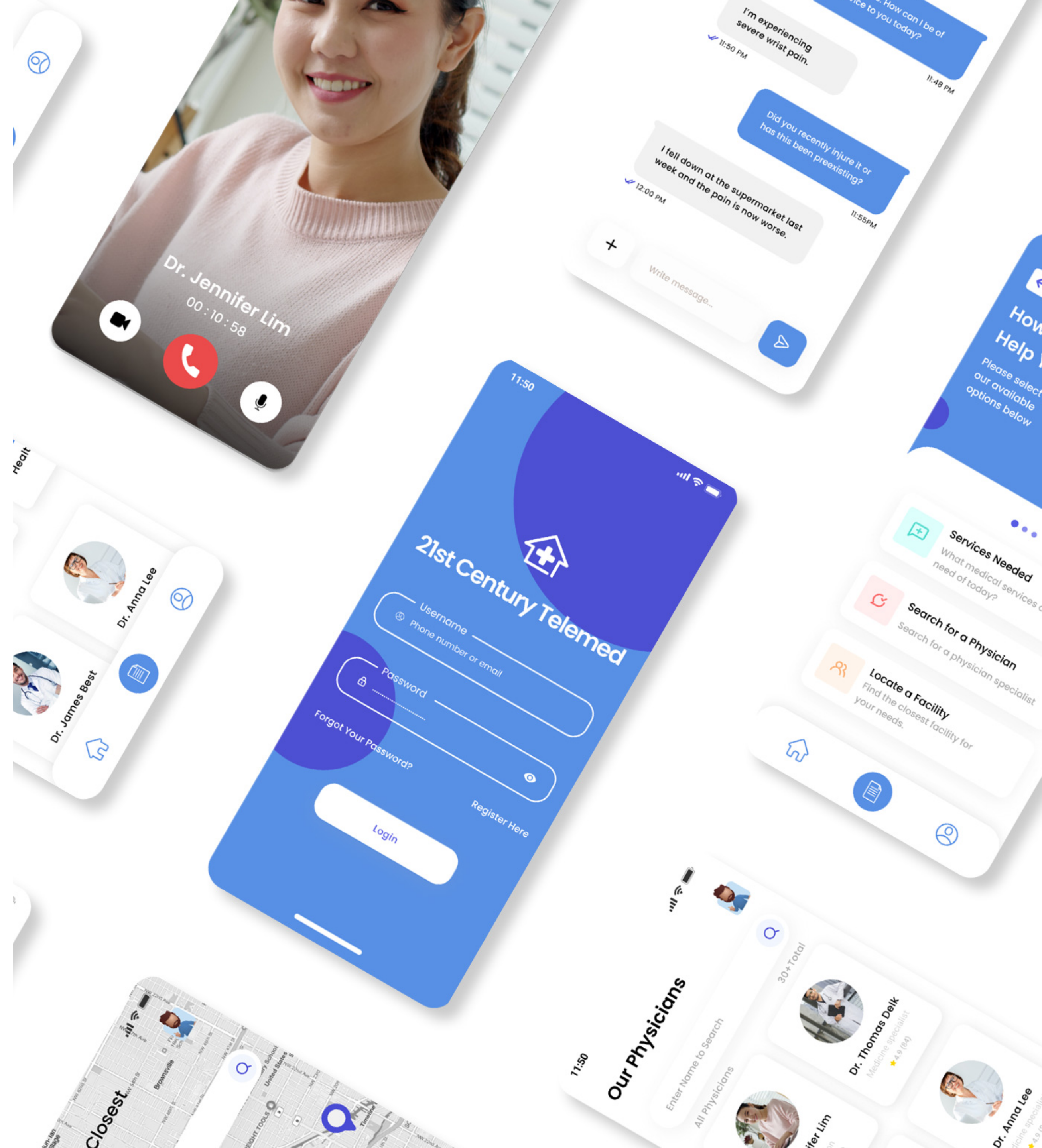# 21st Century Telemed

Case Study

Research, methodology, and execution of UX and UI design for mobile-first Telehealth application

Christophe Alise | Consortium1

Contents

Introduction ——

21st Century Telemed connects patients and healthcare providers in a sleek, integrated platform.

Users are able to search for hospitals and care providers based proximity, community reviews, and services offered, all from the comfort and privacy of their home.

Perspective ——

Based on expertise in clinical software, we knew patients delayed care due to lack of access. Minor ailments became severe, thus increasing cost of care for the Hospitals and Insurers carriers.

CV19 exacerbated issues and increased the value proposition of a telehealth solution.

Overview

Goal

Develop a user-centered application that engages patients in the telehealth experience and healthcare professionals with a new conduit to their patients.

Project Scope

iOS and Android App, Responsive Website

Timeline

12 months

Tools

Adobe Creative Suite
Figma
InVision
Sketch
Visio

Target Audience

Users of all ages and current health conditions that will benefit from convenient, on-demand preventative healthcare.

Role

UX/UI Product Design Lead

Responsibilities

Strategy
User Interviews
Personas
Affinity Mapping
User Flows
Wireframes
Visual Design

Competitive Analysis
User Surveys
Journey Mapping
Empathy Mapping
Card Sorting
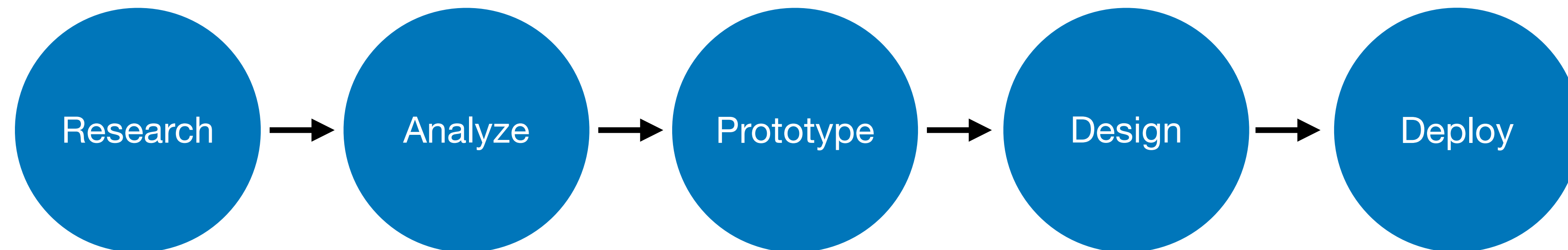Information Architecture
Usability Testing

UX Design Process

We embraced the expanded diamond process in order to take into account Vision at the outset of the project. This variation on the traditional model yielded valuable alignment across departments and ensured the product vision was unified and supported from the outset.
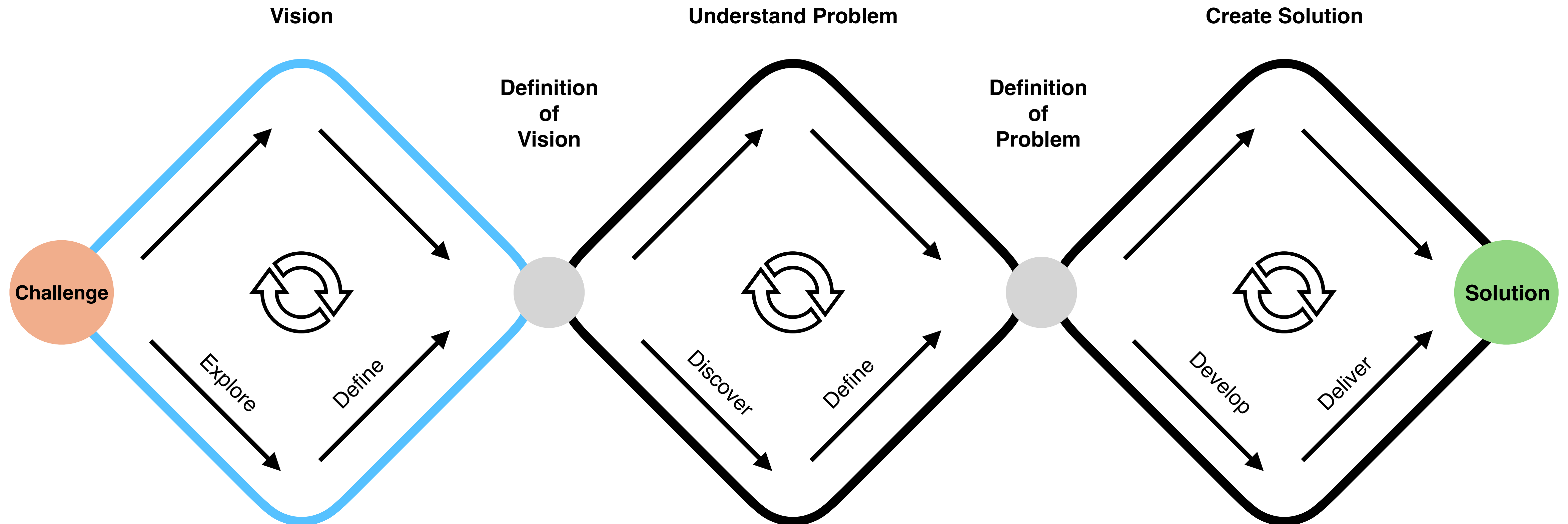
UX Design Process

We launched the process focusing on an empathic user-centered perspective. Throughout development, I continued to assess the holistic user experience, while progressing through appropriate research techniques. Resulting data was incorporated into the app design iterations and supported by user testing.

Research → **Analyze** → **Prototype** → **Design** → **Deploy**

Research	Analyze	Prototype	Design	Deploy
• User Interviews	• User Personas	• Ideation	• High Fidelity Design	• Developer Handoff
• Stakeholder Workshops	• User Journeys	• Concept Sketches	• Interactive Prototypes	• Design Reviews
• Expert Interviews	• User Stories	• Mid-Fidelity Mockups	• Style Guide	• User Testing
• Empathy Maps	• Task Flows	• Interactive Prototypes	• Annotated Wireframes	• Iterations
• Contextual Inquiries	• Low-Fi Wireframes	• User Testing		• Measure and Refine
• Competitive Analysis	• Screen Flows	• Concept Validation		
• Data Analysis	• Information Architecture			

Project Timeline

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9

Research
Observe, Stakeholder Interviews

Strategy
Challenges and Goals

User Experience
Interviews, Competitive Analysis, Personas, Wireframes

User Interface
Mood Boards, Inspiration

User Interface
Visual Design, Prototyping

User Testing
Testing, Implementation

Design Strategy

Guided by target audience metrics, design process was executed. Ongoing interaction with end users informed workflows, visual identity, and features offered.

Business Strategy Alignment

Ensured strategic outcomes were clear and unified in order to inform the UX process.

Value Innovation

Rationale for app development based on providing users and the marketplace with a compelling product alternative.

Validated User Research

Detailed user research and testing employed to guide UX decisions at every phase to uphold usability.

Empathic UX

User-centered design methodologies inform the entire process where functionality recedes and experience shines.

Cross-Device Integration

Native OS development with web-based responsiveness necessary to deliver unified, quality experience to all users on all devices.

Intuitive UI

User flow and presentation of information achieved in a fluid, reductive manner to encourage interaction with app and reduce decision fatigue.
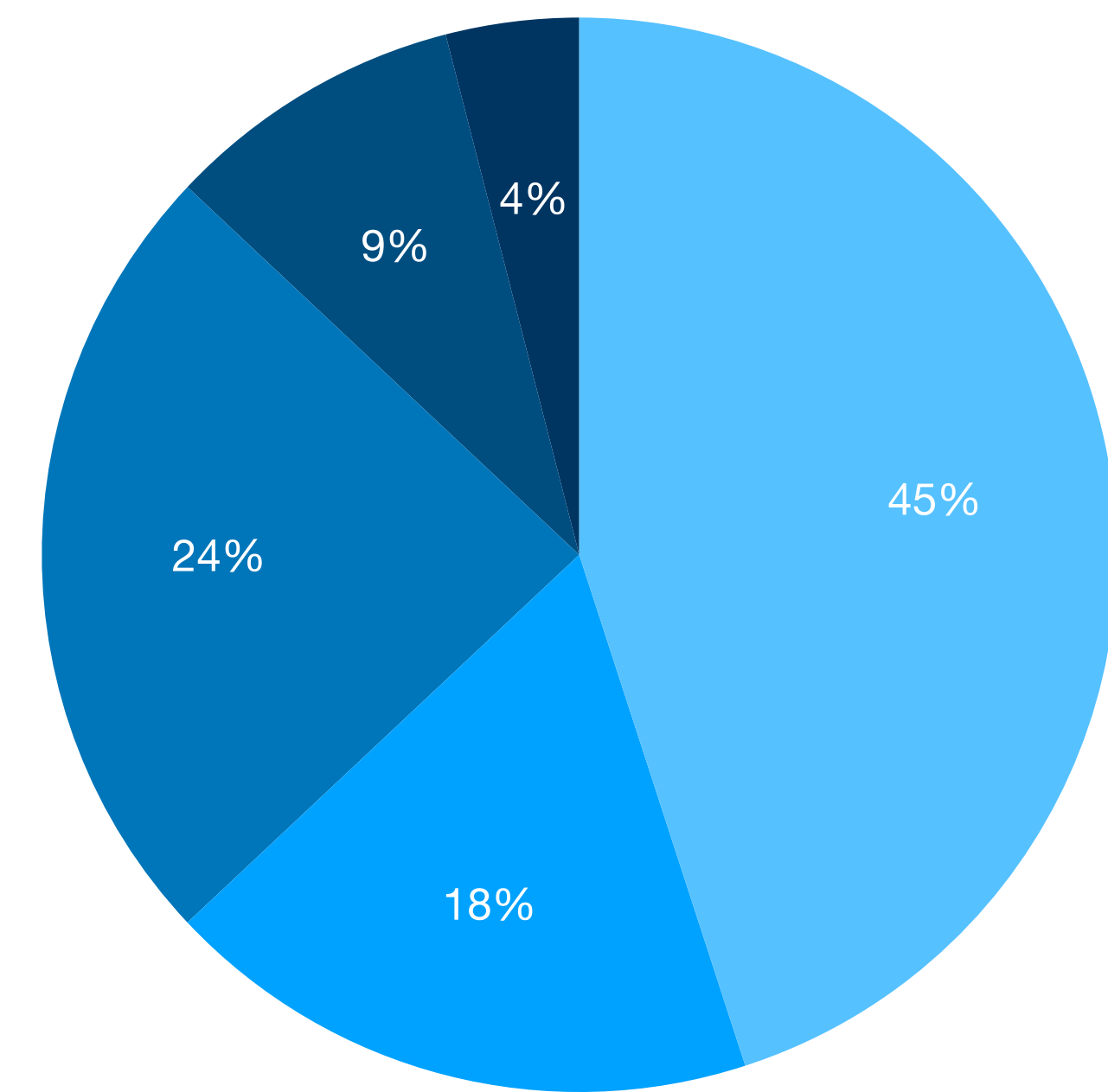
User Research

Designed detailed study of target users and requirements by framing engagement with realistic contexts and insights to design processes. Multiple methods were employed to identify problems and seek associated design opportunities.

Average User Age (Years)

12%
22%
30%
17%
11%
7%
1%
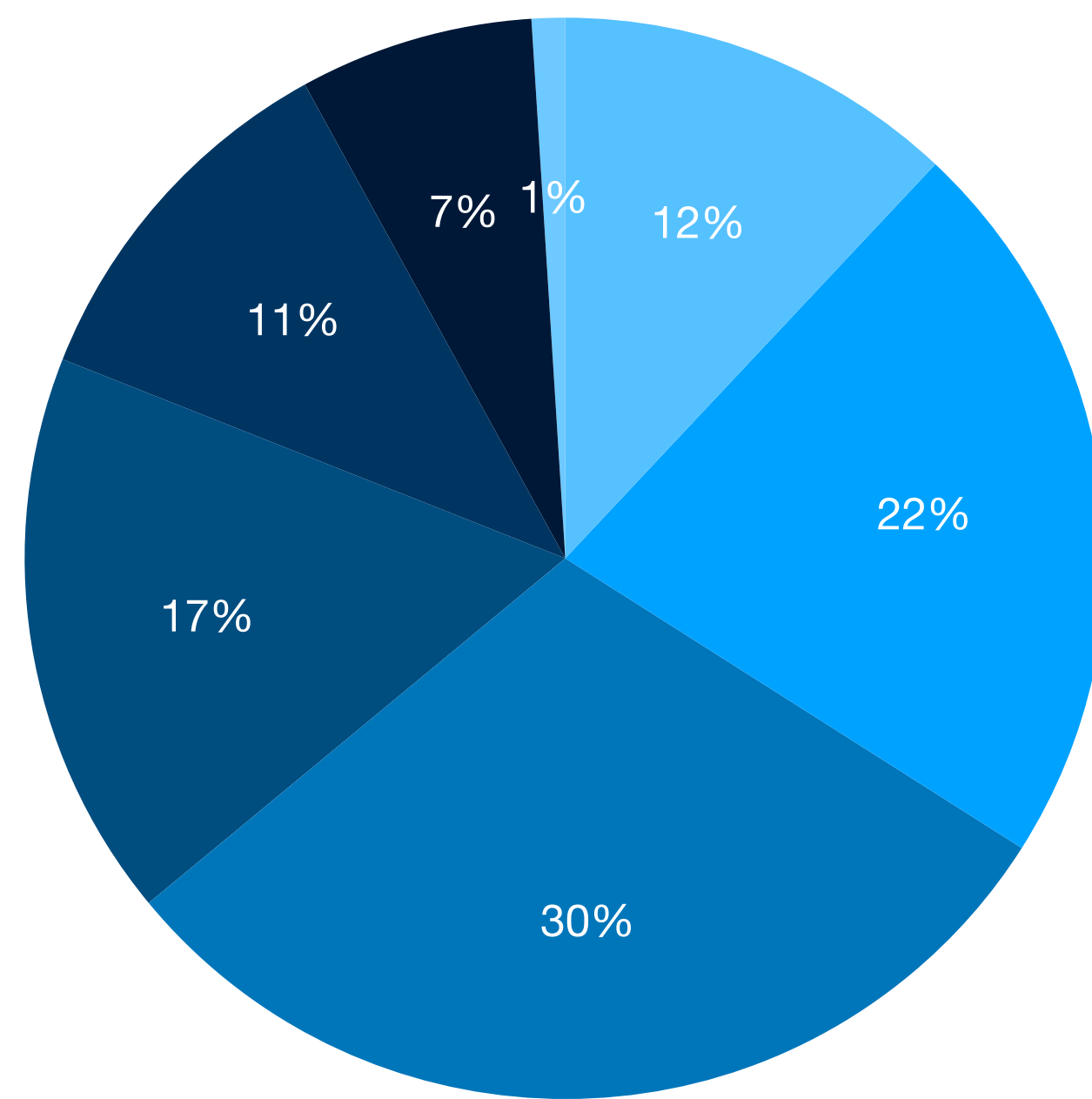
18-29 30-40 41-50 51-60 61-70 71-80 81+

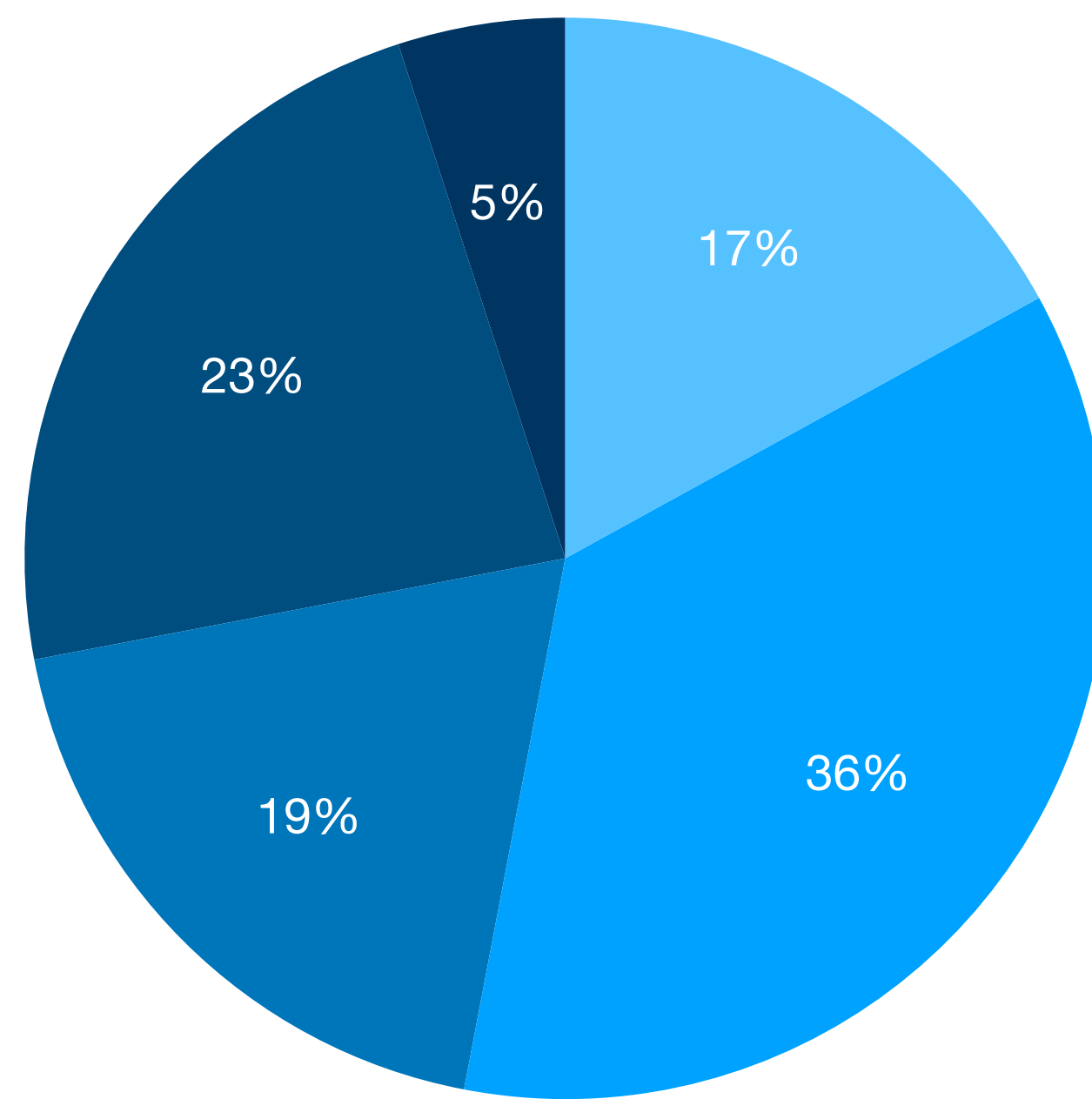## Preventative Healthcare Visits (Annually)

45%
18%
24%
9%
4%

0-1 2 3 4 5+

User Research

Designed detailed study of target users and requirements by framing engagement with realistic contexts and insights to design processes. Multiple methods were employed to identify problems and seek associated design opportunities.

Type of Preventative Care Encounter

- ED
- Outpatient
- Inpatient
- Clinic
- Telehealth

17%
5%
23%
36%
19%

Satisfaction with Preventative Care Encounter
Scale of 1 to 5

- 1
- 2
- 3
- 4
- 5

24%
16%
20%
21%
19%

User Research

Designed detailed study of target users and requirements by framing engagement with realistic contexts and insights to design processes. Multiple methods were employed to identify problems and seek associated design opportunities.
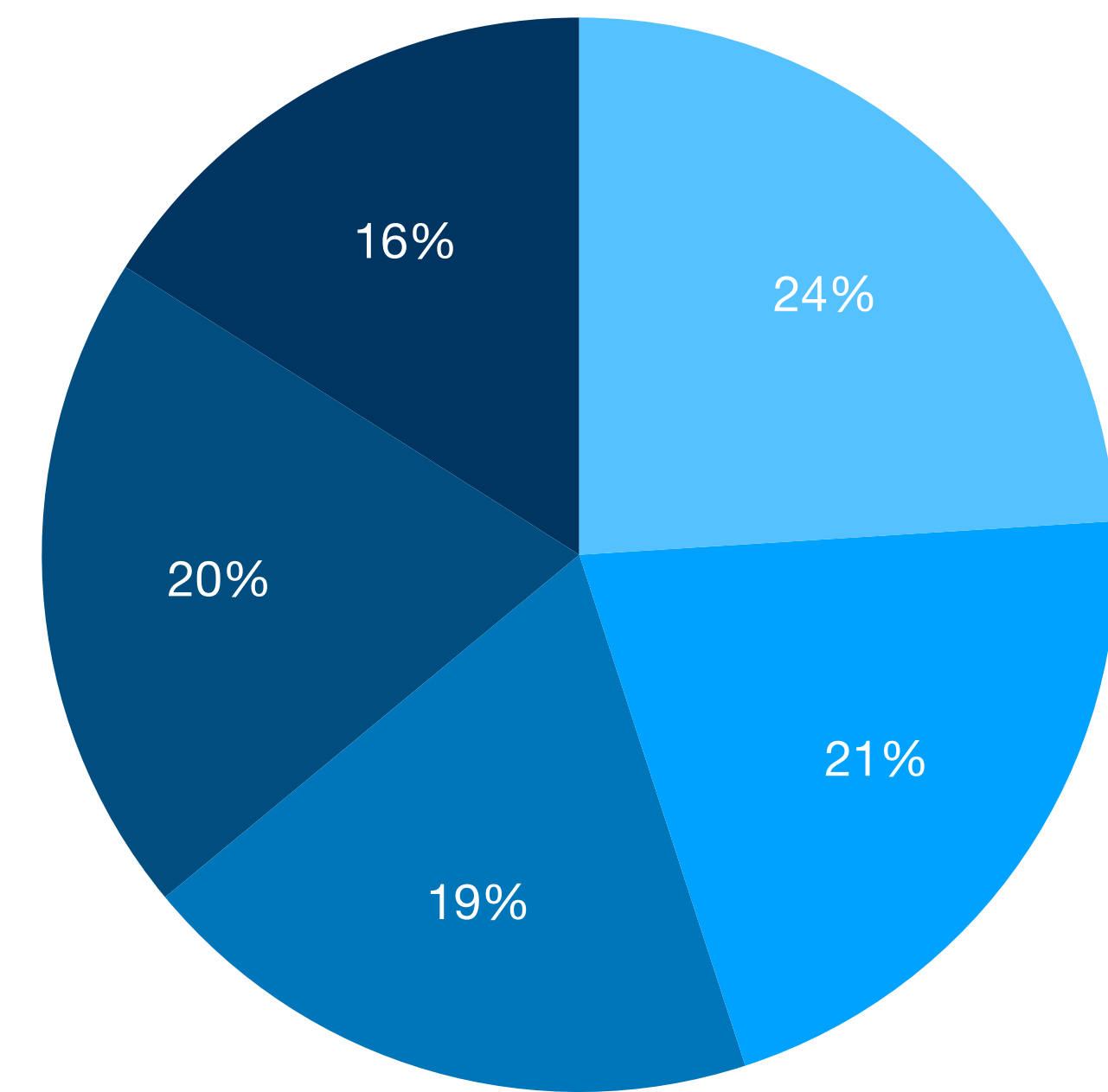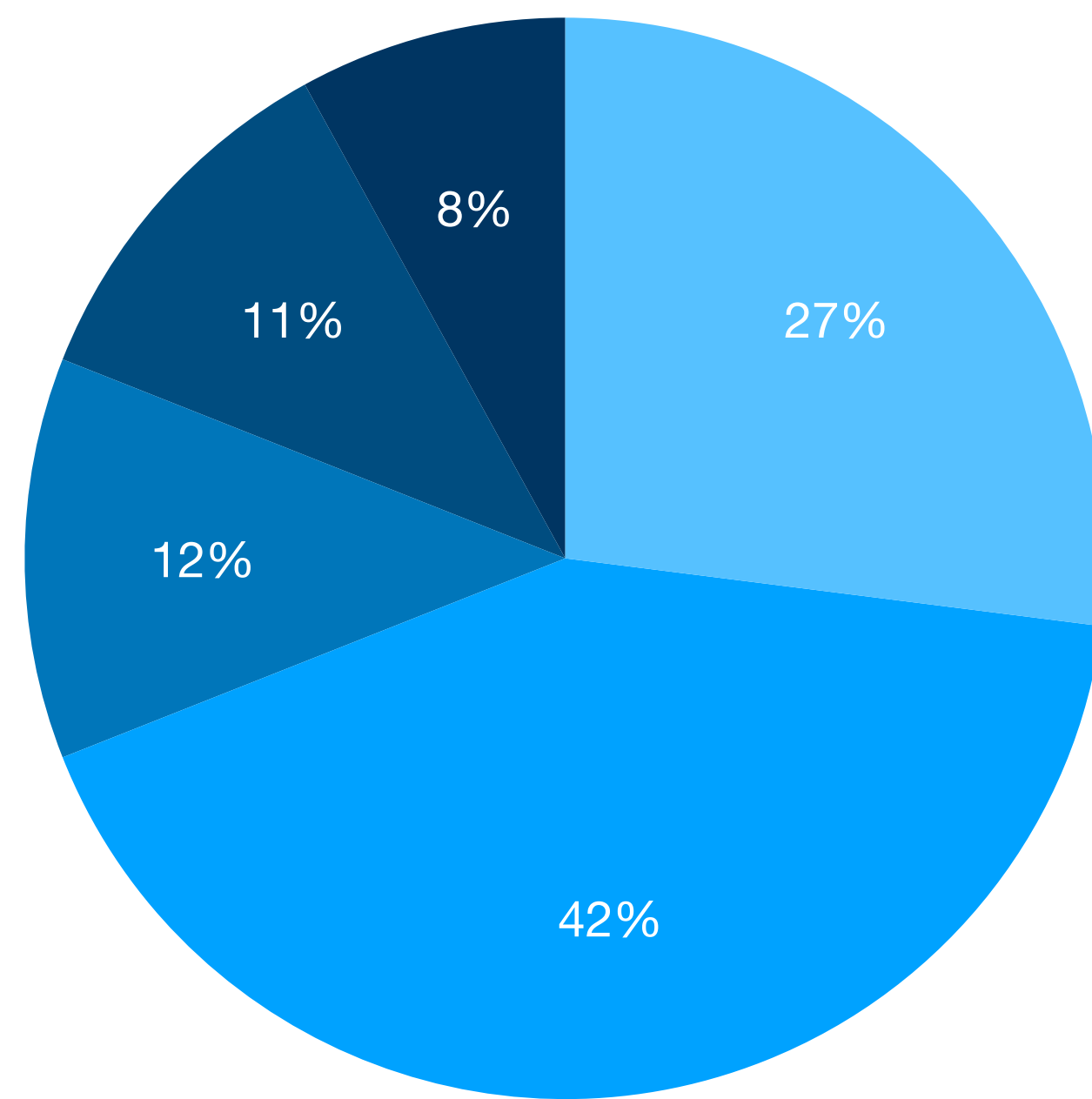
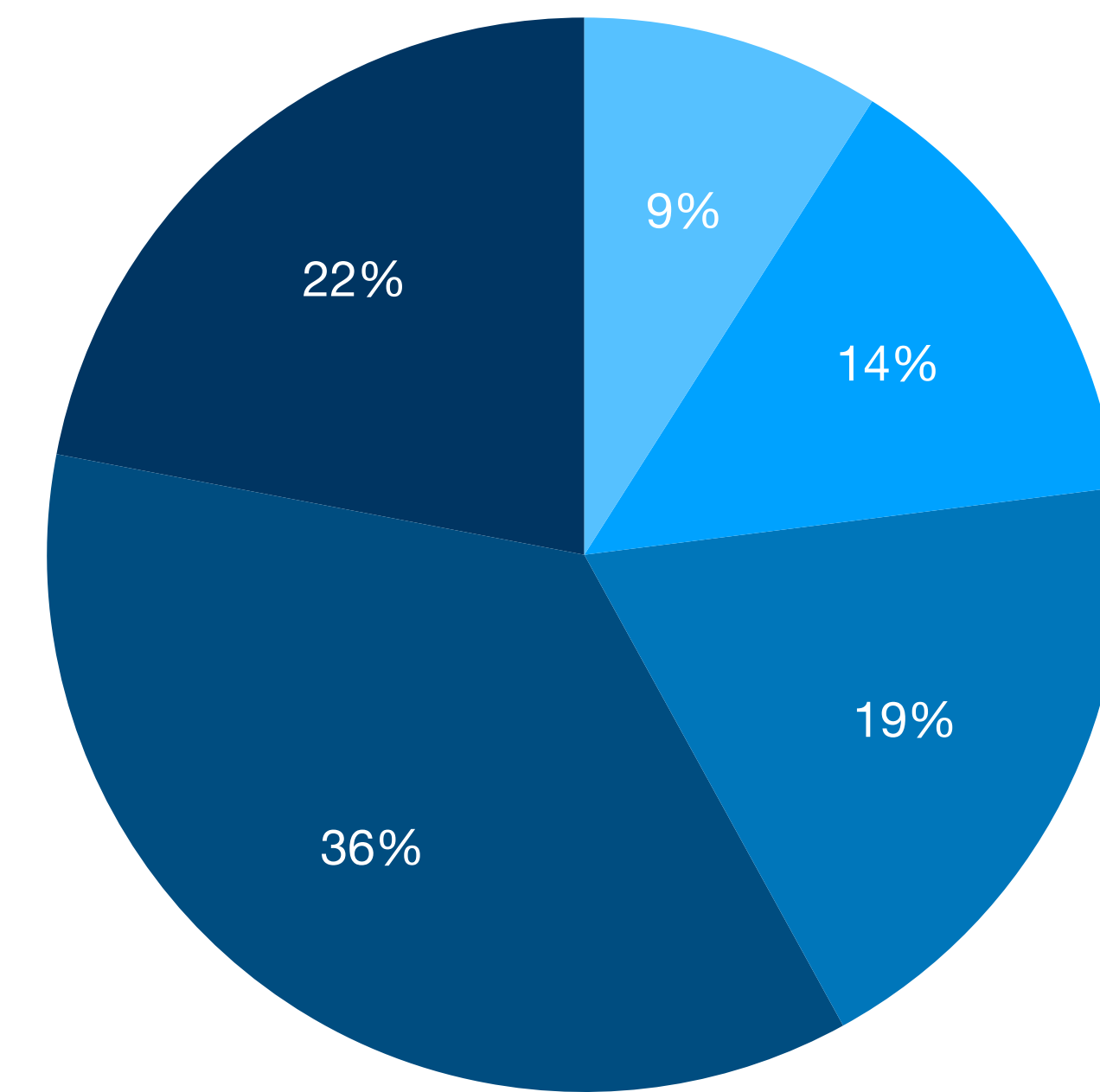## Impediments to Preventative Care

- 27%
- 42%
- 12%
- 11%
- 8%

Legend: Time • Cost / Insurance • Transportation • Mobility • Mental State

Likeliness to Try Telehealth
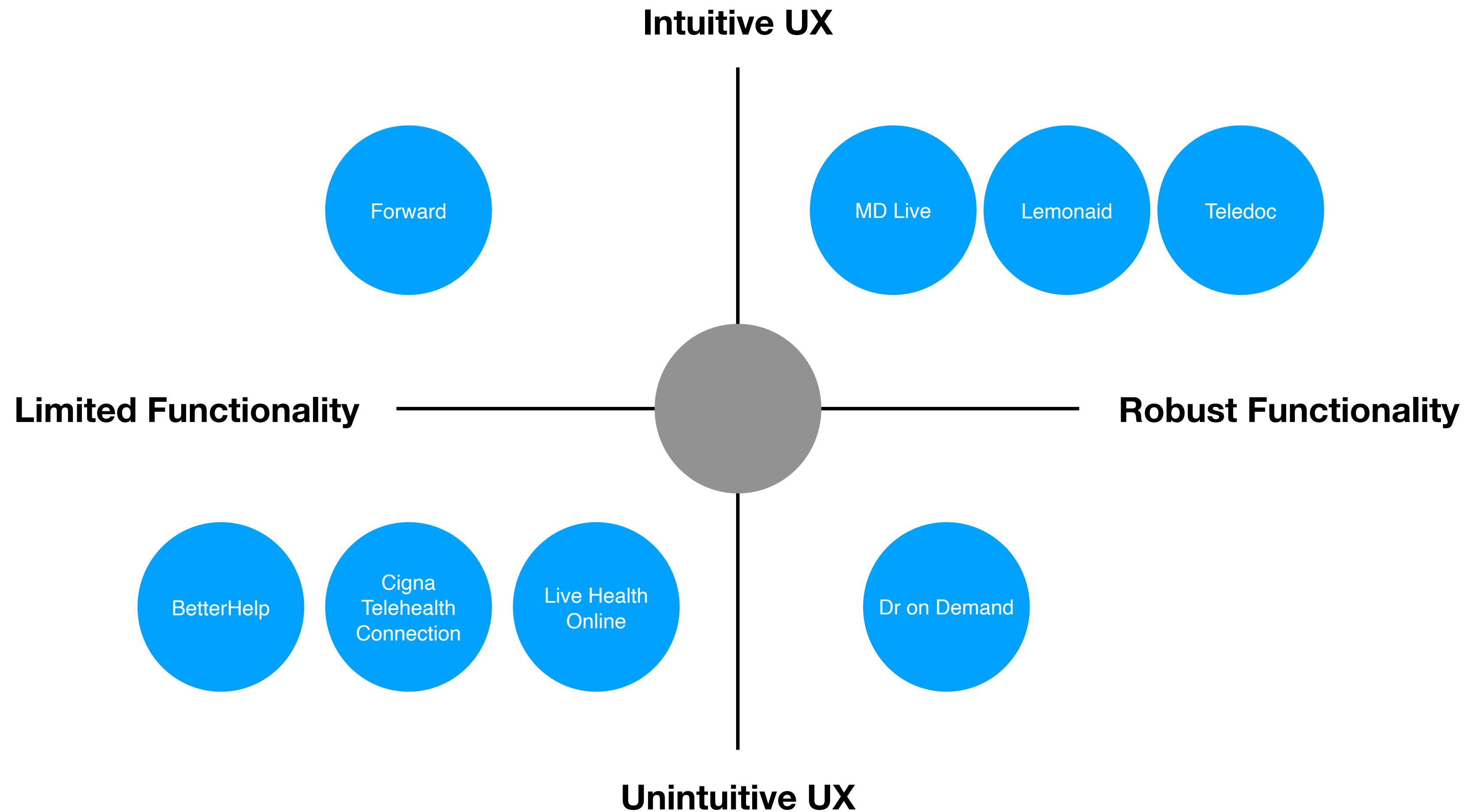Scale of 1 to 5

- 9%
- 14%
- 19%
- 36%
- 22%

Legend: 1 • 2 • 3 • 4 • 5

Competitive Analysis

Reviewed current market leaders and notable startups offering Telehealth applications from the perspective of multiple user personas. Sought to identify impact of UX design and key functionality alongside standard navigation, scheduling, and messaging (phone/text/video) capabilities.
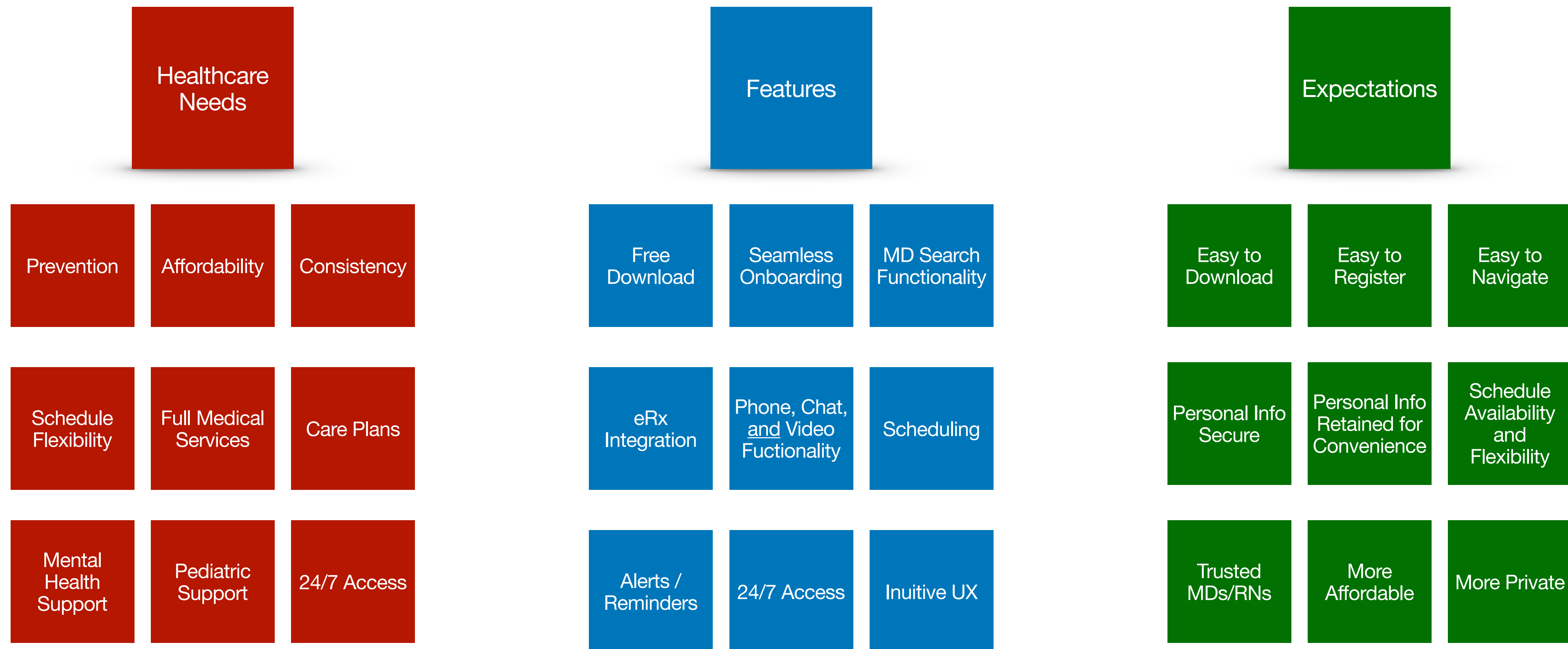
Intuitive UX

Forward

MD Live

Lemonaid

Teledoc

Limited Functionality

Robust Functionality

BetterHelp

Cigna Telehealth Connection

Live Health Online

Dr on Demand

Unintuitive UX

Competitive Analysis

	BetterHelp	Dr on Demand	Forward	Lemonaid	Live Health Online	MD Live	Teledoc
iOS + Android Native	✅	✅	✅	✅	✅	✅	✅
Self-Pay + Insured	❌	✅	❌	❌	✅	✅	✅
Voice, Chat, Video	✅	✅	✅	✅	✅	✅	✅
All Specialities	❌	✅	❌	❌	✅	✅	✅
Scheduling	✅	✅	✅	✅	✅	✅	✅
Care Plans	✅	✅	✅	✅	✅	✅	✅
24 Hour Access	❌	✅	❌	❌	✅	✅	✅
ePrescribing	✅	✅	✅	✅	✅	✅	✅
Board Certified MDs	❌	✅	❌	❌	✅	✅	✅
HIPAA Compliance	✅	✅	✅	✅	✅	✅	✅

Market Insights

✓ Rapidly Growing, Maturing Market

✓ Insured vs. Self-Pay Users Fragmented

✓ Broad Range of UX Design Quality

✓ Ongoing Product Innovation

✓ Difficult to Scale Effectively

✓ Challenges Onboarding 60+ Year Old Users

✓ Technology-based User Acceptance Challenges

✓ Few Large Players, Multiple Startups

Affinity Mapping

Utilized Affinity Diagram to stratify user experiences, opinions, and pain points.
Established groupings based upon relationships supporting logical connection.

Healthcare Needs

Prevention	Affordability	Consistency
Schedule Flexibility	Full Medical Services	Care Plans
Mental Health Support	Pediatric Support	24/7 Access

Features

Free Download	Seamless Onboarding	MD Search Functionality
eRx Integration	Phone, Chat, and Video Fuctionality	Scheduling
Alerts / Reminders	24/7 Access	Inuitive UX

Expectations

Easy to Download	Easy to Register	Easy to Navigate
Personal Info Secure	Personal Info Retained for Convenience	Schedule Availability and Flexibility
Trusted MDs/RNs	More Affordable	More Private

User Persona

Name: Allison B.
Role: Younger Demographic Patient w/Basic Preventative Care Needs

Primary Devices
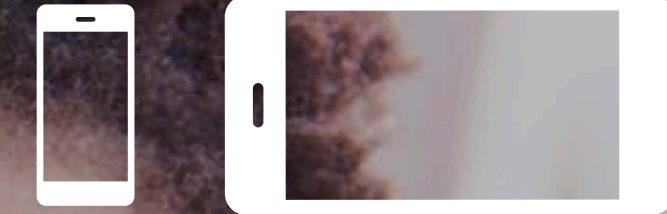
Quote: *It feels like there is no middle ground between trying to schedule a doctor's appointment with a 3 month wait vs. going to the ER when a small problem starts getting worse. It's bad for my health and far most costly.*

Needs
- Convenient access to non-urgent medical care
- Flexible scheduling without months-long wait time
- Access to a physician / specialist with more experience than an urgent care clinician
- Affordable access to care regardless of insurance

Frustrations
- Many physicians are not taking new patients or cannot schedule an office visit for months
- Outdated system of filling out duplicate medical forms at every appointment
- Inconvenience of time take to leave work, drive to hospital or office, park, see doctor for 5-10 minutes, drive back

Goals
- Faster access to medical care
- More convenient access to medical care
- Avoid small issues becoming more severe due to access delays
- Use available technology to improve the experience

Environment
- Access physician care from home or work
- Privacy of choosing location
- Safety of not having to sit in crowded waiting room
- Existing technology platforms used by most every day

User Persona

Name: Marcus T.

Role: Middle Aged Patient w/Increased Preventative Care Needs

Primary Devices

Quote:
I'm not 18 anymore, but I feel fit and strong. I want to have many years ahead of me to enjoy my hard work and spend time with family. Traditional doctor visits are fine, but I'm open to something better.

Needs
- A better way to access an MD/RN for general questions or more urgent matters that might require immediate care.
- A more efficient way to schedule preventative care appointments.

Frustrations
- Wasted time trying to reach doctor's office to schedule appointments or ask simple questions.
- Providing my medical information repeatedly which never seems to be saved for future use.
- Time out of the office to simple healthcare that could be more efficiently achieved.

Goals
- Stay healthy now and identify any serious issues while there is still time to address them.
- Use technology currently available to remain consistent with healthcare goals.
- Take advantage of any insurance incentives for preventative care.

Environment
- Long hours at office plus frequent cross-country travel.
- Access to high quality healthcare, but limited time for self-care.

User Persona

Name: Marcus T.

Role: Elderly Patient w/Elevated Preventative Care Needs

Primary Devices
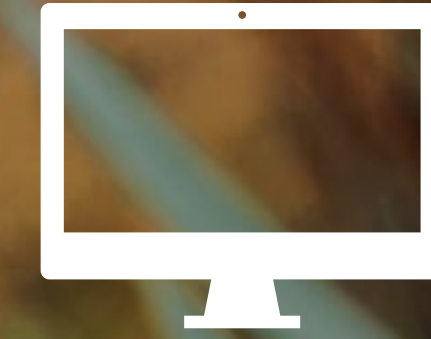
Quote: *I have been healthy most of my life and have a doctor that I like, but it would be a sense of security to know that I could get medical care from the comfort of my home. I'm just not confident in how the technology works to make that happen.*

Needs
- A simpler way to reach a doctor or nurse for general questions or to know if urgent care is needed.
- Ongoing care for pre-existing conditions, which must be covered by insurance.
- Peace of mind in knowing there are new ways to live a long life.

Frustrations
- Trying to schedule appointments and being kept on hold or told nothing is available for months.
- Going into a doctor's appointment and only having a few minutes with the doctor.

Goals
- Maintain current medications and prescriptions.
- Avoid hereditary diseases by proactive tests and preventative care.
- Be around for grandchildren for years to come.

Environment
- Retired, widowed, lives alone with family near by.
- Simple daily routine with effort to walk and move to support joint health.

08

User Persona

Name: Dr. Thomas
Role: Board Certified Physician

Quote: *It often takes more time to see patients during office hours for simple consults than it would connecting by text or video chat. This would improve my efficiency, enable me to see more patients, and likely improve patient feedback.*

Needs
- Efficient way to see more patients needing basic consults
- Ability to deliver care regardless of my location (hospital, office, home)
- Offer new ways for patients to seek preventative care

Frustrations
- Wasted time with missed appointments and office hours that don't meet my patient volume
- Trying to resolve more complex medical problems when preventative care would avoid them
- Unable to increase revenue based on current volume

Goals
- Technology to improve preventative care for patients
- Convenient tool to increase consults from any location
- Low cost solution for me and my patients that is mutually beneficial

Environment
- Hospital, physician offices, home office, travel
- All locations offer access via laptop, tablet, or phone
- Nights and weekend availability could be expanded with right technology.

Empathy Mapping

Utilized Empathy Mapping tools to understand users' needs and prioritize accordingly. These insights are invaluable and necessary early in the process to avoid false starts with product development.

Says

I want to stay healthy

I want to avoid disease

I'm open to new technology

I've heard about telehealth

Does

Sees Doctor As Needed

Reads article on Telehealth apps

Downloads an App

Tries Using App

Thinks

I need to get healthier

I'm scared of genetic diseases

I don't know where to start

The right person or tool will help me

Feels

Am Doing the Right Thing

Curious

Motivated

Frustrated

10

Customer Journey Mapping

Persona: 20-35 years old. Youthful and fit with an full work/life routine.

Objective: Find a convenient way to schedule appointments and have preventative tests easily taken care of.

Stage	Awareness	Consideration	Decision	Service	Loyalty
Customer Action	Receive marketing email, view ad on social media, watch review YouTube.	Review similar products, compare relative benefits and costs	Download app	Schedules appointment, meets with doctor, receives follow up	Recommends app to friends, family, colleagues
Touchpoints	Marketing email, social media (post, ad, influencer)	Marketing email, social media (post, ad, influencer), web search	Website, phone, tablet	Website, phone, tablet	Word of mouth, online reviews
Customer Experience	Interested, frustrated	Curious, optimistic	Optimistic	Satisfied, motivated	Enthusiastic
KPIs	Number downloads, completed registrations, appts booked	Download app, explore app options/functionality	Conversion rates, total installs	Customer feedback, reviews, referrals	Retention rate, return users, testimonials, referrals
Business Goals	Increase awareness, acquire users	Increase user base, total registered users, total registered MDs	Increase active users	Establish customer trust, organic and inorganic referrals	Increase recurring revenue, increase active users
Team(s) Involved	Marketing, sales	Marketing, sales	Sales, technical support	Sales, technical support	Marketing, technical support

10

Customer Journey Mapping

Persona: 35-50 years old. Moderately active and in good health

Objective: Find a more efficient way to schedule preventative care appointments.

Stage	Awareness	Consideration	Decision	Service	Loyalty
Customer Action	Receive marketing email, view ad on social media, watch review YouTube.	Review similar products, compare relative benefits and costs	Download app	Schedules appointment, meets with doctor, receives follow up	Recommends app to friends, family, colleagues
Touchpoints	Marketing email, social media (post, ad, influencer)	Marketing email, social media (post, ad, influencer), web search	Website, phone, tablet	Website, phone, tablet	Word of mouth, online reviews
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Team(s) Involved	Marketing, sales	Marketing, sales	Sales, technical support	Sales, technical support	Marketing, technical support

10

Customer Journey Mapping

Persona: 60-80 years old. Low activity to non-active. Various health issues that could be alleviated with improved fitness and nutrition.

Objective: A simpler way to reach a doctor or nurse for general questions or to know if urgent care is needed.

Stage	Awareness	Consideration	Decision	Service	Loyalty
Customer Action	Receive marketing email, view ad on social media, friend/ family or MD reference	Ask friends, family, and current healthcare provider which app would be best.	Download app	Schedules appointment, meets with doctor, receives follow up	Recommends app to friends, family, colleagues
Touchpoints	Marketing email, social media, family/friends	Marketing email, social media, family/friends	Website, phone	Website, phone	Word of mouth, online reviews
Customer Experience	Interested, frustrated	Curious, optimistic	Uncertain, needs guidance	Pleasantly surprised	Enthusiastic
KPIs	Number downloads, completed registrations, appts booked	Download app, explore app options/functionality	Conversion rates, total installs	Customer feedback, reviews, referrals	Retention rate, return users, testimonials, referrals
Business Goals	Increase awareness, acquire users	Increase user base, total registered users, total registered MDs	Increase active users	Establish customer trust, organic and inorganic referrals	Increase recurring revenue, increase active users
Team(s) Involved	Marketing, sales	Marketing, sales	Sales, technical support	Sales, technical support	Marketing, technical support

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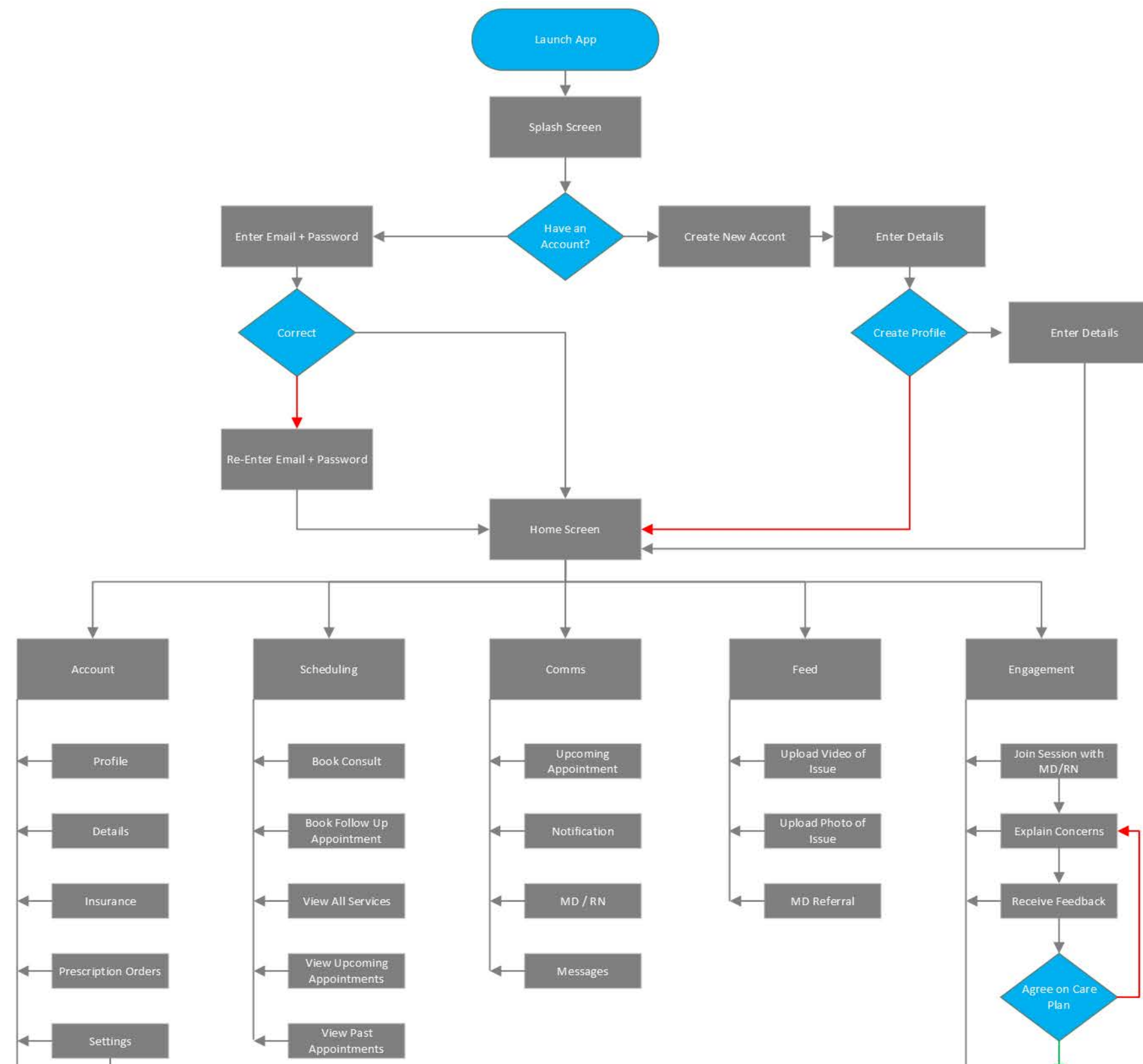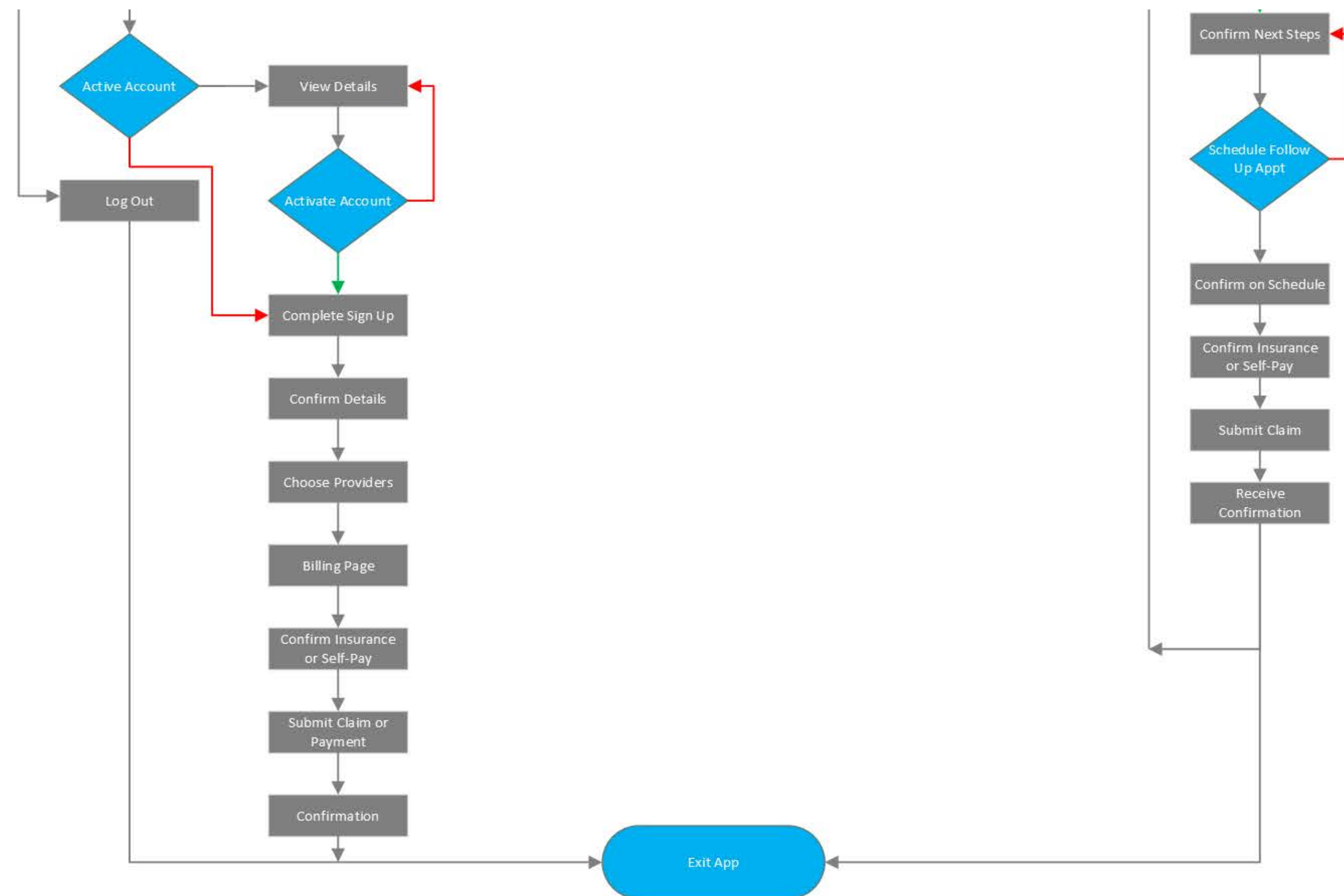**Customer Journey Mapping**

Persona: Primary Care Physician

Objective: Identify telehealth app to benefit private practice and patients' preventative care

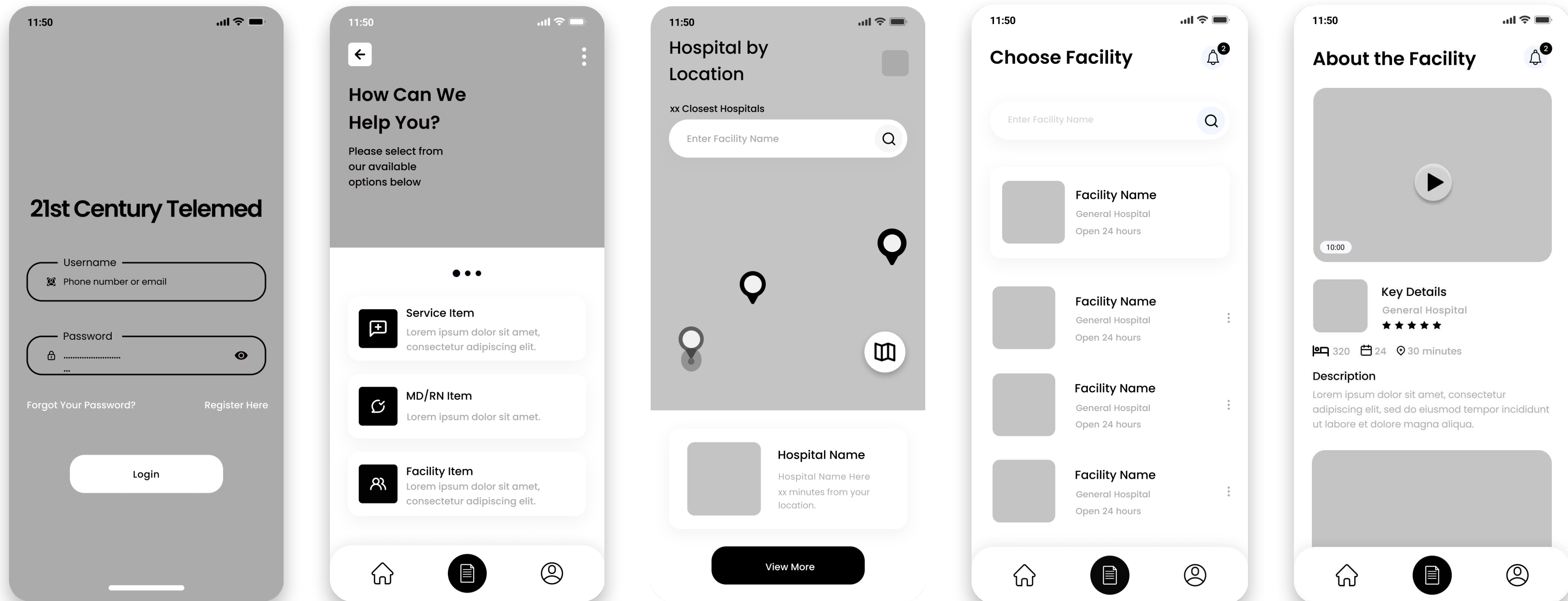| Stage	Awareness	Consideration	Decision	Service	Loyalty
Customer Action	Receive marketing email, view ad on social media, web search	Review similar products, compare relative benefits and costs	Download app	Completes profile, activates scheduling, schedules consult	Recommends app to patients, colleagues
Touchpoints	Sales call, marketing email, newsletter, trade show	Marketing email, social media, web search	Website, phone	Website, phone, tablet	Word of mouth, online reviews, testimonials
Customer Experience	Interested, skeptical	Curious, optimistic, cautious	Optimistic	Satisfied, relieved	Satisfied, excited, relieved
KPIs	Number of impressions per marketing channels	Product demos scheduled	Conversion rates, total installs	Customer feedback, reviews, colleague referrals	Retention rate, return user, testimonials
Business Goals	Increase awareness, acquire users	Increase user base (physicians)	Increase active users	Establish customer trust, organic and inorganic referrals	Increase recurring revenue, increase active users (patients and physicians)
Team(s) Involved	Marketing, sales	Marketing, sales	Sales, technical support	Sales, technical support	Marketing, technical support

Task Flow & User Flow

Established broad variables to guide users through app in the most seamless manner possible. Based on feedback to testing, flows were adjusted and presented for further review, and iteration prior to high fidelity prototyping.
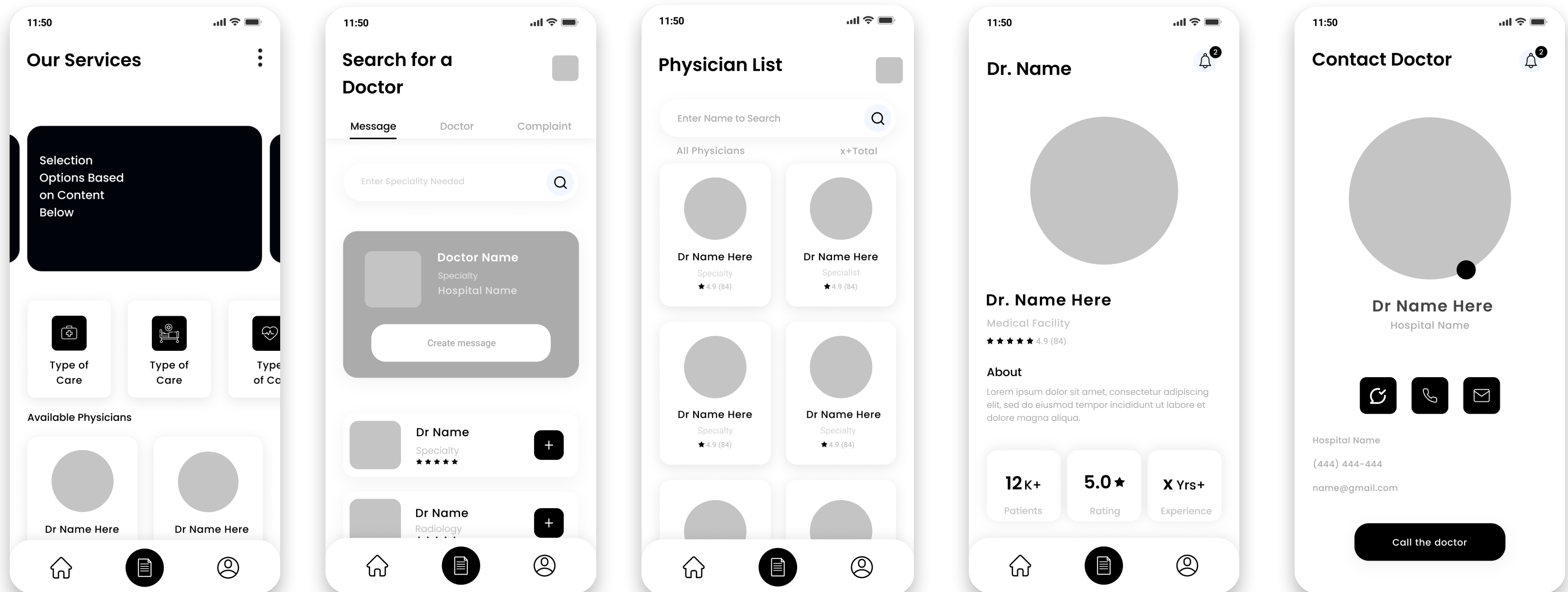
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Wireframes

To validate design strategy and reinforce workflow patterns, wireframe prototypes serve as a valuable visual communication tool between UX and development teams throughout the design process.
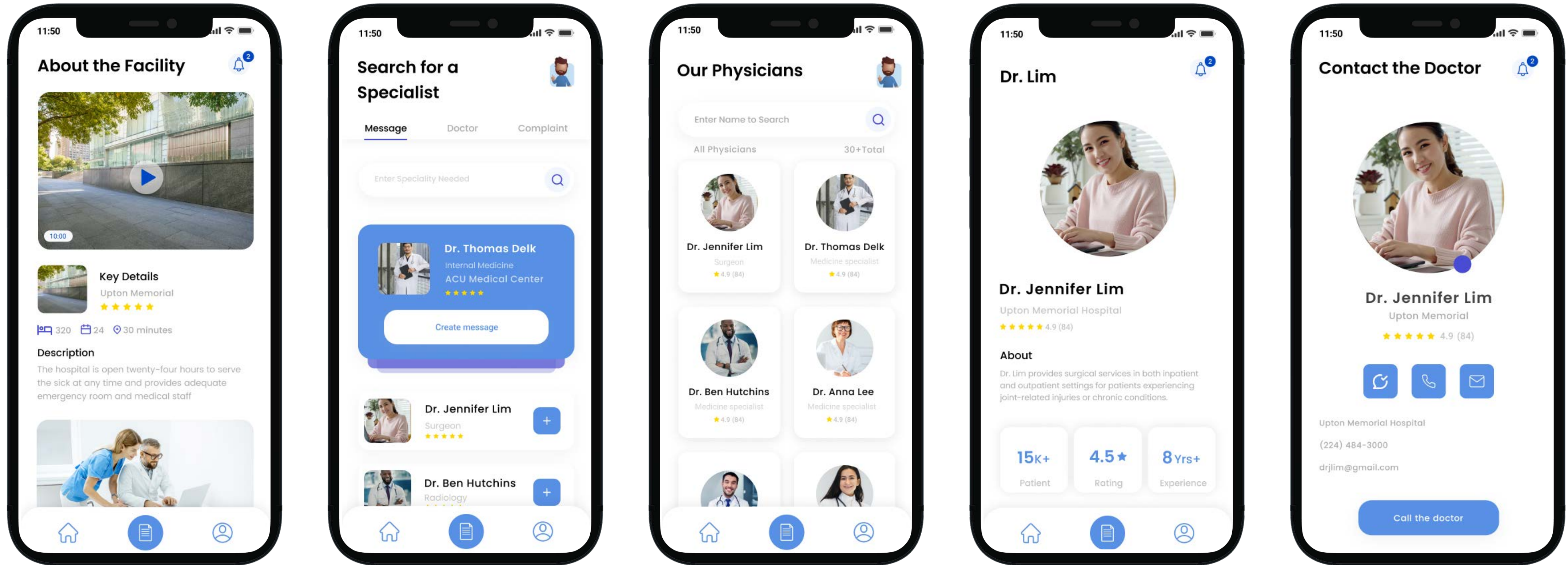
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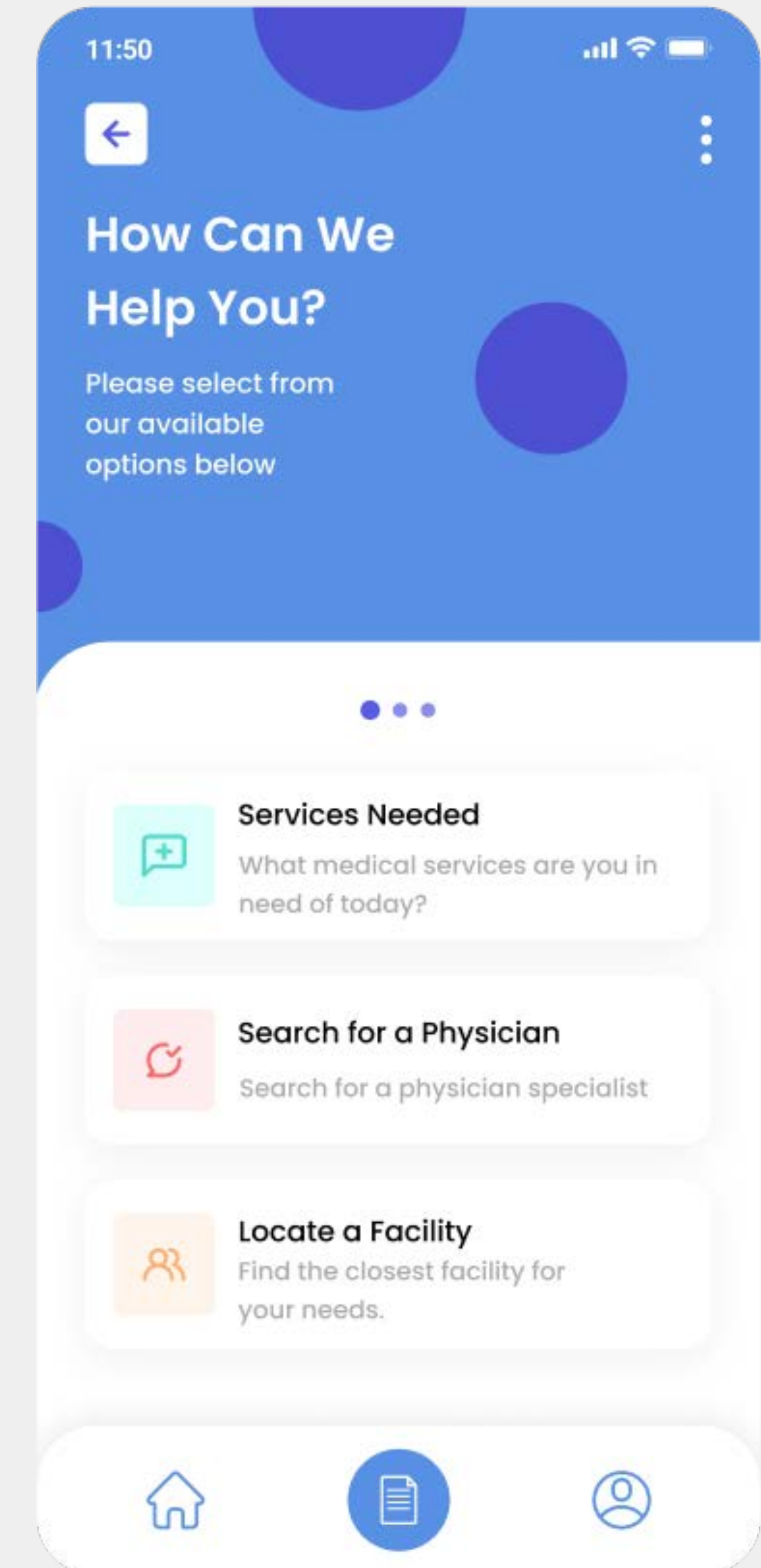
Prototyping

Engaging UI design is supported by intuitive UX methodology, resulting in a user experience that is engaging and motivational. By removing as many technological and psychology impediments to consistent fitness routines, the resulting design achieves its primary objective.
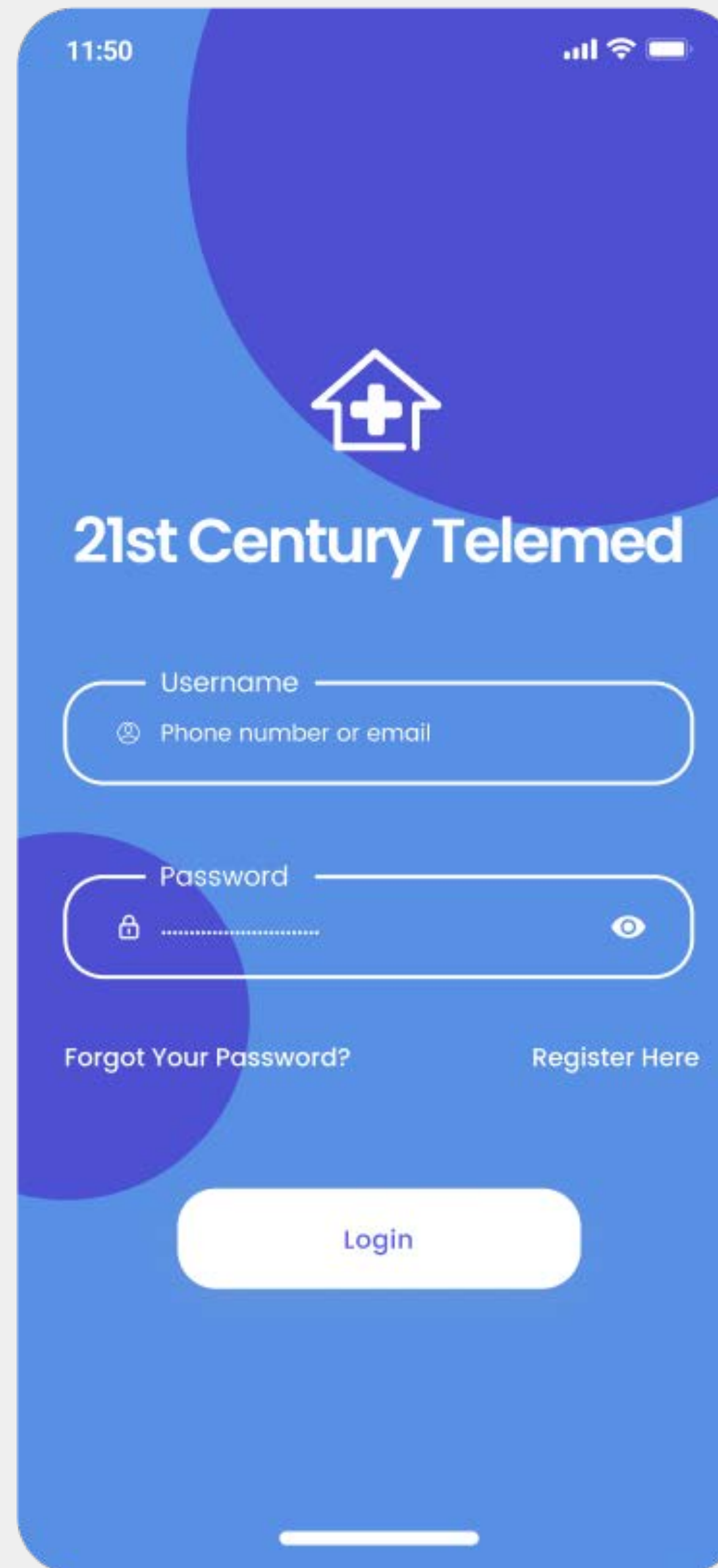
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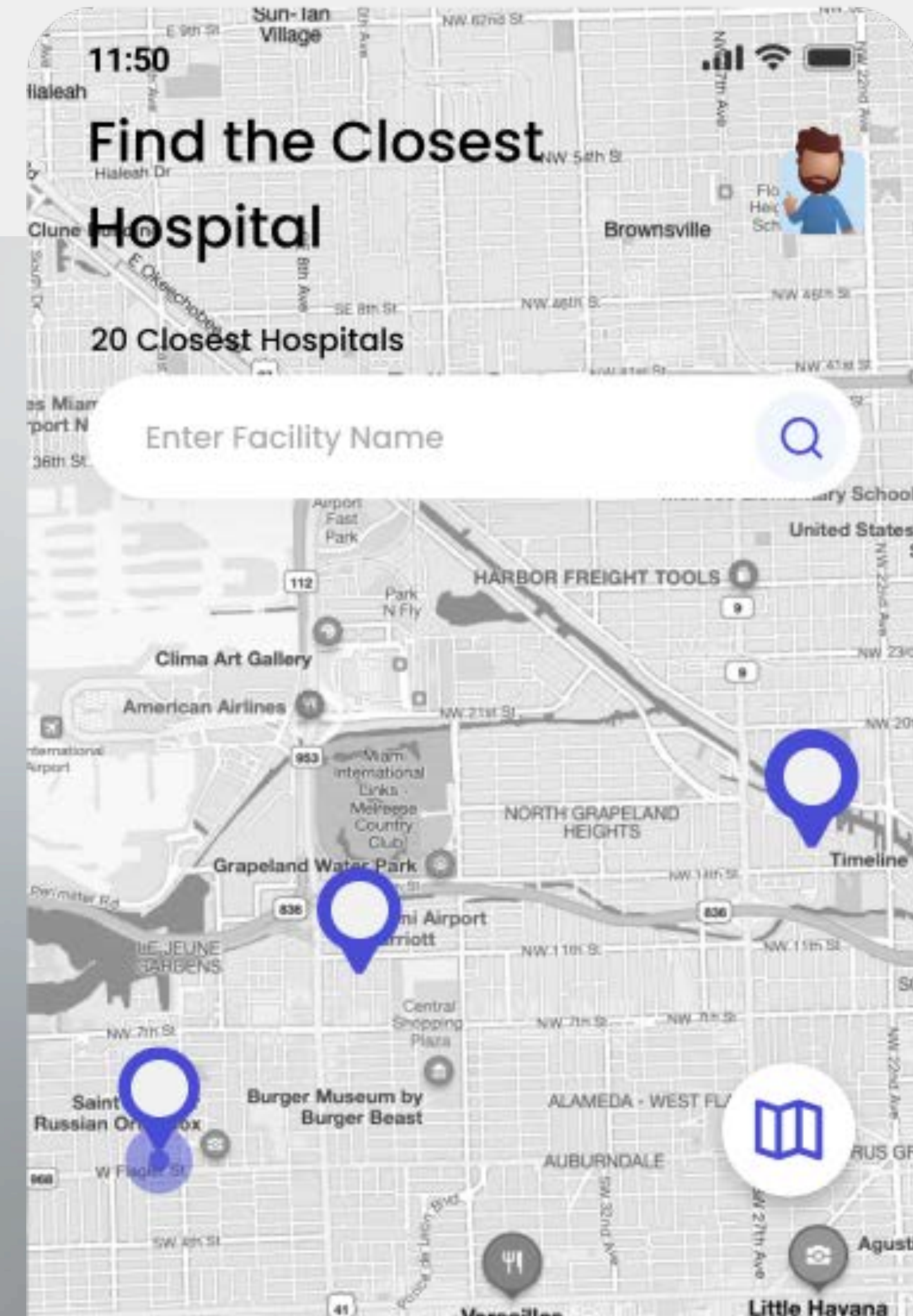
05

21st Century Telemed

21st Century Telemed

21st Century Telemed Provides Robust Information to Patients by Connecting Them to Healthcare Providers in a Sleek, Integrated Platform.
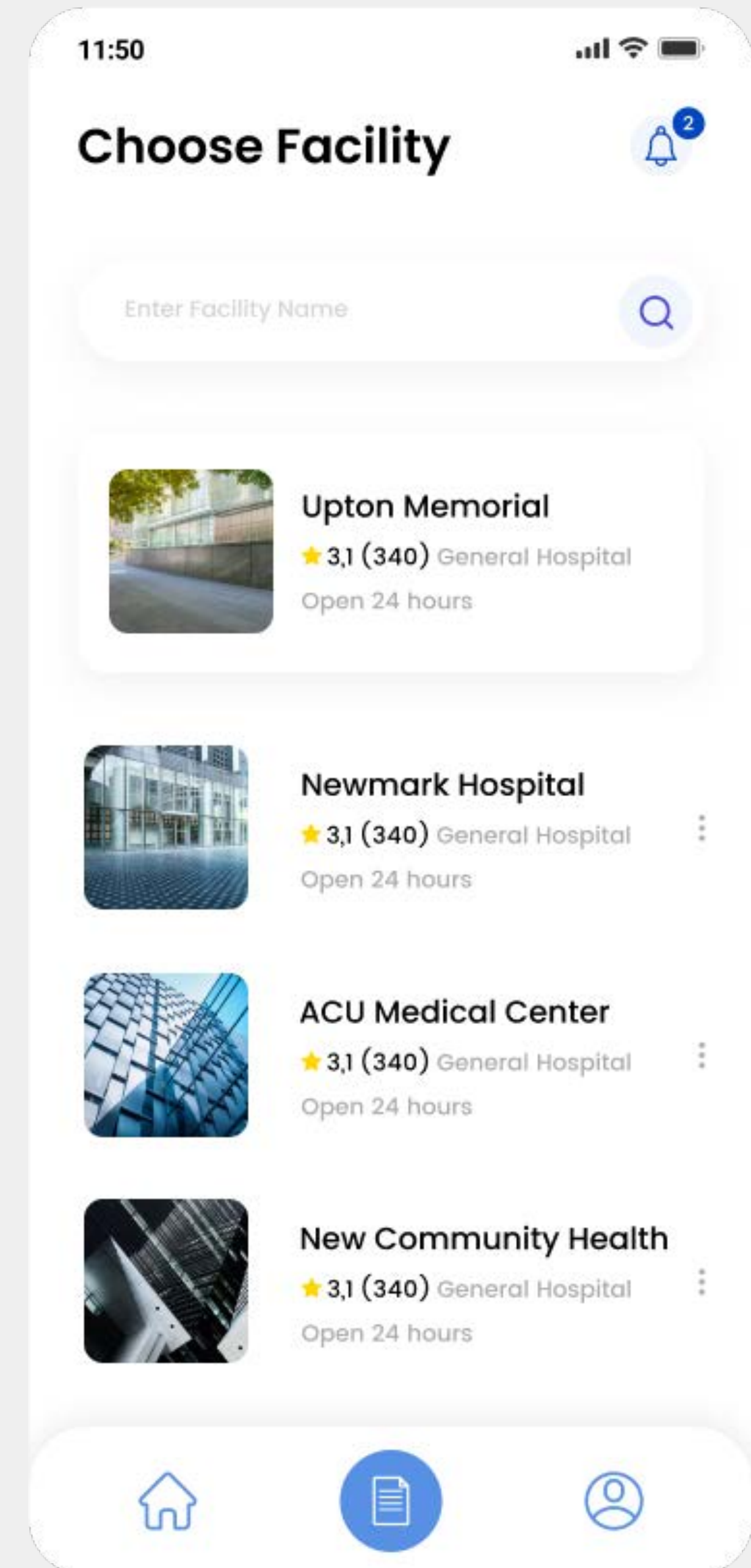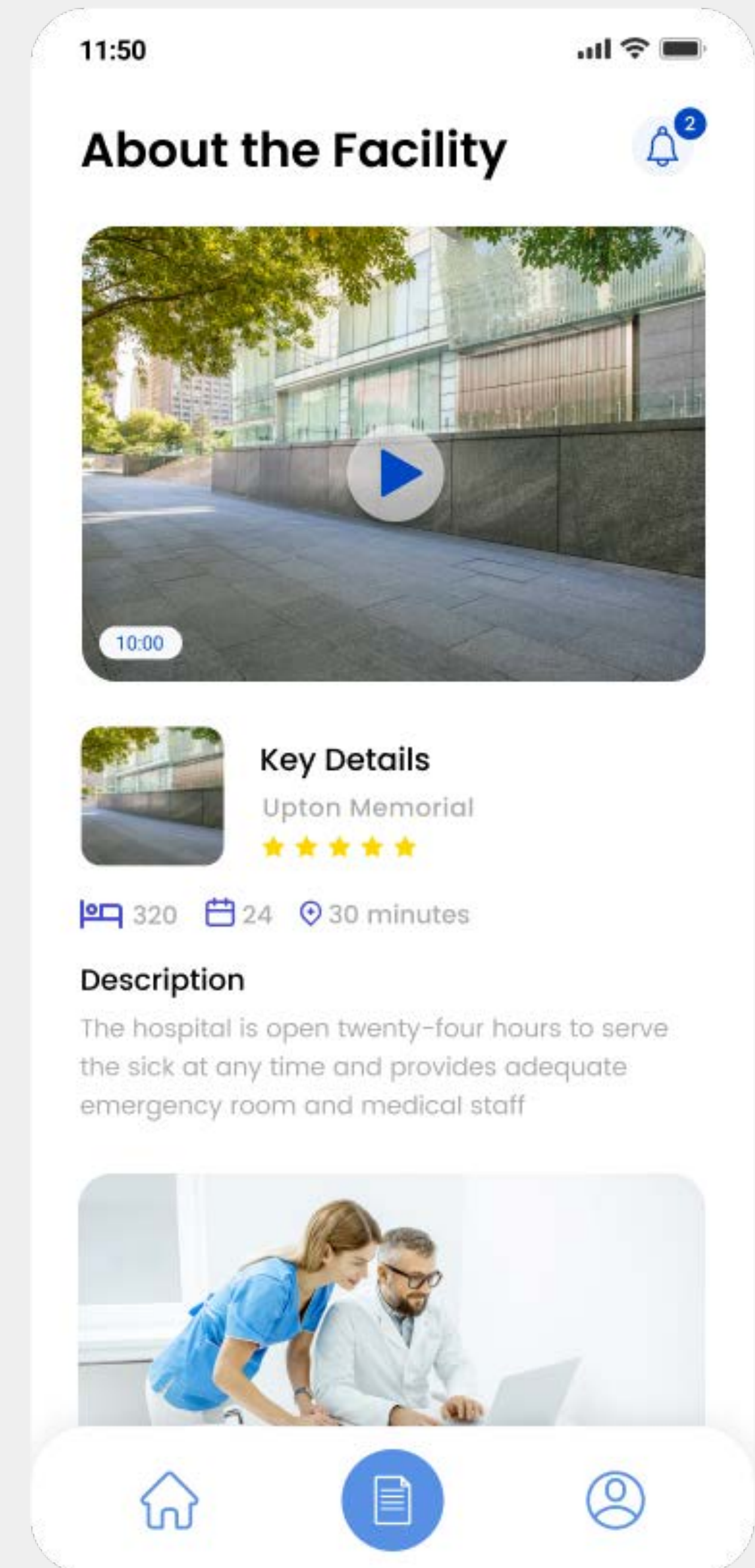
Search Tools

21st Century Telemed users are able to search for hospitals and care providers based proximity, community reviews, and services offered, all from the comfort and privacy of their home.

11:50

Choose Facility

Enter Facility Name

Upton Memorial
★ 3,1 (340) General Hospital
Open 24 hours

Newmark Hospital
★ 3,1 (340) General Hospital
Open 24 hours

ACU Medical Center
★ 3,1 (340) General Hospital
Open 24 hours

New Community Health
★ 3,1 (340) General Hospital
Open 24 hours

Consumer Choice

21st Century Telemed users can delve deeply into each hospital and its available staff to determine if it fits their needs and expectations. The user-driven design mirrors US trends in selection of healthcare providers in a post-pandemic market.

About the Facility

10:00

Key Details
Upton Memorial
★ ★ ★ ★ ★

🛏 320   📅 24   📍 30 minutes

Description
The hospital is open twenty-four hours to serve the sick at any time and provides adequate emergency room and medical staff

Care providers can share profile information and reviews so as to build trust in advance of the first doctor-patient interaction.
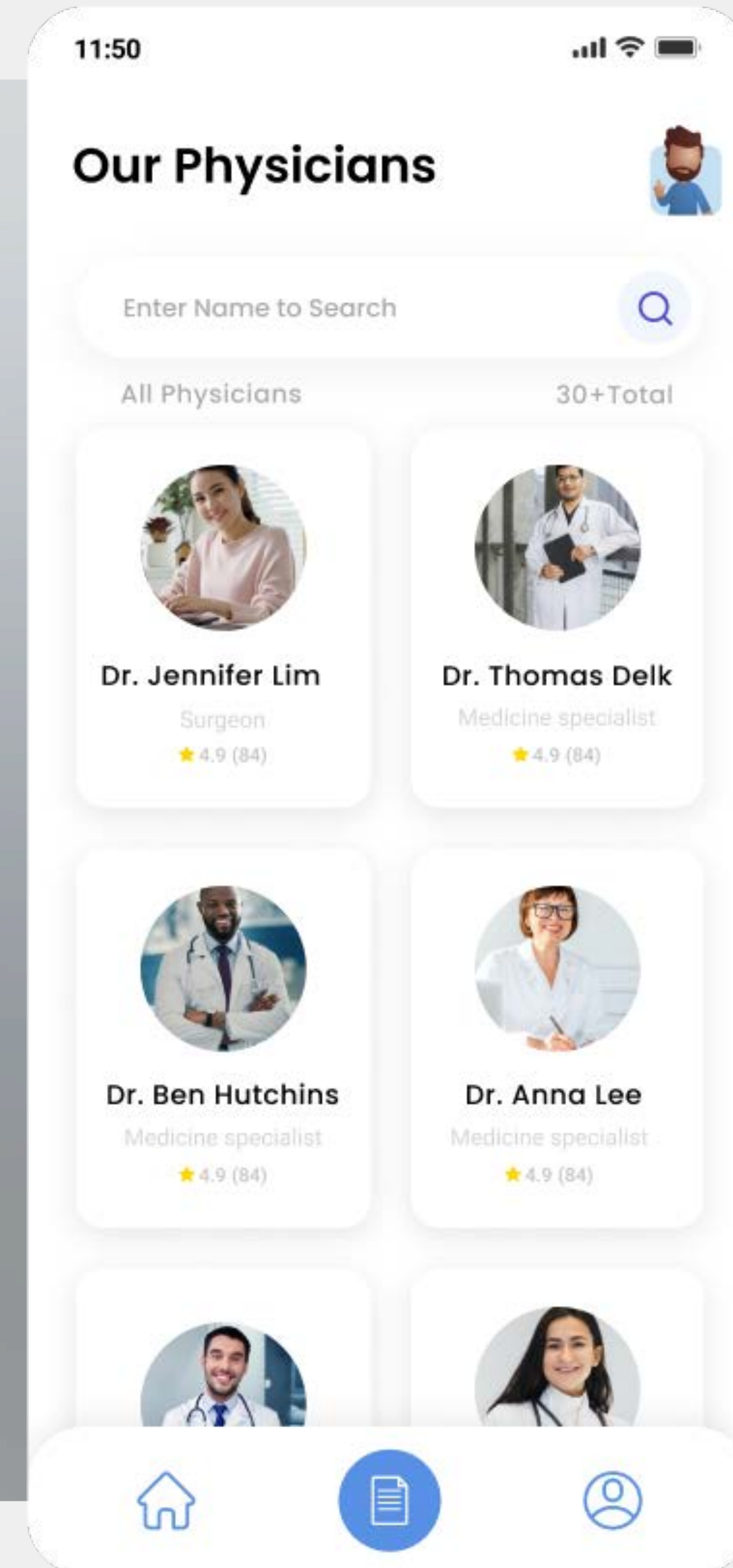
User Engagement

21st Century Telemed seeks to remove existing barriers to care and encourage patients to seek preventative healthcare. This benefits patient health, cost of medical care to patient and insurers, and supports community health at large.
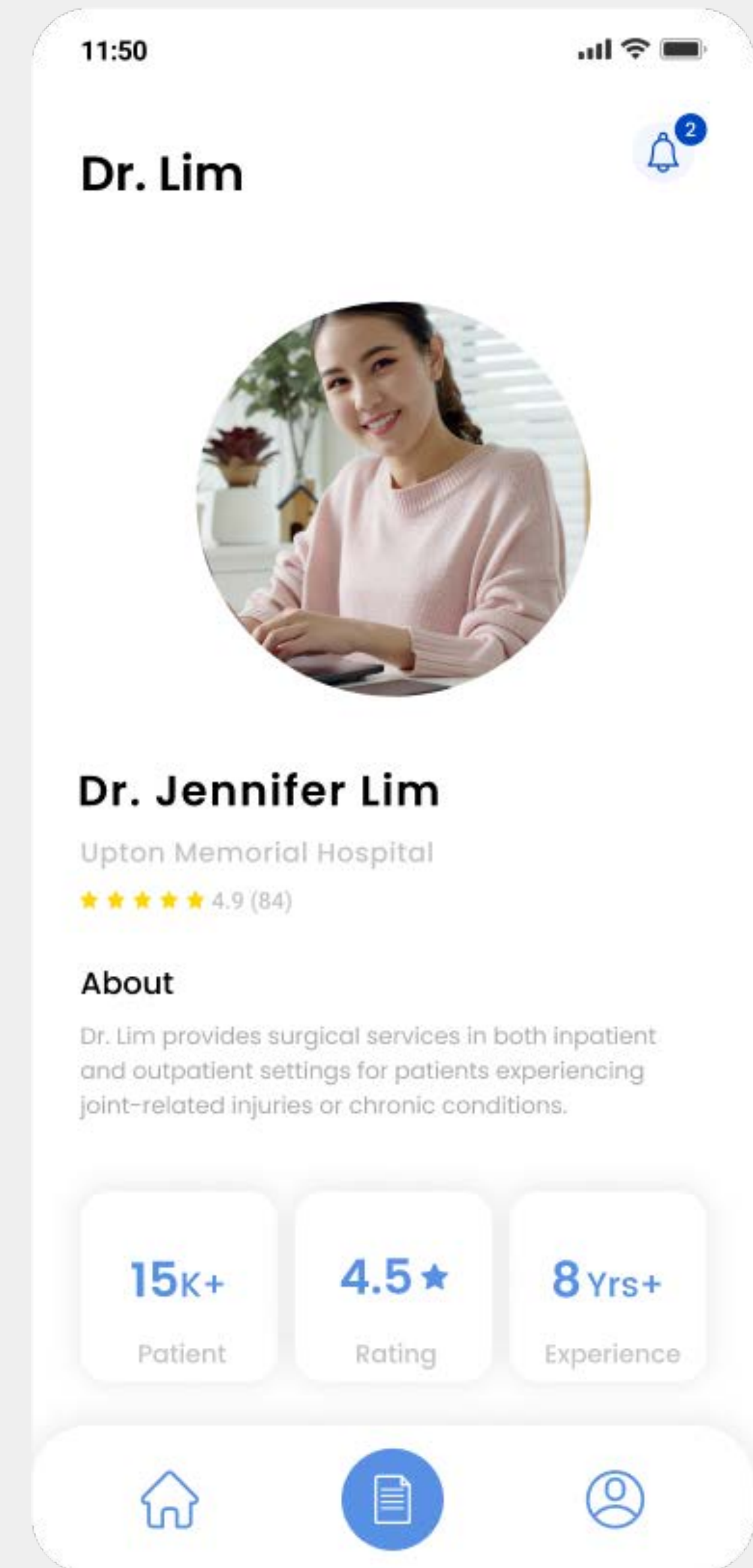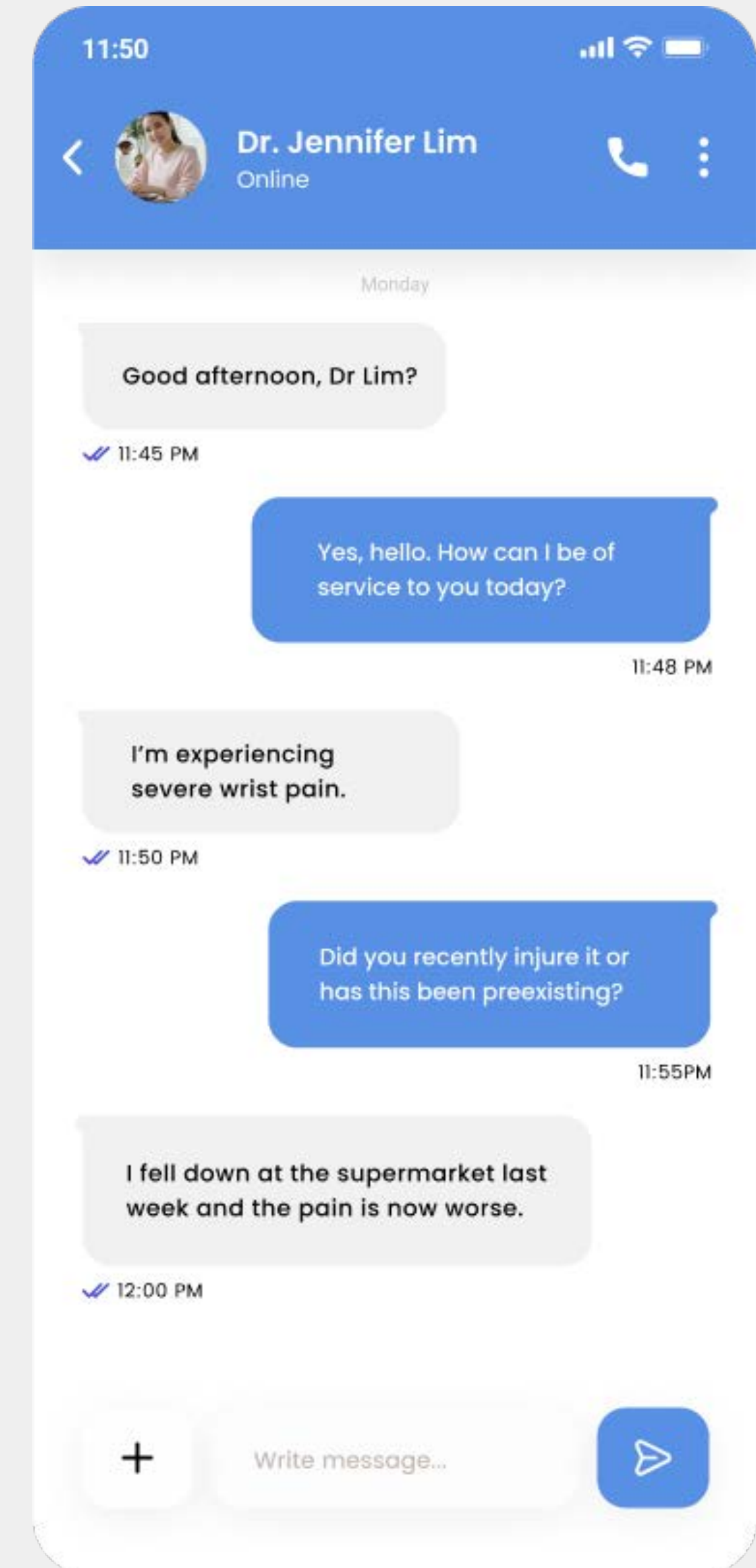
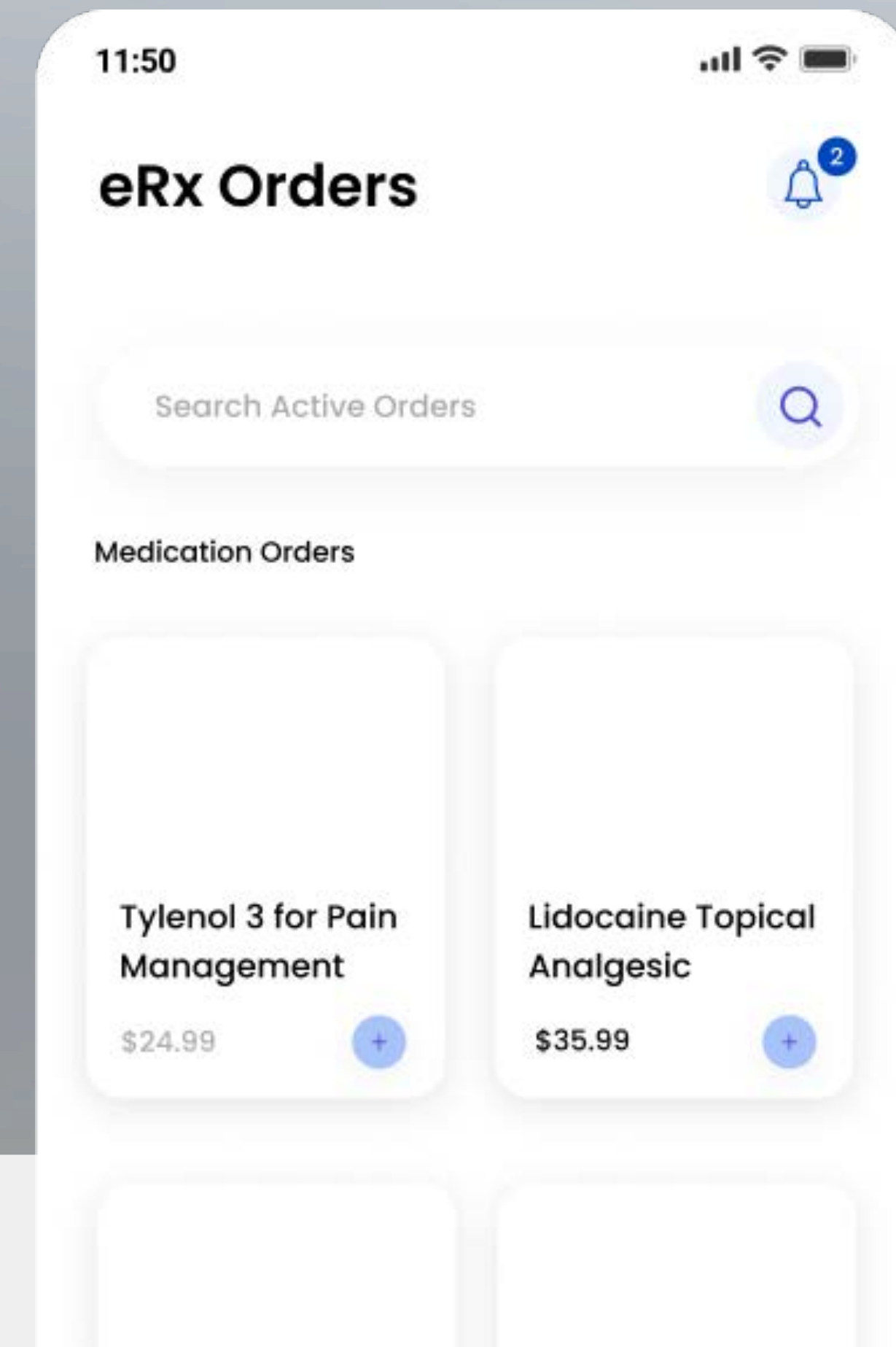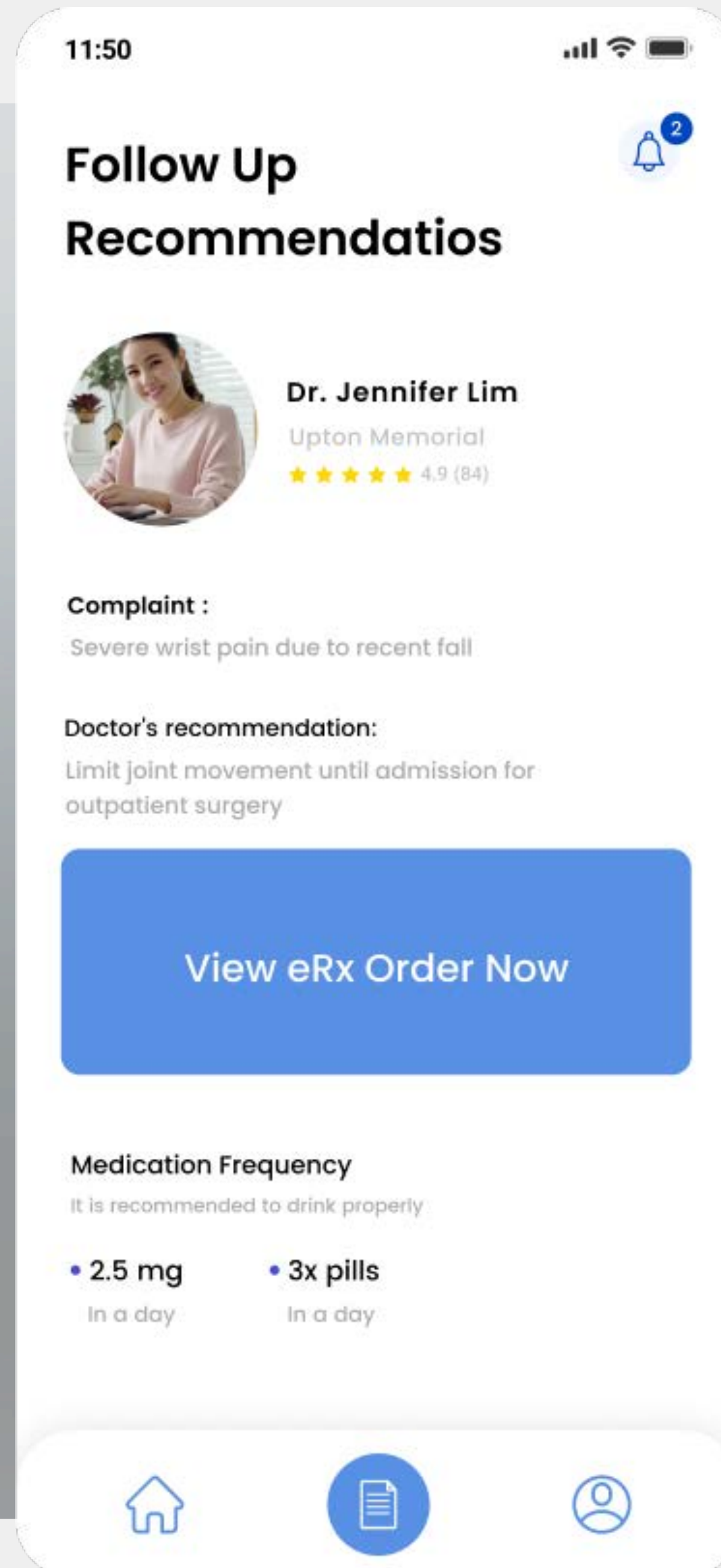21st Century Telemed leverages the integration options and communication platforms available to iOS and Android users.
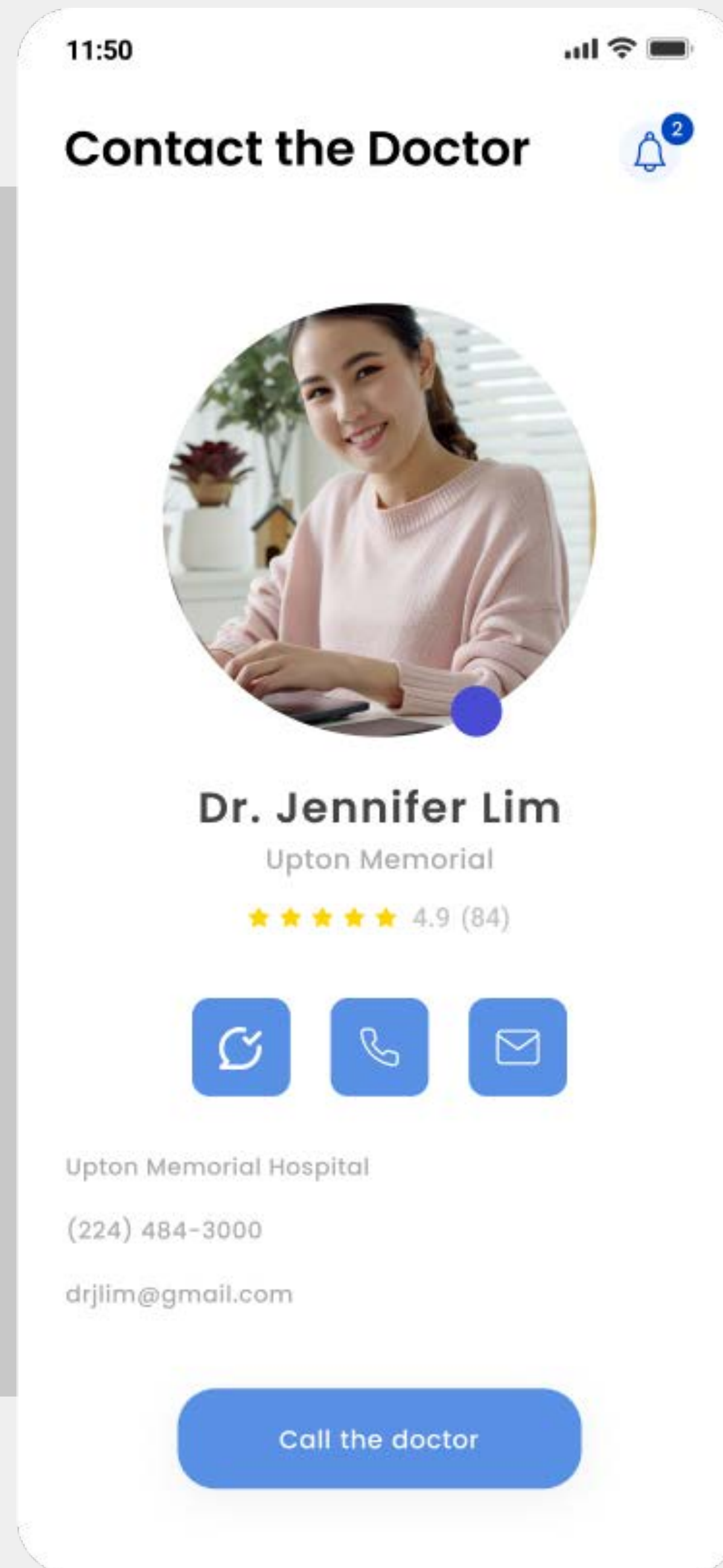
21st Century Telemed provides discrete communication choices for its users whereby state of mind, condition of health, and general personality inform their choice of text, voice, or video interaction with their care providers.

Preventative care is as important as follow up action. 21st Century Telemed integrates both ends of the continuum of care to encourage patients to follow advice from their healthcare providers.

11:50

Follow Up Recommendatios

Dr. Jennifer Lim
Upton Memorial
★★★★★ 4.9 (84)

Complaint :
Severe wrist pain due to recent fall

Doctor's recommendation:
Limit joint movement until admission for outpatient surgery

View eRx Order Now

Medication Frequency
It is recommended to drink properly

• **2.5 mg**
In a day

• **3x pills**
In a day

11:50

eRx Orders

Search Active Orders

Medication Orders

Tylenol 3 for Pain Management
$24.99

Lidocaine Topical Analgesic
$35.99

Brand Guidelines

✓ Visceral Identity of the Brand

✓ Editorial Voice

✓ Differentiation from Competitors

✓ Consistent Across Channels

✓ Color Profile

✓ Evolve in Sync with UX Updates

✓ Typography

✓ Respond to User Interaction

Brand Personality

Modern

Mobile

Trusted

Experienced

Discreet

Robust

21st Century Telemed provides a mobile-first clinical engagement experience for patients and healthcare providers by aggregating user-friendly technology tool and integrating into a single delivery platform for virtually all wellness needs.
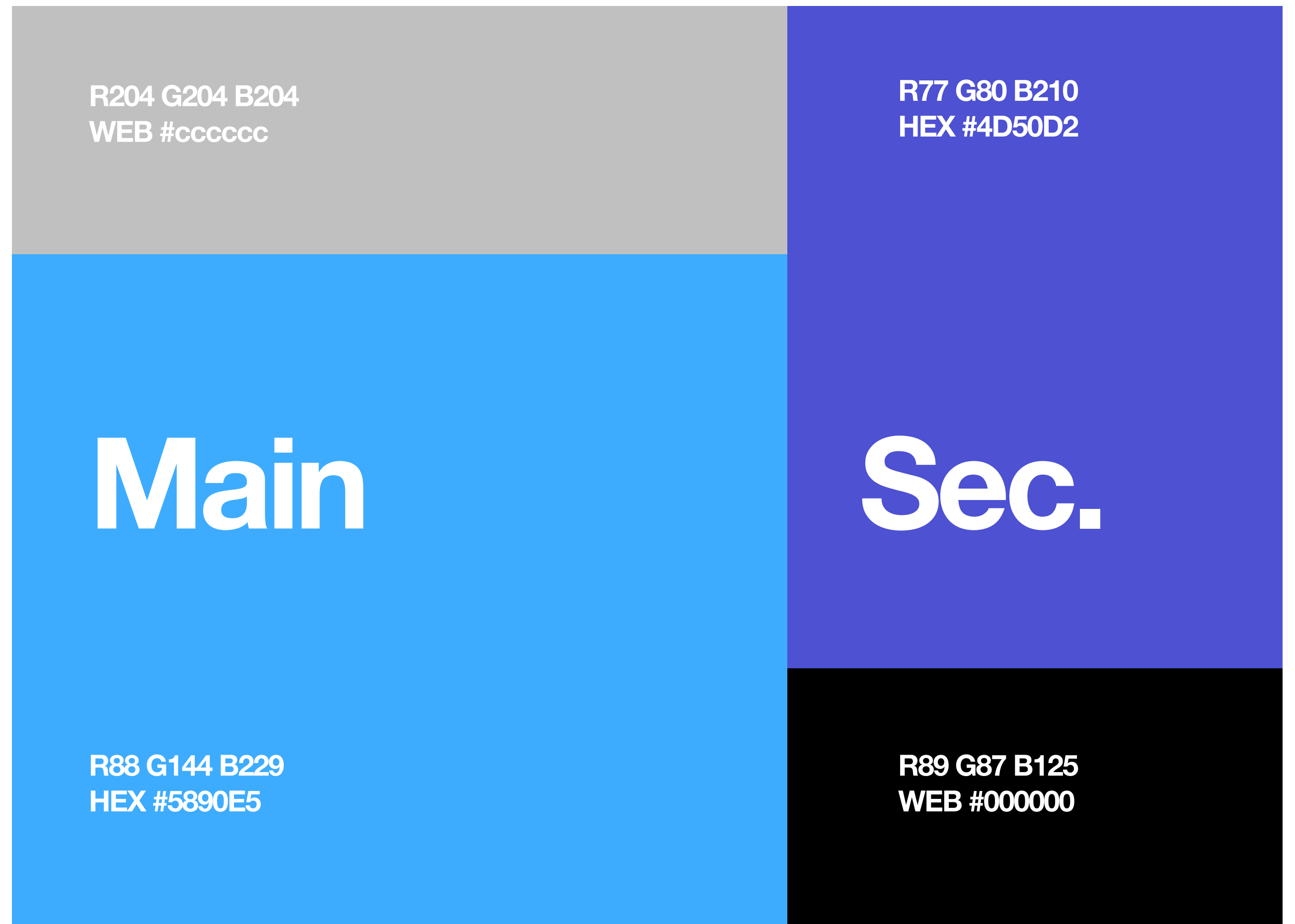
Logo

The logotype concept is derived from the core of the business model whereby the firm provides crucial information to patients by connecting them to healthcare providers in a sleek, integrated platform.

21st Century Telemed

Color Guide

The color identity is designed to focus on the energetic blues in contact to varying depths of grey scale. While many healthcare firms prefer standard colors, 21st Century Telemed was open to a more proactive approach.

R204 G204 B204
WEB #cccccc

R77 G80 B210
HEX #4D50D2

Main

Sec.

R88 G144 B229
HEX #5890E5

R89 G87 B125
WEB #000000

Typography

Poppins serves as an elegant primary heading typeface, often used in all caps. The flexibility of Open Sans serves as an ideal supporting typeface to communicate the majority of information.

AaBc

Poppins   Variable

A B C D E F G H I J K L M N O P Q R S T U V

W X Y Z a b c d e f g h i j k l m n o p q r s t

u v w x y z 0 1 2 3 4 5 6 7 8 9

AaBc

Open Sans   Variable

A B C D E F G H I J K L M N O P Q R S T U V

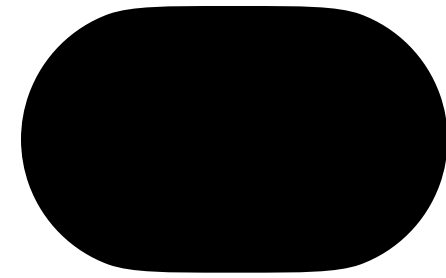**W X Y Z a b c d** e f g h i j k l m n o p q r s t u v

w x y z 0 1 2 3 4 5 6 7 8 9

Today

21st Century Telemed is poised to reinvent choice in healthcare to patients in the US.

Tomorrow

21st Century Telemed seeks to become the industry standard in healthcare technology.

Contact

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