

USE OF TECHNOLOGY, DIGITAL TOOLS, AND TECHNIQUES TO IMPROVE EFFICIENCY IN HEALTH AND CARE

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Abstract

Healthcare efficiency could possibly improve through the adoption of technology and digital tools and techniques. The integration of digital tools in the healthcare system provides a solution to various problems and allows for better detection and prevention of diseases. Healthcare providers are also capable of overcoming various challenges they are facing within their workplace through the use of digital technologies. Besides, healthcare technology ensures easy access to information by the right people at the right time, thus improving safety, effectiveness, and efficiency within health care systems. It is, therefore, necessary to ensure the incorporation of resources that would enable the healthcare system to become like one ecosystem powered by optimized workflows, intuitive technology, and data information to give healthcare providers a more holistic and influential perspective of the whole patient journey. Integration of operations and application of automation and other digital techniques enables healthcare leaders to provide their clinicians with a more streamlined path to ensure a confident diagnosis and provide greater value to patients.

1. Introduction

Running a successful healthcare practice involves many tasks that include the actual care received by patients and other processes and procedures that need to be maintained behind the scene to keep other operations running. The resulting cumbersome tasks within health care coupled with big patients' data require healthcare facilities and providers to quickly access, synthesize, and share data in healthcare (Atasoy, Greenwood, and McCullough, 2019). There is a compromise of care collaboration and quality when the clinical workflow processes are inefficient. Therefore, healthcare should incorporate resources that would enable it to become like one ecosystem powered by optimized workflows, intuitive technology, and data information to give healthcare providers a more holistic and influential perspective of the whole patient journey. Integration of operations and application of automation and other digital techniques enables healthcare leaders to provide their clinicians with a more streamlined path to ensure a confident diagnosis and provide greater value to patients (Kelly et al., 2020). Therefore, it is possible to improve health care efficiency through the use of technology and digital tools.

2. The Use of Contemporary Technology in Health Care

There have been rapid technological advances and use within the contemporary health care system. Technological acceleration and evolution are experienced daily, which changes people's way of life and interaction (Rapp, Tirassa, and Tirabeni, 2019). Technological advancements have affected peoples' communication, work, and traveling. Besides, there has also been a huge impact of technology experienced in the healthcare industry. There has been more breakthrough in the contemporary healthcare system regarding collecting information, treatments, and communication, whose resultant effect is reduced costs and improved quality of care and patient experience (Jim et al., 2020). All these breakthroughs and their associated benefits have been

contributed by integrating technology in health care. Digital tools and techniques have become an integral part of every step of the contemporary healthcare experience to improve quality and efficiency.

2.1 Diagnosis

There are various technologies and tools available for use in the diagnosis process. The primary health information technology tools include several technological tools used in healthcare such as EHR, tools for patient engagement and exchange of health information, clinical decision support tools such as computerized alerts and reminders, computerized provider order entry, medical devices, and medical imaging information systems, all of which play key roles in different diagnostic process aspects (Zhang et al., 2019). These health information technology tools are used in the diagnostic process to capture patient information that informs the diagnostic process, including physical exam, clinical history and interview, and results of diagnostic tests. Digital tools such as temperature sensors, pacemakers, ultrasound scanners could be used to diagnose a condition or guide a surgeon during certain procedures. Besides, other digital diagnostic tools are also useful in improving clinical workflow, diagnostic decision making, and facilitating the exchange of information between patients and healthcare professionals and among healthcare providers.

2.2 Administrative

Healthcare administration is key in ensuring clinics, hospitals, and practices are running. Healthcare administrators are responsible for the daily operation of health care facilities. Health information technology plays a key role in streamlining healthcare administration. Healthcare administrators' focus is on the creation of transparency, reduction of risk, innovation of healthcare, and cultivation of relationships between patients and clinicians (Kolasa et al.,

2020). Technology has resulted in healthcare administrators' implementation of electronic medical records to address all the issues above and improve healthcare value access and cost. Digital administrative tools such as GP uses computers to collect information for appointments, keep patients' information, and aid e-prescription. Electronic availability of complete medical records enables healthcare providers to make better diagnoses, data collection, thus resulting in increased healthcare efficiency.

2.3 Care Support

There is no doubt that technology is changing the provision of health care. Initially, carers were at a higher risk of stress, depression, sleep problem resulting from the stressors directly associated with their role. However, technological advances and technology integration in the health care system has resulted in many patients having control over their health, safety, and wellbeing (Majumder et al., 2017). Technology also enables patients to become more independent and links them to essential services. Besides, health care workers can easily communicate with patients' families, their fellow professionals, and staff, thus enhancing the care they offer. These technological tools are key in helping staff prioritize and concentrate their attention on those who need it the most.

3. The Use of Technology During Covid-19

Although Covid-19 caused unprecedented health and economic crises worldwide, it also encouraged innovative solutions due to limited resources and urgent need for medical care and treatment. The control strategy of Covid-19 included mandating quarantine measures and physical distancing to try to maintain the status quo. These measures resulted in widespread technology adoption since varying types of human behavior shifted to online (Modgil et al., 2021). Various technological tools and techniques were integrated into the health care system to

facilitate Covid-19 identification, limiting its spread and preventing it. Smart emerging technologies such as drones, autonomous vehicles, global positioning systems, robots, Bluetooth, and the Internet of Things were considered in the effort to handle the pandemic. Besides, other modern technologies such as artificial intelligence applications, mathematical modeling for prediction, and the use of Big Data were integrated into the health care system to improve the efficiency of care (Ahir et al., 2020). There was also the use of technology community screening, nanotechnology for treatment and vaccine development, and the use of telemedicine to manage new healthcare demand.

4. The Use of Digital Communication, Collaboration, And Participation

New digital technological tools have been widely used to engage many patients to participate in healthcare programs. The use of patient portals and communication systems that are tethered to electronic health records has been promoted within the healthcare systems. There is widespread use of social media such as Facebook and Twitter as a new channel for healthcare communication. Patients mostly use these social media platforms to interact with other patients and exchange health information. Besides, electronic health records are also used in the healthcare system to enhance collaboration among the care providers. Vos et al. (2020) indicate that electronic health records enable healthcare providers to coordinate patients care with their colleagues on an informed basis at any time and place.

5. Digital Identity, Well-Being, and Safety

There is an exponential growth in human activities relying on digital technology resulting from a reduced cost of technology, increased mobile internet access, and simplification of interaction between humans and computers. Some kind of identification is needed to access internet services and spread and exchange information over the internet. However, the increased creation of

internet accounts for various platforms has resulted in an issue related to the proper management of individual access data (Dash et al., 2019). Besides, these platforms can diffuse and store information regarding an individual user. The effect of these technological advances in the online existence of an individual's presence can be a source of stress or distraction. It is essential for every individual using online healthcare platforms to be aware of the risks and benefits entailed by the online presence and digital participation for identity, health, safety, and wellbeing both at individual and collective levels.

6. The Use of Digital Literacy For Professional Career Development

Developing healthcare professionals need to be digitally literate to facilitate their career development. Professionals need to understand the risk and benefits associated with an online presence and digital participation on their identity, reputation, and integrity to enable them to maintain a positive online identity reputation across various online platforms. Besides, digital literacy also can enable professionals to act safely and responsibly in digital environments (Sherwood, 2017). These measures would enable these professionals to use digital tools to pursue their goals and manage digital workload, overload, and distraction, thus facilitating their career development.

6.1 Teaching

Teachers need to be digitally literate to ensure they perceive technology as something that can increase their creative potential and that of their students. This perception would enable teachers to find useful digital tools such as podcasts and videos that could help them in engaging students to learn. Developing teachers are able to guide their students regarding the authentic and regularly updated sources of information if they are digitally literate. Besides, digital literacy

could help developing teachers inspire their students to think deeply and develop logical analysis skills that would enable them to come out with original ideas and answers.

6.2 E-Learning

Professional e-learning involves the understanding of the risk and benefits associated with an online presence and digital participation on their identity, reputation, and integrity to enable them to maintain a positive online identity reputation across various online platforms. Professional e-learners could use technology to find information, analyze online sources of information, create content, and effectively communicate with others. Therefore, being digitally literate is essential for one to be an effective e-learner.

6.3 Self-Development

Digital literacy is beneficial to an individual in many ways, including contributing to the development of an individual's confidence. People become more independent when they are more confident in using digital literacy skills. As a result, they start to incorporate these skills into their daily lives, thus enabling them to improve their skills and discover new goals in life. Self-confidence resulting from digital literacy also helps reduce the feeling of social isolation or improve their ability to find and maintain employment.

7. The Relevance of Technical Proficiency for Information, Data Handling

Technical proficiency in relevant information and data handling. Technical proficiency enables health care administrators to tap into and extract the relevant information and data that is abundant over the internet to be used as a valuable asset in health care. The large volume of relevant and irrelevant data in the healthcare system can only be organized well to increase the speed and efficiency of processing it if the healthcare professionals are technically proficient

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(Pashazadeh and Navimipour, 2018). Otherwise, an overload of information at healthcare would cripple healthcare administrators, leading them to ignore crucial data in the decision-making processes because of a lack of means to transform the available data into actionable information.

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