**CLINICAL DECISION MAKING AND PATTERN RECOGNITION IN HEALTHCARE**

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**INTRODUCTION**: We all engage in decision-making throughout our lives, whether in personal matters or in professional roles such as caring for patients and clients. Decision-making can vary from quick, intuitive choices to more deliberate, evidence-based approaches. **Clinical decision making is a balance of experience, awareness, knowledge and information gathering, using appropriate assessment tools and evidence-based practice to guide you.**

Recent advancements in data acquisition and monitoring have led to an explosion of biological and medical data, which can significantly enhance clinical decision-making if properly analyzed. Over the past decade, pattern recognition techniques applied to biomedical data have improved diagnostic and therapeutic support, allowing clinicians to make better-informed decisions in a timely manner and improving overall healthcare outcomes.[1]

**TRENDS IN HEALTHCARE:** The history of digital healthcare can be traced back in the early 18th century, where it was in 1897 that the first documented telemedicine happened. During the second half of the 20th century, the development of ultrasound imaging techniques, artificial organs, and DNA sequencing clarified the degree to which technology can be used in medicine. A significant milestone in the development of digital health was the launch of a digital health unit by the US Food and Drug Administration (FDA) in 2017. Investments in digital health has skyrocketed in this age: from $4.1B in 2014 to $9.4B in 2020.[2] Another study analyzing the impact of digital transformation in healthcare revealed that, out of 5,847 published articles, between 2008 and 2021, 287 were focused on digital healthcare and related topics. However, there has been a steady rise in the number of such articles and citations particularly from 2019 to 2021, as illustrated in Figure1.1. [3]

**HOW DOES TECHNOLOGY AFFECT HEALTHCARE:** By digitizing medical records and improving communication channels, patients, providers, and payers can all benefit from increased efficiency and better quality of care. Let’s break it down.

Benefits for Patient: Improved access to care, Higher accuracy of Care, faster access to medical files. When all of a patient’s medical information is stored electronically, it is easier for providers to access and share information.

Benefits for Providers: Automating administrative tasks, preventing regulatory mishaps, reducing costs of service. By making it easier for patients to access the care they need, digital transformation can help improve patient satisfaction and outcomes.

Benefits for Payers: Improved fraud detection, Increased operational efficiency, Expansive service offerings. As the industry continues to evolve, it can help payers develop more accurate risk models and improve patient safety.[4]

**CHALLENGES TO DIGITAL TRANSFORMATION IN HEALTHCARE:** Challenges to digital healthcare include data privacy and security concerns, lack of interoperability between systems, resistance to organizational change management (OCM), and navigating complex processes that span multiple systems. Additionally, low employee engagement and satisfaction, along with shifts in payer models, further complicate the transition.[4]

**FUTURE PROSPECTS FOR COTIVITI:** With the growing digitization of healthcare and Cotiviti's vast data access, the company could expand into data protection services for healthcare providers and insurers. Cotiviti could enhance its offerings by introducing solutions to detect and prevent data breaches, providing proactive software and services to protect sensitive information. While Cotiviti already emphasizes data security, formalizing this as a comprehensive software solution for its clients could present a new revenue stream.

Cotiviti could also develop an AI-powered platform that seamlessly connects patients, healthcare providers, and insurers. Acting as a "Google for healthcare," this platform would centralize information, streamline communication, and help patients find the right providers and insurance plans, while giving professionals real-time access to critical data for better care coordination and decision-making.

**REFERENCES**

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2. FZ, Mahya. Published in That Medic Network Feb 05, 2021. Title of the Article: A Brief History of Digital Health.
3. Stoumpos I, Angelos writing – original draft. Kitsios, Fotis Conceptualization. Talias A, Michael & Wang, Zixin & Lam, Thomas Yuen Tung & Kor, Puikin Patrick. Academic Editor. Published online 2023 Feb 15. doi: 10.3390/ijerph20043407. Title of the Article : Digital Transformation in Healthcare: Technology Acceptance and Its Applications
4. WalkMe Team. Published on 2023 May 2. Title of the Article : Digital transformation in healthcare: past, present, and future.

**GRAPHS**

**Figure 1.1: A graph with blue and red lines

Description automatically generated**Graph sourced from: Stoumpos I, Angelos, writing – original draft. Kitsios, Fotis Conceptualization. Talias A, Michael & Wang, Zixin & Lam, Thomas Yuen Tung & Kor, Puikin Patrick. Academic Editor. Published online 2023 Feb 15. doi: 10.3390/ijerph20043407. Title of the Article : Digital Transformation in Healthcare: Technology Acceptance and Its Applications.