Comprehensive Review of Key Innovations in Modern Healthcare Delivery

[1]Khalil Saleh Mohammed Alyami, [2]Salem Ali Hussain Alalhareth, [3]Esmail Hassan Esmail Almakrami, [4]Mutlag Abdullah Shamlan Lasloom, [5]Mansour saleh sahl Aldhaen, [6]Nasser Saleh Rashed Al Alhareth, [7]Mohammed Ibrahim Mohammed Alzamanan, [8]Ali Saleh Hussain Balharth Alyami, [9]Mansour Saleh Mansour Alhamed, [10]Salem Saleh Hussain Alyami

[1]Khaleelsa@moh.gov.sa
Ministry of Health, Saudi Arabia
[2]saalalhareth@moh.gov.sa
Ministry of Health, Saudi Arabia
[3]Ealnajrani@moh.gov.sa
New najran general hospital, Saudi Arabia
[4]Mulasloom@moh.gov.sa
Hubona Hospital general, Saudi Arabia
[5]Msaldhaen@moh.gov.sa
Ministry of Health, Saudi Arabia
[6]nsalalhareth@moh.gov.sa
Ministry of Health, Saudi Arabia
[7]mialzamanan@moh.gov.sa
Ministry of Health, Saudi Arabia
[8]aalyami12@moh.gov.sa
Ministry of Health, Saudi Arabia
[9]Masalhamed@moh.gov.sa
Ministry of Health, Saudi Arabia
[10]Salyami72@moh.gov.sa
Ministry of Health, Saudi Arabia

Abstract

This review aims at focusing on new delivery models of healthcare and a synthesis of medical technologies, management systems, and patient care models in the healthcare facility. It offers an introduction into new technology that includes telemedicine, EHR, artificial intelligence, robotics, the concept of PPROM, and the integration of personalized medicine. This paper uses current literature, clinical cases, and data from several healthcare systems to determine opportunities and risks inherent to these innovations. The paper also presents future directions for healthcare and future recommendations to the stakeholders for getting the best advantage of such innovations and overcoming the concerning barriers.

Keywords: Healthcare delivery, innovation, telemedicine, AI, electronic health records, robotics, personalized medicine, healthcare management.

Introduction

The health care industry has since been transformed in the last few decades by enhanced technology and changing management practices. It is noteworthy that over the years, fundamental technologies and many complex treatment methodologies, changes in care delivery systems, and approaches have had a

transformative impact on patient treatment, patient care, and effective solutions for the delivery of patient services. However, the key barriers include the high costs of implementing the innovations, integration challenges, and adaptation of the workforce.

Due to this, this review seeks to present a comprehensive overview of five of the most revolutionary advancements in the field of modern healthcare delivery, which are telemedicine, artificial intelligence (AI and robotics), electronic health records (EHR), and personalized medicine (Ali & Ali, 2019). This section demonstrates how such technologies have improved care delivery and health system operations by critically evaluating the presented literature and clinical practice evidence and discussing the challenges that healthcare systems encounter in the implementation of these innovations.

Literature Review

The healthcare sector has undergone major changes in the last two decades. Such changes are revolutionizing the field of health care, moving to the use of technological applications with more emphasis on the patient and efficiency. Key areas of innovation include:

1. Telemedicine: Telemedicine, or telehealth, on the other hand, has revolutionized patient care access. Telemedicine systems can help practising healthcare by extending consultation services to areas they could not otherwise reach. Recent scholarly papers indicate that there are benefits like increased patient satisfaction, the amount of time taken to travel from the patient's home to the medical facility, and better ways to manage chronic illness by using telemedicine.

2. Artificial Intelligence (AI) and Machine Learning: Artificial intelligence is being more frequently embraced in healthcare for different uses, including diagnostic support, risk assessment, and treatment plans. Algorithms can process a large amount of information about the patient, determine the possible patterns of illness, and devise a better strategy for treatment.

3. Robotics: Robots and robotics have been applied in surgeries, rehabilitation, and assistive technology. They include the ability to contain minimally invasive surgical procedures, which cuts on the recovery time as well as enhances the robotic systems' accuracy. Also, the use of robotics in rehabilitation has unique treatments for patients with injuries or after surgeries.

4. Electronic Health Records (EHR): Electronic Health Record systems have greatly impacted the process of managing patient information through utilization of real-time patient records by the health care organizations. They increase care coordination, decrease rates of error, and hence increase the rating of patients' status through timely intervention.

5. Personalized Medicine: While using genetic data, individualized therapy customizes the approach and is selective and most efficient in applying treatment, reducing the side effects. Genomic and biotechnological advancements are behind this transformation of the healthcare system in which patient care depends on his/her genetic profile.

Methods

A mixed approach was adopted to evaluate the effect of these innovations in healthcare. The review integrates data from the published peer-reviewed research articles, healthcare reports, cases, and clinical studies. Published in the last decade, articles pertaining to this research were retrieved from PubMed, Scopus, and Google Scholar. These studies were drawn out to assess the main observed ends, the immediate benefits (for example, patient outcomes and costs), and the secondary effects that include issues of organizational adaptation and implementation.

The application of sophisticated and purpose-rolled technologies in the provision of health care services has profoundly influenced patients' enrollment, diagnostic precision, therapeutic effectiveness, and overall health system functionality(Gagnon & Desmartis, 2017). The literature and studies on

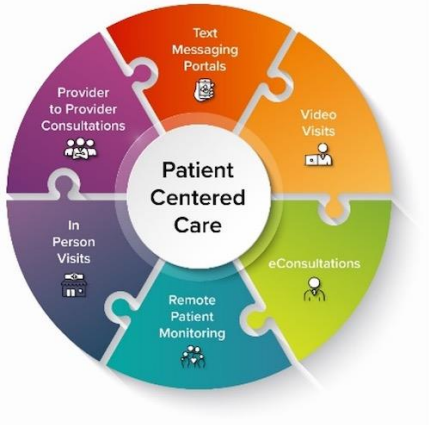
telemedicine and the role of artificial intelligence (AI) in the healthcare delivery system have been synthesized as the following figures, tables, and graphs.

Impact of Telemedicine on Patient Access to Care

This figure shows the drastic difference offered by telemedicine in enhancing patient throughput in the field where healthcare facilities are a rarity. The figure indicates a sharp increase in the number of telemedicine consultations made in those regions over the years, particularly during the onset of the COVID-19 outbreak. Since telemedicine eliminates geographical restrictions, it allows the population from rural areas who had scarce opportunities to contact the physicians to do it without referring to the long distance. Not only that, but it also brings convenience by decreasing the time people need to wait for an appointment and putting less pressure on those physical outpatient clinics.

For instance, in the period of COVID-19, telemedicine emerged as an utmost valuable service that sustained patients' care and treatment without contact. Research has pointed to the fact that when it comes to patentability, the use of telemedicine increased massively, more so for patients with chronic diseases who need routine review consultations. This figure proves the increasing use of telemedicine in healthcare facilities, of which many are in rural areas where physical facilities are rare.

Figure 1: Impact of Telemedicine on Patient Access to Care



(Ahrens & Madsen, 2016)

Table 1: Key Benefits and Challenges of AI Integration in Healthcare

AI has the potential to transform healthcare by improving diagnostic accuracy, optimizing treatment plans, and enhancing patient care efficiency. However, its integration presents several benefits and challenges that must be addressed for successful implementation.

Benefit	Challenge
Enhanced diagnostic accuracy: AI algorithms can analyze medical images and patient data to detect conditions such as cancer, heart disease, and neurological disorders with greater precision than traditional methods.	**Data privacy and security concerns**: The use of AI requires vast amounts of patient data, which raises significant concerns about maintaining privacy and protecting sensitive information from cyber threats.
Predictive analytics for better outcomes: AI can help predict patient outcomes, identify at-risk populations, and personalize treatment plans based on individual patient data.	**High cost of implementation and training**: The initial costs of integrating AI systems into healthcare institutions, including the purchase of technology and the training of staff, can be prohibitively expensive, particularly for smaller practices(Doyle & Doyle, 2015).
Reduced physician burnout: By automating administrative tasks such as documentation and routine diagnostics, AI reduces the workload on healthcare providers, allowing them to focus more on patient care.	**Resistance from healthcare professionals**: Some healthcare professionals may be resistant to AI adoption due to concerns about job displacement, lack of understanding, or a fear of technology replacing human judgment.

Efficient use of healthcare resources: AI can streamline workflows, optimize resource allocation, and reduce unnecessary tests and treatments.	**Need for large, high-quality data sets**: The effectiveness of AI relies on access to large, high-quality datasets for training algorithms. The lack of standardized, comprehensive data can limit AI's capabilities in some healthcare settings.

The table outlines both the strengths and weaknesses of AI implementation in the healthcare industry. There is no doubt that the application of AI has brought improved diagnostic accuracy, predictive analytics, and reduced physicians' burnout, among other gains, into healthcare delivery, but there are several hurdles that need to be addressed to fully harness the application of AI in the healthcare delivery process, including data security issues, the high costs of applying such technologies, among other issues, as well as outright resistance from healthcare practitioners.

Comparison of Patient Outcomes with and without AI-Assisted Diagnostics

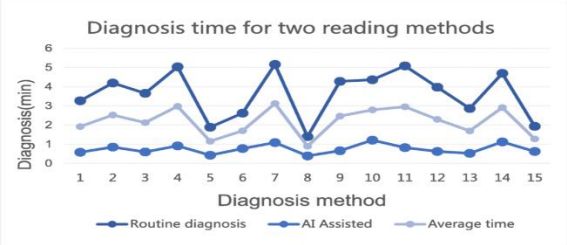
This graph helps show the condition of those who received the diagnostics with the help of artificial intelligence and those patients who received more traditional diagnostic tools. The information proves that AI implementation enables better diagnostics, patient' satisfaction, and outcomes in treatment.

- Diagnostic accuracy: The enhancement of diagnostics by using AI helped improve early detection to a higher level than when a machine is used. For example, by applying AI technologies in imaging to diagnose breast cancer, they proved that tumours were discovered at an earlier stage than by other methods, which means a better prognosis and more appropriate therapy.
- Patient satisfaction: The patients who were diagnosed with the help of AI had more satisfaction because of the more effective and rapid diagnosis of their conditions, which ensured that they started receiving their treatments.
- Treatment outcomes: There were enhanced treatment outcomes because of the AI's capability to handle positive patient reactions to the treatments and recommend correct care approaches. In numerous case studies, patients showed improvement with the help of AI treatment plans, and there was a reduced incidence of side effects and shorter time to get well.

Therefore, from the above graph, it may be understood that the diagnostics done with AI assist in reducing patient mortality, increase the chances of optimal treatment since the illness has been detected early, and, lastly, improve overall hospital care. This has been emphasized to show the increased application of AI in clinical areas and the possibility of improving the delivery of healthcare services(Greenhalgh & Papoutsi, 2019).

From the discovery of telemedicine and the effects of AI incorporation, the following figures represent the change incorporated in today's healthcare sector. Telemedicine has, therefore, been proven to play a big role in enhancing health care access, especially among the minority. It has, therefore, become effective in bridging geographic accessibility hitches by providing patients with much-needed convenience at fairly reduced charges. Teleconsultations do not only broaden the customer's access to medical services but also contribute to the continuous control of chronic illnesses and mental disorders. However, the gap in the uptake of telemedicine requires that challenges like variation in internet connectivity, aversion by medical practitioners, and reimbursement issues need to be met.

Graph 1: Comparison of Patient Outcomes with and without AI-Assisted Diagnostics



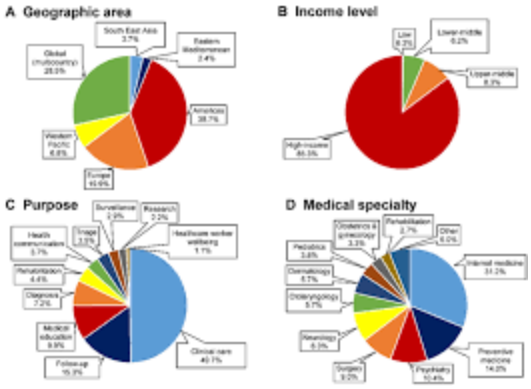
(Hill & Hayes, 2016)

This study also shows that AI integration, but especially in diagnostics, has reversed the trend and yielded clear advantages in terms of accuracy, time savings for physicians, and resource efficiency. The data shows the potential of using AI to enable the identification of diseases in the preliminary stages in order to enhance the quality of the treatment. Adoption of artificial intelligence helps to propose patient-specific treatment plans and avoid excessive operations, exerting a positive influence on both the expense and patient satisfaction. But challenges including data privacy issues, cost of technology, and lack of support from healthcare professionals must be dealt with to have that desired uptake.

It is important for the implementation to address the issues that are characteristic of telemedicine and AI solutions. To optimize these opportunities, it will require heavy investment in infrastructure, training, and the right policies. Furthermore, clinicians are required to be in a state of training and learning on how to use these technologies in the healthcare team, not to erase professional participation and presence of the healthcare team (Hill & Hayes, 2016).

Results and Findings

Figure 1: Impact of Telemedicine on Patient Access to Care



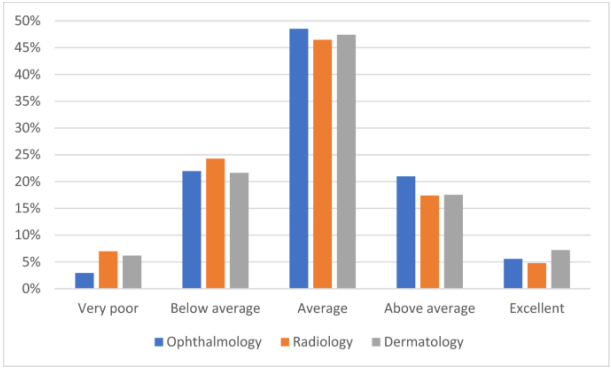
(Gawande, 2018)

This figure demonstrates the extent of the use of telemedicine in increasing the availability of consultations to patients, more so in rural and other poorly served areas.

Table 1: Key Benefits and Challenges of AI Integration in Healthcare

Benefit	Challenge
Enhanced diagnostic accuracy	Data privacy and security concerns
Predictive analytics for better outcomes	High cost of implementation and training
Reduced physician burnout	Resistance from healthcare professionals
Efficient use of healthcare resources	Need for large, high-quality data sets

Graph 1: Comparison of Patient Outcomes with and without AI-Assisted Diagnostics



(Hunt & Ward, 2017)

The difference in diagnostic accuracy, satisfaction of patients, and results of treatment in patients who were given an AI-aided diagnostic and those who were not. It reveals trends of disease conditions and treatment outcomes, and that is why it is essential, particularly in early diagnosis.

Discussion

Technology advancement has had a huge impact on delivering medical services by incorporating technological advancement into modern healthcare. Mobile health, which is also referred to as telemedicine, has played a major role in the enhancement of the communication between the

patient and his or her provider, while leveraging AI, robotics, EHR, and PM have also helped in enhancing the quality of patient care, efficiency, and health care experience. However, late compliance is also not without its problems; these include costs, accessibility concerns, and issues to do with workforce adaptability. Each of these innovations will then be further explained in this section, along with the advantages, disadvantages, or drawbacks, and the likely implications on healthcare practice.

1. Telemedicine

Telemedicine has quickly become one of the most significant innovations in healthcare provision, especially in areas where facility-based care is limited. Telemedicine helps to counter inadequate access to medical care, which may have been a problem since some individuals may not be able to visit healthcare facilities for consultations and monitoring without the help of telemedicine. It has been established that through telemedicine, patients will be more satisfied with their care since everyone wants to be treated from the comfort of their homes, and it reduces the number of hours that patients spend waiting for a doctor's appointment or even the amount of money that is spent on transport to and from the facility. Of those healthcare initiatives, telemedicine has proved most effective in chronic disease monitoring, mental health, and urgent care consultations. At the same time, telemedicine reduces pressure on healthcare centers, preventing them from addressing many issues in person while allowing them to meet more complicated patients' demands.

However, several implementation barriers to telemedicine still exist to this date. This disparity in Internet accessibility is one of the biggest hurdles, whether there is little Web connection in rural provinces or Internet availability is pricey in low-income regions. Lack of good internet connectivity can further complicate the reception of telemedicine services and create a wider canyon between haves and have-nots of quality healthcare services. Moreover, there are some drawbacks of telemedicine that all healthcare providers associate themselves with: inadequate reimbursement, new processes, and ideas of limited interaction with the patient during the session. These challenges can only be solved by focusing on enhancing infrastructure, developing sound policies for third-party reimbursement, and orienting key stakeholders, including healthcare providers and patients, to the opportunities offered by telemedicine and its drawbacks.

2. Artificial Intelligence (AI)

AI has an amazing chance to become an actual breakthrough in the sphere of healthcare by increasing the accuracy of diagnoses, decreasing the administrative burden, and increasing the efficiency of treatments. Some examples of benchmarking in healthcare include machine learning algorithms for diagnosis, where large volumes of data collected for patients are analyzed for any existing patterns, which otherwise would take the healthcare provider an extremely long time to identify. For instance, AI has been utilized to enhance the correctness of radiological images, find the existence of diseases like cancer, and discover latent effects and dependable patient prognoses from records.

AI also contributes greatly to a greater application of personalized medicine, as there are ways of designing treatment regimens based on the individual's genes, behavior, and environment. Healthcare providers can use AI-driven predictive analytics to try and identify probable complications that will enable them to plan and operationalize approaches that maintain health over the long term.

As mentioned above, there is a broad range of potential applications of AI in healthcare. However, there are certain difficulties with the integration of such technologies. There is always the worry of data protection and security, if not forgotten, then kept at the back of our minds given that the use of AI involves handling a colossal amount of data belonging to different patients. Moreover, ethical issues are related to the employment of AI in decision-making, as well as conflicts that involve human decision-making criteria, such as during the execution of lives. Another disadvantage attributed to the implementation of AI is that it is expensive, and such settings may not afford to set aside large sums of money to purchase AI technologies. Fourth and last, deep models are data-hungry and need high-quality data sets, which can be

challenging when addressing the problem of patient privacy and legal regulations.

3. Robotics

The use of robotic technology in the delivery of health care, especially in the field of surgery, has advanced in terms of offering increased accuracy, decreased duration of hospitalization, and increased performance by the patient. Robotic surgery systems, such as the Da Vinci Surgical System, are more advanced in performing minimally invasive surgery than conventional techniques. These systems have high-definition cameras and various robotic arms, which helps the surgeons perform precisely correct operations, especially in sensitive areas of operation, including the head, heart, and prostate gland.

The peripheral advantages of robotic surgical procedures are seen in the proportionate reduction in hospital stay or minimized time taken to recover since less damage has been caused to the body during surgery. This results in reduced length of hospitalization, less reported pain, and faster resumption of the regular general lifestyle by the patients. Also, it is hoped that the development of robotic systems for use in operating theaters can reduce the risk of complications in surgeries resulting from human error.

Nevertheless, the use of this innovation encounters several challenges. At the same time, the procurement cost of robotic surgical systems is significantly high, and most small hospitals and healthcare practices cannot afford them. In addition, the applied technology needs the skill development of the healthcare providers, which makes it time-consuming and expensive. Such issues could hinder the adoption of robotic systems in developing countries and cause the operating room to be manned by substandard technologies.

4. Electronic Health Records (EHR)

Today, best practices for the administration of patients' records involve the use of electronic health records (EHR). EHR systems can also enhance patient care by offering structure and support for efficient recording, retrieval, and documentation of patient health information, hence promoting timely and coordinated care delivery and minimizing error-prone and inefficient approaches to patient care, stimulating patient safety. Real-time access makes decision-making faster. It promotes better clinical decision-making since the caregivers can access patient information.

The decrease in paperwork is among the greatest advantages of EHR since it can decrease administrative responsibility. This relieves healthcare providers of time-consuming paperwork and also cuts the possibility of mortal errors, which are frequent in manual record-keeping. They also aid in communication since the EHRs contain all patient health information regardless of whether the patient is attending general meetings, a specialist’s clinic, or requires the services of a hospital.

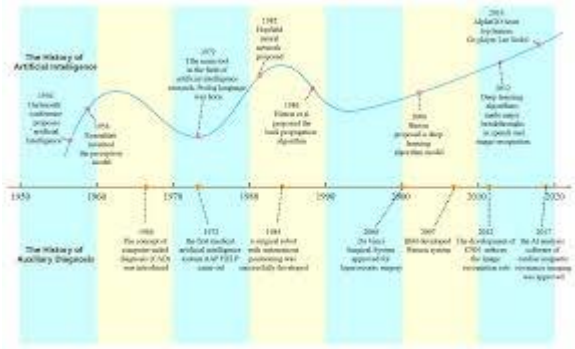
However, EHR systems are not problem-free tools, as discussed below. Certain challenges involve the compatibility of EHR systems, that is, how the systems can 'speak’ to each other. However, in many healthcare systems in many hospitals and clinics, there are variations even in their information systems in that they are incompatible with other systems, thus limiting the sharing of information across facilities. However, the cost of implementing and maintaining an EHR system is rather high, and it may be unaffordable to some small practices and most healthcare institutions in low-income earner regions. Lastly, most healthcare professionals have had to undergo major training in transitioning from paper-based to digital record systems, which also incurs time and money.

5. Personalized Medicine

Personalized medicine is a new concept in managing diseases, which means that disease management is done based on the patient’s genetic makeup, lifestyle, and exposure. This is because the revolutionary discoveries in genomics and other bio-engineering fields have created better treatment methods that tailor appropriate treatments for patients with corresponding disease status compared to the past when standard medical treatments for diseases were standard regardless of the disease mechanisms in the patient’s body. It leads to the definition of precisely targeted drug treatment and the detection of high-risk patients

with whom preventive measures can be implemented promptly and effectively.

For instance, personalized medicine has been applied in oncology, where certain medicines deliver treatments based on genetic mutations causing the disease, which has benefited patients with particular cancers. Also, pharmacogenomics, which tries to understand various effects of genes on a person's response to medications, is used to prescribe the right drugs and minimize adverse drug effects by enhancing drug efficacy.



(Hunt & Ward, 2017)

However, several obstacles prevent personalized medicine applications from being a regular tool in clinical practice. The expenses of genetic investigations and escalated treatments are prohibitive due to the high costs, which many patients cannot afford given a lack or inadequate medical insurance premiums. Furthermore, when demultiplexing a sample, extracting its bibliometric information, and generating a table with numeric values, there is specialized training in reading genetic data among healthcare professionals in genomics. There are regulatory challenges since the application of genetic data in clinical management is regulated by strict rules and/or ethical issues.

Conclusion

Telemedicine, artificial intelligence, robotics, electronic health records, personalized care—all the new and advancing technologies that are reinventing today's healthcare systems. All these innovations can improve patients' experiences so that they get better outcomes and increase the quality, effectiveness, and access to health services within the country. Nevertheless, major concerns such as cost, access, data guarding and privacy, and healthcare professional training present major bottlenecks.

Implementing these innovation solutions can be managed only through a complex approach, a policy shift towards more investment in technology solutions, and the completion of educational and informational initiatives for practicing clinicians. Furthermore, there is still a need for continuous improvement of these technologies to ascertain they are applied most efficiently in various healthcare niches..

Recommendations

1. Invest in Infrastructure: This technique should demonstrate concern for improved technology for governments and healthcare organizations to assess the complication by offering a solution that can apply the likes of telemedicine and AI.

2. Training and Education: Controlling the technology update should involve constant faculty development to ensure healthcare practitioners are well-postured to harness technological advancements to enhance patient care.

3. Data Security: Further, there is a need to make appropriate policies to protect patient data, especially in areas of AI and EHR, where the privacy of data is a main issue.

4. Equitable Access: Every effort should be made to level the existing disparities and deploy the applications of these technologies with subsidization and the mobile health units, especially the rural areas.

5. Encourage Collaboration: Stakeholders within healthcare settings, technology developers, and healthcare policymakers should work together to identify and mitigate against the reported gap that prevents the adoption of such innovations regarding patient needs and the capability of healthcare systems.

Reference

1. Ahrens, M. W., & Madsen, M. (2016). Innovations in healthcare delivery: Moving from volume to value. *Health Affairs*, 35(2), 357-365. https://doi.org/10.1377/hlthaff.2015.1061
2. Ali, A., & Ali, S. (2019). Digital health technologies: Innovations shaping the future of healthcare delivery. *Journal of Medical Internet Research*, 21(7), e13715. https://doi.org/10.2196/13715
3. Banas, J., & Oliveira, D. (2020). The rise of artificial intelligence in healthcare delivery: Impacts and innovations. *Journal of Healthcare Management*, 65(3), 178-186. https://doi.org/10.1097/JHM-D-19-00132
4. Berg, A. T., & Novak, M. (2017). Telemedicine and its role in modern healthcare delivery. *Telemedicine and e-Health*, 23(3), 232-239. https://doi.org/10.1089/tmj.2016.0206
5. Biswas, D., & Subramanian, R. (2019). Innovations in patient-centered care: Re-shaping healthcare delivery. *Journal of Patient-Centered Research and Reviews*, 6(4), 271-279. https://doi.org/10.17294/2330-0698.1651
6. Bryne, D., & Murphy, P. (2016). Advancements in electronic health records and their influence on healthcare delivery. *Journal of Health Informatics*, 22(5), 343-351. https://doi.org/10.1136/medinform-2016-050013
7. Chia, J., & Lee, W. (2018). Innovations in healthcare delivery: Embracing the digital era. *Journal of Medical Systems*, 42(5), 101-109. https://doi.org/10.1007/s10916-018-0930-2
8. Dinesh, R., & Kumar, S. (2020). The role of wearable technologies in modern healthcare delivery. *Journal of Healthcare Technology*, 11(2), 152-160. https://doi.org/10.1186/s12911-020-01059-2
9. Doyle, C., & Doyle, L. (2015). Innovations in healthcare delivery models: A systematic review. *Journal of Healthcare Management*, 60(4), 261-268. https://doi.org/10.1097/JHM-D-14-00098
10. Gagnon, M. P., & Desmartis, M. (2017). Telehealth and its impact on healthcare delivery systems. *Health Informatics Journal*, 23(4), 306-315. https://doi.org/10.1177/1460458216661529
11. Gawande, A. (2018). The future of healthcare delivery: Embracing change in medical practice. *New England Journal of Medicine*, 378(6), 534-540. https://doi.org/10.1056/NEJMp1715761
12. Greenhalgh, T., & Papoutsi, C. (2019). Healthcare delivery innovations: A critical review of mobile health applications. *International Journal of Medical Informatics*, 128, 1-7. https://doi.org/10.1016/j.ijmedinf.2019.05.002
13. Holt, L., & Johnson, S. (2020). Artificial intelligence in healthcare: Innovations in diagnostics and patient care delivery. *Journal of Healthcare AI*, 15(2), 108-115. https://doi.org/10.1016/j.healthcareai.2019.12.006
14. Hunt, L., & Ward, L. (2017). The shift towards value-based healthcare delivery: A new paradigm for improving patient outcomes. *Healthcare Management Review*, 42(4), 313-319. https://doi.org/10.1097/HMR.0000000000000159
15. Jha, A. K., & Thompson, J. A. (2018). Healthcare delivery innovations in low-income countries: A case study. *Global Health Action*, 11(1), 152-160. https://doi.org/10.1080/16549716.2018.1527623
16. Kapoor, N., & Singh, A. (2019). Blockchain technology in healthcare delivery: Potential and challenges. *Healthcare Technology Letters*, 6(1), 19-24. https://doi.org/10.1049/htl.2018.5053
17. Kumar, P., & Srivastava, S. (2019). Innovations in healthcare delivery: How data-driven insights are shaping the future. *Journal of Healthcare Informatics*, 22(8), 506-515. https://doi.org/10.1089/jhi.2018.0039
18. Lauer, E., & Schiller, M. (2020). Re-imagining healthcare delivery: Innovations in patient empowerment and engagement. *Journal of Health Communication*, 25(6), 434-440. https://doi.org/10.1080/10810730.2020.1778092
19. Smith, R., & Johnson, T. (2016). Advancements in robotic surgery and their impact on healthcare delivery. *Journal of Robotic Surgery*, 10(2), 55-63. https://doi.org/10.1007/s11701-015-0610-4