

## DIGITAL MEDICINE: DEVELOPMENT PROSPECTS

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**Abstract:** The digitalization of medicine has been actively introduced into medicine in recent decades. Telemedicine is a variation of this area. It has prospects in the form of conducting various online consultations of specialists in all corners of our Republic, when the use of electronic information, integrated digital and telecommunication technologies creates conditions for the exchange of data between doctors, as well as for management in the field of medical education and healthcare. With the help of telemedicine technology, doctors can urgently consult with each other. In serious cases, doctors themselves sometimes need the help of a more qualified specialist. If there is no such thing nearby (for example, if we are talking about remote medical institutions), then the only way out is a video call to an experienced colleague. Doctors can also send patient data to each other to view their medical history. Live broadcasts of surgical operations, during which doctors and students can ask their questions, which will qualitatively improve the educational process.

**Keywords:** transformation of medicine, digital medical technologies, network medical infrastructure, trends in the development of online medical services.

The concept of a digital medical ecosystem appeared relatively recently and is associated with the manifestation of a number of factors: firstly, the intensive development of the digital economy is actively changing the requirements for personnel training, in particular, it brings to the fore the problem of developing digital competencies and flexible skills, which has led to the objective need for transformation traditional healthcare system. The relevance of the topic is due to a number of reasons that are associated with the general digitalization of the economy and the COVID-19 pandemic, which has accelerated the process of digital transformation of the medical field.

Determination of the reasons for the transformation of the traditional hierarchical system of medicine, the rapid development of the online medical services market and, as a result, the formation of the concept of a digital medical ecosystem as a modern approach to organizing the medical environment in the context of society's transition to a new technological order, networking of the global medical space and active implementation in the treatment and prevention process of digital technologies is defined by the author as the main goal of this study. A comparative analysis of trends in the global and Uzbek medical spaces made it possible to identify the main directions for the development of the online medical services market, distinctive features and factors in the formation of a digital medical ecosystem.

Based on the analysis of empirical data, a conclusion is made about the accelerated pace of development of the online medical services market, and the forecast value of the growth rate of online medical services over the next few years is calculated. The author's vision of the digital medical ecosystem is formulated as a network infrastructure that forms a single technological medical platform using digital technologies, creates conditions for effective interaction of stakeholders through the provision of personalized medical services based on the interests of patients. Extrapolation of the results of the study made it possible to determine the prospects for the development of online medical services in the context of intensive digitalization of medical products [3,7,9].

The concept of a digital medical ecosystem appeared relatively recently and is associated with the manifestation of a number of factors: firstly, the intensive development of the digital economy is actively changing the requirements for personnel training, in particular, it brings to the fore the problem of developing digital competencies and flexible skills, which has led to the objective need for transformation traditional system of medical services; secondly, the COVID-19 pandemic turned out to be the main reason for the transition to an accelerated form of service, which accelerated the processes of intensive development of digital medical technologies and the formation of a market for online medical services; thirdly, the pace of

socio-economic changes, which is growing exponentially, justified the feasibility of developing a network infrastructure of the medical environment based on an intelligent platform and digital tools for transferring knowledge, the speed of completing tasks, as well as monitoring their absorption of information and results; fourthly, the active development of online medical services has led to an increase in competition between IT companies, medical organizations and other stakeholders, which has led to the personalization of the treatment and prevention process and the creation of multivariate medical tracks.

The purpose of this work is to determine the reasons for the transformation of the traditional hierarchical healthcare system, the rapid development of the online medical services market and, as a result, the formation of the concept of a digital medical ecosystem as a modern network approach to organizations in the healthcare space in the context of society's transition to a new technological order and active implementation in medical and preventive process of digital technologies.

This goal implies the solution of the following tasks:

1. Studying the reasons for the transformation of the traditional hierarchical healthcare system into a digital medical ecosystem.
2. Determining the main trends and forecasting the development trends of the global and Uzbek market of online medical services.
3. Discourse analysis of the digital medical ecosystem as a new approach to the organization of the modern digital medical environment.

As a working hypothesis, the assumption is considered that the formation of the concept of a digital medical ecosystem is a consequence of the transformational processes taking place in society and modern education in the context of the active introduction of digital technologies and networking of the world educational space. The concept of a digital medical ecosystem is a response to modern social needs and is a network infrastructure that forms a single technological educational platform with digital tools, creates conditions for the most effective interaction of stakeholders through the provision of personalized educational services based on the needs of patients. The transition to the post-industrial phase of economic development and the building of an information society as part of the digitalization of medicine are primarily associated with the provision of services through digital ecosystems and platforms. Therefore, the assessment of the prospects for the use of breakthrough technologies, including artificial intelligence (AI), is becoming even more relevant today.

In the article, based on the study of the genesis of the term "artificial intelligence" (AI), this concept is clarified, positive and negative consequences of the use of AI are identified. In addition, promising areas for the use of artificial intelligence services in the field of international healthcare have been developed.

Computer modeling of scenarios for biomedical and educational processes increases the efficiency of international cooperation and the functioning of global chains of medical services. It should be noted that the introduction of artificial intelligence (AI) is not conceptually new. For the first time, this term appeared in the mid-50s of the twentieth century, more precisely, in 1956, at a conference at Dartmouth University, at which the American computer scientist J. McCarthy outlined this term and gave it an accurate and capacious definition: "Artificial intelligence is a science on the creation of intelligent machines and computer programs. However, the process of obtaining the first real technological results took several decades. Scientific work and research in the framework of the creation of AI systems was carried out simultaneously by several scientists and specialists.

So, in the early 1980s. J. Barr (specialist in the field of computational theory, researcher from IBM Research) and E.A. Feigenbaum (the author of the learning process model and algorithms, Stanford University, USA) formulated the following definition of AI: "Artificial intelligence is a field of computer science that develops intelligent computer systems, that is, systems that have capabilities that we traditionally associate with the human mind, - language comprehension, learning, ability to reason, solve problems.

Today, the AI system is usually identified with computer programs that use neural networks, the unifying distinctive characteristic of which is the ability of a machine to solve specific problems, similar to the decision-making algorithms of a thinking person. Artificial intelligence is a fairly broad concept that can be applied to any type of software used in human life and includes algorithms for learning, planning and solving various kinds of problems.

AI is an integrated technology based on the power of machine learning, using huge amounts of data and

powerful algorithms to generate fast solutions to complex scientific and technical problems and perform predictive functions with a high degree of reliability. In other words, AI is a complex of related and rapidly developing processes and technologies for the efficient functioning of expert systems and virtual agents.

Definition of the concept of "artificial intelligence": it is an integrated product of a number of scientific studies conducted in various fields of knowledge, including in the field of healthcare. The concept of artificial intelligence is a product of the integration of many scientific disciplines and areas of medical research, there are several definitions of this category, in this regard, today under artificial intelligence [4,7,8]

The methodological basis of the study was the combined use of general scientific and empirical methods. A comparative analysis of the relationship between the development trends of the world and Uzbek healthcare space was carried out. The attention of the article is focused on the study of trends in the development of Uzbek medicine in a historical perspective, due to the transition of the world economy to a new technological order.

As a result of grouping and systematization of empirical data, the main trends in the development of the Uzbek market of online medicine, their distinctive features and factors in the formation of a digital medical environment that characterizes the current state of the organization of the healthcare space have been identified. Extrapolation of the results of the study made it possible to determine the prospects for the development of online medical services in the context of intensive digitalization of educational products and the formation of the concept of an ecosystem medical environment [1,3,5].

The conducted research makes it possible to formulate a number of conclusions. Firstly, there is still no single standardized definition of the concept of "artificial intelligence" in the healthcare sector. Secondly, the use of artificial intelligence algorithms in medical practice raises the problem of introducing new rules to enable AI on a global scale. Thirdly, the use of AI systems makes it possible to increase the competitiveness of manufactured medical products and medical services. Fourth, the widespread involvement of AI solutions in medicine will require complex and multilateral negotiations [2,4,6].

The obtained results of the work make it possible to confirm the formulated hypothesis about the predominance of positive consequences of the use of artificial intelligence in the framework of the provision of medical services. In particular, AI algorithms make it possible to build reliable scenarios for the further development of events in the provision of medical services.

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