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## **Stages of historical development of the healthcare system in Kazakhstan: problems and prospects**

The most crucial spheres of social life in any state are health care and education, including medical education. Strengthening and safeguarding the population's health is one of the core priorities of every country's state policy. The health care system of Kazakhstan, as well as the whole country, during the years of independence has passed a complex phase of formation and development. Therefore, this research has been conducted to analyze the way of development of the health care system of the republic during the years of independence. The authors of the article conducted a review of programme and conceptual documents and their analysis. In the article the authors have attempted to analyze the path and stages of development of the health care system of Kazakhstan during the years of independence.

*Key words:* healthcare, healthcare system, history of healthcare, history of Kazakhstan, state programmes in the field of healthcare, health policy.

### *Introduction*

Throughout the historical, socio-economic, and cultural development, human society has established a series of social institutions, including healthcare, reflecting a specific type of civilization and the traditional, cultural, religious, and value orientations characteristic of that society. The modern era is marked by the increasing significance of the role of healthcare in the lives of populations in all countries, irrespective of their economic development levels. It is noteworthy that healthcare has always accompanied human civilization in one form or another, evolving alongside humanity since the time people began treating diseases and attempting to safeguard their health. The health of each individual, as an integral part of the overall population health, becomes a factor that not only defines the completeness of their existence but also the potential of their capabilities. The state of the population's health, in turn, determines the extent of a country's socio-economic, cultural, and industrial development. From the perspective of sustainable and stable growth in the well-being of the population, the healthcare sector, representing a unified, developed, socially-oriented system aimed at ensuring accessibility, timeliness, quality, and continuity of medical care, stands as one of the primary priorities in the republic.

Over the course of more than 30 years of Independent Kazakhstan's development, profound changes have taken place in all sectors, including healthcare. In light of this, in our view, the study of the historical development of the healthcare system in Kazakhstan is a relevant topic in the present context. The relevance of this topic is heightened by the fact that the examination of health and healthcare system is the object of growing public interest and scientific research not only among medical professionals but also among sociologists, historians, philosophers, political scientists, as well as government officials and policymakers. The healthcare system itself has become one of the most crucial elements of state policy, ensuring the national security and labor potential of our country.

In the contemporary period, the challenges of reforming the health care system, state policy in the field of management and financing, diverse aspects of medical care and population health status are studied in a number of works by specialists — economists, sociologists, philosophers, legal scholars, and so forth, indicating a widespread scientific interest in the topic and interdisciplinary study of the Kazakhstani health care system.

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*Materials and methods of research*

The issue of researching the history of the development of medicine and health care in the territory of Kazakhstan at the current stage is causing great interest among researchers-historians. As we know, a new stage in historiography came from the 90s of the twentieth century, after the collapse of the USSR, since the moment of acquisition of state sovereignty by the Republic of Kazakhstan. Since in this period the access to the closed archival sources was opened, conditions for overcoming subjective political and ideological attitudes appear and the opportunities for conducting objective scientific research expand. The history of the development of medicine and public health care in Kazakhstan from ancient times to the modern times is dedicated to the collective work of the authors: M.A. Kamaliev, R.K. Bigalieva, T.Kh. Khabieva [1]. Researchers A. Birtanov and E. Birtanov have studied the history of healthcare development of one city [2]. The early 1990s were marked by studies on the history of the development of regional health care. Among the dissertation works can be noted the work of S.Kh. Dushmanov [3], in which the author considers the history of health care of Western Kazakhstan since the 18th century. In the period of formation of independence there was written a dissertation by A.S. Nurgalieva [4] on the history of health care development in East Kazakhstan (20th – 21st centuries), in which the author concentrated attention to the specifics of health care development in a particular region of the republic, without focusing on the consideration of a holistic picture of the establishment of health care as a system. Thus, the state's social policy issues, the role of social institutions and health were reflected in the works of Yu.K. Shokamanov [5]. Also, it is necessary to note the PhD thesis of G.G. Fanilevna [6], which is dedicated to the study of the national health care system of the Republic of Kazakhstan in the 90s. The article by A.K. Turgambaeva, S.E. Ibraev, and O.S. Eskendirov considered the major stages and prospects of development of the health care development system in Kazakhstan [7].

The methodological framework of the research relies on the principles of historicism, objectivity and systematicity. The article used general scientific and special historical research methods. The methods of analysis, synthesis, induction and deduction were used within the framework of general scientific methods. The primary methods of research are special methods of historical cognition. Among them historical-comparative, content analysis, historical-genetic, historical-typological, historical-systemic, retrospective methods are the most significant.

*Discussion*

The socio-political and socio-economic transformations that occurred in Kazakhstan after the collapse of the USSR, including the final establishment of the priority of market relations, have also influenced the system of organizing medical care for the population. The clear management vertical that existed in the past broke down with the collapse of the command-administrative management system. In an effort to improve the effectiveness of the health care system and increase the sectoral potential, the state and the institutions of power tried to change the system of organization, management and financing of health care. Among the many shortcomings and mistakes made in reforming the country's health care system in previous years, the main one was the lack of a clear, well-considered and well-founded strategy for the development of the sector. Consequently, Kazakhstan's healthcare system in the dynamics of its political and economic landscape was subjected to significant reconstruction and during the period of state sovereignty, subject to historical, political and socio-economic determinants, experienced three models: budgetary, budget-insurance, programme-budgetary with elements of paid medicine at all stages of development [8]. The 1990s systemic socio-economic crisis determined the decrease of many public health and health care indicators. Experiencing the economic difficulties of the transition period, the country's budget allocated less than 2% to the domestic health care system. Insufficient funding for health care led to the reduction of medical organizations and jobs, the ageing of the material and technical base, and a decline in the provision of equipment, apparatus, medical devices and instruments. The total lack of medicines, dressing materials, inadequate supply of laboratories, inability to provide full balanced therapeutic nutrition to patients, and low wages of medical workers made it impossible to achieve the necessary level of quality and efficiency of medical care [9].

Furthermore, “the State Programme for Reforming and Developing Health Care in the Republic of Kazakhstan for 2005-2010s” and the sectoral “Programme for Developing Cardiology and Cardiac Surgery in the Republic of Kazakhstan for 2007-2009s” were implemented in the Republic of Kazakhstan. The major thrusts of these programmes were the implementation of up-to-date diagnostics and treatment technologies, ensuring accessibility and improvement of the quality of medical services, the development of medical examinations, and raising the professional level of doctors.

According to the World Health Organization, Kazakhstan was a country with an extremely strained medical and demographic situation. In addition, the health care system as a whole had a low rating according to international standards. Therefore, the promotion of a high-tech healthcare system and improvement of the quality of medical services was a priority goal of Kazakhstan's policy. In this regard, Kazakhstan adopted a number of state programmes, legislative acts and institutional initiatives aimed at reforming and developing the health care system. During the period from 2011s to 2015s, Kazakhstan implemented “The Salamatty Kazakhstan” State Health Development Programme. Within the framework of this program, maternal and infant mortality rates were significantly reduced. There were also improvements in indicators related to cardiological and cardio-surgical care. The state program “Densaulyk” was implemented from 2016 to 2019. Since July 1, 2017, Compulsory Social Health Insurance (CSHI) has been in effect. CSHI ensures equal access to medical services and pharmaceutical products from the Compulsory Social Health Insurance Fund (CSHIF) for all insured citizens of Kazakhstan, regardless of gender, age, social status, place of residence, and income. Prior to this, the provision of medical services was funded by state (republican and local) budgetary funds, voluntary health insurance funds, and loans from international financial institutions for the implementation of international projects [10; 50].

In particular, the programs “Densaulyk» (2016–2020) and “Salamat Qazaqstan” (2011–2015) are oriented towards introducing social services, improving the quality of medical services, increasing accessibility, and adapting the healthcare system to market conditions dictated by society and modern requirements. The programs emphasize that achieving these goals in healthcare organizations, development, and functioning are significantly influenced by the effective implementation of innovations in the working process under the conditions of a market economy. Additionally, healthcare organizations in Kazakhstan face a serious deficiency, as confirmed by statistical data from past years, in technological, product-related, organizational-managerial, marketing, and other innovations.

Taking the above into account, from the perspective of medical organizations and the state, if active corrective measures are not taken in the current situation, the negative consequences in the near future will become even more significant.

The comprehensive measures implemented have led to improvements in healthcare and demographic indicators. During the implementation period of the State Program “Salamat Qazaqstan”, notable reductions were observed, including a 15.3% decrease in the overall mortality rate, a 1.9-fold decrease in maternal mortality, and a 1.7-fold decrease in infant mortality. The reduction in maternal, infant, and child mortality rates, as confirmed by the Interagency Group of United Nations agencies, allowed Kazakhstan to achieve the fourth and fifth Millennium Development Goals. Over these years, the number of excess hospital beds decreased by more than half, corresponding to a decrease in the bed-to-population ratio of 136.4 to 65.6 per 10,000 people for round-the-clock hospital organizations [7; 12].

As we know, in 2021, the healthcare system of Kazakhstan endured a colossal burden due to the high increase in cases of coronavirus infection. Nevertheless, healthcare professionals continued to provide planned medical assistance. Overall, Kazakhstan's healthcare underwent several qualitative changes last year, particularly taking a confident step towards providing financial support to medical workers. To learn more about the transformations in the domestic medical sphere, read the overview material.

Thus, by the end of 2021, the following medical assistance was provided in Kazakhstan:

2586 medical aviation flights were carried out;

4960 medical services were rendered, including:

2615 patients transported to medical organizations (53%);

254 consultations conducted (5%);

176 surgeries performed (4%);

1915 remote medical services with the involvement of specialized professionals organized (38%).

Medical assistance in the form of medical aviation was provided to 3950 patients, including:

- 966 women with obstetric and gynecological pathology;

- 947 children with pediatric pathologies;

- 679 patients with various injuries (including road traffic accidents — 277));

- 505 patients with diseases of the circulatory system;

- 493 newborns with malformations;

- 360 patients with other diseases.

Eight citizens of the Republic of Kazakhstan were transported from foreign clinics in critical condition (Turkey — 3, UAE — 2, Russia — 2, Georgia — 1). 38 flights were made to provide face-to-face consulta-

tive assistance by qualified specialists of republican and medical organizations of Nur-Sultan and Almaty cities. 4 flights were made to transport donor organs to the relevant medical organizations for subsequent transplantation. The number of visits to health care organizations providing primary health care in the republic at the end of 2021 was 101,199,905, which is 28.3% more compared to the same period last year (78,866,841). The number of visits per inhabitant in the republic was 5.20 (4.11 in the same period of 2020). At the inpatient level, the total volume of hospitalizations in 24-hour hospitals increased by 4.9% and amounted to 2,979,130 cases (of which 2,017,627 on the assets of the CSHI Fund and 961,502 under the GVFCM budget). As of 1 January 2022, 14,732 infectious disease beds have been deployed to treat patients with coronavirus infection and pneumonia. The number of intensive care beds in infectious diseases hospitals totaled 1,674 beds [11].

According to the report of the Minister of Health of the RK A. Giniyat at the meeting of the final Collegium on January 10, 2023, the country noted positive dynamics in the main medical and demographic health indicators. In connection with summing up the results of the year in March, the total mortality rate of the population for the eleven months of 2022 compared to 2021 increased by 30% (29.7%). At the same time, there is a decrease in mortality rates from diseases of the circulatory system by almost 34% (33.7%), cancer — by 8% (8.3%), mortality from respiratory diseases — by 1.7 times, and mortality from tuberculosis has decreased by 12.5%. Also, there is a significant reduction in maternal mortality — more than 3 times (2021 — 185 cases, 2022 — 57 cases). According to the minister's report, there are more than 5 thousand (5,695) PHC organizations in the country (501 in rural areas, 5,194 in cities). In 2022, 9 additional city clinics and outpatient clinics were put into operation: Karaganda region — 3 clinics;

Mangystau region — 3 (VA — 1, PHC center — 2); Turkestan region — 1 clinic; Astana city — 2 medical outpatient clinics. Additionally, “The Green Corridor” has been implemented to expedite the examination and treatment in cases of suspected oncological and hematological diseases [12].

Additionally, special attention was given to the training and professional development of healthcare workers. Thus, in 2022, 4,200 doctors were trained at the expense of the national budget, 138 of them abroad, and 2,650 paramedical staff were trained. According to the data of health departments, more than 15 thousand doctors were additionally trained at the expense of local executive bodies, including 209 abroad, as well as more than 29 thousand nurses were trained. Thus, according to the results of 2022, the need for doctors in rural areas was reduced by 12%, while the total need in the country was 26% [12].

Considering the above, we can highlight the following stages in the historical development of healthcare in Kazakhstan (Table).

Table

Stages of development of the healthcare system of Kazakhstan for 1991–2020 [7; 17]

1991–1994	Development of the Soviet model of healthcare	Reduction in the number of healthcare organizations, decreasing in the availability and level of medical care provided to the population. In 1992 the first concept of healthcare reform was adopted.
1995–1998	Introduction of the budget-insurance model of healthcare	Promotion of market relations, the emergence of buyer and seller relations; differentiated remuneration depending on the volume and quality of medical care; protection of patient rights in connection with the adoption of the first law on compulsory medical insurance (1996)
1998–2004	The State program of the Republic of Kazakhstan “People’s Health”. Introduction of program financing on a budgetary basis	Improvement of the healthcare management system, transformation of the medical care system into a multi-layered and multilevel one, changing the system of financing and economic relations in healthcare, reforming the system of training medical personnel, strengthening the material and technical base of healthcare, creating a competitive environment in the provision of medical services. Focus on the final result depending on the allocated funds.
2005–2010	State program of healthcare reform and development of the Republic of Kazakhstan for 2005–2010. Formation of new financial mechanisms for healthcare management in connection	The Code of the Republic of Kazakhstan “On the Health of the People and the Healthcare System” was adopted; the network of state medical organizations was typified and standardized, the state network standard was approved; protocols for the diagnosis and treatment of diseases were intro-

	with the creation of a single payer at the national level.	duced; a system of sectoral and independent quality expertise was created; the development of telemedicine and mobile medicine in the health care of rural areas. Development and implementation of National Health Accounts (2006). Improving financing, transparency of cash flows. In 2010, the volume of healthcare financing for the first time amounted to 3.2% of Gross domestic product. Consolidation of the budget at the regional level, since 2010 — at the republican level for the provision of inpatient and inpatient replacement care.
2008–2011	Development of the material and technical base of healthcare. Investment project “Construction of 100 schools, 100 hospitals”	Strengthening the material and technical base of healthcare. Introduction of public-private partnership in the field of construction of medical facilities, fitted with medical equipment.
2011–2015	The state program of healthcare development “Salamatty Kazakhstan”. Implementation of the Unified National Health System (UNSS)	Improving the health of citizens of Kazakhstan to ensure sustainable socio-demographic development of the country. Improving and increasing the volume of healthcare financing. A healthcare system has been created based on the principles of the patient’s free choice of a doctor and a medical organization, the formation of a competitive environment and transparency in the process of providing medical services. Rationalization of the use of health care resources and their direction to the development of inpatient and primary health care, rehabilitation and prevention of diseases. Transfer of the introduction of high technologies. Introduction of the Stimulating component of the comprehensive per capita standard and differentiated remuneration of health workers. Development of independence of the Ministry of Defense (management training, transfer to Right of economic management, JointStock Company). Development of a unified health information system.
2015–2016	Preparatory stage for the introduction of Compulsory Social Medi	Adoption of the law “On Compulsory social health insurance”; improvement of the regulatory framework, health information systems; carrying out information and explanatory work among the population.
2016–2019	The state program “Densaulyk” for 2016–2019 [10]. Development of digitalization and public health	Development of a new model of Guaranteed volume of free medical care. Preparatory work on the introduction of compulsory social health insurance. Approval of a new state network standard and a longterm plan for the development of healthcare infrastructure. Transition to paperless, digital management of medical records in healthcare organizations (from 2019). Gradual increase in salaries of medical workers.
2020–2025	The State program of healthcare development for 2020–2025, transformed in 2021. To the National project “Healthy Nation” [12]. Introduction of the compulsory social health insurance system	Introduction and improvement of the compulsory health insurance system. Development of the concept of the “State Program for improving public health for 2020–2025” and a new version of the draft Code “On the Health of the people and the healthcare system”. Adoption of the new Code [6]. Large-scale fight against the pandemic of coronavirus infections. Further development and improvement of the country’s healthcare system.

The logical continuation of the initiated reforms has been taken into account and implemented within the framework of the new State Programme for Health Care Development for 2020–2025. The aim of this programme is to improve the quality of medical care and to achieve a life expectancy of up to 75 years. The implementation of the State Programme for 2020 is aimed at achieving 4 target indicators. These include: increasing life expectancy to 73.21 years, reducing the risk of premature mortality from cardiovascular, oncological, chronic respiratory diseases and diabetes to 18.86%, reducing maternal mortality to 17.1 per 100,000 live births, reducing infant mortality to 10.1 per 1,000 live births [13].

### Conclusions

Overall, over the years of implementing healthcare development programs in the Republic of Kazakhstan, a positive trend in indicators characterizing the health of the population can be observed, which, in turn, contributes to improving the quality and increasing the life expectancy of the country's population. Examining the stages of historical development, improvement in key health indicators and increased funding in the healthcare sector can be observed. However, despite these results, compared to other countries, life expectancy and financing remain at a low level.

The strengths of the above programs include: widespread coverage of the population with healthcare services; effective control of expenses in the healthcare sector; standardization of clinical activities; unified procurement of pharmaceuticals and medical products; digitization of healthcare; strategic partnership of medical universities with leading foreign universities. The weaknesses of the health care system are: insufficient level of health literacy among the population; uncompetitive wages for medical workers in the public health sector; aging infrastructure of medical organizations and insufficient equipment with medical equipment; workforce imbalance in the healthcare system; uneven level of service and quality of medical care; imperfection of information technologies. Nevertheless, the stages of the historical development of the health care system allow us to draw a conclusion that Kazakhstan's health care system in the future will occupy a decent place in the world health care system, and the population of Kazakhstan will be provided with medical care corresponding to the international standard of advanced countries.

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### Қазақстандағы денсаулық сақтау жүйесінің даму кезеңдері: мәселелері және келешегі

Кез келген мемлекеттің әлеуметтік өмірінің маңызды салалары — денсаулық сақтау және білім беру, соның ішінде медицина саласы өзекті болып саналады. Халықтың денсаулығын нығайту және қорғау әрбір елдің мемлекеттік саясатының негізгі мүдделерінің бірі. Қазақстанның денсаулық сақтау жүйесі, бүкіл ел сияқты, тәуелсіздік жылдарында қалыптасу мен дамудың күрделі кезеңінен өтті. Осыған байланысты бұл зерттеу тәуелсіздік жылдарындағы республиканың денсаулық сақтау жүйесін дамыту

жолын талдау мақсатында жүргізілді. Мақала авторлары бағдарламалық және тұжырымдамалық құжаттарға шолу жасап, оларды талдап, тәуелсіздік жылдарындағы Қазақстанның денсаулық сақтау жүйесінің даму жолдары мен кезеңдерін талдауға тырысқан.

*Кілт сөздер:* денсаулық сақтау, денсаулық сақтау жүйесі, денсаулық сақтау тарихы, Қазақстан тарихы, денсаулық сақтау саласындағы мемлекеттік бағдарламалар, денсаулық сақтау саласындағы саясат.

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## Этапы исторического развития системы здравоохранения в Казахстане: проблемы и перспективы

Важнейшими сферами социальной жизни любого государства являются здравоохранение и образование, в том числе и медицинское. Укрепление и охрана здоровья населения является одним из ключевых интересов государственной политики каждой страны. Система здравоохранения Казахстана, как и вся страна, за годы независимости прошла сложный этап становления и развития. В связи с этим данное исследование было проведено с целью анализа пути развития системы здравоохранения республики за годы независимости. Авторы статьи провели обзор программных и концептуальных документов, попытались проанализировать путь и этапы развития системы здравоохранения Казахстана за годы независимости.

*Ключевые слова:* здравоохранение, система здравоохранения, история здравоохранения, история Казахстана, государственные программы в сфере здравоохранения, политика в сфере здравоохранения.

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