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ANALYSIS OF THE CURRENT STATE AND DIAGNOSIS OF KEY PROBLEMS OF PUBLIC ADMINISTRATION IN THE HEALTHCARE SECTOR IN THE REPUBLIC OF KAZAKHSTAN

Healthcare is one of the most important areas of activity of any state. One of the goals of sustainable development, the United Nations (UN) proclaims "Ensuring a healthy lifestyle and promoting well-being for all at any age." The efforts of all countries of the world are directed towards the realization of this goal, since the health of the nation and the high standard of living of the country's population are important components of the sustainable development of each country. In this regard, the article emphasizes that healthcare is one of the most important areas of activity of any state, and effective public administration in this area is critical, so the goal was to develop proposals and recommendations to ensure high-quality and affordable medical care for all segments of the population. For this purpose, various research methods were used, such as the method of scientific abstraction, the method of induction and deduction, literature analysis and statistical analysis of modern data in dynamics over the past 5 years, the method of generalization and comparative analysis, which were used to identify problems and develop recommendations to improve the availability and quality of medical care, ensure public health and improve the quality of life of the population. In light of the challenges Kazakhstan has faced in public health management, including pandemics, demographic changes and technological innovations, we have proposed: introducing an automated data processing system in all regions of the country, improving the system of monitoring and analyzing health management, optimizing the financing system, developing a mechanism for monitoring and overseeing the provision of high-quality and affordable medical care to all segments of the population.

Key words: health, healthcare, affordable medical care, quality of life, pandemic, recommendations, public health management

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Қазақстан Республикасындағы денсаулық сақтау саласын мемлекеттік басқарудың қазіргі жай-күйін талдау және негізгі проблемаларын диагностикалау

Денсаулық сақтау кез келген мемлекет қызметінің маңызды бағыттарының бірі болып табылады. Біріккен Ұлттар Ұйымы (БҰҰ) тұрақты дамудың мақсаттарының бірі «салауатты өмір салтын қамтамасыз ету және кез-келген жастағы барлық адамдардың әл-ауқатына ықпал ету» деп жариялайды. Осы мақсатты іске асыруға әлемнің барлық мемлекеттерінің күш-жігері бағытталған, өйткені Ұлт денсаулығы мен ел халқының жоғары өмір сүру деңгейі әрбір елдің орнықты дамуының маңызды құрамдас бөлігі болып табылады. Осыған байланысты, мақалада денсаулық сақтау кез келген мемлекет қызметінің маңызды бағыттарының бірі болып табылатыны және осы саладағы тиімді мемлекеттік басқару өте маңызды екенін ескере отырып халықтың барлық топтарына сапалы және қол жетімді медициналық көмек көрсету үшін ұсыныстар әзірлеу мақсаты қойылды. Ол үшін ғылыми абстракция әдісі, индукция және дедукция әдісі, әдебиеттерді талдау және соңғы 5 жылдағы динамикадағы заманауи деректерді статистикалық талдау, проблемаларды анықтау және медициналық көмектің қолжетімділігі мен сапасын жақсарту, қоғамдық денсаулықты қамтамасыз ету және сапаны жақсарту үшін ұсыныстар әзірлеу үшін пайдаланылған жалпылау әдісі және салыстырмалы талдау сияқты әртүрлі зерттеу әдістері

демияны, демографиялық өзгерістерді және технологиялық инновацияларды қоса алғанда, денсаулық сақтауды мемлекеттік басқару саласында Қазақстан тап болған сын-тегеуріндерді ескере отырып, біз: еліміздің барлық өңірлерінде деректерді өңдеудің автоматтандырылған жүйесін енгізуді, денсаулық сақтауды басқару мониторингі мен талдау жүйесін жақсартуды, қаржыландыру жүйесін оңтайландыруды, халықтың барлық топтарына сапалы және қолжетімді медициналық көмек көрсетуді қамтамасыз етуді бақылау мен қадағалау тетігін дамытуды ұсындық.

Түйін сөздер: денсаулық сақтау, денсаулық сақтау, қолжетімді медициналық көмек, өмір сапасы, пандемия, ұсыныстар, қоғамдық денсаулықты басқару.

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Анализ современного состояния и диагностика ключевых проблем государственного управления сферы здравоохранения в Республике Казахстан

Здравоохранение – одно из важнейших направлений деятельности любого государства. Одной из целей устойчивого развития, Организацией объединенных наций (ООН) провозглашается «Обеспечение здорового образа жизни и содействие благополучию для всех в любом возрасте». К реализации данной цели направлены усилия всех государств мира, так как здоровье нации и высокий уровень жизни населения страны являются важными компонентами устойчивого развития каждой страны. В связи с чем, в статье подчеркивается, что здравоохранение – одно из важнейших направлений деятельности любого государства, а эффективное государственное управление в этой сфере имеет критическое значение, поэтому была поставлена цель разработать предложения и рекомендации с целью обеспечения качественной и доступной медицинской помощи всем слоям населения. Для этого применялись различные методы исследования, такие как метод научной абстракции, метод индукции и дедукции, анализ литературы и статистический анализ современных данных в динамике за последних 5 лет, метод обобщения и сравнительный анализ, которые использовались для выявления проблем и разработке рекомендаций для повышения доступности и качества медицинской помощи, обеспечения общественного здоровья и улучшения качества жизни населения. В свете вызовов, с которыми столкнулся Казахстан в сфере государственного управления здравоохранения, включая пандемии, демографические изменения и технологические инновации, нами были предложены: внедрение автоматизированной системы обработки данных во всех регионах страны, улучшить систему мониторинга и анализа за управление здравоохранением, оптимизировать систему финансирования, развить механизм контроля и надзора за обеспечением качественной и доступной медицинской помощи всем слоям населения.

Ключевые слова: здоровье, здравоохранение, доступная медицинская помощь, качество жизни, пандемия, рекомендации, государственное управление здравоохранением.

Introduction

State health management is a system of organization and coordination of the activities of state bodies, as well as private and public structures, aimed at providing the population with quality and affordable medical services, preserving and strengthening the health of citizens, controlling the quality of medical care, and ensuring the effective functioning of the healthcare system as a whole (Law of the Republic of Kazakhstan, 2003). State management in the field of healthcare includes the development and implementation of medical policy, legislative regulation in the field of healthcare, financial support for medical programs, control over the quality and

safety of medical services and drugs, as well as the development of medical science and education. The main goal of state health management is to ensure the accessibility and quality of medical care for all segments of the population and to reduce the level of morbidity and mortality (Law of the Republic of Kazakhstan, 2003). The tasks of state health management include a wide range of measures and actions aimed at ensuring the effective operation of the healthcare system and maintaining the health of the population. Below are the main tasks of state management in this area (Law of the Republic of Kazakhstan, 2003):

Ensuring the availability of medical services: The state should create conditions so that all citi-

zens have access to quality and affordable medical services, including prevention, diagnosis, treatment, and rehabilitation.

Improving the quality of medical care: An important task is to ensure a high level of quality of medical care, including through control over the professional training of medical workers, ensuring compliance with treatment and diagnostic standards, as well as the quality of medical equipment and drugs.

Development of the disease prevention system: State health management should actively assist in the development and implementation of programs for the prevention of common diseases, such as cardiovascular diseases, cancer, infectious diseases, and others.

Ensuring the financial stability of the healthcare system: An important task is to ensure stable financing of the healthcare system to guarantee its continuous operation and development.

Development and implementation of measures to optimize the operation of the healthcare system: The state should conduct an analysis of the efficiency and effectiveness of the healthcare system and develop measures to optimize it, including improving the organization of work of medical institutions, optimizing the processes of providing medical care, and improving the management system.

Development of medical science and education: State health management should support the development of medical science and education, contributing to the improvement of the qualifications of medical workers and the development of new methods of diagnosis and treatment.

Ensuring the safety of medical services: An important task is to ensure the safety of medical services, including the protection of patients' rights, control over the quality and safety of medical technologies, drugs, and procedures.

These tasks are the main directions of the activities of state management in the field of healthcare and are aimed at ensuring a high level of health and well-being of the population.

Literature review

The literature review was based on authors who deeply studied the issues of "healthcare governance." Their works formed the basis for analyzing current research, publications, and scientific works that cover various aspects of healthcare system organization and management. Notably, "Reforming Health Care Systems: Experiments with Managed Competition in Four Countries" by Alain C. Enthoven and Kieke G. H. Okma (Kieke, 2001). This book provides a comparative analysis of healthcare system reforms in four countries: the United States, Germany, the Netherlands, and the United Kingdom, highlighting the advantages and disadvantages of different management models .

«Improving Health Care Management in the 21st Century» by Louis C. Gapsenski and George H. Pink offers practical strategies and recommendations for enhancing healthcare management (Louis C., 2007). It covers aspects such as financial management, quality of medical services, and organizational processes .

In «Health Systems Governance in Europe: The Role of European Union Law and Policy,» Elias Mossialos, Monika Sagan, and others explore the role of European Union legislation and policy in healthcare organization (Kessel, 2016). The book provides recommendations for improving governance in this field .

«Policy Tools and Instruments for Health Systems Management» by Reinhard Busse, Miriam Blümel, and others discusses various tools and methods for managing healthcare systems, including examples of best practices and recommendations for their application (Busse, 2014).

«Good Governance for Digital Health» by the World Health Organization (WHO) presents recommendations and strategies for using digital technologies in healthcare to enhance service quality, accessibility, and state governance in this area .

Since the research topic remains relevant for many years, we examined works containing ways to improve the state health care system.

Table 1 – Comparative analysis of the works of authors who studied the issues of «public health management»

№	Authors	Proposals, developments and a model for improving the State Health Institution
	Muhammad Zia ud Din, Xu Yuan Yuan	It was demonstrated that public governance has a significant impact on public health service delivery through the intervening variable of shared governance using both social information processing theory and collaboration theory. (Zia ud Din, Yuan, 2024)
	<u>Rıdvan Ot</u>	For an effective public health care system, it is important for the state to know that the funds spent on quality health care are reflected in a reduction in health care costs. A statistically significant relationship between health care costs (per capita) and effective secondary health care has been proven (Ot, 2024).

No	Authors	Proposals, developments and a model for improving the State Health Institution
	<u>Nawaj Mehtab Pathan, Chandan Kumar</u>	AI in improving diagnostics, developing personalized treatment plans, and enhancing patient care across a range of allied health specialties. By discussing case studies and advances, this study highlights the profound impact of AI innovations in advancing more efficient and effective healthcare practices (Pathan, Kumar, 2024).
	<u>Vince Tebay, Westim Ratang</u>	Presented new organizational cultural characteristics that have a dominant influence on the formation of organizational culture to achieve optimal quality of medical services (Nebay, Ratang, 2024)
	<u>Paolo Candio</u>	For sustainable healthcare development, the author believes that it is necessary to ensure alignment of goals among stakeholders when developing policies and business strategies. The COVID-19 pandemic has accelerated the digital transformation of numerous healthcare services and products, which must be used to improve this system (Candio, 2024)
Note – complied by the authors based on (Zia ud Din, Yuan, 2024), (Ot, 2024), (Pathan, Kumar, 2024), (Nebay, Ratang, 2024), (Candio, 2024)		

These research studies and publications provide valuable insights and recommendations for improving healthcare governance. They also serve as a foundation for developing further strategies and policies in this field.

Methodology

This article examines the problems and offers recommendations and proposals for improving public health management, firstly, by the methods of induction and deduction, which allowed the authors to establish their own point of view by studying the opinions of many scientists studying the sphere of public health management. The method of scientific abstraction provided an opportunity to see the overall picture of the planned presentation of the State Healthcare Institution, which revealed the patterns and problems of public health management. The methodology also included an analysis of the literature, which contributed to the search for the best recommendations of various experts and specialists who studied the sphere of public health management. Conducting a statistical analysis of modern data provided by state official sources in dynamics over the past 5 years to identify the current state of public health management in the Republic of Kazakhstan. The generalization method was necessary to simplify and systematize information on the main reforms and activities carried out in the field of public health management and their implementation in order to identify patterns for further improvement and application to a wider group of the population. Using comparative analysis to identify similar situations in different countries and develop proposals for solving their problems based on the experience of successful countries, as well as introducing innovations in public health management.

Results and discussion

Government healthcare management holds immense significance for society and the state as a whole, for the following reasons (Rakhimbekova, 2014):

1. National Health Provision: The health of the population is a fundamental resource for societal development. Government healthcare management aims to provide quality medical services, prevent diseases, and reduce mortality.

2. Social Protection: Healthcare plays a crucial role in ensuring social protection for citizens, especially vulnerable groups such as children, the elderly, disabled individuals, and low-income populations.

3. Economic Development: A healthy and productive workforce is a key factor in economic development. Government healthcare management contributes to minimizing economic losses due to illnesses and invests in the health of future generations.

4. Social Stability: A robust healthcare system reduces public discontent and social protests, as people feel more secure and confident about their future.

5. Enhanced Education and Culture: Healthy children and adults perform better in education and work, leading to improved overall education and cultural levels in society.

6. Public Health Protection: Government healthcare management involves developing and implementing measures to protect the population from epidemics, pandemics, and other threats to public health.

Thus, government healthcare management strategically ensures societal well-being and sustainable state development.

According to the ****Concept of Healthcare Development in the Republic of Kazakhstan until 2026****, the Ministry of Healthcare of the Republic of Kazakhstan has formulated an implemen-

tation plan based on this concept. However, the report provided at the beginning of 2023 revealed the results of reforms and measures taken at this stage.

Table 2 – Main reforms /main activities at the beginning of 2023

№	Name of reforms/main activities at the beginning of 2023	Performance information		
		plan	fact	comments
1	Target indicator 1. Life expectancy at birth	73,7	74,4	Indicator reached.
	Development of a system for monitoring the state of the environment inside public buildings for children	-	-	The event is completed.
	Development of a school medicine standard	-	-	The event is completed.
2	Target indicator 2. Level of population satisfaction with the quality and accessibility of medical services provided by medical institutions	69,6	58,8	Execution at 84.5%.
	Development of a Roadmap for the development of phthisiopulmonological service in the Republic of Kazakhstan for 2023-2025	-	-	The event is completed.
3	Target indicator 3. Share of adapted foreign technologies from the total number of introduced new technologies	16,8	20	The indicator has been reached.
4	Target indicator 6. Maternal mortality	11,0	17,0	Execution at 64.7%.
5	Target indicator 7. Infant mortality	7,5	7,68	Compliance at 97.7%.
	Development of a plan providing effective mechanisms and implementation measures to reduce infant mortality			The event is completed.
6	Target indicator 8. Investments in fixed assets in healthcare	248,5 млрд тг	257,2 млрд тг	The indicator has been reached.
7	Target indicator 9. Reliability indicator of laboratory tests of SES	92%	93,8%- 100%	The indicator has been reached.
8	Target indicator 10. The level of provision of medical workers to the rural population in accordance with the minimum standard for the provision of medical workers in the regions	87,3	91,3	The indicator has been reached.
	Introduction of a model of continuous integrated medical education			The event is completed.
9	Target indicator 11. Share of purchases by the Unified Distributor of domestic medicines and medical products as a percentage of the total purchase volume	37,0	34%	Compliance at 91.9%.
	Introduction of amendments and additions to the order of the Minister of Health of the Republic of Kazakhstan dated August 20, 2021 No. KR DSM-89 "On approval of the rules for the provision of medicines and medical products within the framework of the guaranteed volume of free medical care and (or) in the system of compulsory social health insurance, as well as rules and methods for forming the need for medicines and medical products within the framework of the guaranteed volume of free medical care and (or) in the system of compulsory social health insurance» for the introduction of a methodology for calculating the need for drugs and medical devices according to the average daily dose (DDD WHO) and their automation	-	-	The event is completed.
10	Target indicator 12. Average Hirsch index of personnel of medical education and science organizations	0,34	0,36	The indicator has been reached.
11	Target indicator 13. Level of coverage of the population in the compulsory health insurance system	84,6	82,4	Compliance at 97.4%.
Note – compiled by the author based on the source (Resolution of the Government of the Republic of Kazakhstan., 2022, Ministry of Health of the Republic of Kazakhstan., 2023)				

Target Indicator 1 on the expected life expectancy at birth shows a positive trend, indicating the effectiveness of measures taken in healthcare. The second target indicator, related to the level of population satisfaction with the quality and accessibility of medical services, did not reach the planned level, however, work in this direction continues. The third indicator, concerning the share of adapted foreign technologies, shows a positive trend, indicating the development of the introduction of advanced methods and technologies in the medical field. This will allow a more accurate assessment of the effectiveness of measures to combat oncological diseases. Target Indicator 6, concerning maternal mortality, shows that execution is 64.7%. This may indicate the need for additional efforts to achieve the planned level of reduction in maternal mortality. Target Indicator 7, concerning infant mortality, shows performance at the level of 97.7%. This indicates that the measures taken to reduce infant mortality have been largely successful. Development of a plan with effective mechanisms and measures for implementation to reduce infant mortality. Investments in fixed capital in healthcare exceeded the planned level, amounting to 257.2 billion tenge against the planned 248.5 billion tenge. This indicates the state's priority in providing financial resources for improving healthcare and developing its infrastructure. The reliability indicator of SES laboratory studies has also been achieved at the level of 93.8%-100%, indicating a high level of accuracy and reliability of laboratory diagnostics, which is important for effective provision of medical care to the population. Thus, the analysis of these indicators speaks of a fairly high level of achievement of target indicators in healthcare, indicating work in the right direction and the level of state attention to this sphere. From the analysis of the indicated target indicators, it can be seen that most of the goals have been achieved or are at a sufficiently high level of execution. The level of provision of medical workers to the rural population has been increased, indicating successful efforts in the direction of solving the problem of lack of medical personnel in remote areas. The introduction of a model of continuous integrated medical education allows updating and improving the knowledge of medical specialists, which is a key factor for improving the quality of medical care. The share of procurement of domestic medicines and medical devices also remains at a high level, which contributes to the support of local production and reduces dependence on imports. Making changes and additions to the rules for providing medicines and medical devices speaks of a desire to improve efficiency and transparency

in the procurement system, which is important for providing quality medical care. The average Hirsch index of the staff of medical education and science organizations has increased, indicating the growth of scientific and educational activity in the field of healthcare. The level of coverage of the population in the system of compulsory social medical insurance (CSMI) is also maintained at a high level, which guarantees the availability of medical care for wide sections of the population.

So, based on the presented data, we can conclude that certain progress has been made in implementing measures to improve the healthcare system, however, some aspects require further attention and improvement and despite some achievements, there is still a lot of work in the field of reducing mortality from various diseases and improving the overall health of the population. The continuation of measures to improve the healthcare system and a wider implementation of innovative approaches can help achieve goals in reducing mortality and improving the quality of life of citizens. We will consider the current state of the healthcare system in dynamics over the past 5 years in the following figures. Let's consider the general indicators of the healthcare sector in Figure 1.

Let's calculate the growth rate for each indicator by year:

1. Number of hospital beds:

$$2018 : (98,371 - 99,465) / 99,465 * 100\% \approx -1,10\%$$

$$2019 \text{ year: } (96,286 - 98,371) / 98,371 * 100\% \approx -2,12\%$$

$$2020 \text{ year: } (127,464 - 96,286) / 96,286 * 100\% \approx 32,33\%$$

$$2021 \text{ year: } (125,034 - 127,464) / 127,464 * 100\% \approx -1,91\%$$

$$r: (125,034 - 125,034) / 125,034 * 100\% = 0\%$$

2. Number of beds for sick children:

$$2018 \text{ year: } (4,591 - 4,629) / 4,629 * 100\% \approx -0,82\%$$

$$2019 \text{ year: } (4,445 - 4,591) / 4,591 * 100\% \approx -3,18\%$$

$$2020 \text{ year: } (5,192 - 4,445) / 4,445 * 100\% \approx 16,81\%$$

$$2021 \text{ year: } (5,888 - 5,192) / 5,192 * 100\% \approx 13,38\%$$

$$r: (5,888 - 5,888) / 5,888 * 100\% = 0\%$$

3. Number of hospital organizations:

$$2018 \text{ year: } (788 - 853) / 853 * 100\% \approx -7,63\%$$

$$2019 \text{ year: } (749 - 788) / 788 * 100\% \approx -4,95\%$$

$$2020 \text{ year: } (773 - 749) / 749 * 100\% \approx 3,20\%$$

$$2021 \text{ year: } (773 - 773) / 773 * 100\% = 0\%$$

$$r: (773 - 773) / 773 * 100\% = 0\%$$

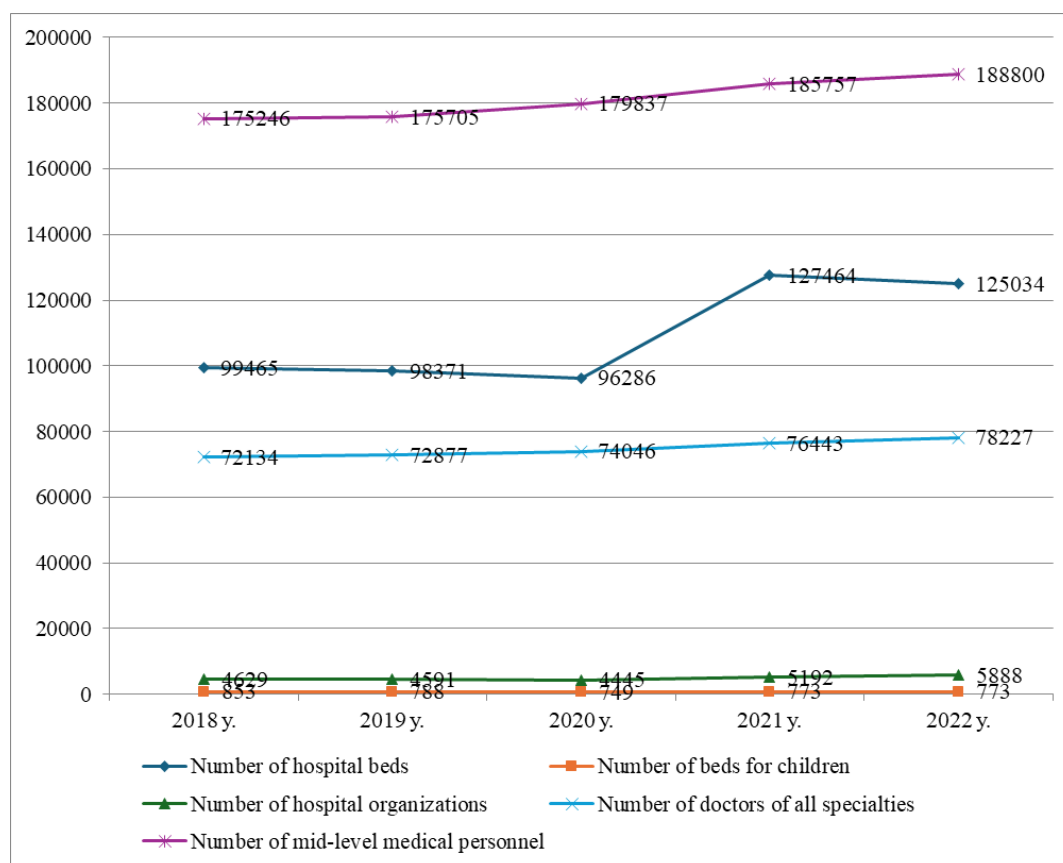


Figure 1 – Health indicators for 2018-2022

Note – compiled by the authors (Bureau of National Statistics., 2022)

4. Number of doctors of all specialties:

2018 year: $(72,877 - 72,134) / 72,134 * 100\%$
 $\approx 1,03\%$

2019 year: $(74,046 - 72,877) / 72,877 * 100\%$
 $\approx 1,61\%$

2020 year: $(76,443 - 74,046) / 74,046 * 100\%$
 $\approx 3,24\%$

2021 year: $(78,227 - 76,443) / 76,443 * 100\%$
 $\approx 2,33\%$

2022 year: $(78,227 - 78,227) / 78,227 * 100\% = 0\%$

5. Number of paramedical personnel:

2018 year: $(175,705 - 175,246) / 175,246 * 100\% \approx 0,26\%$

2019 year: $(179,837 - 175,705) / 175,705 * 100\% \approx 2,35\%$

2020 year: $(185,757 - 179,837) / 179,837 * 100\% \approx 3,29\%$

2021 year: $(188,800 - 185,757) / 185,757 * 100\% \approx 1,64\%$

2022 year: $(188,800 - 188,800) / 188,800 * 100\% = 0\%$

From the analysis, it can be seen that for the period from 2018 to 2022, there is a different dynam-

ics of changes in the health care of the Republic of Kazakhstan:

Number of hospital beds:

In 2020, there was a significant increase of 32.33%, which may be due to the expansion of medical facilities and an increase in demand for medical services.

There was little decline or stability in subsequent years.

Number of beds for sick children:

The indicator grew throughout the period, with the largest growth in 2021.

Number of hospital organizations:

In 2018 and 2019, there was a decrease of 7.63% and 4.95%, respectively, but in subsequent years this indicator remained stable.

The number of doctors of all specialties has been gradually growing throughout the period, which indicates an increase in human resources in healthcare.

The number of mid-level medical personnel has also been steadily growing, which indicates an increase in the number of medical personnel in general.

Thus, although some indicators showed temporary fluctuations or declines, overall healthcare in the Republic of Kazakhstan demonstrates a stable positive trend with an increase in resources and human resources, that is, the current trend emphasizes the desire to improve healthcare and the availability of medical care for the population, however, the indicator of the provision of the population with bed capacity is calculated using the following formula:

$OK = CH * 10,000 / CH$, where:

OK – provision of the population with bed capacity -

CH – number of beds – 125807 in the Republic of Kazakhstan;

CH – population at the end of the reporting period in the Republic of Kazakhstan 20 million people (Population of Kazakhstan (2023)).

Unit of measurement – per 10 thousand people.

$OK = 125807 * 10000 / 20000000 = 63$ beds per 10 thousand people.

According to OECD data, the bed provision rate in Japan is 131 beds, in South Korea – 123 beds and in Germany – 80 beds per 10 thousand people.

Thus, the bed provision rate in Kazakhstan is not high, even with the existing growth dynamics of all indicators.

How effective these indicators are can be determined by the volume of services provided in this area, Figure 2.

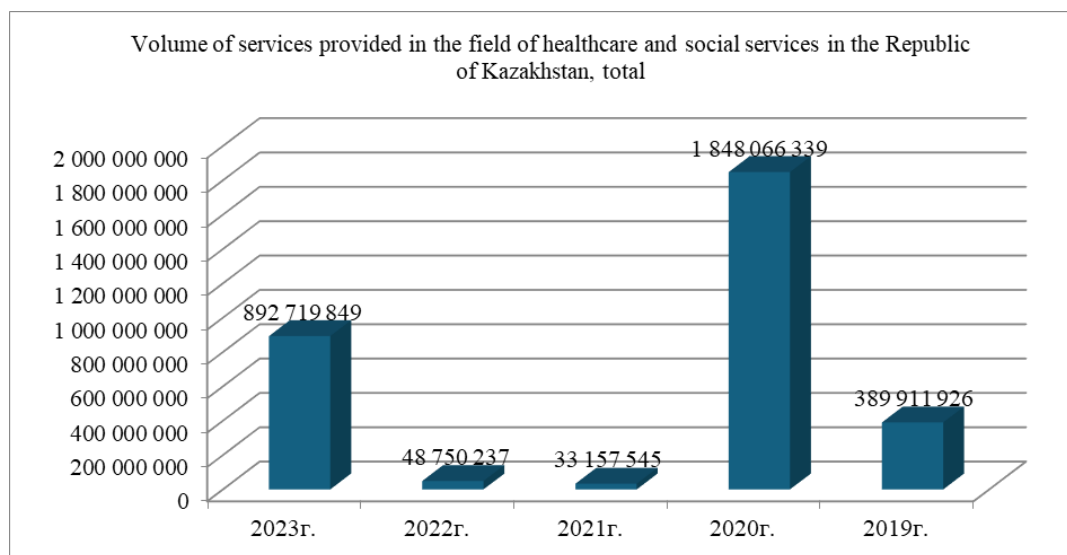


Figure 2 – The total volume of services provided in the field of healthcare and social services in the Republic of Kazakhstan .

Note – Compiled by the authors (Bureau of National Statistics., 2022)

From the data provided, there is a significant increase in the volume of services provided in the field of healthcare and social services in the Republic of Kazakhstan for the period from 2019 to 2023. The total volume of services increased from 389,911,926 tenge in 2019 to 892,719,849 tenge or by 129.02% in 2023. If in 2020 compared to 2019, the growth was almost a 4-fold increase – a sharp jump was associated with the COVID-19 pandemic. But already in 2021, there was a decrease in the volume of services by 5051.43%. In 2022, compared to 2021, the growth was 147%. In 2023, compared to 2022, the volume of services provided in the field of healthcare and social services in the Republic of

Kazakhstan increased almost 45 times. This is due to the allocation of funds for healthcare and social programs within the state budget due to an improvement in the economic situation or a revision of priorities in financial planning. There is also an increase in the financial participation of the population and enterprises in the healthcare system, which is associated not only with inflation and rising prices for medical services and social programs, but also with the population's concern for health.

However, it is important to compare what situation is observed in developed countries in the field of rendered services in the field of healthcare and provision of social services in the world, for exam-

ple, in Germany this figure was 234 billion euros in 2023, which is equivalent to 2840 euros per capita (Zdrorovye (2023)), while the figure in the Republic of Kazakhstan is 892,719,849 tenge, which is 198,372 euros and is equivalent to 9.9 euros per capita. Which means the need for greater strengthening of the State Healthcare Institution, to improve

this system in order to improve services and provide high-quality and affordable medical care to the entire population of Kazakhstan.

This growth is largely due to an increase in financing from the budget, population, and enterprises, which we will consider in more detail in the figure.

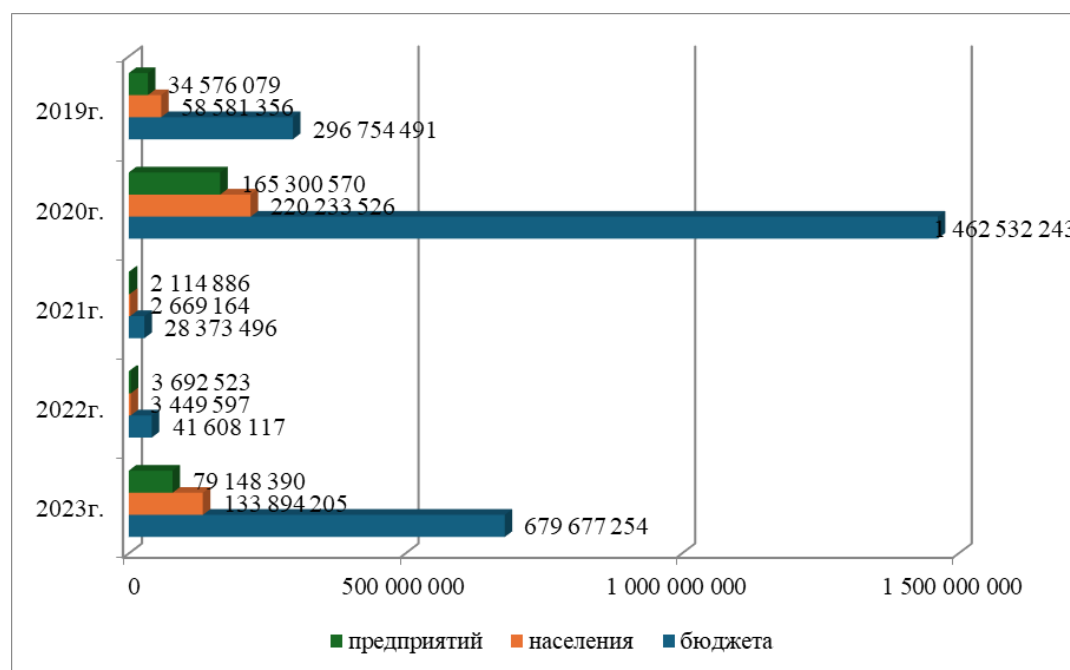


Figure 3 – The budget of services provided in the field of healthcare and social services in the Republic of Kazakhstan
Note – compiled by the authors (Bureau of National Statistics., 2022)

It should be noted that the financing from the budget increased from 296,754,491 tenge in 2019 to 679,677,254 tenge in 2023. There was also a significant increase in financing from the population and enterprises.

Comparing the data on the budget of services provided in the field of healthcare and social services in the Republic of Kazakhstan over the last five years, the following conclusions can be made:

1. The total volume of services provided in 2023 significantly increased compared to previous years, reaching 679,677,254 tenge.

2. Compared to 2019, the volume of services in 2023 increased by more than 100%, indicating a significant increase in demand for healthcare and social services in the country.

3. Looking at individual sources of funding, it can be noted that in 2023 the budget for providing services from the funds of the population and en-

terprises increased, which also indicates the growth of social responsibility of citizens and business towards healthcare.

4. This trend reflects the efforts of the state in the field of healthcare and social protection of the population, but it may also indicate an increase in demand for these services, which requires further attention and development of the healthcare system for effective satisfaction of the population's needs.

Thus, it can be concluded that although there are still problems in the healthcare of the Republic of Kazakhstan, the state management in this area is improving and achieving certain successes in solving key tasks.

If we compare the budget of services rendered in the field of healthcare in Germany and Kazakhstan again, we will also notice a huge difference, since the German budget was 14.5 billion euros, while the domestic budget is 679,677,254 tenge or

1,505,949.56 euros, that is, almost 90% less. This means that it is necessary to continue working to improve the healthcare system and solve problems to ensure high-quality and affordable medical care for all citizens.

Having studied the current state of the State Healthcare Institution, we have accumulated the

problems of healthcare in the Republic of Kazakhstan in Table 2.

These issues require comprehensive solutions at the level of state policy, including improving healthcare financing, developing medical infrastructure, improving the qualifications of medical personnel, and strengthening preventive measures.

Table 2 – Problems in the healthcare system of Kazakhstan

1.№	Problems in the healthcare system	Description of problems
	Insufficient funding	Despite the increase in budget expenditures on health care, funds are not enough to provide quality medical services, purchase modern equipment and train medical personnel.
	Uneven distribution of resources	Most medical institutions and qualified specialists are concentrated in large cities, which creates problems of access to medical services for residents of remote and rural areas.
	Low level of service quality	Some health care facilities experience poor quality of care due to outdated equipment, insufficient staff qualifications, and insufficient quality control measures (Ministry of Health., 2022).
	Shortage of medical personnel	There is a shortage of qualified medical professionals in various areas of healthcare, which leads to overload of existing specialists and a decrease in the quality of medical services.
	Insufficient disease prevention	Low public awareness of prevention methods, limited access to preventive measures and insufficient funding for disease prevention programs lead to increased morbidity and mortality.
	Waste of resources	Ineffective use of health care resources, including drugs and medical equipment, can lead to unnecessary costs and poor access to health care services.
	Population aging	The rising average age of the population and the increase in the number of older people pose new challenges to the healthcare system, including an increased burden on pension and medical systems.
Note – compiled by the author based on the source (Forbes, 2019, Ministry of Health., 2022)		

The geopolitical situation in the world, complicated by the consequences of the COVID-19 pandemic, has led to managerial and financial restrictions that determine the basis of health policy as a focus on “prioritization” and limitation of public spending. Public administration in the field of health care is formed in each country in accordance with the traditions of the state structure, economic situation.

It should be noted that many foreign healthcare management models are examples of successful implementation of certain strategies, methods, and technologies that can be adapted and applied in Kazakhstan to improve its healthcare systems.

Existing healthcare models are conditionally divided into budgetary, social insurance and private, the division of which is based on differences in the sources of financing of medical care, the degree of coverage of the population by state support programs, the methods of its organization and the forms of ownership of service providers.

In particular, examples of effective health management in some countries demonstrate a high level of medical care and good health outcomes, including low infant mortality and high life expectancy. Often have a mixed financing model, combining public and private funds, which ensures accessibility and high quality of services. In addition, successfully developed countries in the field of public health management introduce new technologies and medical innovations, which contributes to the improvement of the efficiency and quality of services. Also, much attention in these countries is paid to disease prevention, which reduces treatment costs and improves the overall health of the population. Effective government regulation and quality control in such countries contribute to stability and a high level of trust in the health care system. They provide education and training systems with highly qualified medical specialists. Thus, let us consider effective models of public health care in the world.

Healthcare reforms in the UK are aimed at introducing market elements into the national healthcare system to stimulate efficient work at the micro level: responsibility for the “purchase” of medical services is separated from responsibility for the “delivery”; “national healthcare trusts” are created; general practitioners are fund holders; the introduction of a strategic purchasing system for medical care; a model of contractual relations; increased control over care; free choice of service providers by the patient. As you can see, the reforms being carried out cover two aspects: increased competition among healthcare providers and increased independence in management. Similar approaches to healthcare system management by the state are in such countries as Greece, Denmark, Ireland, Spain, Iceland, Italy, Norway, Portugal, Sweden.

The social insurance model assumes the participation of organizations of various forms of ownership in the provision of medical services, and the state acts as a guarantor in providing citizens with these services, and is typical for Germany, France, the Netherlands, Austria, Belgium, Switzerland, Canada, Japan, etc. The US healthcare system is a striking example when the financing of the healthcare system is almost completely transferred into “private hands” and private medical organizations are included in the management process, which are responsible for providing accessible and high-quality medical care.

Key principles of the healthcare system in Singapore (Reforming the healthcare system in Singapore, 2017):

Universal coverage: All citizens of Singapore have access to basic medical care.

Social security system: The Singapore healthcare system provides a wide range of services at affordable prices.

Preventive medicine: Attention is paid not only to treatment but also to disease prevention.

Private participation: Private and public institutions interact to provide quality medical care.

Successes and achievements in healthcare:

High level of population health: Singapore is often noted as one of the countries with the highest life expectancy.

Effective epidemic management: Singapore successfully dealt with epidemics such as SARS and COVID-19, thanks to prompt measures and close cooperation between public and private institutions.

Thanks to the system of public and private participation, residents of Singapore have access to high-quality healthcare services.

Management and financing mechanisms:

Medical insurance: All citizens and permanent residents of Singapore are required to make mandatory contributions to medical insurance, which provides financing for the healthcare system.

State funding: The state actively participates in healthcare financing, ensuring the availability and quality of medical services.

Private medical institutions: The development of the private sector stimulates competition and improves the quality of medical services.

The Singapore healthcare management model is an example of successful implementation of effective financing, management, and provision of medical services, leading to a high level of population health and quality medical care.

Features of the Swedish healthcare model (Afanasyev, 2023):

Universal coverage: All residents of Sweden have the right to medical care provided by public and private medical institutions.

Decentralized system: Healthcare in Sweden is organized at the regional level, with regional and local health authorities, which provides flexibility and adaptation to local needs.

Attention is paid to preventive medicine: Sweden actively invests in preventive measures and education of the population in the field of a healthy lifestyle.

Advantages and results of the system:

High level of population health: Sweden is often recognized for one of the countries with a high level of health and life expectancy.

Free access to medical care: The Swedish model provides accessibility and free medical services for all residents of the country.

Innovative technologies and research: Sweden is known for its innovative approaches to medical science and technology, which contributes to the development of the medical industry and the improvement of the quality of medical services.

Funding and management model:

National insurance system: Sweden has a national system of compulsory medical insurance, which is funded by tax funds.

Regional management: Regional health authorities have significant autonomy in managing healthcare in their areas.

Private participation: Private medical institutions complement the state system and provide patient choice.

The Swedish healthcare model is an example of a successful combination of public and private participation, providing a high level of accessibility, quality, and innovation in the medical field.

Structure and management of the German healthcare system (Afanasiev, 2023).

Healthcare system structure:

Mandatory health insurance: Germany has a system of mandatory health insurance, including public and private insurance companies.

Public and private participation: Patients can choose between public and private medical institutions and insurance companies.

Decentralized system: Healthcare management is organized at the level of federal states and districts.

Key principles and management tools: Financing through the mandatory insurance system: Insurance premiums are paid by employers and workers, as well as individuals, providing financing for the healthcare system.

Centralized regulation: The Federal Ministry of Health oversees the system and sets standards and norms.

Quality control: There are a number of organizations and agencies responsible for quality control of medical services and pharmaceuticals.

Evaluation of effectiveness and achievements:

High level of accessibility and quality of medical care: Germany is known for its advanced technologies and highly qualified medical staff.

Successful disease control: Germany effectively controls the spread of infectious diseases and other health threats to the population.

Innovations and research: The country actively invests in medical research and development, contributing to the development of new treatment and diagnostic methods.

The German healthcare system is an example of a successful combination of mandatory insurance, private participation, and centralized management, which provides a high level of accessibility, quality, and innovation in healthcare.

Success factors in effective healthcare management models include the following aspects:

Universal coverage: Effective management models provide access to quality medical services for all citizens, regardless of their social status or financial situation.

Preventive medicine: The main focus is not only on treating diseases but also on their prevention through lifestyle, vaccination, regular medical check-ups, etc. This reduces the burden on the healthcare system and improves the quality of life of the population.

Decentralization and autonomy: Management models based on decentralization and granting significant autonomy to regional or local levels are

more flexible and adaptive to the specific needs of the population.

Innovations and technologies: The introduction of innovative technologies, digital solutions, and medical achievements contributes to improving the quality and efficiency of medical service, as well as optimizing management and monitoring processes.

Financing system: Effective management models provide sustainable and fair financing of the healthcare system, providing the necessary resources to maintain a high level of service and innovation.

Personnel and training: The presence of qualified and motivated medical workers, administrators, and managers plays a key role in the effective functioning of the healthcare system.

Monitoring and evaluation: Regular monitoring, evaluation of results, and feedback help identify problems and make adjustments to improve the efficiency of the system.

Effective healthcare management models usually combine a combination of these factors, which allows achieving high results in providing quality and accessible medical care to the population.

An analysis of existing models of public administration has shown that there is no universal system of administration, the level of centralization of power, regulation of industry processes, the optimal financing system, etc. varies greatly. Today, for the effective organization of healthcare, both at the national and regional levels, as one of the priority areas of development, it is necessary to search for new combinations of structural elements of basic models and ways of adapting them to the existing conditions in the country's industry. To improve the state management of healthcare in Kazakhstan, the following recommendations can be suggested (OECD, 2021):

1. Introduction of digital technologies: Automation and digitalization of processes in healthcare will improve the availability and quality of medical services, simplify the procedures for making appointments and receiving prescriptions, and increase the efficiency of medical data management.

2. Improving the monitoring and analysis system: The development of a system for collecting and analyzing population health data will make it possible to more accurately assess the current situation and predict trends in morbidity. This will allow more efficient allocation of resources and the development of disease prevention measures.

3. Optimizing the financing system: Revising the structure of health financing, taking into account the socio-economic needs of the population and the characteristics of the health market, can contribute

to more efficient use of funds and increased accessibility of health services.

4. Development of control and supervision mechanisms: Strengthening control over the quality of medical services, drugs and medical equipment will help prevent the negative consequences of errors and violations in the health sector.

5. Professional development of staff: Investments in the professional development of health professionals as well as in the improvement of their working conditions contribute to improved quality of care and patient satisfaction.

6. Developing community feedback mechanisms: Establishing a feedback system between patients and health authorities will help identify problems and deficiencies in the health system and develop measures to address them.

7. Promoting healthy lifestyles: Conducting information campaigns and programs to promote healthy lifestyles among the population contributes to reducing morbidity and improving public health.

These recommendations, according to the authors, will improve the efficiency and accessibility of the health care system, which in turn will lead to improved public health and quality of life of the population.

Conclusion

Given that healthcare is a crucial area of activity for any society, effective government management in this sphere is essential to prevent errors and avoid their repetition during the development and improvement of Kazakhstan's healthcare system.

Indicators of healthcare development not only show growth dynamics but also demonstrate progress in implementing development programs within the healthcare sector. Understanding foreign successes and applying them can stimulate innovative approaches and ideas in Kazakhstan's healthcare domain. This encourages the development of new methods, technologies, and strategies. Furthermore, it fosters international collaboration, allowing for knowledge exchange, experience sharing, and resource utilization to achieve common healthcare goals.

By implementing best practices and methods from international experiences, we can enhance the quality of medical services, improve accessibility, and enhance the overall health of the population.

In summary, healthcare management plays a significant role in the development and enhancement of Kazakhstan's healthcare system. The competitiveness of the healthcare system in the global community is determined, among other things, by the scientific potential of the industry and the recognition of the results of its scientific activities. By 2025, a paradigm shift will occur in medicine: medical workers will base their decisions on the principles of predictive, preventive, personalized and collaborative medicine. Today, the scientific community is focused on studying and using patients' genetic data, access to Big Data, and Internet of Things technologies.

According to Accenture (2017), successful application of artificial intelligence is expected to increase industry profits by 55% by 2035, accelerate annual economic growth in 12 countries by 2035, and rationalize resources (for example, by reducing errors in drug dosages).

The healthcare system must be tasked with creating «step-by-step» accessibility to medical services. The core of the patient-oriented model is the need to increase the industry's infrastructure (by 2025, it is planned to build and open about 200 primary health care facilities in rural areas) and increase the availability of doctors to patients by reducing the workload (up to 1,700 assigned population per general practitioner). In order to achieve the target indicators that the industry sets for itself, it is rational to increase the share of private investment by creating attractive conditions for them.

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