**Medicine Organization System**  
Project 1 - Proposal  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
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Purpose

The Medicine Organization System (MOS) will help doctors and nurses administer medication, create medication schedules, and track drug severity. The MOS will help to ensure that patients safely receive the medication they need. The MOS will do this by requiring multiple steps to check the medicine details accurately match the prescription and schedule. Doctors and nurses will use the system to communicate information accurately and immediately. The goal for the final product is to share instant and accurate information. Any errors made during the process will be caught before they can harm the patient.

Scope

The MOS will allow doctors to log in using their ID and create a schedule of patients and their needed drugs. The MOS will contain a database of drug barcode numbers, drug names, severity colors, and general drug information. The MOS will allow the nurses to log in using their ID and enter the patient ID for whichever patient is in need. The system will use the nurse and patient ID to find the drug needed for the patient and the time it should be given. The system will check the scanned barcode in the database and compare it to the drug the doctor assigned on the schedule for each patient. If correct, it will log the patient ID, nurse ID, doctor ID, and the time the drug was scanned. If incorrect, it will prompt the nurse to retrieve the correct medicine using the correctly colored label and recheck the barcode to make sure it is accurate. The system will not alert nurses if a drug needs to be given and has not yet been scanned. It will use the hospital's drug database to verify barcodes. It will not retrieve the medicine for the nurse or change any wrongly assigned barcodes in the database. The database will consist of drug names, their barcodes, and a severity color label and should not be changed throughout the process.

Rationale

One major issue in medical administration is medical errors resulting from worker mistakes of administrating the wrong drug to a patient. To address this issue, this system has the nurse enter both their ID and the patient's ID and then scan the drug to see if it matches the patient's prescribed medicine. Along with recording data pertaining to the drug and patient, such as administration time. Providing this level of information lessens the chance of medical error due to mixing up medications or administering combinations of medicines that are harmful together. This system can also reduce the potential cost of harmful errors.

Major constraints

The system must require access to the databases that contain nurse IDs, patient IDs, doctor IDs, patient logs, and drug information. The system cannot change any information in these databases if any information is incorrect. The system’s retrieval speed of drug information will be based on the database's size, the hardware, and the software used to host the database. This same limitation will affect the retrieval of nurse IDs and patient IDs. Since the manner of scanning the drug is new, training will be required for full, efficient use. The type of language used to code this software will be limited to languages compatible with the current computers used within the hospital. The MOS cannot be used outside the medical setting, as it is designed specifically for medical use; however, other medical facilities could use it if appropriately designed. Depending on the model we use, we may need the requirements for the system upfront. The technology used for this project will also be based on the budget for this project.

Definitions

* MOS – Medicine Organization System
* ID – unique numbers used to identify Doctors, Nurses, and Patients.
* Color Codes, Severity Color, Color – colors on medicine labels to communicate severity and other information about the medicine.

References

Leap frog hospital survey. Barcode Medication Administration <https://ratings.leapfroggroup.org/sites/default/files/2020-08/2020-BCMA-Fact-Sheet.pdf>