# Rosie the Health Manager

- Version MVP

- Proposed for limited release Fall 2022

## Vision and Motivation

The purpose of this release of Rosie the Health Manager is to establish a minimum viable product that can be released into the hands of actual users. By completing this release, we will

1. Give the team a target for completing internal MITRE security and privacy reviews confirming that both the front-end and back-end components provide adequate protection of users' personal data.
2. Provide an opportunity for the team to gain experience using the application and to allow others to use it and provide feedback, potentially through a limited IRB-approved pilot.

## Requirements

This section details the specific requirements for the minimum viable product, from the perspective of a user of the application. At a high-level, the requirements described below allow a user to

* create an account
* Pull in Apple Health Kit data, mostly limited to EMR records they connect to Health Kit
* Get a list of recommended preventative services recommended by the US Preventative Services Task Force based on their age, and gender as well as potentially their smoking status, whether they are currently pregnant, and whether they are sexually active.
* If the returned list includes hypertension screening, provide basic recommendations and help around screening themselves for high blood pressure on an annual basis.

### Accounts, Privacy, and Security

The data held by and accessible from Rosie the Health Manager will include sensitive health information that must be protected from un-authorized access and use. User accounts will be the primary mechanism by which an individuals information is associated with them and protected.

Specific requirements and capabilities include

1. The ability to create an account, specifying a username and credentials used to verify identify and access the account.
2. The ability to reset account credentials.
3. The ability to login with the account credentials and gain access to the Rosie application and associated services.
4. The ability to log out from the application.
5. The ability to delete and account and remove all associated data from the application and its servers.
6. Users logged in will have access only to data that their account is authorized for. This will always include their own data, and may also include that of other individuals.

### Data Sharing and Consent Management

A foundational capability of Rosie the Health Manager is the ability to share the patient's information within individuals and services that can help maintain and improve the patient's health. However, this is only done with the express consent of the patient, which they can revoke at any time.

Specific requirements and capabilities include

1. List all available potential data sources and allow the user to identify which sources they would like Rosie to access to pull in data.
2. List all available services that data could be shared with and allow the user to identify which sources they would like to share their data with.
3. The ability to grant another account access to information within this account.

Specific capabilities that are NOT in scope for this MVP, but for which non-functional buttons may exist include:

* The ability to remove a data source from Rosie, including removal of all existing information Rosie has on the patient from that source.
* The ability to restrict the information that Rosie will share with specific services or individuals.
* The ability to restrict what information that Rosie will pull from specific data sources.

### Data Collection, Input, and Services

Rosie requires a patient's health data in order to provide assistance. For the minimum viable product, the scope of data collection and service connection includes:

1. EMR records accessed through Apple Health Kit
2. Limited additional information from Apple Health Kit, including birthdate, gender, blood pressure, and potentially smoking status, sexual activity, and pregnancy flag if available.
3. User-entered data for a limited set of fields including birthdate, gender, blood pressure, smoking status, sexual activity, and pregnancy flag.
4. Sending a patient's age, gender, smoking status, sexual activity flag, and pregnancy flag ot the US Preventative Services Task Force API to get back a list of recommended preventative services appropriate for someone with those characteristics.

Specific capabilities that are NOT in scope for this MVP, but for which non-functional buttons may exist include:

* The transfer of collected information back to the original data source, e.g., a correction to a patients smoking status back to their primary care doctor.

### Care Plans and User Interactions

Beyond collecting their data into a single location, Rosie the Health Manager aims to empower patients for their own self care and to leverage their community to help care for them. For this MVP, the app will provide assistance in evaluation for hypertension.

Specific capabilities and requirements include

1. On the Care Plan screen, display a list of recommended preventative services (if consent to shared data with the USPSTF granted).
2. On the Care Plan screen, if the hypertension screening is included and there is an action to take, it will be placed at the top of the list. Otherwise, it will be filtered and removed from the list. The following actions are possible

* No action (filtered): recent blood pressure within the normal range
* Check blood pressure: most recent blood pressure more than a year old
* See a doctor: most recent blood pressure was within the past year and was in the high (see a doctor, but not urgently) or very high range (see the doctor urgently)

1. Within the blood-pressure specific screen, display visually where the most recent blood pressure lies within the range of possible values and the recommended action.
2. Within the blood-pressure specific screen, allow the user to enter a new blood pressure reading
3. Within the blood-pressure specific screen, allow the user to use the location services on their phone to find a nearby location (e.g., pharmacy) where they can take their blood pressure.

Specific capabilities that are NOT in scope for this MVP, but for which non-functional buttons may exist include:

* Get in contact with a doctor or emergency services to get immediate help
* Get in contact with a doctor to schedule an appointment

## Proposed Design and Implementation

TODO