

# High-level Requirements

1. Users must be able to actively see dynamic and static data of the patients in their department
  - a. Patients displayed on the news feed will have dynamic vital data display next to their icon as well as important static data
  - b. If the user clicks on the patients icon on the newsfeed, the user will go to that patient's profile
  - c. Users must be able to change some of the static data for each patient
2. Users with the position of a doctor must be able to create and update standing order for patients
  - a. Nurses cannot update or create standing orders, only view.
  - b. Doctor's order is based on the condition of the patient and it can only be changed by the doctor.
3. Doctors will be able to assign a nurse to the patient, other users will only be able to view the active nurses, but not assign them.
  - a. The nurses tend to switch according to their shifts, and their availability so the feature is set for the doctor of the patient.
  - b. The doctor can pick the nurse and assign it to the patient based on the availability and condition of the patient.
4. The patient will have a triage tag based on the health and condition.
  - a. The triage tag is important for the users of the application to see how the patient is based on the color of the tag. All users will be able to see the condition.
  - b. **Black** (Expectant) - Pain medication only, until death, **Red** (Immediate) - Life-threatening injuries **Yellow** (Delayed) - Non-life-threatening injuries, **Green** (Minimal) - Minor injuries
5. The application will alert all users signed in their department if a patient's status get critical.
  - a. This feature will be shown in the live feed. The patient's icon on the feed will automatically turn bright red and the information on the condition of the patient will be updated in the data field of the patient.
  - b. For example, if a patient's heartbeat rose and is high compared to their average, then the icon will turn bright red to alert the users.
6. The live feed will be separated into three different departments to distinguish the patients.
  - a. There are 3 departments for the patients to be categorized in; infants, post operation, and general care.
  - b. Users will have a specific department password which will let them view that departments patient feed.
7. The live feed will have a filter feature that will let users filter viewed patients on their feed.

- a. The filter can give the user way to check certain patients based on their condition. For example, if a nurse wants to check who has the Black tag, they can have a live feed of patients with those tags.
- 8. The users of the application that are considered hospital personnel ( doctors, nurses, and receptionists) will be able to direct message one another.
  - a. The feature will give users with their account to message one another directly through the app. If they want to get their message across the hospital to someone, they can without having to meet the other person in person. This way communication is fast and can be deemed helpful in times of emergencies.
- 9. All users will need to create an account by setting the username and given the department password to use the application.
  - a. The account is going to be given certain rights to the users based on the position and role of the user.
  - b. Doctors will be able to give more rights such as the standing order and to assign nurse to the patient.
  - c. Nurses can change tag, create and edit patient info.
- 10. User can “chart” patient data directly into the app, charts are logged by date and patient.
  - a. The entries will be charted and saved to be viewed later.
  - b. Users can also check the chart history to view the change in details and the patient’s history

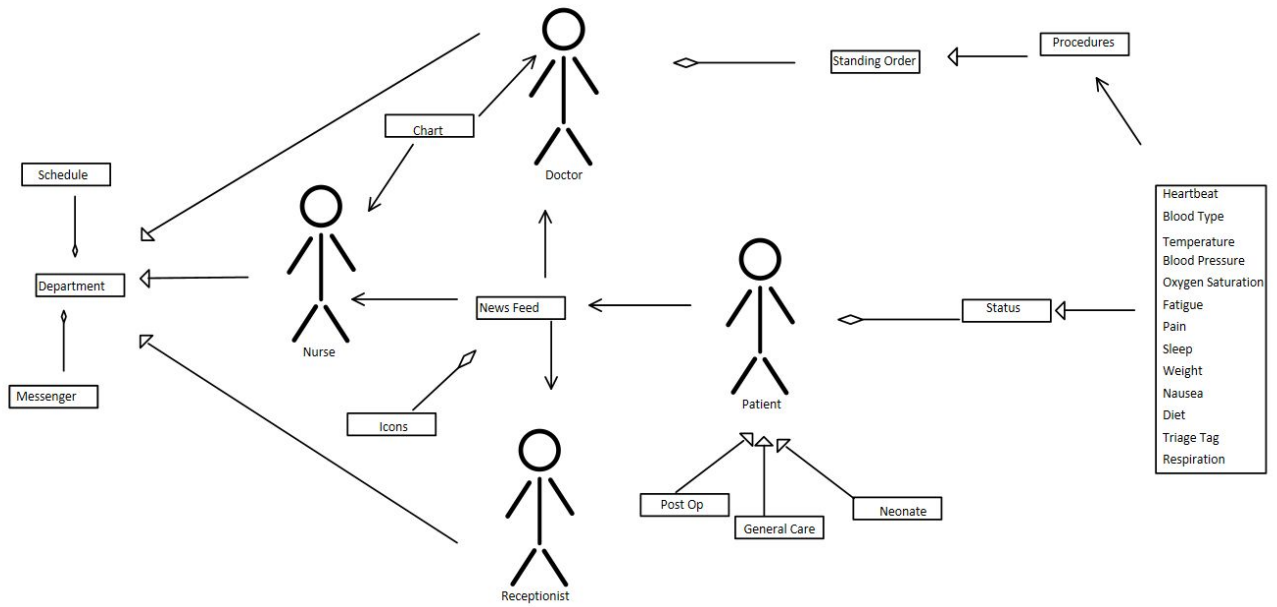
# Domain Model

## Patient Monitoring System

### Initial list of nouns/phrases

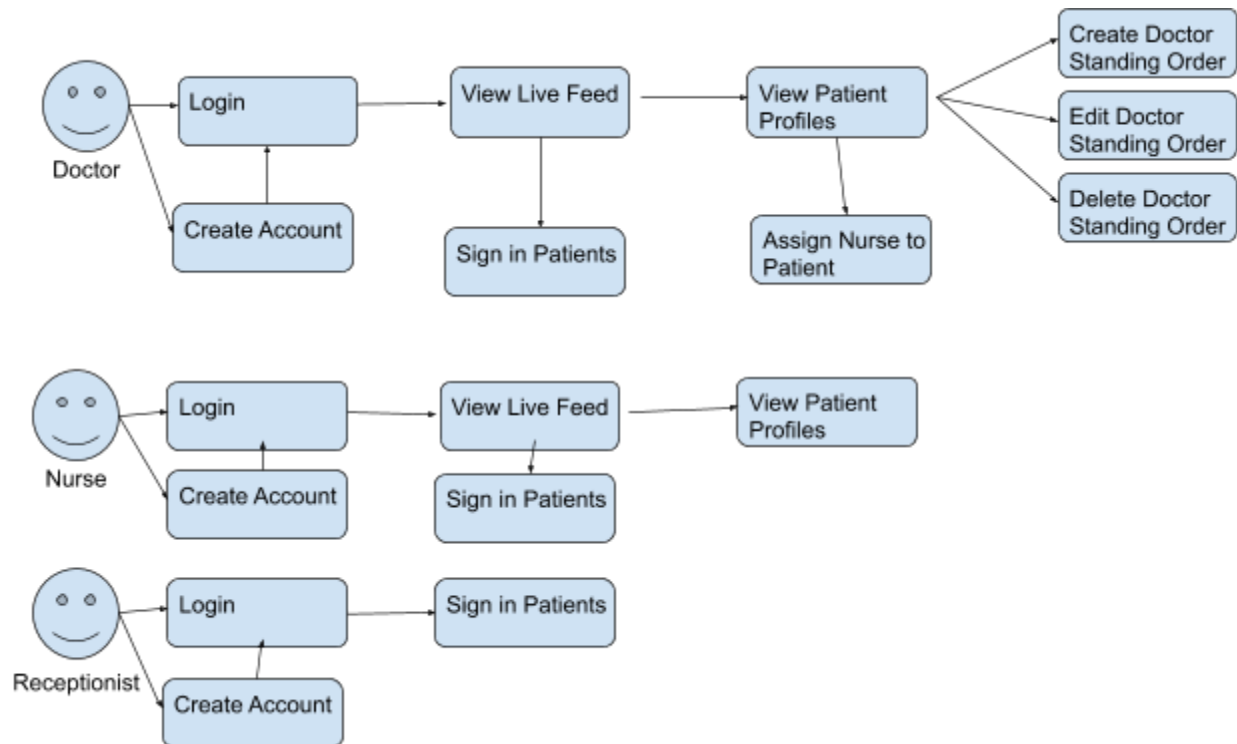
- Patient
- Doctor
- Nurse
- Receptionist
- BP
- Oxygen Saturation
- Heartbeat
- Temperature
- Pain
- Sleep
- Diet
- Respiration
- ECG
- Nausea
- Fatigue
- Vomit
- Triage Tag
- Standing Order
- News Feed
- Neonatal
- Neonate
- Weight
- Blood Type
- Procedure
- Schedule
- Chart
- Messages
- Alert
- Critical condition
- Infant
- General Care
- Post Operation
- Filter
- Resting Heart Rate
- Active Nurse
- Department
- Patient Icon

# Domain model diagram



# Use Cases: Patient Monitoring System

## USE CASE DIAGRAM



### User assigns nurse to patient (Alphonso)

#### BASIC COURSE

The user (Doctor, nurse) will login in with their account credentials and enter the patient feed page. The user will click on a patients' icon and go to that patients' profile. Within the patients' profile the user will click the "Assign Nurse" button, if a patient does not currently have an active nurse the user will choose a nurse within the Nurse Selection Page and assign that nurse to that patient.

#### ALTERNATE COURSES

**User attempts to assign nurse to patient who already has an active nurse:** When a user attempts to assign a nurse to a patient who already has an active nurse, an error message will be displayed to patients' profile page saying "Patient already assigned nurse, remove nurse to add another active nurse". The system will not allow the user to do this until the current active

nurse is removed from that patient.

### Create Doctor Standing Order (Charles)

#### **BASIC COURSE**

A doctor on the live feed page clicks on a patient's icon, then the system displays that patient's patient profile. The doctor enters text for a standing order and clicks submit, then the system checks if the text is empty or greater than 1MB. If not, the system updates the standing orders and patient profile.

#### **ALTERNATE COURSES**

**Doctor attempts to create a blank standing order:** If a user attempts to create a blank standing order, the system displays an error page.

**Standing Order text >1MB:** If a doctor attempts to create a standing order with more than 1MB of text, the system displays an error page.

### Sign In Patients (Sean Todd)

#### **BASIC COURSE**

Application checks if a user is logged in. Application prompts the user to enter the patient's first name and last name, description, resting heart rate, height, and weight in text fields and select triage tag via drop down menu. Patient's first name, last name, description, resting heart rate, triage tag, height, and weight are then stored in the database.

#### **ALTERNATE COURSES**

**User is not logged in:** Application displays error message and sends user to log in page.

**Any field left blank:** Application displays error message prompting the user to enter text into empty field(s).

**Triage tag not selected:** Application displays error message prompting user to select triage tag.

## Creating an account (Dhruvil Joshi)

### **BASIC COURSE**

The application will require the user to login or sign up in order to use the account. When creating the account, the user will be asked the hospital, name, position/role, username, email, and the employee id if they work at the hospital. After creating the username, they can use their given department password which will give them access to the live feed of the department.

### **ALTERNATIVE COURSE**

**User creates a new account with the same email:** Application displays an error message to prompt them to use a different email or login with that email.

**If any field is left blank:** Application displays an error message and prompted to enter text in all fields.

**If the username field is taken:** Application displays an error message and prompted to enter different text.

**If a field is not selected from the drop-down menu:** Application displays an error message and prompted to select an entry for the specific field.

## Direct Messaging (Logan Kollar)

### **Basic Course**

The application allows accounts to message one another directly through the app. This is universal amongst the departments as this allows information to be passed quickly in case of an emergency. A filter is used to speed up the process of finding another user.

### **Alternative Course**

**User not found:** If the person they are trying to search does not exist within the database then an error message will be displayed informing the user of this.

**Not Logged in:** Program displays log in page