PAPERLESS HOSPITAL SERVICE

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ABSTRACT

Paperless Hospital Service is a system designed to register and store patient details or doctor details and retrieve these details automatically whenever required. In this project the data will be entered in electronic format by a receptionist in the hospital. This automatic updating process saves a lot of time, work and gets information within very less time. Our project Paperless Hospital Service includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy and labs. Our project has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id. The Paperless Hospital Service can be entered using a user name and password. It is accessible by an administrator as well as person with valid authorization. Only they can add data into the database. The data can be retrieved easily. The interface is user-friendly. The data are well protected for personal use and makes the data processing very fast.

Keywords- *Online appointment scheduling, Patient-Doctor management system.*

I. INTRODUCTION

Before these computerized came into existence in hospitals, everything was strictly based on the paper based manual system and still it is in some of the places. Therefore, it becomes very difficult to keep proper information reagrding patients, doctors, drugs, lab reports, etc. Hospital Management system is designed to solve all these problems so that there is no need to search for the records of patients in big pile. It will save alot of time, money and manpower as well. It will also help in monitoring daily life of the hospitals. It can be used anywhere through admin rights to access the data. It can be applied to small as well as large hospitals across the globe. This project deals with the collection of patient's information, diagnosis details. while the system output is to get these details on to the monitor when required by the management, and also to manipulate these details meaningfully. By using this Paperless Hospital Service there would be no delay in transforming the medical records of the patient to the doctor. Information can be shared easily. This system provides high level security, data modification present in the database will be difficult. It will also help in saving a lot of paper generated as a waste in almost all Hospitals.

II. RELATED WORK

The current operating procedure in health care environment for patient registration and appointment scheduling are time consuming and somehow tiresome. In some places appointment can be done online via web but still patient has to walk in with the appointment card to be swiped by the front desk personnel. Online patient registration and scheduling appointment etc have been suggested

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to improve the work flow and smoothen waiting time[1]. It also requires the large spaces of cabinets, drawers and huge store rooms to keep them altogether. The retrieval of any of these records becomes more tedious so it will be very helpful if all the records are available electronically as shown in fig 2.2.[5] It also keep the record of doctor, nurse allotted to the specific patient. This study proposed that the design of hospital management database system will solve the problem of manual method of keeping record of patient[3].

Percentage of waste generated by hospitals through papers is the highest when compared to all other wastes as shown in fig 2.1. So, it is necessary to control the use of papers in hospitals to create an ecofriendly work space for all. Most complaints issues recorded are the dissatisfaction in the length of time spent between patient arrival and actual starting time of consultation. According to Clinic audit(2012) Brunei Darussalam has recorded an average of 2710 general cases in outpatient department with the mean waiting time of 58 minutes per sessions. In the International journal 'Application of Smart Technologies for Mobile Patient Appointment System' it is mentioned that patients are dissatisfied by the inconveniences and unavailable time of appointment slots, especially for patients with urgent needs.[1]
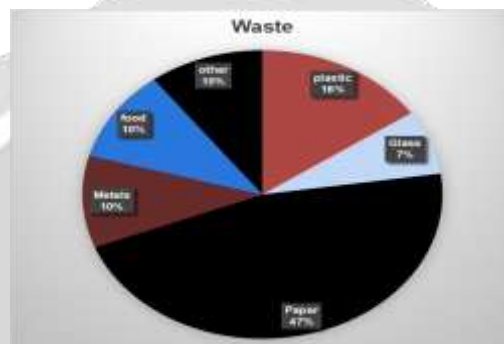

Fig 2.1: Waste generated by paper

The management of records electronically will help to save more time and manual labor as well. This management system includes all the day-to-day activities of the hospital like room activities, admission of new patients,discharge details, assignment of doctors and computing the bill as well after consultation and discharge[5].Preoperative Risk Assessment(PRA) form was designed within the study hospital. Although not every hospital trust uses such a form, the journal focuses on this form because it contains the most extensive set of Anaesthetic relevant data such as auditing and assessing preoperative risk.In the British Journal of Anaesthesia "TOWARDS THE PAPERLESS HOSPITAL",it is mentioned that the hospital experienced two major obstacles in using data this way. First the PRA forms tend to be filled out inadequately, making analysis difficult. Secondly, the data are in paper form and therefore need to be entered manually into the electronic system.[2] Recently health care industry has slowly moved towards implementing cloud-based platforms. Near Field Communication(NFC), the subset of Radio Frequency Identifier(RFID) whereby data can be established in shorter range than RFID.[1]
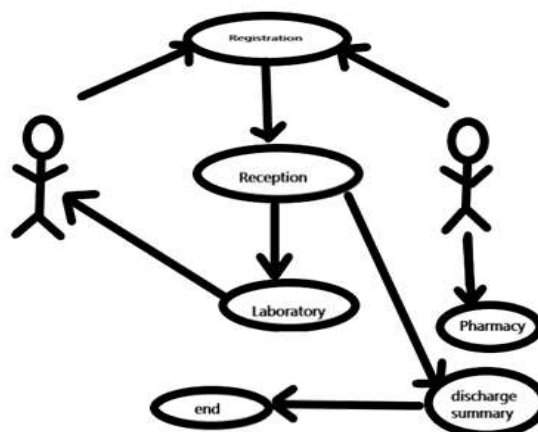

Fig 2.2 : Flow Diagram of the system

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The application of electronic information system (EIS) had created many useful insights into the quality of data accuracy and basic health care provision in primary health care setting. this is one of the adapted approach and style of data storing and entry influenced by the design presented from recent structure[3].Between registration process and consultation the total patient waiting time is divided into 1) patient's earliness 2) internal waiting time. The current procedure is based on first-come, first-served basis. Goldsmith(2000) stated that the internet has a great impact in transforming both the structure and standard of procedures(SOP)[1]. This implies viewing such technologies not simply as a way of dealing with the legacy of paper, but rather as a way of supporting an ongoing mix of paper and electronic media.[2]

III.DESIGN AND IMPLEMENTATION

This application starts with registering the details of patient,if he/she is a new patient and for old patient application directly go to the app and login using your unique id and password. In the registration process patient is asked about their name, address, user id and password. Old user directly go the login page where they are asked to login to their account and after login, the user is requested to book an appointment, and if already booked the appointment then the time of appointment is displayed by the application. User can also see their appointed doctor along with the appointed date and time. After their checkup it shows medicine prescribed and lab test result in the interface as shown in fig 3.1. In the next page patient can make payment and receive online receipt for the payment and at last after all the work is done user can log out by clicking on the log out button.
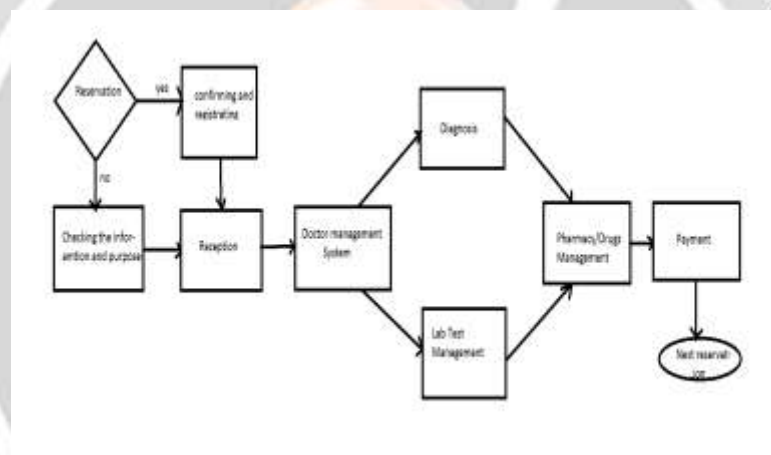

Fig 3.1: Architectural diagram of Hospital management service.

1. PATIENT MANAGEMENT SYSTEM

Paperless hospital management system gives complete assistance in patient hospital management. In this module there is a facility for patient registration and also help us to view their report and their history. Paperless hospital management system help us to get detailed information about patient health.

2. DOCTOR MANAGEMENT SYSTEM

Doctor Management system allow registering the doctor, working in the hospitals and also working in clinics. It helps them to check whether they have completed their appointment or not along with patient history. Doctor will get patient information by querying on patient ID and will conduct series of tests and will update their test report along with comments in the Application.

3. DRUGS MANAGEMENT SYSTEM

Drugs Management System is another module of Paperless hospital management system. This system helps in updating the inventory record as well as all record of payroll management. Billing Department will calculate the expense and will be responsible to verify if patient has insurance policy, if so then they will open a secure session to charge the cost to insurance providers, If patient doesn't have insurance policy, Then he must pay either in cash or cash

4. ONLINE APPOINTMENT MANAGEMENT SYSTEM

Online Appointment Management System allows patient to get online appointment instead of physical visit by patient. With help of online appointment management system all patients, staffs and doctors can easily check the status of appointment. Using this module, appointments can be issued in advance for new patients as well as for follow-up patients. Appointments can be rescheduled or cancelled as per the requirement.

5. LAB TEST SYSTEM

Lab Test System gives complete details of all the test services that are available in that specific hospital such as X-ray, CBC test, and blood test and different other test services. It also manages the history of test details of all patient according to the registered patient name.

IV. CONCLUSION & FUTURE WORKS

Paperless Hospital system will not only prove to be boon for hospitals & doctors but it will also help the patients to get their medical history without even going to hospital and asking for records again and again. This project will help in creating an eco-friendly workspace because there will be less use of paper as well as waste generation will also be low. This project will automate the process of collecting and accessing records in the hospitals. This technology can be further modified by using the cloud computing techniques as well as the networking and security. In future, Video Conferencing facility for remote areas for treatments as well as Blood Bank Information Management system can also be introduced.

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