

Accessible Biometric Data at the Tip of Your Tongue



Collected by: Daniel Aley / Clinica Model Case Study / September 26, 2018

<http://www.flutterspace.com/clinica.html>

<http://www.flutterspace.com/Clinica/Main.html>



Project Statement

Clinica is a project that allows users to access and view their biometric data tests on mobile devices, while also using a separate device that is paired with their smartphone.

Problem Details

People don't have the ability to harmlessly collect, easily monitor, and understand biometric data that relates to their internal systems; such as glucose, calcium, and proteins.

Clinica is a project that focuses on providing access to biometric data. Biometric data can be used for both personal health as well as professional monitoring.

For the lab technician use, a goal of timelines is the ultimate challenge. Currently, lab tests take a while to design and process of both doctors and lab technicians. This process complicates the timeliness of developing solutions and identifying health related issues in patients.

For the consumer, in a commercial environment, the goal and challenge of developing these services and products is having to develop a method that teaches the user how to collect and see this data; also the use of the device itself. The second challenge, in the mindset of commercial purposes, is having to find ways to clearly communicate the information between a device and a smartphone, or other IOT based devices.

To approach this task, the design of the device must possess usability standards that are based on trial and error and user testing. Rapid prototyping must also be integrated. To bring these standards together, on a holistic level, a measure of use and refinement, based on the qualitative information that is gathered during testing, will be used to design the final output.

The project should take around 2-3 weeks to develop and refine.

Market Research

My research for the application and use of a device focused primarily on ways to collect biometric data. I didn't want to collect blood samples, like most other devices, because I felt that pain was something that had to be reduced when dealing with the development and friendliness of healthcare; so I instead branched into saliva and urine sample collections.

A lot of the methods that I found for reading biometric data from saliva and urine are actually quite practical and have accurate results in lab testings. Therefore, I decided to focus on the practicality of the device and saliva.

Websites that I utilized for research of these biometric collections came from:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3011946/>

<https://www.healthline.com/diabetesmine/testing-your-glucose-levels-using-saliva#1>

The experience of the interfaces were also a main focus. I felt that the actual design of the application had to be based off of something that was already familiar with most users; therefore I began to consult with the already designed and native based Health application on the iPhone.

Market competitors in the pharmacy and healthcare industry were also consulted with the better understand what was already available to consumers for purchase, use, or and even download.

Research Information

Location: The location for testing is to take place in Building 13, Art Department.

Partners and clients: My fellow class peers and professor.

Audience and community being served: The overarching community of individuals who need access to biometric data for their health and their physicians.

Members: Daniel Aley (Myself).

Design Process

A process of design for the creation of content was created for Clinica. In order to execute such a task, the development of the products and material had to be separated into **Baseline Information** for the device, **prototyping**, and the **Product Impact**.

Baseline Information

In the beginning, my knowledge of biometric data and health information was rather minimum; perhaps at average at most.

Products that I new to have been on the market were more based on glucose readings for diabetics and used a finger pricking device in order to collect the blood samples.

Other competitors in the marketplace also focused on the collection of biometric data but most have turned out to not be as successful; some are now defunct due to fraud and health violations. (Theranos was the main research result).

There were also major collaborative efforts between clinics and healthcare providers to increase customer engagement with their own products and services; both in store and online. The crossroad to this assignment came when I realized that a separate device could collect data and be used with the already built health ecosystem that is native to most apple products within the health app.

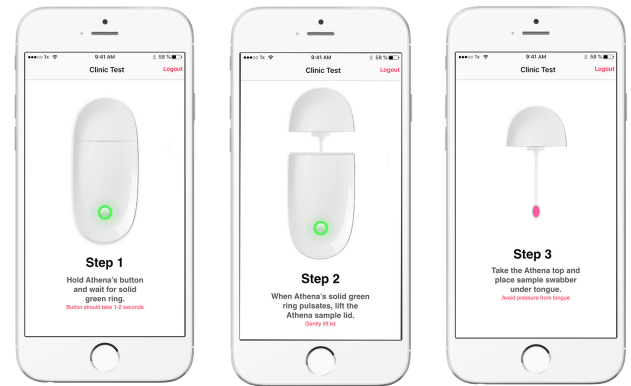
Prototype Development

Sketches of the actual interface were storyboarded. I attempted to devise a system of navigation that was simple and easy to both navigate and read. I found that color coding the biometric data and the graphs were a definite improvement for users to see and associate colors with different types of data.

For the physical device, I built a small hollow paper capsule and drew different imagined buttons and features onto it. I was curious to see how users would interact with the device. I received questions such as:

1. "How does the device pair with my phone?"
2. "What ways do I know that the device is turned on?"
3. "What if I used heat to know about notifications?"
4. "How do I clean it or change the saliva swab?"

I also looked into the ways that the health app can be paired with other "smart" health devices. These devices ranged from glucose meters and even pacemakers for some users.



User Personas

My targeted user persons for the clinical application and device were developed for three segmented populations.

1. Younger people who are health conscious.
2. Middle aged people who have health providers, or not.
3. Elderly patients that may not have access to healthcare providers or are confined to their homes.

The people that are to be targeted for the use of the device are all different. It is by realizing this core source of differentiation between users that I also found that all bodies are biological a little different. Internally, we all process and metabolize compounds differently. Ultimately, it is what makes us unique and ripe for different biometric data. This had to be accounted for in my designs and relayed to the segmented user demographics.

Design Solutions

Solutions that I found for concluding my research were based on time and alternative testing methodologies. Ultimately, I found that having a faster alternative to regular testing in labs helps both patients, doctors, clinic workers, and lab technicians.

Alternative solutions were further explored and adopted into my final designs that focused on the exploration of other compounds and chemicals that can be displayed to the interface and gathered from the device.

Read more details at : <http://www.flutterspace.com/clinica.html>
<http://www.flutterspace.com/Clinica/Main.html>
<http://www.flutterspace.com/index.html>

Design Impact

The impact that the device has on people and industries can be positive.

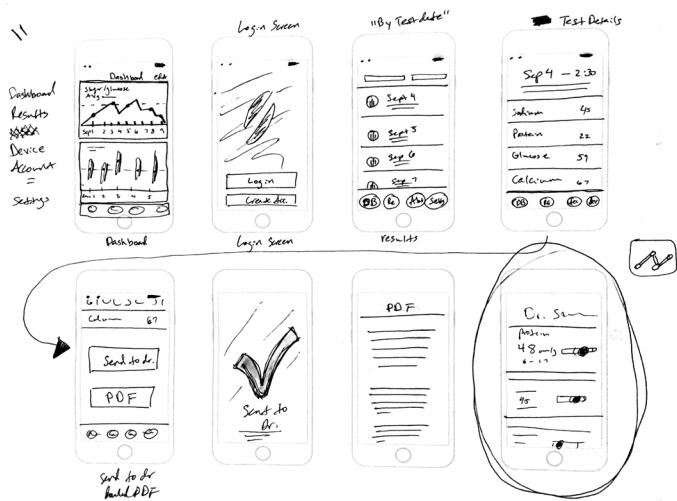
It has the potential to change the health of people and make people more conscientious of their health.

It can also increase the lifespan of users and save lives when having information monitored and sent to physicians.

The impact in the healthcare industry can also be beneficial as some users may not have equal access to physicians due to time or economic disparity.

Ultimately the device can be implemented into clinics and also used at home. These integrations have the ability to introduce a new standard of living for people; people of all ages.

Design Sketches

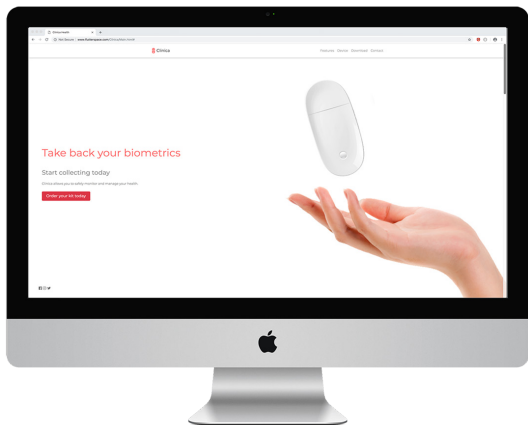


XD Prototype

<https://xd.adobe.com/view/acf11599-0704-4c45-49f1-030e7e2acd2a-dac0/>

Website Concept

<http://www.flutterspace.com/clinica.html>



Project Reflections

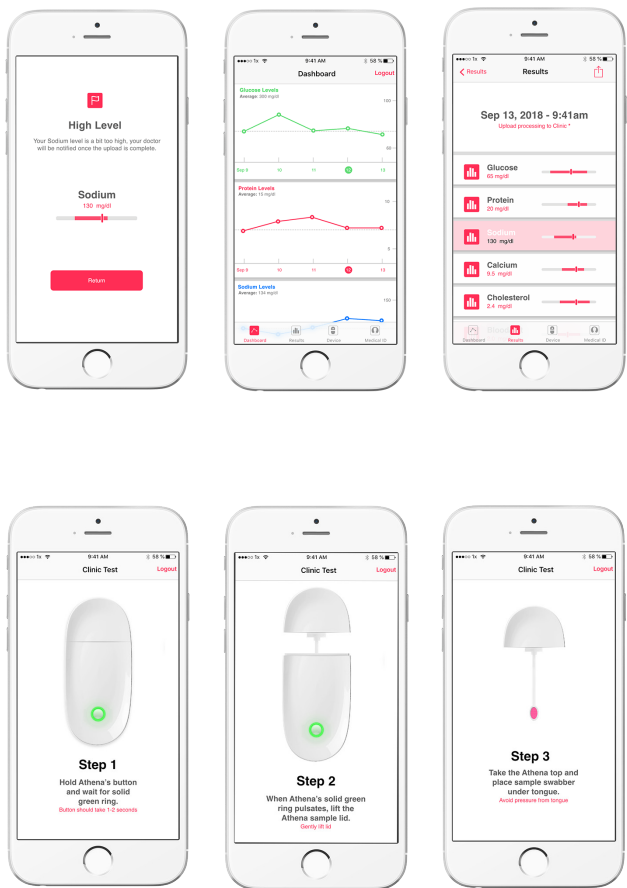
This project was important to me because of the access that I would like people to have to their own personal health information. I believe that most people are not able to easily access their health, most of the time, and don't always have the ability to gain the access.

Tools that helped me achieve these goals were based off of the available prototyping tools, such as Adobe XD. Other course based readings that were related to user case study development and design thinking methodologies were also helpful in achieving my project's results.

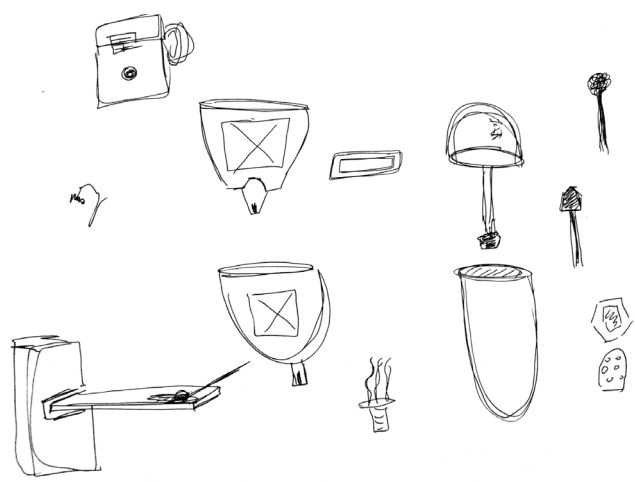
Other people can become involved in this project through the development of the project itself. I imagine other academic and creative industries becoming involved for actual product development. These industries are the biomedical industry, microbiology industry, and the healthcare industry. Together, with the collaboration between these multiple industries, there exists the possibility to achieve even more innovation within the design community and the medial research community; all having a common goal of increasing easy access to biometric health information for users.

This product could be expanded even further with multiple users for one device on an account to be used in areas where there may not be financial means to access multiple devices.

UI Asset Preview



Product Sketches



Tangible Concept



Final Concept



Post Task Questions

- 1. How calm did you feel when using the device?
- 2. What are 2 things that confuse you about the design of the app?
- 3. Was their anything in the design that made helped you learn something new?
- 4. How would you use the app and device, and where would you feel most comfortable using it?

Question(s)	1	2	3	4
User 1	Felt very calm	Menu Bar at bottom is confusing for scrolling.	Allowed me to know about compound levels.	At home
User 2	Felt happy	Menu bar wasn't scrolling correctly.	Learned about the charts and the information	At home and somewhere that it clear
User 3	Feels nervous about the numbers and information.	Nothing confusing. Easy to read	Learned about the device and what it is for.	In the morning and use it at home where you felt safe.
User 4	Felt "good about it".	Does not understand all of the colors on the graphs.	Learned that saliva can be collected and how to use the device.	In the bathroom and away from people

UI Asset Preview

