

## Solution to Provide Quality Drugs at Cheaper Prices

### Problem Overview

One of the major problems in health care industry is the sky-rocketing prices of various drugs prescribed to the patients by the doctors due to which many patients are not able to afford these drugs and they are left with no choice other than to give up on the treatment. The solution that I am proposing aims to provide the same quality drugs at cheaper rates to patients so that they don't have to choose between groceries and prescriptions.

### Application Key Functionalities

1. Creating a network of users (doctors & patients), compounding pharmacies and feedback mechanism working together to lower the cost of a particular drug
2. Doctors & Patients can create a work request to share the drug they want to be formulated
3. Compounding Pharmacies can pick up a work request from a doctor and start the research on how to manufacture an alternative formulation to the drug
4. Compounding Pharmacies can pick up a work request from a patient and start manufacturing an alternative formulation at a cheaper price
5. Compounding pharmacies can raise a work request to inspect a formulation that has been manufactured
6. Inspection organization can pick up a work request and start inspecting the formulation for bioequivalence to the existing available drug
7. Once inspection is completed, the inspection organization can create a work request to start the delivery process of the formulation to the patient or send back the formulation to the manufacturer/research organization in case the inspection fails
8. Delivery organization can intimate the subscribed patient with SMS about the delivery updates
9. Doctors and Patients can respond to feedback form sent via SMS to the Compounding Pharmacies Enterprise about the formulation so that the necessary changes can be made

### Project Entities

1. System Administrator
  - a. Create a Network
  - b. Create **User History Enterprise**
    - i. Creates user history admin and provide login credentials
  - c. Creates **Compound Pharmacies Enterprise**
    - i. Creates admin for the enterprise and provide login credentials
2. Enterprise Administrator
  - a. User History Administrator
    - i. Creates doctor and patient organization
    - ii. Creates feedback mechanism for users
  - b. Compound Pharmacies Administrator
    - i. Creates manufacturer, research, inspection and delivery admins
    - ii. Provides login credentials to each organization
3. Organization Administrator
  - a. Doctor Organization
    - i. Raises a request to compounding pharmacies enterprise to start research about formulation of a drug
    - ii. Accepts request to provide feedback about the formulation
  - b. Patient Organization
    - i. Raises a request to compounding pharmacies enterprise to order a formulation by uploading the doctor's prescription
    - ii. Accepts the request to provide feedback about the formulation

- c. Manufacturer Organization
  - i. Accepts the request to manufacture a formulation for a particular drug asked by the patient
  - ii. Raises a request to inspect the formulation
- d. Research Organization
  - i. Accepts the request to start researching about how a drug can be formulated. The request is raised by a doctor
  - ii. Raises a request to inspect the formulation
- e. Inspection Organization
  - i. Accepts the request to inspect a formulation. The request can be raised by either manufacturer or researcher
  - ii. Raises a request to either deliver the formulation or make changes to formulation
- f. Delivery Organization
  - i. Accepts a request to deliver a formulation to the patient/doctor

### Ecosystem Architecture Diagram

