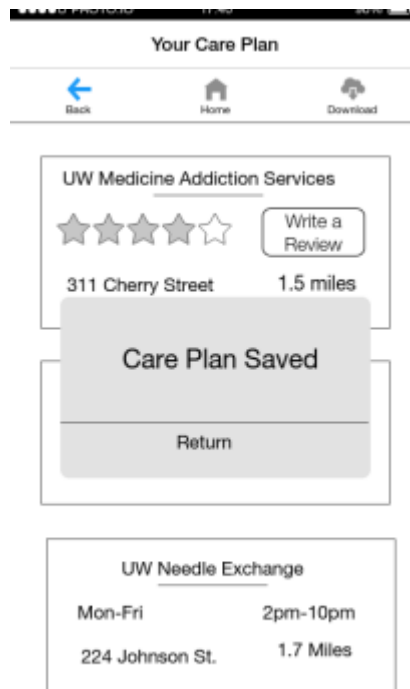
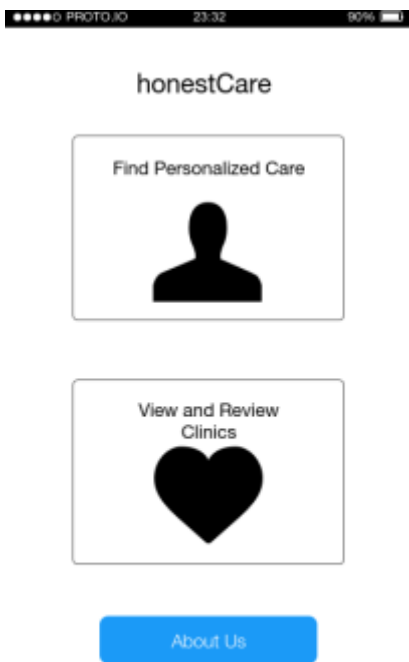


Screen 2.1

Digital Mockup

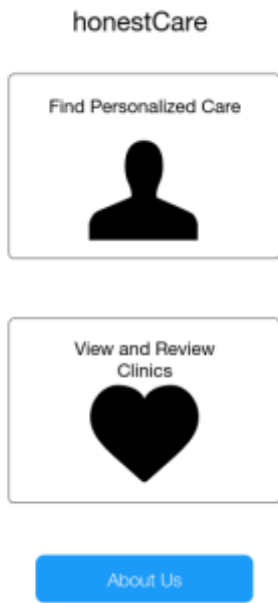
Click on this [link](#) to see the interactive digital mockup.

Overview:





Task 0:



Screen 0.0



Screen 0.1

Screen 0.0: Application Home Screen. When the user clicks “Find Personalized Care” they will be lead to the care questionnaire to find care. When the user clicks “View and Review Clinics” the user will be directed towards a list of nearby clinics. Finally, when the user clicks on “About Us” they will be lead to a information page.

Screen 0.1 Application about screen that gives some background about the mission of the app. The user can click on “Back to Home” in order to return to the home screen.

Task 1:

Find Personalized Care

How old are you?

13 or under

14-25

26-40

Older than 40

Are you insured?

Yes

No

Are you a US Veteran

Yes

No

Have you ever shared needles?

Screen 1.0

Are you HIV + ?

Yes

No

Maybe/I don't know

Are you HEP + ?

Yes A B C

No

Maybe/I don't know

Screen 1.1

Have you been tested for either in the last...

3 months

Year

Longer/Never/Don't know

Are you pregnant?

Yes

No

Maybe/I don't know

Find Care →

Screen 1.2

Your Care Plan

UW Medicine Addiction Services

311 Cherry Street 1.5 miles

Free HIV Testing

Sunnydale Testing Center

424 11th St 3.3 miles

UW Needle Exchange

Mon-Fri 2pm-10pm

224 Johnson St. 1.7 Miles

Screen 1.3

Screen 1.0 - 1.2: Care Questionnaire. The user can fill out the questions in order to find care that is personalized to their needs. Once they fill out the form they click on “Find Care” in order to arrive to their care plan screen.

Screen 1.3: Your Care Plan: The user can view the clinics and services they are recommended from their care questionnaire. They can also choose to write a review if they have been to any of the clinics recommended to them.

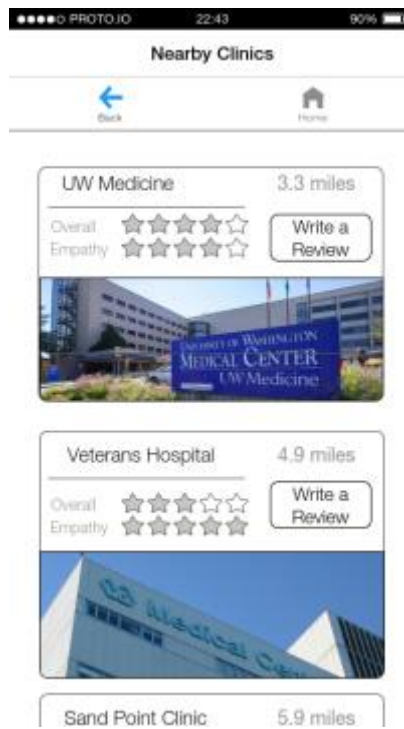
How the design supports the task:

The task at hand here is the ability of a user to fill out a relevant questionnaire and receive a usable recommended care plan for them to follow. In this sense, the design affords the user a clear route to the form, clear and constrained form options and an ultimate plan with a primary care source, and additional resources when relevant. The final care plan allows the user to save the plan as a .pdf to their gallery and sends a dialog box to confirm the saving. Lastly, from the plan screen directly, a user can write a review of their primary care service if they end up actually going to that facility.

Task 2



Screen 2.0



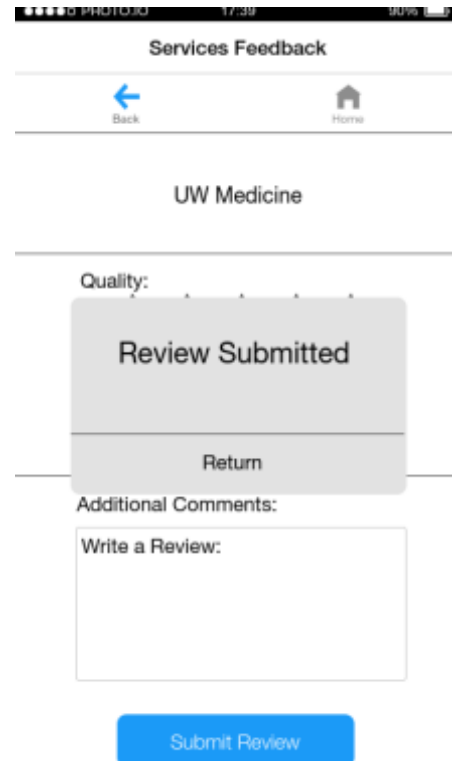
Screen 2.1



Screen 2.2



Screen 2.3



Screen 2.4

Screen 2.0-2.2: From the Nearby Clinics/Your Care Plan/Clinic screens users can write a review for a clinic by clicking on “Write a Review”

Screen 2.3: Users can fill out a Services Feedback form to write a review. Once they click on “Submit Review” they complete the review.

Screen 2.4: Users will receive a confirmation once they finish writing the view. They can click on “Return” in order to return to the screen that they last visited.

How the design supports the task:

Firstly, if users wish to review a clinic from the personalized plan, as described with task 1’s addendum, they can review directly from the plan screen. Secondly, they can view all clinics and scroll until they find the clinic they visited (sorted by distance) with helpful pictures to jog their memory. They can also view in screen 2.4 a summary of their clinic with relevant information. However, they needn’t go to that screen to review, as even from the view-all-clinics screen they can directly write a review. When reviewing, they have a simple form to complete, and on completion they get a dialog box confirming submission.

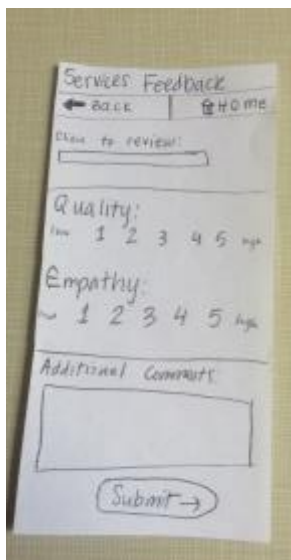
Design Changes:

Our group did not make any major design changes from our final design of our paper prototype. Most of our changes were small changes in UI/UX in order to allow for a more fluid design and experience. The changelog and documentation of changes are listed below:

Overall changes/minor changes:

- Changed text for various pieces and the popups
- Changed texts for button at bottom of the survey
- Adding a Blue/Grey color scheme to the prototype.

1. Changed services feedback to always have name of clinic instead of having to fill it in



Paper Mockup

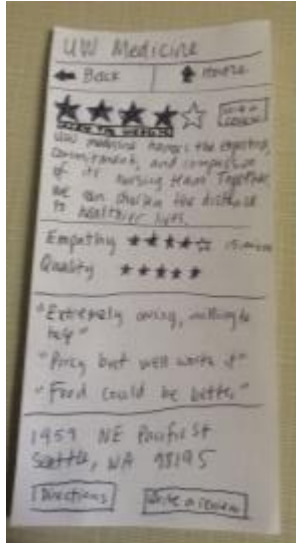


Changed Mockup

Rationale: There are several circumstances wherein it is redundant for a user to write in the clinic name. For example, if a user clicks UW medicine’s ‘write a review’ button, it is implied they are interested in writing a review for UW medicine and not another clinic. Furthermore, our user studies showed that no one used the

clinic agnostic 'write a review' button. As such, there is no circumstance currently wherein a user would be writing a review and the system not already know which clinic they are reviewing.

2. Changed clinic-specific page drastically. Some **examples** of changes are following: (not exhaustive)
 - a. Added Call button
 - b. Got rid of description of clinic
 - c. Added photo
 - d. Changed layout



Paper Mockup



Changed Mockup

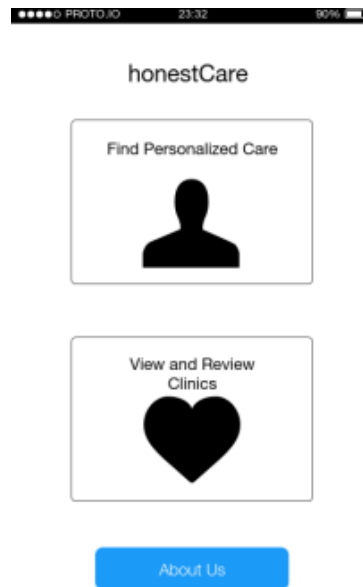
Rationale: We added a 'call' button because we realized all of us schedule our doctors appointments over the phone, and seeing as this is a mobile app, it seems a useful shortcut to add. We got rid of the descriptions of the clinics as we felt it was 1) irrelevant (and often marketing material from the clinic) and 2) a waste of space considering the other functionality we could provide. We also added photos to make the system more exciting and better clarify the locations of the clinics and lastly changed the layout to better make use of the aforementioned changes and encourage users to use the buttons at the bottom (and, specifically, to make contact with the clinic).

3. Changed 'view all clinics' text on home screen to include notion of reviewing
 - a. Rationale: When prompted to 'review a clinic' most of our testers, we now realize, took some time to realize that they could do so via the 'view all clinics' page. As such, we adjusted the name of the button to better get that point across.

4. Added logo at top of home screen



Paper Mockup



Changed Mockup

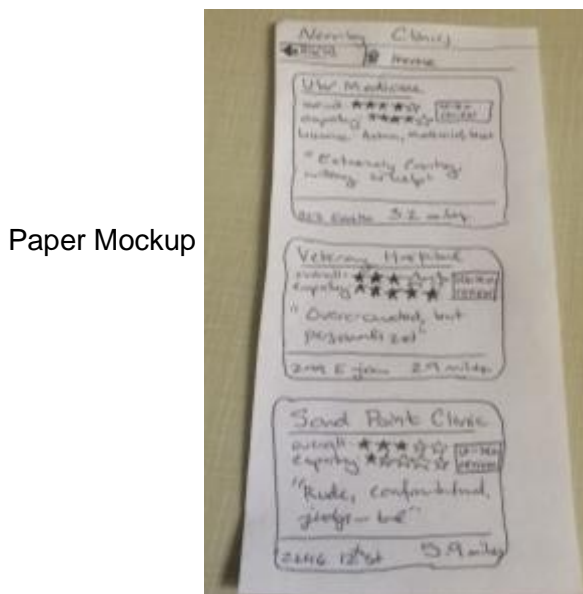
- a. Rationale: Without this logo there is no particular way to identify this app's name, utility or purpose, without using the 'about us' page, that is.

5. Changed 'view all clinics' page to add pictures and removed snippets of testimonials

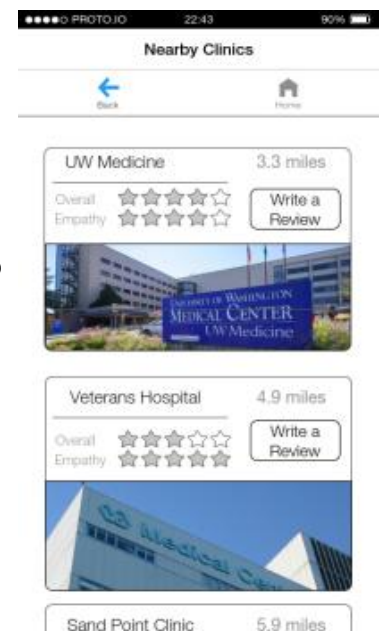
- a. Rationale: We felt that we wanted to encourage users to see the in-depth view of the clinic page before coming to any conclusions based off of the shortened versions of the testimonials. Furthermore, we felt that the photos might better allow users to identify their clinic (or one they have seen before).

6. Removed floating review button

- a. Rationale: No users ever used this feature, and we (especially considering the newly added photos) feel that it is much more user friendly to allow users to find their clinic *and then* review the clinic, as opposed to the other way around.



Paper Mockup



Changed Mockup

Discussion

- What did you learn from the process of iterative design?
 - Reflecting on the process at large, our group went into the iterative design process assuming that we would either a) vacillate between the different alternative designs that we ideated on earlier or b) build a system that began small but grew with each iteration into a larger and potentially more unmanageable system as time went on. By the end of the testing, we were very surprised. Rather than either of the two aforementioned theories, we found the iterative design process to be useful not only to help bridge the gulfs between our own expectations and those of our users, but also to help narrow the focus, intentions, and use cases of our tool to ourselves. After the usability testing, it became clear that we had added several routes for the users to get to the same places (i.e. several routes to write a review, and several ways to display the smaller summary of a clinic). While we had envisioned that these several routes would be helpful by hopefully casting a wider net, we realized that their excess cluttered our system and made it ultimately less usable. This distinction, while obvious in retrospect, was surprisingly difficult to address as the testing went on as we were always worried that this simplification of the tool was going to suddenly cut corners and drastically worsen its usability: strikingly we found this to never be the case, at least in our few iterations. While that was a more specific note, the iterative design process at large (and, specifically the parallel design process) was surprisingly fruitful and ended up being a helpful vehicle for ourselves (as opposed to just for our participants) to mentally revisit what we really wanted from our tool.
- How did the process shape your final design?
 - Ultimately it narrowed our focus considerably. Our idea, from the start, has involved a sort of three part purpose. 1) We wish to offer personalized nearby (and reviewed) care without stigma 2) We want to encourage users to review clinics so we can continue to help future users find stigma-less care and 3) We wish to inform users as much as possible about similar services (i.e. needle exchanges) as our research made clear to use that every element of the care system that interacts directly with the users should be an information resource. With these sort of mixed goals, we found that our user research gave us invaluable insight into the expected path that our users sought. For example, we found that the reviewing notion was best solved by allowing users to find clinics first and then review them, as opposed to beginning a review then selecting which clinic to review. Beyond more substantive changes like that, we found many smaller (though no less fatal) issues that were more easily addressed, like button sizes or placement. Ultimately, this process of iterative design allowed us to experiment with our various ideas and by the end we found that not only was our process simplified, but also simplified (and clarified) were our own personal goals for the tool (how we really see it being used).
- How have your tasks changed as a result of your usability tests?
 - Our tasks have changed throughout this process in order to allow for smoother usage of the interface in the tasks. The actual tasks themselves have not changed in their functionality but they have become easier to complete as we have taken into account easier usability with getting to different features in the application. For example, the primary example in which we changed our design for smoother execution of tasks was when the user uses the personalized care feature to find clinics that match with them, the user is able to now review from the personalized care screen directly rather than having to go into reviews and find the clinic from the list in the drop-down menu. Improvements like these made it much easier for users to quickly accomplish the tasks with less ambiguity in how to complete them.
- Do you think you could have used more, or fewer, iterations upon your design?"
 - In general, we feel like we hit just about the perfect amount for the scope of this design and class. However, since the last few iterations were so fruitful, if we had to we would err on more iterations, since the changes found have not yet seemed to asymptote. However, this is not to say that we haven't seen drastic improvement, nor that we are unsatisfied with our current design. As mentioned earlier, the design process for us was less about choosing between A, B, or C, but instead about us

transforming A into AB and then into ABC. In that sense, we feel we currently address and encompass the tasks and goals we envisioned for the tool. As such, while we feel we could find a few more things to note in future hypothetical iterations, we are very much pleased with the transformation thus far, and anticipate any possible future critiques would be more to do with the user's particular taste than with the objective usability and utility of the tool.

Appendix

Testing Materials:

Instructions given in usability testing:

Considering the confidential nature of medical information, we purposefully did **not** have our participants use their real personal information. Instead, we ad-libbed different circumstances so that the users could answer the questionnaire. However, those circumstances were not relevant to the actual use cases we had them perform, and as such we did not record them.