Case Study: Surgeon Planning App

Prepared by Tyler Burton

I'm Tyler Burton,
a product designer living in Los Angeles, California.

- 10 years experience in **UX/UI design**
- Designed digital products for the **NFL, Apple Music and Meta**
- Most recently consulted for **McKinsey & Company**

Deliver an interconnected technology stack in order to reduce surgical variability, simplify operational workflow and improve the user experience

Two workstreams

- Converged Planning
- Mobile first redesign of the Surgeon Hub app, a key part of the surgeon technology stack

My Role

Design specialist

- Research
- Client workshop facilitation
- UX/UI Design
- Prototyping

McKinsey Team

- 3 responsible partners
- Tech lead
- 2 Engagement managers
- 2 Product owners
- 2 Designers
- 4 Developers

Duration

8 weeks

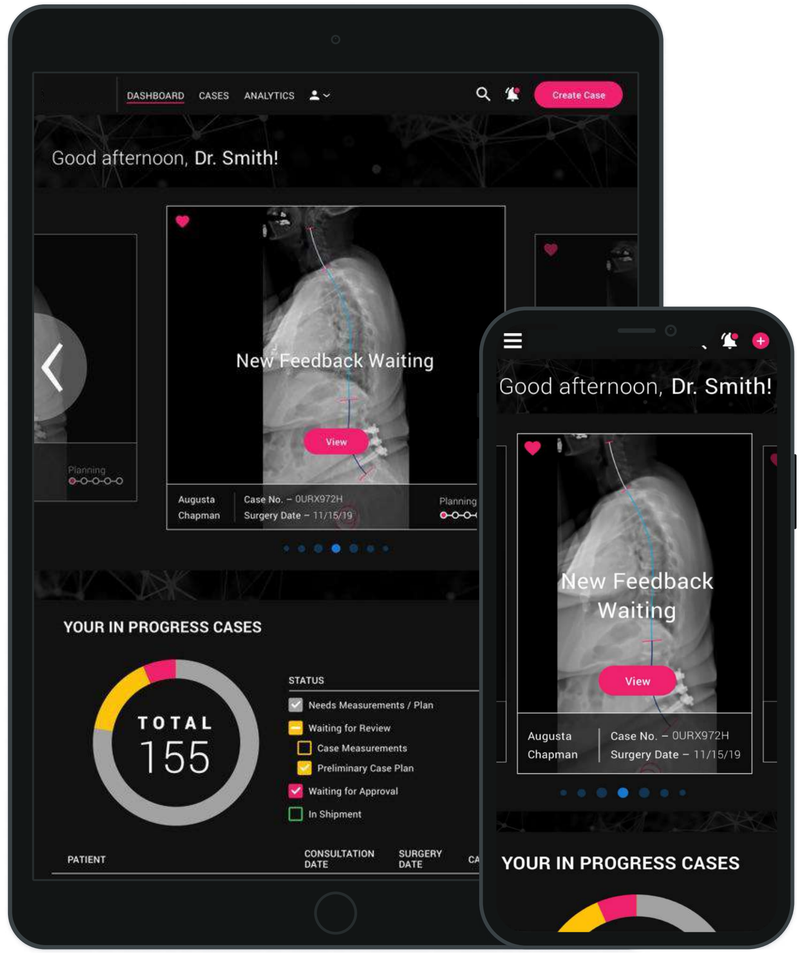
The Surgeon Hub will deliver a distinctive surgeon experience through an intuitive and streamlined application

Short-term mandate (MVP vision)

- Improve the workflow to create operational efficiencies
- Build foundational UI/UX and architecture to support scaling
- Mobile first design process

Business goals

- Increase surgeon satisfaction
- Improve patient outcomes
- Create operational efficiencies for lab engineers



01

Research Overview

Previous client efforts identified 4 main persona groups across surgeons, engineers and consultants

The Academic Surgeon

"Its imperative to have historical data and appropriate analytics to not only have better surgical outcomes but also create a learning opportunity within community"

The Well-Balanced Surgeon

"I care about all my surgeries…I want to make sure they are done well and efficiently, so that I know I'm providing the best possible care"

The Entrepreneurial Surgeon

"I tend to focus on lower complexity cases because I know these are more predictable, this enables me to also focus on managing my practice'

Lab Engineer/ Consultant

"Identifying a priority case requires me to sift through all notifications and cases, irrespective of the surgeons I collaborate with"

Characteristics

The Academic Surgeon	The Well-Balanced Surgeon	The Entrepreneurial Surgeon	Lab Engineer/ Consultant
Highly organized and actively plans in advance	Highly organized and actively plans in advance	Highly organized and actively plans in advance	Ability to multitask
Research oriented	Research oriented	Research oriented	Analytics oriented
Data driven decision making	Data driven decision making	Data driven decision making	Offline communication

Low — High

Each persona was updated and refined during the course of the project

Well-Balanced Surgeon

Dr. Carla Joseph

AGE: 45
GENDER: Female
LOCATION: Jersey City, NJ
ROLE: Orthopedic Spine Surgeon
TOOLS: Globus Excelsius, UNiD
AFFILIATION: JC General Hospital
YEARS OF EXPERIENCE: 12

BACKGROUND

Dr. Carla Joseph is a highly regarded spine surgeon practicing at JC General Hospital, Jersey City. She primarily focuses on age related degenerative surgeries, with some complex cases of deformity or lumbar fusion in patients over the age of 35

GOALS AND MOTIVATIONS

- Driven to conduct efficient surgeries while maintaining the highest standards of patient care
- She is motivated to set-up a robust case planning process that not only considers her choices and methods for various cases, but also saves them for future reference, for a highly functional workflow
- Bring more engagement on platform across patient care continuum

PAIN POINTS

- Repetitive effort of adding the same filters and parameters on planning software tools can be time-consuming and takes her away from important tasks
- Limited functionality to compare before and after surgery imagery makes it difficult to quicky identify and present the success of surgical outcomes
- Fragmented communication methods cause unnecessary delays which can add to her frustration when planning, reviewing and approving cases

"I care about all my surgeries…I want to make sure they are done well and efficiently, so that I know I'm providing the best possible care"

CHARACTERISTICS

Highly organized and actively plans in advance
Low — High

Research oriented
Low — High

Data-driven decision making
Low — High

DESIRED EXPERIENCES

Seamless E2E pre-op to post-op workflow with tools and technologies that:

- Saves time on repetitive tasks to free up her mind for more important tasks like patient education/care
- "Get smarter" as she continues to use these technologies, e.g. saves her preferences for even more efficient navigation/workflow in future
- Enable her to make informed decisions along with the patient

We spent 20+ hours interviewing surgeons, engineers and consultants focusing on what is desirable, viable and feasible

13 Surgeons

7 Academic hospitals

3 Private practices

3 Large hospitals

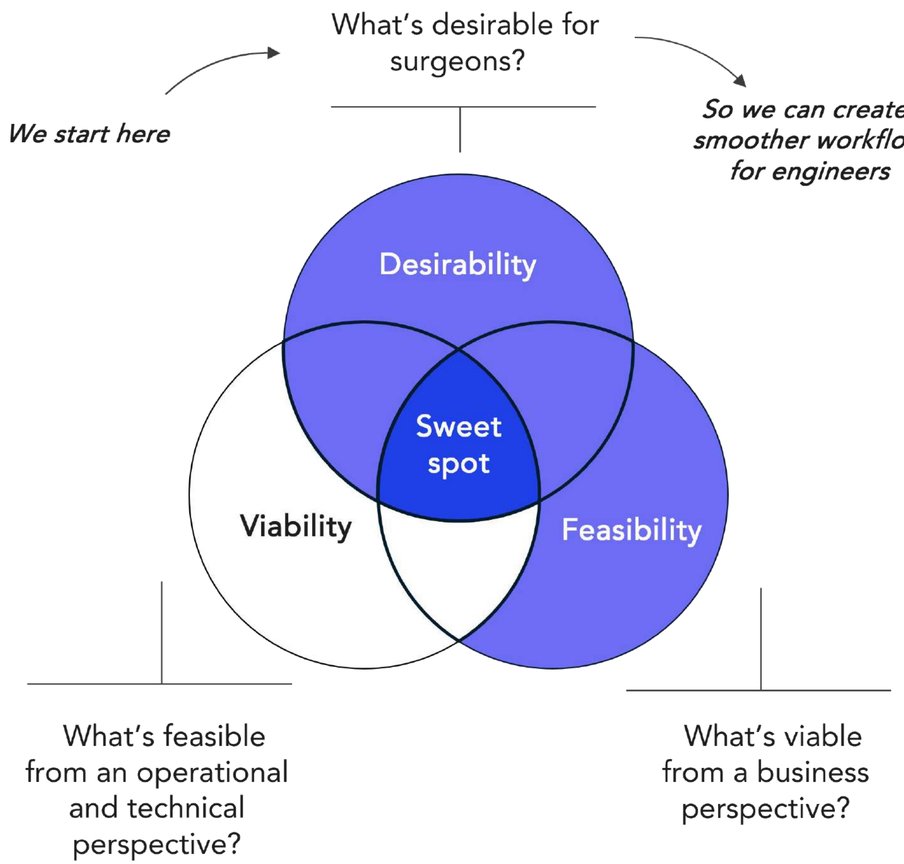
6 Engineers

3 Regional supervisors

2 Lab engineers

1 Case manager

3 consultants



We identified 5 key Surgeon pain point themes

01 **Fragmented communication methods from leveraging several methods (e.g., email, Surgeon Hub chat, SMS)**

02 Viewing data throughout Surgeon Hub is not tailored to what is most helpful for specific user roles. Surgeons saved filters are removed due to system cache and cookie clearing

03 Mobile view is not optimized for FaceID login, system requires long loading times for patient imaging and cases.

04 Absence of pre-op and post-op 3D imaging makes it difficult to review comparisons data in existing software

05 **Absence of pre-op and post-op 3D imaging makes it difficult to review comparisons data in existing software**

We identified 6 key Lab Engineer & Consultant pain point themes

01 Engineers struggle with long loading times, no methods to compress heavy files, unknown errors, missing information and filters that are erased by monthly cache and cookie clearing

02 **Managing engineers get every notification for the people that work under them, making it difficult to identify priority items**

03 Engineers leverage several methods of communication (e.g., email, in Surgeon chat, and SMS) creating challenges in tracking all communications

04 Engineers manually upload patient data reserved from EHR system which causes a disjointed experience and delays the case creation process

05 Slow system updates result in engineers using offline tools like excel spreadsheets to manage data and workload

06 **Lack of potentially useful features. No ability to auto-align placement within the analyzer, no option to request access to a specific patient's chart and no 3D planning option.**

02

Journey Mapping & Ideation

We conducted an ideation workshop with the client with the goal of coming up with potential concepts that would address critical pain points

Time	Session	Objectives	Content & Activities	Format	Duration
3:30 – 3:40p	Kick-off	Goals for workshop	Workshop agenda and set up	Main room	10 minutes
2:10 – 2:40p	Insights	Understand Surgeon Hub interaction map Empathize with key personas and critical pain points	Review key themes and Surgeon Hub interaction map *(5 min)* Review of personas and pain points *(10 min)* **Activity A:** empathy mapping *(10 min)*	Main room Breakout groups	30 minutes
2:40 – 4:20p	Ideation & Synthesis	Generate ideas to address critical pain points of personas and Surgeon Hub	**Activity B1:** How Might We (*50 min)* Break *(15 min)* **Activity B2:** Synthesis of ideas + voting (*20 min)* Break *(10 min)* **Activity D1:** MVP Build Considerations *(20 min)* Team share-out *(10 min)*	Breakout groups Main room	100 minutes
4:20 – 4:55p	Initial MVP Build Considerations	Discuss value considerations (regulatory, reusability, feasibility)	**Activity C1:** Concept cards *(20 min)* **Activity C1:** Share out (15 min)	Breakout groups Main room	35 minutes
4:55 – 5:00p	Wrap up	Outline work moving forward Address any final questions	Next steps discussion	Main room	5 minutes

McKinsey

Product Owner

Engineer

Tech lead

Designers

Client

Research Director

Lab Engineer

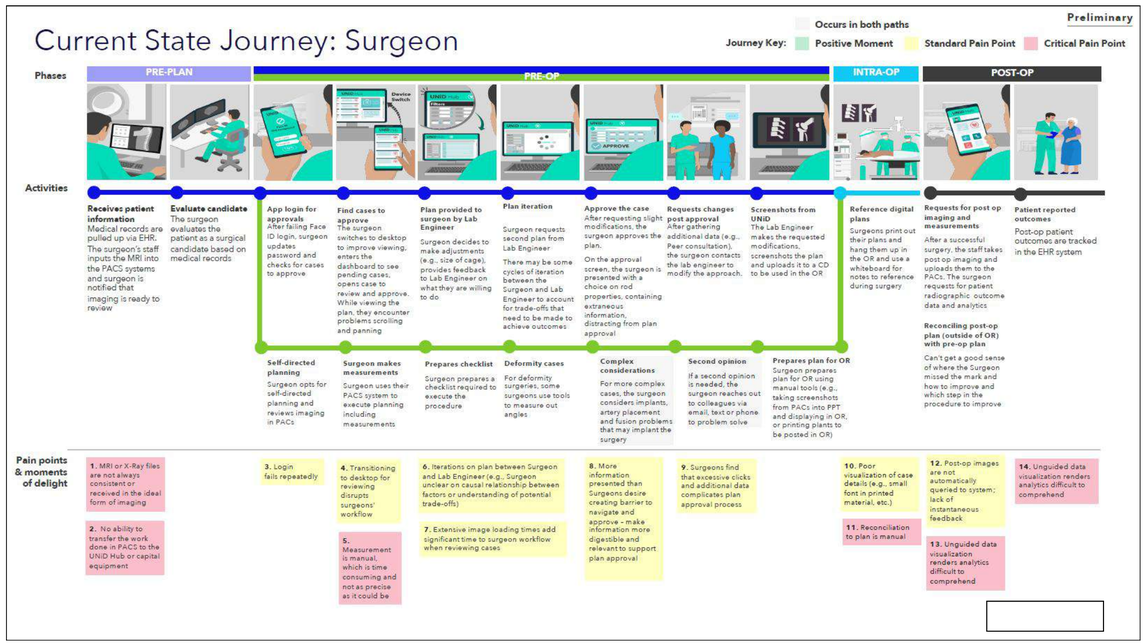
Solutions Architect

Surgeon Hub Product Mgr

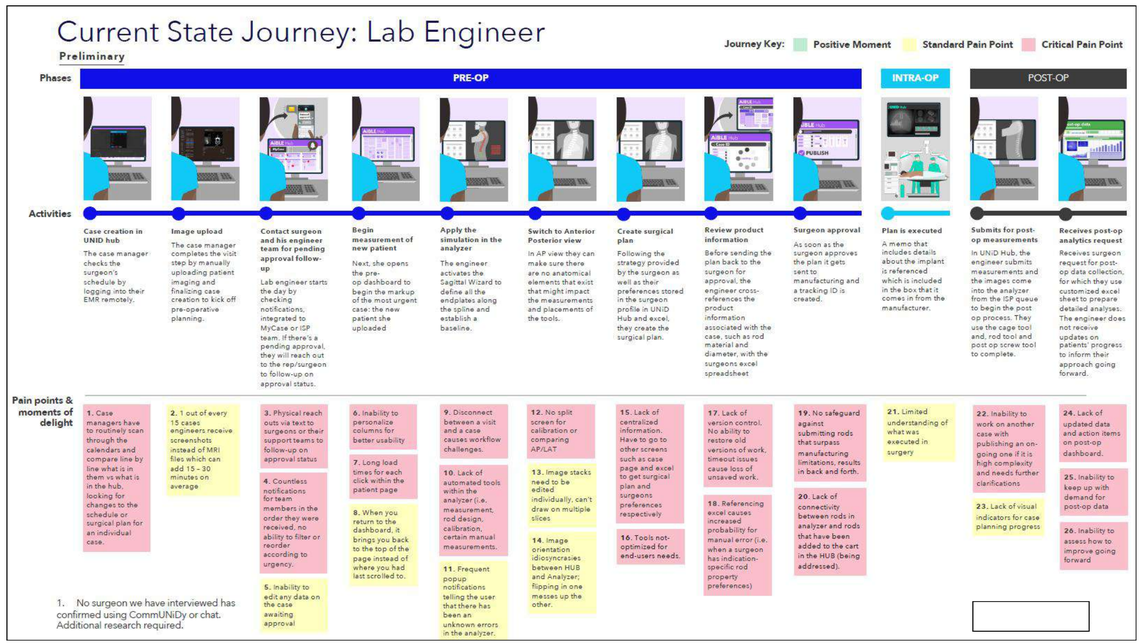
IT Representative

I created current state journeys for the Surgeon & Lab Engineer

Each surgeon has the option to choose Surgeon Directed Planning or delegate planning to a Lab Engineer



The journey shows the back and forth interaction between the surgeon and the Lab Engineer



1. No surgeon we have interviewed has confirmed using CommUNiDy or chat. Additional research required.

The ideation workshop included exercises that explore indirect competition and How Might We questions

Concept cards illustrating how indirect competitors have solved similar types of pain points

Seamless face ID login on Vivid app with interactive native camera creates a 2-click login experience

Pain point addressed: Inconsistent Login functionality

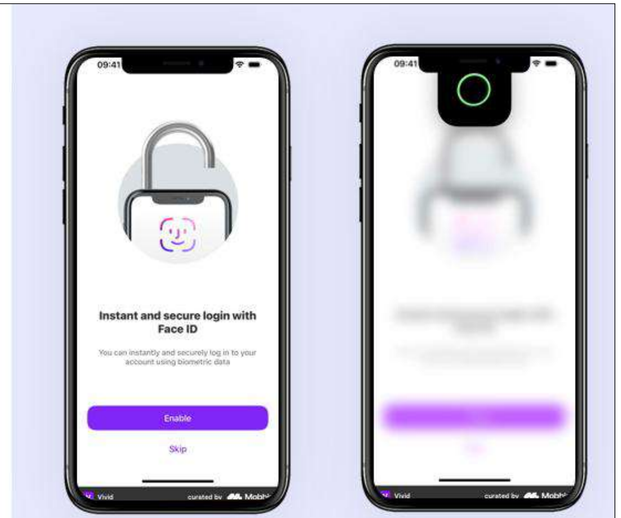
How it works

- Vivid app enables the use of different methods of login (finger-print, pin code, face recognition) for different use cases
- Customers can register for biometric login for a faster access to mobile app

Why it is distinctive?

- Uses native camera for a 2-click face recognition and leverages an interactive color ring to show verification of image recognition

Source: https://vivid.money/en-eu/



Simple and instant login into mobile app using native face recognition for quick account login

Ideation stimulus to generate ideas for How Might We questions

Exercise B2 – Share out

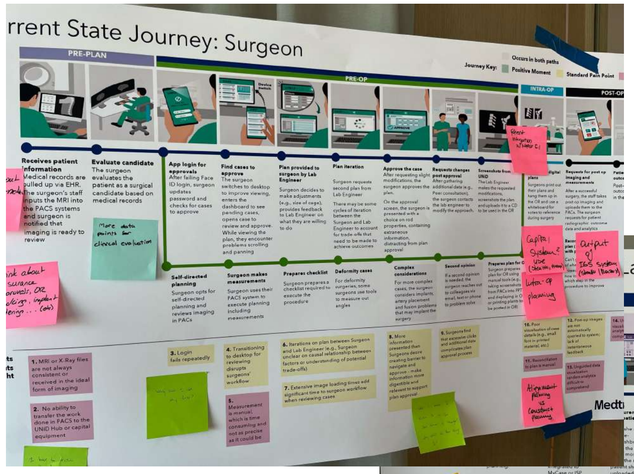
Share and build on each other's ideas. This is where the value of a cross-functional team comes in – our different perspectives make our ideas stronger

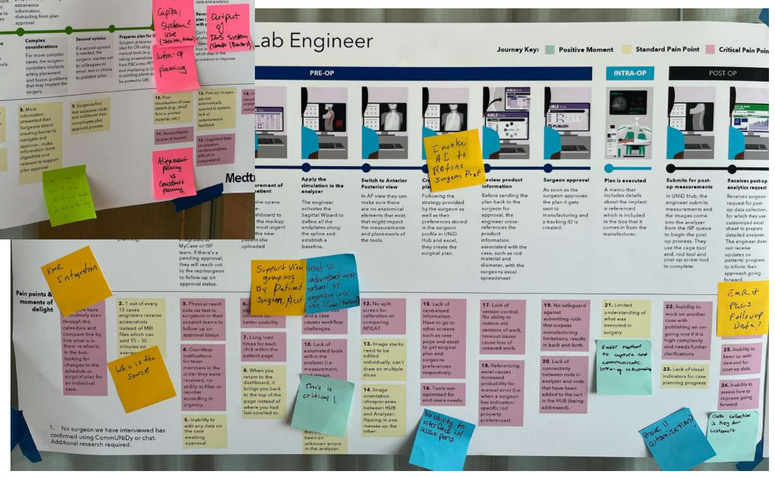
Instructions

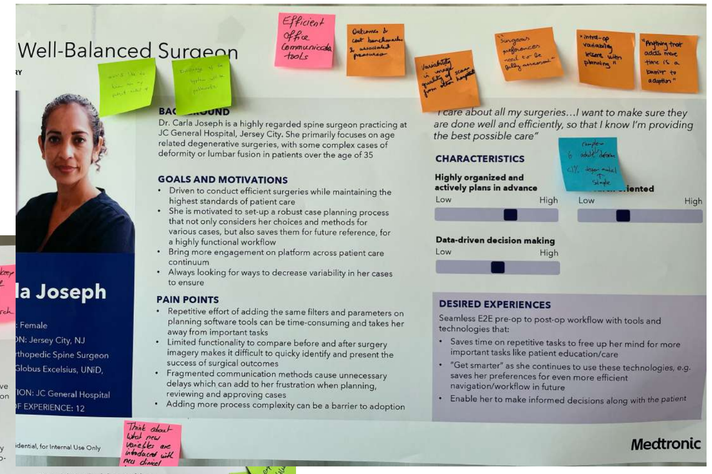
- Each person will share their concepts with their breakout group
- Open discussion as we build on each other's concepts

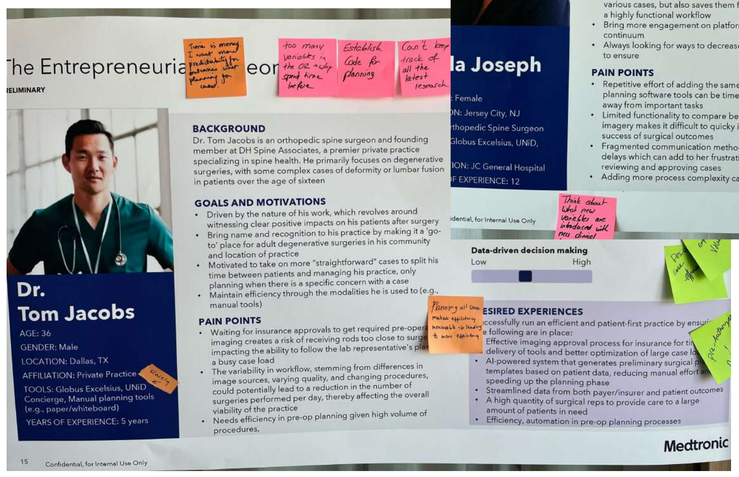
10 min

With help from the client, the current state journeys and personas were refined, how might we questions were developed and initial MVP build considerations were documented

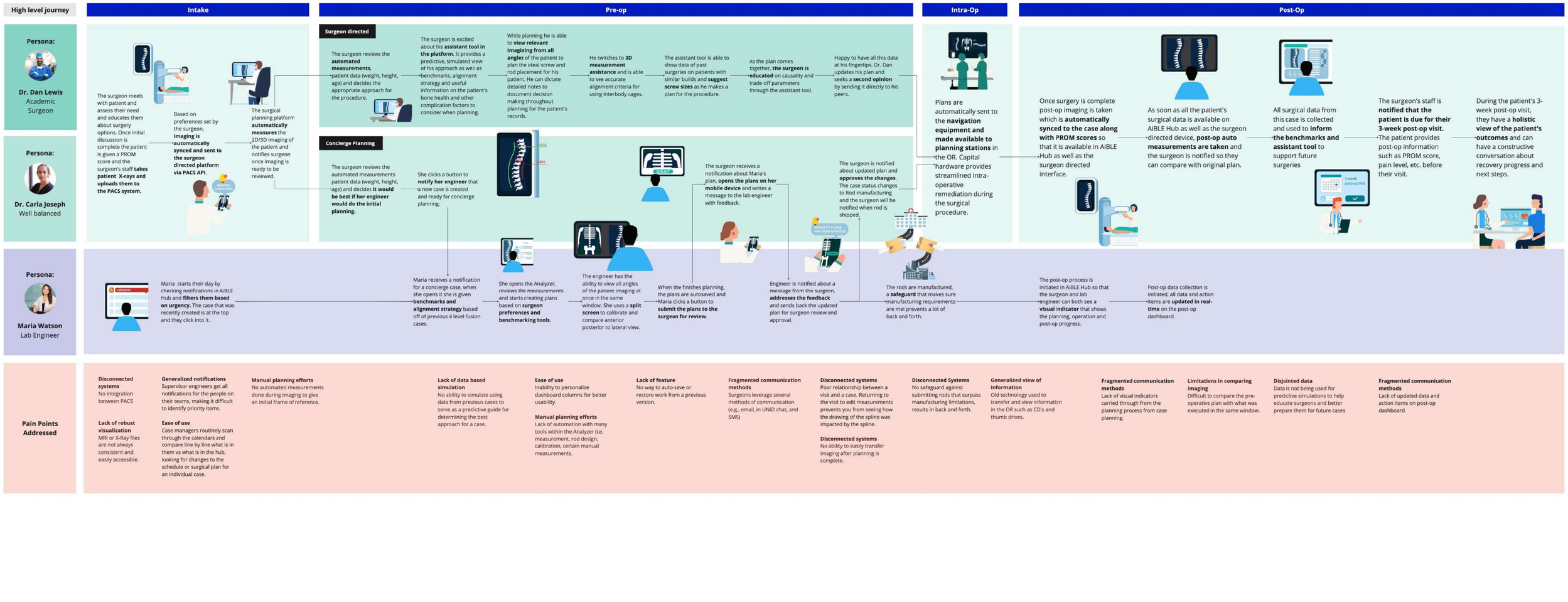




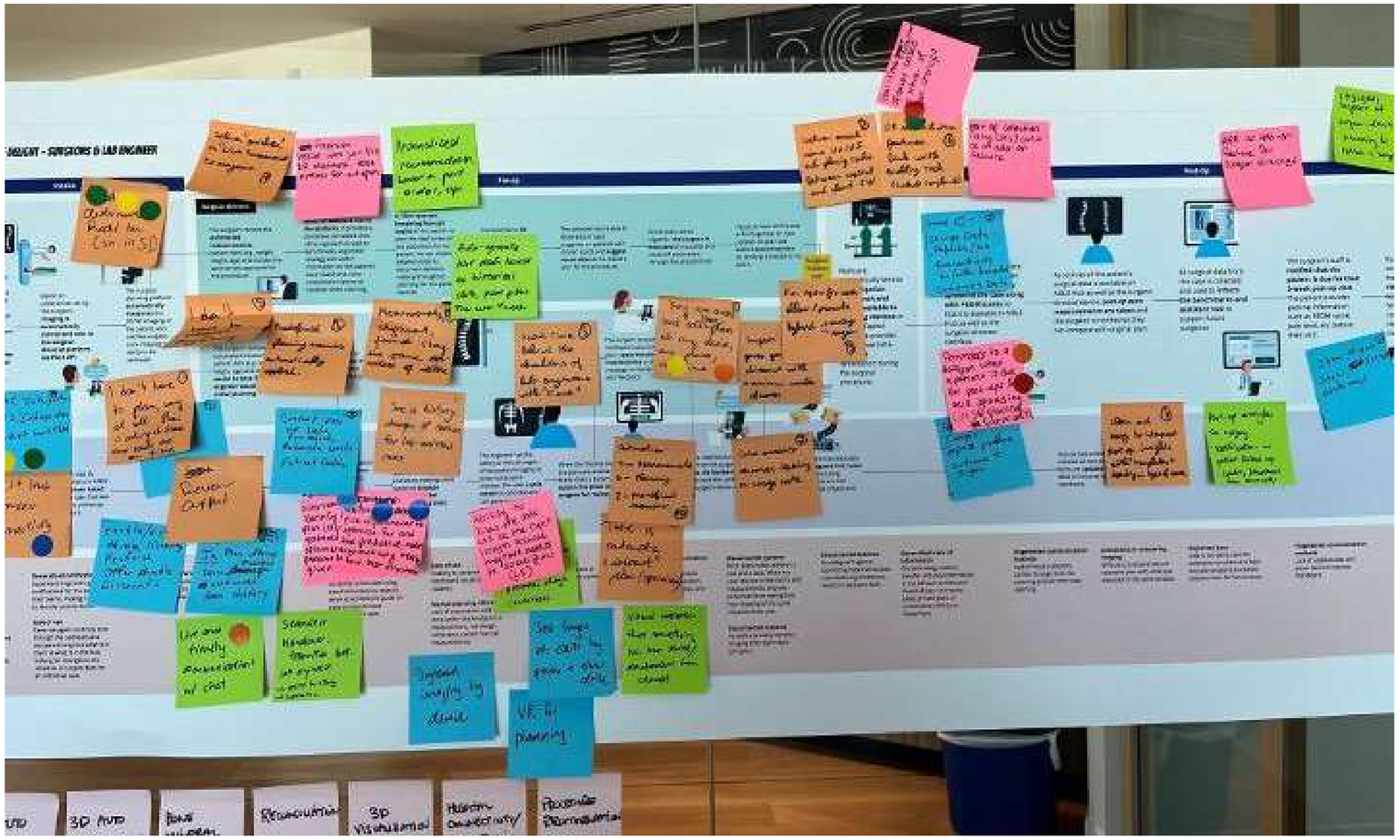




I created a comprehensive flow to illustrate an ideal journey for both surgeons and lab engineers using the new Surgeon Hub



We conducted an ideation workshop with the client with the goal of aligning on and prioritizing MVP features



McKinsey

Product Owner

Engineer

Tech lead

Designers

Client

Research Director

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Solutions Architect

Surgeon Hub Product Mgr

IT Representative

03

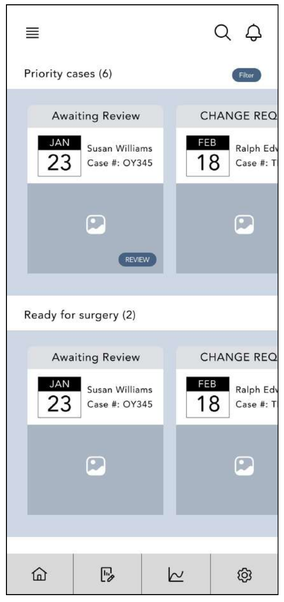
Design & Prototyping

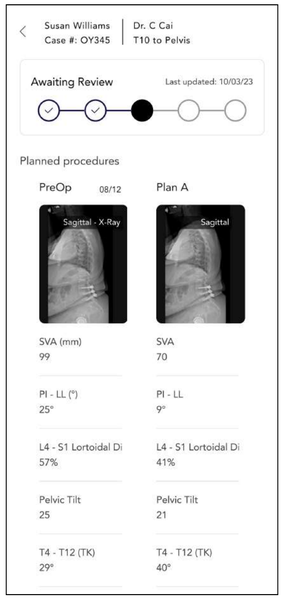
As a team, we developed user stories in Jira to give design a development a roadmap

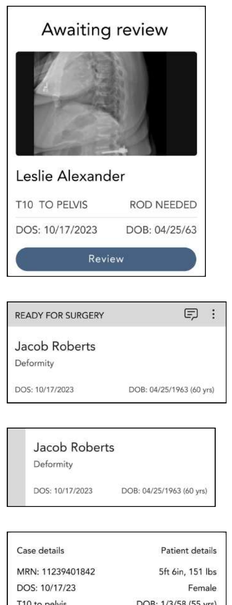
How might we...surface priority cases to the Surgeon/Lab Engineer in order to give them a task oriented dashboard

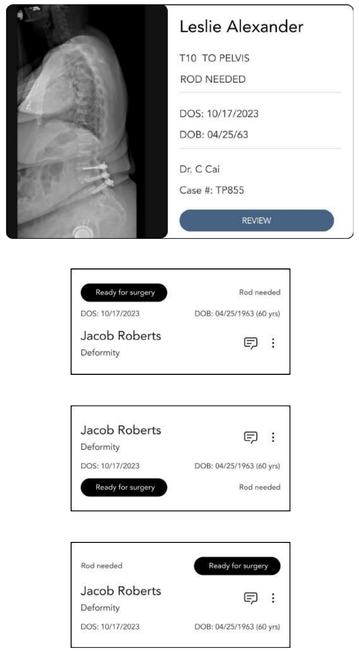
How might we...give the user multiple methods and tools to find the right information they are looking for within the hub

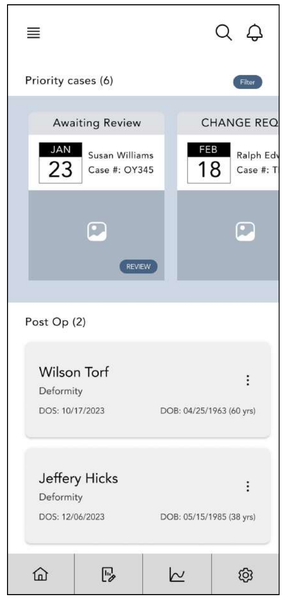
Design began with wireframing different versions of our concepts



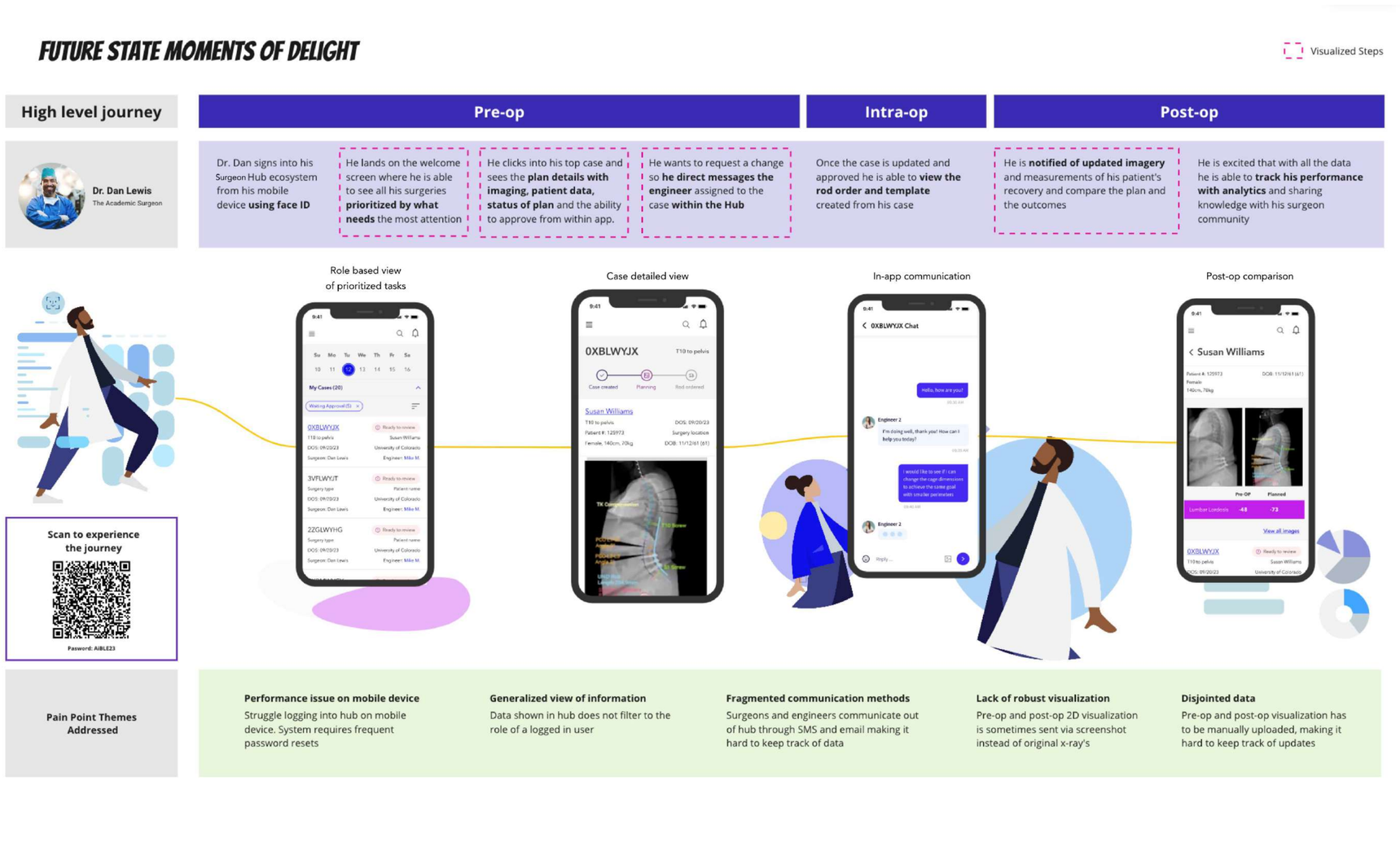




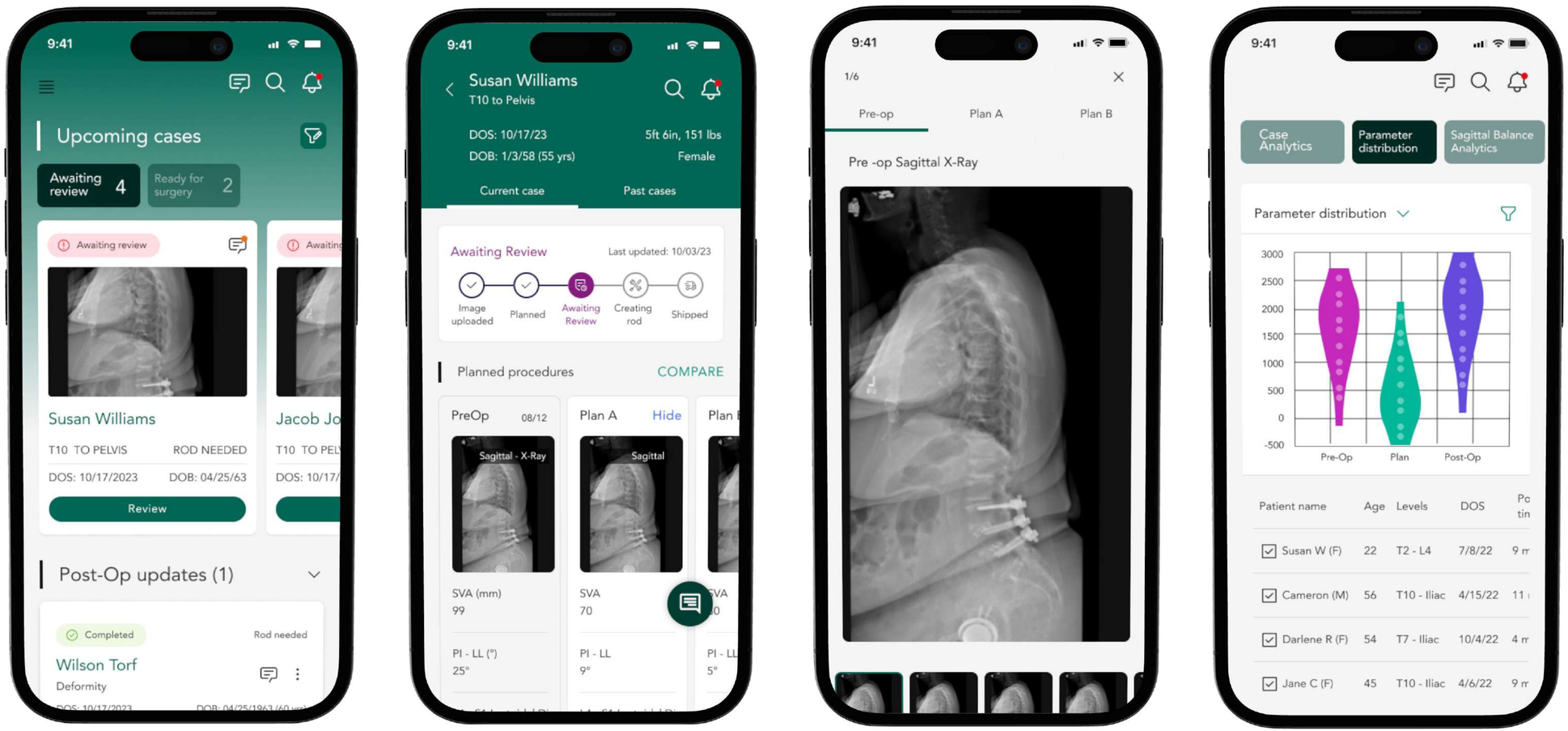




I created a proof of concept journey to validate our design direction with client leadership and potential users

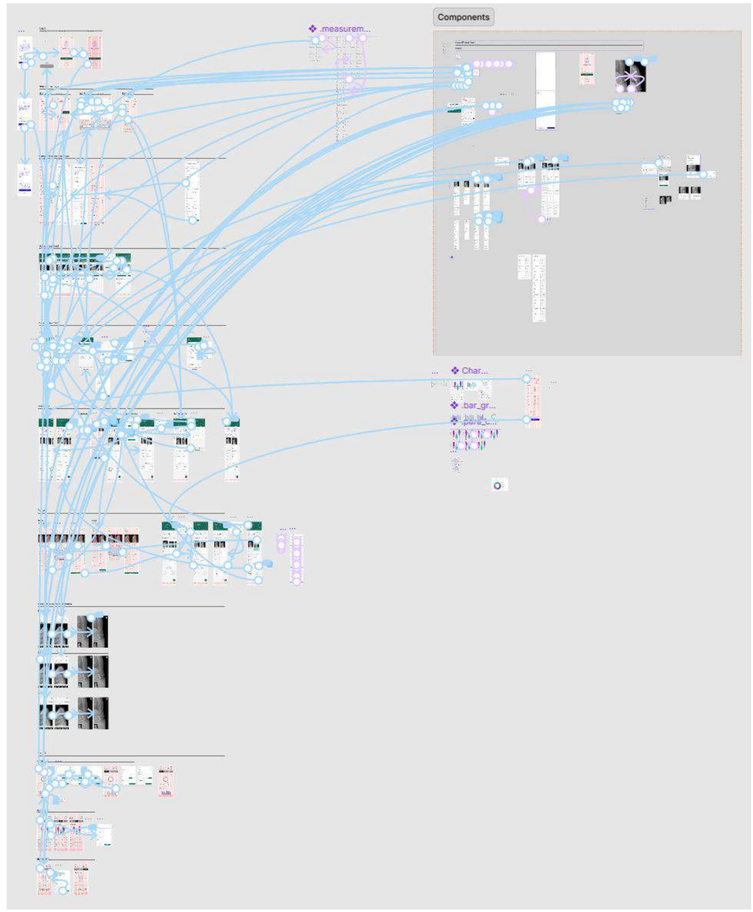


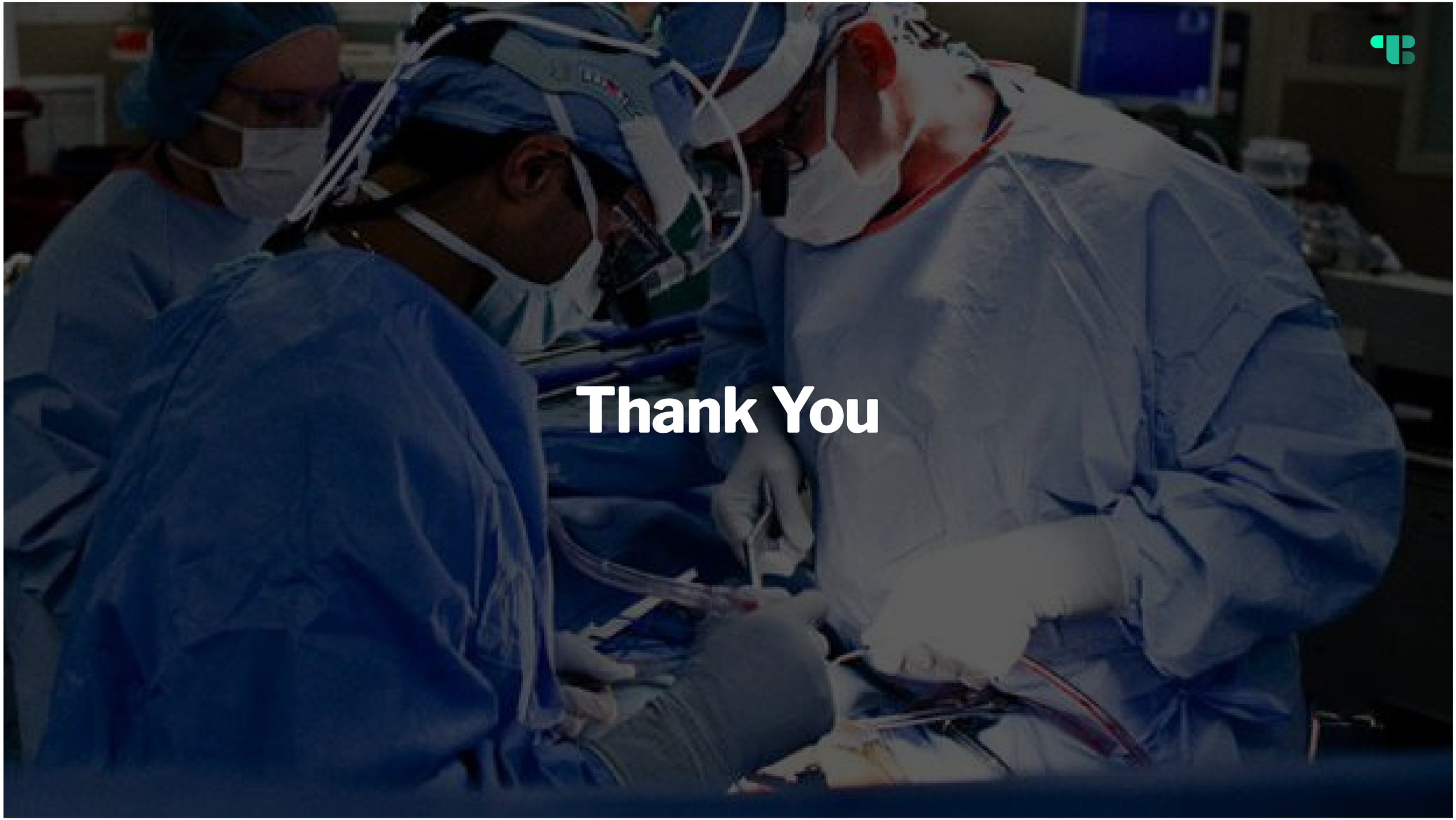
Design fidelity increased until I landed on a polished and approved UI design



I brought my designs to life with a functional prototype that were eventually tested with users view prototype

- Face ID login
- Home
  - Task based dashboard
  - Chat functionality
  - Global search
  - Notifications
  - Dashboard filter
- Cases
  - Case type and calendar filters
  - Patient view
  - Compare cases
  - View case imaging
  - Case approval
- Analytics
  - Case analytics
  - Parameter distribution
  - Sagittal balance distribution

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