

Medical Devices Startup

Digital healthcare for ostomy patients

Case Study - Extended Version



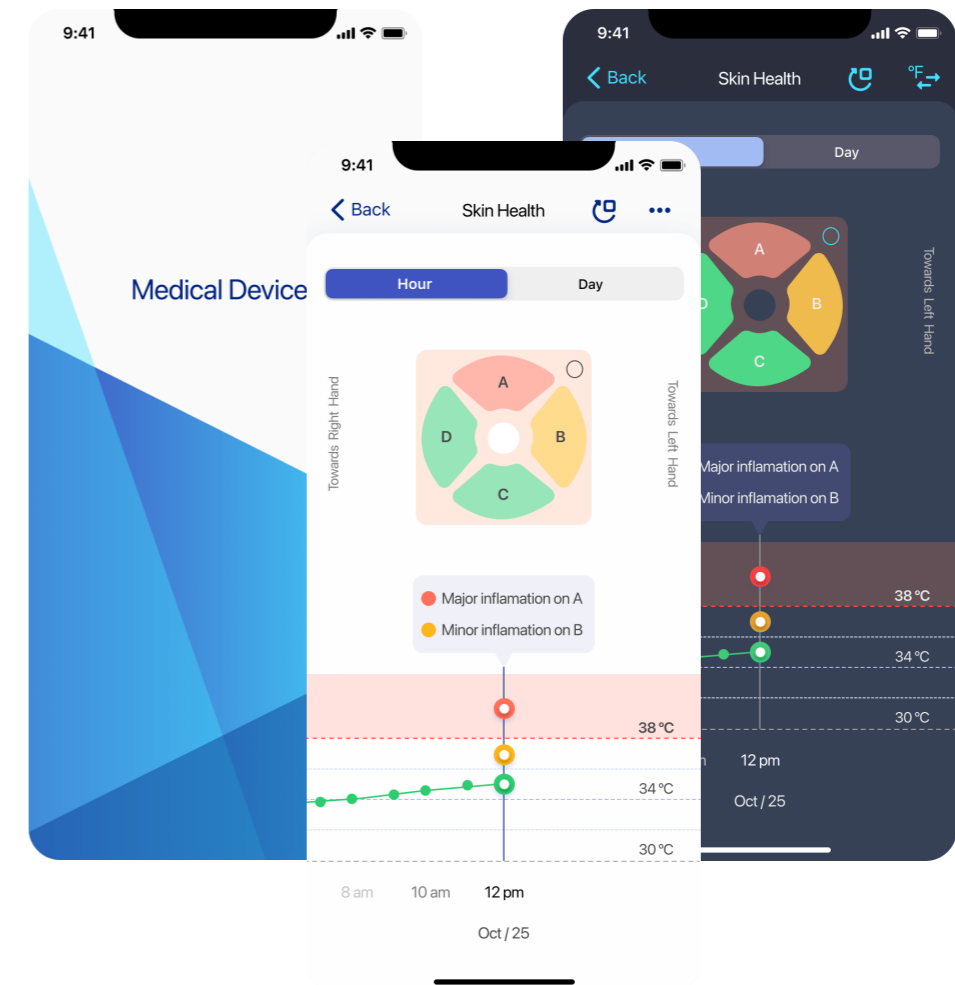
Project Overview

The product

A specialized Medical Devices Startup focused on supporting ostomy patients with innovative tech.

Project Duration

From the understanding to the delivery of high-quality mockups and prototypes, the Product Design team worked a total of 12 weeks.



Project Overview

The problem

We worked with an existing app that had an existing database about the users that were already interacting with the product. The main challenge was that this app didn't have all the needed features and most of the existing ones needed some updates to successfully meet the users' needs.

The goal

A native mobile application that provides a clear and easy way for ostomy patients to be aware of their general health while living with this condition through the connected monitoring system.

Quick access to the educational material assigned to patients based on relevance of their current symptoms, and visualizations of the data gathered by the wearable devices.



Project Overview

Our Role

The work began by taking all the existing information that the app already had and using it to analyze, compare, and research even more about the user's needs. The team had to work hand in hand with the health professionals and other stakeholders so the final product was satisfactory in every possible way.

Responsibilities

This project involved discovery, research, user interface design, and prototyping stages.



Understanding the User

- User Research
- Personas
- Problem Statements
- User Journey Maps

User Research

Summary

We started the research by reviewing existing documentation and data. Since a version of this app already existed, and it had active users, we were able to validate our desktop research with actual user behaviors. Among the existing documents, we were also able to review surveys, affinity maps, high-level profiling of users detected by the Medical Devices Startup, empathy maps, and a user journey map.

With the previous data available and the interviews we conducted with stakeholders, we refined the existing documents and created the three main profiles of users in order to understand and establish their needs. Then, we translated those into a list of new features to implement. Once these new features were validated by stakeholders and users, the information architecture was created.

Pain Points

Notifications

The user needs to be informed about the most important situations regarding their ostomy bags and their health, such as, leaks or high-temperature detection. But it is also important to not saturate the user with excessive alerts.

Variability of conditions

There are many variables within ostomies. Users often need more personalized attention and resolution of questions. There are things that can be solved with general content, but sometimes the user will need to contact a professional.

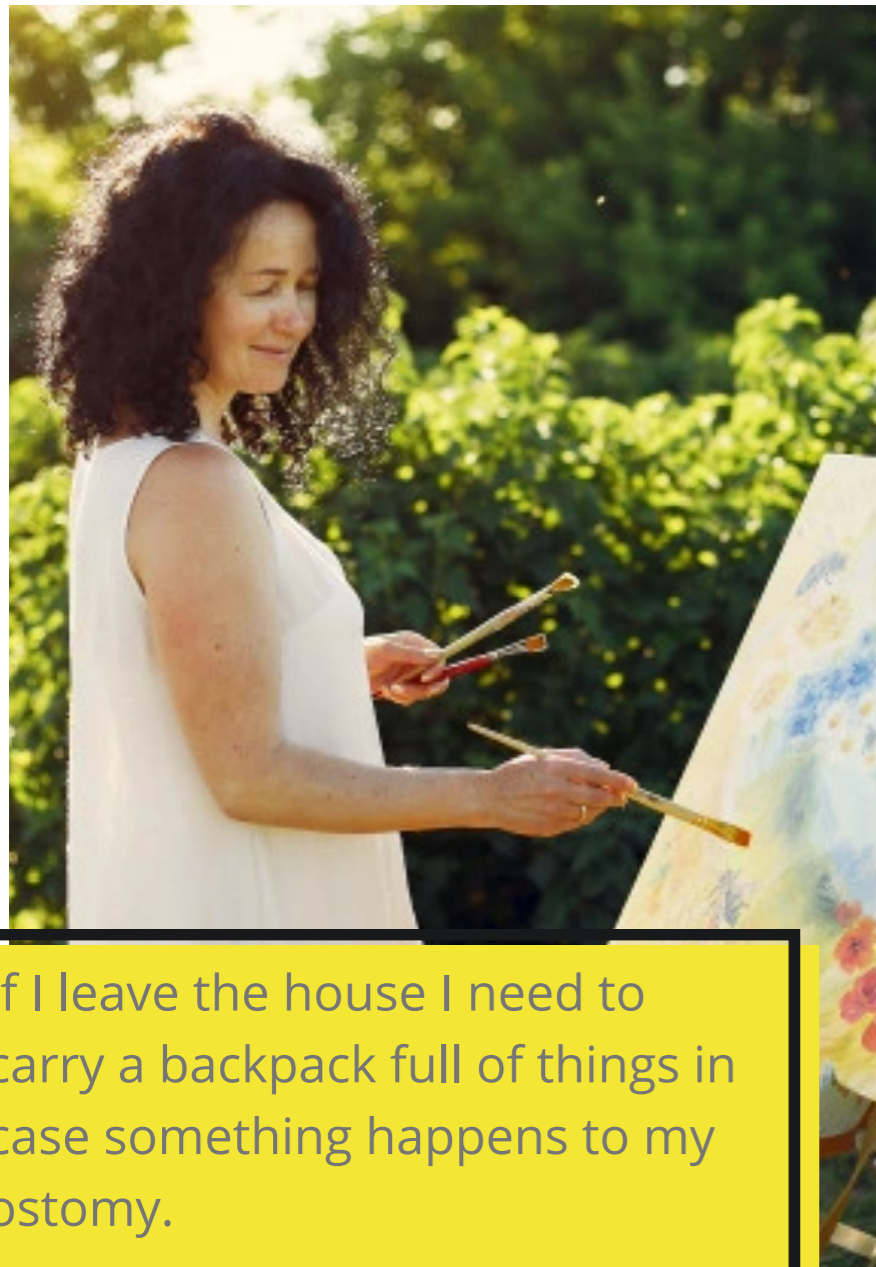
Clear understanding

On many occasions, the user is new to both ostomy and to the use of digital applications for health care, so it is necessary to use clear language, create an intuitive and friendly interaction and add educational sections.

Lack of action

Informing the user about situations or changes in their condition and health is a great benefit. However, this can fall short when the person doesn't have a clear understanding of what to do or how to react to an alert or notification.

Persona



If I leave the house I need to carry a backpack full of things in case something happens to my ostomy.

Anne

👤 41

📍 Toronto

👩 Teacher

Bio

Anne is an artist and art teacher for children. She lives with her two dogs and when she is not working she is at home exercising and painting. Anne has had an ostomy bag for 11 years and although she now is used to it, getting out of her house is still a logistic challenge

Goals & Motivations

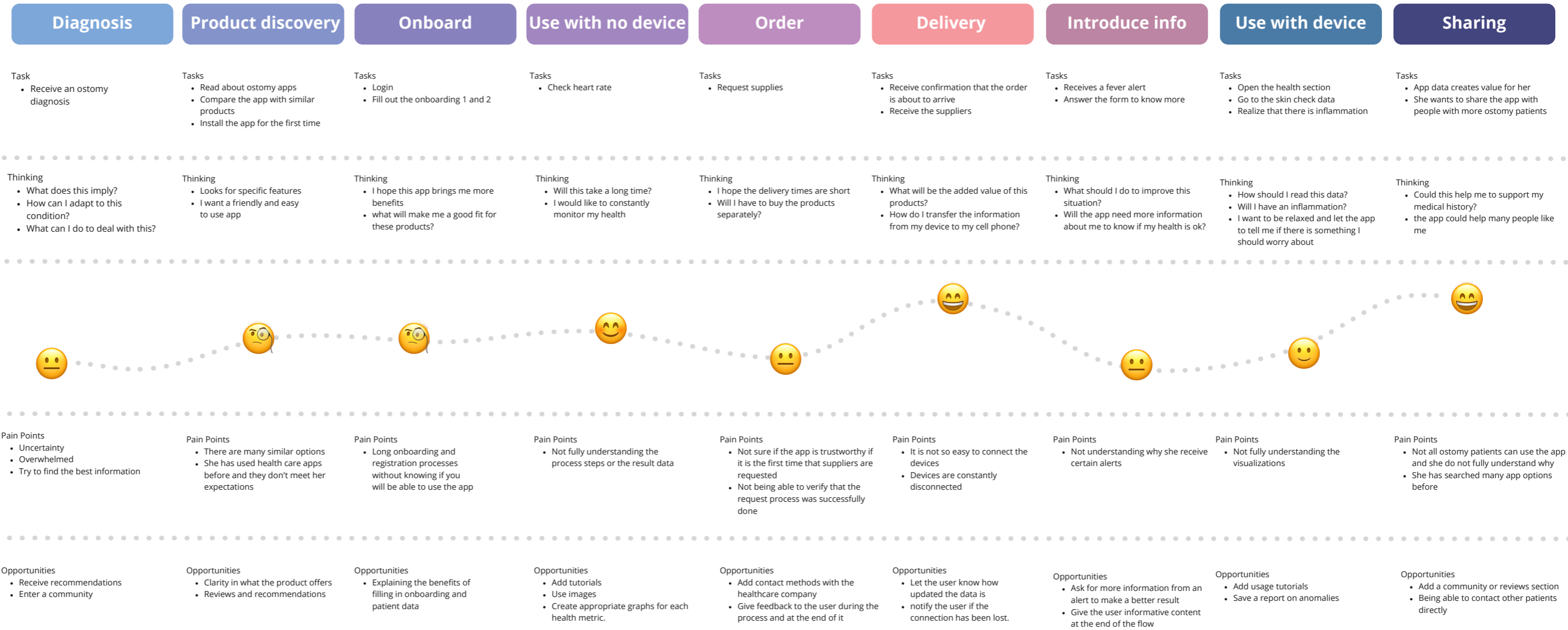
- Increase her self-confidence.
- Find groups of people who are going through a similar situation.
- Use tools and innovations that improve her routine.

Frustrations

- Cannot fully accept her body.
- Feels that she can't relax if she is not at home.
- She feels limited in terms of activities that people her age can do without problem.

User Journey Map

Phases of the Journey



Persona



“ For me the most important thing is my health and that is why I try to find more options to improve my day. ”

Amelia

- 👤 72
- 📍 Buenos Aires
- 👔 Marketing director (Retired)

Goals & Motivations

- An active life.
- Have someone she trust so she can share her questions and concerns about the ostomy bag.
- Be informed about new ostomy recommendations.

Bio

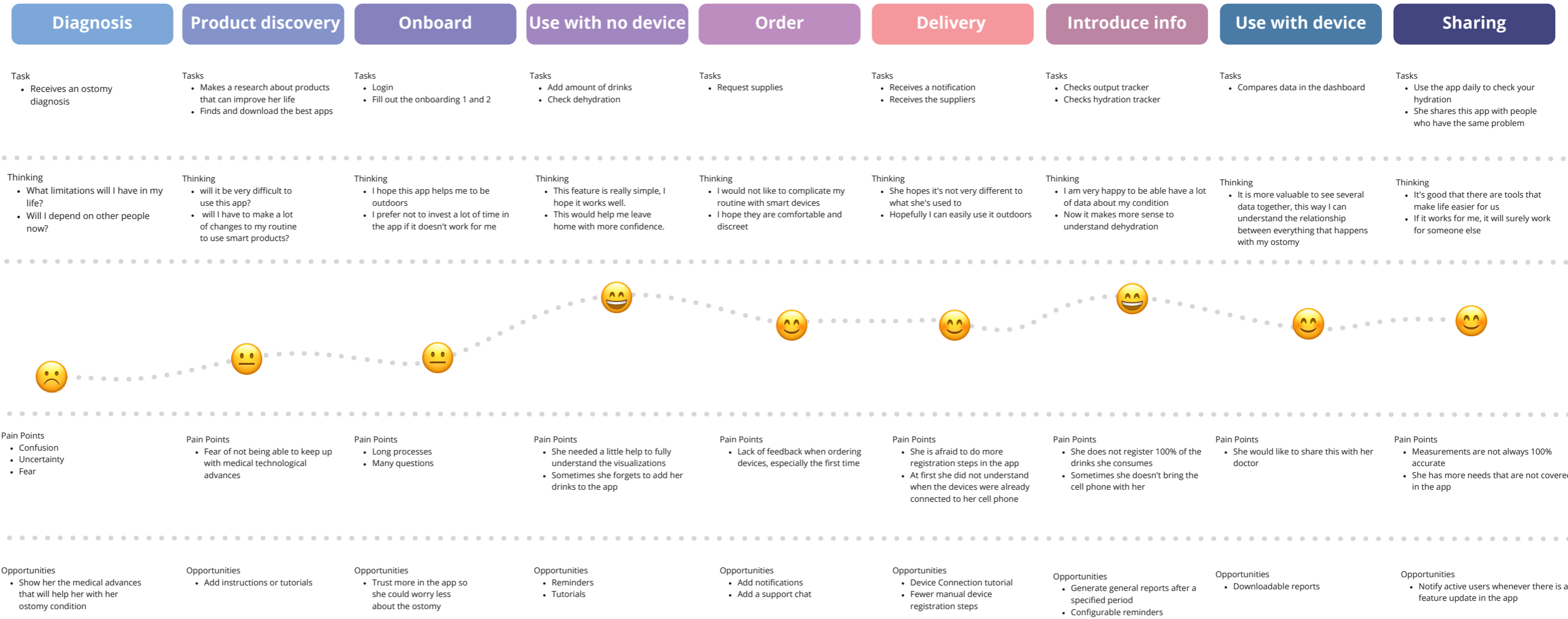
Amelia is a retired professional who lives with her husband. She was diagnosed with cancer 3 years ago and although she is now cancer free, she has to wear an ostomy bag. Her condition has helped her to appreciate life a little more and she now tries to travel and discover new places.

Frustrations

- Having to constantly worry about her bag.
- Not knowing if she is hydrated enough.
- Feeling that her family has to take care of her because of her condition.

User Journey Map

Phases of the Journey



Persona



" I was officially an adult and now I feel like my parents have to take care of me again. "

Oliver

👤 22

📍 Utah

🎒 Student

Bio

Oliver is passionate about extreme sports. He recently suffered a motorcycle accident and since the surgery he has had to wear an ostomy bag, he is still not used to the idea of having a bag and just wants to know when he will be able to return to his outdoor activities.

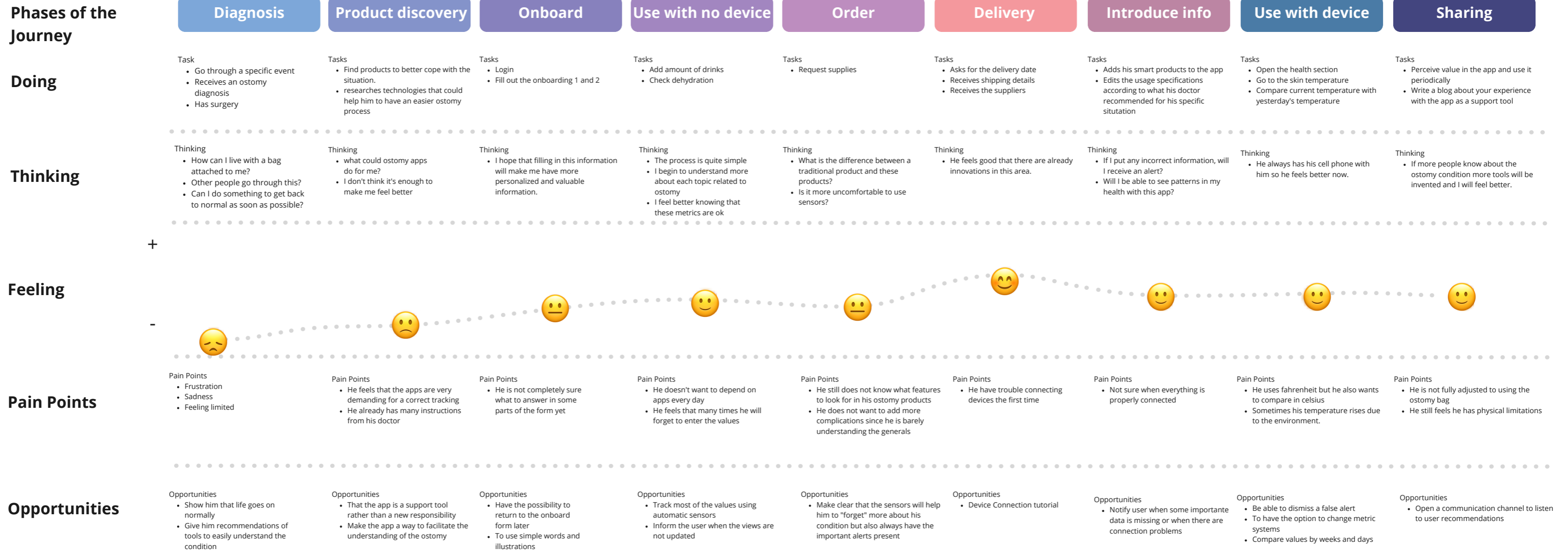
Goals & Motivations

- Being able to do the activities and sports he likes.
- Have a better understanding of how he could improve his situation.
- Not feeling alone and isolated with his situation.

Frustrations

- Feels lonely and misunderstood.
- Needing help to change your bag seems annoying.
- He no longer enjoys hanging out with his friends so much.

User Journey Map



Starting the Design

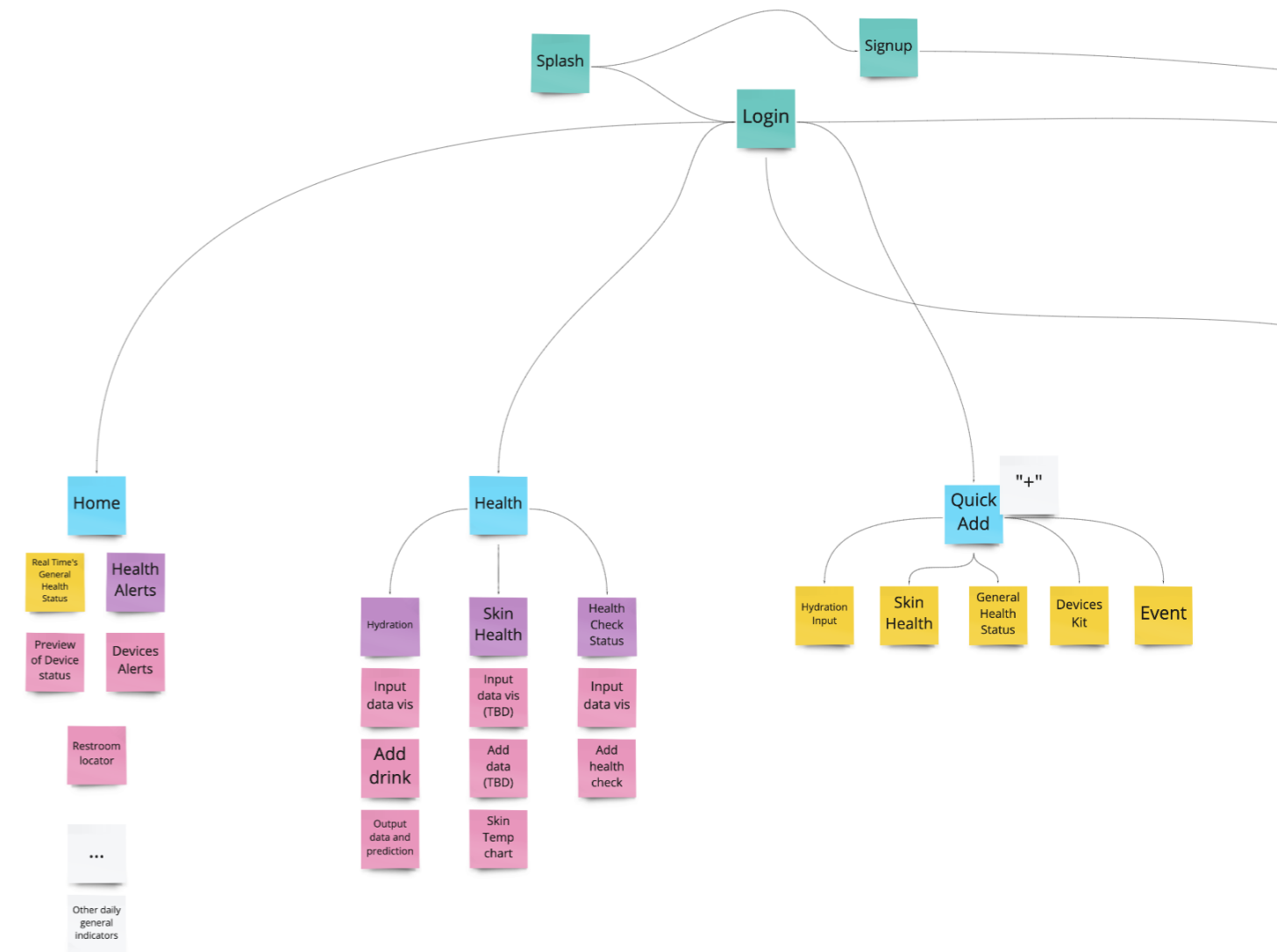
- Information Architecture
- Paper Wireframes
- Digital Wireframes
- Usability Studies

Information Architecture

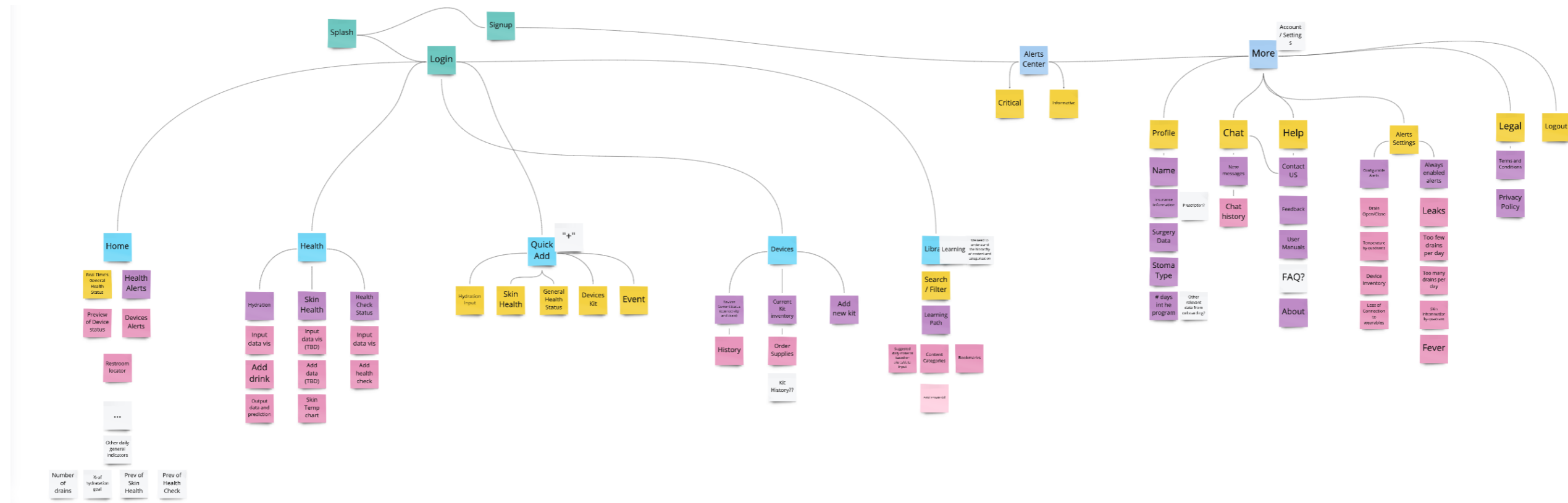
Process

Since it was necessary to add many different but related features to the app, the first step in the interface design had to be the information architecture.

Some of the features were really sophisticated so they had to be divided into subcategories in order to create better navigation paths. For easier navigation, a quick add button and a tap bar were implemented since this stage.



Information Architecture



Alert settings

For an easier understanding, all the alert specifications are configured from the settings part.

Support chat

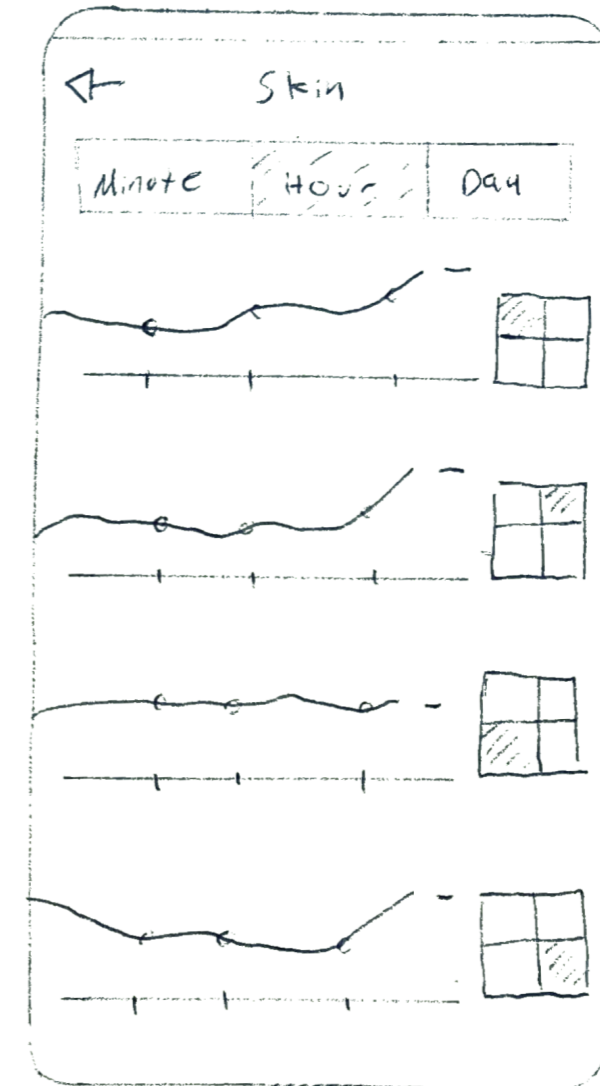
The technical support chat is currently located in settings, however, it is intended to integrate a medical support chat with quick access

Paper Wireframes

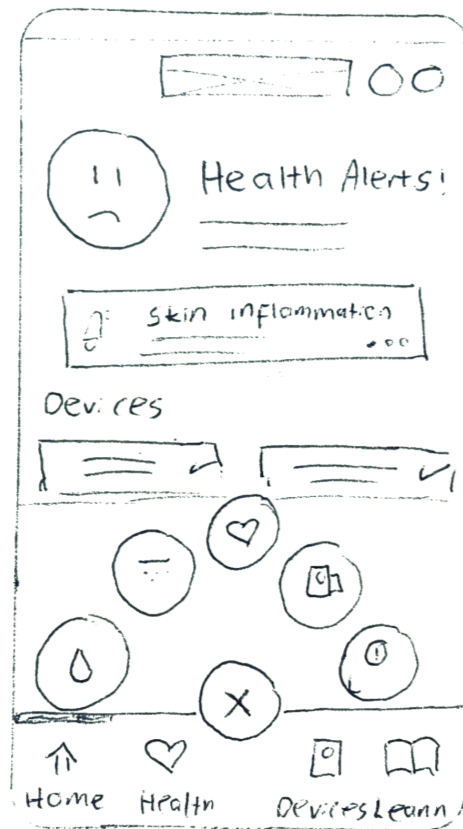
Process

The first approach to visual proposals was the paper wireframes. A quick wireframing process was important for the following reasons:

- Internal checks in the design team
- Set the basic navigation components
- Establish the most elaborate ideas
- Validate concepts with stakeholders and users

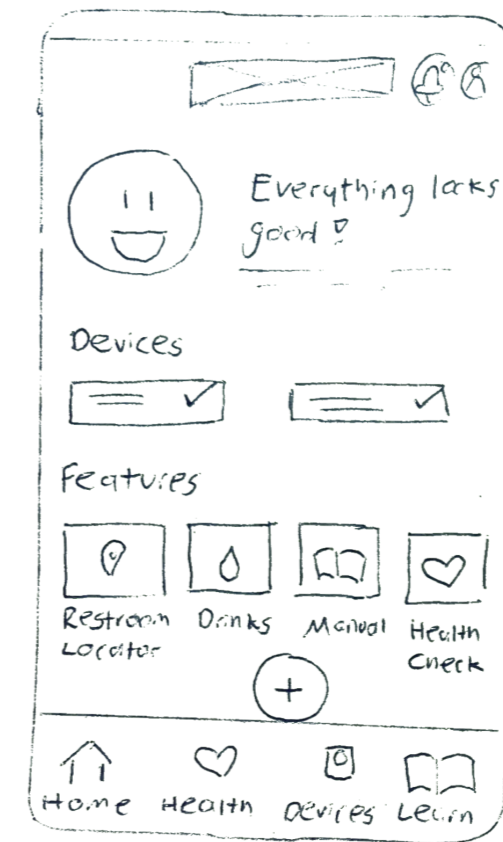


Paper Wireframes (Option 1)



Main navigation sections

We created the tap bar component to have easy access to the main sections. In order to avoid responsive problems, we left 4 main sections and a quick add.



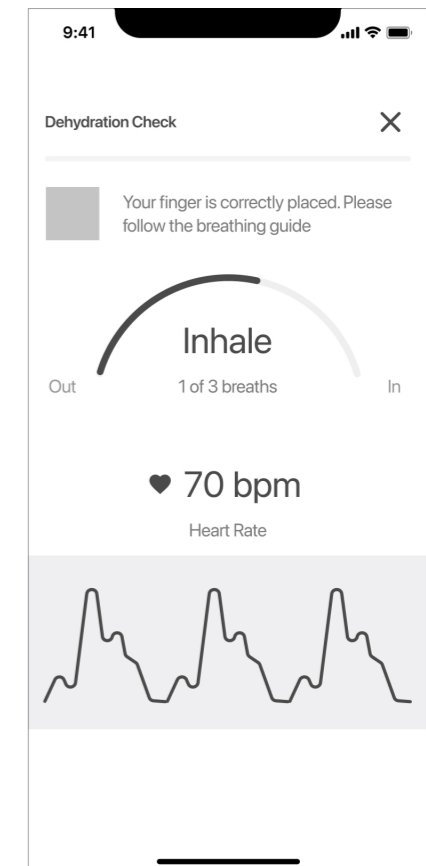
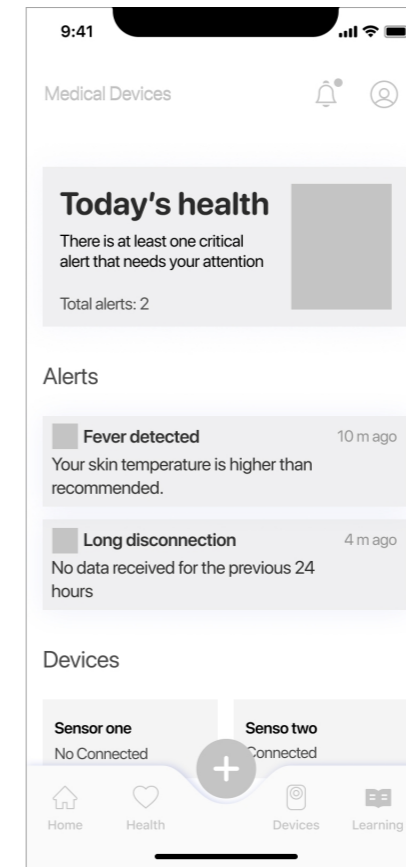
Visual images and illustrations

A key need was to communicate the most important things through visuals and text, so big icons were placed at the top of the homepage.

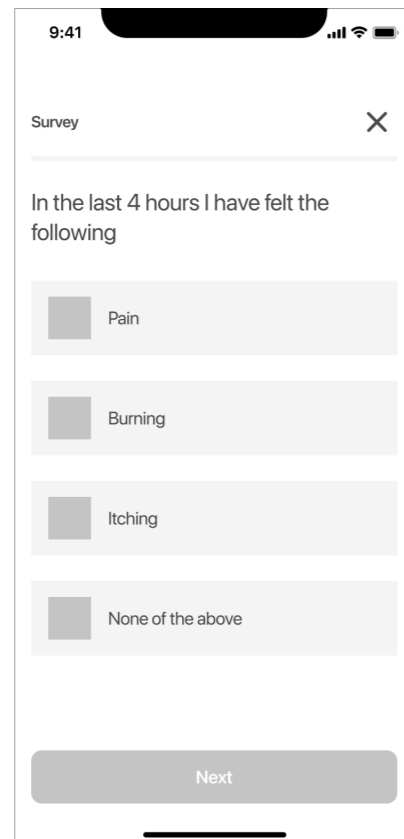
Digital Wireframes

Process

After establishing the bases and making sure the needs of the stakeholders were met, we created the digital wireframes to optimally layout all the elements and functionalities.

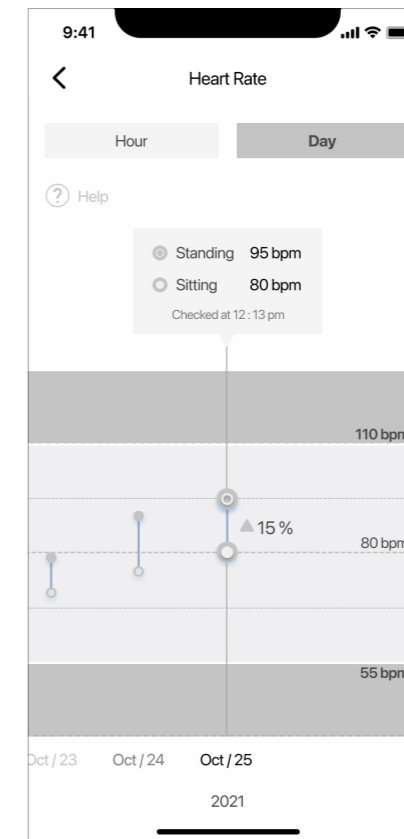


Digital Wireframes



Knowing more about the patient

Throughout the app a series of questionnaires were implemented that would give better results for the user and also train the algorithm for future improvements.

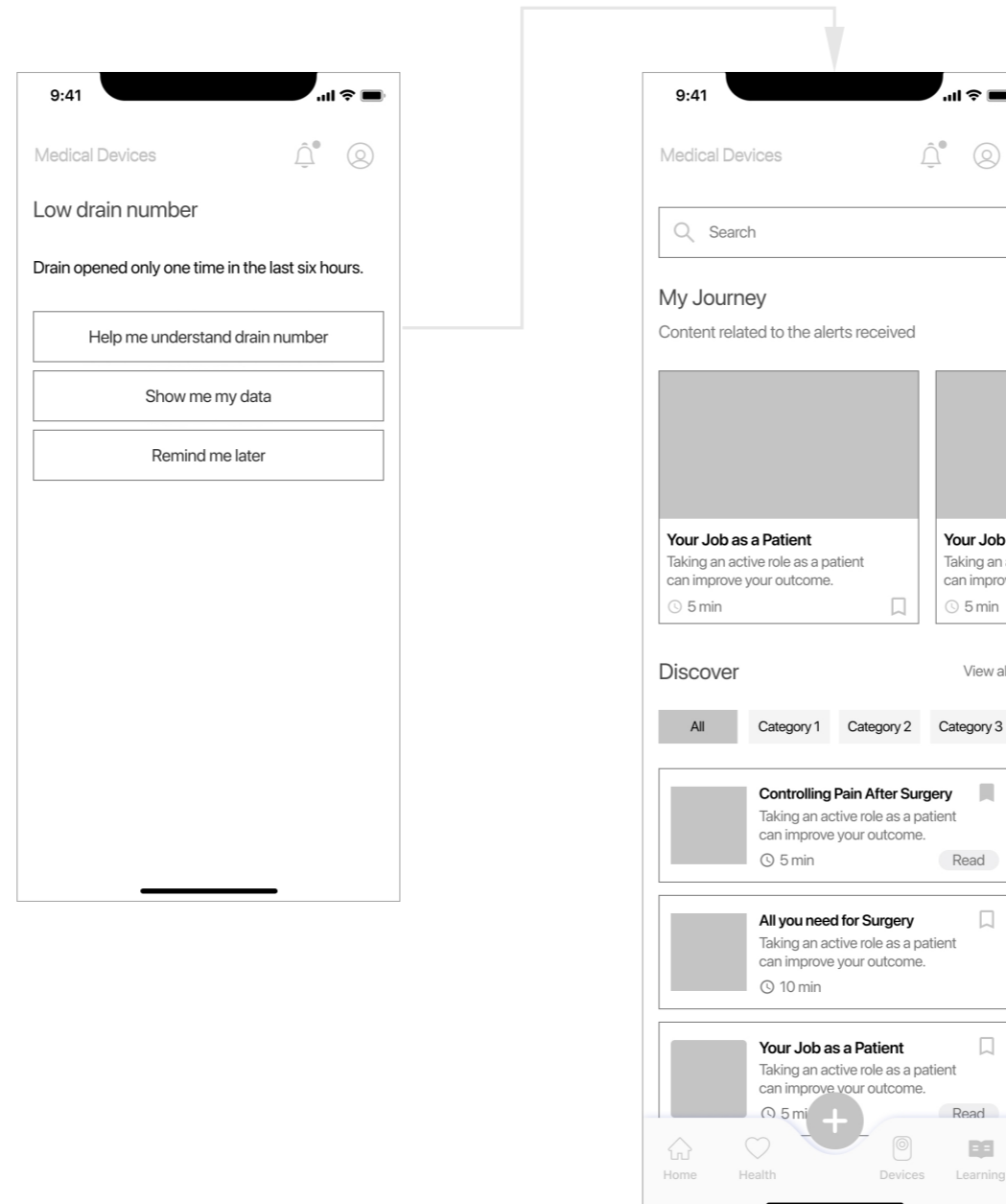


Data visualization

The data being turned into a visual format is the core part of the app since this is where the user really understands the relevant information related to the ostomy.

Digital Wireframes

Each alert contains actionable options so the user can track and understand the symptoms.



The app offers personalized educational content that is directly related to the user symptoms.

Findings

Usability Study

After testing the wireframes with a group of specialists, the findings were:

- The user will be able to edit certain goals and recommendations to match their personal needs.
- It is necessary to create forms after some alerts, so the user can obtain better learning material.
- A tutorial for health visualizations needed to be added.
- Devices must have the possibility to customize the orientation so the user could match this with the way they wear it.
- A glossary of terms is needed.
- Suggestions must appear when the user gives an alarming response in the forms.
- The quick add component must be scalable.

Refining the Design

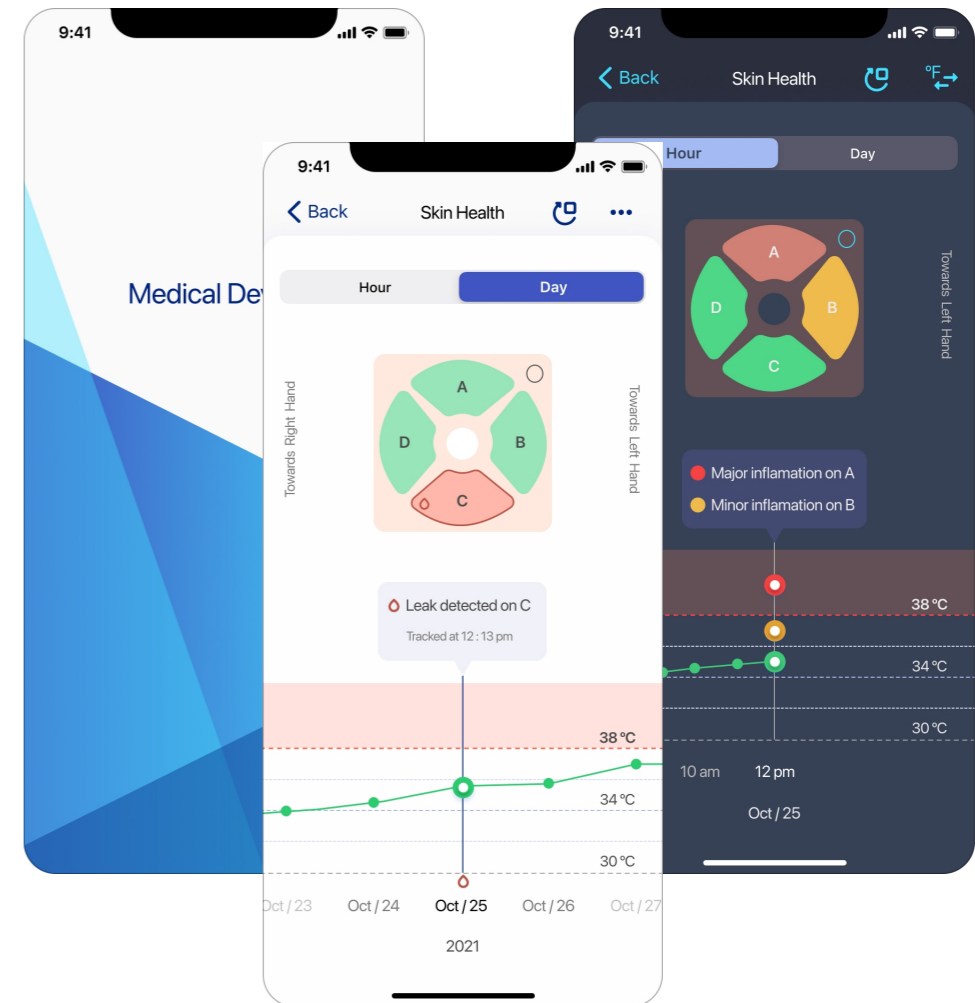
- Mockups
- High - Fidelity Prototype
- Accessibility

Mockups

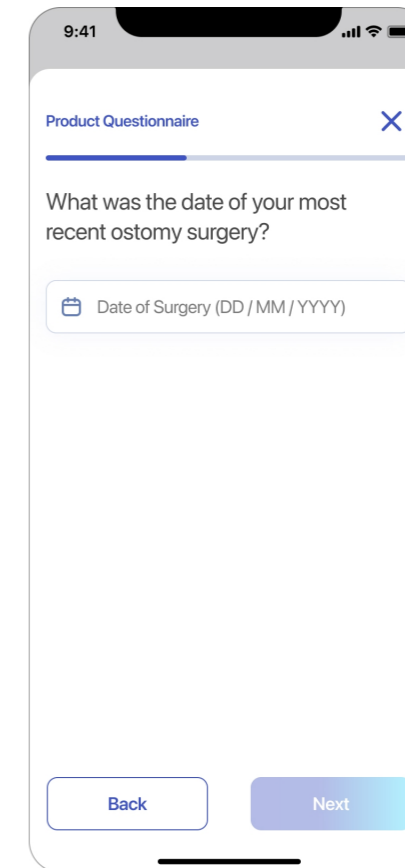
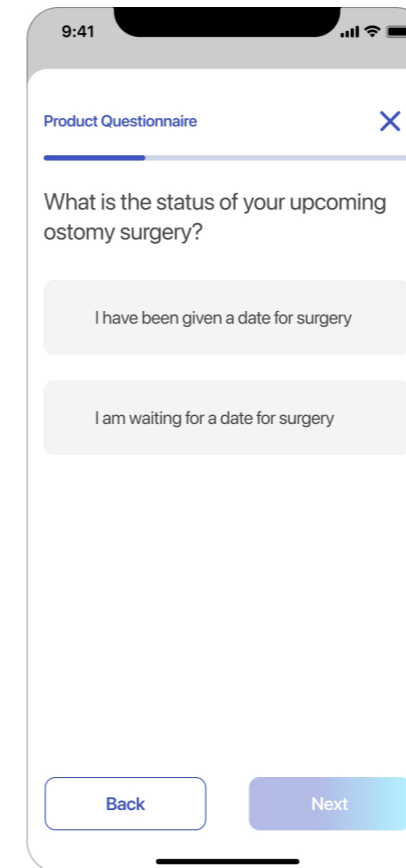
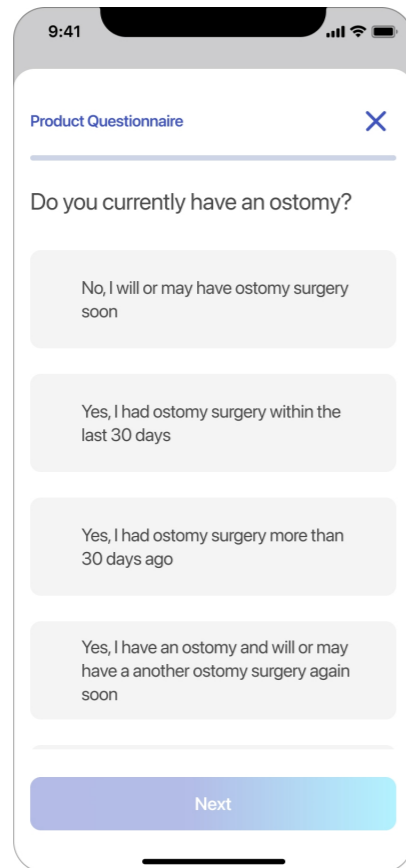
Process

We created the final mockups once the most crucial elements and functionalities were refined or validated.

The mockups are very useful to present stakeholders and the development team with a complete vision of what the final product will look like.



Mockups



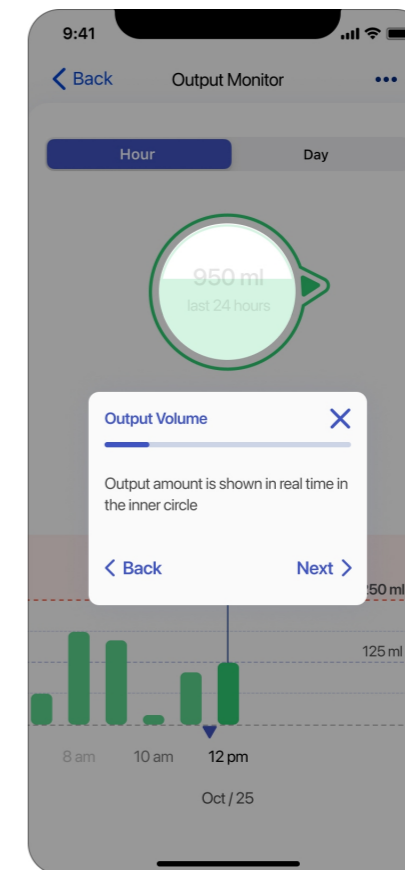
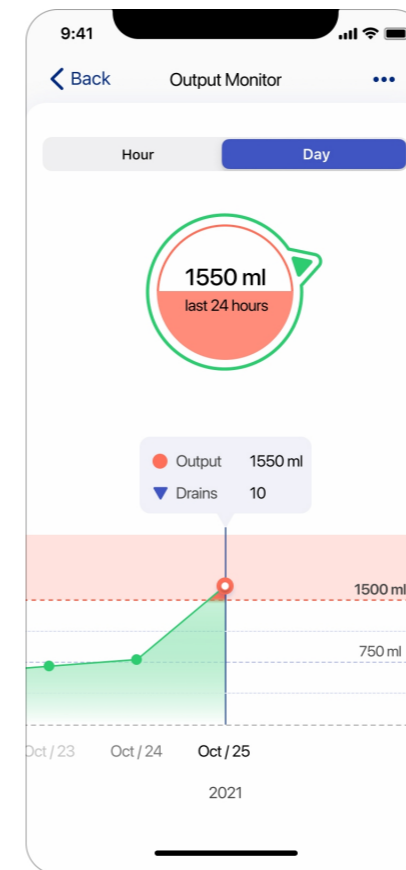
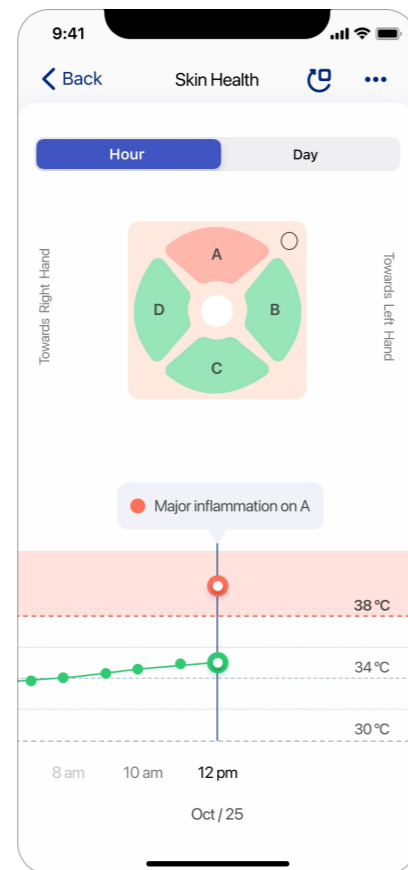
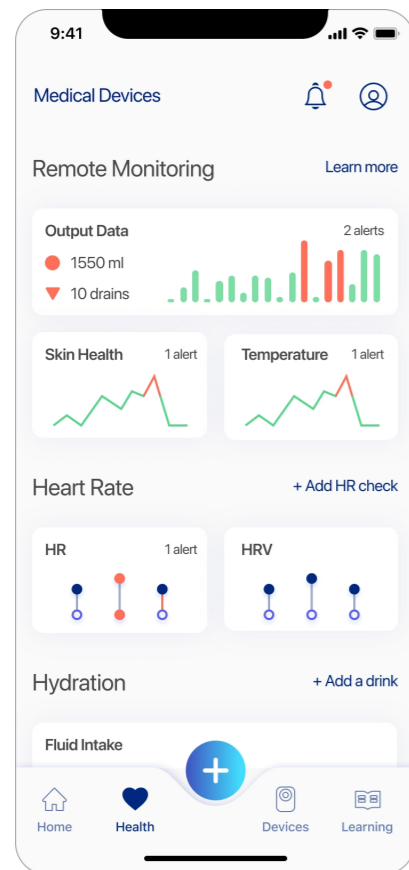
Onboard surveys

Onboard questionnaires to get information about the user and provide better content.

Flow division

Different screens depending on what the user has answered in the previous question.

Mockups



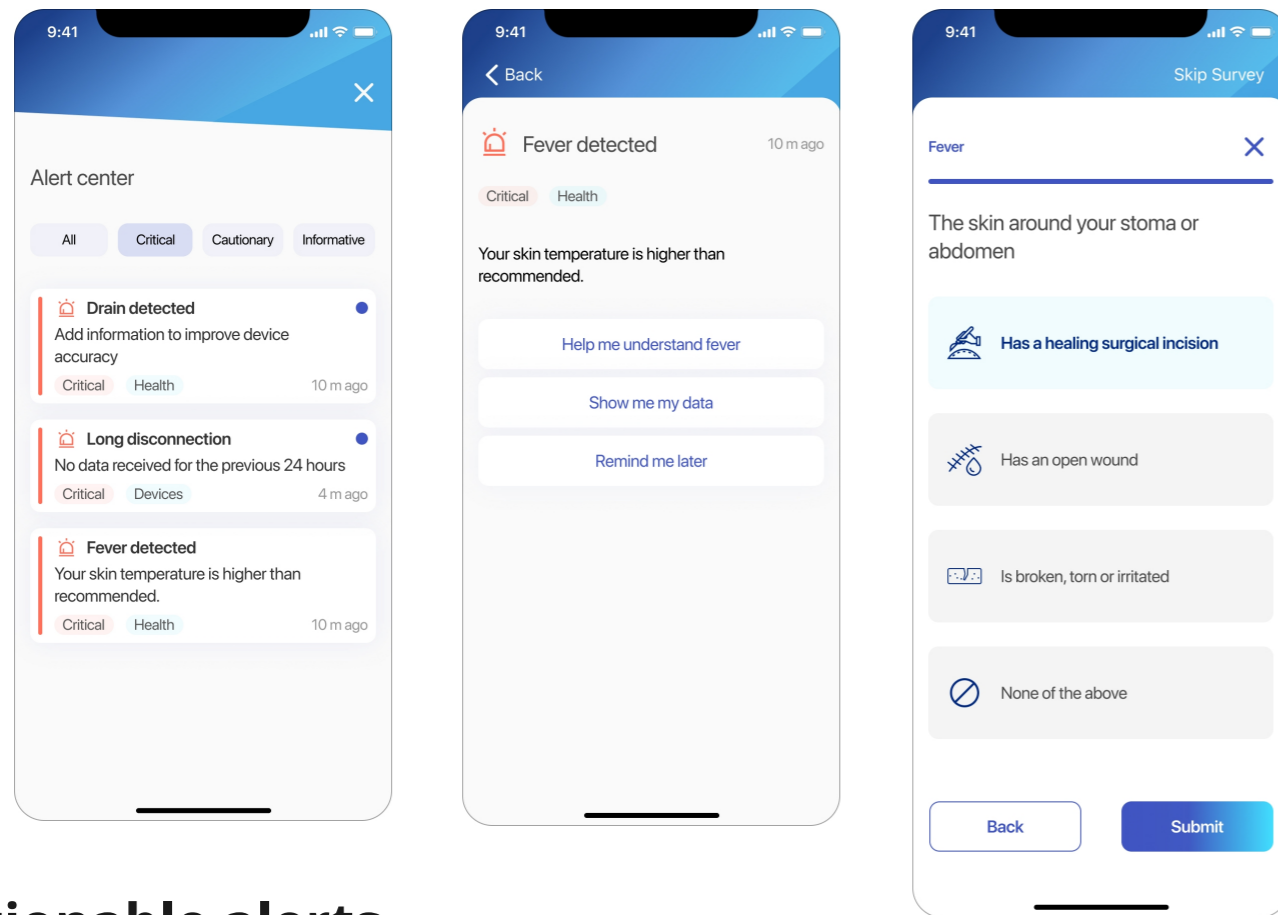
Health dashboard

Summary view to compare the latest health data on one screen. Each graph can be expanded for more details.

Visualizations and tutorials

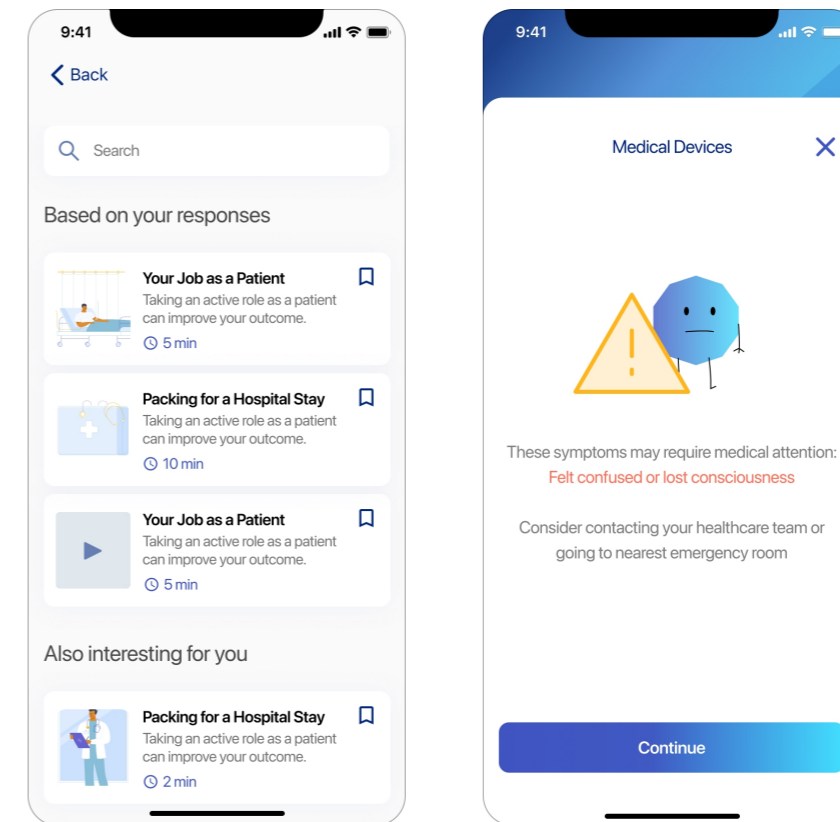
Friendly visualizations and the option to see a tutorial to better understand each part of the graph.

Mockups



Actionable alerts

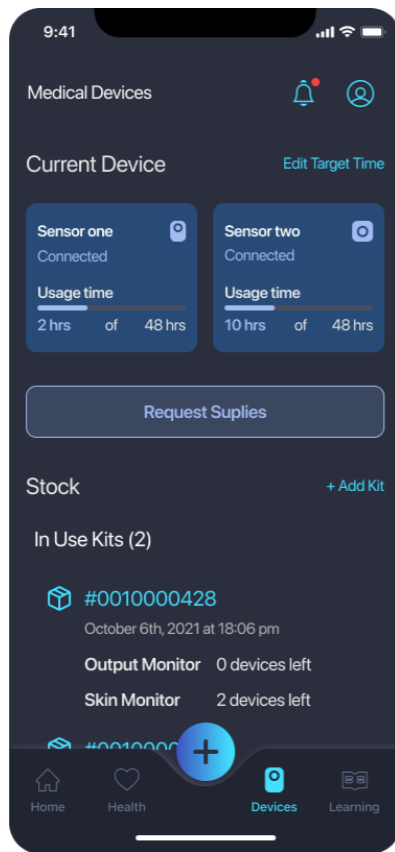
Each alert has a series of suggested actions so the user can know what to do based on each symptom.



Health recommendations

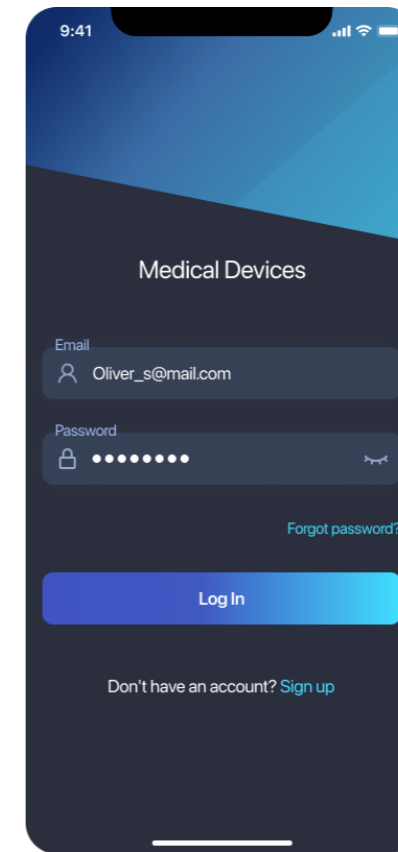
At the end of each flow, the user receives content recommendations and, if an alarming response was detected, an alert screen also appears.

Mockups



Custom colors

For development practicality, each color has its dark mode equivalent.



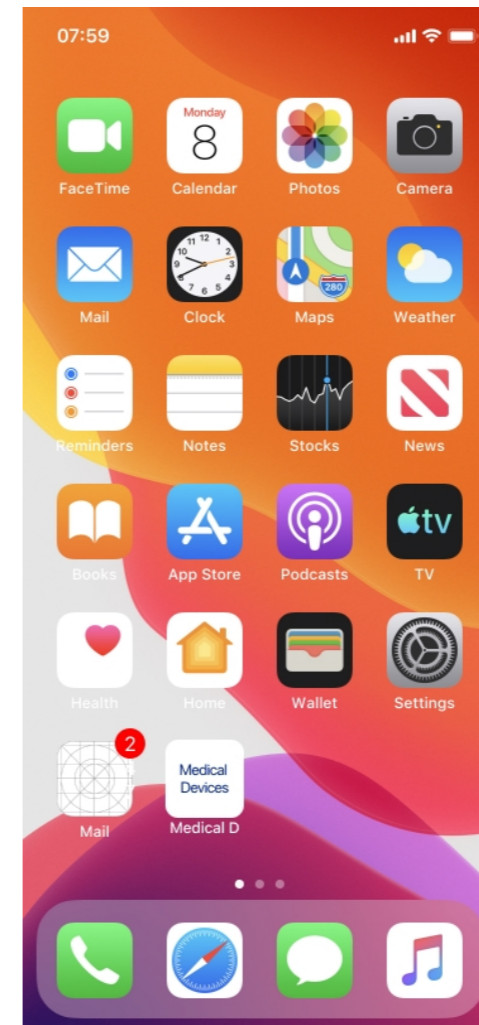
Blue tints

The blue tones help with contrast and make a more varied color palette.

High - Fidelity Prototype

Prototype Link

[Medical Devices Startup prototype](#)

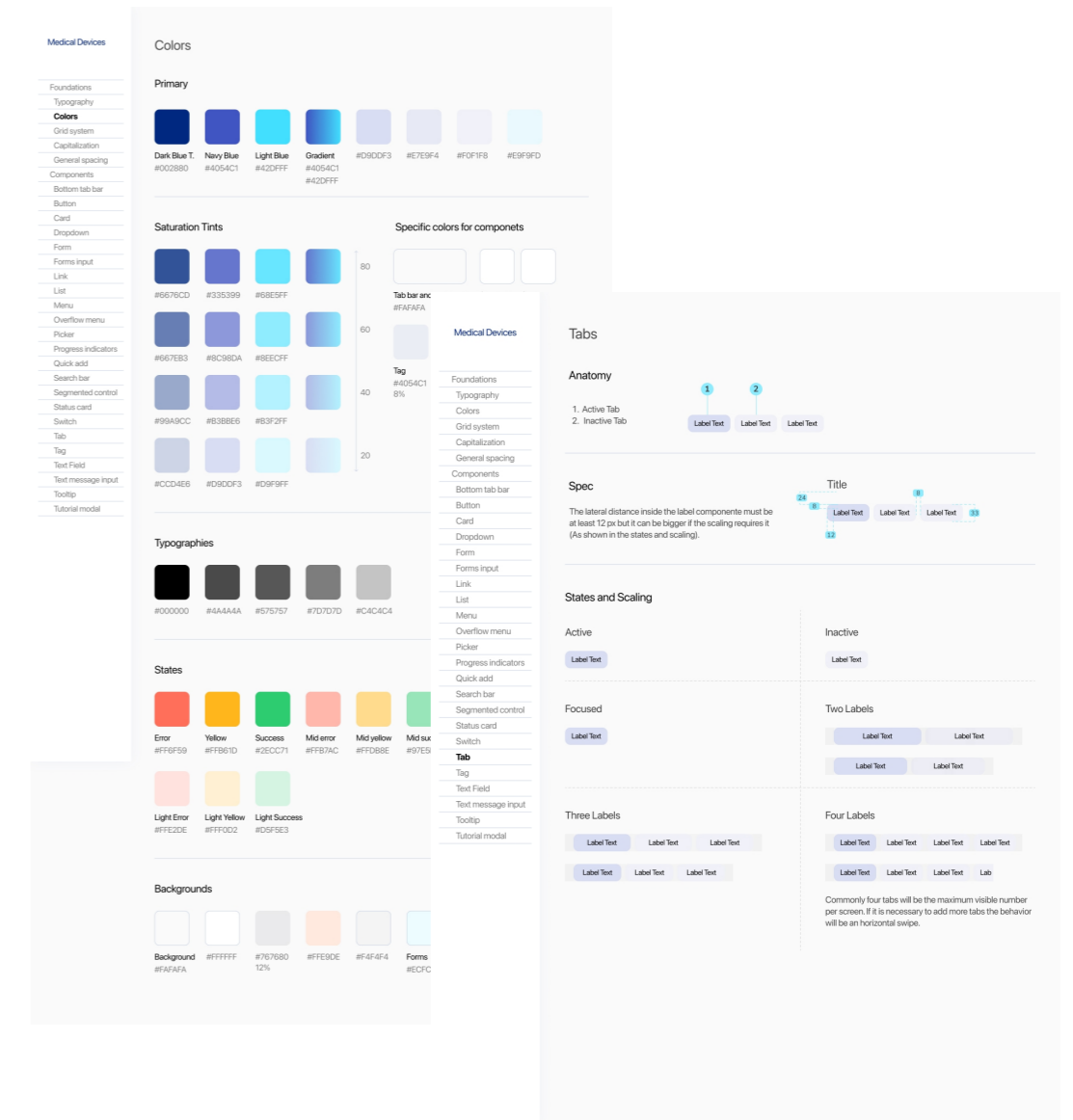


Design System

Process

We created and documented all the components used in this app. The design system was a fundamental piece of the process because the project started with an iOS native app and later an Android app was also required.

The documentation of all the components was also important for a correct transition and adaptation to the dark mode screens.



Accessibility Considerations

Accessibility in current features

- We used native fonts so the user always has the option to see the largest text sizes if they have it configured accordingly.
- We created an equivalence of colors to make sure that the dark mode met the requirements for enough contrast.
- The color codes used in the app are used to communicate statuses, but they are still always accompanied by text or descriptions.

Going Forward

- Takeaways
- Next Steps



Takeaways

Impact

The Medical Devices app has a very special impact on the lives and routines of users. Being able to visualize, understand, and take actions based on information presented directly improves the day-to-day lives of patients. This app allows the users to relax more in their daily activities by trusting that any anomaly will be detected by the sensors.

Learnings

- It's important to plan functionalities that will aid with future data accuracy.
- It's necessary to have good communication with the dev team so that each designed feature has optimal impact.

Next Steps

What's next?

- Create a report section with the option to download a summary of the health data.
- Analyze and train the algorithm from the current form responses and learnings section.
- Test the latest version of the app.
- Add a web panel.
- Adapt flows to have different roles in the app.

**Thanks for
tuning in!**

