

Digital Technologies in Health Care: Challenges and Opportunities



The advancement of digital technologies has transformed the landscape of health care delivery. Electronic health records (EHRs), clinical decision support tools, and data analytics have become indispensable to modern health systems. However, the rapid growth of digital tools has not been without challenges. While many technologies have improved efficiency and patient care, they have also introduced unintended consequences, such as administrative burdens on clinicians. Health care leaders are now focusing on leveraging telehealth, remote patient monitoring, and artificial intelligence (AI) to address these challenges. A study recently published by NEJM Catalyst Innovations in Care Delivery explores the real-world impact of digital health technologies, the implementation hurdles, and the future potential of AI in reshaping health care.

The Real-World Impact and Cautious Adoption of Digital Technologies

Despite the apparent benefits of digital technologies, many health care organisations have been cautious about adopting emerging tools. According to a worldwide survey of clinicians and health care leaders, two-thirds of respondents reported that their organisations were slow to implement new digital technologies, often waiting for robust evidence before making significant investments. This careful approach is even more pronounced outside the United States. However, the same survey indicates that the anticipation for AI's impact on care delivery is substantial; 85% of respondents believe AI will bring moderate to significant changes within three years. This contrast between the cautious adoption of technologies and the optimistic outlook on AI signals the need for health care organisations to reassess their strategies for integrating emerging digital tools.

Frameworks for AI in Health Care: Fairness, Utility, and Reliability

Effective and ethical implementation of AI is a significant focus for health systems. A framework called FURM (Fair, Useful, and Reliable Models) has been introduced to guide AI's safe and practical application. This framework not only evaluates the usefulness of AI models but also includes financial assessments and ethical considerations, such as fairness and reliability. Real-world applications of the FURM framework demonstrate its ability to ensure that AI tools contribute positively to care delivery. Another case of AI use is screening for fraud, waste, and abuse in health care claims processing. An AI tool developed for this purpose has already reduced overall spending by 1.2%, showing the potential of AI to improve efficiency and reduce unnecessary costs in health care systems.

Innovative Approaches to Digital Health Communication and Care Delivery

The use of digital technologies has also transformed the way health care providers communicate with patients. A notable example is implementing an "inboxologist" approach to managing electronic patient messages in primary care. This model involves a registered nurse handling initial triage and an advanced practice practitioner overseeing the communication, significantly decreasing response times and workload for primary care providers. Additionally, telehealth is proving to be a valuable tool for expanding nursing care. A case study at NewYork-Presbyterian Hospital illustrates how virtual nursing has improved patient and team member experiences, demonstrating that digital technologies can enhance care delivery when properly integrated. Another example is the "Digitally Enabled Care Framework," which aims to leverage technology to strengthen the physician-patient relationship, ensuring that digital solutions complement rather than replace personalised care.

Balancing Optimism and Pragmatism in Digital Health Innovation

The ongoing challenge of digital technology innovation in health care is one of balancing optimism with pragmatism. While digital technologies can potentially transform care delivery significantly, their adoption must be carefully managed to ensure they bring tangible benefits without unintended consequences. This special issue highlights that, with thoughtful implementation and a focus on real-world impact, digital tools can effectively improve health outcomes, enhance care experiences, and optimise clinical workflows. As health care organisations embrace the potential of AI and other emerging technologies, they must continue to refine strategies that allow for cautious yet proactive integration to fulfil the promise of digital innovation for all stakeholders — clinicians, leaders, and patients.

Source: [NEJM Catalyst Innovations in Care Delivery](#)

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