

The Role of Medical Records in Supporting Healthcare Quality Reporting and Performance Metrics:

(Review Article)

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Abstract

Background: Implementing precise data management systems guarantee the secure and effective transmission of sensitive health care data. Nevertheless, health care workers neglected their crucial responsibilities regarding the processing of medical data. Therefore, the use of superior electronic health record (EHR) software in the healthcare industry is crucial in order to reduce medical mistakes.

Aim of Study: This study aims to delineate the functions of Electronic Health Records (EHR) in enhancing the delivery of high-quality healthcare services.

Methods: The detected keywords include EHR (Electronic Health Record), EMR (Electronic Medical Record), medical data processing, medical data preservation, medical data deletion, health care, patient care, and other related phrases with various combinations. Articles from PubMed (National Library of Medicine), Google Scholar, and the Google search engine were retrieved via a search conducted on these databases. The search was conducted utilizing boolean operators “AND”, “OR”, and “NOT” using both the [All fields] and [MeSH Terms] search techniques.

Results: The articles were reviewed by examining their titles, assessing their abstracts, and then two persons determined whether the remaining full-text materials should be included or omitted based on their eligibility.

Conclusion: Inadequate medical data processing systems are the primary causes of medical mistakes. Utilizing standardized data management solutions minimizes mistakes and the resulting hardships. Consequently, the use of electronic technologies in healthcare institutions guarantees secure and effective data administration. Hence, it is crucial to build suitable

systems for managing medical data in order to ensure effective delivery of healthcare.

Key Words: Electronic Medical Data – Health Care Data – Medical Data Processing.

Introduction

THE primary objective of health care facilities is to restore the health of patients, which requires the use of effective and efficient medical data for evidence-based intervention [1]. Implementing a suitable health care data management system with accurate case definition allows for fast data extraction [2]. It enhances communication for clinical decision making in medical practice and clinical research, and improves the quality of health care services [2-8]. Healthcare personnel are proactive in enhancing the documentation, dissemination, monitoring, and implementation of preventative strategies to reduce morbidity [9-12]. In the health care market, it is necessary to have consistent, thorough, comprehensive, and reliable information in order to draw more attention [3].

The health care sector use a combination of paper-based record (PBR) and electronic health record (EHR) systems for the purpose of managing patient data. The Electronic Health Record (EHR) has become a crucial component of medical treatment, significantly enhancing the quality of healthcare services and improving both clinician satisfaction and patient decision-making [13-16]. Access to precise data from Electronic Health Records (EHR) allows clinicians to efficiently enter orders and assess the clinical accuracy, therefore enhancing the overall quality of patient treatment [17]. This capability is essential for both diagnosis and treatment, which also has advantages for medical and legal activities [18]. Embedded features refer to defined checklists,

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alarm signals, prediction tools, and recommendations that are integrated into a system or software. 1– Inspire and incentivize leaders of health care organizations and convince doctors to optimize the use of best practice alerts (BPAs) in a more efficient and effective manner [19]. Research findings support the notion that health care practices are shifting from PBR to EHR systems. However, a study indicates that EHR systems are not as adaptable for recording in eye care practices [20].

The EHR system allowed for easy access and transmission of patient data. This facilitates precise diagnosis and decision-making by minimizing access time and use. Notification signal flags or BPAs provide prompts about the specific content and intended recipients of information, which might lead to possible adverse occurrences [21-25]. These prompts are shown in a clear and clearly recognizable manner to warn reviewers of patient data [26]. Enhancing patient participation in healthcare service provision and decision-making processes has been shown to promote trust and confidence, ultimately aiding in the identification of specific and actionable adherence hurdles [27-31]. Furthermore, patients may get automated email and telephone reminders to enhance their motivation and ensure optimal compliance [32]. Inadequate data management techniques are the primary causes of recurring errors and the resulting injuries or fatalities, mostly owing to unreadable PBR (errors in recording or transcribing) [33-36].

Aim of work:

The EHR program enhances the workflow, reliability, security, and effectiveness of patient care delivery. Therefore, by establishing standardized rules, processes, and procedures, a health care data management system may enhance the quality of health services and efficiency [37]. This system also helps to eliminate non-value adding tasks and assures significant improvements in quality and safety [16,17,23,34]. Hence, this study aims to delineate the functions of Electronic Health Records (EHR) in enhancing the caliber of healthcare service delivery.

Methods

The discovered keywords include EHR, EMR, electronic health record, electronic medical record, medical data recording, medical data processing, medical data retention, medical data deletion, health care, patient care, animal data, and plant data, with various combinations. The search was conducted using Boolean operators “AND”, “OR”, and “NOT”. We utilized the terms “EHR,” “EMR,” “electronic health record,” “electronic medical record,” “medical data recording,” “medical data processing,” “medical data retention,” and “medical data destruction” in our search. To search for articles from PubMed and Google Scholar databases, as well as the Google search engine, use the following query:

((health care) OR (health care) OR (patient care) OR (patient care)). Data was retrieved from downloaded files and used for qualitative synthesis.

Processes for managing patient health care data:

The health care business is an information-based sector, yet the techniques for capturing data and the rules for protecting data differ significantly across institutions and nations. The health care data management rules should clearly establish confidentiality measures and prohibit any attempts to recreate the data after it has been destroyed, under the oversight of security professionals. The document destruction policy should clearly outline the medical data retention policy and associated norms of practice, which should include a comprehensive analysis of the benefits and drawbacks of both deleting and maintaining medical data [38-40].

The advantages of using Electronic Health Records (EHR):

Implementing Electronic Health Records (EHR) enhances the quality of services and guarantees patient safety by using decision-support technologies to minimize errors. This leads to increased satisfaction among doctors and patients, ultimately boosting clients’ healthcare-seeking behavior. Presently, around 1,000 Electronic Health Record (EHR) apps are released on a monthly basis with the aim of enhancing performance [41,42] enhancing energy conservation, optimizing usability, guaranteeing adherence, authenticity, and contentment, [41,43] with satisfactory improvements in safety [44]. The EHR tool was successfully deployed in the United States and the United Kingdom, both of which possess the biggest commercial and public healthcare systems globally. This implementation effectively delivered high-quality patient care [45]. The deployment of current information technology is crucial for improving the quality of health care services, in line with medico-legal issues [46-48].

Accessing the electronic health record (EHR) technology enhances the delivery of healthcare. Individuals aged 19 and 24 have shown an increased ability to make precise judgments, which in turn leads to the enhancement of healthcare quality and research output at a lower cost [49,50]. The technology also guarantees the secure transmission of healthcare data that fulfills the patient’s expectations, promotes the uninterrupted provision of patient care [51], and assures compliance with medication adherence [52,53]. Furthermore, the tool facilitates the attainment of diabetic goals, while non-physician staff participates in the service delivery process. The data derived from the Electronic Health Record (EHR) measures several aspects including preventative, process, and outcome metrics [54-56].

Implementing a high-quality:

Electronic Health Record (EHR) enhances epidemic monitoring, reduces patient hospitalization

duration, and increases job productivity. By minimizing non-value adding operations, [34] enables the achievement of objectives and facilitates prompt decision-making at a lower cost [49,57]. The technology minimizes the amount of time that nurses and clerks need to obtain data in order to make timely actions [1]. It guarantees the high quality of services while minimizing costs [58]. The possible advantages of Electronic Health Records (EHR) include enhancing the quality of healthcare, assuring seamless patient care, increasing efficiency, and generating a favorable financial return on investment [50]. Utilizing EHR effectively enhances patient safety, confidence, and happiness with the healthcare system by directing patients towards health-related information sources [59]. Patients often want the ability to regulate the manner and specifics of the notifications they get when their data is accessed [23]. The tools may be tailored to alert and guarantee the secure transmission of sensitive patient data, [33] and they must be safeguarded. The exchange of medical information across healthcare facilities enhances the comprehension of illness, diagnosis, and decision-making processes by the medical staff. The Electronic Health Record (EHR) enables automated illness monitoring and facilitates the involvement and development of secure and efficient healthcare practices [56].

Obstacles Associated with eHR Implementation:

The Electronic Health Record (EHR) is considered to have both positive and negative aspects, as it enhances quality on one hand [57-61] but also raises concerns about privacy and safety hazards on the other hand [34]. These are significant concerns expressed by patients about the transfer of their health care data [23,33]. Despite its increasing acceptance rate, the use of Electronic Health Records (EHR) remains relatively low, especially in developing nations [46,62,63]. Several reasons contribute to the low adoption rate, including behavioral issues such as a lack of perceived advantages, poor confidence, discontent, doctors' reluctance, lack of stakeholders' engagement, and ignorance about more sophisticated systems. Technical factors, such as interoperability, lack of financial support or specific financial incentives, and lack of technology infrastructure, contribute to the challenges faced in implementing electronic health records (EHRs). Legal factors, such as the absence of a legal framework and a comprehensive national policy and strategy for EHRs, also pose obstacles. Socio-demographic factors, including the age and education level of physicians, as well as practice-related factors like high skill demand and lack of training, further complicate the situation. Additionally, knowledge-related factors, such as poor awareness, play a role in hindering EHR implementation [64]. The Delphi research revealed the obstacles that medical practices encounter when trying to install EHR systems. These obstacles include both internal barriers related to behavior and cognition, as well as external constraints

related to economics and technology. These barriers make it difficult for medical practices to make the first choice to invest in an EMR system [50].

Remote Healthcare Service:

Conventional telephone systems played a crucial role in the development of contemporary telemedicine. The implementation of electronic communication applications with high processing power facilitates the ability to remotely control processes [65-67]. While efforts to decrease medical errors are a global priority, clinicians continue to make various sorts of errors while manually processing medical data, either via mistakes made during recording or by failing to promptly capture healthcare information [35]. Mistakes related to medical data are frequent and expensive. Nevertheless, it is important to take into account the social, spiritual, psychological, and ethical aspects of the technology, along with its technical capabilities, while creating and implementing new health care technologies [68]. It is essential for all parties involved to assist in this process. The PBR systems are inherently more susceptible to errors; however just replacing the system with EHR does not guarantee accuracy [34]. Therefore, it is crucial to ensure the effective handling, use, and retention of medical data in order to make informed choices in both clinical and public health settings.

Future Perspectives:

The successful implementation of Electronic Health Record (EHR) systems relies heavily on several aspects, including the systems themselves, the people involved, the processes followed, and the quality of the result. These elements are crucial in determining the outcome of the implementation. The stakeholders get advantages from the systems that safeguard the patients' requirements and guarantee their confidentiality [24]. Having access to precise and comprehensive clinical information is the primary factor in making good decisions [69]. This is achieved via the use of decision-support electronic health record (EHR) systems, namely behavioral health integration with the goals of healthcare institutions and the advantages of enhancing patient experiences. One example of this is addressing alcohol consumption [30]. The system may be used to enter the present status of a patient and get appropriate recommendations for medical testing, potential illnesses, and treatment strategies [69]. Research findings demonstrated that implementing the EHR "active choice" method led to a substantial rise in influenza vaccination rates as well as the use of colonoscopy and mammography screening services.8Voice input applications may be used to transcribe doctor's dictation and streamline the collecting, indexing, storage, and retrieval of medical information [17]. A research has shown that although electronic health records (EHR) may enhance services, they do not always support a collaborative team culture or benefit professionals [70].

The use of electronic health records (EHR) by the healthcare sector fosters trust and offers a chance to track hospital admissions, diagnoses, and outcomes. This data may be used to shape public health policies and improve service provision [58]. It is advisable to promote the integration of social knowledge networking capabilities into the EHR systems by the suppliers. Researchers have found two concerns that need more investigation to better understand the causes for doubts [71]. Initially, a research study conducted at the national level revealed that the rate of adoption of electronic health records (EHR) was greater in rural practices compared to urban equivalents, which contradicted previous patterns [72]. Another study also emphasized the need of taking into account the patient's behavioral elements while utilizing the tool during patient rendering operations in order to enhance the patient's degree of involvement [73]. These challenges may need the involvement of behavioral scientists to solve this specific patient concern.

Conclusion:

Healthcare practitioners often engage in the fundamental duty of processing medical data. Computerized physician order input programs with decision-support fields decrease preventable medical mistakes by using built-in memory aids. The use of automated warning alerts facilitates quick and appropriate action, hence ensuring safer and more efficient healthcare. In order to maintain anonymity, the design policies of electronic technology must adhere to predetermined norms and criteria. Technologies that are easy to use and understand guarantee that health care data is sent efficiently and on time. This is important for providing high-quality patient care that meets the demands of both the patients and the organization.

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دور سجلات المرضى فى دعم تقارير جودة الرعاية الصحية ومقاييس الأداء: مراجعة

الخلفية: تضمن تنفيذ أنظمة إدارة البيانات الدقيقة نقل البيانات الحساسة للرعاية الصحية بطريقة آمنة وفعالة. ومع ذلك، تهمل العاملين فى مجال الرعاية الصحية مسؤولياتهم الحاسمة فيما يتعلق بمعالجة البيانات الطبية. لذا، فإن استخدام برامج سجلات الصحة الإلكترونية (EHR) المتقدمة فى صناعة الرعاية الصحية أمر حيوى من أجل تقليل الأخطاء الطبية.

هدف العمل: يهدف هذا الدراسة إلى توضيح وظائف سجلات الصحة الإلكترونية (EHR) فى تعزيز تقديم خدمات الرعاية الصحية عالية الجودة.

الطرق: تضمنت الكلمات الرئيسية المكتشفة EHR سجلات الصحة الإلكترونية EHR صحة الإلكترونية، معالجة البيانات الطبية، الحفاظ على البيانات الطبية، حذف البيانات الطبية، الرعاية الصحية، رعاية المرضى، وعبارات أخرى ذات صلة بتنوعها. تم استرداد المقالات من PubMed المكتبة الوطنية للطب، Google Scholar ومحرك البحث Google من خلال بحث أخرى على هذه القواعد البيانات. تم إجراء البحث باستخدام عمليات البحث المنطقية «AND» و «NOT» و «OR» باستخدام تقنيات البحث على كل الحقول.

النتائج: تمت مراجعة المقالات من خلال فحص عناوينها، وتقييم ملخصاتها، ثم قام شخصان بتحديد ما إذا كان يجب تضمين المواد الكاملة المتبقية أو استبعادها استناداً إلى مؤهلاتها.

الاستنتاج: أنظمة معالجة البيانات الطبية الناقصة هى الأسباب الرئيسية للأخطاء الطبية. يقلل استخدام حلول إدارة البيانات الموحدة من الأخطاء والمشاكل الناتجة عنها. وبالتالي، يضمن استخدام التقنيات الإلكترونية فى مؤسسات الرعاية الصحية إدارة بيانات آمنة وفعالة. لذا، من الضرورى بناء أنظمة مناسبة لإدارة البيانات الطبية من أجل ضمان تقديم الرعاية الصحية بفعالية.