

# THE SMART DRIP MANAGEMENT SYSTEM

GROUP 10 :

- Anshul Bhardwaj
- Akshar Gabani
- Abhishek Soni
- Aman Gupta
- Akshay Naresh Ochani
- Shardul Tadaskar
- Vansh Pathria

Prof. Zivan Ezhil



# Outlines

1. Problem Statement and Objective
2. Proposed Solution
3. Project Scope
4. Assumptions
5. Interface Design
6. Diagram
7. Business Model
8. Out Of Scopes
9. Credentials



# Problem Statement and Objective



## Problem Statement

Hospitals have a large infrastructure, but taking care of such a large number of people can be challenging due to the current pandemic, with over 1 million Americans lost their lives in COVID-19. If there are patients in every room in such a large hospital, it is a problem. To remember every drip or IV the patient receives is challenging for nurses.

## OBJECTIVES

- Enhanced precision: By integrating latest optical technology, which is primarily used for keeping a track on drip speed, level, and completion.
- To streamline the process of recording, reporting, and analyzing patient's data.
- To monitor IV drip parameters to maintain safety and health.
  - Remote patient monitoring would enable medical professionals to keep an eye on patients while they are receiving care, allowing for shorter response times in the event of difficulties.

## Proposed Solution

- The purpose of this project is to create a drip/IV management system that can be used in clinics, hospitals, and other healthcare settings to enhance patient treatment and safety.
- Sensors and alarms will be built into the system to notify medical professionals of any deviations from the recommended doses or rates and to identify any foreseeable problems, such as air bubbles or occlusions in the IV lines.
- User-friendly interface will make it simple for healthcare professionals to enter patient data, handle fluid and medication orders, and keep track of patient progress.
- In order to aid healthcare professionals in making wise choices about patient care, the system will also include features for data analysis and report generation.
- To ease clinical workflows and enhance patient safety by lowering the risks connected with manually managing drips and IVs.

# Project Scopes

- By monitoring the drip speed and real-time drip completion progress, the project aims to have immediate care to the patient improving patient safety and at the same time make life of hospital staff easy.
- The system will be integrated with the hospital's electronic health record (EHR) system, enabling medical personnel to access patient history and drug consumption.



- Analytics and reporting features will allow tracking of dosage administration and monitoring of IV status
- With the use of mobile alerts, the system will be able to alert medical professionals via their mobile devices if there are any problems with the administration of medication, such as leakage detection or an empty IV bag.

## Assumptions

- Regulatory compliance
- Availability of hospital infrastructure
- Compatibility with hospital EHR system
- No major technical issues
- Availability of trained medical staff
- Accurate patient history and dosage information
- Patient cooperation

# Interface Design

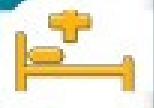


# Interface Design



Occupied Rooms **56** 

Room No.	Patient Id	Patient Name	Doctor Name	Dose Name	Drip IV Status
101	1235693	Akshay Ochani	Dr. John Daniel	Ibuprofen	56 %

**Home** 

**Doctors**

**Nurses**

**Indoor Patients**

**Rooms**

**Reports**

**Billing**

# Interface Design



## Reports



Room No.	Patient Id	Patient Name	Doctor Name	Test Conducted	Action
101	1235693	Akshay Ochani	Dr. John Daniel	Blood Test CBC	Generate Report

**Home**

**Doctors**

**Nurses**

**Indoor Patients**

**Rooms**

**Reports**

**Billing**

# Interface Design



Home

Doctors

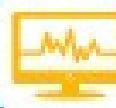
Nurses

Indoor Patients

Rooms

Reports

Billing



Available Doctors



Total **22**

Available Nurses



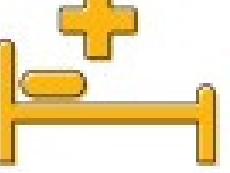
Total **107**

Indoor Patients



Total **3,075**

Occupied Rooms



Total **56**

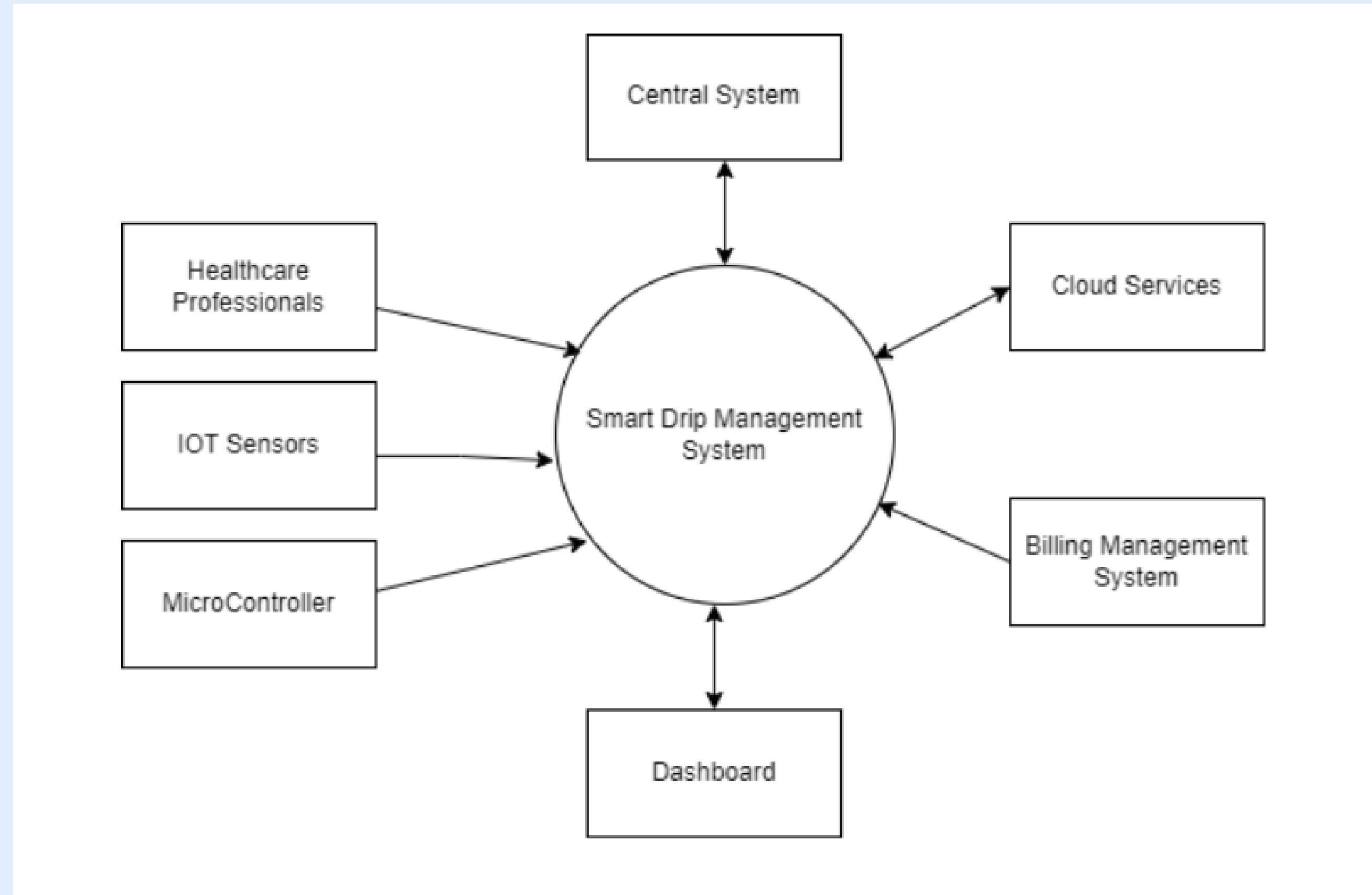
Reports



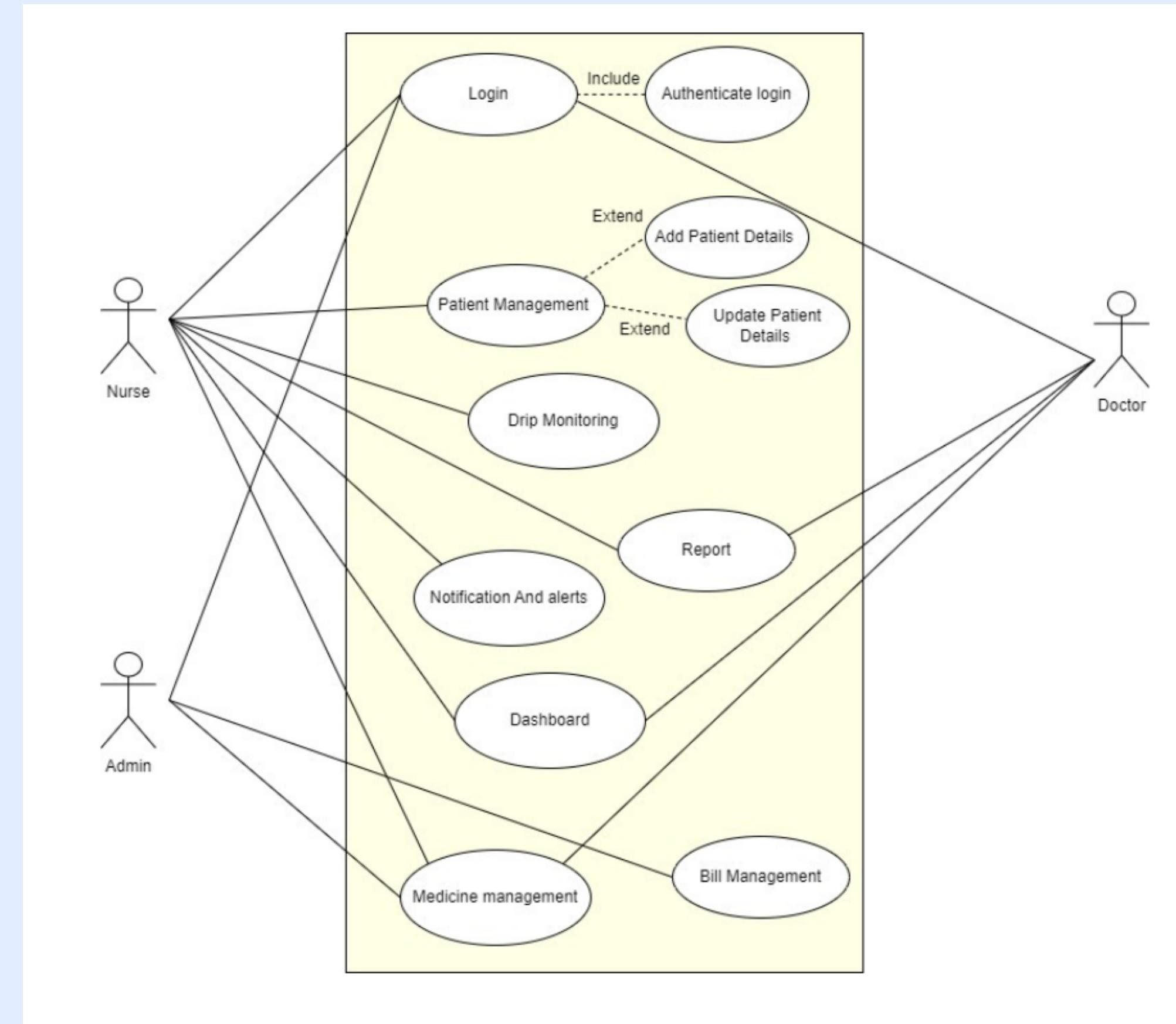
Billing



# System Context Diagram



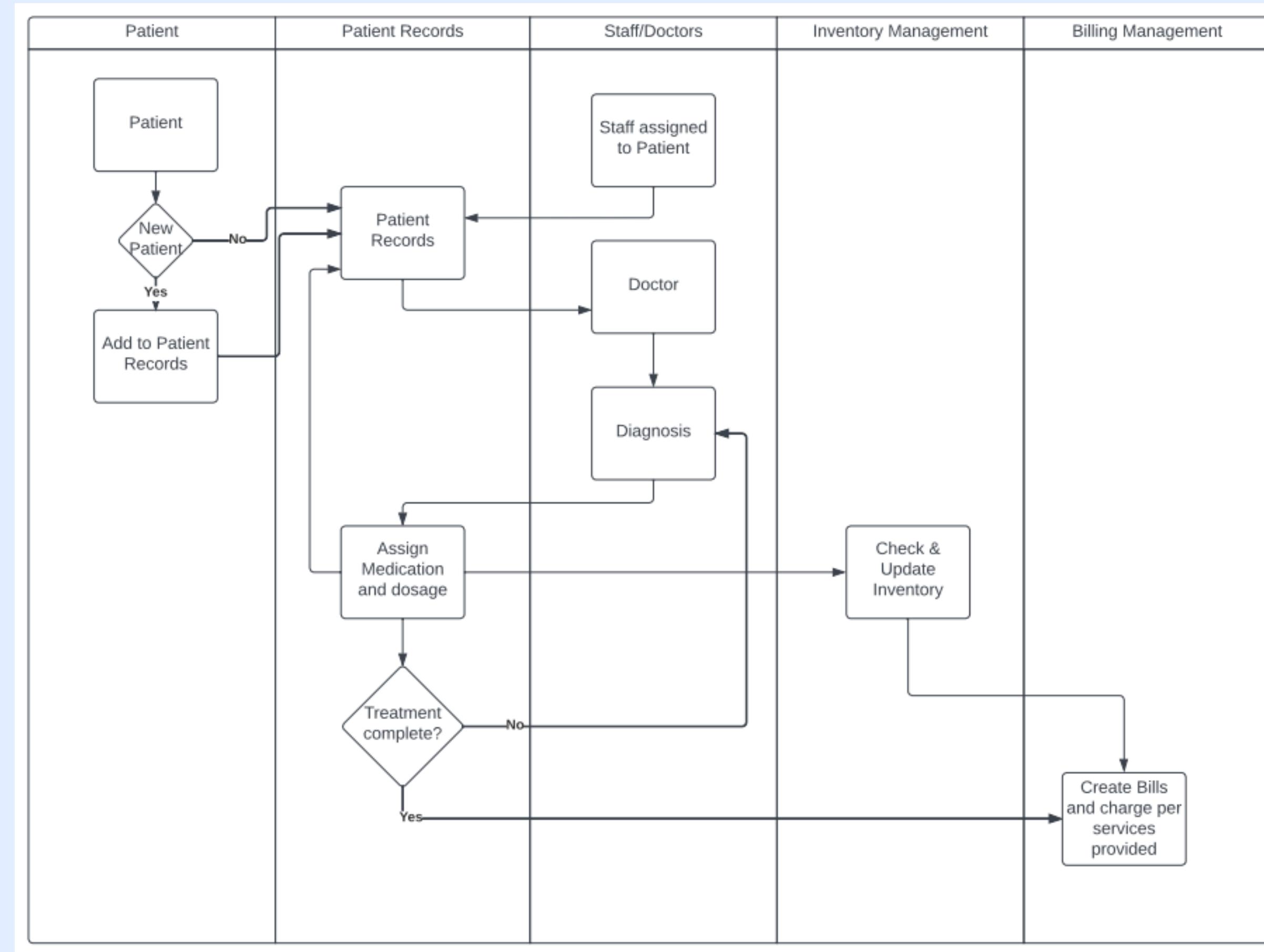
# Use Case Diagram (Drip Management)



# Use Case Diagram (Administration)



# Business Model



# Credentials

- Integration of optical sensors
- A user-friendly interface
- Gather information
- Alert system
- Possibilities for remote patient monitoring
- Data security
- Electronic health records
- Training and support



## Out Of Scopes

- Diagnosis or treatment of medical conditions
- Medication administration
- Monitoring of vital signs
- Patient safety outside of treatment
- Patient positioning
- Power supply
- Heart monitoring

# Thank You