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REVIEW

Modern Trends in the Development of Healthcare

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Abstract

This article is devoted to contemporary global trends in the development of the healthcare. It discusses the issues of transition to a digital system in the field of health care, globalization of the medical services market, the increasing role of mental health of the population, ecology, conditions and lifestyle, culture as basic prerequisites for national health, also the development of public-private-public partnerships and differentiation of health care.

Keywords: Healthcare- health protection- the digital system in the field of healthcare- the market for medical services

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Introduction

The modern world today is in a state of constant change, whether it is in the political, scientific or cultural sphere. This condition also applies to the healthcare sector.

The healthcare system around the world is experiencing a number of common global problems: population growth, demographic aging, the prevalence of chronic non-communicable diseases, the constant increase in health care costs with a simultaneous increase in resource scarcity.

But at the same time, there is an active development of information technologies, including the accumulation of big data, artificial intelligence, telemedicine, remote monitoring of patients and the ever-increasing availability of high-performance mobile devices and high-speed Internet connection.

The development and implementation of modern technologies has affected many areas, ranging from oncology and surgery, to the development of COVID-19 vaccines.

The analysis of the state of healthcare in the world at the present stage allowed us to identify the following new trends in the development of healthcare.

The first trend is the use of digital technologies in healthcare. The healthcare industry is looking for ways to virtually treat patients, predict and prevent diseases, improve the efficiency of hospitals, as well as overcome safety problems and shortages of medical specialists. In fact, the industry is moving towards reducing the cost of services. This can be achieved by introducing personalized medicine, which improves patient care.

Technologies bring great value in customer care, allowing you to perform the following functions.

- remote monitoring of patients, including those with chronic diseases;
- virtual screening using devices that transmit information about the patient's health status;
- individual treatment plans;
- early detection of the disease.

Consider the technological trends in healthcare that will shape the industry in the coming years.

First, Telemedicine. Telemedicine embodies high-tech healthcare. It was a driving force in the transformation of the healthcare system, which allowed thousands of people in remote areas to receive medical care they did not have access to. Telemedicine has also freed city residents from long queues in waiting rooms caused by a shortage of medical workers.

It is possible to point out the following current trends in the development of medical technologies in telemedicine:

- improved applications for healthcare. Remote communication is widespread, and therefore telemedicine seeks to improve the quality of interaction between patients and medical professionals. Therefore, it is safe to expect that applications will become more intuitive and easy to use.;
- healthcare will become less centralized. More and

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more professionals are abandoning large hospitals in favor of small private practices;

- strengthening cybersecurity. Medical operations are susceptible to cybercrime, so protecting medical data is naturally the number one priority.

Secondly, the Internet of Medical things (Iot). According to a recent report, the market for wearable medical devices is expected to reach more than $27 million by 2023.

The convergence of the Internet of Things and telemedicine has led to the emergence of many wearable devices and mobile applications used to track and prevent diseases. IoMT covers a variety of smart devices: ECG, ECG monitors, connected inhaler and much more.

Thirdly, data-based medicine is one of the key emerging trends.

The use of data in healthcare is very promising for:

• reducing the frequency of errors when taking medications,

• creating disease prevention plans,

• reducing waiting times due to staff shortages,

• preventing readmission of patients and improving long-term care.

Fourth, artificial intelligence as a modern trend in healthcare. Artificial intelligence, along with machine learning, promises to bring a lot of benefits to this sector. They provide innovative ways to diagnose diseases, develop treatment plans, conduct medical research, drug discovery and clinical trials, monitor and predict epidemic outbreaks, and improve work efficiency during peak loads in hospitals.

According to the forecast, by 2030, systems powered by artificial intelligence will be widely used in personalized medicine, and in 5 years autonomous artificial intelligence will begin to replace human doctors.

Artificial intelligence also allows you to create personalized medicines and effective treatment based on individual patient data, such as tests and reactions to chemicals. According to forecasts, personalized treatment based on artificial intelligence will be available for mass use by 2030 [1].

Fifth, another key trend in healthcare is real-time digital interactions. While video calls are currently unreliable at best, online doctor visits may soon become possible thanks to 5G. The deployment of instant web connections that 5G provides will allow patients to be treated remotely via their computer or mobile device. And while they will share their medical data online, online meetings may seem more personal as they involve real-time human interaction.

Digital technologies in the field of healthcare are being developed to increase the availability of prevention, treatment and monitoring of public health. Digital information systems provide an overview of cost containment opportunities and allow you to track which solutions are successful.

The second trend is the globalization of healthcare. Research by the World Bank has shown that the treatment of patients in other countries is associated with its lower cost or high quality [2]. This is facilitated by the availability of information on the level of medical education and services in various countries, including the results of representative surveys [3].

Due to the lack of medicines, the treatment of many serious diseases was impossible. The globalization of healthcare has contributed to the interconnection between countries, convenient export and import of vital medicines. Globalization has overcome the communication barrier. Medical professionals from less developed countries can easily communicate with world experts to get the necessary advice and recommendations. Globalization has contributed to the emergence of online health awareness programs to democratize access to health care.

The globalization of healthcare, of course, affects the development of infrastructure. Medical organizations strive to implement the standards of developed countries by providing improved infrastructure and modern facilities. Although this may infringe on the categories of citizens with low incomes, raising health standards on a par with the developed world is a great advantage of globalization.

At the same time, the globalization of healthcare is leading to the fact that medical personnel are moving to more developed countries, leaving poor countries without qualified doctors to treat local residents. Young professionals, as a rule, settle in the countries from where they received their diplomas, refusing to return home. Developed countries experiencing a shortage of medical personnel also tend to hire specialists from poorer countries, thereby leaving the latter's health care system in ruins.

The third trend is the increasing role of mental health of the population. Mental and physical health are closely interrelated. Mental health plays an important role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, negatively affect people's ability to engage in health-saving behaviors. In turn, physical health problems, such as chronic diseases, can have a serious impact on mental health and reduce a person's ability to participate in treatment and recovery [4].

Poor mental health affects individuals and their families, leading to a loss of income, a lower level of education, quality of life and a much shorter life expectancy.

The COVID-19 pandemic and the resulting economic downturn have negatively affected the mental health of many people and created new barriers for people already suffering from mental illnesses and substance use disorders.

The fourth trend is the deterioration of the environmental situation. In recent decades, significant environmental changes have been observed in the world, which partially contradict each other. For example, an increasing number of the world's population gets access to drinking water, high–quality food, environmental organizations are developing, but at the same time the reverse process is also observed - air pollution is increasing, the area of forests is decreasing.

More than half of the world's population lives in

unfavorable environmental conditions [5].

Maintaining a healthy environment is central to improving the quality of life and the duration of a healthy life. Globally, 23% of all deaths and 26% of deaths among children under the age of 5 are due to preventable environmental factors [6].

Environmental factors are diverse and far-reaching. They include: exposure to hazardous substances in the air, water, soil and food, natural and man-made disasters, climate change, occupational hazards, anthropogenic environment.

Poor environmental quality has the greatest impact on people whose health is already at risk. Therefore, environmental protection should take into account social and environmental factors that increase the likelihood of exposure and disease [6].

Environmental health is a dynamic and developing field. Although not all complex environmental problems can be predicted, some known emerging issues in this area include:

first, climate change. Climate change is predicted to affect sea levels, the nature of infectious diseases, air quality and the severity of natural disasters such as floods, droughts and storms [7] ;

secondly, disaster preparedness. Preparedness for the environmental impact of natural disasters, as well as disasters of human origin, includes planning for health needs and impacts on public infrastructure, such as water supply and roads [8];

third, nanotechnology. The potential impact of nanotechnology is significant and offers possible improvements for the prevention, detection and treatment of diseases, electronics, clean energy, production, environmental risk assessment [9].

fourth, the anthropogenic environment. The features of the built environment seem to affect human health -they affect behavior, physical activity patterns, social networks and access to resources [10]. According to a major report "Healthy environment, healthy lifestyle: How the environment affects health and well-being in Europe", published by the European Environment Agency (EEA), the polluted environment is the cause of death of every eighth European [11].

Air pollution, noise, the effects of climate change such as heatwaves and exposure to dangerous chemicals worsen the health of European residents. In addition, the COVID-19 pandemic has exposed the complex interrelationships between the environment, social systems and our health with factors causing diseases related to human activities.

The fifth trend is the development of public-private partnership in the field of healthcare. The entry of private capital into the medical sector is a global trend today. The introduction of innovative treatment practices, technological equipment of clinics, improvement of the quality of medical care, the formation of a new institutional structure of the healthcare sector necessitate the attraction of private investment.

Public-private partnership is an effective tool for solving a number of important socio-economic problems, including improving the quality of patient care and the availability of expensive types of treatment, as well as modernizing the information system, improving the qualifications of medical personnel. As world practice shows, the joint work of the state and business both in the system of compulsory medical insurance and in projects to modernize the healthcare system based on public-private partnership is more effective than in cases where the healthcare system is exclusively under the jurisdiction of the state [12].

The key measures of state policy in the field of medical services are focused on the creation of a self-regulatory model, the development of which will take place in conditions of intensive interaction between the public and private sectors. The introduction of PPP mechanisms at the national level will accelerate the development of the medical services market, and will also contribute to the formation of an effective competitive environment, optimize the management of financial resources, improve the quality and increase the number of services provided. In addition, the development of public-private partnership will affect the increase in the return on funds invested in healthcare, the formation of a favorable investment climate, and the acceleration of the introduction of state guarantees.

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