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EFFICIENCY CHALLENGES IN HEALTHCARE MANAGEMENT OF THE REPUBLIC OF KAZAKHSTAN

The key factor that determines the relevance of the study of the author is the importance of continuing and developing the processes of modernization in the healthcare economy, provided for in the state program of development of healthcare of the Republic of Kazakhstan "Densaulyk", as well as the "Strategy-2050". Currently, a number of unresolved problems aimed at improving the quality of medical services, the efficiency of the health care system as a whole and at the level of medical organizations have been identified, which are reflected in this article. The article shows essential modifications affecting the provision of medical organizations with high-tech treatment and diagnostic equipment, as well as addressing issues related to their informatization through the introduction of medical information and analytical support systems aimed at automating the basic processes of medical activity. The experts argue that in order to obtain the greatest efficiency and productivity of medical organizations, it seems advisable to introduce process-oriented quality management systems in healthcare, which represent a synthesis of professional management and current information technologies.

The objectives of the work are to study the fundamental issues of quality management in healthcare organizations and to examine the quality management system. On the results of the study the authors come to the relevant findings.

Keywords: quality, quality management, healthcare, health, health models, innovations, OESD, GII, efficiency, Hofer/Shendel model.

Кілт сөздер: сапа, сапа менеджменті, денсаулық сақтау, денсаулық сақтау үлгілері, инновациялар, ЭЫДҰ, ЖИИ, тиімділік, Хофер/Шендель үлгісі.

Ключевые слова: качество, менеджмент качества, здравоохранение, модели здоровья, инновации, ОЭСР, ГИИ, эффективность, модель Хофер/Шендель.

JEL classification: I 10

Introduction. The term «health» was approved by WHO back in 1948 - «state of complete well-being (mental, physical and social) ». Subsequently, the types of health systems were identified, including all stakeholders, as well as institutions and resources whose main objective was to improve the population's health. The current priority for most countries in the world is to provide quality health services sustainably, intending to create a productive society that contributes to economic growth.

Effective decision-making is the primary and most challenging task in the health system. This difficulty lies mainly in the various interactions between the components of health systems: financial resources, technology, and human resources.

By the term "quality," we consider the degree to which a product or service meets the expectations of the consumer. Quality dimension has been an important foundation for competition between companies, but recent studies in this area allow us to use quality as one of the main features of the process, thereby adding another level of monitoring. Indeed, by defining the required level of quality (zero defects, six sigmas), it is possible to monitor and control changes in the overall process.

As you know, the criteria for assessing the quality of health care are global indicators in this area, necessary to assess the performance of the health care and social security system.

The objective of the study is to investigate factors potentially affecting efficiency in the healthcare of the Republic of Kazakhstan.

Literature review. The scientific foundations of the formation of health economics, necessary for the development of procedures for assessing the quality of medical care, as well as the effectiveness of medical organizations are devoted to the following works: A. Abramov [1], V. Agalakov [2], M. Adzhiev [3],

N. Arshinova [4], Z. Bykova [6], Yu. Emanuel, A. Khotin [7], A. Yamshikov, O. Tkach, O. Ardasova [8], etc. Both theoretical and applied aspects of process-oriented management are researched in the papers of O. Aristova [9], N. Valentinova [10], M. Kane and others.

Also, Kazakh scientists have studied quality management issues: G. Bokenova [5], V. Solovyov [12], A. Rakhisheva [13] and others.

The study was based on the application of a systemic content-analytical approach to quality management issues, since modern health care requires urgent modernization. The system approach is also necessary at the stage of planning, forecasting and in the process of health care management.

Main part. Active modernization of the health care system in Kazakhstan began even before independence in 1991 with the signing of the Almaty Declaration on Primary Health Care in 1978.

Further progress of world health care was identified by the signing of the Astana Declaration in the scope of the 40th anniversary in October 2018.

Today, Kazakhstan is a country with a relatively new generation and dynamic population indicators. Gross domestic product is estimated at \$171 billion in 2021, with a per capita gross domestic product of \$9,121, compared to \$58,510 in OECD countries. Even so, as an exporter of oil, Kazakhstan holds a leading position among Central Asian countries.

Among the countries of the world, Kazakhstan's rating for information and communication technology (ICT) development is 6.79, which places the Republic of Kazakhstan in 52nd place. The Republic of Kazakhstan ranks 53rd in terms of health care system - 60.94%.

The state program to reform and develop healthcare in the Republic of Kazakhstan began from 2005 to 2010. This reform preceded the state program "Salamatti Kazakhstan" for 2011-2015, the state program "Densaulyk" for 2016-2020 and the current state program of health care development of the Republic of Kazakhstan, which is planned for the years 2020-2025.

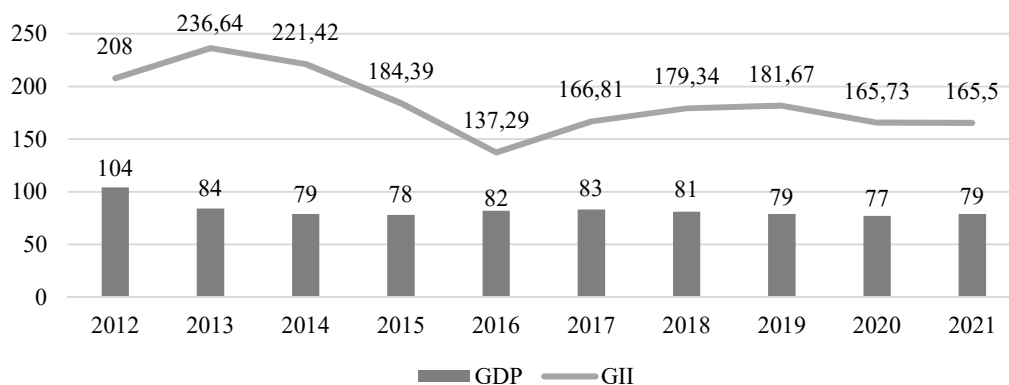


Figure 1. **World Innovation Index vs. GDP (billions of US dollars) of the Republic of Kazakhstan for 2012-2021***

* Compiled by the author on the basis of source [14]

The table above provides Kazakhstan's score on the global stage over the past ten years, the current score is the same as in 2019 and 2014. In 2021, the Republic of Kazakhstan ranks 79th among 132 countries, 23rd among 34 upper-middle-income countries, and third among ten Central and South Asian countries.

The downgrade of the GII in 2020 is most likely due to the COVID-19 pandemic, which caused a slowdown in the world economy. Despite this, Kazakhstan is pursuing an active policy to develop innovation and build an innovative ecosystem and knowledge-based economy. The main objective of Kazakhstan's strategic plan until 2025 is the sustainable development of the economy to improve the population's well-being compared to the OECD countries.

In order to classify health systems, it is helpful first to define the health system. According to Quadagno, these organizations, clinics, and hospitals provide health services and manage economic resources allocated by the Government, private agencies, provinces, communities, or insurance companies. The classification of health systems is now diversified. These systems can be classified according to the source of funding, the type of institution, or the population group they focus on.

Table 1

Main health models used in the world*

Healthcare model	Features
Beveridge model	This model offers health care to all citizens of the country where it is used and is financed by the Government through the payment of taxes.
Bismarck model	This model relies on an insurance program that is funded by both employers and employees via wage deductions. However, insurance schemes in this model are not profitable because they do not cover all citizens. One of the features of this particular model is simply that hospitals and other institutional units are usually private rather than public.
National health insurance or Tommy Douglas model	This model is mixed because it has the characteristics of the two previous models (the Beveridge model and the Bismarck model). In this system, service providers are owned by the private sector, but payment for the services provided is made through insurance payments, which are administered by the State. Financed by paying insurance premiums or taxes. Such programs are usually cheaper.
Model «out of pocket»	This model is used in countries with fragile economies, which prevents the Government from providing health care to the general population. In these countries, part of the population cannot afford to pay for health services.

* Drawn by the researchers on the base of the following sources [3,7]

The introduction of reforms and the implementation of new policies aimed at improving health indicators, however, to date have not spared Kazakhstan's health care system from problems such as the shortage of advanced IT infrastructure, extensive bureaucracy and insufficient development of effective preventive services and programs. Many of the problems are related to the unique geospatial, socio-political and economic realities that impede innovation, and as a result, key health indicators continue to fall short of other OECD countries.

We will evaluate strategic alternatives for private medical clinics on the example of Ust-Kamenogorsk with the help of the Hofer/Shendel model. This model uses two parameters: «relative competitive position» and «stage of market development».

The process of defining the boundaries of groups by the parameter «Relative competitive position» consists of three steps:

- 1) An arithmetic mean shall be calculated;
- 2) The total number of enterprises in the market in question is divided into two sectors for which the STS values are more significant or lower than the average;
- 3) In each of the sectors, we calculate the default deviations, which, together with the minimum and maximum values, define the boundaries of the presented groups. The standard deviation of a brand's competitive position (σ_1 (σ_2)) is calculated using the following formulas:

$$\sigma_1 = \sqrt{(1/\kappa_1) \times \sum (D_s - D_{cp1})^2}, S = 1, \dots, \kappa_1 \tag{2}$$

$$\sigma_2 = \sqrt{(1/(n - \kappa_1)) \times \sum (D_t - D_{cp2})^2}, t = 1, \dots, n - \kappa_1, \tag{3}$$

The market of paid medical services in Ust-Kamenogorsk is in the «Saturation» stage. The main competitors include the following clinics: «ONCLINIK», «EUROMED», «Outpatient Centre», and «ASMEDEK».

Table 2

Raw data for defining group boundaries in the category «Competitive position» in constructing Hofer/Shendel matrix

Clinic	Kp	Kp-Kp(avg)	(Kp-Kp(avg))^2
«ASMEDEK»	3,60	0,10	0,01
«EUROMED»	3,70	-0,40	0,16
«Outpatient center»	3,10	0,20	0,04
«ONCLINIK»	3,20	-0,30	0,09
Average	3,40	-	-

* Compiled by the authors

Based on the calculations, the following indicators were obtained:

$$\sigma_1 = 0.31$$

$$\sigma_2 = 0.37$$

The boundaries will be as follows:

$$\left\{ \begin{array}{l} [3,87, 4,1] \\ [3,5, 3,87] \\ [3,19, 3,5] \\ [3,1, 3,19] \end{array} \right\}, \text{ if } \left\{ \begin{array}{l} \text{I group - Powerful position} \\ \text{II group - Average position} \\ \text{III group - Weak position} \\ \text{IV group - The worst position} \end{array} \right\}$$

The relative position of the clinics can be determined according to the Hofer/Shendel model.

Table 3

Position of clinics according to the Hofer/Shendel model

	Powerful	Average	Weak	The worst
Development				
Growth				
Saturation	"EUROMED"	"ASMEDEK"	"ONCLINIK"	"Outpatient center"
Decrease				

* Compiled by the authors

For example, the position of the clinic «ASMEDEK» relative to the Hofer/Shendel model corresponds to the profit maximization strategy. The strategy should combine the following elements:

- 1) Addressing the weaknesses
- 2) Exploit competitors' weaknesses
- 3) Leveraging your strengths
- 4) Profit maximization

Next, it is necessary to highlight tactical steps regarding the chosen strategy:

- 1) Expanding the range of services
- 2) Building Market Reputation
- 3) Enhancing the quality of care
- 4) Growing the number of skilled professionals

The next stage is the development of a marketing complex to implement the above steps. First, it is essential to consider the existing elements of the marketing mix, which will change. Based on the analysis, a list of recommendations will be developed that will lead to a successful implementation of each of the tactical steps

Table 4

Methods of development of marketing complex for «ASMEDEK» clinic*

Tactical steps	Marketing element	Proposed actions
1. Expanding the range of services	Product/Service	Implementation of new services
2. Building Market Reputation	Promotion	Promotion development
3. Enhancing the quality of care	People	Staff development
4. Growing the number of skilled professionals	People	Attract highly qualified specialists

* Compiled by the authors

In the first stage, we will create a monthly media plan, using internet resources, radio, and TV as tools

Table 5

Mediaplan for 1-month 2022

Filed	Tool	Duration	Price per.	Price (KZT)
1	2	3	4	5
General	Targeted advertising in instagram feed	1 month	1000 shows	22000
Membrane plasmapheresis	Targeted advertising in instagram stories	1 month	1000 shows	22000

1	2	3	4	5
Male diseases	Targeted advertising on the local radio station	1 month	-	0
Female diseases	Targeted advertising on the local radio station	1 month	-	0
Ultrasound of organs	Targeted advertising in instagram feed	1 month	1000 shows	22000
Total				66000

* Compiled by the authors

Each of the proposed actions should be considered in detail.

1,2,5 - Advertising on the social network «Instagram» - Advertising records on the social network are very effective now. Such advertising allows for reaching a reasonably broad audience. The cost of advertising depends directly on its duration. In the following case, the duration of one month of advertising banners appearing in the news feed is 22,000 tenge.

3,4 Advertising on the radio - the clinic's partner, «ASMEDEK», is a local radio station. The advertising budget will not incur costs when transacting between companies is carried out by barter (service for service).

To expand the range of services and attract qualified specialists, the best option is to invite a specialty doctor who is not in the clinic. Having analyzed the assortment, it is recommended to open a dentistry room to carry out injection cosmetic procedures.

To improve the quality of service, the best solution is to upgrade the skills of the clinic administrators. In this direction, we find various courses and training, increasing maintenance personnel's effectiveness. For example, the online course «Effective Medical Center Administrator» or «Patient Recovery. » The average cost of such services is 30,000 KZT per person.

The main challenges facing health systems are summarized under five specific challenges:

- Demand for technology. Consumers need new technologies to diagnose and manufacture drugs to treat their diseases.
- Demographic demand. Another factor increasing the cost of health care today is the aging population, which has been and will continue to grow during these last two decades. In general, this trend is evident in health systems worldwide, as the older age group has high levels of chronic diseases requiring periodic medical check-ups and interventions. In Kazakhstan, for example, per capita, health expenditure in 2021 was \$268.
- Human resources. For health systems, the availability of skilled labor and financial resources are important factors in meeting the growing demand for health care for the entire population.
- Medical errors. One of the leading causes of illness and mortality are errors committed by personnel working in various areas of the health care system.
- Logistics. Proper management and understanding of the supply chain in healthcare systems is important because if the supply chain is flawed, it affects the administrative, financial, and pharmaceutical areas of the system.

A clear definition of activities (processes) and the establishment of relationships between them is the basis for the effective operation of a quality control system, since the outputs of one activity directly form the inputs of the next. Identification of processes, their interaction, as well as management has been called the "process approach".

Conclusion. Kazakhstan, like all countries in the world, faces numerous health care challenges related to trends in life expectancy, maternal mortality, efficiency, digitalization, and lack of human resources. The spread of coronavirus infection has become a major problem for health systems worldwide, but this has led to the continued advancement of digital health and telemedicine.

The economy of Kazakhstan, the scale and nature of social institutions, including a functioning health care system, require effective attitudes to its management and administration.

Thus, the focus of employees on the outcome, delegation of authorities and liability to the " holders" of the processes, underlying the process-oriented approach, will improve the efficiency of the health care management system.

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КАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ДЕНСАУЛЫҚ САҚТАУДЫ БАСҚАРУ ТИІМДІЛІГІНІҢ МӘСЕЛЕЛЕРІ

Андатпа

Авторлық зерттеудің өзектілігін анықтайтын басты фактор – Қазақстан Республикасының Денсаулық сақтау саласын дамытудың «Денсаулық» мемлекеттік бағдарламасы, сондай-ақ «2050 Стратегиясы» аясында қарастырылған денсаулық сақтау экономикасында жаңғырту процестерін жалғастыру және дамыту қажеттігі болып табылады.

Қазіргі уақытта, осы мақалада көрсетілген медициналық қызметтердің сапасын, денсаулық сақтау жүйесінің тиімділігі мен тұтастай алғанда медициналық ұйымдар деңгейіндегі тиімділікті арттыруға бағытталған бірқатар шешілмеген мәселелер анықталды. Мақалада медициналық ұйымдарды жоғары технологиялық емдеу – диагностикалық жабдықтармен қамтамасыз етілуін арттыруға, сондай – ақ медициналық қызметтің негізгі процестерін автоматтандыруға бағытталған медициналық ақпараттық-талдау жүйелерін енгізу арқылы оларды ақпараттандыруға байланысты мәселелерді шешуге әсер ететін маңызды өзгерістер көрсетілген.

Авторлар медициналық ұйымдардың жұмыс істеуінің барынша нәтижелілігі мен тиімділігіне қол жеткізу үшін кәсіби менеджмент пен заманауи ақпараттық технологиялардың синтезі болып табылатын денсаулық сақтаудағы қызметтер сапасын басқарудың үдерістік-бағытталған жүйелерін енгізу орынды болып табылатынына негізделген.

Зерттеу міндеттері денсаулық сақтау ұйымдарындағы сапа менеджментінің негізгі аспектілерін зерттеу және сапа менеджменті жүйесін талдау барысында анықталған. Жүргізілген зерттеу нәтижелері бойынша авторлар тиісті қорытынды жасады.

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ПРОБЛЕМЫ ЭФФЕКТИВНОСТИ УПРАВЛЕНИЯ ЗДРАВООХРАНИЕМ РЕСПУБЛИКИ КАЗАХСТАН

Аннотация

Главным фактором, определившим актуальность авторского исследования, выступает необходимость продолжения и развития процессов модернизации в экономике здравоохранения, предусмотренных в рамках государственной программы развития здравоохранения Республики Казахстан «Денсаулық», а также «Стратегии-2050».

В настоящее время обозначился ряд нерешенных задач, которые были направлены на повышение качества медицинских услуг, эффективности функционирования системы здравоохранения как в целом, так и на уровне медицинских организаций, которые отражены в данной статье.

В статье показаны значимые преобразования, влияющие на повышение обеспеченности медицинских организаций высокотехнологичным лечебно-диагностическим оборудованием, а также решение вопросов, связанных с их информатизацией посредством внедрения медицинских информационно-аналитических систем, направленных на автоматизацию основных процессов медицинской деятельности.

Авторами обосновано, что целью достижения наибольшей результативности и эффективности функционирования медицинских организаций представляется целесообразным внедрить процессно-ориентированные системы управления качеством услуг в здравоохранении, представляющие собой синтез профессионального менеджмента и современных информационных технологий.

Задачи исследования определены в изучении основных аспектов менеджмента качества в организациях здравоохранения и анализе системы менеджмента качества. На основе проведенного исследования авторами сделаны соответствующие выводы.