

Assessing the Impact of Web-Based Patient Management Systems on Healthcare Efficiency

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Abstract— Countless patients visit hospitals and clinics every day. Patient data is still manually managed by several hospitals in India. With an excellent software system in place for managing patient data, hospitals may save both money and time. Creating web-based application software to manage patient registration and visitation data at a medical facility or clinic is the idea. It should be possible to search for patients by name and view their past visit records through this system.

Keywords—patient data, web-based application software, track, patient visits, previous visit history.

I. INTRODUCTION

Hospital administrators are frequently faced with an overwhelming amount of information to handle and keep up to date records for many patients and their visits. Clinics and hospitals can use the web-based technology AYU E-HEALTH to keep an eye on patient registrations. Additionally, this system needs to allow past visit records to be retrieved and name searches for patients. This web-based tool aims to support medical professionals and hospital administration in managing patient visitation information. The system's goal is to manage several tasks and keep correct data to speed multiple processes, such as patient evaluation and registration.

The objective of the project is to use JavaScript, HTML, CSS, and Java to create a web application. The patient registration process at clinics or hospitals will be monitored by this app. Furthermore, the system will enable.

II. REVIEW OF LITERATURE SURVEY

[1] The storage of medical records can be greatly enhanced thanks to developments in technology and the global trend towards digitalization. Electronic patient records provide better accessibility. The goal of the project is to create an electronic medical record management system that can propose doctors based on a patient's ailments or difficulties, securely store patient data, and provide cloud-based access from any place. Physicians find it more and more difficult to manually retain patient information as the number of ailments rises.

[2] The purpose of this study is to determine the difficulties hospital developers encountered when developing their medical record systems. The standard of patient treatment is positively impacted by high-quality medical records. Better management of health services can result from the implementation of an effective medical record management

system. The web-based systems that are suggested in this study are designed to tackle problems with patient registration, service speed, processing medical record data, and information tracking.

III. FEATURES OF AYU E-HEALTH

This research investigates the potential of the Ayu E-Health web application to improve communication and collaboration between doctors and patients. The application offers a comprehensive suite of features designed to streamline healthcare management processes and enhance patient outcomes.

Research Objectives:

Evaluate the effectiveness of the Ayu E-Health platform in facilitating communication between doctors and patients.

Assess the impact of the application on streamlining healthcare record management and improving accessibility for patients.

Analyze how the platform's features contribute to informed decision-making by doctors and improved quality of care.

Research Design:

A mixed-methods strategy could be used in this study to collect data using both quantitative and qualitative techniques.

Quantitative data: Analyze user activity data on the platform to understand how features like appointment scheduling, record access, and data download are utilized.

Qualitative data: Conduct surveys and interviews with both doctors and patients using the Ayu E-Health application. This will gather insights on user experience, perceived benefits, and potential areas for improvement.

Data Analysis:

Quantitative data analysis will involve statistical methods to assess the frequency of feature usage, impact on appointment scheduling efficiency, and potential correlations with improved patient outcomes (if medical record data is available with proper anonymization).

Qualitative data analysis will involve thematic analysis to identify recurring patterns in user experiences and feedback. This will provide valuable insights into user satisfaction, perceived improvements in healthcare management, and suggestions for further development of the platform.

Identify applicable funding agency here. If none, delete this text box.

Expected Outcomes: This research is expected to contribute to the growing body of knowledge on the application of technology in healthcare communication and management. The findings will shed light on:

Physician Login: This module contains the physician's login credentials, which include their username and password, which they can use to access the website. In addition to viewing the data and the medical history record, they can add new patients and enter new records.

Add Patient: The doctor can add new patients by entering their information in the add patient module, including name, address, phone number, and age. Click on Add New Record, Data Viewing, Medical History List, and PDF Report Downloading. **Sign Up/Create Account:** Using their login credentials, new users can create a new account in this module, or existing users can sign up.

Patient Login: In addition to their user ID and password, which they can get via the patient login module, patients can access and log in to the page using their Aadhaar card number for verification.

Patients can use the user ID and password that the patient login module provides to access the page by using their Aadhaar card number for verification.

Patients can access the page by confirming their Aadhaar card number and logging in with the password and user ID they obtained from the patient login module.

IV. TOOLS AND LANGUAGES

HTML/CSS: These two languages are essential for creating the platform's web-based features, such as online reporting, data visualization, and user interface.

JavaScript: JavaScript makes it easier to create user-friendly interfaces, real-time data updates, and interactive web elements.

Figma: Figma is used in the design of the application.

PHP: For backend programming, PHP (Hypertext Preprocessor) is utilized.

XAMPP: Mostly used for local server web application testing, XAMPP is an open-source web server package.

Bootstrap is an open-source framework for front-end programming that makes it possible to create online apps and webpages.

VS-Code: The code authoring platform is called VS-Code

System Architecture

Recommendations for optimizing the platform to further enhance healthcare delivery and patient engagement.

This research can inform future developments in web-based healthcare management systems and contribute to improved patient care through better doctor-patient interaction and access to medical information.

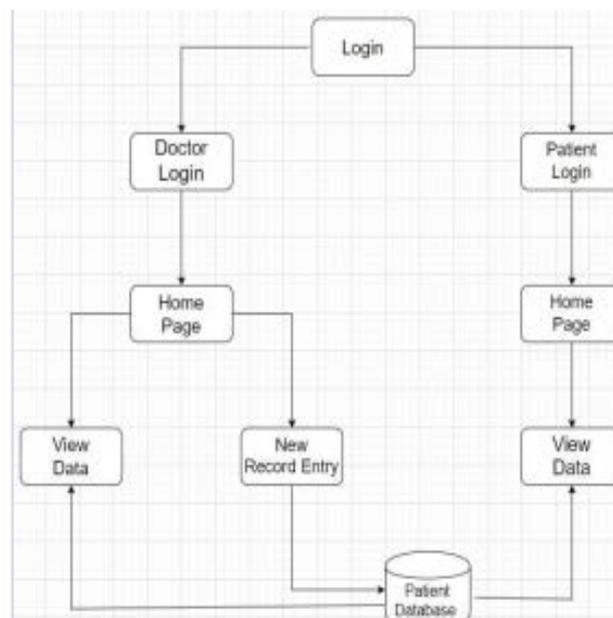


Fig. System Architecture Doctor Login

Physicians can access the page by logging in with their credentials, which are included in the doctor login module. They can check data and medical history, add new patients, and enter new records.

Add Patient Doctors can enter new patient information, including name, address, phone number, age, etc., in the add patient module.

Make a new record. Physicians can enter new patient records in this section.

A. Examine Information Physicians are able to view patient data with this capability.

B. Medical History List: A list of patients' medical histories is available to doctors.

C. Get the PDF report. Patient reports are available to doctors in PDF format. Register or Make an Account Current users can register, and new users can use their login information to create an account in the module.

Patient Login Patients can validate their Aadhaar card number and log in to the page by using the patient login module, which contains user credentials such as a password and user ID. In order to gain access, the patient must provide user credentials, such as a password and user ID, and their Aadhaar card number must be verified. Patients utilize their Aadhaar card number for verification when they log in using their user ID and password in the patient login module. With their user ID and password, patients can access the login page. They must also provide their Aadhaar card number as a second verification step. In order to access the patient login feature, patients must provide their Aadhaar card number as identification and create a password.

I. FUTURE WORK

Hospital administrative procedures are about to undergo a radical change thanks to the deployment of cutting-edge technologies. Hospital operations will operate more efficiently thanks to these solutions, which will replace

conventional paper files with safe, centralized digital data. They will also make it easier for employees, physicians, and other medical professionals—including those who work remotely—to share information without interruption.

The system can classify enormous volumes of data using machine learning, which can subsequently be used for study. The gathering of this data will make it possible to evaluate the benefits and possible risks of different drugs, which will help in the creation of pharmaceuticals that can provide patients with better care.

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