ТЕЗИ

СЕКЦІЯ 1 ТЕНДЕНЦІЇ ТА ПЕРСПЕКТИВИ РОЗВИТКУ ЗАБЕЗПЕЧЕННЯ Й УПРАВЛІННЯ ЯКІСТЮ В ФАРМАЦІЇ І ОХОРОНІ ЗДОРОВ'Я

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Digital technologies in health care: transforming the quality of care in an era of innovation

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The dynamics of the development of society and the intensive introduction of the latest information technologies have a significant impact on the development of the medical industry. The use of digital technologies in the field of medicine is a promising tool for more accurate diagnosing, preventing, treating, and predicting results. These innovative technologies contribute to improved access to care and the monitoring of patients.

The aim of the work is to analyze and systematize the main directions of the introduction of digital technologies in health care in order to improve the quality of medical care.

Materials and Methods. Studies were conducted using scientometric databases on the Internet.

Results. Currently, health care is one of the key sectors actively implementing and using artificial intelligence. Its application contributes to improving the quality and accessibility of care through the ability to support physician decisions and integration with technologies such as electronic medical records, mobile health, and telemedicine. The introduction of artificial intelligence technologies aims to improve the efficiency of remote monitoring and the provision of primary health care. There are the following areas of use of artificial intelligence in medicine: diagnostics and image processing, data analysis and prediction of the development of diseases, personalized medicine, monitoring of the patient's condition, analysis of texts and electronic medical records, prevention and management of diseases, etc.

The use of big data in medicine also significantly affects the improvement of the quality of medical care provided. The analysis of extensive medical data allows the identification of patterns, improvement of diagnosis, disease prediction and prevention, and development of personalized treatment approaches. This contributes to more accurate diagnoses, effective prediction of treatment outcomes, and ultimately to an overall level of healthcare quality.

The Internet of Medical Things allows physicians to monitor important indicators of patient health in real time. This contributes to the early identification of problems, more accurate diagnoses, and effective disease management. In addition, the connectivity of medical devices via the Internet improves the coordination and exchange of information between medical specialists, which ultimately contributes to improving the overall level of health care quality.

Digital twin modeling technologies of a patient allow reproducing similar real-world functions, reactions, and processes of the human body, its system or organ, modeling operations, and other medical interventions. They can significantly affect the quality of medical services.

Augmented and virtual reality contribute to improved training, diagnosis, treatment, and interaction in the medical field, improving the quality of services provided and treatment outcomes.

3D printing in medicine improves the quality of medical care through: the creation of accurate 3D models of organs for planning operations and training; the manufacture of personalized implants and prostheses; drug development; building models for training medical specialists, etc.

Currently, work is actively underway to create uniform international standards related to information technology in health care. In the field of storage, exchange, and prompt access to medical data, the following areas of standards can be distinguished: general provisions (e.g., ISO 12967-3: 2020), organization of communication between technical devices and data transfer requirements (e.g., ISO/IEEE 11073-10201:2020), instruments (e.g., ISO/IEEE 11073-10404:2022), terminology and documentation (e.g., ISO 17115:2020), information security systems (e.g., ISO/TR 11633-2: 2021), security (e.g., ISO/TR 21548:2010), and medical record management (e.g., ISO 20302:2022).

Conclusions. The implementation of artificial intelligence, big data analysis, the Internet of Medical Things, digital twins, augmented and virtual reality, and 3D printing are some of the key areas for improving healthcare quality.