Quick Help Document

CRC Cards

1. **AndriodApp**

Parent Class: None
Subclasses: None

Responsibilities:
- Uses navigator to navigate through the app

Collaborators:
- Navigator

2. **Navigator**

Parent Class: none
Subclasses: None

Responsibilities:
- Controls the user's access
- Controllers the view displayed for the user
- Transitions to different pages of the app

Collaborators:
- User
- Professional
- Map
- Login
- UpdateInfo
- Register

3. **Login**

Parent Class: None
Subclasses: None

Responsibilities:
- Authenticates user, upon filling in the sign in form
- Gets a user given the correct username and password

Collaborators:
- User
- Navigator

4. **Register**

Parent Class: None
Subclasses: None

Responsibilities:
- Create a user account upon filling in user information
- Create a professional account upon filling in user and professional information

Collaborators:
- User
- Professional
- Navigator

5. **User**

Parent Class: None
Subclasses: Professional

Responsibilities:
- Knows its username and password
- Knows its location
- Knows its medical history
- Knows its messages
- Can send an SOS signal to professionals
- Can send messages to other users

Collaborators:
- SendSOSDAO
- MessageDAO
- Message
- Navigator

6. **Professional**

Parent Class: User
Subclasses: None

Responsibilities:
- Responds to other user's SOS signals
- Knows its medical qualifications

Collaborators:
- ReceiveSOSDAO

7. **Message**

Parent Class: None
Subclasses: None

Responsibilities:
- Knows its timestamp
- Knows its message
- Knows the user who sent the message

Collaborators:
- User

8. **UpdateInfo**

Parent Class: None
Subclasses: None

Responsibilities:
- Contains data of user settings
- Updates user authentication
- Updates user's medical history

Collaborators:
- User
- Navigator

9. **Map**

Parent Class: None
Subclasses: None

Responsibilities:
- Display location of both user and professional once an SOS signal is accepted
- Provides directions from professional to user once an SOS signal is accepted
- Displays all nearby user locations for the professional

Collaborators:
- User
- Professional
- SendSOSDAO
- ReceiveSOSDAO

10. **SendSOSDao <<Interface>>**

Parent Class: None
Subclasses: None

Responsibilities:
- Finds all professionals nearby given a user's location
- Sends an SOS signal to all nearby professionals given a user's location

Collaborators:
- User

11. **ReceiveSOSDAO <<Interface>>**

Parent Class: None
Subclasses: None

Responsibilities:
- Gets all SOS signals given a professional's location

Collaborators:
- Professional

12. **MessageDAO <<interface>>**

Parent Class: None
Subclasses: None

Responsibilities:
- Sends a message to a user given their username
- Receives a message from a user

Collaborators:
- User
- Professional
- Message

CRC Model

AndriodApp	
- Uses navigator to navigate through the app	Navigator

Navigator	
- Controls the user's access - Controls the view displayed for the user - Transitions to different pages of the app	User Professional Map Login Update Info Register Andriod App

Login	
- Authenticates user, upon filling in the sign in form - Gets a user given the correct username and password	User Navigator

Register	
- Create a user account upon filling in user information - Create a professional account upon filling in user and professional information	Navigator User Professional

User	
- Knows its username and password - Knows its location - Knows its medical history - Knows its messages - Can send an SOS signal to professionals - Can send messages to other users	SendSOSDAO MessageDAO Message Navigator

Professional	
- Responds to other user's SOS signals - Knows its medical qualifications	ReceiveSOSDAO

Message	
- Knows its timestamp - Knows its message - Knows the user who sent the message	User

UpdateInfo	
- Updates user authentication - Updates user's medical history - Contains data of user settings	User Navigator

Map	
- Display location of both the user and professional once an SOS signal is accepted - Provides directions from the professional to the user once an SOS is accepted - Displays all nearby user locations for the professional	User Navigator ReceiveSOSDAO SendSOSDAO Professional

<<Interface>> SendSOSDAO	
- Finds all professionals nearby given a user's location - Sends an SOS signal to all nearby professionals given a user's location	User Professional

<<Interface>> ReceiveSOSDAO	
- Gets all SOS signals given a professional's location	Professional

<<Interface>> MessageDAO	
-Sends a message to a user given their username -Receives a message from a user	User Professional Message

System Interaction and Environment

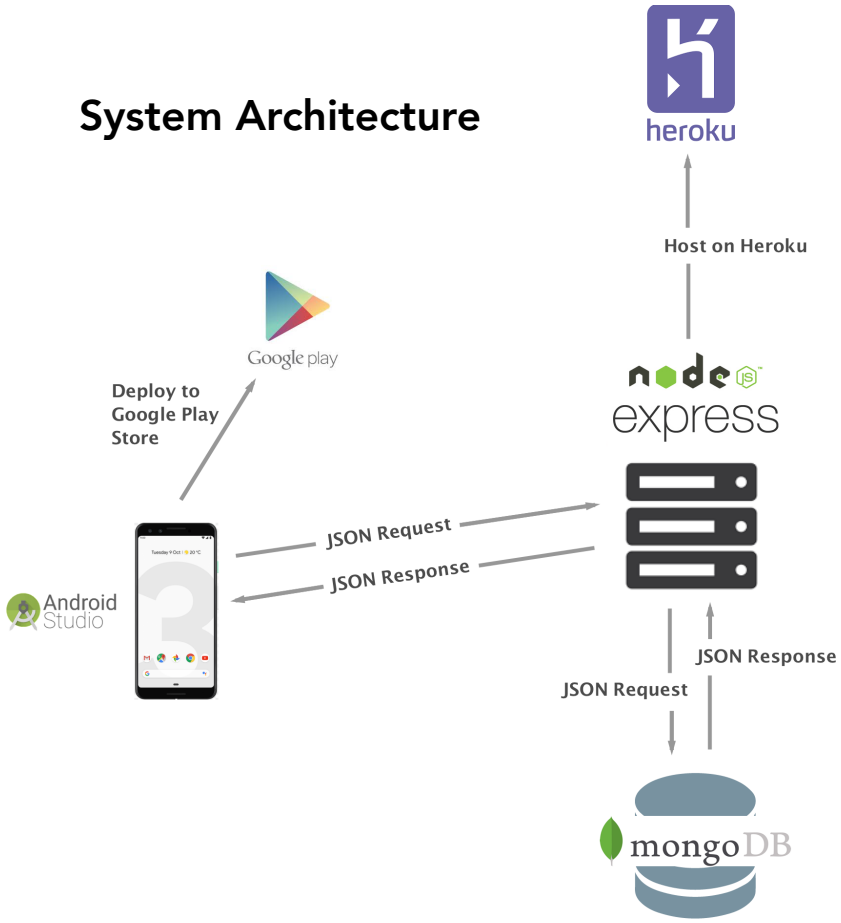
The technologies QuickHealth will be using will include:

- Server: Node.JS, Express
- Database: MongoDB
- Frontend-end: Java (Android Studio)

Android mobile operating system is currently taking the lead in the market share worldwide. Big companies such as Samsung, Google, and Huawei have mobile devices operating on Android. Taking this into consideration, deploying an android application will allow Quick Help to reach a wider range of users.

We will be using Android Studio as our IDE to build our front-end. Android Studio emcompasses many advantages over other technologies, most evidently its built-in emulator. The built-in emulator will make it easier for the team to run and test the application. We decided to use mLab for our MongoDB database. Heroku will be used to host our Node.Js server which will contain our Express application that will handle API requests to our server. Finally, the final product will be deployed to Google play console so the application is available for download worldwide. To accommodate users without mobile data service, we are considering to use Twilio API for sending help requests and receive text based direction in our next release.

System Architecture



System Decomposition

There are three main components in the Quick Help system architecture: client, server, and database.

The classes associated with the server are Register, SendSOSDAO, RecieveSOSDAO, UpdateInfo, Login, and MessageDAO. This is because the client will send REST API calls to our Node.js server in which one of these classes will handle the request and send out the appropriate response. To be more precise, the SendSOSDAO and ReciveSOSDAO in Quick Help will use a Node.js middleware which will find, send and notify the professional of the SOS signal that a user has sent out. Similar to Register, UpdateInfo, Login, and MessageDAO, the Node.js middleware will search through the database and send the necessary information between the users and professionals.

The client component classes are AndroidApp, Map, and Navigator. These are classes that the client uses to interact with the Android application. The classes send JSON formatted requests to the server in hopes to receive back the required responses.

The database component consists of the classes User and Professional. These classes represent schemas in our MongoDB database.

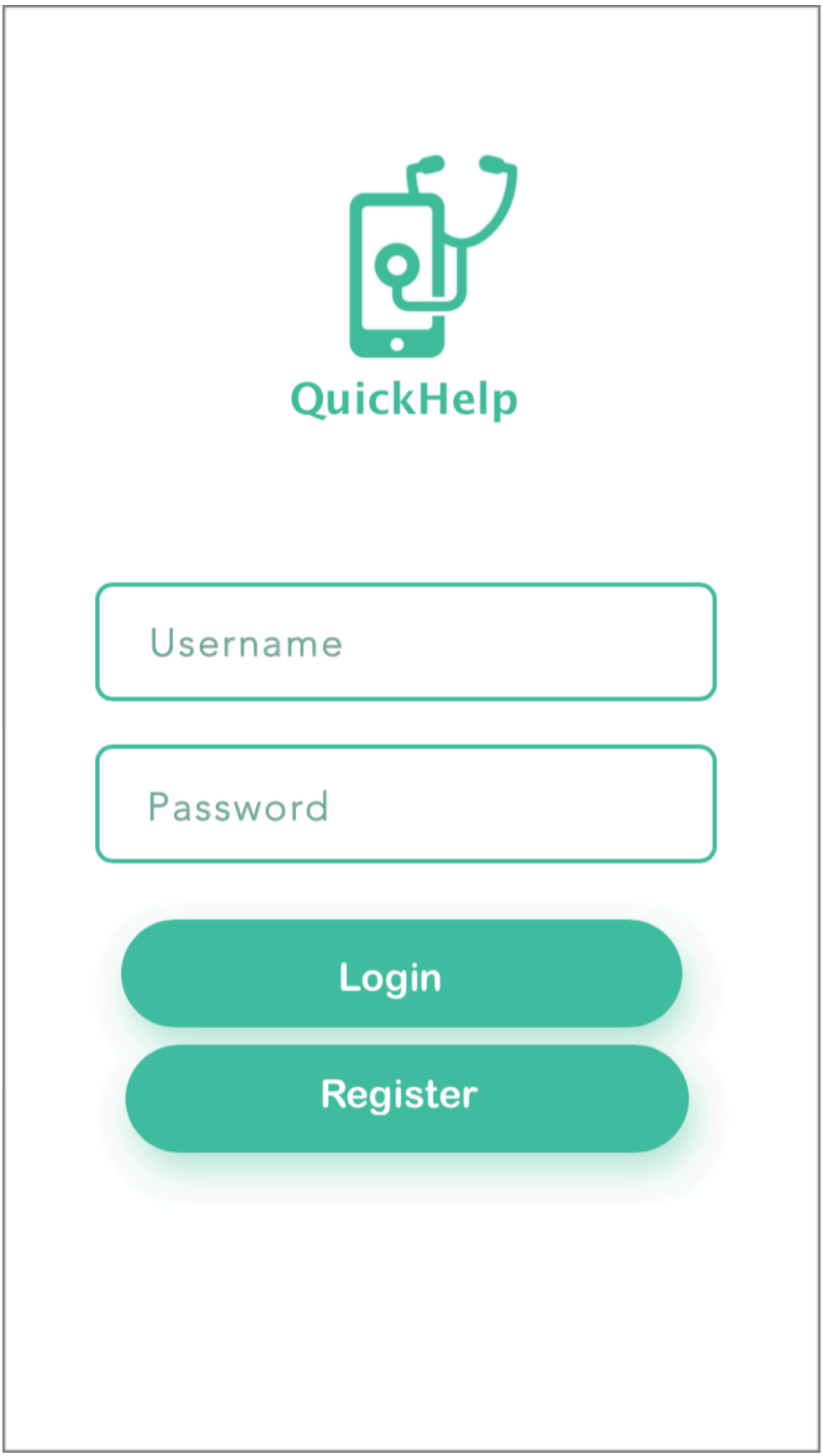
The system decomposition is provided on the system architecture diagram. It shows each component and its functionality on a higher-level architectural view.

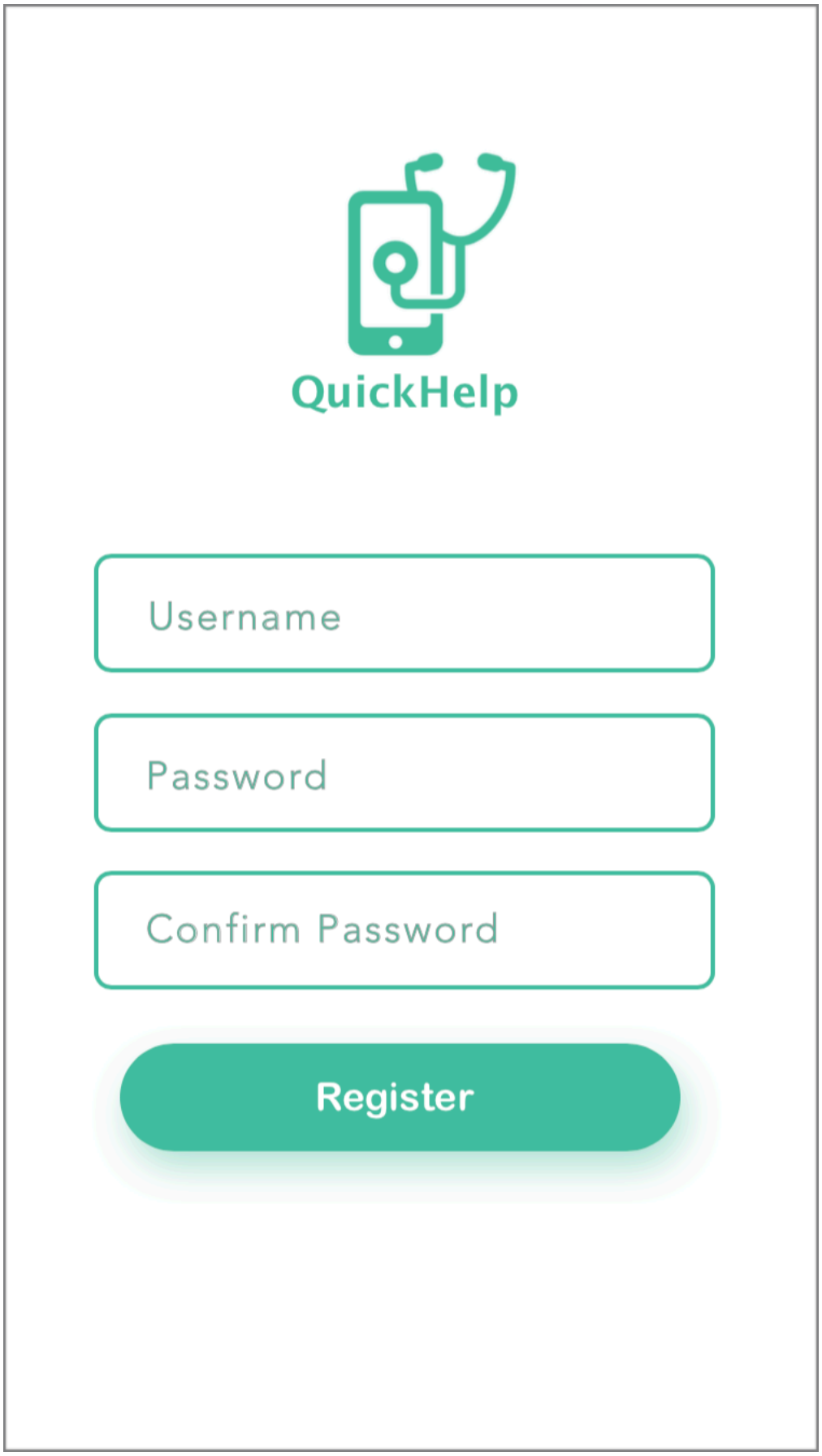
We anticipate that there might be connectivity issues that will interfere with a user's ability to submit a registration or send SOS signals. In order to fix any issues with network connectivity , during a SOS signal, we intend to implement a quick restart feature which will be prompted when the app recieves two consecutive 500 error from the server. This can ensure that a client-server connection is intact.

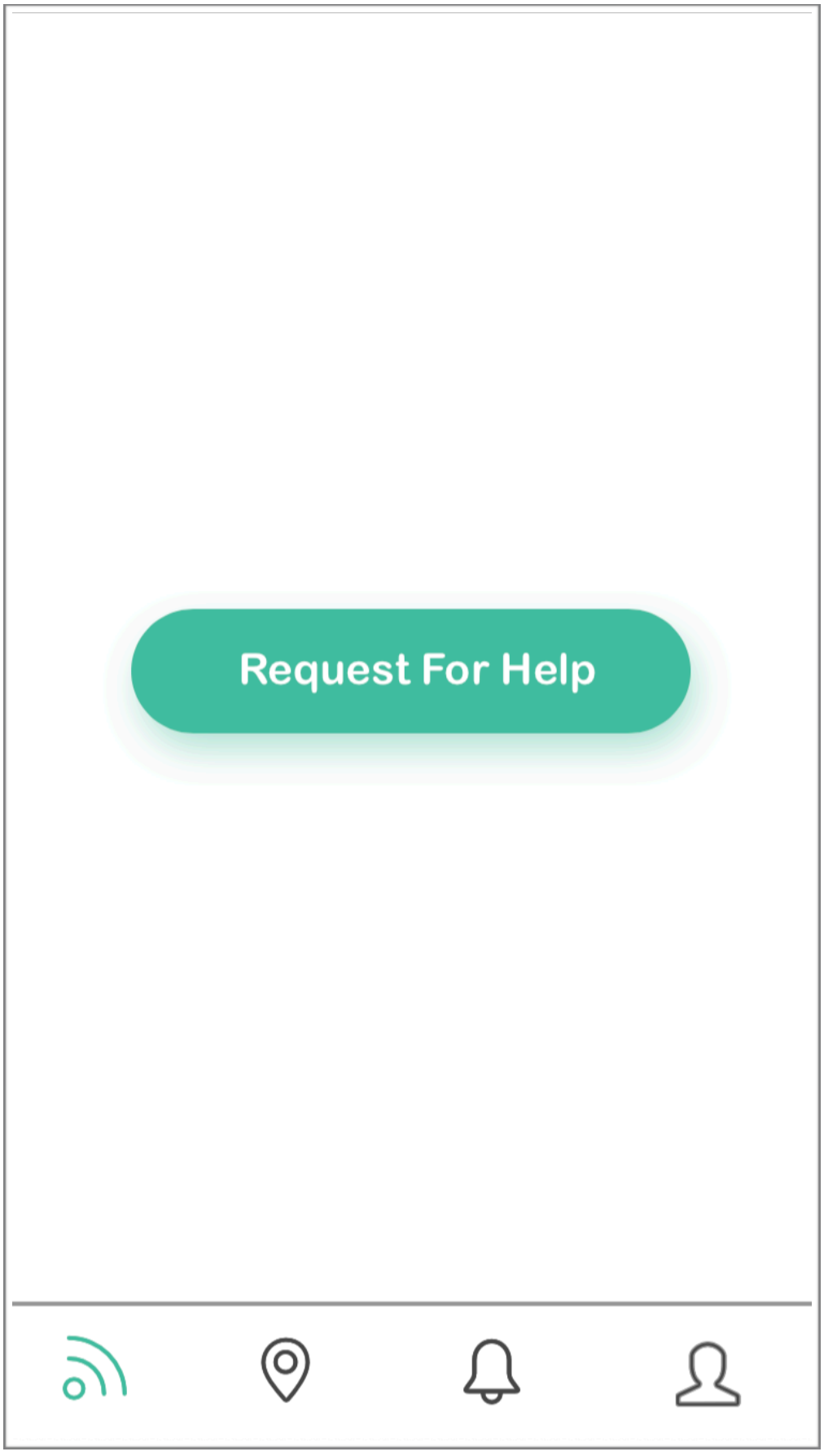
Another problem to consider is view scalability issues. Views may vary depending on the size on the client's android device. The strategy will be to create multiple views of the app and to make sure that the design we use is easily resizable.

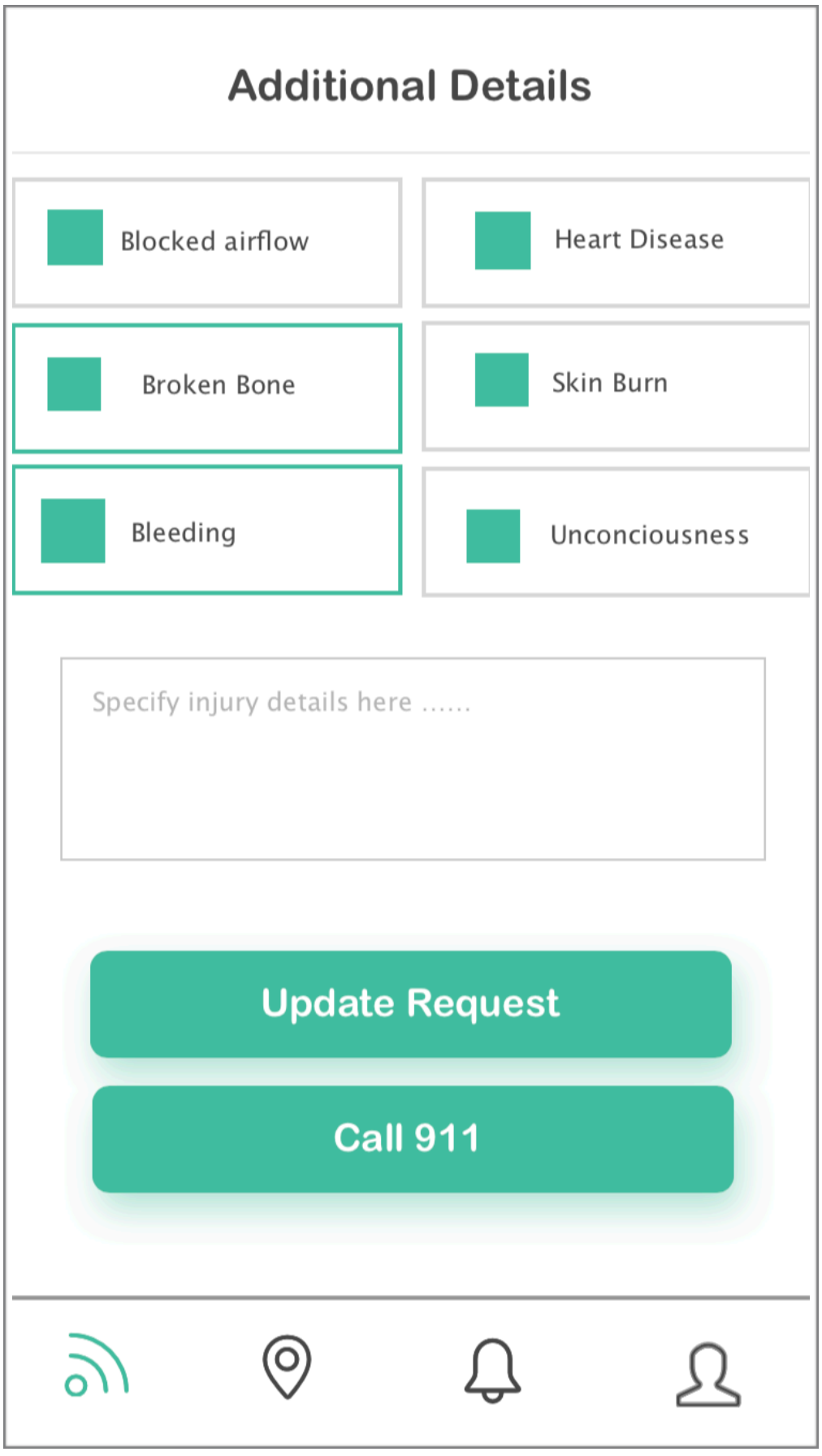
Other failures such as incorrect user input from our client will be dealt with in the server where we will validate the data and send appropriate errors when necessary. This will be handled using a Node.js library called validator.js.

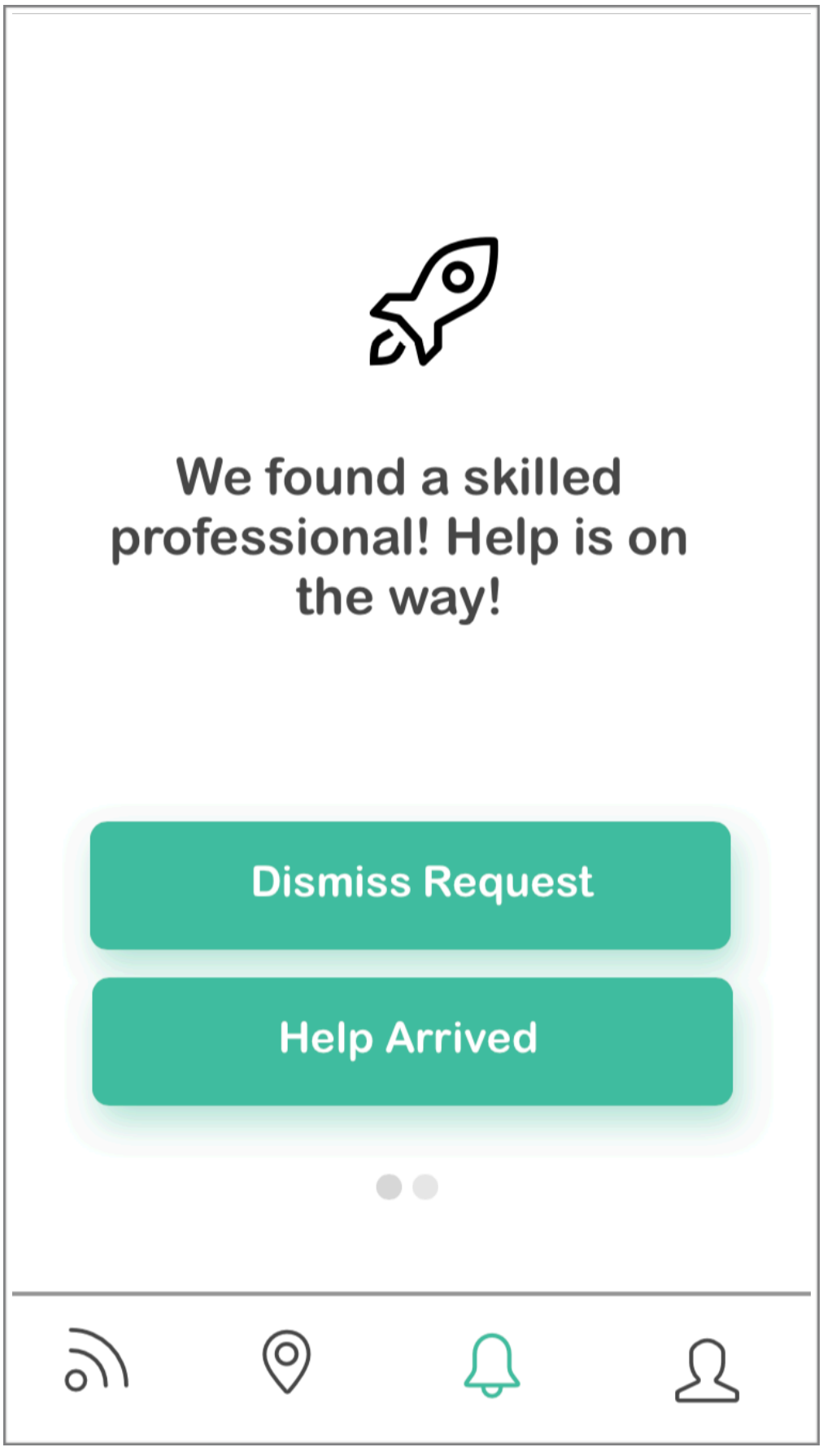
Design Mockup


QuickHelp
Username
Password
Login
Register


QuickHelp
Username
Password
Confirm Password
Register


Request For Help


Additional Details
Blocked airflow
Heart Disease
Broken Bone
Skin Burn
Bleeding
Unconciousness
Specify injury details here .....
Update Request
Call 911


We found a skilled professional! Help is on the way!
Dismiss Request
Help Arrived

Procedures While Waiting

Bleeding

(1) Keep the patient calm

(2) Find a clean piece of cloth

(3) Use the cloth to put pressure on the wound

(4) Help the patient lie down

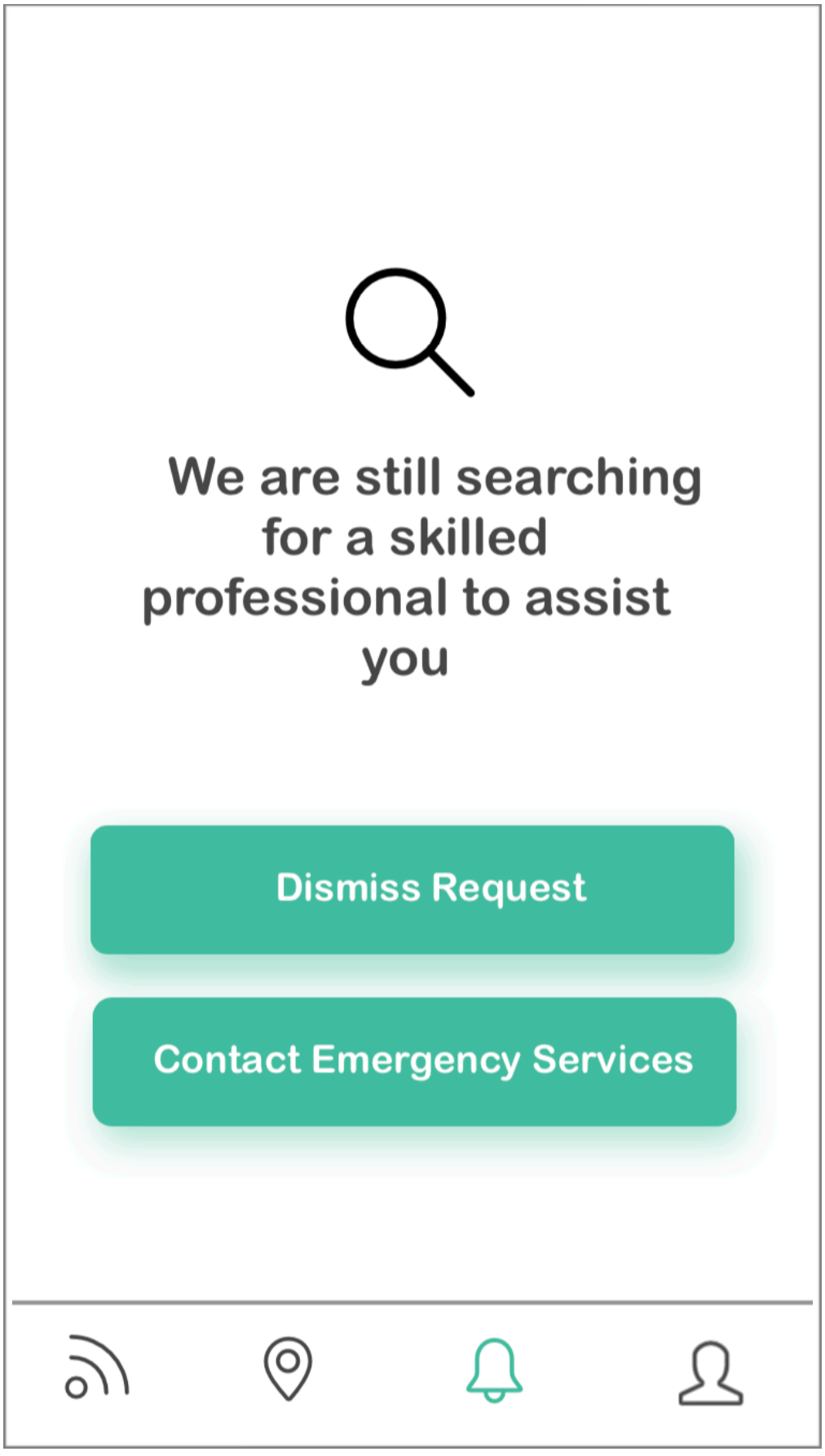
(5) Remove debris from wound (do not remove any objects embedded in the body)

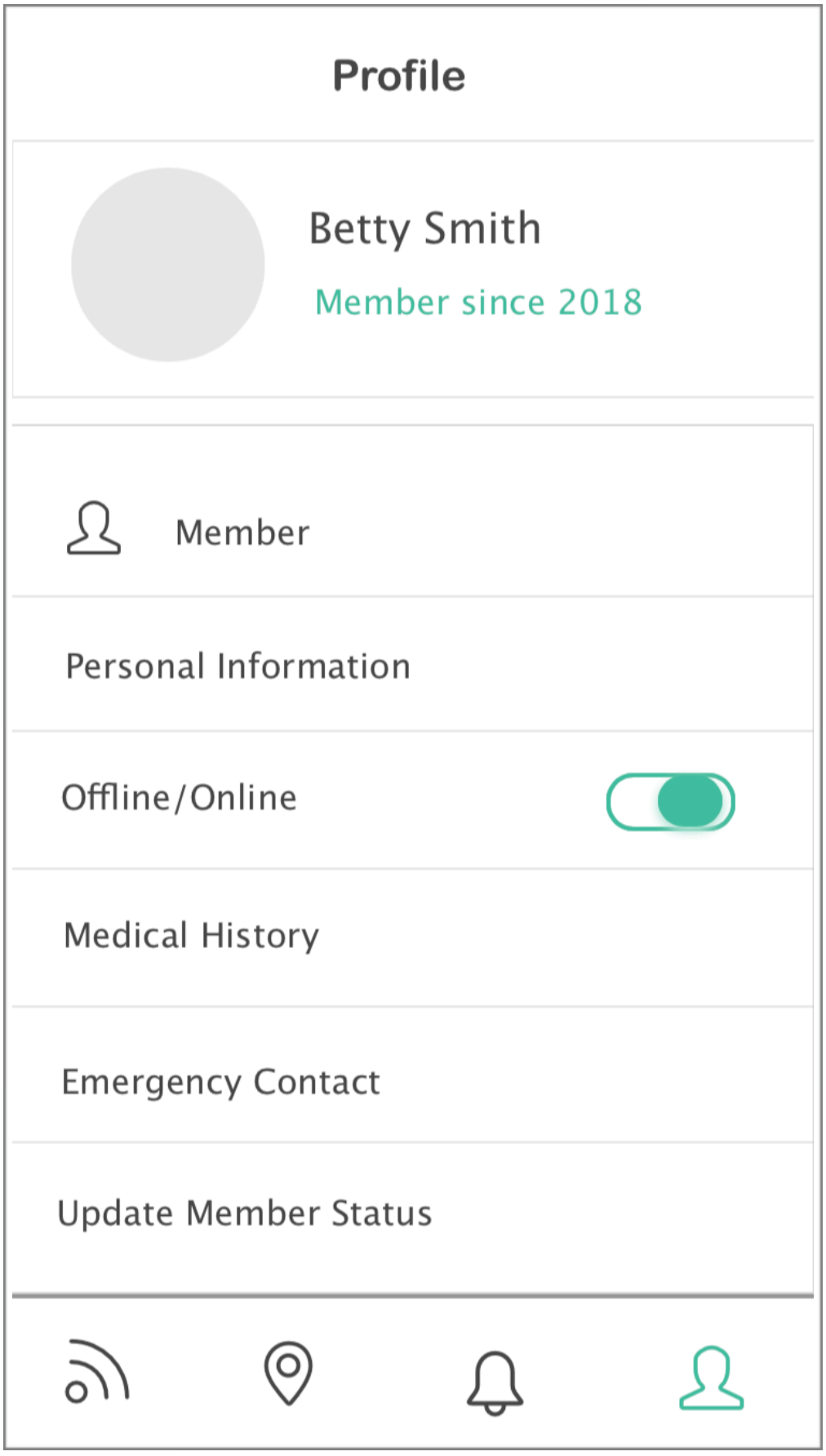
Broken Bone

(1) Don't try to realign the bone or push a bone that's sticking out back in

(2) Apply ice packs wrapped in a cloth to limit swelling and help relieve pain





We are still searching for a skilled professional to assist you
Dismiss Request
Contact Emergency Services


Profile
Betty Smith
Member since 2018
Member
Personal Information
Offline/Online
Medical History
Emergency Contact
Update Member Status

Personal Information

First Name

Veronica

Last Name

Sullivan

Address

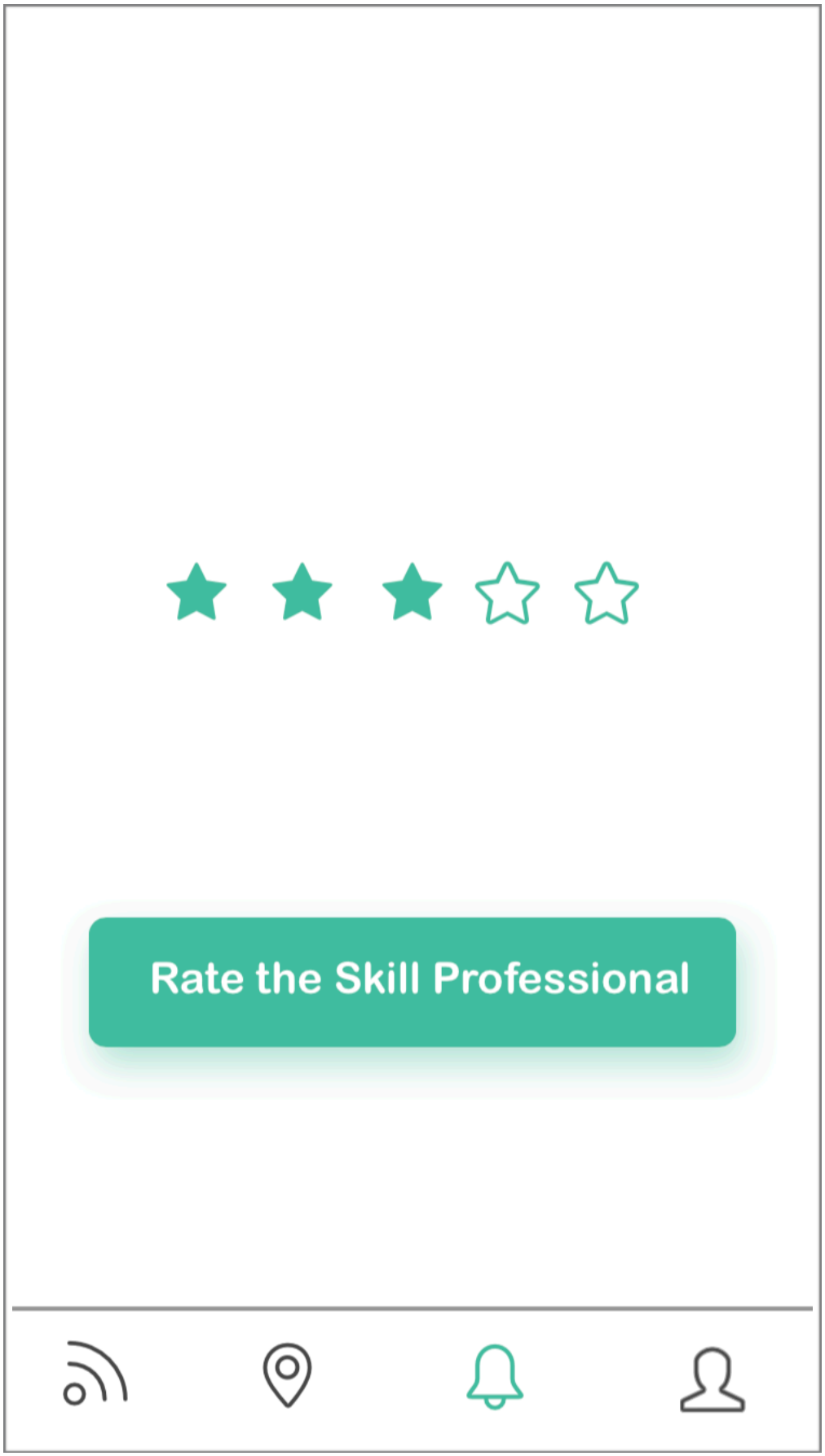
56 Castle Drive

Occupation

Pediatrician

Blood Type

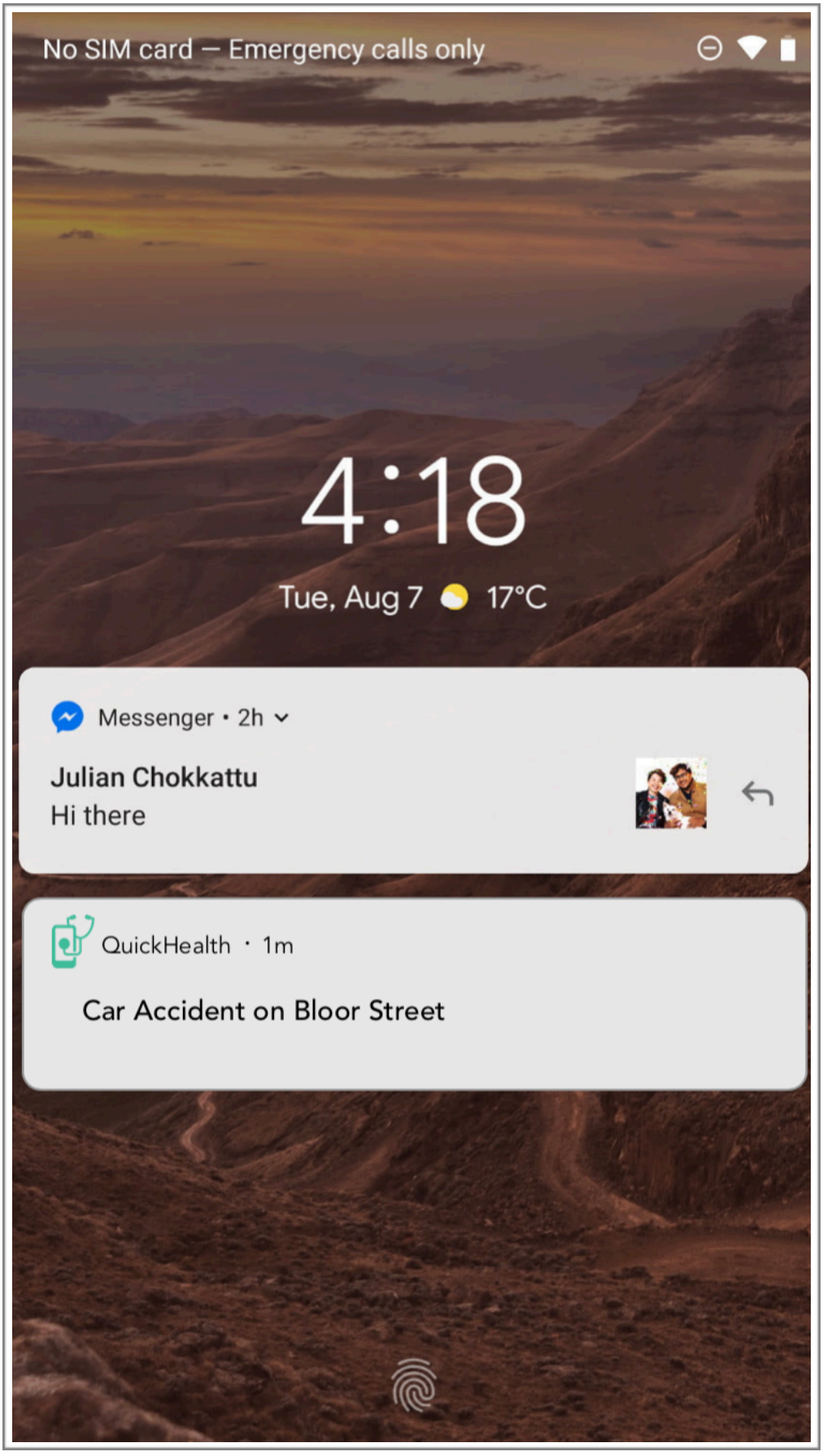
O

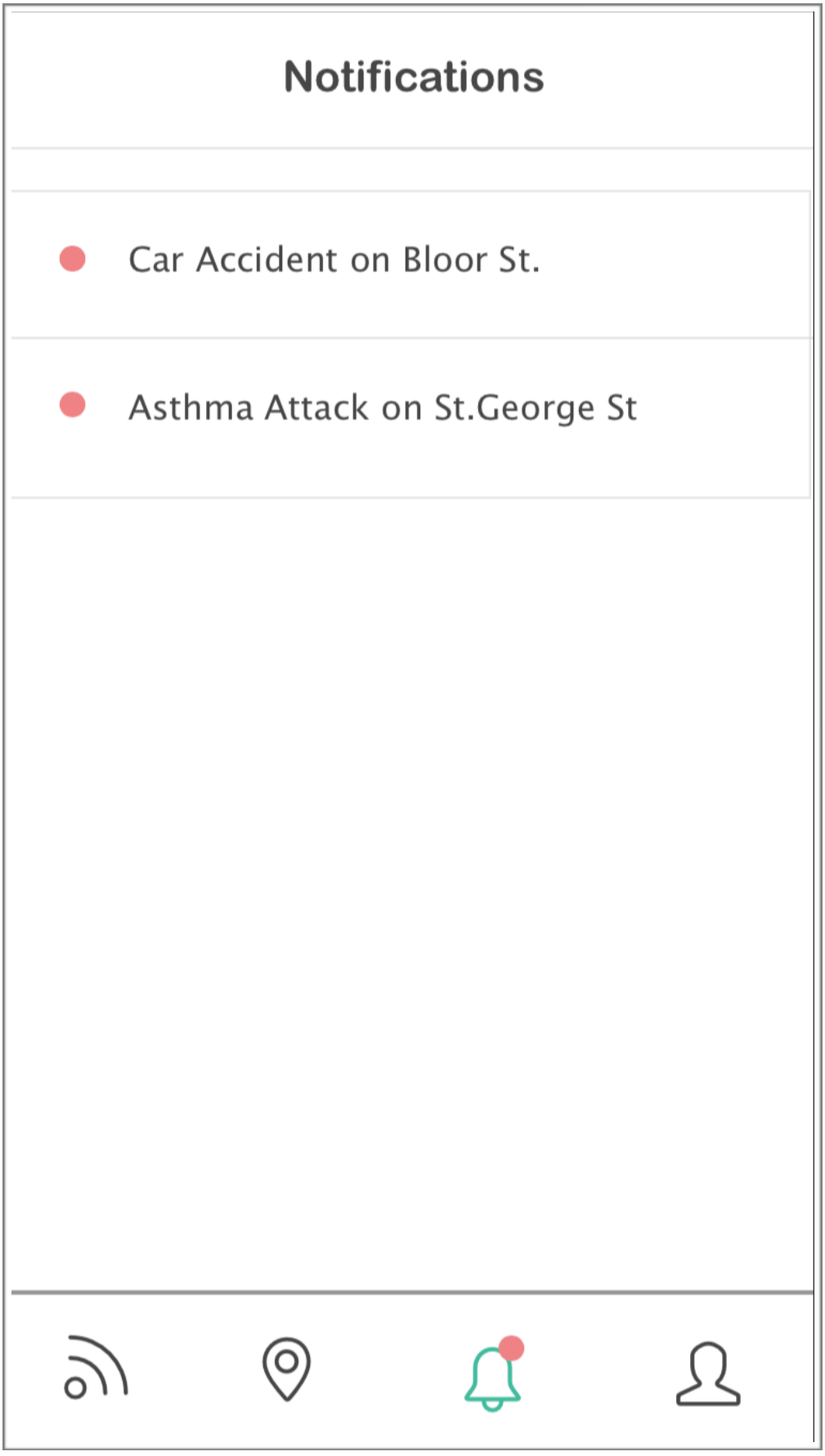

Rate the Skill Professional

Medical History

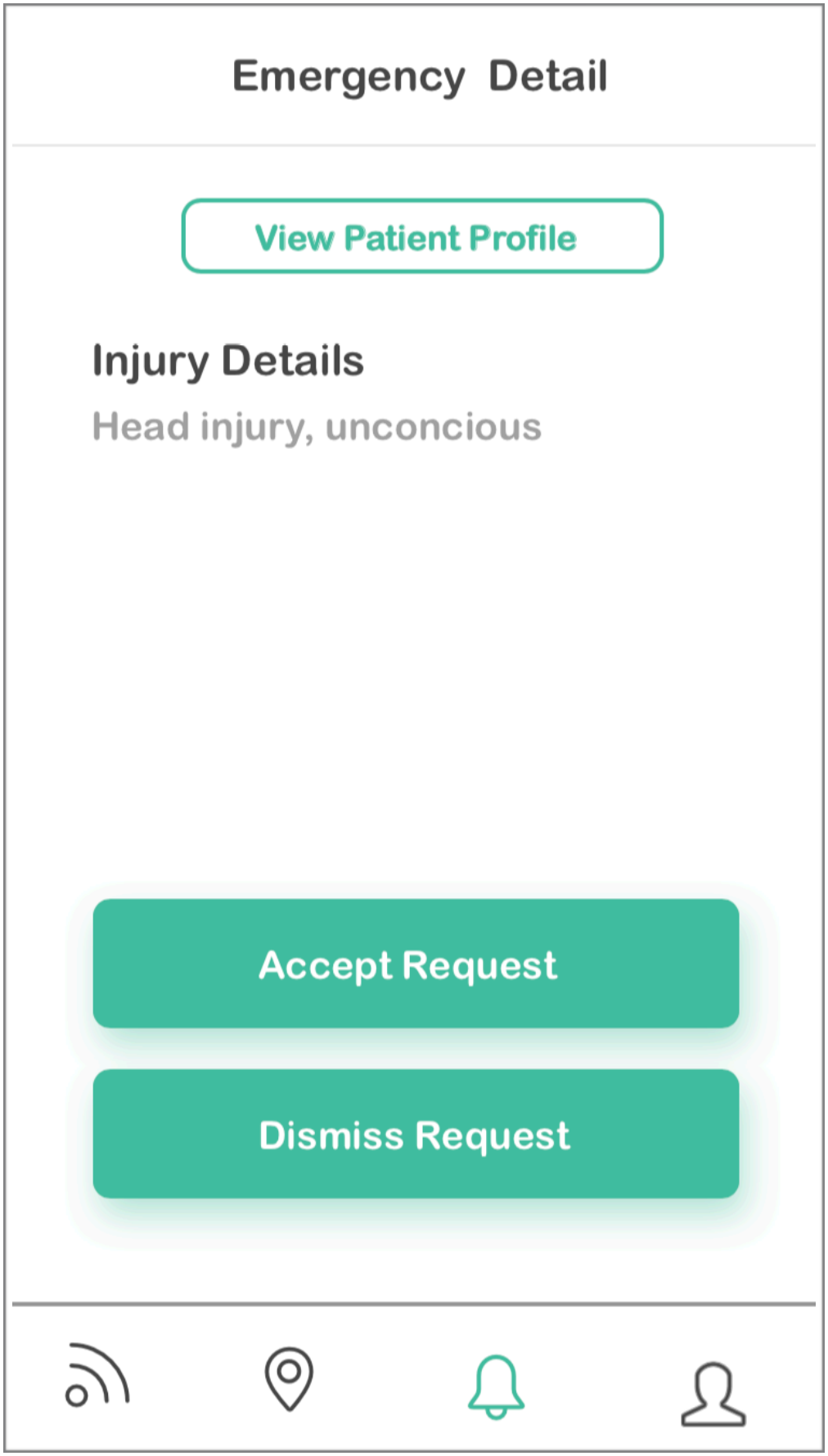
- [x] High Blood Pressure
- [ ] High Cholesterol
- [x] Kidney Disease
- [x] Thyroid Problems
- [ ] Joint Replacement
- [ ] Lung Disease
- [ ] Stroke
- [ ] Asthma
- [ ] Heart Problem
- [ ] HIV
- [ ] Kidney Problems
- [ ] Nervous Disorder

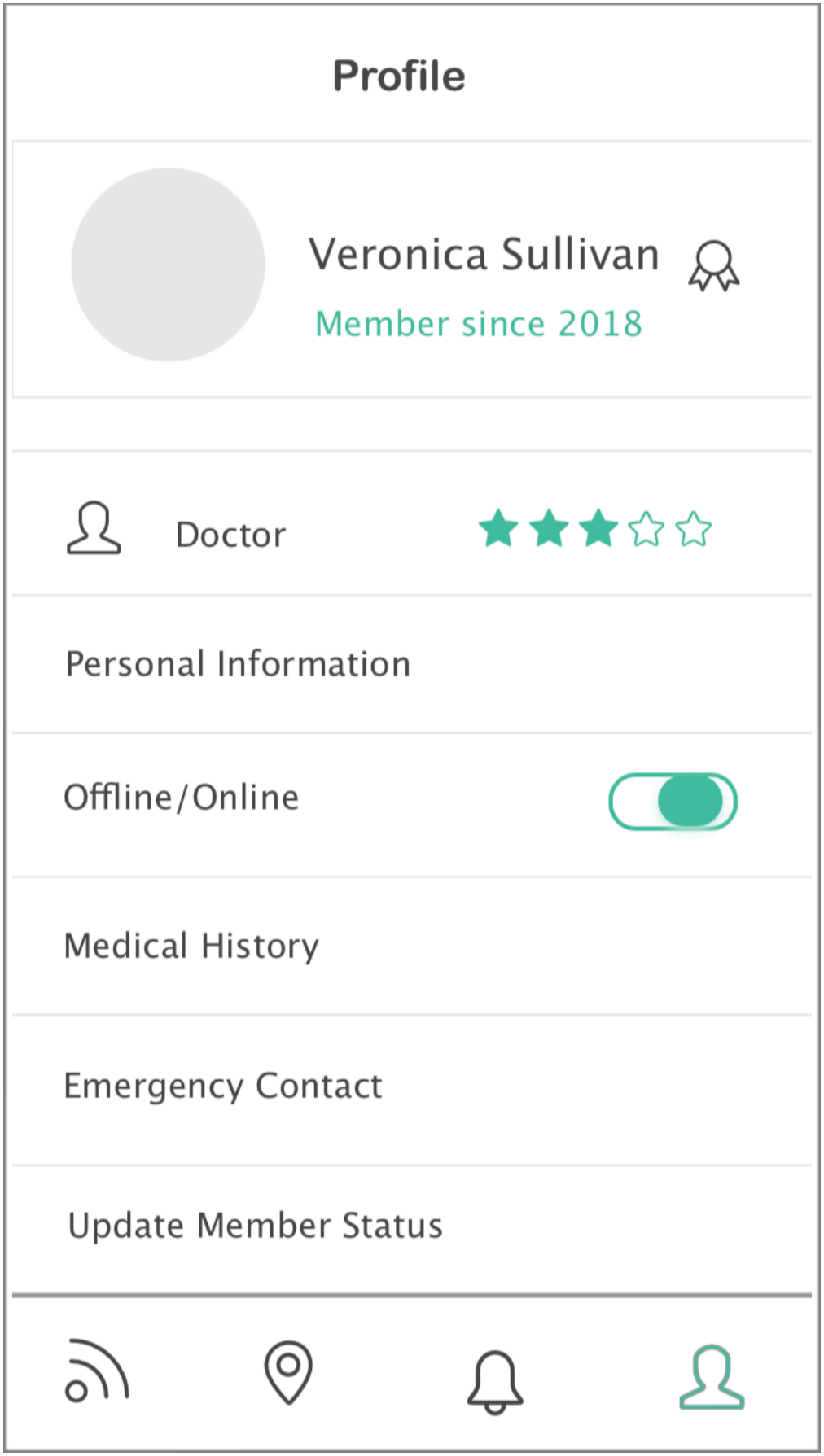
Other

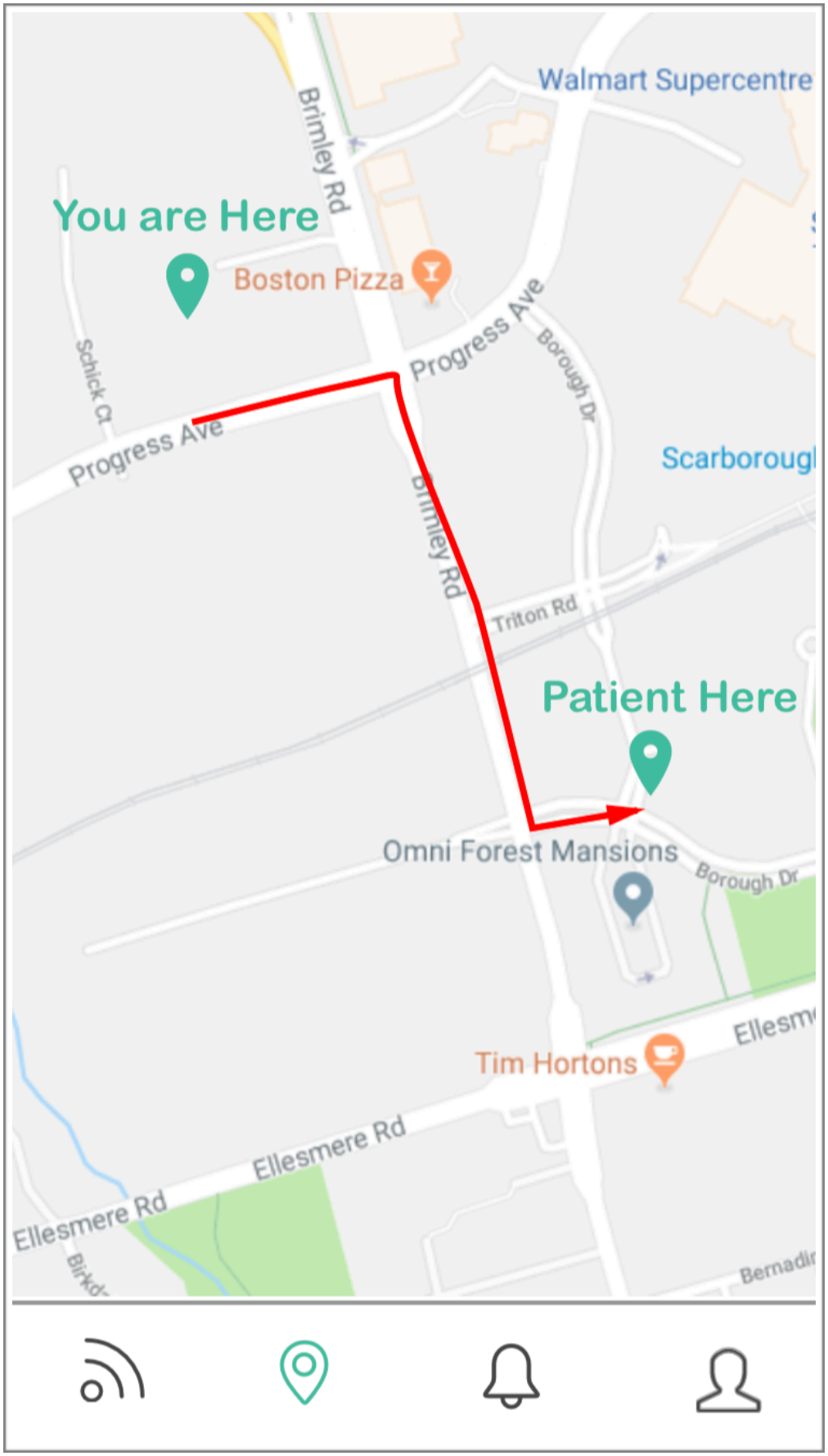

No SIM card — Emergency calls only
4:18
Tue, Aug 7
17°C
Messenger • 2h
Julian Chokkattu
Hi there
QuickHealth • 1m
Car Accident on Bloor Street


Notifications
Car Accident on Bloor St.
Asthma Attack on St.George St


Walmart Supercentre
Brimley Rd
Boston Pizza
Progress Ave
Borough Dr
Schick Ct
Progress Ave
Scarboroug
Brimley Rd
Triton Rd
Omni Forest Mansions
Borough Dr
Tim Hortons
Ellesmere Rd
Ellesmere Rd


Emergency Detail
View Patient Profile
Injury Details
Head injury, unconcious
Accept Request
Dismiss Request


Profile
Veronica Sullivan
Member since 2018
Doctor
Personal Information
Offline/Online
Medical History
Emergency Contact
Update Member Status


Walmart Supercentre
Brimley Rd
You are Here
Boston Pizza
Progress Ave
Borough Dr
Schick Ct
Progress Ave
Scarborough
Brimley Rd
Triton Rd
Patient Here
Omni Forest Mansions
Borough Dr
Tim Hortons
Ellesmere Rd
Ellesmere Rd

Update Status

To be able to access this application as a medical professional, it is required that some valid credentials are submitted to ensure all doctors operating this app

If you wish to become certified on this app, please use the upload button below to upload pictures of your certifications.

If you mee the requirements, you will receive an email containing the certification key.

Upload Credentials

Upload images of your medical credentials using the upload button below.

Upload

Documents 0

Send

Enter Certification Key: