



Electronic Health Records and its Implementation

¹Ankita Saloni, ²Mohit Kumar, ³Ramit Kumar Gupta, ⁴Rashid Manzoor, ⁵Soniya

¹Scholar, ²Scholar, ³Scholar, ⁴Scholar, ⁵Assistant Professor

¹Department of Computer Science & Engineering,

¹Noida Institute of Engineering & Technology, Uttar Pradesh, India

Abstract : The use of Electronic Health Records (EHRs) in Healthcare can potentially improve healthcare and this cloud infrastructure can amplify the facilities and treatment. It has been surveyed that the usage of EHRs is limited and has been slow to become part of the medical practice, redirecting to a possible failure. This survey seeks to gain insight on the functioning of EHR and its effectiveness in healthcare delivery. The main aim was to understand the flexible usage or limitations users find while accessing EHR.

IndexTerms - EHR, Health Records, Healthcare, Digital Wellness, Electronic Health Records, Health-card, MedTech

1. INTRODUCTION

With the exponential technological advancement leading to the development of Electronic Health Record in the medical field, which plays a vital role in the betterment of our daily life. The Electronic Health Record (EHR) contains a digital record of a patient's medical history, diagnoses, reports, treatment plans and other details. These health records can be updated by a patient in real time and can be accessed by any doctor with the permission of the user. The facility of Electronic Health Records simplifies both the doctor's as well as the patient's experience ensuring feasibility, accuracy, and efficacy. They provide up-to-date, comprehensive information about the patient's medical history while enabling quicker access as well. EHR compliance reduces malpractice and a robust MedTech infrastructure to increase the quality of healthcare that patients.

2. RESEARCH METHODOLOGY

For this survey, a questionnaire was prepared to understand the first-hand response of the users of EHR, and some were interviewed in person. Besides the research formerly done and the surveys conducted were studied and analysed. To create a fully functional EHR system integrated in the hospitals, a multi-staged evaluation required to be planned for the execution whose stages included but not limited to surveys, individual interviews, and groups with local family physicians regarding multiple factors which included interest in EMR and its functionality, related barriers and the willingness and capability of paying for EMR.

2.1 ELECTRONIC HEALTH RECORDS IN INDIA

The Government of India introduced EHR after the initiation from Ministry of Health & Family Welfare in September 2013. Various EHRs developed over time in India such as HealthPlix, Praxify, Medanta Ray, Practo etc.

2.1.1 Ayushman Bharat Health Account (ABHA)

ABHA was an initiative launched by the government of India. It is a digital form of health card which helps users to maintain their health records and allows them to share them digitally with hospitals, clinics, etc. It provides a unique 14- digit number to everyone.

A news article by [Priyanka Sharma](#) in The Mint, states that as of 22 May 2022, around 21.9 Crore ABHA IDs have been created under Ayushman Bharat Digital Health Mission. However, as a limitation of this initiative, we find that to access ABHA scheme one needs to have the phone number associated to the Aadhar card necessarily and that it can only be accessed in the registered clinic or hospital. This risks the personal information of the patient as it can be subjected to hacking. People who do not have close accessibility to the registered hospitals can also face delay in treatment.

2.1.2 PurpleDocs

PurpleDocs is also an application for maintaining digital health records for the flexible accessibility of vital health data to help in making informed clinical decisions. Deepak and Pooja Gupta founded PurpleDocs in 2014. This cloud-based service offering for healthcare records management.

PurpleDocs turned out to be helpful as it eliminated the need for technically trained staff. The records uploaded are easily backed up on cloud and can be searched easily. The privacy of the patient data is also ensured as there is strict quality checking, and authorization-based access allowed. What Makes PurpleDocs more unique is that the records are also available as physical archives and can be delivered at the doorstep as needed. However, it can be a challenge to training the staff to adapt to the new system.

2.1.3 My Health- An initiative by Max Healthcare

Max Healthcare launched an artificial intelligence powered device to monitor the patient, claimed to be the first in India. This service is collaborated with digital health solutions provider My HealthCare.

The platform, Max My Health can be used to monitor the vitals of a patient using the clinical devices associated to the app. Thus, clinical readings would continue to be recorded. It has integrated blood pressure monitors, ECG and heart rate devices and blood sugar monitoring devices in this service and continues to upgrade. This EHR also is facilitated with a feature of vital alerts to warn the staff of possible dangers if the records exceed the permissible limits.

As Max began adopting the EMR model in 2009, the first stage of implementation started by connecting few hospitals to this EHR network and allowing a limited number of doctors and their patients to access it. Max Healthcare by now has achieved Stage 6 level of EMR adoption model. Almost all top hospitals in India have started implementing EHR with great success. Apollo group of Hospitals have also successfully achieved stage 6 of adoption model.

Adam C.Powell, et.al in their paper “Electronic health record use in an affluent region in India” tried to characterize the use of EHR systems in an affluent region of India whereby they surveyed Chandigarh. The survey reported that around 24 hospitals were offering multi-specialty inpatient care.

Among them 18 of these hospitals had EHR systems. The report mentioned that “of the hospitals with systems, 17 (100%) could access patient demographic information internally, but 12 (71%) could not access vital sign, allergy, or immunization data internally.

11 (65%) of the systems could share patient summaries internally, but 13 (76%) could not send electronic referrals internally.” Thus, we locate that the organizations which have adopted EHR face a major barrier because of the financial and staff matters. The information for EHR can be obtained from variety of aspects.

3. SURVEY BASED CONCLUSIONS

For a first-hand survey result analysed based on the sent-out questionnaire or personal interviews, some general findings were as follows:

Around, 24 % were very satisfied with the EHR system they used while around 10% were totally not satisfied. Around 7% of them had never accessed any EHR.

We find that 72% of the participants find EHR as meaningful in the modern world, while 2.5% disagree with it. 15% of them are still unsure about its merit on a widespread scale. As a concerning limitation agreed by all none of the current EHRs electronically forwards the medical prescriptions to the pharmacies. We also find that around 42% of participants are not sure if their medical records are accessible to third parties and it does put them in dilemmas often.

4. CHALLENGES FACED IN IMPLEMENTING EHR

Although, EHR has tried to make lives flexible, it has been surveyed that it is equally challenging to implement it on a larger scale. EHR requires adequate funding, well trained staff members such as experts from different areas like doctors, ICT experts, consultants, or educators. We know that 70% of India being rural and aren't very well adapted to technological advancements. Thus, we rarely find the use of an EHR/EMR tool in the Community Health Centers or the Public Health Centers. The public at large is still unaware of the positive change this can bring. Government established Standardization and Regulations for EHR is required to make it mandatory and widespread which is a challenging task for now. Surveys also find that data entries are more hassle for staff.

5. CONCLUSION

EHRs are omnipresent in India and is more likely to have capabilities for intro-organizational setup in near future which may foster clinical research. The implementation and development of Electronic Health Records in India is still emerging and needs to upgrade

more. It becomes of utmost importance to focus on the current challenges of EHR such as the need of proper training of doctors and other professionals. The initial experience with EHRs has been encouraging for the doctors, physicians and MRs and their knowledge will continue to transform the application of EHRs for the purpose of clinical research.

This pace of technology has brought unprecedented analytic capabilities, but they are to be pursued with appropriate measures in places to manage the security, privacy, and ensure adequacy of the informed consent. Ongoing programs have been implemented the creative solutions for these issues using distributed analysis to allow the organizations to retain the data control and doing this by engaging patient stakeholders.

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