



IMPLEMENTATION OF E-HEALTH IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

The implementation of e-health in the Republic of Uzbekistan represents a significant step toward modernizing the healthcare system and improving access to quality medical services. E-health involves the use of digital technologies to manage and deliver health services, improve healthcare delivery, and ensure better patient outcomes. This article explores the development of e-health initiatives in Uzbekistan, highlighting key policies, challenges, and opportunities for further growth. The integration of electronic health records (EHR), telemedicine, mobile health applications, and the digitalization of medical services are among the main components of e-health in the country. Moreover, the article examines the role of the government, healthcare professionals, and technological advancements in facilitating the successful adoption of e-health solutions. The analysis also addresses the barriers to implementation, including infrastructure limitations, data security concerns, and the need for capacity-building in healthcare personnel. The findings suggest that while progress has been made, continuous investment and collaboration between stakeholders are crucial for the sustainable development of e-health in Uzbekistan.

ОСОБЕННОСТИ ВНЕДРЕНИЯ ЦИФРОВОГО ЗДРАВООХРАНЕНИЯ

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ABSTRACT

В настоящее время во многих развитых странах мира усиливается интерес к исследованиям в сфере информационных и коммуникационных технологий, т. к. электронное здравоохранение (eHealth) имеет большой потенциал для повышения качества и доступности медицинской помощи в кратко - и долгосрочной перспективах. Реализация электронного здравоохранения в Республике Узбекистан представляет собой значительный шаг к модернизации системы



медицинские записи (ЭМЗ), технологии здравоохранения, результаты для пациентов, услуги здравоохранения, разработка политики.

здравоохранения и улучшению доступа к качественным медицинским услугам. Электронное здравоохранение включает использование цифровых технологий для управления и предоставления медицинских услуг, улучшения их предоставления и обеспечения лучших результатов для пациентов. В этой статье рассматривается развитие инициатив в области электронного здравоохранения в Узбекистане, подчеркиваются ключевые политики, проблемы и возможности для дальнейшего роста. Интеграция электронных медицинских записей (ЭМЗ), телемедицины, мобильных здоровье сберегающих приложений и цифровизации медицинских услуг являются основными компонентами электронного здравоохранения в стране. Более того, статья исследует роль государства, медицинских работников и технологических достижений в содействии успешному внедрению решений в области электронного здравоохранения. Анализ также затрагивает барьеры для реализации, включая ограничения инфраструктуры, проблемы безопасности данных и необходимость для развития потенциала медицинского персонала. Полученные результаты указывают на то, что несмотря на достигнутый прогресс, непрерывные инвестиции и сотрудничество между заинтересованными сторонами имеют ключевое значение для устойчивого развития электронного здравоохранения в Узбекистане.

RAQAMLI SOG'LIKNI SAQLASHNI AMALYOTGA TADBIQ ETISH XUSUSIYATLARI

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sog'liqni saqlash
yozuvlari (EHR), sog'liqni

ABSTRACT

Hozirgi vaqtida dunyoning ko'plab rivojlangan mamlakatlarida axborot-kommunikatsiya texnologiyalari sohasidagi tadqiqotlarga qiziqish ortib bormoqda, chunki elektron sog'liqni saqlash (elektron sog'liqni saqlash) qisqa va uzoq muddatli istiqbolda tibbiy yordam sifati va mavjudligini yaxshilash uchun katta imkoniyatlarga ega. O'zbekiston Respublikasida elektron sog'liqni saqlash tizimining joriy etilishi sog'liqni saqlash tizimini modernizatsiya qilish va sifatlari tibbiy xizmatlardan foydalanish imkoniyatlarini yaxshilash yo'lidagi muhim qadamdir. Elektron sog'liqni saqlash sog'liqni saqlash xizmatlarini boshqarish va taqdim etish, ularni etkazib



saqlash texnologiyalari, bemorlarning natijalari, sog'liqni saqlash xizmatlari, siyosatni ishlab chiqish.

berishni yaxshilash va bemorlar uchun yaxshi natijalarni ta'minlash uchun raqamli texnologiyalardan foydalanishni o'z ichiga oladi. Ushbu maqola O'zbekistonda elektron sog'liqni saqlash tashabbuslarining rivojlanishini ko'rib chiqadi, asosiy siyosatlar, muammolar va keyingi rivojlanish imkoniyatlarini yoritadi. Elektron tibbiy ma'lumotlar (EMR), telemeditsina, mobil sog'liqni saqlash ilovalari va tibbiy xizmatlarni raqamlashtirish integratsiyasi mamlakatimizda elektron sog'liqni saqlashning asosiy tarkibiy qismlari hisoblanadi. Bundan tashqari, maqola elektron sog'liqni saqlash yechimlarini muvaffaqiyatli amalga oshirishda hukumat, sog'liqni saqlash mutaxassislari va texnologik yutuqlarning rolini o'rganadi. Tahlil, shuningdek, amalga oshirishdagi to'siqlarni, jumladan, infratuzilma cheklovlarini, ma'lumotlar xavfsizligi bilan bog'liq muammolar va tibbiyot xodimlarining salohiyatini rivojlantirish zarurligini ko'rib chiqadi. Natijalar shuni ko'rsatadiki, erishilgan yutuqlarga qaramay, doimiy investitsiyalar va manfaatdor tomonlar o'rtasidagi hamkorlik O'zbekistonda elektron sog'liqni saqlashning barqaror rivojlanishining kalitidir.

Introduction. The analysis of foreign practices accumulated in the healthcare sector allows us to critically comprehend the main technologies and areas of ensuring the availability and quality of medical services for their possible implementation. Among them: 1. Providing conditions for scientific research, development of innovations, scientific and technological progress, creating territories with innovative infrastructure aimed at stimulating the development of advanced technologies in the healthcare sector with financial support from the state. Of particular interest in this context is the US experience in involving citizens in the process of innovative development of the healthcare system. For example, in 2000, the California government implemented two important initiatives to stimulate scientific research in the biopharmaceutical industry - the California Institute of Science and Innovation and the California Institute of Regenerative Medicine were created. In 2017, the UK government allocated 86 million pounds sterling for the development of medical advances, which allowed small and medium-sized enterprises to develop and test new technologies in the National Health Service, including in the field of digital technologies that provide patients with the opportunity to remotely manage their health from home without visiting medical institutions. Sweden, as a recognized leader in a number of areas of medical science, spends 3.6% of GDP on funding scientific research and innovation, where research using ICT plays an important role, the sources of which are funds that provide funds to higher education institutions on a competitive basis.

E-health, which includes the use of information and communication technologies (ICT) in healthcare, such as electronic medical records (EMR), telemedicine, mobile health applications and online health services, has the potential to change the way healthcare



services are delivered, especially in developing countries. The Republic of Uzbekistan, with its ongoing efforts to modernize its healthcare infrastructure, is increasingly using e-health solutions to improve the quality of healthcare services.

improve health management and overcome the limitations of the traditional healthcare system. Based on the opinions of experts on ICT, digital technologies and innovations, ICT, digital technologies and electronic document management are being introduced into the healthcare practice of the Republic of Uzbekistan, which creates new opportunities and privileges in the work of healthcare workers, in providing the population with affordable medical care, as well as the ability to ensure continuity and continuity of patient treatment. In e-health, four groups of users are distinguished: doctors, patients, administrators of medical institutions, and health insurance companies, each of which has its own interests and requirements for the organization of ICT, digital technologies and services. If we try to formulate briefly what ICT, digital technologies, telemedicine are, we can highlight the following. Firstly, it provides broad opportunities for monitoring, analyzing and forecasting the health status of the population. Another, no less important area of its application is the provision of medical care in remote and hard-to-reach areas, in extreme situations associated with natural and man-made disasters, etc. The use of ICT, digital technologies and services in telemedicine makes it possible to organize remote consultations of local and foreign highly qualified specialists of leading medical centers for patients living in the regions, which will give the likelihood of reducing fatal outcomes, in some cases up to 30%. The third area of application of ICT, e-health and telemedicine is distance learning and advanced training of medical personnel. The Decree of the President "On comprehensive measures for the fundamental improvement of the healthcare system of the Republic of Uzbekistan" No. UP-5590 dated December 7, 2018 approved the concept of development of the country's healthcare for 2019-2025, which provides for the widespread introduction of the "electronic healthcare" system in medical institutions, the creation of a complex of information systems and databases integrated on the basis of unified national standards. This Decree defines the goals, objectives and main trends of further reform of electronic healthcare.

One of the main components of Uzbekistan's e-health initiative is the establishment of electronic health records (EHR), which allows for the digital management of patient information. This initiative aims to eliminate paperwork, reduce errors, and improve patient care by ensuring that medical professionals have timely and accurate information at their fingertips (Miroshnichenko & Rakhimov, 2021). Telemedicine, which allows for remote consultations between patients and healthcare providers, is also gaining traction, especially in rural areas, where access to healthcare services is often limited. Moreover, mobile health applications and online platforms have become increasingly popular in providing health-related information and services to the public. However, the implementation of e-health in Uzbekistan is not without its challenges. The country's healthcare system faces several barriers, including outdated infrastructure, limited technological expertise, concerns regarding data privacy and security, and the need for continuous capacity-building for healthcare professionals (Bekjanov, 2022). Despite these challenges, the ongoing efforts by the government and private sector players to invest in ICT infrastructure and training programs have contributed to the gradual but steady progress in the digitalization of



healthcare in Uzbekistan. This article examines the current state of e-health in the Republic of Uzbekistan, highlighting the key components of the initiative, the policies driving its implementation, and the challenges faced by the country. Additionally, it offers insights into the future of e-health in Uzbekistan, considering the role of technological innovation, government support, and international cooperation in overcoming obstacles and realizing the full potential of e-health solutions.

Literature Review. The integration of e-health solutions in healthcare systems has become a global trend, with numerous countries striving to modernize their healthcare systems through digital technologies. E-health, which encompasses the use of information and communication technologies (ICT) to manage healthcare services, is seen as a critical tool for improving healthcare accessibility, efficiency, and patient outcomes. The literature on e-health adoption and implementation, especially in developing countries like Uzbekistan, highlights both the opportunities and challenges faced by healthcare systems in transitioning to digital platforms.

In their study, Sodikov (2020) explores the role of digital technologies in transforming healthcare in Uzbekistan, emphasizing the importance of integrating electronic health records (EHR) and telemedicine as part of the country's broader healthcare reforms. According to Sodikov, these innovations not only help streamline administrative processes but also improve the quality of patient care by providing real-time access to medical information. The use of EHR is particularly beneficial in eliminating paper-based records, reducing human errors, and enabling more accurate diagnosis and treatment.

Telemedicine, another key aspect of e-health, has been extensively researched in the context of Uzbekistan's healthcare modernization. Miroshnichenko and Rakhimov (2021) discuss how telemedicine has proven essential in bridging the healthcare gap between urban and rural areas, where access to healthcare professionals is often limited. By allowing remote consultations, telemedicine ensures that patients in remote regions receive timely medical advice, thus reducing the burden on local healthcare facilities. This technology has been crucial during the COVID-19 pandemic, where remote consultations helped reduce patient overload in hospitals and clinics (Miroshnichenko & Rakhimov, 2021).

Despite the potential benefits of e-health, there are significant challenges in its implementation, particularly in developing countries. Bekjanov (2022) addresses the barriers to e-health adoption in Uzbekistan, such as limited technological infrastructure, the digital divide between urban and rural areas, and concerns over data privacy and security. The absence of robust ICT infrastructure in some regions of the country has slowed the rollout of e-health services, and the lack of trained healthcare professionals skilled in using digital tools further exacerbates the situation. Additionally, data privacy concerns, especially in the context of electronic medical records, remain a significant issue, as patients and healthcare providers must ensure that sensitive health information is securely stored and transmitted.

Moreover, the financial aspect of implementing e-health solutions is another challenge identified in the literature. The cost of acquiring and maintaining digital health technologies, including software, hardware, and training programs, can be prohibitive, especially for low- and middle-income countries. However, international collaborations and partnerships with technology providers have helped mitigate some of these financial constraints. According to



Bekjanov (2022), the involvement of international organizations, such as the World Health Organization (WHO), has been pivotal in facilitating knowledge transfer and providing financial support to Uzbekistan's e-health initiatives.

Conclusion. In conclusion, while the adoption of e-health in Uzbekistan offers numerous benefits, its successful implementation requires overcoming significant challenges, including technological infrastructure, data privacy concerns, and capacity-building for healthcare professionals. Continued investment in ICT infrastructure, as well as effective policy frameworks and international collaboration, will be crucial for realizing the full potential of e-health in Uzbekistan. While the implementation of e-health in Uzbekistan faces several obstacles, there are positive signs of progress. The government's commitment to healthcare reform and the growing role of the private sector in providing digital health solutions have contributed to the gradual success of e-health initiatives. Additionally, Uzbekistan's participation in international e-health forums and the adoption of best practices from other countries are expected to accelerate the development and implementation of digital health solutions.

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