

TOPIC: Exploring the Status, Challenges, and Strategies for Effective Implementation of Electronic Health Records (EHRs) in Private Sector: A comparative analysis.

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INTRODUCTION

An Electronic Health Record (EHR) serves as a comprehensive digital repository containing an individual's medical information, spanning their entire lifespan. Its primary objective is to facilitate seamless healthcare delivery, enhance patient education, and provide valuable data for research purposes. EHRs revolutionize traditional healthcare documentation by digitizing and centralizing patient data, thereby streamlining healthcare processes and enhancing patient care delivery. In recent years, the adoption of EHRs has become increasingly prevalent in healthcare systems worldwide, driven by advancements in technology and the recognition of their transformative potential. India is working towards achieving universal health coverage (UHC) and digitising the healthcare system, with Electronic Health Records at the centre of these efforts. However, their implementation faces numerous challenges stemming from diverse factors such as infrastructural limitations, regulatory complexities, and socio-cultural contexts. This paper aims to discuss the current policies in place for EHR adoption, challenges/obstacles that exists and concluding with way forward for the successful implementation of EHRs.

REVIEW OF LITERATURE

Electronic Health Records (EHRs) are defined as digitally stored healthcare information throughout an individual's lifetime with the purpose of supporting continuity of care, education, and research. The EHRs may include such things as; observations, laboratory tests, medical images, treatments, therapies, drugs administered, patient identifying information, legal permissions(1).

The Institute of Medicine and others have suggested that the wide-scale adoption of the EHRs could be pivotal for improving patient safety and health care quality. EHRs may also reduce

the costs of providing ambulatory care. However, despite emerging evidence about the benefits of EHRs, there are considerable barriers to adoption(2).

In the United States, an initiative was launched to establish EHR for most of the population by 2014, leading to the creation of the Office of the National Coordinator for Health Information Technology in 2004. Recent research conducted by the HIMSS revealed that merely 1.1% of hospitals have fully transitioned to paperless systems, while nearly 90% are in the process of shifting from PBMR to EHR. Similarly, within Canada, no hospital has achieved complete paperless status as of now; however, close to 50% of healthcare facilities have initiated partial integration of EHR systems, with ongoing governmental endeavours to further facilitate this implementation. The National Health Service in the United Kingdom established a goal in 1998 to have electronic medical records operational across all its trusts by 2005. Nevertheless, by 2002, only 3% of the trusts had managed to meet this objective, primarily due to financial limitations and a deficiency in essential IT standards. European countries like Sweden, the Netherlands, Denmark, Finland, and Austria have high percentages of GPs using electronic medical records, with initiatives for cross-border EHR implementation by the European Commission(3).

A research study conducted by Mukherjee A. revealed that digital technologies can (a) contribute to economic growth through increased investment, job creation and increase in exports of newer health products and services (b) reduce reliance on imported medical devices, and (c) allow for a more patient-centric approach. Study illuminated the strategic emphasis of the Indian Government on the digitization of its healthcare sector, encompassing EHRs for enhanced management of patient data, fostering seamless collaboration among healthcare professionals, and advancing healthcare research. Feedback from survey respondents indicated that the utilization of EHRs has the potential to render healthcare more cost-effective, accessible, and impartial(4).

The barrier most frequently documented in the literature was cost which included cost related to initial cost related to implementation of EHRs in the hospital setting, maintenance cost and training costs (5).

The slow rate of adoption suggests that resistance among physicians must be strong because physicians are the main frontline user-group of EMRs. Whether or not they support and use EMRs will have a great influence on other user groups in a medical practice, such as nurses and administrative staff (6).

Tsai CH studied the effects of EHR implementation and barriers to adoption and use which suggested that current EHRs still do not meet the needs of today's rapidly changing healthcare environment. Data duplication is still a prevailing issue, and solutions are still sought even though this was expected to be solved by the uptake of EHRs (7).

A study by Aggarwal P. revealed that poorly designed user interface account for unintended adverse consequence leading to decreased time efficiency, poor quality of care and increased threat to patient safety. Another challenge documented under the study was the loss or destruction of data occurs during data transfer raises concerns about the accuracy of the data base as patient care decisions are based on them(8).

RESEARCH QUESTIONS:

1. What is the present state of adoption of Electronic Health Records and what are the accompanying obstacles?
2. How can these challenges be addressed to facilitate the successful integration of EHRs?

OBJECTIVES:

1. To study the present adoption rate of adoption of electronic health records in United States, Canada and India?
2. To study the key barriers to the effective adoption of EHRs in the healthcare system.
3. To discuss the potential strategies and future directions for addressing the identified challenges and promoting the effective adoption of EHRs.

METHODS AND MATERIALS:

Study Design: This study will employ a secondary research approach, relying on a comprehensive review and synthesis of existing literature, including peer-reviewed articles, government reports, policy documents, and industry publications related to Electronic Health Records implementation.

STUDY POPULATION:

Inclusion Criteria:

- Geographical Location – USA, Canada and India.
- Studies focusing on EHRs implementation and adoption and barriers to adoption of EHRs.
- Articles published in English language between 2005 and 2023.
- Research articles, review papers, and policy documents providing insights into the status, challenges, and future directions of Electronic Health Records.

Exclusion Criteria:

- Studies not specifically addressing EHRs implementation.
- Studies addressing EHRs implementation in countries other than the inclusion criteria.
- Articles published in languages other than English.
- Studies published before 2005 or after 2023.

Study Tools:

- Literature databases such as PubMed, Scopus, and Google Scholar will be searched using relevant keywords including "Electronic Health Records" "EHR implementation", status of adoption of EHR in India, USA, Canada, "barriers to adoption of EHR", EMR, "healthcare technology", "health informatics", benefits of using EHR/EMR etc.
- Data extraction: Relevant information, including the status and barriers to EHR adoption, theoretical frameworks, and strategies, will be extracted from selected studies.

Stages of Study Selection Process

269 papers resulted after initial searching through databases.



102 papers left after removing duplicates.



70 papers left after exclusion based on title and keyword used.



29 papers left after reading abstract and introduction.



29 papers will be included in study after full text exclusion.

DURATION OF STUDY:

The study will be completed in 3 months between March to June.

IMPLICATIONS OF RESEARCH:

Electronic Health Records hold immense potential for revolutionizing healthcare. However, their successful implementation requires addressing critical challenges. This study, focusing on policies, challenges, and strategies for EHR adoption, is necessary for several reasons:

- **Limited Understanding of Policy Landscape:** Studying policy and regulatory frameworks will help identify gaps, redundancies, or inconsistencies that hinder adoption.
- **Persistent Adoption Challenges:** Despite ongoing efforts, challenges like interoperability, data security, and usability persist. Analysing these challenges will provide insights for developing targeted solutions.

ETHICAL CONSIDERATIONS:

- Proper attribution and citation of sources will be done for maintaining academic integrity and respecting the intellectual property rights of original authors.
- The credibility and trustworthiness of the literature reviewed will be critically evaluated and sources that may contain biased or misleading information will be avoided.

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