Health Equity in the Cardiovascular Learning Healthcare System, Health Informatics and Digital Transformation

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Abstract

Compared to Caucasians, African Americans experience greater rates of cardiovascular morbidity and mortality and lower rates of specialty consultation and care. These differences also exist in the management of cardiovascular problems linked to chemotherapy. African Americans experience cardiotoxicity more frequently than Caucasians do, and they are underrepresented in research studies designed to avoid circulatory damage brought on by cancer therapy. An interdisciplinary and creative strategy will be needed to reduce racial and ethnic differences in cardiotoxicity prevention. If different types of digital transformation utilising health informatics are done properly and strategically in conjunction with minority populations, they have the potential to contribute to health equity. Examples of a learning healthcare system that can be used to develop, implement, and spread interventions to reduce.

Keywords: Health equity • Health informatics • Digital transformation

Introduction

Digital medicine, or digital health as it is used in medical practise, is a crucial part of health for the future. Healthcare and conventional medical models are evolving as a result of digital medicine initiatives, addressing the shifting dynamics of patient-physician relationships and overall clinical results. Technology that supports the practise of medicine, such as illness prevention and treatment for individuals and communities, is powered by hardware and software tools in digital medicine. Although claims, registry, and electronic health record (EHR) data will predominate in the near future, they do not fully capture all the variables that affect a patient's cardiac health. Technology that can provide an accurate account from outside of clinics and hospitals will therefore become more crucial [1].

According to a Scientific Statement from the American Heart Association (AHA), a significant barrier to analysing and applying the therapeutic uses of digital health technology is the lack of specified processes. The American College of Cardiology and the FDA just produced draught guidelines on this subject, thus this issue is being addressed. It will take time to gather the necessary data to further refine the standards. A shared vision across many different stakeholders is what will transform healthcare. Together, stakeholders create new models of healthcare delivery that are evidence-based, patient-centred, and prioritise value above volume. Innovation in technology is a crucial part of this change. To more accurately assess the scope of the difficulties emerging healthcare innovations face and to successfully address these difficulties, insight is required. The American College of Cardiology (ACC) organised a Healthcare Innovation Summit to hear the opinions and concerns of diverse healthcare stakeholders, including patient advocacy organisations, physicians, researchers, policy, entrepreneurship, and industry.

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A list of pertinent healthcare policies and strategies is included in the resultant ACC Health Policy Statement [2].

Description

In the context of a learning healthcare system, this paper examines the role of digital health and how we might optimise advantages for patients and the health system at large (LHS). A LHS is one in which observational data created within the system is combined with scientific knowledge from outside the system to give patients safer, more effective, and higher-quality healthcare, according to the Agency for Healthcare Research and Quality. In 2017, the AHA published a scientific statement on LHS that discusses how to use health IT and health data to make sure that "evidence informs practise and practise informs evidence". High calibre information from the literature is included into this integration and then braided into everyday practise. LHS can also be used to enhance employee work conditions through the dissemination of knowledge based on evidence and response to criticism. A LHS outlines and contextualises the digital health's component technologies to show how they affect patients' ability to easily understand and visualise their medical prognosis. Understanding the purpose, goals, and advancement of digital health can help us better comprehend how disruptive technologies are continuing to alter medicine [3].

The need for digital and connected health products has increased as a result of recent occurrences. The coronavirus disease of 2019 (COVID-19) has increased these services' accessibility, uptake, and effectiveness. However, there are still challenges in evaluating new technologies and making sure integration is done fairly. Working with the industry to carry out thorough research on the clinical efficacy of various products can provide doctors the confidence to suggest their usage and will start to create a body of proof to support the expansion of insurance coverage for digital health. This study discusses the role of digital health in the LHS, highlights system implementation issues, and lists important factors in an effort to add to and direct the expansion of this body of research. Because of the COVID-19 pandemic's restrictions on elective treatments and frequent clinic visits, telemedicine, mHealth, and digital health have rapidly gained popularity. This opened the door for doctors, healthcare professionals, and patients to continue safely communicating through digital methods. The term "digital health" refers to a range of technologies, from wearables [such as blood pressure sensors, electrocardiogram (ECG) monitors, and mobile applications] to health diaries and educational videos for patient care. Large patient populations considered immunocompromised or at risk have thus benefited from the facilities and infrastructure that used

digital health in the pandemic. By incorporating artificial intelligence (AI) into their pre-hospital triage processes, certain hospital systems have taken the initiative to decrease potential exposures and transmission, notably by using an AI-based [4].

A rising number of these developments in digital health allow individuals to monitor mobile diagnostic tests and provide physiologic measurements that are available to medical experts. As the "digitalization of healthcare" advances, patients are given the tools they need to gather vital health information and give physicians clinically important information. In fact, as a result of this transformation, a wide variety of new technologies have surfaced, including smartphone-connected gadgets, wearable and wireless gadgets, lab-on-a-chip and new point-of-care human genome-sequencing devices, as well as data analytics with cloud computing and artificial intelligence. These technologies can offer professionals and individuals almost rapid diagnostics as well as predictions of current disease and health patterns. The drivers for digital health can be seen from two angles: from the standpoint of patients and consumers who want to take an active role in their own health and have data that can inform clinical interactions by acquiring new digital health tools, and from the viewpoint of healthcare professionals who require new digital tools and data analytics to lower healthcare costs, improve patient outcomes, and boost the effectiveness of healthcare delivery. We must make sure that racial and ethnic minority communities' opinions are heard and welcomed as important drivers of the process of digital transformation if we are to find the best solutions for both points of view [5].

All parties are committed to starting a digital transformation process that will impact all facets of healthcare delivery, including patients, clinicians, and institutions. Health equity should be a top priority at all levels, from developing new technologies to participating in the generation of evidence, notwithstanding the importance of the current initiatives, which should be bolstered by clinicians, their patients, and medical professional organisations. Then, we might be better prepared to respond to crucial queries, deepen our comprehension of important disagreements, and disseminate knowledge about the technologies that could someday widen access and eliminate the digital health divide for all people. In order to foster research, the framework must highlight the continual participation of interdisciplinary and varied teams of stakeholders, including patients, doctors, academia, industry, and hospitals.

Conclusion

The advancements and developments in user experience with health technologies are also responsible for the prominence of digital health today. Patients can now immediately comprehend how the technology functions thanks to enhanced user interfaces, making it easier for them to incorporate it into their daily life. As trackers and sensors, combined with app monitoring and reminders, have increased patient adherence while also enabling healthcare professionals to maintain oversight, adherence to prescriptions and treatment programmes has also improved. This area of medicine has long been challenging to manage because patients may forget to take their drugs or take them at irregular intervals, which reduces adherence and results in less favourable outcomes. For instance, sensors have been put into inhalers for asthma patients to track inhaler usage and also to pinpoint position.

Acknowledgement

Conflict of Interest

None.

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