



## **DIGITAL TECHNOLOGY AND THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN MEDICINE**

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### **ANNOTATION**

The introduction of information technologies in the field of healthcare is one of the most important factors of today. Medical services provided by doctors to patients with modern methods of treatment, diagnostic methods, prevention of disease and restoration of health, increasing the speed of first aid provided to patients, effective use of digital technology and artificial intelligence, indicate the development of our medicine.

**Keywords:** Information technology, digital technology, artificial intelligence, medical software, digital medical technology.

### **INTRODUCTION**

Great changes are being made in the healthcare sector in our country, equipping doctor's workplaces with modern medical devices is an indication of the development of our medicine. The quality of medical services provided to patients in clinics and family clinics is increasing day by day. The computer information system designed for the automation of workplaces provides a great help to the doctor and requires not to make mistakes in making a diagnosis based on the patient's diagnostic information. Here, technological processes include treatment prevention, reporting and presentation of medical statistics, step-by-step planning, obtaining various types of medical certificates.

Currently, digital technology is introduced in many fields, including medicine, and each medical device in medical institutions is equipped with devices that meet modern global standards. In addition, all diagnostic medical devices have gone digital and have the ability to quickly diagnose patients' illnesses.





Digital medicine is a field related to the use of information technology as a tool to measure and influence the positive impact on human health. Digital medical products are defined by quality medical devices and software. In the past, in the healthcare industry, patients were assisted by X-ray devices and had to wait a long time for results, and the images were not clear and sharp, and the accuracy percentage of the doctor's diagnosis with these images was very low. Currently, all medical devices in every clinic and private clinic are digital, and the doctor's diagnosis depends on the accuracy of the medical images. Only then the doctor will not make a mistake in diagnosing the patient. We can see that the digitization of medicine is developing all over the world, as well as in our country, the main goal of medical digital technology is to improve people's access to quality medical services.

Today, experts are talking about the third wave of computerization in medicine. Complete automation of procedures, analysis of patients' condition, new methods of surgical intervention - these modern technologies can offer. The use of these opportunities will help doctors to focus on the most important things - patient care and scientific activity.

According to the McKinsey & Company research agency, the current level of development of medicine allows the introduction of integrated IT systems in many hospitals. However, this process is moving very slowly due to concerns about the security of personal data of patients and imperfect legislation. In addition, doctors themselves often do not know where to start with the popular computerization.

Analysts believe that the general experience of corporations that have been successfully using digital technologies in their work for a long time can help health care. They all started computerization with one question: What do our customers want? After receiving the response, the businessmen begin to change and expand the product type according to the demand of the consumers. It's the same in medicine - first of all, doctors need to be educated, patients need to be explained what digital technologies are.





Research shows that 92% of healthcare facilities are improving the efficiency of healthcare services through digital transformation. The introduction of advanced technologies will develop the healthcare infrastructure, expand the capabilities of medical personnel and make medical services more convenient.



**Figure 1. Digital technology in medicine**

**Figure 2. Artificial intelligence in medicine**

The main purpose of artificial intelligence is to maintain and strengthen human health, prolong life, treat and prevent diseases. By the meaning of the term artificial intelligence, we understand the technologies based on the training of computer technologies and designed to replace human actions in the implementation of any processes. Exponential growth in the number of studies, as a rule, is accompanied by a constant expansion of the range of problems to be solved. Therefore, we do not claim to have a complete understanding of the use of artificial intelligence in medicine, but we are trying to identify the most successful or promising directions from our point of view.

Currently, a lot of work is being done in medicine with the help of artificial intelligence. Our previous doctors were hesitant to use new technologies. The programmers calculated performance indicators, checked how well the model worked, where there were errors, and always conducted tests together with several medical professionals. Doctors see such tests yielding good results and have a positive attitude towards artificial intelligence.

Currently, the role of artificial intelligence in medicine is increasing. Medical systems with artificial intelligence (AI) exist in many medical fields. It is known that the knowledge of doctors, compared to observations and data, is less than those with high experience, often relying on sources from the educational process or literature, they face difficulties in diagnosing the patient. In the implementation of each specific diagnosis and treatment, the doctor combines basic ideas with personal experience based on analogies to confirm his assumptions. At the same time, depending on his qualifications and experience, he recognizes the condition and manifestations of the





disease and predicts the dynamics of the process. According to the World Health Organization, artificial intelligence offers great opportunities to improve healthcare worldwide. The main goal of neurocybernetics is to create a human brain that can think like a human brain through neurons in foreign health facilities. For this, it is possible to model structures similar to the structure of the human brain with the help of artificial intelligence and create and implement these analogies with neurons.

The decision of the President of the Republic of Uzbekistan "On measures to create conditions for the rapid introduction of artificial intelligence technologies" was issued.

### **Summary:**

Every clinic and private clinic in the health sector is being equipped with digital medical technology devices. Qualified doctors can quickly and accurately diagnose patients with digital medical technologies and prevent diseases. Modern digital medical technology devices include computer tomography, ultrasound, cardioecho, laboratory equipment and other medical devices.

Artificial intelligence is being used to analyze lung cancer cells, create a human brain structure, create a 3D heart, analyze DNA, design prosthetics, optimize transplant times, reduce hospital costs and improve quality, and create a modern emergency room model.

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