IJIRCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Issue 5, May 2023

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.379

International Journal of Innovative Research in Computer and Communication Engineering

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105255|

QR Based Patient Health Record System

Vaibhav Kale [1], Vishal Rayate [2], Manoj Thombal[3], Prof. Sapike N.S.[4]

Department of Computer Engineering, Vishwabharti Academy College of Engineering, Ahmednagar, India[1,2,3]

Professor, Department of Computer Engineering, Vishwabharti Academy College of Engineering, Ahmednagar, India[4]

ABSTRACT: The Health Transformation Program reform platform, with its motto of "People First," has been a major contributor to this successful improvement. The health care delivery system is hierarchical and patient transfer from the lower level to the next higher level health care facility involves patients carrying their physical medical record card. Among other details, a medical record card contains information about the patient's medical history, allergies, medical conditions, and current prescription medications. In this paper, we propose the use of Speedy Reaction (QR) codes to get and communicate this delicate patient data from one level of the medical services conveyance framework to another. When such patient information is recorded on a medical health card, it is vulnerable to misuse, loss, misinterpretation, and breaches of confidentiality.

KEYWORDS: Patient Health Record, QR code, Android Application, Disease Prediction, Symptoms

I. INTRODUCTION

The inability to effectively coordinate a patient's care has resulted in higher medical costs, lower quality of care, and more hospital readmissions. The two fundamental parts of appropriately planning care include the capacity to speak with different gatherings and the capacity to share precise information. Medical services suppliers today should be visible to facilitate care with the utilization of shared information sources, calls, faxes, postal mail conveyance, or text informing. The platform required to effectively coordinate care is not supported by these current solutions. Wait times, reaching the wrong resources, or miscommunication over a weak line, for instance, can make it difficult to communicate with healthcare providers over the phone. By implementing a mobile messaging application with QR code technology, the goal of this project is to improve care coordination.

A machine-readable barcode called a QR code can be used for a variety of purposes, including product tracking, marketing, document management, and item identification. Efficiency in data storage, increased data storage, and quick readability are among the advantages. An execution of QR code innovation which can be utilized to store general clinical information and be filtered to show the overall clinical information to work on the coordination of care is introduced.

The objective of this project is limited to a completed implementation and a plan for future beta testing due to time-sensitive circumstances. A mobile application that uses QR code technology to store and read general medical data will be implemented as part of this project. Alongside the execution of this task, an arrangement for future beta testing will be organized to confirm the application's verification of idea. When used in marketing for hospitals and the healthcare industry, QR codes can help patients and healthcare providers communicate and get treatment. Smartphones have made things easier and faster, especially since tech-enabled services like online doctor appointment apps, patient management platforms, electronic health records, and AI-based gadgets came out. QR Codes innovation, in spite of the fact that, has been around for more than 20 years at this point as 2-D scanner tags, the idea is moderately new in the medical services industry. Smartphones have only recently become prevalent in healthcare, not because the healthcare industry is not advancing in treatment and technology.

PROBLEM DEFINITION AND OBJECTIVE

In the early days, patients' reports and records were kept by hand, and the records were also saved in drawers and rooms. As a result, it was very likely that data would be lost. After this time passed, computers were introduced, and numerous management systems were made available in the market to reduce manual labor and make or maintain all records using computers. As a result, things became easier to manage. Healthcare systems have always been built as standalone architectures. Patient information in one framework or one office may not exist in another framework or division.

International Journal of Innovative Research in Computer and Communication Engineering

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105255|

If we wish to examine a patient's previous record or any other particulars. Management will face significant challenges. Finding a record within a file takes a lot of effort and time. Keeping records takes a lot of time and waste a lot of valuable worker hours. The purpose of SRS is, essentially, for everyone involved to comprehend and anticipate the system's operation.

II. RELATED WORK

It is evident that people's health has improved over the past few years. The Wellbeing Change Program change stage, with its saying of "Individuals First," has been a significant supporter of this fruitful improvement. The Turkish government is currently implementing the second phase of this program to improve health sector governance, efficiency, and quality. Legal changes have been implemented within the Ministry of Health as part of the health reforms, including the reorganization and restructuring of its affiliates and units. Health system policy development, planning, supervision, monitoring, and evaluation will all be improved as a result of the restructuring efforts, which aim to empower the management function. To support the situation in medical care administration arrangement the General Wellbeing Foundation has been made.

Most people think that patient identification can be solved and is a crucial part of healthcare and patient safety. Many public healthcare providers still manually identify patients, but when the instructions for patient identification are followed, the underlying methods are capable of preventing numerous errors and undesirable outcomes at various stages of healthcare delivery.1 Because it is extremely likely to result in anthropogenic errors, this method of patient identification needs to be eliminated. ID mistakes can prompt serious issues with operations, like prescription organization, blood bondings, clinical preliminaries, and medical procedure.

The main benefit of QR code use for patient recognizable proof begins from its straightforward innovative base QR code-based innovation gives high simple entry to clients since it requires no exceptional labels, (for example, RF labels). Because they can be printed on any surface (such as paper or plastic labels or any other surface), QR codes don't require any more specialized equipment than a printer and are easy to create.

Smartphones are widely used across various life domains, reading and decoding QR codes has become much easier than using systems based on complex technology. A QR code system has another advantage over RFID-based systems because reading QR codes requires closer proximity, it is almost impossible to read an undesired code. From this perspective, QR code reading is unambiguous, as it only requires close proximity of the reader device to the patient's bracelet to read the code. QR code-based technology is also superior in other ways, such as higher data storage capacity, lower implementation cost, technical simplicity, widespread use, and widely available, free programs for reading and decoding by camera-equipped smartphones. These features make this technology attractive for patient identification purposes, especially for institutions in developing countries with limited sources.

III. PROPOSED METHODOLOGY

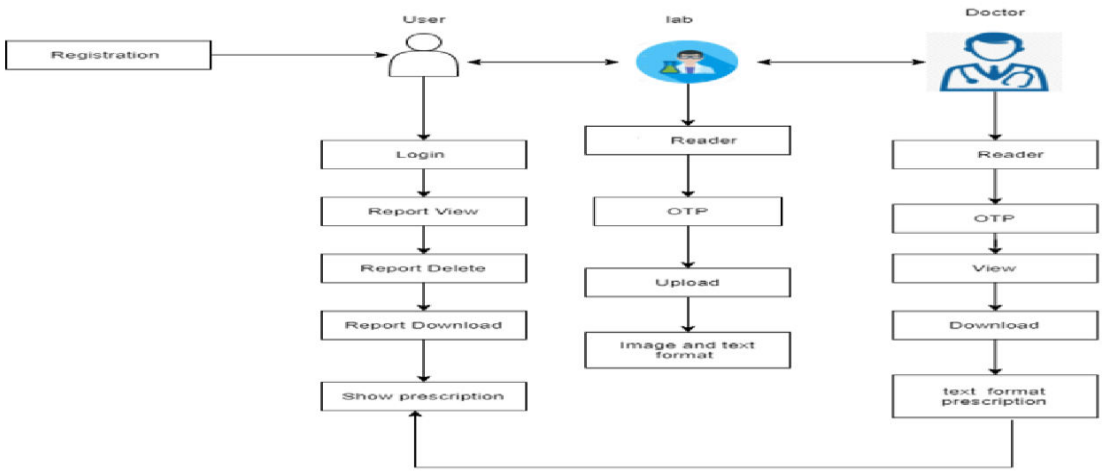

Fig 1. Proposed System Architecture

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105255|

The users of this application locker are patient, doctors, and lab assistants. Each one of them will be provided with unique login ID after the registration. The QR code will be generated when the patient will register into the application. The patient can further view, delete, and download its data. The doctor is supposed to scan this QR code in order to access the report of patient. He can update, view, send prescription, and delete any data of the patient. The lab assistant is supposed to scan this QR code in order to access the report of patient. He can update, view, send prescription, and delete any data of the patient. After work done the user may logout of the application.

IV. WORKING MODULE

The implementation of our system are as follows:

- Install flutter application
- Design login registration page for patient, doctor and lab assistance
- Create code for QR code generation on the basis of registration data
- Create code for QR scanner
- Provide test check box
- Add text field for prescription
- Add update download report function

V. OUTCOMES

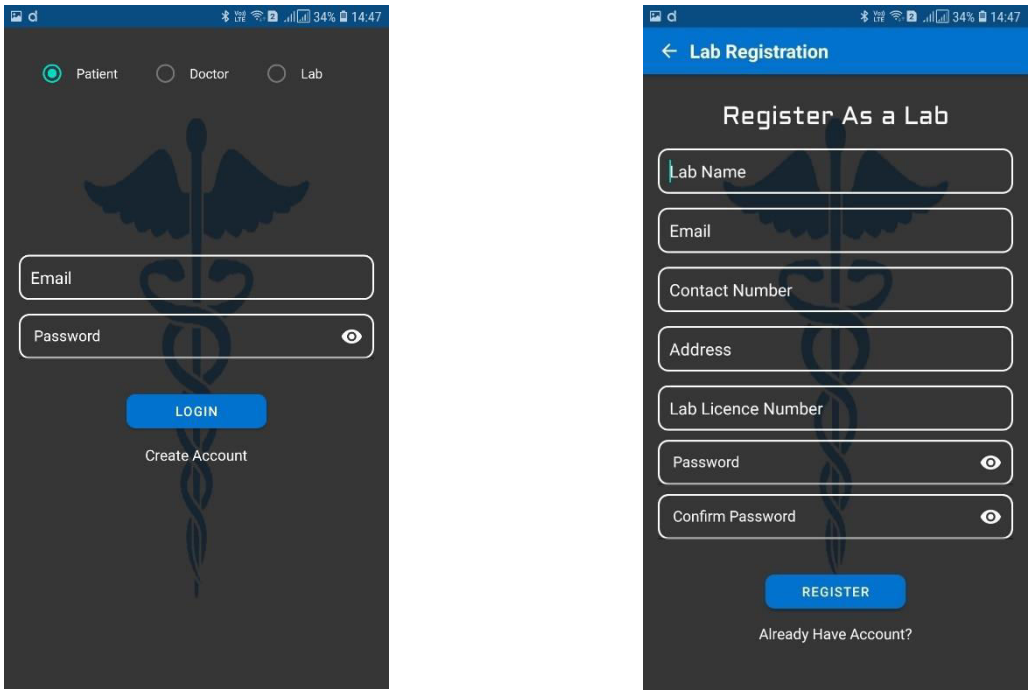

Fig 2: Login Registration Page

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105255|

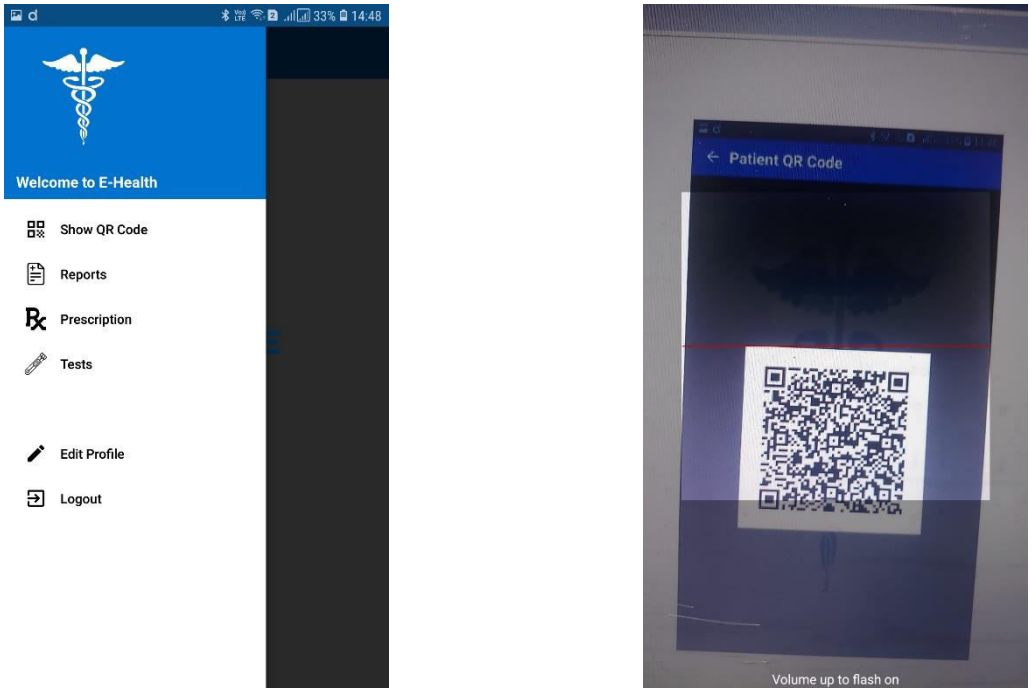

Fig 3: Patient Dashboard

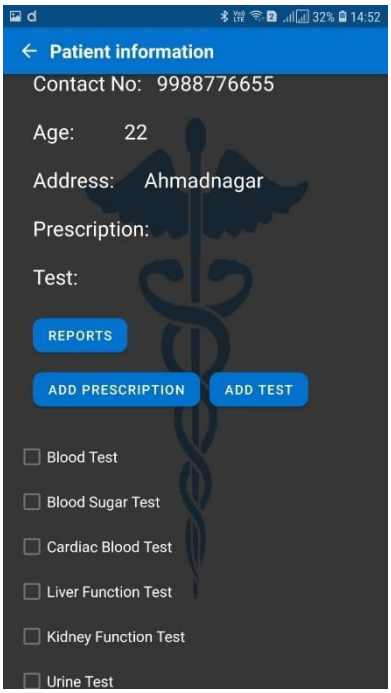

Fig 4: Patient Information

VI. CONCLUSION

This application will help in enhance the outdated filing system in hospitals and will provide security to our data. This application will help the doctors and nurses to manage and update data digitally through their mobile phones. This

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105255|

application will help the hospital staff to manage data properly on cloud and not to store hand written data in store rooms. Hence it is concluded that this application will not only help the hospital staff and doctors but also the patients because their data is now secure and is hard to delete. The data will also be very helpful in future for applying data science and machine learning algorithms on it. We are making a management system for hospitals which will be based on QR-Code. In this, QRCode will be used as a tag or an identification of the patient, through which the vast amount of information of the patient will be accessed on application which will be install on a mobile or tablet. The QR-code is used to scan the information of the patient when is required by using mobile or tablet's camera. We used QR-Code because it is cheap and fast.

REFERENCES

1) P. Shewale, K.Javeri, P.Gandhi, M.Inamdar, R.Mujawar, "Health Care System Using Qr-Code Strategy" 2018 International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE2018), pp. 1-5.
2) Isitman, B. Oguz, M. Bayrak and P. Yazgan, "Mobilized patient record management systems," 2012 8th International Conference on Information Science and Digital Content Technology (ICIDT2012), Jeju, 2012, pp. 235-238.
3) N. Mahmood, A. Shah, A. Waqas, Z. Bhatti, A. Abubakar and H. A. M. Malik, "RFID based smart hospital management system: A conceptual framework," The 5th International Conference on Information and Communication Technology for The Muslim World (ICT4M), Kuching, 2014, pp. 1-6.
4) V. Uzun, "QR-Code Based Hospital Systems for Healthcare in Turkey," 2016 IEEE 40th Annual Computer Software and Applications Conference (COMPSAC), Atlanta, GA, 2016, pp. 71-76.
5) S.Dube, S.Ndlovu, T.Nyathi and K.Sibanda, "QR Code Based Patient Medical Health Records Transmission: Zimbabwean Case",Proceedings of Informing Science & IT Education Conference (InSITE) 2015, pp,521-530.
6) P. Grover and R. Johari, "Review of big data tools for healthcare system with case study on patient database storage methodology," 2016 6th International Conference Cloud System and Big Data Engineering (Confluence), Noida, 2016, pp. 698-700.
7) L. Li, S. Bagheri, H. Goote, A. Hasan and G. Hazard, "Risk adjustment of patient expenditures: A big data analytics approach," 2013 IEEE International Conference on Big Data, Silicon Valley, CA, 2013, pp. 12-14.
8) Jun-Chou, C., Yu-Chen, H., & Hsien-Ju, K. (2013). "A Novel Secret Sharing Technique Using QR Code". International Journal of Image Processing (IJIP), Volume (4) : Issue (5)
9) Salvador, A., & Christian, P. (2012). "Method for Privacy-Protecting Display and Exchange of Emergency Information on Mobile Devices".

INNO SPACE
SJIF Scientific Journal Impact Factor

Impact Factor: 8.379

doi cross ref

ISSN INTERNATIONAL STANDARD SERIAL NUMBER INDIA

निस्केयर NISCAIR

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462 6381 907 438 ijircce@gmail.com

www.ijircce.com

Scan to save the contact details