Vision Statement

About the Team
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Project Name: Apollo
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TL;DR
A telemedicine platform to make virtual doctor's visits effective and efficient by enhancing patient-doctor communication.

Background
Problem
Doctor visits are inconvenient. Patients must worry about the commute and then actual waiting time despite getting there early for your appointment - and that's if you even made an appointment. Health care is a fundamental right yet it is so difficult to access.

Commuting, wait times, costs, privacy and scheduling are significant barriers to accessing healthcare. Telemedicine seeks to address these problems; however, virtual appointments today diminish the quality of communication between patients and doctors.

Motivation
Expanding digital access to healthcare will increase patient satisfaction, promote patients to access healthcare, and help grow medical organizations.
- 84% of healthcare executives felt that the development of telemedicine services is important to their organizations.
- 74% of patients are comfortable with communicating with their doctors using technology instead of seeing them in person.
- 67% of patients say that using telemedicine would increase their satisfaction with medical care.

Existing solutions
- PatientAccess Mobile App

- ○ Connect patients to healthcare services (book GP appts (remote or in person), order prescriptions, explore pharmacy services, symptom information, view medical record (immunizations, test results, allergies, etc))
- ● Teladoc, DoctorOnDemand
  - ○ Patients enter symptoms before video appointment and video conference with doctors affiliated with the platform.
- ● SutterHealth Patient Portal
  - ○ Centralizes messages, health records, appointments, and billing for patients.
  - ○ Live chat support
  - ○ Example of technology behind large healthcare providers

Strengths of existing solutions
- ● Reporting symptoms is simple and can be done online by the patient.
- ● For larger providers, information like health records and past prescriptions is easily accessible in a central location.
- ● Virtual visits save patients time overall.

Gaps in existing solutions
- ● The actual virtual visit experience does not provide value beyond video conferencing.
  - ○ 41% of millennials trust physicians as the best source of health information.
  - ○ Lack of in-person communication due to virtual visits could negatively influence this already low number.
- ● Doctors cannot record patient vitals before visit
- ● Types of visits that can be conducted virtually are limited to common conditions that can be easily described and recognized (e.g. fever, allergies, flu) and addressed with a prescription.
- ● The post-visit experience is largely dependent on the information put forth by healthcare providers.
  - ○ Less than 25% of millennials agree that doctors and pharmacists give them the information they need to make decisions

Note: Our target user group consists of people trying to save time through virtual visits. This group is comfortable with technology and trusts to engage with a telemedicine platform. Thus, millenials are a key target demographic.

Goals
Existing telemedicine solutions utilize video conferencing to connect patients and doctors. Our goal is to augment the patient experience of virtual doctor's appointments and make virtual visits as effective as in-person visits by:
1. Improving virtual patient-doctor communication by allowing patients to communicate with any doctor in the language of their choice without a translator
2. Increasing the amount of patient data that can be collected to better inform doctors and allow both patients and doctors to share external information during the virtual visits.

3. Target a new use case for virtual visits by allowing doctors to demonstrate physical therapy exercises and have patients follow along with a virtual guide.

Potential Technologies

Frontend: React, react-bootstrap
Backend: Node.js, Koa
APIs: Twilio, GCP Speech-To-Text, Google Calendar, PoseNet, Fitbit
Database: Postgres
Design: Figma

Milestones - Agile Process Model

Sprint 1: 10/14 - 10/24
- Research tools / technologies
- Set up end-to-end framework
- Begin PRD

Sprint 2: 10/24 - 11/7
- PRD v1 due Oct. 31st
- Finish skeleton implementation of entire pipeline
- Have a full video conferencing app set up with authentication
- Integrate parts of necessary APIs for live appointment user stories (Google Speech-to-Text, PoseNet, Fitbit)
- Begin working on live appointment user stories and addressing blockers associated with video/audio streams
- Rough wireframes

Sprint 3: 11/7 - 11/21
- Add unit tests
- Finish integrating necessary APIs
- Fix bugs
- Work on lightweight scheduling and symptom intake form
- Continue working on live appointment user stories
- Polish UI

Sprint 4: 11/21 - 12/5
- PRD v2 due Nov. 25th
- Prototype due Dec. 2nd
- Test and finish prototype implementation