

CHALLENGES AND PROSPECTS FOR THE DEVELOPMENT OF EHEALTH SERVICES

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Abstract

In this scientific work defines e-health as a set of technologies used through the Internet, through which medical services are provided to improve the quality of life and facilitate the provision of medical services. One of the key findings was the identification of the four most common practices used and the most widely used technologies associated with eHealth.

Key word: E-health, telemedicine, knowledge management, accessibility of medical services, patient-centric system, artificial intelligence.

Annotatsiya

Ushba ilmiy maqolada elektron sog'liqni saqlashga hayot sifatini yaxshilash va sog'liqni saqlash xizmatlarini ko'rsatishni osonlashtirish uchun tibbiy xizmatlar ko'rsatiladigan Internetga asoslangan texnologiyalar to'plami sifatida ta'rif berilgan. Asosiy topilmalardan biri elektron sog'liqni saqlash bilan bog'liq to'rtta eng keng tarqalgan amaliyot va eng ko'p qo'llaniladigan texnologiyalarni aniqlash edi.

Kalit so'zlar: Elektron sog'liqni saqlash, telemeditsina, bilimlarni boshqarish, tibbiy xizmatlardan foydalanish imkoniyati, bemorga yo'naltirilgan tizim, sun'iy intellekt.

Abstract

In this scientific work defines e-health as a set of technologies used through the Internet, through which medical services are provided to improve the quality of life and facilitate the provision of medical services. One of the key findings was the identification of the four most common practices used and the most widely used technologies associated with eHealth.

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INTRODUCTION

Digital change has been particularly challenging in healthcare as there is an increasing demand for services due to an ageing population and the emergence of new diseases. Thus, investment in new treatments is necessary to ensure that everyone has equal access to the healthcare system. E-health includes practices such as medical care and telehealth that use electronic technology to provide health resources, services and information.

Mobile health or health care consists of the use of mobile devices so that patients can request services electronically, use applications to check information, and manage or monitor treatment or problems or other health-related issues. Telehealth can be defined as the use of telecommunication technology to facilitate care and education for patients and professionals working in the field.

E-health has become an integral part of the healthcare system as it solves a number of problems in medicine, including reducing errors and providing more efficient services with more accurate results [1]. Such is the case with the use of electronic medical records, which stores all patient information, preventing inappropriate administration of medication during care and ensuring that the patient is treated quickly and comfortably [2]. However, its realisation depends on adequate planning and strategies so that virtual health care can be performed [3].

METHODOLOGY

The theoretical and methodological basis of the study was formed by the theory of servicisation, the theory of digitalisation, the theory of public health, the views of domestic and foreign scientists in the field of health economics, the generalisation of which made it possible to interpret telemedicine services in a meaningful way and to propose the author's methodological approach to the analysis and evaluation of the market of telemedicine services in the conditions of digitalisation. The study used general scientific methods of synthesis, comparative, systemic, functional analysis, time series analysis, index method, extrapolation method, methods of induction, deduction, systematisation and generalisation.

ANALYSIS AND RESULTS

The success of eHealth in a country is related to several factors, including user adoption and the types of infrastructure, systems and governance used [4]. Meanwhile, there are four stakeholders involved in the outcomes: entrepreneurs, health care providers, patients, and those responsible for health insurance and care policies [5]. In order to effectively implement the use of health information technology, eHealth strategies must be implemented in an integrated manner, including the development of norms, laws or regulations. This situation is valid whether in telemedicine and health care, or in specific categories such as electronic health records or health literacy - e-learning (health education) [6].

The eHealth strategy has three main components:

- knowledge management;
- tools and methods;
- policies.

These components work to consolidate health systems with support networks and science and technology production, manage infrastructure and human resources, reduce barriers to accessing health services, and promote community integration [7]. Some barriers to eHealth include the difficulties faced by both health-care providers and patients in using systems and applications, and ensuring the security and privacy of user data transmitted through these systems.

Another eHealth challenge is interoperability between systems. That is, new eHealth systems must interoperate with existing systems, and there must be a standard electronic language between hospitals (or clinics) to facilitate communication and data exchange, as well as formal agreements on how the system should work in a standardised way. In addition, the cost of implementing eHealth also presents

challenges that may make it impossible to implement such systems. This is due to the high level of investment required to purchase equipment to implement more sustainable methods [8] than traditional systems that store paper records, along with the cost of employing specialised Information Technology (IT) support staff to keep systems up and running and to purchase software.

In researching this topic, two studies related to eHealth were found with a general approach. However, such studies do not fully cover all eHealth practices, which distinguishes this study from previous work on this topic. Although scientific publication databases contain a wide range of studies on eHealth, there are gaps in knowledge related to this topic, justifying the need for this review.

According to WHO, the success of telemedicine development depends primarily on the level of economic development: the vast majority of existing telemedicine services are provided in the highest income countries. The most economically developed countries tend to have sufficiently developed technology and information and communication infrastructure, freedom in the allocation of resources within the health-care system, and greater support for experimentation and research into new approaches to health care. This creates the potential for more formalised and systematic development and implementation of telehealth solutions. Telemedicine initiatives in lower-income countries are informal, not part of a structured telemedicine programme, but remain as part of occasional remote links between local specialists and consultative health facilities [9].

The professional medical community is also ambivalent about digital health care: some believe that remote patient support will increase the number of medical errors, while others believe that it will help to clarify diagnoses in difficult clinical cases in a timely manner and will provide greater opportunities for processing MRI, CT and morphological studies, enabling high-quality conclusions to be obtained and providing economic benefits.

Innovations from other economic sectors are firmly entrenched in modern healthcare. These include a value-oriented and careful financial approach, a maximally transparent process of providing medical services, machine building, and marketing. Telemedicine, cito-medicine (express diagnostics), and projects based on artificial intelligence (AI) have taken leading positions.

During the study of this topic we analysed foreign experience of e-health development and according to the results of the analysis we came to the conclusion that the following types of this system will be developed prospectively:

1) Patient-centred eHealth. A caring attitude to the patient and support in any matter is the area that has become the most actively developing. And apart from physical health, no less important today is psychological health. As the traditional model in the healthcare system has changed and continues to improve, the doctor-patient tandem is a priority today. The patient's opinion, voice and experience have become very important in choosing a particular medical facility. In the modern world, in addition to the rating and equipment of the clinic, qualification and professionalism of the doctor, comfortable trusting relationships between the doctor and the patient are taken into account.

After quarantine, the demand for personalised medicine increased. These personalised tactics have become a major global trend and will continue to dominate in 2024. At the core of e-health is convenience, accessibility and, as a result, lowering the cost of healthcare services. Clinic marketers are actively involved in the process: it is possible to offer a patient blood sugar tracking, comprehensive treatment of chronic, autoimmune, oncological diseases, as well as personalised recommendations from attending physicians on nutrition, therapeutic exercises, etc. By the way, there is a growing number of clinics where DNA analyses are performed. Thanks to this, it is possible to learn about health risks and make an individualised plan of preventive measures.

2) Cito-medicine e-health system. Rapid diagnostics has become an important and priority area in many clinics. Fast and accurate diagnostics helps to identify pathology and, without losing precious time, to proceed to further examinations or necessary treatment. But, of course, cito-medicine is impossible without innovative methods and professional equipment. The method is attractive for patients by one-time processing of analyses, ultrasound, X-ray, CT, MRI results. And the use of modern technologies allows to prolong and save life, especially in the case of severe diseases. Today, a patient can visit a general practitioner or paediatrician, take the necessary tests and immediately receive the necessary scheme for treatment or further diagnostics.

3) Telemedicine. Telemedicine is no longer a new trend, but it is still actively developing. It always stands out favourably among competitors and meets all the expectations of patients. In addition to various applications, online consultations, there are devices that collect the entire anamnesis of the patient. For example, for patients with diabetes mellitus, a portable device performs an assessment analysis of blood glucose, which makes their lives much easier.

4) Sovereignty, digital security. After the pandemic and due to the difficult geopolitical situation in the world, it became clear that sovereignty is needed in various sectors of the economy, including healthcare. But along with the implementation of major projects, the issue of information security has arisen.

5) Artificial intelligence, robotisation. Today, you don't see anyone with digital assistants any more - they are also actively used in medicine. In polyclinics, digital assistants analyse protocols and help attending physicians (most often therapists) to make the right diagnosis. The assistants form an 'independent' opinion, request additional information if required, and provide disease dynamics.

CONCLUSIONS AND SUGGESTIONS

The conducted analysis allows us to make some generalisations of interest for our study: the typical basis for further study and search for new approaches to the modelling of the medical information system from the position of its influence on the socio-economic state are the information processes and the presented models of the healthcare system. Thus, the modelling of information processes of the healthcare sphere is relevant at present and is aimed at reforming the healthcare system, which will regulate the processes of digitalisation of the medical information system at all state levels.

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