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HISTORY OF THE DEVELOPMENT OF MEDICINE IN KAZAKHSTAN

Annotation. The article provides a review of the development of medicine in Kazakhstan from the moment of gaining independence until 2021. The medicine of Kazakhstan has undergone a serious evolution. The healthcare system in Kazakhstan is multifaceted and complex. During the formation of the medical system in Kazakhstan, there have been major changes in management, personnel planning, and advanced training of medical staff. The history of healthcare development in Kazakhstan is based on the experience of implementing international programs. The key stage in the formation of healthcare in Kazakhstan was the reformation of the system of state regulation in accordance with the regular messages of the president. To implement these programs, modern medical equipment, mobile patient delivery vehicles were purchased, and modern hospitals were built. As a result of the development of the coronavirus pandemic, investments in medical activities in the country have increased many times over. The quality of medical services provided has increased many times over. The result of the development of medicine in Kazakhstan was an improvement in life expectancy. Satisfaction with medicine by citizens has increased, and the confidence of citizens in public hospitals has increased.

Keywords: healthcare; medical care; development of medicine; digitalization; medical consultations; remote medicine; vaccination; therapy; medicines; Republic of Kazakhstan.

Introduction

The collapse of the Soviet Union marked the formation of Kazakhstan and the development of its own industries, including healthcare. In an effort to improve the demographic characteristics of the state, the key task of the government was to improve the quality of health care services. For this, the state has taken a number of steps to modernize the healthcare system, pension reforms, and social reforms [1]. During the formation of the Kazakh statehood, the medical industry experienced a budget deficit, which negatively affected the quality of medical services.

With Kazakhstan achieving stability and economic growth, a full-scale reform in the medical industry was announced. The basis of the reform was an increase in the financing of the industry. Financing of health care at the turn of the formation of the health care system was formed from two sources: from the local budget and the republican budget. To date, there is a fund of compulsory social insurance.

In the period from 2000 to 2009, there has been an intensive growth in the budget of the medical sector of Kazakhstan, in the period up to 2019, there has been a stabilization of the budget level, and in 2020 and 2021, against the backdrop of the development of coronavirus infection, there has been a new increase in healthcare budgeting. The growth of budgeting is not the only approach to improving the quality of medical services, other issues of improving the quality of services are the modernization of the healthcare system, new equipment, and the training of qualified specialists [2].

Research materials and methods

The objectives of this study are: firstly, to study the chronology of changes in the healthcare system of Kazakhstan, and secondly, to study the functions of modern medical organizations in the healthcare system of Kazakhstan. Qualitative and quantitative research methods were used in the work. The work studied the mechanisms of functioning and issues of formation of the health care system.

Research results

In modern conditions, an effective mechanism for innovative development is project management, which includes a structural component (resource provision) and a process component (technological provision), as well as the content of the result, which is characterized by the quality of public health and the quality of medical services provided to the population [3].

The state has chosen a strategy for the comprehensive modernization of the healthcare system. The starting point of qualitative positive changes in medicine in Kazakhstan was 2002, which was declared the Year of Health. The healthcare system was reformed in 4 directions. First of all, they took up the prevention of diseases and the improvement of the health of Kazakhstanis.

In 2002, Kazakhstan conducted the first mass survey of the population. Its results showed that in the short term, special attention should be paid to the health of women and children. Kazakhstan became the first country in the CIS where vaccination of newborns against hepatitis was introduced. The prevention of cardiovascular and oncological diseases has also become an important task.

The next task for the development of healthcare was the creation of a new model of healthcare management. Every inhabitant of the country was guaranteed a set of free medical services. The private medical sector began to develop actively. In 2008, 800 private clinics accounted for 1,900 state polyclinics, and the share of the private sector in the industry was 30 percent. The third direction was the introduction of innovative methods and the creation of advanced treatment centers. For the first time in Kazakhstan, the possibility of kidney transplantation, bone marrow transplantation, and endoprosthetics appeared [4].

The reforms also affected the system of providing the population with pharmaceuticals. The pharmaceutical industry needed not only conditions to increase the production of medicines and saturate the domestic market, but also high-quality effective regulation.

The State Program for the Reform and Development of Health Care for 2005-2010 were also developed. Primary health care centers have been set up in the regions. In total, more than 50 such centers appeared, as well as 7 district hospitals, 44 healthcare facilities were built.

In December 2009, the Code "On the health of the people and the healthcare system" was adopted. The adoption of the code raised the status of national medicine. The industry was built in such a way as to fully interact with other sectors of the economy and government institutions.

In 2010, the introduction of such a system began, which would give patients the right to choose a medical organization during hospitalization. Funding has also changed to focus on treatment outcomes. From 1.9% of GDP in 2002, it rose to 3.2% in 2010. High medical technologies became more and more accessible in the country.

The first medical cluster in the capital was formed by 2008, under the leadership of international-level cardiac surgeons. At that time, the center was part of the National Medical Holding. The importance of creating a medical cluster in the capital is invaluable, as the experience of the capital began to be adopted by the regions [5].

The experience of creating a medical cluster and the prospects for applying the cluster approach in regional healthcare can be traced on the example of the Aktobe region. Here, on behalf of the president, a medical center was created, which is now making a great contribution to the development of domestic medicine. Aktobe Medical Center is the first regional medical cluster in Kazakhstan.

In 2020, during the first wave of the pandemic, a provisional hospital was opened on the basis of this medical organization. Difficult patients were cared for here, who, in addition to COVID-19 and pneumonia, had concomitant diseases. Here is one example of saving a life: in a 50-year-old patient with left-sided pneumonia, ultrasound of the vessels revealed thrombosis of the veins of the lower extremities and the inferior vena cava with the spread of the thrombus along the lumen of the vessel up to the heart. There was a real danger: when detached, a blood clot could block the lumen of the vessels of the lungs. This is a life threatening situation. To save the patient, the doctors involved the full range of necessary measures. To eliminate the risk of pulmonary embolism, a cava filter was installed in the patient. This is a special "trap" for a thrombus, which is installed in the lumen of the vessel above the thrombus. Such an operation is considered highly specialized; it requires high-precision equipment and high professionalism of vascular surgeons. The patient was saved.

During a meeting in Aktobe, President Kassym-Jomart Tokayev noted that the medical and demographic situation in the country is changing in a positive direction: since independence, the population of the republic has increased by 2 million people. Life expectancy has also increased by 6 years.

In his speech, the President noted that the infrastructure of medical organizations has been significantly increased. There are more hospitals in the country - 219 more hospitals and 1,200 primary health care organizations and outpatient clinics have appeared [6]. A unified national healthcare system was introduced, and in the republican medical centers they began to carry out the most complex operations that were previously inaccessible to Kazakhstanis.

Gradually, polyclinics and hospitals began to be supplied with equipment and apparatus. In the 2000s, the construction of modern-type polyclinics began in Nur-Sultan.

A disease management program and joint responsibility for health have been introduced in the country. Patients got the opportunity to manage their diseases, undergo screenings so as not to start the disease. The number of disciplined patients is increasing from year to year, which pleases the medical community.

The digitalization of healthcare is another step towards patient participation in managing their health. The patient can now see the results of his laboratory tests himself through “Damumed” mobile application. It has also become convenient for doctors to work: the so-called CMIS program (comprehensive medical information system), as well as the integration of data from different medical organizations in one system, allows them to track the path of the patient: which medical organizations he visited, what examinations he underwent.

As part of the compulsory medical insurance system, Kazakhstanis got the opportunity to be examined using expensive equipment. Certain categories of patients with complex diseases can receive drugs at the expense of compulsory health insurance.

It should be noted that within the framework of the State Health Development Program for 2020-2025 and “Auyl-el Besigi” in Kazakhstan, it is planned to build more than 469 new primary health care facilities.

Materials and research methods. By 2021, Kazakhstan's health care system has withstood an enormous burden due to the high growth of cases of coronavirus infection (CVI). At the same time, doctors continued to provide planned medical care. In general, medicine in Kazakhstan has experienced several qualitative changes; in particular, a confident step has been taken towards material support for medical workers. About what transformations have taken place in the field of domestic medicine, read the review material.

So, at the end of 2021, the following medical care was provided in Kazakhstan:

- 2,586 air ambulance sorties;
- 4960 medical services provided, of which:
- 2615 patients were transported to medical organizations (53%);
- 254 consultations held (5%);
- 176 operations performed (4%);

¾ 1915 distance medical services with the involvement of specialized specialists were organized (38%).

The number of visits to healthcare organizations providing primary health care in the republic in 2021 amounted to 101199905, which is 28.3% more than in the same period last year (78,866,841). The number of visits per inhabitant in the republic amounted to 5.20 (for the same period in 2020 - 4.11).

At the inpatient level, the total volume of hospitalizations in round-the-clock hospitals increased by 4.9% and amounted to 2,979,130 cases, of which 2,017,627 were financed by the assets of the Compulsory Social Health Insurance Fund (compulsory social health insurance) and 961,502 by the budget of the State Compulsory Commissariat for Compulsory Medical Care (guaranteed free medical care).

As of January 1, 2022, 14,732 infectious beds have been deployed to treat patients with coronavirus infection and pneumonia. The number of resuscitation beds in infectious diseases hospitals amounted to 1674 beds.

Currently, 184 laboratories carry out CVI diagnostics, of which 97 are state laboratories (including 19 laboratories of the sanitary and epidemiological service, 78 laboratories of medical organizations) and 87 private ones. The total capacity of all involved laboratories is 128,325 tests per day (including laboratories of the sanitary and epidemiological service 27,520 (specific weight 21.5%), private 79,318 (specific weight 16.7%), medical organizations 21,487 (specific weight 61.8%.

At the level of the organization (first aid), FMA patients with CVI are provided with medical care by 3,054 field mobile teams, of which 1,752 are in the countryside, providing a range of services at home (doctor's examination, prescription of treatment, prescriptions, manipulations, home delivery of medicines etc.).

The measures taken to equip medical organizations made it possible to increase the equipment of medical equipment to 77%, including 71.4% - obstetrics and gynecology, 65% - anesthesiology and resuscitation, 70.7% - pediatrics.

Measures have been taken to increase vaccination coverage of the population, including the rural population. The total number of people vaccinated in the country by the first component as of March 14 this year was 10,329,141, the second component - 9,778,343 people, which is 80% of the total number to be vaccinated.

In 2021, 2,586 air ambulance sorties were carried out (2,125 sorties in 2020). 217 patients with thyroid diseases were treated with radionuclide therapy. 410 people underwent SPECT-CT examinations (single photon emission computed tomography combined with CT examination, assessment of the anatomical and functional state of organs). 7,000 quotas have been allocated for IVF.

In 2021, there is an increase in the birth rate by 7.13%, 44 high-tech medical services have been introduced. Last year, 9,503 heart surgeries and 6,424 open-heart surgeries were performed. The Gamma Knife Center for radiosurgical treatment of diseases of the central nervous system was opened. An additional 4 stroke centers have been created.

The nuclear medicine center in Semey (radioiodine therapy, PET diagnostics) began its work. A green corridor for cancer patients has been introduced. Additionally, 3 high-tech radiation therapy devices were installed.

The measures taken to develop the oncological service made it possible to reduce the mortality rate from malignant neoplasms by 6.33% (9 months 2020 - 79.2, 9 months 2021 - 74.26).

The clinical protocol for the treatment of COVID-19 used in Kazakhstan has been recognized by the World Health Organization. The Ministry of Health, together with local executive bodies, is conducting active information and explanatory work among the population. The topics mainly concern the issues of prevention and signs of CVI, the prevention of self-treatment, the importance of vaccination and revaccination against CVI, and the refutation of false information. Particular attention is paid to patients at risk, which include patients with CVI; persons aged 65 years and older, pregnant women and children, as well as patients with chronic diseases under

dynamic observation, and patients with pneumonia at the outpatient level. For self-diagnosis of this category of persons, self-observation checklists have been developed for daily monitoring of symptoms.

Today, there are 96 domestic manufacturers of medicines, medical devices and medical equipment in the country.

For 12 months of 2021, there was an increase in investments in the pharmaceutical industry, amounting to 21.3 billion tenge (+39% by 2020). The increase is explained by the fact that in 2021 a plant for the production of immunobiological preparations and vaccines (against coronavirus infections) was launched on the basis of the Research Institute (Research Institute) of biological safety problems in the Zhambyl region, and the plant of Chimfarm JSC was modernized, new workshops were launched in LLP "Karaganda pharmaceutical complex" [6].

According to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, the volume of medicines and medical devices of domestic production for the period January-December 2021 amounted to 191.6 billion tenge. The total volume of the pharmaceutical market amounted to 820.2 billion tenge.

As for whether local pharmaceutical manufacturers are able to fully cover the needs of Kazakhstanis in medicines, despite the high growth dynamics of the pharmaceutical industry, domestic products still do not fully meet the needs of the market. The volume of the pharmaceutical market provides only 17-20% of the country's need for medicines. However, during 2015-2021. the volume of pharmaceutical production in the country increased by almost 2.5 times in value terms - from $168 million in 2015 to $443 million in 2021.

State policy measures to organize procurement under the SBP and OSMI, as well as the distribution of pharmaceutical products, have become an effective tool to support the development of the pharmaceutical industry in Kazakhstan [7]. As a result, these incentives from the state made it possible to expand the planning horizons of Kazakh pharmaceutical manufacturers to attract foreign investors and localize the production of foreign companies in Kazakhstan.

At the moment, within the framework of the CSHI, medicines and medical products of local production have been purchased in the amount of 109.9 billion tenge. Of these, as of March 17, 2022, products worth 49.5 billion tenge were delivered to the warehouses of the Single Distributor, which is 45% of the annual purchased volume. Within the framework of long-term contracts with domestic manufacturers, 840 types of medicines and medical devices were purchased in the amount of 105.4 billion tenge, which is 51% of the total purchase volume (1623 items) [7].

To date, there are 87 long-term contracts concluded with 33 domestic producers for the supply of 4,676 types of medicines and medical devices (920 and 3,756, respectively). Of these, 42 long-term contracts were concluded for medicines and 45 long-term contracts for medical devices.

Based on the results of the procurement for 2021, an order was placed for the supply of 627 types of medicines and medical devices for a total amount of 90.4 billion tenge from 21 domestic producers. Within the framework of the concluded long-term contracts, 13 contracts have been implemented in full, medicines and medical devices are being supplied, 18 contracts have been partially implemented.

The Ministry of Health conducted a detailed analysis of the concluded long-term contracts with domestic producers in 2019-2020. So, for the production of 920 types of medicines, 42 contracts were concluded, of which 17 provide for the construction of a plant or workshop for the production of medicines, 19 provide for the modernization of existing production. The volume of investments for the launch of new medicines is 127.04 billion tenge. The volume of production by 2025 will be 2.1 billion units in the amount of 257.3 billion tenge, based on the results of the launch of new production facilities.

For the production of 3,768 types of medical devices, 46 long-term contracts were concluded, of which 14 are planned to build a plant or a workshop for the production of medical devices, 31 provide for the modernization of existing production.

Within the framework of regional long-term development plans, akimats are systematically implementing measures to upgrade the infrastructure of the healthcare system in the regions, incl. overhaul, reconstruction, construction of facilities. Thus, in order to ensure the availability of outpatient care (hereinafter - APO), in 2021, 70 APO facilities were opened and built in the regions (including in Akmola - 3, Aktobe - 9, Almaty - 26, Atyrau - 1, East Kazakhstan - 1, Zhambyl - 1, Karaganda - 1, Kyzylorda - 9, Mangistau - 3, Pavlodar - 1, Turkestan regions - 5, in Nur-Sultan - 10) at the expense of local budgets, private investment, as well as within the framework of the programs "Auyl - El Besigi" and the Employment Roadmap.

In addition, at the end of 2021, 96 healthcare facilities were overhauled. In 2021, the construction of a regional perinatal center in Aktobe, a polyclinic for 250 visits in the village of Aiteke bi, Kazalinsky district, Kyzylorda region, and the construction of a regional oncological dispensary for 200 beds in the city of Taraz, Zhambyl region, were completed.

To further prepare the healthcare infrastructure for an increase in the incidence of coronavirus infection and increase the availability of medical care to the population in a pandemic, 13 modular infectious diseases hospitals have been built in 11 regional centers (Akmola, Almaty, Atyrau, West Kazakhstan, Karaganda, Kostanay, Kyzylorda, Mangystau, Pavlodar, North Kazakhstan, Turkestan regions) and in the city of Almaty (in addition to the previously built modular hospital) by the akimats of the regions within the framework of the Employment Roadmap program with funding from the local budget, the reserve of the Government of the Republic of Kazakhstan and sponsorship. Modular hospitals in the cities of Aktau, Atyrau and Kulsary were built at the expense of sponsorship.

In general, the difficult epidemiological situation of coronavirus infection in the world and the country has revealed the need for further improvement of the national sanitary and epidemiological service. The sanitary and epidemiological control service was restructured. A draft Law "On Biosafety" has been developed.

In order to provide the industry with medical personnel, since 2012, a norm has been introduced for mandatory work for graduates studying at the expense of the state educational order in medical specialties for three years (applies to 2019 graduates of medical universities studying under the state order).

Together with local executive bodies, work is being carried out to support young professionals and provide social assistance. In 2021, 282 specialists received lifting allowances, 222 received housing, and 92 young specialists received other social support measures [8].

In order to reduce the burden on FMA doctors, in addition to the existing 249 FMA facilities built and commissioned, 480 additional reception rooms for general practitioners were created in 2021. By 2025, it is planned to build 500 FMA facilities, including 420 in rural areas, and 350 FMA facilities will be overhauled.

To ensure the availability and provision of medical services to the population living in remote villages, transport medicine has been introduced and is being developed; in 2020, 100 mobile medical complexes were purchased on a chassis to the existing ones. In 2021, 149 mobile transport complexes covered about 1.8 million residents of 2,542 remote locations, about 132,000 cases were detected. PMC (perinatal medical center) conduct screening studies of the target population and provide consultations with specialized specialists, laboratory and functional studies, including patients with chronic diseases according to the list of diseases subject to dynamic monitoring in primary health care organizations. Based on the results of examinations, when cases with diseases are detected, they are transferred for further dynamic monitoring at the FMA level [9].

The coronavirus pandemic has made adjustments to the training of medical personnel. The Ministry of Health has strengthened the subject in the direction of biosafety in such disciplines as: childhood infectious diseases, general hygiene, general epidemiology, clinical epidemiology, infectious diseases, emergency medical care, internal medicine and childhood diseases, pulmonology [10].

To provide the necessary number of medical personnel, more than 60,000 medical employees took retraining and advanced training courses. The most demanded were medical workers, infectious disease epidemiologists. New specialties have been introduced: kinesiotherapy, occupational therapy, nuclear medicine, geriatrics.

For the 2021-2022 academic year, the number of applicants for admission to the undergraduate program in the direction of "Healthcare" was 25,718 applicants, of which the most popular specialties were: "General Medicine" was chosen by 12,218 (47.5% of the total number of applicants), "Pediatrics" was chosen 4259 (16.5%), "Public Health" was chosen by 3628 (14.1%), "Pharmacy" was chosen by 2716 (10.5%), "Dentistry" was chosen by 1745 (6.7%).

Discussion. The main stages in the development of methods for financing domestic research and development consisted in the implementation of economic calculations, the completeness and degree of implementation of which were determined by the needs of the national economy.

The financial relationship between the customer and the contractor consisted in the fact that the customer transferred money to the contractor in stages in the process of performing the work, the subject of payment was the process of performing the work, and not its result. Thus, there were no control mechanisms, as well as incentives for the proper fulfillment of obligations.

The expansion of independence in the use of own funds was provided for by the resolution "On changing the procedure for planning costs for research work and on expanding the rights of heads of research institutions." For the first time, a category of profit appeared in scientific organizations, which can be obtained in the performance of contract work. Up to 75% of the profits could be used to expand the scientific and industrial base.

Conclusion

The transition to modern management methods has increased the indicators of social satisfaction with the health care system. For 30 years of independence, Kazakhstan has managed to build a successful healthcare system and provide quality medical care to the citizens of the country. Such a transition was possible due to the creation of research institutes and research and development in the country, which provided the market for healthcare services with high-quality medical personnel. Due to the transition to compulsory medical insurance, the state managed to provide medical care to every citizen during the period of coronavirus infection. Stabilization by the health care mechanism has now made it possible to focus on cutting-edge developments and unresolved societal problems. Now in Kazakhstan, research is underway to combat diabetes and cancer. Such a transition was made possible thanks to a well-established administrative and economic management model.

REFERENCES

[1] Fanil'eva G.G. (2017) Formirovanie sistemy podgotovki medicinskih kadrov v Kazahstane (90-e gody XX veka) [Formation of the system of medical personnel training in Kazakhstan (the 90s of the twentieth century)] *Uchenye zapiski Kazanskogo universiteta - Scientific notes of Kazan University. Seriya Gumanitarnye nauki - Series Humanities. Vol. 159, 4* [in Russian].

[2] Sharman A. (2014) A new paradigm of primary health care in Kazakhstan: Personalized, community-based, standardized, and technology-driven // Central Asian Journal of Global Health. *V. 3, 1* [in English].

[3] Obermann K. et al. (2016) Data for development in health: a case study and monitoring framework from Kazakhstan // BMJ Global Health. *V.1, 1.* [in English].

[4] Tinasilov, M.D., Urkumbaeva, A.R. (2017) Innovacionnaya deyatel'nost' i ocenka medicinskoj tekhnologii Kazahstana [Innovative activity and evaluation of medical technology in Kazakhstan] *Nauka i innovacionnye tekhnologii - Science and innovative technologies, 2, 28-31* [in Russian].

[5] Kozhekenova, L.G., Musahanova, A.K. (2014) Konceptual'noe videnie realizacii strategii medicinskoj pomoshchi, orientirovannoj na pacienta v otechestvennoj i mirovoj praktike

zdravoohraneniya [Conceptual vision of the implementation of a patient-centered medical care strategy in domestic and world healthcare practice] *Nauka i zdravoohranenie – Science and healthcare, 5, 3-7* [in Russian].

[6] Badaev M. (2021) Public-private partnership in healthcare and pharmaceutical sector of the Republic of Kazakhstan // NAUKOVIJ VISNIK. *V. 8, 2, 44* [in English].

[7] YESSENTAY A. et al. (2020) Financing of healthcare facilities in pension system assets of ecologically problematic regions in Kazakhstan // The Journal of Asian Finance, Economics, and Business. *V. 7, 7, 531-541* [in English].

[8] Koikov V. et al. (2018) Vision of the development of the qualification framework (QF) for the healthcare sector in Kazakhstan // European Journal of Public Health. *V. 28, 4, 218, 117* [in English].

[9] Dzhumasheva, M.H. (2021) Osobennosti okazaniya skoroj medicinskoj pomoshchi trudyashchimsya v stranah evrazijskogo ekonomicheskogo soyuza: pravovye aspekty [Features of providing emergency medical care to workers in the countries of the Eurasian Economic Union: legal aspects] *Vestnik nauki- Bulletin of Science. V. 2, 5 (38), 104-113* [in Russian].

[10] Bimurzaeva, F.A., et al. (2021) Sovremennye problemy podgotovki specialistov obshchestvennogo zdravoohraneniya Kazahstana [Modern problems of training public health specialists in Kazakhstan] *Vestnik Kazahskogo Nacional'nogo medicinskogo universiteta - Bulletin of the Kazakh National Medical University, 1, 329-334* [in Russian].

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ҚАЗАҚСТАН МЕДИЦИНАСЫНЫҢ ДАМУ ТАРИХЫ

Аңдатпа. Мақалада Қазақстан Тәуелсіздік алған сәттен бастап 2021 жылға дейінгі медицинаның дамуына шолу жасалған. Қазақстан медицинасы күрделі эволюциядан өтті. Қазақстанның денсаулық сақтау жүйесі көп қырлы және күрделі. Қазақстанда медициналық жүйенің қалыптасу кезеңінде менеджментте, кадрлық жоспарлауда, медицина қызметкерлерінің біліктілігін арттыруда үлкен өзгерістер болды. Қазақстанның денсаулық сақтау саласының даму тарихы халықаралық бағдарламаларды жүзеге асыру тәжірибесіне негізделген. Қазақстан денсаулық сақтау саласын қалыптастырудың шешуші кезеңі Президенттің кезекті жолдауларына сәйкес мемлекеттік реттеу жүйесін реформалау болды. Осы бағдарламаларды жүзеге асыру үшін заманауи медициналық құрал-жабдықтар, науқастарды жеткізуге арналған жылжымалы көліктер сатып алынып, заманауи ауруханалар салынды. Коронавирустық пандемияның дамуы нәтижесінде еліміздегі медициналық қызметке инвестиция бірнеше есеге артты. Көрсетілетін медициналық қызметтердің сапасы еселеп артты. Қазақстандағы медицинаның дамуының нәтижесі өмір сүру ұзақтығының ұзаруы болды. Азаматтардың медицинаға деген қанағаттануы артты, азаматтардың мемлекеттік ауруханаларға деген сенімі артты.

Кілт сөздер: денсаулық сақтау; медициналық көмек; медицинаны дамыту; цифрландыру; медициналық консультациялар; қашықтан медицина; вакцинация; терапия; дәрі-дәрмек; Қазақстан Республикасы.

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ИСТОРИЯ РАЗВИТИЯ МЕДИЦИНЫ В КАЗАХСТАНЕ

Аннотация. В статье приводится рассмотрение вопросов развития медицины в Казахстане с момента обретения независимости вплоть до 2021 года. Медцина Казахстана претерпела серьезную эволюцию. Система здравоохранения Казахстана многогранна и сложна. За период становления медицинской системы Казахстана произошли серьезные изменения в управлении, кадрового планирования, повышения кваллификации медицинских сотрудников. История развития здравоохранения Казахстана основана на опыте реализации международных программ. Ключевым этапом становления здравоохранения Казахстана

стала реформация системы государственного регулирования сосгласно регулярным посланиям президента. Для реализации данных програм было закупленно современное медицинское оборудование, средства мобильной доставки пациентов, построены современные больницы. В результате развития пандемеии коронавируса инвестиции в медицинскую деятельность в стране многократно возросли. Качество предоставляемых медицинских услуг многократно возросло. Итогом развития медицины Казахстана стало улучшение продолжительности жизни. Удовлетворенность медициной гражаданами увеличилось, возросло доверие граждан к государственным больницам.

Ключевые слова: здравоохранение; медицинское обслуживание; развитие медицины; цифровизация; медицинские консультации; дистанционная медицина; вакцинация; терапия; лекарственные средства; Республика Казахстан.