

Issues of Legal Regulation of Telemedicine in the Republic of Uzbekistan

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An overview of the development of e-health in Uzbekistan, as well as the legal regulation of telemedicine, both at the global and national levels, is provided in this article. It identifies existing barriers and problems that need to be solved, analyzes the international documents that form the basis of global digital health, and examines the best practices of countries like Japan and the USA. A review of Uzbekistan's experience in developing digital health, as one of the branches of the state's digital economy, is presented, as well as recommendations for improving the regulatory framework. Based on a legal and political framework, practical proposals have been developed for the development of an integrated digital health system, which identifies and eliminates gaps and barriers.

Introduction

Telemedicine has become increasingly prevalent in our vocabulary in recent years. Although telemedicine developed in some states after the Second World War, it was developed for the first time in Central Asia in the Republic of Uzbekistan after the 1990s. As a result of an unprecedented and global pandemic, the revolutionary development of telemedicine has been observed all around the world. In the wake of the COVID-19 pandemic, our familiar world, way of life, and national healthcare systems have all been affected, which has forced the world community to reconsider existing medicine and its legal framework. Medical institutions and staff were overloaded due to the imperfection and unpreparedness of the system. Global health care has recognized that it must focus as much as possible on digitalizing health care for the development of the sector. Firstly, it will solve problems such as accessibility, nondiscrimination, quality, and timeliness. As a result of the introduction of digital technologies into medical services, the shortage of medical personnel is primarily addressed. By 2030, the world will be short of 9.9 million doctors and nurses, according to the World Health Organization [1].

The world community, as the most effective solution to this problem, has come to a common denominator - the digitalization of healthcare both at the global and national levels.

Global Digital Health Strategy 2020-2025, adopted by the World Health Organization (WHO), aims to create a common understanding among all WHO Member States about the importance of digital health solutions and how to create an interoperable digital health ecosystem. A framework for interactive information technology used primarily by the medical community in all healthcare institutions and organizations is referred to as digital technology. Health care providers, medical device manufacturers, public health authorities, medical schools, and research institutions are all included [2].

It is evident that digitalization opens up a wide range of possibilities for solving various problems that are not only common in our country, but also in any state, for example, the inaccessibility of high-quality medicine in rural areas. Therefore, in parallel with the digitalization of medicine, it is also necessary to solve the problem of ensuring Internet access to all hard-to-reach and remote areas of the population. The entire socio-economic infrastructure, especially the medical infrastructure, must be rebooted here.

Uzbekistan has implemented comprehensive measures in recent years to actively develop its digital economy, and modern information and communication technologies have been widely implemented in all sectors and areas, including public administration, education, healthcare, and agriculture.

There has been an initial start to the implementation of over 220 priority projects aimed at improving the e-government system, developing the domestic software market and information technology market, organizing IT parks in all regions of the republic, and supplying qualified workers to this area.

In order to accelerate the development of the digital industry in the Republic, increase the competitiveness of the national economy, and ensure the implementation of the tasks defined in the State Program for implementing the Action Strategy in five priority areas of development in 2017-2021 in the “Year of Science, Education and Digital Economy Development” by Decree of the President of the Republic of Uzbekistan dated October 5, 2020, No DP-6079 “On approval of the Strategy “Digital Uzbekistan-2030” and measures for its effective implementation”, the Strategy “Digital Uzbekistan-2030” was adopted, developed by the Ministry for the Development of Information Technologies and Communications with the participation of interested ministries and departments, academics and business representatives, as well as foreign experts.[3].

A modern healthcare system for providing medical care to the population was developed through the implementation of measures to reform the healthcare system in the Republic.

In Uzbekistan, work is underway to improve primary health care: rural medical centers, urban and rural family clinics have been established, and large-scale efforts are being made to improve access for all segments of the population.

A unified centralized emergency medical care system has been established, and a network of republican specialized scientific and practical medical centers is being improved, providing high-tech medical care to citizens.

By Decree of the President of the Republic of Uzbekistan dated December 7, 2018 No. DP-5590 “On comprehensive measures to radically improve the healthcare system of the Republic of Uzbekistan”, the Concept for the Development of the Healthcare System of the Republic of Uzbekistan for 2019-2025 was adopted, where one of the tasks is the widespread introduction of “e-health systems”, creation of a complex of information systems and databases integrated on the basis of unified national standards.

Increasing knowledge and utilizing ICTs to promote healthcare provides a variety of benefits

First, the creation of an “e-health system” based on unified national standards, incorporating a complex of information systems and databases, providing the facility to:

a) for the public:

- the process of obtaining information about medical organizations and the services they provide;
- information about the qualifications of doctors, their work experience, appointment times, and the possibility of reserving an appointment remotely;
- the quality of services provided, including medical personnel’s activities;
- through mobile applications, users can access the system;

a) for medical organizations and health authorities:

- Transformation of the institution into a socially-oriented institution;
- Implementation of a healthcare standardization system;
- Introducing electronic document management (filling in medical records and case histories, issuing “electronic prescriptions”);
- Medical personnel, medicines, medical devices, medical equipment, and consumables accounting and monitoring;
- Managing financial transactions under programs of state-guaranteed free medical care, assessing future expenses of medical organizations, and analyzing possible risks;
- Provide support for the national health accounts system, including medical statistics, accounting, and reporting;
- Information exchange with other medical organizations and integration with their information systems;

Secondly, monitoring the performance of medical organizations and the state of the industry using information and communication technologies;

Thirdly, the development of telemedicine for information exchange between medical organizations and the provision of remote medical and educational services (consultations, consultations, operations, master classes, etc.).

In order to achieve the goals of this concept, it is necessary to develop a public health system and to improve interdepartmental cooperation on health issues[4].

In order to digitalize the healthcare sector and introduce a single set of information systems, reduce unnecessary procedures in the management process, improve the quality of services provided to the population, ensure the efficiency of medical workers, as well as the full implementation of digital transformation programs adopted in this direction. In order to digitalize the healthcare sector and introduce a single set of information systems, reduce unnecessary procedures in the management process, improve the quality of services provided to the population, ensure the efficiency of medical workers, and implement the digital transformation programs adopted in this direction, the Decree of the President of the Republic of Uzbekistan dated 23 February 2021 No. DP-5000 “On measures for the effective organization of digitalization in the healthcare sector”. In this Decree, the Ministry of Health approved the establishment of a limited liability company titled “IT-Med” (hereinafter referred to as “IT-Med” LLC) on the basis of the state unitary enterprise “Center for the Development of Information and Communication Technologies within the Ministry of Health:

optimization, rationalization, standardization, and automation of healthcare processes;

developing technical and economic parameters, concepts, and other design and pre-project documentation for projects financed by international financial institutions in the healthcare sector;

developing policies and standards for information technology and communications in medicine and pharmaceuticals;

integrating E-Health information systems with other government information systems, and ensuring their implementation and maintenance;

introduction of international experience in this area into practice through the development of

business processes and IT reengineering in the healthcare system; attracting investors, business partners, and outsourcing services;

implementation of a unified platform for the healthcare information system (hereafter referred to as the Unified Platform), which includes information systems and software products designed to expand the digitalization of health care.

According to the decision, also:

As of January 1, 2024, all medical and pharmaceutical organizations in the republic, including pharmacies, are gradually connected to the Unified Platform;

IT-Med LLC must always be involved in the development and implementation of information systems, resources, and other software products in the healthcare sector[5].

In the country, serious efforts have been made to digitalize medicine, and the digitalization of the healthcare system has been placed at the heart of all state programs, based on the principle of universal coverage of its services. The Republic began the development of telemedicine in 2000, thanks to the merits of Academician, Hero of Uzbekistan A.S. Abdullahodjaeva. On May 30, 2002, the President issued a Decree entitled "On the further development of computerization and the introduction of information and communication technologies", and on June 6, 2002, the Cabinet of Ministers adopted a resolution entitled "On measures for the further development of computerization and the introduction of information and communication technologies". On the basis of which, at the initiative of M.S. Abdullakhojayeva, a specialized scientific and technical laboratory for telemedicine was established within the Republican Pathological Anatomical Center. As a result of the academician's leadership, the laboratory provided services to the population for the first-time using telemedicine capabilities, and this marked a major step forward for Uzbekistan's digitalization of medicine.

Currently, the digitalization of medicine refers to the integration of modern information technology into a wide range of medical processes, including those in the public and commercial arenas. This process has a second side, however, which can lead to information leakage, violations of human rights, violations of the rights of patients to protect their personal data, and violations of medical confidentiality. Therefore, it is very important to carry out this task very fundamentally, establishing interdepartmental cooperation, while maintaining a well-developed legal framework. Uzbekistan's legal framework does not yet meet the challenges of digitalization and needs to be improved.

As a result of studying the experiences of foreign countries, Smishlaev A.V., Melnikov Yu.Yu., and Artemova P.V. found that the USA and Japan were the most advanced in this area. In terms of telemedicine technologies, the United States is far ahead of many states, while also experiencing dynamic growth in both social and economic indicators. According to the American Telemedicine Association [6], telemedicine technologies are being actively used in telemedicine care systems in 2017 for real-time communication, transferring photo and video material of medical and diagnostic value, as well as for patient video reports. The analysis of the patient's clinical indicators is carried out remotely, a system of regular online consultations "patient-doctor" has been introduced, as well as telemedicine technologies being introduced in order to improve the qualifications of doctors in the healthcare system [7].

In the last 30 years of telemedicine use in the United States, has consistently shown to be a safe, high-quality method of care, a convenient option for patients and clinicians, and a secure environment for data collection and transmission. When these attributes are combined to determine where and how care is provided.

Using telemedicine and virtual care, rural communities, underserved and vulnerable groups, and

those who cannot receive in-person care can now access health care, ensuring everyone has access to safe, effective, and appropriate care, wherever they are and whenever they need it. Using telemedicine, the elderly can receive high- quality, safe, and convenient care by “aging on the spot” and communicating with their service providers regularly. The use of telemedicine can also increase efficiency, reduce costs, and provide more value to patients [8].

The Japanese government is also a leader in telemedicine implementation, and it has its own rich practice. In 1996, Professor Shigekoto Kaihara of the University of Tokyo organized the first group to study telemedicine with the support of the Ministry of Health and Welfare. A conference on telemedicine was held in Tokyo for the first time in 1997. JTТА - (later formed) originated from the original study group; it was reorganized by Professor Sumio Murase in 2003 into the Telemedicine Special Group of the Japan Medical Informatics Association.

In 2005, the Japan Telemedicine and Telemedicine Association (JTТА) was established as a private organization, and in the same year, the association published original journals and held its first annual conference in Takamatsu. The intensification of projects related to telemedicine, funded from the national budget, required the exchange of results and experiences in a common meeting place. Consequently, the first JTТА Spring Conference was held in Tokyo in February 2009. Based on conference exchanges, the JTТА Guidelines for Telemedicine for Home Care Telemedicine were released in March 2011.

JTТА was reorganized from a private organization to a registered body in April 2011. The first elections for the “new” JTТА’s governing members and board members took place between April and June 2011.

To promote telemedicine, JTТА founded the Japan Telemedicine Society (JTS) in 2012.

Consequently, the Japanese Telemedicine Society concluded that it is important to divide telemedicine according to the profile of patients and the profile of diagnostics and treatment monitoring [9].

Aside from the United States and Japan, many countries have advanced in the field of digitalization of medicine, including the UK, Germany, Australia, Greece, Ireland, Spain, Canada, France, Sweden, and Switzerland. As well as this, many projects are currently being implemented in the CIS countries (Russia, Ukraine, Belarus, Moldova, Georgia, Armenia, Kazakhstan, etc.).

V. Safonov in his thesis examining the main stages in the formation of scientific ideas about the development of a digital society in the development of a digital environment, according to him, solving the problems of informatization and overcoming the digital divide is an important part of the transformation of the information society. The inclusion of questions about the development of the global information society on the agenda of the World Economic Forum meeting in Davos in 2000 confirms this.

Considering the problem of the digital divide in the context of the development of the medical services sector, he emphasizes that it is the availability of medical services that is the determining factor in overcoming the digital divide in society and ensuring sustainable socio-economic development of the regions [10].

Discussions at the 2019 WHO Symposium on the Future of Digital Health Systems in the European Region focused on key issues such as the nature of digital health, its impact, ethical considerations, and development strategies. Accordingly, the conference’s key conclusions can be summarized as follows:

1. Our basic understanding of how and where health services can be delivered is changing due to digitalization, which is driving a shift towards predictive and preventive healthcare.

2. It is more than just doing the same things faster and more efficiently when health systems are digitalized. Among the things involved are: providing the individual with a central role in their well-being, determining approaches to protecting citizens' rights, including informed consent, and harnessing the enormous potential of data.

3. By providing rational and efficient models for delivering quality care that is equally accessible to everyone, digital health plays a key role in achieving universal health coverage. Furthermore, in order to introduce digital health care, it is important to ensure that investments are directly linked to the resolution of public health problems [11].

Thus, in conclusion, it can be noted that digital health development in the Republic of Uzbekistan in the context of universal coverage of quality health services will play a key role in ensuring the safety and inclusiveness of medical services [12]. Further research and improvement are needed to develop digital health as one of the most dynamic institutions of medical law.

In addition, an important factor determining whether the mechanism is effective is interdepartmental interaction, which is the use of open and transparent interaction mechanisms by government agencies in cooperation with academic institutions, medical institutions, and pharmaceutical companies [13]. Of course, this will require great efforts, certain barriers may arise, such as the human factor, corruption, lack of jobs, lack of IT specialists, inadequate knowledge of IT technologies on the part of both medical workers and the population, especially in those far away from the capital regions.

Consequently, the best experience of the most developed countries will be passed down to those of the most developing countries, including the USA, Japan, Great Britain, and Switzerland, the continuous improvement of medical workers' knowledge and proficiency in IT technologies, the improvement of training conditions and the provision of appropriate equipment to all medical institutions in all regions of the country, creating opportunities for Internet accessibility and appropriate conditions in remote regions [14].

Furthermore, the creation of an appropriate regulatory framework for e-health is very important. The draft law "On Telemedicine" needs to be developed and appropriate changes must be made to the current law. To develop a bill, as well as to improve existing legislation, it's important to pay attention to the terminological apparatus first.

In the Global Strategy for Digital Health for 2020- 2025 adopted by WHO, "digital health" is defined as "the development and use of digital technologies to improve health" [15]. According to Kartskhiya A.A., digital consumers with a wider range of smart and connected devices are also included in this definition, as well as other types of digital health services, such as the Internet of Things, cloud computing, big data analytics, and artificial intelligence combining machine learning and robotics [16].

Effective tools and mechanisms for implementing the tasks set are crucial factors in this problem [17].

The development of e-health in Uzbekistan should be the focus of special working groups, as well as separate research groups for the development of telemedicine and coordination of the work of a single digital health ecosystem, which includes representatives from the Ministry of Health, Ministry for the Development of Information Technology and Communication, Ministry for Justice, Education, Innovation, Ministry of Finance, Law Enforcement, Universities, Higher Education Institutions, Telecommunications Service Providers, etc. The digital revolution requires a dynamic development of modern medicine.

It is important for working groups to first assess the readiness and maturity of digital technologies within the healthcare system. By identifying and addressing gaps and barriers, on the basis of a

legal and policy framework, it is important to develop an integrated digital health system. However, it is important to keep in mind that the digitalization of healthcare is not a single process, but rather a very important auxiliary tool for solving healthcare problems.

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