CS342/MED253 Building for Digital Health
Kidney Care

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https://cs342.stanford.edu
cardinalkit.slack.com

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About Us

Kabir Jolly 2024  
Amrita Kaur 2021  
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Project Background

- Proper outpatient care is a vital step towards recovery post kidney transplant

- This process benefits from increased opportunities for patient management/engagement through their doctor
  - This provides the opportunity for an app-based solution to navigate the post-op care process for a month (or longer) after transplantation
Need Statement

- **Problem:**
  - Over 500k patients in the US alone with kidney disease on dialysis
  - Transplantation is reported to be a better alternative, both physically and economically
  - However, non-adherence to medication regimens is a massive problem with fears of potential organ rejection and graft loss

- **Population:**
  - Those who have undergone kidney transplant surgery
  - Potential extension to any type of post transplant patient care plan

- **Outcome:**
  - Improved and effective patient engagement platform
    - Promotes and increases medication adherence
    - Allows for symptom/vital tracking, care navigation, and patient education in a centralized platform
Architectural Diagram

Frontend

Bluetooth/Peripherals

Backend

Firebase
Cloud
Firestore
Features Contributed Back to CardinalKit

- Inputting scheduled medications
  - Adding name of medication
  - Add dosage
  - Add times that it must be taken
  - Notifying the patient when it is time to take the medication
Feedback from Testers

What worked well?

- Overall Flow
  - Broken down into easy to digest steps
  - Intuitive

- Design
  - Simplicity of design
  - Interesting graphs/visuals

- Medications
  - Notifications
  - Autofilling medications

What could be better?

- Medications Tab
  - “Quantity” portion is not clear
  - Use to schedule times for BP check and other tasks

- Login and Onboarding
  - Sign in with Apple
  - Autofilling email
  - More explicit when creating a 4 digit password
  - Clarity of flow when first open app

- Schedule Tab
  - Too many modules/scrolling
  - Organize meds by time
  - Information about meds
Next Steps

- **Increasing accessibility**
  - Translating into different languages, units
  - Creating a tutorial
- **Developing progress reports** for patient motivation and engagement
  - Charting lab results, medication adherence
  - Creating reward system
  - Personalized notifications
- **Introducing provider-facing web portal**
  - Changing medications
  - Presenting and condensing patient data
- **Conducting clinical trials**
- **Creating a sustainable business model**
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