HomeCare Team

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Project Plan

With the evaluation metrics we've created based on our project goals, we are going to keep our overall project plan as following. Currently we've finished the feature of setting up stock answers where users will be able to add and delete stock answers into the system. We are going to ask for the feedback from our stakeholder and iteratively design and develop our final product.

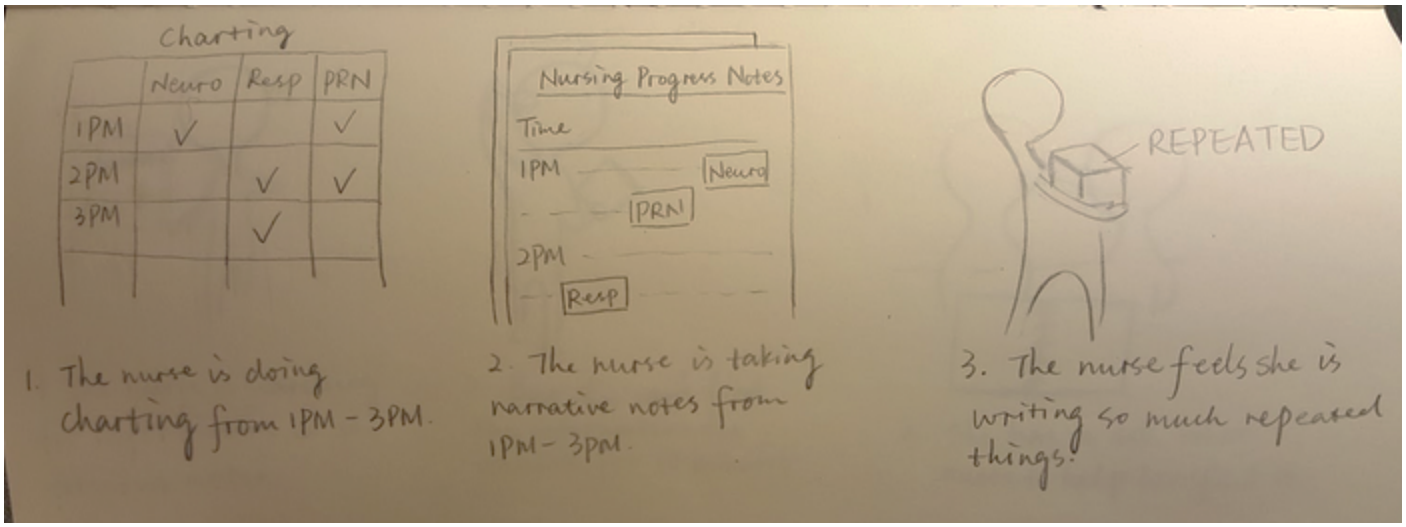
For the next step, Jeanette will be responsible for helping users document and save the patient's information. It will specifically depend on the number of failures when users try to save the patient's information in general, by body system category, and through narrative notes. Another metric will be the time period for users to document all patients' information, including charting, taking personal notes as well as narrative notes. Jiaying will be responsible for helping users recall the patient's information. According to the metrics, the details will be depend on the number of failures and time period when users try to search for patient's information in general, by a specific body system category, and within a specific time slot.

Overall, we hope to reduce the time and improve the security when users interact with the technology to perform a task, which improves the efficiency of the overall homecare process.

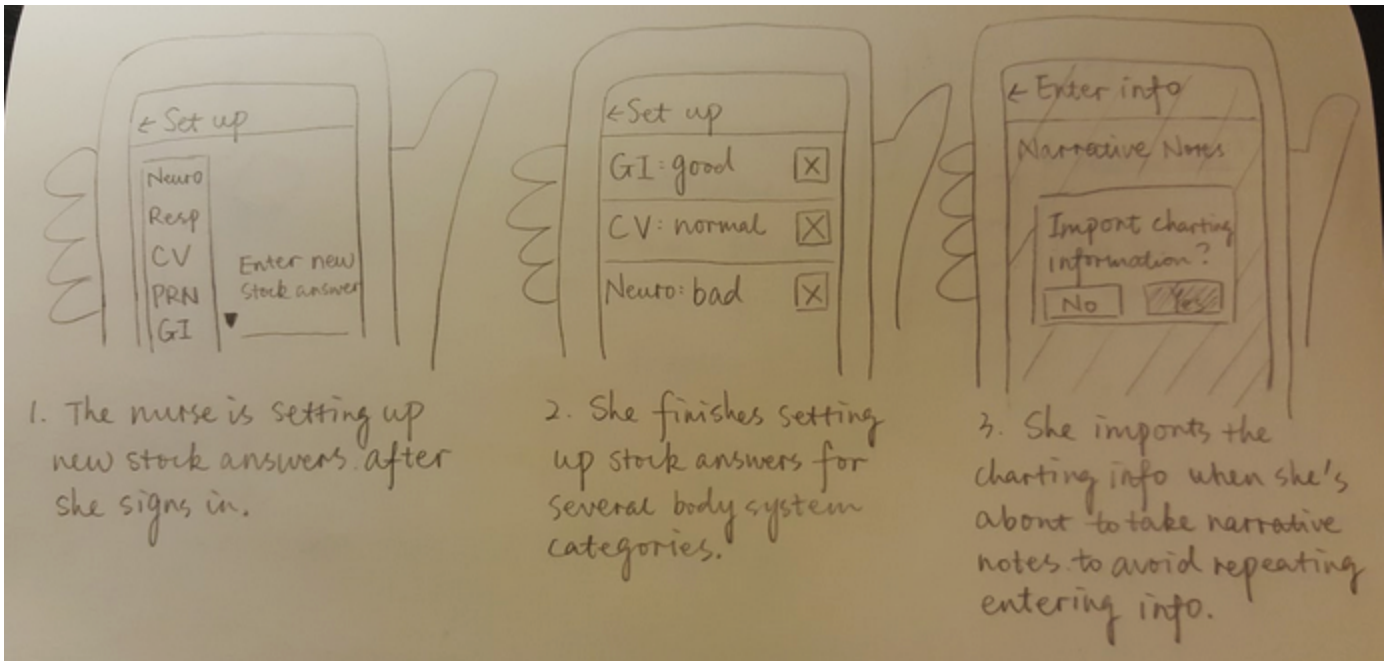
Storyboards

Situation 1

Before: The nurse feels she is doing so much redundant work when doing charting and taking narrative notes.

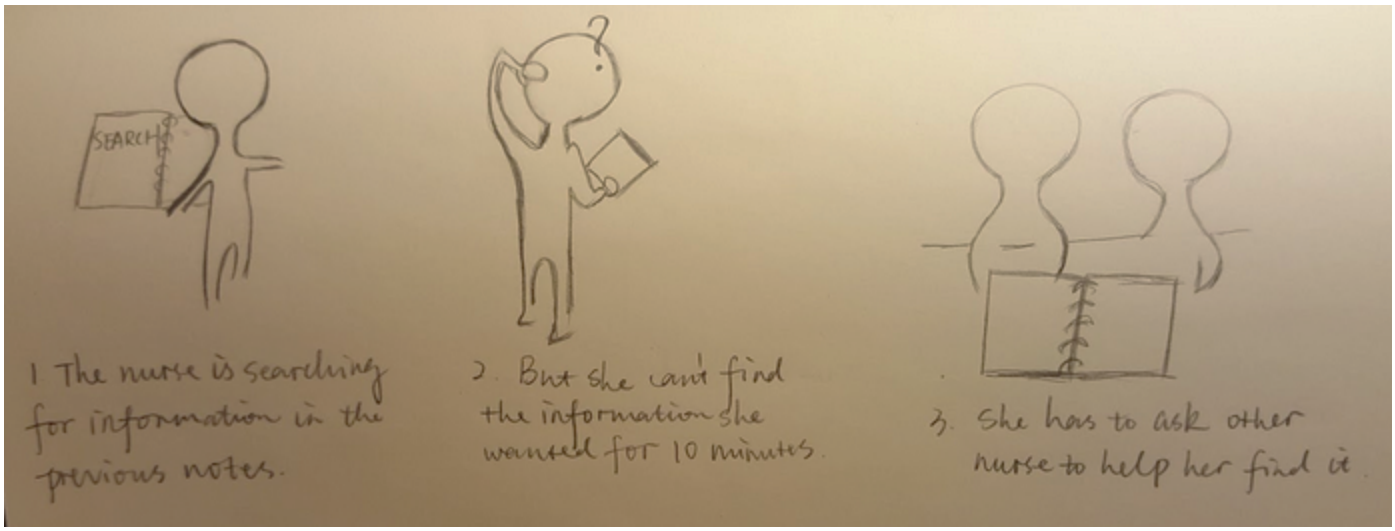


After: The nurse can choose to import the charting information that she has set up before when she is about to take the narrative notes, which avoids her entering the same information multiple times.

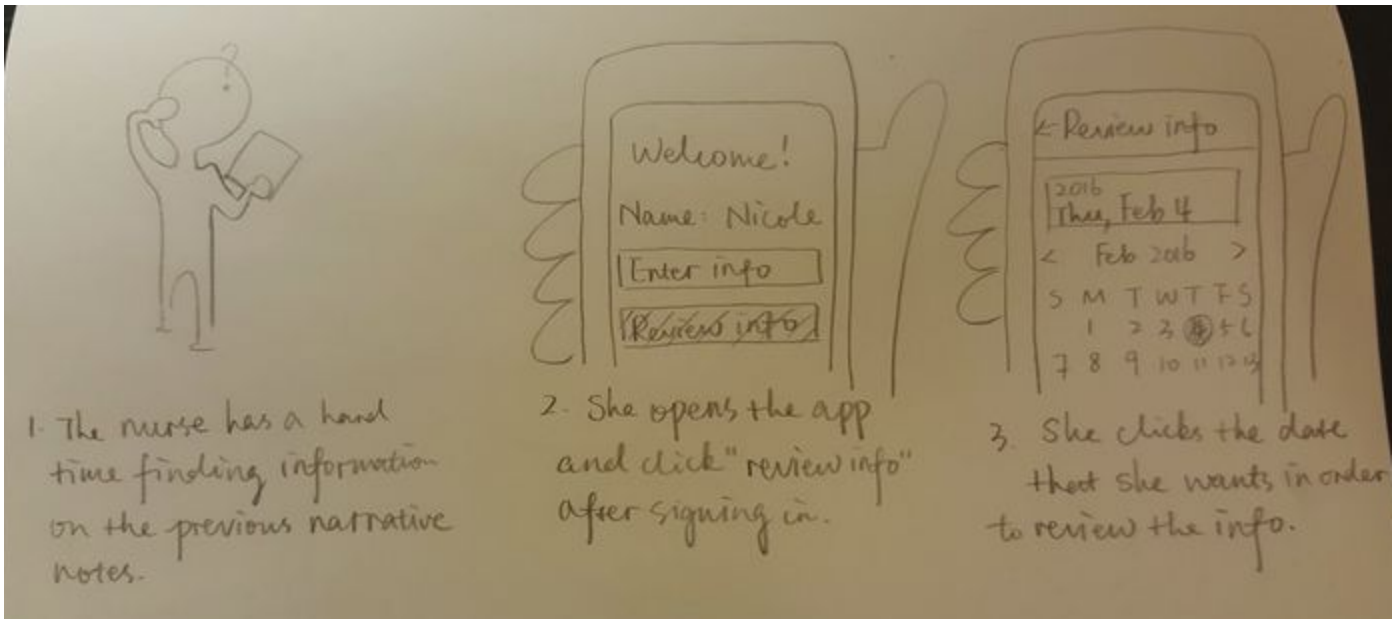


Situation 2

Before: The nurse has a hard time searching for information on the previous notes.

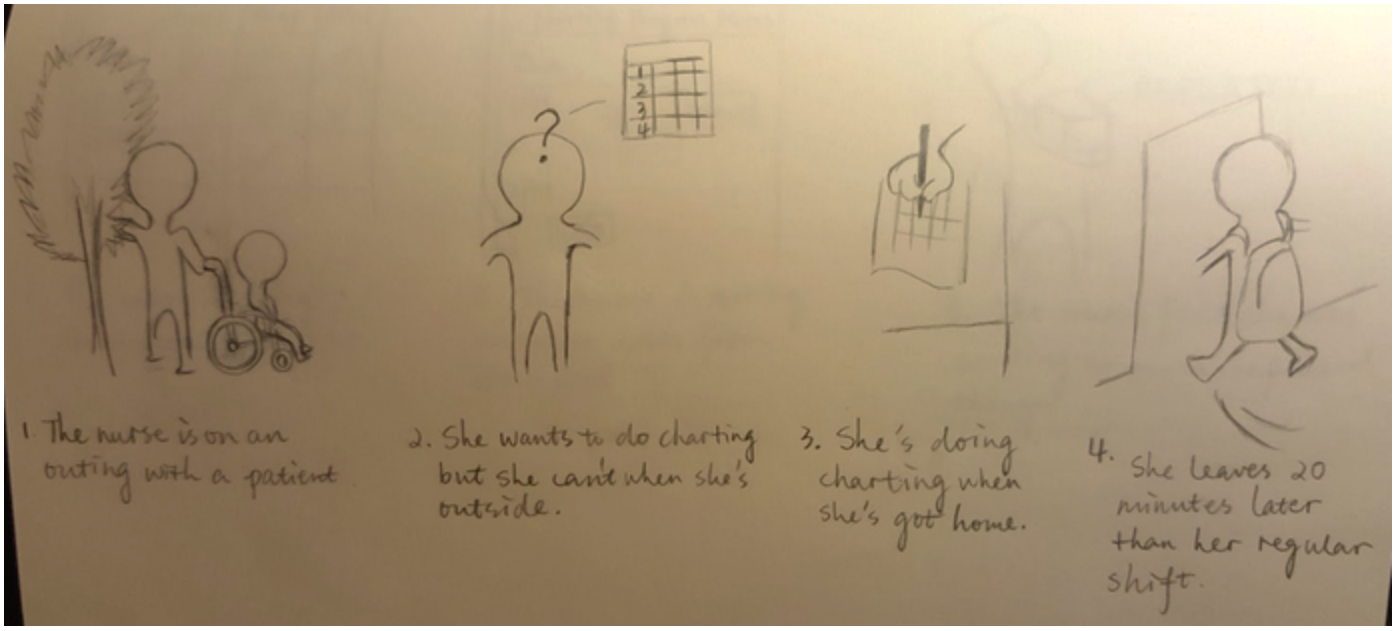


After: She is able to review the notes on the specific date that she chooses on the app.

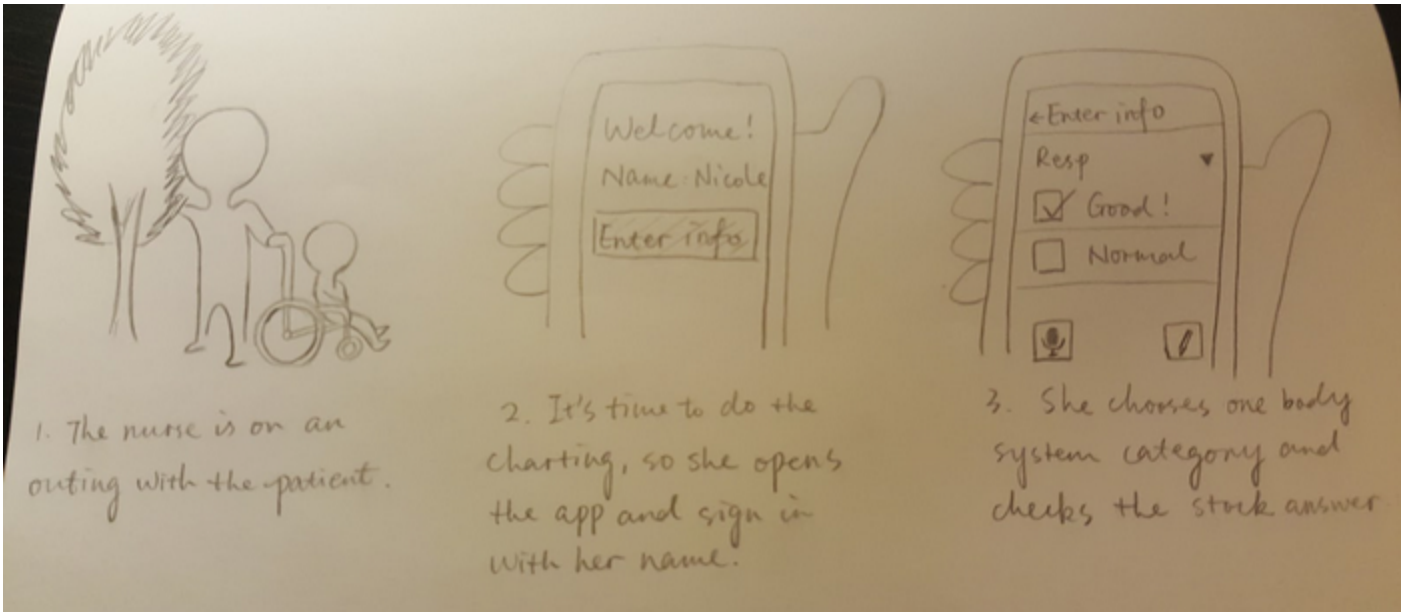


Situation 3

Before: The nurse is unable to take the narrative notes when she is on an outing with the patient, so she has to stay past the regular shift to finish the notes.



After: She just needs to spend a few seconds to click the checkbox of stock answers for the charting when she is on an outing with the patient.



Technical Specification

Define Project Goals

- Saving the patient's information (in charge: Jeanette - 1 week)
  - The users assess the patient first and gather his/her information.
  - The users open the application on an Android device.
  - The users add the patient's information to the system.
    - The users can use checkboxes for stock answers.
    - The users can use typing or voice recognition for free text input.
  - The users save the patient's information by clicking the save button.

- Recalling the patient's information (in charge: Jiaying)
  - The users open the application on an Android device.
  - The users enter the desired time block.
  - The users request entries from the database by clicking a button.

The *Set Up* has been changed from adding a new patient to the system to managing the stock answers provided by the system. This decision was made mainly due to time constraints. If we have enough time left, we consider adding medication charts and patient diagnosis to the system.

- Managing stock answers (in charge: Jeanette - 1 week)
  - The users open the application on an Android device.
  - The users can save a new stock answer by body system by clicking a button.
  - The users can delete an existing stock answer by clicking a button.

Define the system architecture/infrastructure

This is an android application that is based on several activities providing the necessary functionality to the user. We provide a short summary of each activity and which functionality is provided.

MainActivity contains a login feature and three buttons: Enter information, review information and set up stock answers. In order to proceed to enter/review information or set up stock answers, the user must first provide their initials or name. This activity serves as the application's home screen.

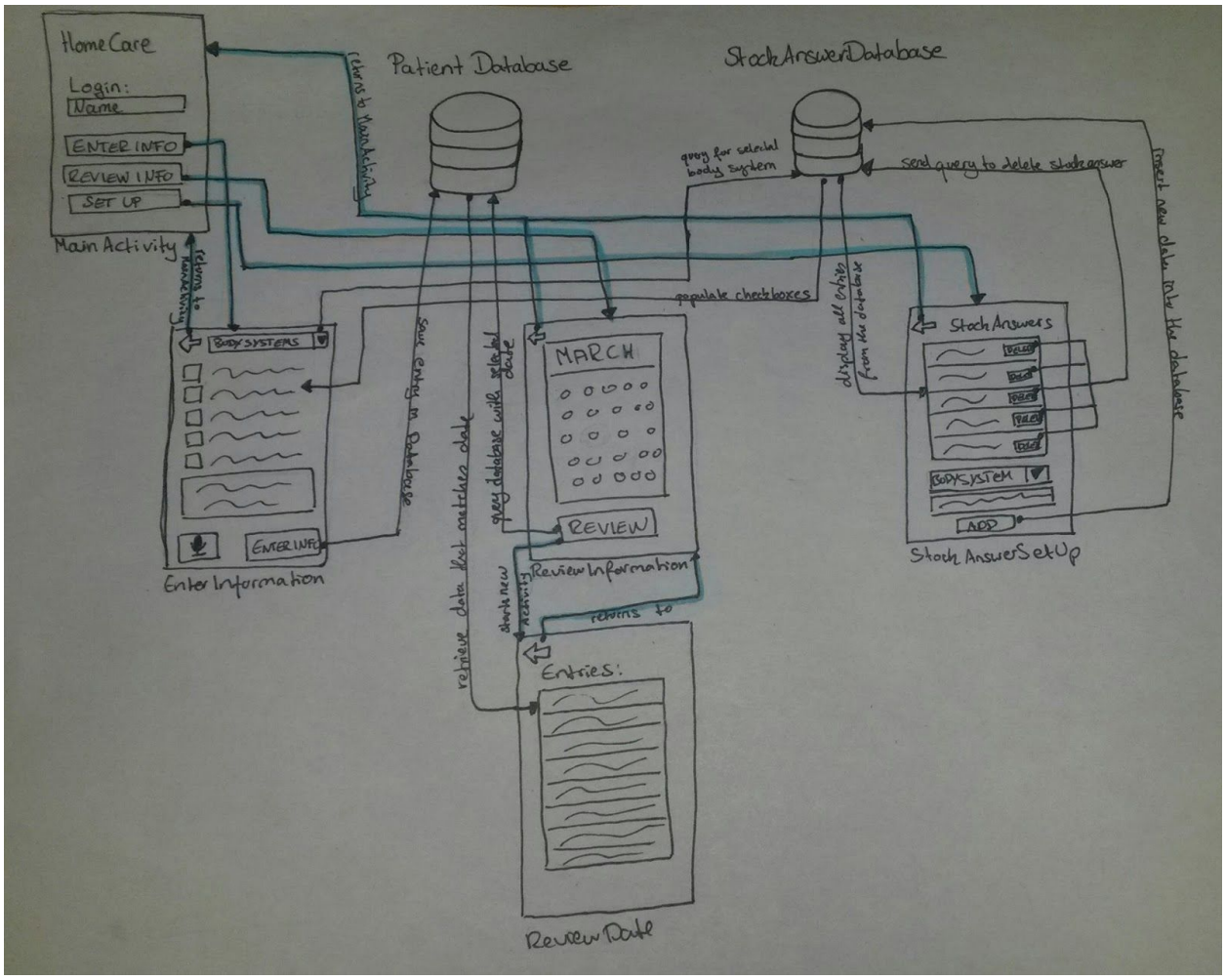
EnterInformation shows a list with checkboxes that contains the stock answers stored in a local database for the currently selected body system. If the desired information doesn't show up in the checkboxes, it also allows one to enter a new note by choosing a certain body system and typing or using voice input to save the condition and information about this body system.

ReviewInformation first lets the user choose a date to start and end a specific time block. After the review button is clicked, it will retrieve all the information stored in the database during that time period.

ReviewDate serves to show the information retrieved from the database for a specific time block.

SetUpStockAnswer allows one to manage stock answers by first choosing a body system and then write down the information about this body system. These stock answers will be stored in a database, and will show up in list of checkboxes when the user enters new information in *EnterInformation*. If a certain stock answer is no longer wanted, one can delete this stock answer from the database by simply clicking the delete button.

Define the user dialogs and the control flow



Define the database model

Database "*Patient Information*"
In order for a user to save the patient's information and later on recall this information, we need a database. This database should store the nurse's name, their notes, as well as the corresponding body system and the appropriate time stamp. We are using SQLite to manage the database in our android application. We show how the database is structured with two example entries:

ID	NurseName	Body System	Notes	Time
1	Anna	Neuro	Patient is asleep.	1/13/2016 10:00PM
2	Kate	Integ	Zero changes	1/14/2016 9:30 AM

Database "*Stock Answers*"
We want to reduce repetitiveness by allowing the user to select stock answers. These stock answers are predefined by the user and categorized by body system. The user can always add or delete a stock answer. We are using SQLite to manage the database in our android application. We show how the database is structured with two example entries:

ID	Body System	Stock Answer
1	Neuro	Patient is asleep.
2	Pain	Tylenol administered.

Define the non functional requirements

The response time for this application is very fast. It only takes less than a second for this app to start and it takes a small amount of time to load each page. The data processing (e.g. the list of stored information on EnterInformation page after selecting a body system) depends on the amount of data stored in the device, and normally it should take at most few seconds to load.
A nurse is currently spending up to 45 minutes on the narrative notes. Our goal is therefore to reduce this time to around 15 minutes. We consider this time frame to be realistic as the nurse still has to log the information during their shift as well as write down the final notes on paper at the end.

The data inputted is stored locally, which is only limited to the device of each patient. It has better privacy since it doesn't involve possible data sharing through cloud. Since we store the data in a database on the device, we can take advantage of search queries and the nurse or family will be able to find important notes much faster than searching through all the paperwork. We hope to lower the upper bound of 5 minutes to under 1 minute if the time block is known beforehand.
Using voice input to enter new information is only available when the device is connected to the internet. Besides the voice input, other features are available at any time and any location. The flexibility our app provides should enable the nurse to chart in every situation, therefore allowing them to leave their shift on time and reduce the number of occasions a nurse was not able to take notes.