Medical Center Management System

Questionary for study the system

Analysis of current System

1. What is the current system for this process? (Computerize or Manual)
2. What is the process? (Briefly explain A to Z about the current system)
3. Who are the actors in Current system? (Persons)
4. What are the draw backs of current system
5. What are the backup options do you have on current system
6. How do you analyze the information you currently receive? What type of data is used?
7. How do you currently get the data?
8. How often do you get new data ?

Recognized problems

1. Available payment methods(online/cash/card)
2. How much patient historical information is required
3. Who will be using the system? What are their levels of expertise
4. What are the titles and roles of the people who will use the system? What are their levels of expertise
5. Once the project is ready, Who or Which team will report, analyze and maintain the system?
6. Who is responsible for performing a maintenance task? Explanation: Who is involved? Which partner functions do they have? How are they represented in the system?
7. Do you print notifications?
8. Do you want to archive notifications? If so, provide a copy of your document archiving policy. If this is not available, please describe specific archiving requirements
9. How do you want to plan special tools, documents and so on, which are required to execute maintenance activities?
10. Is it necessary to determine if a person is available to do a task? (If yes, considerusing employee shift scheduling.
11. What are your goals in developing this system?
12. what are the special offers/ privileges given for regular patients.

Confidential Info

1. Are there any confidential details to unexposed to others (patient medical history is confidential)
2. Is the data and/or functionality shared with other (many) section? If so, which?
3. Do you have to do things manually that you would like to automate? (Admin)

Objective

1. What do we need to accomplish to make this project successful.
2. What are the expected financial returns of this project?
3. Do you want to assign individual operations to particular people.

Expected New System

Features of expected new system

1. Display what are the special offers/ privileges given for regular patients
2. how to notify /inform the next clinical day of the patient
3. Reminder of the next medical reports
4. automation of the charges of the medical
5. stock management of the drug at pharmacy area
6. update the doctors' recommended prescription of medicine on user profile and share it with the pharmacy.
7. Automated visible graphical icons/ graphs to analyse the patients history as summary in his profile Interface
8. Update the doctors profile, which subject areas are they specialize and the qualifications.

Current System

At present fully manual system use to handle the medical center. In this Medical Center, there are doctors, nurses, a pharmacist, lab technicians, and a receptionist. The medical center maintains clinic record books for children under 12 years of age, keeping them in the reception area. When patients come to visit the doctor, nurse select the patient's book and give it to the patient to take it to the doctor. Then the doctor updates the medical status and writes the prescription for medicine. However, adult patients don't have any kind of clinical history report readily available.

Adult patients who come to this medical clinic need to verbally communicate their medical history, or they can bring their past medical reports to the doctor. Analyzing the medication history of patients in this manner can be challenging for both parties.

The nurse measures the BMI of every patient before they visit the doctor. After the doctor's examination, the doctor writes the prescription for medicine on paper. The prescription is then given to the pharmacist, who dispenses the medicine and handles the payment process. If a particular medicine is unavailable, the patient is given a prescription to buy it from an external pharmacy.

In cases where the doctor recommends a vaccine or wound dressing, the nurse administers the necessary treatment and handles the payment process.

If a medical report is recommended by the doctor, the Laboratory technician obtains a blood sample, which is then sent to recommended third-party facilities for analysis. The report is obtained physically and the patient comes to collect it, presenting it to the doctor for analysis. Based on the report and overall assessment, the doctor prescribes necessary medications or makes appropriate medical decisions.

Observations of the system drawbacks and suggestions

I recognized these problems in the current system.

1. **When patient have to come and collect number from the clinic before the doctors visit.**

I have proposed the implementation of an online booking and reservation system for doctor's appointments. Patients would have the option to select their preferred date and time for their visit before physically coming to the clinic.

However, a challenge arises concerning the payment gateway. I recommend collecting only the booking appointment charges through this online system to secure the booking.

For patients who do not have online access, they can still visit the medical center in person to schedule an appointment.

2. **When patients come to the doctor, they often have to wait in long queues.**

To minimize this issue, it would be immensely helpful to provide patients with access to information about the doctor's arrival time and the current patient appointment number through a website.

This way, patients with later appointments can better plan their schedules and save valuable time by avoiding prolonged waits in queues.

3. **The receptionist will retrieve the children's medical books from the rack.**

Children under the age of 12 are required to maintain a medical book.

When a patient arrives, they should provide their details, and the receptionist will then locate the book and give it to the patient before their doctor's visit.

Sometimes, there are instances when the medical books for children are misplaced, causing delays in finding them. To address this issue, I've suggested the implementation of a web-based profile system for every registered patient at the clinic.

4. **Written paper of medical prescription**

Patients receive a small paper from receptionist, which contains their queue number, name, age, and date. The nurse adds the BMI levels and blood pressure readings to this paper. Patients receive a small paper medical prescription from the doctor. Then the pharmacist dispenses the prescribed medicine based on the information written on that paper by the doctor.

As there is currently no record kept without this small paper, I have suggested implementing a web-based medical profile for every patient to improve record-keeping and provide a more comprehensive and accessible medical history.

5. **Payment issues of current system.**

When patients receive medicines from the pharmacist, the pharmacist informs them of the cost and collects the payment. However, there may be instances where the pharmacist unintentionally charges the wrong amount. This can lead to disadvantages for both parties involved, including the patient who might overpay or underpay and the pharmacist who may face issues reconciling accounts or providing accurate receipts. To avoid such situations, implementing a reliable and automated payment system can help ensure accurate billing and payments.

Medical Center Management System

Proposed system

Introduce a web-based application for patient handling and managing medical center work includes all the areas covered by manually. The software has the facility to give a unique id for every patient and stores the details of every patient.

I suppose to do all the documentation work over the web and if needed, print it and store patient history of medication show the analyze graphs to get the idea at once.

In new system any patient has to register in the system by own or can get assistance from the receptionist to register with the system. In the patient registration Patient get their user name and password.

We recognize the patients by using there ID. We can issue the ID no for every patient those who are registered in the medical system. In registration process we use the patient profile details, like

After registration patients can login to the system and they can see appointment history, book appointments, See medical history, check there scheduled medical test, and scheduled visits for doctor investigations.
If patient book a appointment he gets the reminder before 1 hour. If anyone check the system they can see the doctors arrival time, ongoing patient number in the dash board.

However, a challenge arises concerning the payment gateway. I recommend collecting only the booking appointment charges through this online system to secure the booking.

After arrival of patient to the medical center and Receptionist check the appointment no and refer to the nurse to check height, weight and pressure of the patient, Nurse will update the patient profile of these details. Nurses can login to the system and update the patient details by using patient ID.

When that the patient visited the doctor. Doctor can check the patient profile of medical history and regular monitoring process. Doctor can refer to the clinic, vaccine, diet plan, Medical checkup , blood report and prescribed medicine or test.

Then patient can go to collect medicine at the pharmacy, then the pharmacist can see the prescribed medicines and issue it to the patient, the pharmacist mark the dispensed medicines and at the moment automatically system update the price of the issued medicine according to their quantity, If some unavailability of medicine those are not issue from inside pharmacy, then the pharmacist can print the prescribed medicine and give it to the patient.

If there is some test to undergo then the patient go to the laboratory in the medical center and get the test. Then the lab technician get the test and add the price to he patient profile. After get the report they add it to the system according to patient IDs. Then patient can see the report any time anywhere.

If nurses have to give any vaccine, dressing or some tasks they can do their job by refereeing patient history and mark the system then the all payments are updated the patient profile.
After doing all these patients can pay the bill from reception area and leave from the medical center. Patients can do the payment online or cash.
Then the reminders of the next visit, next check-up report dates. Because the documents of the history of the patient not visibale to other parties.

Medical Center Management System

Objectives

Why should go for New system.

The following are reasons:
- **Computerization** – All the details regarding patients, will be computerized.
- **Automated inventory** – If the medicines are provided to the patients, the stock will be reduced in the inventory, and will help in to know the status of the available medicines.
- **No redundancy** – For every test that is conducted of the patients, an automated report will be generated and will be available to the patients and his / her concerned doctor uniformly.
- **Keep the Records** – It will be an easier task for the management to keep the record of the patients for historical purposes.
- **Appointment** – It will be easier for both the doctors and the patients to have the appointments. It is just two clicks away.

Key Features:

- Multi-user account system
- Monitoring the whole medical center managment system
- Management of all type of users' account
- Notice Board
- Appointment Management
- View Appointments
- Notifications
- Medical History
- Invoice Management
- Medical Report Management
- Internal Communication
- Responsive User Interfaces
- analyse graphs to get the idea at once.
- reminders of the next visit, next check-up report dates

Health Tip of the Day
- Yes, this is another attractive feature that is available to the registered patients in the system.
- Every day a new tip will be notified to the users.
- He/she can implement those tips in their life and can make it happy.
- The main purpose of this section is to make each person a healthy life.

Users involved in a Medical Center

- Admin
- Doctor
- Patient
- Nurse
- Receptionist
- Pharmacist
- Lab Technicians

Each of the above plays an important role in the hospital management system. If a single of them does not function properly, the management will not be successful.

Admin of Hospital Management System
- Only one admin in the system.
- The admin can create and manage all other all user accounts. He/she can delete any account according to need.
- The admin can monitor all the activities of the MCMS. Whatever is going on in the Medical Center, will be available in the admin panel.
- If others violate the codes of the hospital, he can take immediate action and can charge that user.

Who are the members in this system? What is the role there in the system?

Doctor

Every doctor must register the system and they maintain their profile in this system. They can access the patient details and they have permission to update the patient medication profile.
The doctor can view the medication history of the patients. The doctor can provide prescriptions to the patients.

Nurse

Every nurse is registered in the system and can access certain sections of the patient profile.
They have the ability to update information such as BMI, blood pressure levels, sugar levels, and dressing situation. However, they are unable to update other details but can view the patient's information.

Lab technician -

They can access the testing & lab reports module and are able to upload medical reports. When they update the patient's profile for lab testing, the payment is automatically added to the patient's profile. However, they are unable to update other details but can view the patient's information.

Pharmacist

The pharmacist can access the medical prescription in the patient's profile. They can mark the medicines that have been dispensed, and at that moment, the prices for the medicines are updated in the patient's profile. Additionally, the pharmacist can print a list of medicines that are currently unavailable in the clinic for patients who may need to obtain them elsewhere.
He is the responsible person to update the medicine stock in the clinic.
All the medicines and their information in the hospital are managed by the pharmacists.
He/she can view which medicines are in the stocks and which are to be needed. He/she can filter the medicines based on date i.e. expired date so that it is easier to know which medicines are going to expire so that those can be arranged at the hour of the need.

Medical Center Management System

Receptionist

The receptionist is responsible for scheduling appointments. If a patient wishes to cancel an appointment, only the receptionist has the authority to do so.

At the end of the session, the receptionist can collect the total payment for all treatments from the patient and then update the patient's payment status.

Receptionist can't access any medication details of the patient. They can access only the payment and the appointment modules.

If a patient has undergone tests outside the clinic, the receptionist can upload the test reports to the system. The receptionist also manages appointments and schedules the doctors' time table.

Patient

Patients have the capability to:

- ✓ View their own profile.
- ✓ Book appointments.
- ✓ Check their appointment history.
- ✓ Review their medical history.
- ✓ Update their profile information.
- ✓ Change their password.
- ✓ Recover a forgotten password.

Additionally, patients can access graphical representations of their medical status, view upcoming appointment dates, see scheduled dates for medical tests, and receive reminders on their profile.