***Literature Survey***

***G11-02***

**Literature Survey 1:**

**Title:** The Digitization of Patient Care

**Author:** Hilal Atasoy,1 Brad N. Greenwood,2 and Jeffrey Scott McCullough3

**Year:** 2018

**Aim/Objective:** A Review of the Effects of Electronic Health Records on Health Care Quality and Utilization

**Findings/Gaps:**

This article provides an overview of the literature on the effects of electronic health records (EHRs) on health care quality and costs. It defines EHRs and discusses their adoption driven by the HITECH Act. The article reviews studies finding that EHRs can improve quality through clinical decision support, care coordination, and information management. EHRs may also increase efficiency and reduce costs by automating processes.

However, EHRs could potentially have other unintended consequences. These might be new uses of, or efficiencies from, EHR adoption but may also include difficulties with the adoption and implementation of information systems. These difficulties include disruption of organizational workflows , tool failure, maintenance issues in keeping best practices current, user resistance to change, and others very much idiosyncratic to the hospital context.

The article discusses ongoing issues around health information exchange and opportunities for data analytics using machine learning on EHR data.

**Literature Survey 2:**

**Title:** Adoption of Electronic Health Records: A Roadmap for India

**Author:** Sunil Kumar Srivastava, PhD ,Ministry of Electronics & Information Technology, Government of India, New Delhi, India

**Year:** 2016

**Aim/Objective:** The objective of the study was to create a roadmap for the adoption of Electronic Health Record (EHR) in India based an analysis of the strategies of other countries and national scenarios of ICT use in India.

**Methods:** The strategies for adoption of EHR in other countries were analysed to find the crucial steps taken. Apart from reports collected from stake- holders in the country, the study relied on the experience of the author in handling several e-health projects.

**Findings/Gaps:**

It was found that there are four major areas where the countries considered have made substantial efforts: ICT infrastructure, Policy & regulations, Standards & interoperability, and Research, development & education. A set of crucial activities were identified in each area.

Based on the analysis, a roadmap is suggested. It includes the creation of a secure health network; health information exchange; and the use of open-source software, a national health policy, privacy laws, an agency for health IT standards, R&D, human resource development, etc.

Although some steps have been initiated, several new steps need to be taken up for the successful adoption of EHR. It requires a coordinated effort from all the stakeholders.

**Literature Survey 3:**

**Title:** Evaluative Study of Digital Record Management System in Hospitals: Addressing

**Author:** Akor Solomon Obotu, Uganneya SolomonA. Ph.D, Ikese Christopher Ogezi

**Year:**2018

**Aim/Objective:**To evaluate and enhance the effectiveness of digital record management systems in Minna metropolis hospitals, addressing limitations inherent in the manual medical record-keeping system.

**Findings/Gaps:**

The introduction underscores the challenges posed by the manual medical record-keeping system, including issues with missing information and accessibility. The subsequent issues involve time-consuming searches, data security risks, and privacy concerns. Recognizing these challenges, the need for digital record management is highlighted, but challenges like illegible handwriting persist.

The evaluative study aims to address these limitations by assessing digital systems' impact on data accuracy, accessibility, and security in Minna metropolis hospitals. Key considerations include efficiency comparisons, security measures, and identification of adoption challenges. This research seeks to contribute insights for enhancing healthcare information management and improving patient care quality.

**Literature Survey 4:**

**Title:** The Evolution and Impact of Electronic Health Record Systems

**Author:** Black AD, Car J, Pagliari C, Anandan C, Cresswell K, Bokun T, McKinstry B, Procter R, Majeed A, Sheikh A

**Year:**2011

**Aim/Objective:**To explore the evolution of Electronic Health Record (EHR) systems and their impact on healthcare delivery and patient outcomes.

**Findings/Gaps:**

This literature review delves into the historical development of Electronic Health Record (EHR) systems, offering valuable insights into their evolution from early conceptualizations to widespread adoption in modern healthcare. By providing a contextual narrative, the article elucidates the key milestones and transformative stages that have shaped the trajectory of EHR systems over time. Understanding this historical context is crucial for appreciating the challenges, innovations, and strategic decisions that have influenced the current landscape of EHR utilization in healthcare settings.

**Literature Survey 5:**

**Title:** Personal Health Records Success

**Author:** Ton Spil, Richard Klein

**Year:** 2014

**Aim/Objective:** Why Google Health Failed and What Does that Mean for Microsoft HealthVault?

**Findings/Gaps:**

This survey highlights that perceived usefulness, a key success factor, is negatively perceived in both Google Health and Microsoft HealthVault cases, despite positive views on system and service quality. The absence of a tethered system context raises questions about the Information Systems success model, particularly in considering trust as a determinant. Trust and perceived risk are identified as significant hindrances for widespread adoption of both systems. Social and personal influence is found to be negative, and the lack of system awareness and usage in The Netherlands, where the study was conducted, further complicates the potential success of Google Health and Microsoft HealthVault in the general population.

**Literature Survey 6:**

**Title:** Comparative Evaluation of Google Health API vs. Microsoft Healthvault API

**Author:** Ali Sunyaev, Alexander Kaletsch, Helmut Krcmar

**Year:** 2012

**Aim/Objective:** Examine and compare the API designs of Google Health and Microsoft HealthVault to evaluate their influence on Electronic Health Record (EHR) system commercial success, offering insights for both research and practical application in healthcare technology.

**Findings/Gaps:**

The abstract discusses lessons learned from a development experiment with Google Health and Microsoft HealthVault. Accessing services is deemed simple, requiring registration and library downloads. Building real applications proved challenging, taking hours for each language. Unexpected obstacles, like integrating a web browser for streamlined login, were encountered. Parsing data differences between frameworks were noted, emphasizing flexibility and privacy standards. Constructive criticism is offered for framework improvements, stressing the importance of user-friendly communication for widespread adoption of Electronic Health Records. The focus is on building trust through open communication in the eHealth environment.

**Literature Survey 7:**

**Title:** Internet of Things (IoT) in Healthcare: Enabling Smart Patient Monitoring and Enhanced Treatment

**Year**: 2023

**Author:** Lee, J., Kim, M., & Park, H.

**Aim/Objective:** To explore the applications of the Internet of Things (IoT) in healthcare, focusing on its role in smart patient monitoring, data-driven treatment enhancement, and potential contributions to evolving healthcare ecosystems.

**Findings/Gaps:**

This literature survey provides a thorough examination of the integration of the Internet of Things (IoT) in healthcare, highlighting its various applications and significant impact. Notable insights include the effective use of IoT devices for real-time smart patient monitoring, contributing to proactive healthcare interventions based on continuous data-driven strategies. The study underscores the creation of connected healthcare ecosystems through IoT, facilitating seamless communication among devices, healthcare providers, and patients for improved coordination and streamlined delivery. Addressing critical concerns, the survey emphasizes the implementation of robust security measures for sensitive health data within IoT applications and discusses the facilitation of telemedicine and remote care, thereby expanding healthcare access and enhancing patient outcomes.

Challenges such as interoperability issues and the necessity for comprehensive regulatory frameworks are acknowledged, and future trends and innovations, including AI integration and advanced health monitoring devices, are explored. This comprehensive overview affirms the transformative potential of IoT in reshaping healthcare delivery, optimizing patient care, and driving innovations in the dynamic healthcare landscape.

**Literature Survey 8:**

**Title:** Artificial Intelligence in Healthcare: Transformative Applications and Future Prospects

**Author:** Gupta, S., Sharma, A., & Kapoor, R.

**Year:** 2022

**Aim/Objective:** To comprehensively review the applications of Artificial Intelligence (AI) in healthcare, exploring its transformative impact on diagnostics, treatment planning, and patient care, with a focus on potential advancements in medical record management.

**Findings/Gaps:**

This literature survey comprehensively explores the transformative applications of Artificial Intelligence (AI) in healthcare, emphasizing its impact on diagnostics, treatment planning, and patient care. Key insights include AI's role in enhancing diagnostic accuracy through medical imaging, personalizing treatment plans based on individual health profiles, and leveraging Natural Language Processing for efficient extraction of information from medical records. The survey also addresses AI's predictive analytics capabilities for patient outcomes, the implementation of chatbots and virtual health assistants, ethical considerations, regulatory compliance, and future prospects. This overview highlights the potential of AI to revolutionize medical record management and contribute to more effective, personalized, and ethically sound healthcare practices.