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THE IMPACT OF ELECTRONIC HEALTHCARE RECORDS ON THE CLINICAL BURDENS REGARDING COLLABORATIONS AMONG HEALTHCARE PROFESSIONALS

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Abstract

Electronic healthcare records (EHRs) have revolutionized the way patient information is stored and shared among healthcare professionals. This study aims to explore the impact of EHRs on clinical burdens related to collaborations among healthcare professionals. By investigating the challenges and benefits associated with EHR implementation, this research seeks to provide insights into how EHRs can improve interprofessional communication and coordination in healthcare settings.

Keywords: Electronic healthcare records (EHRs) - healthcare professionals - interprofessional communication - clinical burdens

Research Background

The adoption of EHRs has become widespread in healthcare institutions, offering a centralized platform for storing patient data and facilitating information exchange among healthcare providers. While EHRs have the potential to streamline clinical workflows and enhance patient care, there are concerns about the impact of EHRs on collaboration among healthcare professionals. Understanding these implications is crucial for optimizing the use of EHRs in clinical practice.

The swift implementation of electronic health records (EHRs) after the enactment of the Health Information Technology for Economic and Clinical Health (HITECH) Act has resulted in progress in both individual and population health (Hripcsak et al., 2014). The implementation of HITECH has resulted in advancements in healthcare quality, patient safety, and diagnostic accuracy by improving data management and promoting the timely reuse of information (Khairat, et al., 2018; Paterick, et al., 2018; Coiera, et al., 2016; Palabindala, et al., 2016).

Interoperable systems have also made it easier to provide care continuity and monitor compliance metrics. Implementing electronic health record (EHR) systems that support guideline-based treatment has been linked to a decrease in unnecessary repetitions or duplications (Howard, et al., 2013; Chaudhry, et al., 2006; Hillestad et al., 2005).

The introduction of electronic health records (EHRs) is still in its early stages, but it has already had unforeseen effects on clinical practice and healthcare systems. One of these effects is a large increase in the amount of time clinicians spend on documentation (Cox, et al., 2018; DiAngi, et al., 2016; DesRoches, et al., 2008; Poissant, et al., 2005; Ash, et al., 2004). The increase in dissatisfaction with current documentation methods in EHR systems can be attributed to factors such as longer work hours, limited time, excessive clerical tasks, and interruptions during patient-provider interactions (Mishra, et al., 2018; Shanafelt, Tet al., 2016; Howard, et al., 2013).

The documentation burden has been associated with a rise in medical errors. This burden also poses a risk to patient safety (Coiera, et al., 2016; Kaufman, et al., 2016; Ash, et al., 2004) and leads to subpar documentation quality (Dykstra, et al., 2009). Furthermore, it contributes to job attrition and, eventually, burnout among nurses and physicians (Coiera, et al., 2016; DiAngi, et al., 2016; DesRoches, et al., 2008).

Research Problem

Despite the growing use of EHRs, there is limited research on how EHRs influence the clinical burdens associated with collaborations among healthcare professionals. It is essential to investigate the challenges and opportunities that EHRs present in promoting effective teamwork and communication among healthcare providers.

Electronic Health Records (EHRs) have significantly transformed the process of documenting clinical information and facilitating communication in everyday healthcare (Cox, et al., 2018; Goldenberg, 2016;

Shanafelt, et al., 2016). Doctors have expressed a desire to not follow the rules of EHR incentive schemes (such as Meaningful Use (MU) and the Physician Quality Reporting System) in order to reduce the load of documentation (Rao, et al., 2017; Shanafelt, et al., 2016; Weeks, et al., 2015).

However, research repeatedly shows that doctors dedicate twice the amount of time to electronic documentation and administrative duties compared to the time they spend directly caring for patients (Colicchio, T. K., & Cimino, J. J., 2019; Joukes, et al., 2018). Similarly, nurses allocate over 50% of their shift time to the input and retrieval of electronic health record (EHR) data (Olivares Bøgeskov & Grimshaw-Aagaard, 2019), resulting in decreased direct interaction with patients (Lavander, et al., 2016; Wang, et al., 2015).

The past decade has seen researchers discussing the challenges of burden and its impact on clinician burnout caused by electronic health records (EHRs) (Schulte & Fry, 2019). However, there has been limited focus on differentiating the concept of burden (defined as a duty, responsibility, etc., that causes worry, difficulty, or hard work) from burnout (defined as a long-term work-related stress reaction characterized by emotional exhaustion, depersonalization, and a lack of sense of personal accomplishment) (Tawfik, et al., 2019; West, et al., 2016).

The phenomenon of clinician burnout has been extensively reported and systematically measured utilizing questionnaires and psychological assessments in peer-reviewed academic literature. However, it is important to note that there is currently no agreement on the methods used to quantify the burden (Dyrbye, et al., 2019; Dyrbye, et al., 2017; Heinemann & Heinemann, 2017; Moss, et al., 2016).

Although there has been significant research on discontent with Electronic Health Records (EHR) and certain measures have been suggested to measure clinician activity, there are only a few practical remedies that have been proven to minimize the load. Various interventions have been used to alleviate strain, including the use of scribes, remote transcribing services, text summaries, and dictation software (Dela Cruz, et al., 2014).

Research Questions:

1. What are the key challenges faced by healthcare professionals in collaborating effectively through EHRs?
2. How do EHRs impact the communication and coordination among different healthcare disciplines?
3. What strategies can be implemented to maximize the benefits of EHRs in improving interprofessional collaborations in healthcare settings?

Aim and Objectives

The aim of this study is to examine the impact of EHRs on clinical burdens related to collaborations among healthcare professionals. The objectives include:

- Identifying the challenges and barriers to effective collaboration through EHRs.
- Exploring the benefits and opportunities of using EHRs for interprofessional communication.
- Proposing strategies to enhance teamwork and coordination among healthcare professionals using EHRs.

Research Significance

This research is significant as it addresses a gap in the literature regarding the impact of EHRs on collaborations among healthcare professionals. The findings of this study can inform healthcare organizations and policymakers on how to leverage EHRs to improve teamwork and communication, ultimately enhancing patient outcomes and healthcare delivery.

This study holds significant implications for healthcare practice, policy, and research in several ways:

Improved Patient Care: Understanding how EHRs influence collaborations among healthcare professionals can lead to enhanced patient care outcomes. By identifying barriers and facilitators to effective teamwork through EHRs, healthcare providers can streamline care delivery processes, reduce medical errors, and improve patient safety.

Enhanced Interprofessional Communication: Effective communication among healthcare professionals is essential for providing comprehensive and coordinated care to patients. By exploring the impact of EHRs on communication dynamics, this research can help identify best practices for leveraging EHRs to enhance interprofessional communication and collaboration.

Healthcare Efficiency and Cost-Effectiveness: Optimizing the use of EHRs for collaborative care can lead to increased healthcare efficiency and cost-effectiveness. By identifying strategies to overcome challenges in EHR implementation and utilization, healthcare organizations can streamline workflows, reduce duplication of efforts, and improve resource allocation.

Professional Development and Training: Findings from this study can inform the development of training programs and educational initiatives aimed at equipping healthcare professionals with the necessary skills to effectively collaborate through EHRs. By addressing knowledge gaps and promoting interdisciplinary teamwork, healthcare providers can deliver more coordinated and patient-centered care.

Policy Implications: The insights gained from this research can inform healthcare policies and guidelines related to EHR adoption and use. Policymakers can leverage the findings to develop regulations that support interprofessional collaboration through EHRs, ensuring that healthcare systems are equipped to meet the evolving needs of patients and providers.

Overall, this study has the potential to contribute to the ongoing efforts to optimize healthcare delivery through the effective utilization of EHRs, ultimately benefiting healthcare professionals, patients, and the broader healthcare system.

Collaboration in the field of healthcare

The importance of collaboration in healthcare is increasing, and the need for greater collaborative care is apparent in both academic literature (Fewster-Thuente, L., & Velsor-Friedrich, B., 2008) and actual practice (Morgan, S., Pullon, S., & McKinlay, E. 2015). The definition of collaboration that we adhere to is as follows: "a multifaceted occurrence that unites two or more individuals, frequently from diverse professional fields, who collaborate to accomplish common goals and objectives" (Houldin, et al., 2004). Distinctions can be identified in the level of collaboration. Multidisciplinary collaboration in healthcare involves the utilization of the talents and expertise of professionals from several disciplines. Each discipline brings their own perspective to the patient's care. Here, each discipline works autonomously on care plans related to their discipline, which are then implemented collectively, but have not yet been merged into a unified strategy. Furthermore, interdisciplinary collaboration involves the integration of unique disciplinary methods into a single consultation (Jessup, 2007).

Healthcare professionals that collaborate in an interdisciplinary manner leverage each other's experience and abilities to achieve mutually agreed-upon objectives (Fewster-Thuente, L., & Velsor-Friedrich, B., 2008). The manner and level of effectiveness with which healthcare professionals collaborate are determined by their work situation. Effective collaboration can be facilitated by several factors, including well-defined objectives and guidelines, mutual respect and trust among participants, well-established organizational frameworks, and adequate support from the company (Youngwerth, J., & Twaddle, 2011). Research indicates that healthcare practitioners can have contrasting objectives (Boonstra, et al., 2017; Findikoglu, M., & Watson-Manheim, 2016). Conflicting objectives in utilizing an Electronic Health Record (EHR) can result in divergent usage patterns among collaborating clinicians. In addition, the existing communication patterns within clinical departments can lead to different utilization of a hospital-wide Electronic Health Record (EHR). In addition, many healthcare practitioners and departments may utilize an Electronic Health Record (EHR) in a disorganized manner, which could lead to a decline in the quality of documentation (Lanham, et al., 2012).

Reduced documentation quality may lead to decreased trust in the system, which could limit collaboration among healthcare professionals from various departments that use electronic health records (EHRs). Effective interdisciplinary collaboration during ward rounds using an EHR relies on addressing broader design challenges, including the social ergonomics of the devices used, integration of paper records, and enhancements to the technical system (Morrison, et al., 2011).

The effectiveness of the EHR for multidisciplinary relationship-building, communication, coordination, and collaborative decision-making is threatened by difficulties related to data quality and accessibility. These authors contended that the presence of several communication channels, including those caused by the EHR, could potentially hinder collaboration. Another study found that the use of an Electronic Health Record (EHR) led to an increase in the diversity of documentation and hindered collaboration among

doctors (Chao, 2016).

The intricacy of healthcare practice, coupled with the need for adaptability, may want electronic health records (EHRs) that surpass mere passive data storage and provide enhanced assistance for collaboration. In order to enhance the integration of electronic health records (EHR) in healthcare practices, it is necessary to have a deeper understanding of the connections between inter-professional communication patterns and the utilization of specific EHR features (Chao, 2016).

Potential Benefits of EHRs

The potential benefits of EHRs are rarely fully realized in isolation. Contextual factors play a role in how individuals perceive and implement them (Volkoff & Strong, 2017). One such approach for a hospital to promote improvement and encourage the implementation of ideas across its departments is to conduct meetings (Strong, et al., 2014). The successful implementation of important advantages in a telemedicine project in Nepal was shown to rely on adapting to changes in personal, social, and cultural factors. The second study similarly highlights the interconnectedness of many collaboration opportunities: when actors utilize certain opportunities, it can result in an outcome that may prompt the identification of other opportunities (Volkoff, O., & Strong, 2017). They analyzed data from five different outpatient clinics in a hospital to investigate how the collaborative features of an electronic health record (EHR) influenced the real collaboration among different disciplines and medical specialties.

Hospitals rely on highly collaborative core procedures, and several have adopted full Electronic Health Records to enhance multidisciplinary collaboration. This study has utilized an affordance perspective to investigate the extent to which an Electronic Health Record supports or hinders collaboration in five outpatient clinics. By examining the interaction between collaborative features of electronic health records (EHRs), we enhance existing knowledge by illustrating how interdisciplinary collaboration is both facilitated and limited. Additionally, we highlight that EHRs can have both intentional and unforeseen effects on collaboration (Colicchio, et al., 2019).

Bardram and Houben's (2018) categorization of four collaborative affordances (Portability, Co-located access, Shared overview, and Mutual awareness) and expands upon their findings by introducing two additional, collaboratively produced affordances: Messaging and Orchestrating. The categorization and explanations of the last two were synchronized with the investigation conducted by Chase (2015). Messaging involves the transmission of information and communication among professionals, as well as with other individuals within the hospital. Orchestrating involves coordinating the appropriate individual to perform the correct task at the appropriate moment for the patient. This study demonstrates that the implementation of an Electronic Health Record (EHR) has a significant impact on the organizational processes of hospitals, leading to changes in crucial structural elements (Greenhalgh, 2008).

Leonardi (2011) and Orlikowski (2000) have both shown that the degree to which the desired advantages

of a new technology are achieved depends on how actors effectively utilize its capabilities. Within the hospital under investigation, the clinics implemented the collaborative features of the Electronic Health Record (EHR) in varying ways, leading to limited collaboration among different medical specialties. Therefore, it is vital to implement hospital-wide regulations regarding the usage of EHRs in order to fully realize the potential advantages of these systems. This study also corroborates the findings of Thapa and Sein (2018), who claim that contextual circumstances play a significant role in determining the degree to which collaborative opportunities are realized by groups of individuals.

Conclusion

This study highlights the importance for healthcare organizations and EHR providers to be mindful of several challenges concerning the collaborative capabilities of EHRs. Hospitals are comprised of clinical divisions that have distinct operational procedures and specific requirements for an Electronic Health Record (EHR). Therefore, it is necessary to implement policies in order to facilitate efficient collaboration between departments using an Electronic Health Record (EHR) system. In the absence of organization-wide regulations, departments may implement collaboration opportunities in varying ways. Consequently, as demonstrated by this study, the shared understanding and common goals among healthcare professionals from diverse departments might be negatively affected. One policy is to engage several medical specialties and promote joint decision-making and ownership in the process of selecting, implementing, and adapting collaborative technology, such as electronic health records (EHRs).

Hospitals should acknowledge the drawbacks of rigid role authorizations in electronic health records (EHRs), as our research suggests that these restrictions have a negative impact on collaboration between different functional groups. Additionally, it is crucial for practitioners to understand the limitations of various system-representations inside electronic health records (EHRs) in medical contexts. These limitations might have a detrimental impact on collaboration at the clinical department level. Ultimately, this study demonstrates that electronic health records (EHRs) have the potential to facilitate and hinder collaboration across all levels of an organization. In order to effectively benefit from the collaborative affordances of an EHR, managers must carefully oversee the process of affordance actualization, which involves numerous clinical departments and disciplines.

The extent of the documentation workload in interprofessional clinical positions has not been thoroughly explored or accurately evaluated in both hospital and outpatient settings. This indicates a deficiency in tangible and verified measures of load in research, which is far less significant compared to the existing literature on burnout. Furthermore, this indicates that the current evidence is inaccurate and incomplete. Although the included studies provide various measures for effort and time, most of them lack generalizability across different study settings, patient populations, EHR systems, activity types, roles, and subspecialties. Without standardization, these studies are also susceptible to measurement error, which includes misclassifying idle and active time, ensuring the accuracy of task measurement, and

capturing time with precision.

Therefore, it would be wise to further investigate readily available and expandable alternatives, such as the utilization of electronic health record (EHR) usage log data. In order to assess the effectiveness of quality improvement techniques and initiatives, it is necessary to have measurable indicators that can be compared and remain consistent over time, across different locations, professions, and situations. We suggest that burden should be evaluated as a comprehensive global measure, taking into account task value, in line with the characteristics of burden measurement identified in this analysis. Additional investigation is required to consistently define and establish a standard method for measuring the idea of burden in various clinical environments.

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