Chapter-7

CLINICAL DECISION SUPPORT SYSTEM: AN ANSWER TO SIGNIFICANT ISSUES IN THE US HEALTHCARE

[1]Anirban Kundu
[1]Student, IIHMR University

[2]Dr. J.P. Singh
[2]Professor, IIHMR University

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INTRODUCTION

One significant advancement that has transformed healthcare delivery is the adoption of Electronic Medical Record (EMR) systems, leading to the efficient utilization of available resources and an overall enhancement in workflow quality. Since 2014, EMR systems have been actively sharing data among themselves and other systems. However, achieving interoperability has remained a major global challenge, hindering the full realization of the potential of Healthcare Information Technology (I.T.) for effective use. To ensure compliance with emerging regulations and enforce "meaningful use" (MU) prerequisites, the Centers for Medicare & Medicaid Services (CMS) introduced various regulations and amendments [1].

In accordance with Section 218(b) of the Protecting Access to Medicare Act (PAMA) of 2014, CMS (Centers for Medicare & Medicaid Services) launched a program to support the implementation of Appropriate Use Criteria. As per this legislation, providers participating in Medicare are required to consult Appropriate Use Criteria through a clinical decision support mechanism when ordering specific advanced diagnostic imaging services [2]. The services covered under this requirement encompass diagnostic Magnetic Resonance Imaging (MRI), computed tomography (CT), nuclear medicine (including positron emission tomography), and other diagnostic imaging services specified by CMS in collaboration with the medical community and stakeholders. Importantly, X-ray, ultrasound, and fluoroscopy services are exempt from this mandate [3].

RESEARCH OBJECTIVES

1. To identify and analyze the challenges currently confronted by healthcare facilities in the United States.
2. To examine the recent healthcare reforms and legislations that have been introduced.
3. To innovatively pinpoint the role of Clinical Decision Support System in facilitating healthcare facilities to achieve the necessary

MU (Meaningful Use) and EMRAM (Electronic Medical Record Adoption Model) objectives and ensure compliance.

4. To develop a strategic plan for integrating a Clinical Decision Support System into an Electronic Medical Record (EMR) system.

RESEARCH METHODOLOGY

The study was designed as an External Desk Research Study, constituting a form of secondary research, and was conducted at Deloitte USI in Bengaluru. The research spanned a duration of 3 months, commencing on February 6, 2017, and concluding on May 6, 2017. Throughout the study, data collection primarily relied on external sources of secondary data, drawing insights from a range of reports and journals. This approach allowed for a comprehensive exploration of relevant information to address the study's objectives within the specified timeframe and setting.

RESULTS AND DISCUSSION

The study revealed significant insights into Clinical Decision Support Systems (CDSS), emphasizing their diverse design principles and structural evolution over the past decade. The critical importance of categorizing CDSS based on contextual, knowledge-based, decision support, information delivery, and workflow axes were underscored. The functionalities of CDSS spanned diagnostic assistance, therapy recommendations, drug dosing, test selection, alerts, reminders, as well as preventive, screening, and chronic disease management.

Factors influencing CDSS acceptance were identified, encompassing cost considerations, user attitudes, ease of use, legal and ethical aspects, and interoperability. The study stressed the necessity for knowledge bases derived from reliable sources, user-friendly interfaces, and seamless integration into clinical workflows to enhance user acceptance.

The implementation considerations for CDSS were outlined, covering triggers for External Decision Support Service, patient qualification criteria, security measures, and delivery formats. The study

recommended the formation of committees involving clinicians, analysts, and operational teams to oversee implementation, define responsibilities, and assess the impact on clinical workflows.

The study concluded by highlighting the potential benefits of CDSS, including improved patient safety, enhanced quality of care, and increased healthcare delivery efficiency. It also acknowledged potential drawbacks such as concerns about deskilling, rigidity, and over-reliance on software. Overall, the findings emphasized the evolving landscape of CDSS and its pivotal role in advancing healthcare decision-making processes, providing valuable insights for healthcare practitioners, administrators, and policymakers.

CONCLUSION

The continuously expanding capabilities of Healthcare IT and impending regulations underscore the unavoidable reality that systems such as EMRs without integrated CDSS are at risk of becoming obsolete, lacking value for clients. The incorporation of EMR systems with features like CDSS has the potential to fundamentally transform healthcare delivery, elevating overall quality and safety for patients while cutting the cost of care delivery by eliminating unnecessary steps in the patient care process. Beyond catering to existing customers, CDSS can serve as an additional feature for an EMR vendor when attracting new clients. The study highlights that a CDSS module acts as a guiding tool, aiding clinicians in the decision-making process without impinging on their skills or judgment.

REFERENCES

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