HEALTH RECORD INFORMATION EXCHANGE SYSTEM USING NETWORK SECURITY

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ABSTARCT

Cloud computing emerges as a promising paradigm for computing and attracts attention from both academics and the industry. The cloud-computing model transfers computer infrastructure to third-party service providers who manage hardware and software resources at significant cost reductions. It is emerging as a new computer revolution in the medical field outside of other business domains. Large numbers of health organizations have begun to move electronic health information to the cloud. The introduction of cloud services in the health sector not only facilitates the exchange of electronic medical records between hospitals and clinics but also enables the cloud to serve as a place of medical records center. In addition, cloud migration frees health care organizations from the tedious tasks of infrastructure management and reduces development and maintenance costs. Storing medical data in the cloud enables the treatment to be effective by obtaining a patient's medical history from the database before going for treatment and being aware of patient health problems. A system that captures the medical history of each individual country and provides access to all registered hospitals to read or update information. A hospital that receives a database must be registered and must be licensed. The license number is used as a unique code to access the database. Patient details will be stored and an ID number will be created when their details are stored in a database for the first time after the program is launched.

I.INTRODUCTION

The electronic exchange of health information (HIE) allows doctors, nurses, pharmacists, other health care providers, and patients to effectively and securely share important computerized patient information - improving speed, quality, safety, and cost of patient care. Express Health Care has released an article, stating that India is home to 20% of the world's blind people. It is, therefore, necessary that we provide equal blindness and visibility options to users with easy access.

They are very important because many medical records are on paper in the closet. In addition to the importance of confidentiality, confidentiality and security, the EHR system must address integrity and access to information. Integrity. Integrity ensures that data is accurate and unchanged. ... Elements of an electronic health record may allow data integrity to be compromised. The electronic exchange of health information (HIE) improves the quality and efficiency of health care by allowing health care providers to access and share medical information about patients electronically. ... The provider can then determine which patients need immediate care due to symptoms such as persistent high blood sugar. The state of health information exchange (HIE) has changed dramatically since HIE and the Nationwide Health Information Network (NwHIN) was first considered in 2001.

II.. LITERATURE SURVEY

[1] In the International Journal of American Medical informatics association, 2006. This paper discusses the dramatic increase that has taken place in the adoption of personal health record (PHR) programs for patients and clients. Biomedical texts have not yet adequately described the potential power and utilization of PHR systems. In addition, the lack of a guaranteed business case for widespread distribution hinders the acquisition of PHR. This paper summarizes the College Symposium discussions on PHR programs and provides definitions, system features, technology structures, benefits, barriers to adoption, and strategies to increase adoption. Behavioural research can identify appropriate educational strategies. Complex personal and organizational factors can hinder or speed up the adoption of PHRs. Many of the challenges in implementing PHRs are similar to those of EHRs. By better understanding the needs and benefits of PHRs, we can create better empowerment policies. The cost of PHR deployment opportunities is measured by medical, dollar, and health errors.

[2] In the International Journal of the American Medical Association. This paper aims to examine whether electronic health information exchange (HIE) is associated with emergency department care (ED) procedures and use based on timely information.

Methods: Our data includes 2163 patients seen in the ED of a major medical center where doctors request and check external information from February 14, 2014, to February 13, 2015. External information requests were completed via HIE (Epic's Care Everywhere) or fax / scanning of electronic health record (EHR). We used EHR audit data to determine the time between request for information and for a physician
access data. We tested whether the relationship between the information

system was coming back and ED was coming out (length of visit, imaging issues [computed tomography (CT), imaging resonance imaging (MRI), radiographs] and hospitalization, and total costs) were facilitated by the time to request access, control of patient numbers, case mixing, and fitness. The relationship between HIE and improved care and reduced use practices in ED is resolved through faster access to information from external organizations.

In this study, our primary objective was to assess whether the use of the HIE system was associated with improved care through timely access to information in the ED through standard telephone and fax methods for obtaining information from external organizations. We developed a conceptual model to test whether the relationship between HIE and ED outcomes was related to the time between the external information request and the physician's evaluation.

[3] Infection with the coronavirus 2019 poses major challenges to the existing health system
addressed with the development of new unique and advanced care systems with differentiated care procedures (e.g. tele health testing, multimedia collection, remote testing, telehealth management). However, our current guidelines for the flow of clinical care information and research are out-dated and often conflict at state and federal levels. The Insurance and Accountability Act is designed to allow health information to flow freely and in conflict between health organizations that need to work together to treat patients and, in turn, to allow it to flow to investigators who are trying to figure out how to limit its impact. Patients may not be able to choose a provider that provides follow-up care, and delays and advances in the transfer of information may interfere with the effectiveness of the care program. Public health needs access to new types of builds on data systems mobile providers drive its response. Usage of the government's urgent need to create a comprehensive framework for data exchange on the epidemic and research is an important step in addressing the practical response to the challenges we currently face.

[4] Health Information Exchange (HIE) Exhibitions amazing benefits of patient care such as improving the quality of health care and accelerating systematic care. The Office of the National Coordinator (ONC) for Healthcare Technology requires HIE designs that change the ownership of data from providers to patients. There are many limitations to the patient-centric HIE in the current system, such as security and privacy concerns, data inconsistencies, timely access to appropriate records at most health care facilities. After investigating the current HIE workflow, this paper provides an effective solution to these challenges using different features of blockchain, a led ledger technology that is considered "invulnerable". We use a smart contract feature, which is a self-contained arbitrary protocol that works on the blockchain, developed a blockchain model to protect data security and patient privacy, ensure data access, and give patients full control over their health records. By customizing the data classification with "al-drop-down list "so that doctors can access their data, this design fulfills the patient's HIE. We have performed extensive simulations of this patient HIE procedure and have extensively evaluated the feasibility of modeling, stability, safety, and robust device built at low cost using offline speech recognition.

III. SYSTEM DESIGN

The main focus of the cloud-based health system is data collection, storage, access, analysis, and presentation, etc. Current patient data collection methods are time consuming, inefficient, ineffective. It is also clear that the process of currents violates access to real-time patient monitoring data.

On m-health networks social networks, personal health information is often shared between patients found in social communities suffering from the same co-operative disease, and all healthcare providers already deployed on their medical network cloud servers. However, it also brings a series of challenges, in particular how to ensure the safety and confidentiality of patient health information from various attacks on a wireless communication channel such as listening and interrupting.

HIEs are "biased data custodians" who do not provide care, but use advanced technology to deliver community services. There are many varieties of HIE: regions, nationally, nationally, and vendor to vendors are all examples of the different tastes of HIE organizations currently in the United States.

IV. IMPLEMENTATION AND RESULTS

The solution for a cloud-based health system is based on the concept of "Cloud Computing" a distributed computer system in which a solid, robust pool of power, is managed

computer power, storage, platforms, and services are delivered. The system provides a place where patient records are kept and will be referred to physicians to improve the effectiveness of treatment. This handles the medical history of each individual country and provides access to all registered hospitals to read or update information. A hospital that receives a database must be registered and must be licensed. License number is used as a unique code to access the database. Patient details will be stored and an ID number will be created when their details are stored in a database for the first time after the program is launched. Whenever they go for treatment, their medical information will be stored in a database using their ID number. For security reasons, anyone who wants to view their data will only be allowed to read the data. They will not be given

access to update the database. For hospitals to update the database they need the license number and ID number of the person whose record must be kept.

Once the application is started, the user will be asked to sign in to their email account.
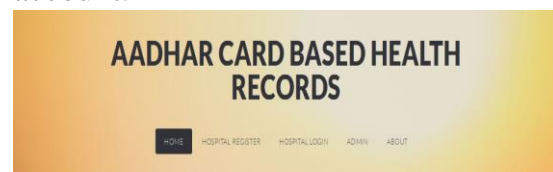
If the user already has the email service, they can sign in using their credentials, otherwise they must create register a new account for the desired email service.
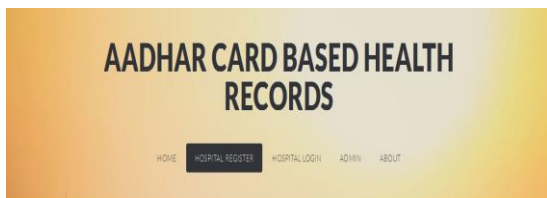
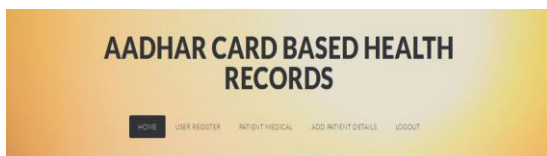When a user requests "Login", the user only needs a license number where the user can access his or her record stored on HIE.

This insertion of the "Hospital Login" text will initiate login actions and request other tabs such as user insertion, patient details, add patient details.

In the "Admin" section only managers will be able to add or delete records.

Providers first register and provide access to doctors and hospital branches to view information stored in the cloud using a given token or license number.

Physicians will have login details used for login. Therefore, after logging in physicians can review their appointments, reassure patients, and with all patient patient definitions.

Patients will have to register and have their entry details. A patient can only enter if they are given a registered hospital license number. After that, they can make appointments and select the doctors they need for treatment.

After that, the supervisor is the only person who can view the hospital-approved information, doctor and hospital details, and the patient's response.
        Both the doctor and the patient are unable to modify the data entered into the system. Doctors can only add details but not change or delete them.

Users can view their information only if they are given a hospital license number for authorized login.

A patient who is required to have access to his or her records will need a hospital license number to enter the hospital and his or her password to view the records already added by the doctor they were interviewing. After that, for new patient information and their records, we first need to register users at the hospital and verify their details. Once registered the patient will receive an OTP through his post office which will be provided by the doctor to enter the patient's details.

While adding patient details, the doctor may also select fields that will be hidden while displaying the corresponding patient details. The checkbox will be located next to the text box for each field. The required field test boxes can be selected if the doctor wants to encrypt them while viewing.

Patient images have been proven to reduce medical errors. Respected, health-care organizations recommend the inclusion of patient pictures and medical records. Patient photography enhances patient safety. Therefore at the time of adding a photo of the patient is mandatory only after the installation process registration can be completed.

A medical report is a complete report covering a person's clinical history. The medical report is important evidence that can confirm and support your claim for Social Disability benefits. Therefore, patient reports can be added as an image after adding patient details.

Viewing details can be from a specific time or from the time the user is registered. After selecting the time for the uploaded data, the details are displayed in table format and consultation doctor details.
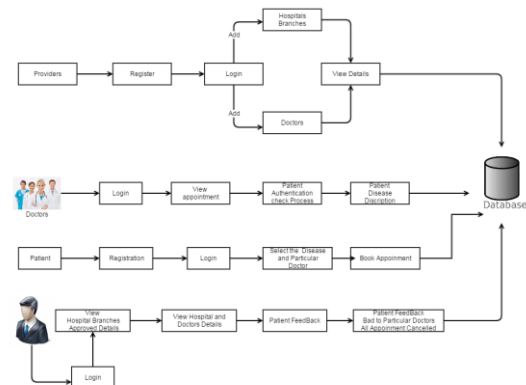
Flow chart 3.1.1

Also, viewing encrypted patient information requires OTP. Here, the AES algorithm is used for encryption.The AES process includes specific encryption cycles (Nr), which are determined by the cipher key size. While it is true that AES 256-bit encryption is harder to crack than AES 128-bit encryption, AES 128-bit encryption has never been broken. We used a 128-bit encryption process in this program to encrypt patient information.

Finally if the user wishes to logout, he/she could say "logout application" to sign out from that computer.

V. CONCLUSION

In this project, a system is proposed that looks at the health information of each country. Contains modules such as generating a unique ID and storing and retrieving personal data. Cloud computing is an emerging computer mode. It promises to speed up the application process, increase innovation, and lower costs, all while increasing business potential. The

type of cloud computing is used in building a data center.

For the new generation of cloud-based health systems, using the cloud is a better option in the future. In future work, the need for online certification authority (CA) and one unique encryption key for each of the standard data encryption in an accredited physician document enables the build to grow in proportion to the size of the group. Besides, the level of anonymity depends on the size of the anonymity set which makes anonymous validation inactive in certain areas where patients are still being depleted.
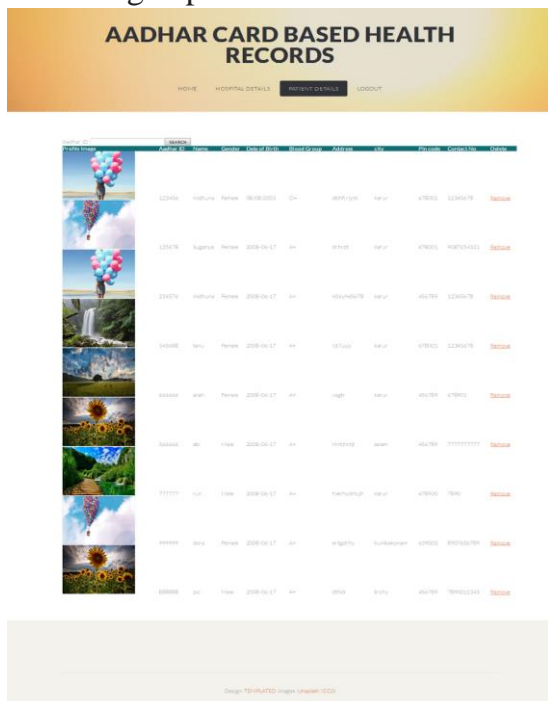
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