



ASSESSMENT OF THE DEVELOPMENT AND COMPETITIVENESS OF THE MEDICAL SERVICES MARKET IN THE REPUBLIC OF KARAKALPAGISTON BASED ON SOCIOLOGICAL QUESTIONNAIRES

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ABSTRACT

This article analyzes the current state of the development of the market of medical services (MMS) of the Republic of Karakalpakstan and the results of evaluation of competitiveness based on sociological questionnaires are given.

KEY WORDS: *healthcare system, state and non-state healthcare sector, medical services market, competitive environment, level of competitiveness, competitiveness factors.*

Competitiveness assessment is an integral element of strategic planning for a medical organization. Study of competitive positions and competitive conditions in MMS (market of medical services), it is necessary for a medical organization to determine its advantages and disadvantages compared to competitors, to develop its own successful competitive strategy and to determine future development directions that will help ensure competitive advantage.

According to the algorithm developed in paragraph 3 of chapter 1, we evaluate the competitiveness of medical organizations in the city of Nukus, Republic of Karakalpakstan. For this purpose, stationary and ambulatory medical organizations were selected to ensure comparability of the conditions of comparative analysis.

The clinics are the most popular medical organizations of this type among residents and visitors of Nukus, Karakalpakstan. The capacity of city polyclinic organizations is 9101 people per shift.

Clinics are engaged in diagnosis, treatment, prevention of diseases, as well as medical rehabilitation of patients. Medical services are provided in ambulatory conditions, at home or at other treatment and prevention institutions (TPI) at the expense of patients' personal funds. In the clinics, people are received by doctors of various specialties, there are rooms for diagnosis, laboratory tests, physiotherapy procedures, consultations, etc.

The work of city polyclinics is carried out on a local-territorial basis. Clinics provide medical services to the population living in their territory. Currently, the size of the regional therapeutic area is determined by its length, distance from the clinic and the

number of adults aged 18 and older (standard 1600-1700 people).

Non-state polyclinics provide medical services to all citizens, regardless of their place of residence, at the expense of their personal funds or the funds of organizations and sponsors.

Medical organizations participating in the study and their characteristics are presented in Table 1.

Considering the activity of the medical organization in Table 1 as acceptable, the last final selection was made only after checking the compliance of the activities of medical service organizations with licensing requirements:

- a) the organization must have buildings and structures that meet the requirements of the specified license;
- b) there must be medical equipments, gadgets and apparatus registered in the prescribed manner;
- c) must have the level of education stipulated in the qualification requirements for healthcare professionals;
- g) there should be a system of internal control of the quality and safety of medical activity.

In accordance with the methodology developed by the author, the assessment of the competitiveness of medical service organizations in the city of Nukus was carried out using an expert method. When choosing specialists, the following characteristics are taken into account: education, qualifications, experience in the field of health care, position held, academic degree, etc. The total number of experts was 8 people.

Therefore, the evaluation of the competitiveness of the medical service organization was carried out by conducting a survey among experts, determining the rating indicators and their weighting coefficients.

Table 1

Descriptions of some medical organizations of the Republic of Karakalpakstan that participated in the research ¹

Name of the medical organization	Organization address	Number of medical services	Number of medical services within OMI	The number of doctors according to the work schedule	Availability of the organization's website	Organization rating on a 5-point scale
GROUP 1: State medical organizations						
Karakalpakstan Multidisciplinary Medical Center	Nukus city. A.Dosnazarov, 110	22	22	105	+ www.rktmo.uz	5
Karakalpakstan Endocrinology dispensary	Nukus city. Ch.Abdirov 1	15	15	60	+	4
Nukus city. Multidisciplinary medical association	Nukus city. Chimboy choykhona 3.	20	20	95	+	4,1
QR Cardiology dispensary	Nukus city. 25th microdistrict, 2nd house	12	12	70	+	5
GROUP 2: Non-State Medical Organizations						
Medical centre	Nukus sh. A.Dosnazarov, 8A-uy	11	0	18	+ medical-centre.uz	4
Imkoniyat	Nukus sh. Taxiatosh	28	0	12	+	4,7
Ata-ana Medical center	Nukus sh. A.Dosnazarov, 68A	10	0	15	+	3,7
Uromed Nukus	Nukus sh. J.Aymurzayev, 23-uyb 73 V	8	0	4	+	5

The composition of experts participating in the assessment of the competitiveness of medical service organizations is presented in Figure 1.

In the process of rating, the selected experts evaluate and place the indicators offered to them in the most rational sequential

order acceptable to them and give each of them numbers in a natural series. In this case, the 1st-level number is assigned to the object most preferred by the expert, and the 5th-level number is assigned to the least preferred object. The accuracy of each expert rating is checked impartially after the overall assessment.

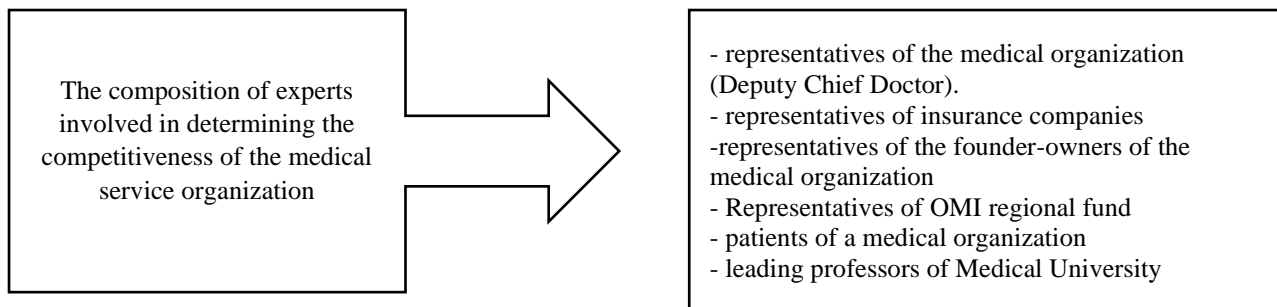


Figure 1. The composition of experts participating in the evaluation of the competitiveness of the medical service organization ²

First of all, experts evaluate the quality of medical services on the basis of such indicators as compliance with doctors' "treatment statements" (k1); completeness of medical services (k2); friendly attitude (deontology), politeness and competence of medical staff (k3); openness and access to information about

the medical organization (k4); access to favorable conditions and medical services, including for the disabled (k5); compliance with sanitary standards and epidemiological requirements (k6).

¹ Муаллиф ҳисоб-китоблари асосида тузилган

² Муаллиф ишланмаси

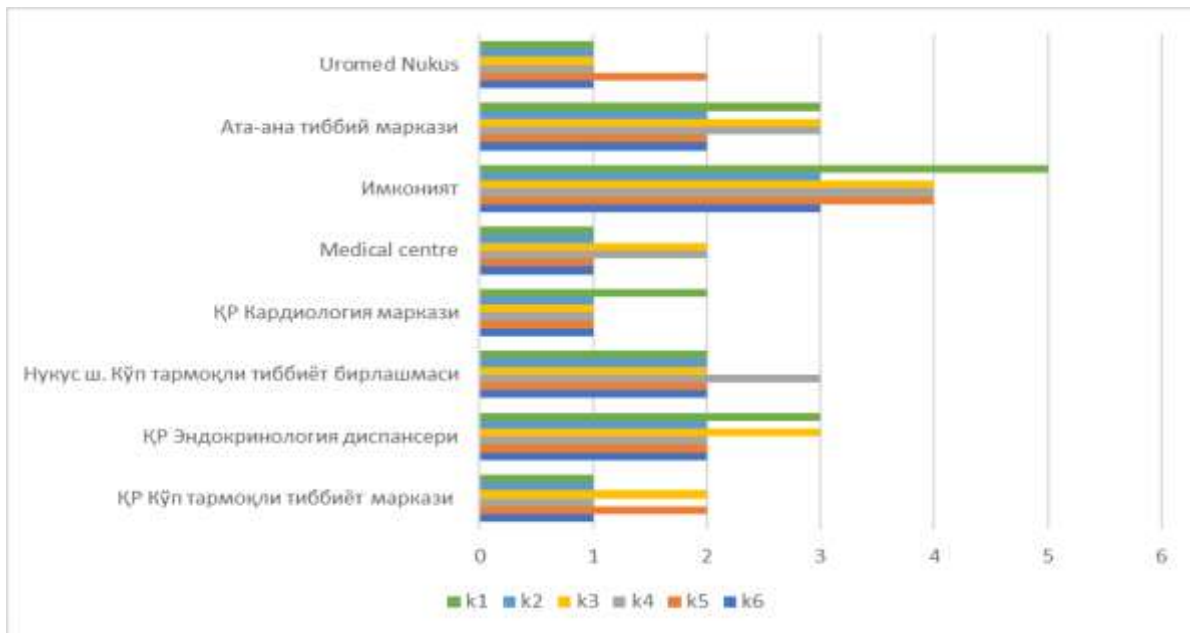


Figure 2. Results of expert assessment of the quality of medical services in medical organizations in Nukus 3

Based on the received expert evaluations, a comprehensive indicator of the quality of medical services was calculated (Table 2).

Table 2

Complex indicators of state and non-state medical organizations operating in Nukus, Republic of Karakalpakstan, based on expert assessment⁴

t/r	Name of medical organization	Complex indicator
1.	Multidisciplinary Medical Center of the Republic of Karakalpakstan	1,3
2.	Endocrinology dispensary of the Republic of Karakalpakstan	2,3
3.	Nukus City Multidisciplinary Medical Association	2,16
4.	Cardiology Center of the Republic of Karakalpakstan	1,16
5.	Medical center	1,33
6.	Imkoniyat	3,8
7.	Ata-ana Medical center	2,5
8.	Uromed Nukus	1,16

The results of the expert assessment of the quality of medical services in the organizations providing medical services in Nukus are presented in Figure 3.

³ Муаллиф ҳисоб-китоблари асосида ишлаб чиқилган

⁴ Муаллиф ҳисоб-китоблари

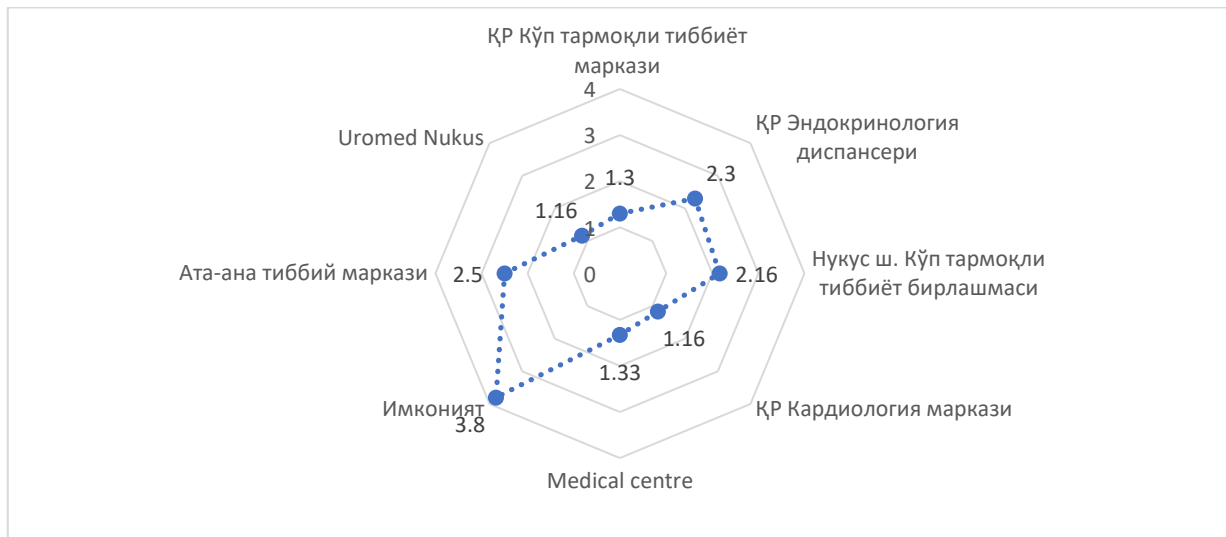


Figure 3. The value of the complex indicator of the assessment of the quality of medical services in medical organizations in the city of Nukus⁵

According to the results of the assessment of the quality of medical services, it can be seen that almost all specialists in the medical organizations of Nukus rated the indicator “politeness and competence of medical staff (k3)” as very low quality in the private clinic “Imkoniyat” in Nukus. It was also noted that “favorable conditions and access to medical services, including for disabled citizens (kz)” are relatively low. In addition, in this clinic, only the indicators of compliance with sanitary norms and epidemiological requirements (k6) and completeness of medical services (k2) were evaluated as relatively satisfactory. In all other indicators, we can see that the condition in the private clinic “Imkoniyat” is comparably low.

Apart from the “Imkoniyat” private medical clinic, the other 3 Medical Centers, Uromed non-state medical organizations had higher expert evaluations of the quality of medical services. It can be seen that all the indicators in the Ata-ana Medical center are much better than in the “Imkoniyat” LLC medical clinic.

Among the private medical organizations, Uromed non-state medical organization received the best indicators (1,2,1,1,1,1). Only the indicator of conditions for disabled people (k5) was evaluated by experts as good, not excellent.

The indicators of the private clinic of the Medical Center (k4,k3) were rated as “good” by experts, and the remaining 4 indicators were rated as “excellent” (1,1,1,1).

Among the state medical organizations, the multidisciplinary medical center of the Republic of Karakalpakstan (1,2,1,2,1,1) and the dispensary of cardiology of the Republic of Karakalpakstan (1,1,1,1,1,2) took the highest rate. In these organizations, almost every 5-6 indicators were evaluated by experts as “excellent” and 1-2 indicators as “good”.

Endocrinology dispensary of the Republic of Karakalpakstan was evaluated by experts in the ratio (2,2,2,3,2,3) according to the “treatment statements” (k1) and friendly attitude (deontology), politeness and competence of medical staff (k3) had the lowest indicator. The Nukus City Medical Association was rated relatively well by experts among state organizations (2,2,3,2,2,2).

According to Table 2, among the medical organizations that participated in the survey, the maximum value of the comprehensive indicator of the quality of medical services corresponded to the Cardiology Center of the Republic of Karakalpakstan and Uromed Nukus private clinics (1.16). The next place is occupied by the Multidisciplinary Medical Center of the Republic of Karakalpakstan and private clinics of the Medical Center (1.33), the Multidisciplinary Medical Association of the city of Nukus (2.16), the Endocrinology Dispensary of the Republic of Karakalpakstan (2.3), Ata-ana Medical center (2.5) and the last place was taken by the private clinic “Imkoniyat” LLC (3.8).

So, among the private clinics, the Medical Center and Uromed non-state medical organizations took the lead. At the private clinics of “Ata-ana Medical center” and “Imkoniyat” LLC, it is still necessary to implement measures in all directions and bring the quality of medical services to the level of satisfaction of the people.

Among the state medical organizations, the cardiology dispensary of the Republic of Karakalpakstan and the multidisciplinary medical center of the Republic of Karakalpakstan took the lead. The indicator of endocrinology dispensary of the Republic of Karakalpakstan, Nukus city medical association is not at the level of today’s requirements.

⁵ Муаллиф ишланмаси



However, according to experts, the quality of medical services in the health care organizations studied in Nukus in recent years is much higher. This is primarily due to the fact that organizations strive to maintain competitive advantages by providing high-quality medical services.

Before proceeding to the calculation of the index of average prices in the studied medical organizations, we reviewed the price lists for paid medical services posted on the websites of medical organizations. Table 3 shows the prices of the most requested medical services in some selected state and non-state medical organizations in Nukus, the center of the Republic of Karakalpakstan.

It can be seen from Table 3 that 10 indicators and treatments were taken for comparison, and the prices of medical services in most non-state medical organizations are much higher than in other budget system city organizations. In particular, the initial examination of therapists and surgeons is higher in all

private sector medical organizations than in the public sector. Intravenous and intramuscular injection procedures are performed free of charge in all public sector organizations, while in the private sector, this procedure costs 12-25 thousand soums. Urine and blood analysis procedures, UEM examinations are 60-68 thousand soums in the public sector, and 50-70 thousand soums in non-state medical organizations. On the contrary, X-ray examinations are 50-65 thousand soums in the public sector, and 55-60 thousand soums in the private sector. This is due to the high cost of services in non-state medical organizations that provide medical services.

This situation is explained by the fact that according to our current legislation, medical organizations have the right to independently determine the prices of paid medical services by medical service providers. The value of individual price indexes for medical services in medical service organizations in the city of Nukus is presented in Figure 4.

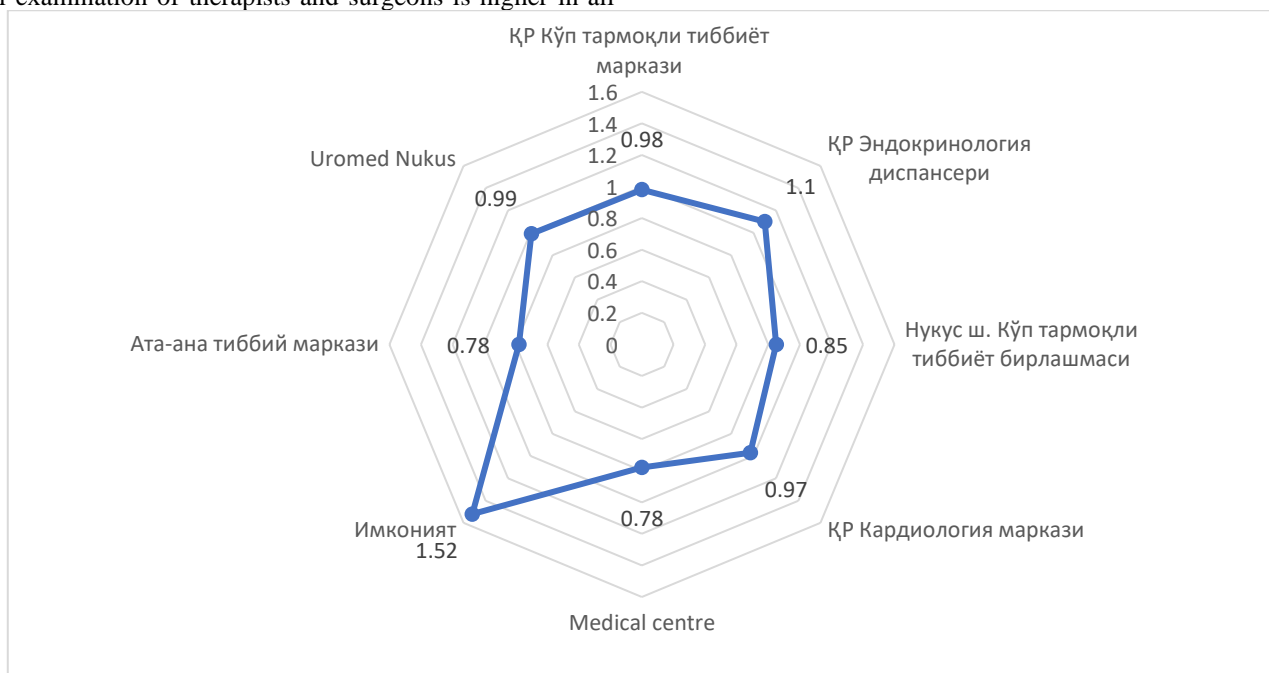


Figure 4. Values of the average indices of medical service evaluations in Nukus city medical organizations ⁶

According to the analysis of the data in Table 3, the lowest prices of medical services are offered to the multidisciplinary medical association of Nukus city, and the highest prices are offered by the cardiology dispensary of the Republic of Karakalpakstan. This difference is especially noticeable in services such as “Doctor’s home care” and “UEM analysis”. As for non-state medical organizations, the highest ratings are observed in the private medical clinic “Imkoniyat” LLC, and the lowest in the private clinic “Medical center”. This is especially evident in the “Blood analysis” and “Urine analysis” procedures. If we do a comparative analysis of the evaluations of 10 types of medical services and procedures in 8 medical

organizations selected for the study, in that case, the results of calculating the average rating index for each of the 8 organizations providing medical services are shown in Figure 4 below. According to our analysis, among the 8 selected state and non-state medical organizations, according to the average rating index, the lowest ratings (average index equals 81.2) were recorded by private clinics “Medical Center” and Ata-ana Medical center (0.78), the highest rating index was recorded at the endocrinology dispensary of the Republic of Karakalpakstan (1.1) and the private medical clinic “Imkoniyat” LLC (1.52).

⁶ Муаллиф тадқиқотлари асосида ҳисоб-китоб қилинган



Table 3

Prices of medical services included in the main list of some state and non-state medical organizations in the Republic of Karakalpakstan⁷, in soums

Name of medical service	MEDICAL ORGANIZATION NAME							
	Karakalpakstan Multidisciplinary medical center	Nukus city multi-disciplinary medical organization	Nukus city multi-disciplinary medical organization	Cardiology dispensary of Karakalpakstan	Medical center	Imkoniyat LLC	Ata-ana Medical center	URO MED NUKUS
Initial examination by a therapist	48000	50000	45000	45000	70000	50000	70000	50000
Doctor's service at home	0	0	0	100000	0	0	0	150000
Initial examination by a doctor-surgeon	35000	40000	35000	30000	70000	60000	65000	50000
General blood analysis (manual according to 5 indicators)	64000	60000	60000	65000	50000	350000	40000	100000
Urine analysis	25000	0	25000	20000	50000	350000	40000	30000
Intravenous injection in a 10 ml syringe	0	0	0	0	12000	10000	15000	25000
Intramuscular injection in a 5 ml syringe	0	0	0	0	12000	10000	15000	25000
Ultrasound examination of 1 internal organ	68000	65000	65000	60000	70000	60000	70000	50000
Full ultrasound of internal organs	257000	260000	250000	265000	180000	170000	200000	250000
X-ray examination	60000	65000	55000	50000	55000	50000	60000	0
Average price indicator	79,5	90,0	69,2	79,3	63,2	123,3	63,9	81,1
Average price index	0,98	1,1	0,85	0,97	0,78	1,52	0,78	0,99

⁷ Муаллиф тадқиқотлари асосида тузилди

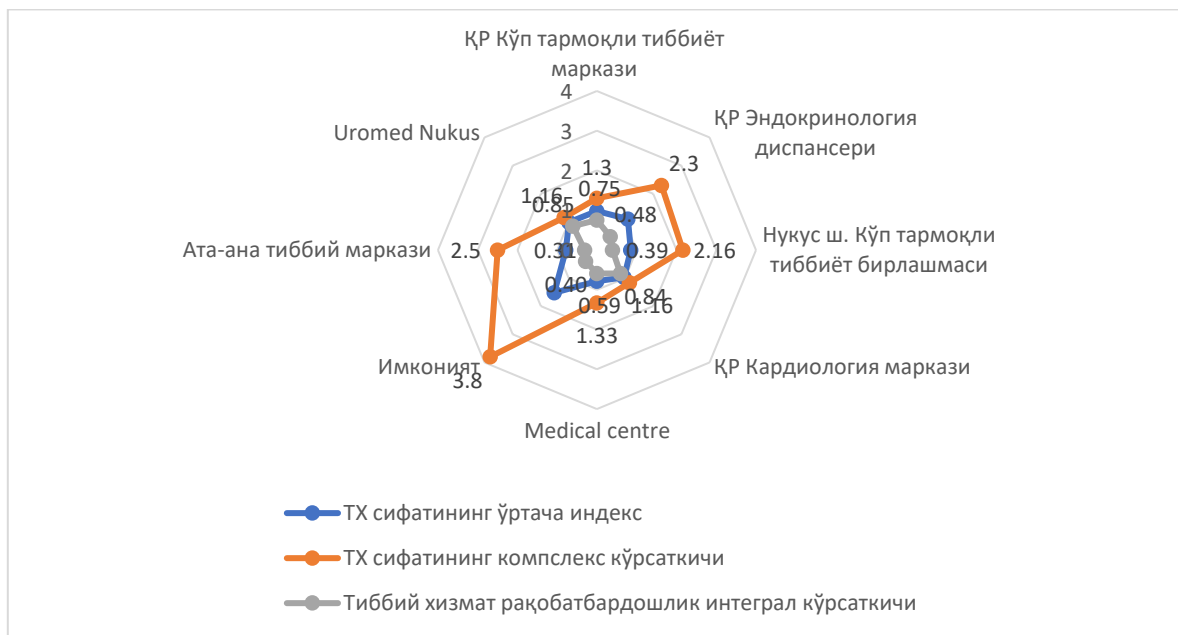


Figure 5. Results of assessment of competitiveness of medical organizations in Nukus ⁸

Now we calculate an integrated indicator of competitiveness for each medical service organization. Figure 5 presents the results of the evaluation of the competitiveness of medical organizations selected for the study operating in the city of Nukus.

Table 4 shows the correlation between the value of the integral indicator of competitiveness and the level of competitiveness of the medical service organization.

Table 4
 Criteria for evaluating the level of competitiveness of a medical service organization ⁹

The value of the competitiveness index of medical organizations	The level of competitiveness of the medical organization
0	Zero degree
$0,25 \geq 0$	Low level
$0,5 \geq 0,26$	Average level
$0,75 \geq 0,51$	High level
$1 \geq 0,76$	Absolute degree of competitiveness =1

Now, in Table 5 below, we present the results of calculating the integral indicators of the quality of medical service and

competitiveness in the medical service organizations selected for the study operating in the Republic of Karakalpakstan.

Table 5
 Evaluation of the quality of medical services (MS) and integral indicators of competitiveness in medical organizations of the Republic of Karakalpakstan ¹⁰

	Average index of quality of MS	A comprehensive indicator of the quality of MS	An integral indicator of the competitiveness of MS
Endocrinology dispensary of the Republic of Karakalpakstan	0,98	1,3	0,75
Endocrinology dispensary of the Republic of Karakalpakstan	1,1	2,3	0,48

⁸ Муаллиф ҳисоб-китоблари

⁹ Муаллиф ишланмаси

¹⁰ Муаллиф ҳисоб-китоблари



The city of Nukus is a multidisciplinary medical association	0,85	2,16	0,39
Cardiology Center of the Republic of Karakalpakstan	0,97	1,16	0,84
Medical center Opportunity	0,7	1,33	0,59
Imkoniyat	1,52	3,8	0,40
Ata-ana Medical center	0,78	2,5	0,31
Uromed Nukus	0,99	1,16	0,85

According to Table 5, among medical organizations in Nukus, the level of competitiveness, that is, according to the integrated indicator of competitiveness, the Republican Cardiology Center (0.84), Uromed Nukus private clinic (0.85) is very high, The index of the Multidisciplinary Medical Center of the Republic of Karakalpakstan (0.75) and the Private Clinic of the Medical Center (0.59) is high, as well as the remaining 4 Endocrinology Dispensary of the Republic of Karakalpakstan (0.48), Nukus City The competitiveness of p branch medical association (0.39), “Imkoniyat” LLC (0.40) and Ata-ana Medical center private clinics (0.31) was assessed as medium level.

If we look at public sector medical organizations, the highest level of competitiveness was achieved by the Cardiology Center of the Republic of Karakalpakstan (0.84), and the lowest level of competitiveness by the Multidisciplinary Medical Association of Nukus (0.39). Therefore, in the future, it is appropriate to review the positive and negative factors that directly affect the quality and competitiveness of medical services in the activity of the multidisciplinary medical

association serving the residents of the city of Nukus, which is the center of the republic, and to regulate the process. Among non-state medical organizations, the highest level of competitiveness was observed in Uromed Nukus private clinic (0.85) and the lowest level of competitiveness was observed in private clinics of Ata-ana Medical center (0.31) and the difference was almost 2.5 times. Based on our opinion, we believe that it would be appropriate to develop and implement a strategy to improve the quality of medical services in private-sector clinics in Karakalpakstan in the near future. This strategy should be based on measures to enhance the quality of medical services and improve the organizational and economic mechanisms to ensure the competitiveness of organizations providing medical services. In the course of our research, we conducted sociological questionnaires in 1 city and 16 districts in the Republic of Karakalpakstan in order to assess the level of competitiveness of TSC. In these questionnaires, a total of 380 business subjects, including 120 of emergency clinics providing medical services, 260 responsible employees of LLC answered the questions asked by the researcher.

Table 6

Evaluation of the activities of state and private medical organizations in the Republic of Karakalpakstan by respondents ¹¹

Features	Private clinics in percent	Percentage in state medical organizations
Depending on the nature of the disease, it is possible to approach patients individually	46 ta (15%)	28 ta (16.5%)
Quick and accurate diagnosis	86 ta (27%)	48 ta (28%)
The level of provision of innovative technologies	66 ta (21%)	30ta(18%)
Few queues	72ta (23%)	40 ta (24%)
Online tips	44 ta (14%)	23 ta (14%)
High digitization		
High deontology	(76 %)	

In the analysis of the development and competitiveness of MMS, the main attention was paid to private sector medical organizations along with the public sector in order to improve the quality of services, expand their types, and deeply study the problems and proposals in Karakalpakstan in the provision of medical services. In the conducted survey, significant differences between state and non-state medical institutions in the Republic of Karakalpakstan were distinguished based on the conclusions given by the respondents. In the Republic of Karakalpakstan, respondents were given the opportunity to select several types of medical services in order to determine

the most attractive medical service complex for the development of private medicine in their regions. Entrepreneurs working in the private medical sector of Karakalpakstan emphasized that in order to improve the quality of medical services in the region, to expand the scope of services and to make the population satisfied with medicine, the following problems should be eliminated. In particular, 18 percent of entrepreneurs in their activity “lack and limitation of preferential loans”, 15 percent “lack of land plots for private activities in places”, 19 percent “lack of full study of the existing demand”, 29 percent “lack of medical equipment” and

¹¹ Муаллиф ҳисоб-китоблари



“shortage and high tariffs for their import”, 19 percent of respondents assessed each as “lack of qualified personnel” (Table 7).

Table 7

Respondents' assessment of the problems hindering the activities of subjects in the field of medicine in Karakalpakstan¹²

Obstructive problems	State organizations, in %	Private medical organizations, in %
Shortage and limitation of preferential loans	7%	18%
Problems related to land in the territories	5%	15%
Not fully studying the current demand	35%	11%
Lack of medical equipment and high import tariffs	35%	23%
Lack of qualified personnel	18%	33%

In the course of our research, to the question “Which are the doctors of the narrow field that are consulted for the most diseases in Karakalpakstan?”, the respondents indicated the

following medical professions that are in high demand (Table 8).

Table 8

Respondents' assessment of doctors in a narrow field in high demand in the Republic of Karakalpakstan¹³

Narrow Field Specializations	State organizations, in %	Private medical organizations, in %
Andrologist	-	5
Urologist	11	10
Cardiologist	14	14
Gynecologist	16	18
Surgeon	19	15
Endocrinologist	20	9
Therapist	10	11
Neuropathologist	6	11
Hematologist	4	7

According to Table 8, 14-19 percent of respondents in the state and non-state sectors are gynecologists and surgeons performing minimally invasive surgery, 20 percent are endocrinologists in the public sector, 14 percent are cardiologists, 10-11 percent are therapists and neuropathologists 4-7 percent said that there is a high demand for the medical services of hematologists. Respondents asked "Which new types of medical services do you think will

increase the competitiveness of medicine in the Republic of Karakalpakstan?" 27 percent of respondents “Children’s cardiology services”, 24 percent “Rapid diagnostic services”, 21 percent “All types of plastic surgery and cosmetology services”, 11 percent “ICI –services” and 17 percent “national, Chinese and Indian folk medicine services” answered the question (Table 9).

Table 9

Qoraqalpog‘iston Respublikasida joriy etilishi ictiqbolli bo‘lgan tibbiy xizmat to‘plapining repondentlar tomonidan baholanishi¹⁴

№	Collection of medical services	In %
1	Pediatric cardiology services	27
2	Rapid diagnostic services	24
3	Plastic surgery and cosmetology services	21
4	ICI -services	11
5	National, Chinese and Indian folk medicine services	17

54% of the respondents who took part in the sociological survey answered “to help send young talented doctors to internships abroad to learn more about foreign practices and scientific-

methodical experiences”, 17% answered “extension of tax benefits”. According to the analysis of the main factors affecting the expansion of services in private medical

¹² Муаллиф тадқиқотлари асосида ишлаб чиқилган

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organizations in MMS in Karakalpakstan, 29% of the respondents said that “the rate of benefit to the expansion of medical services is low”, 31% “the population's income is low”, 19% “the existence of a stereotype of applying to the old state medical organizations”, 21% “the intensity of competition due to the concentration of medical organizations mainly in the city of Nukus, the center of the republic” assessed. So, based on the results of sociological surveys, In the Republic of Karakalpakstan, it is necessary to increase the medical culture of the population in order to fully implement the concept of “medicine for human dignity” in the health center. Improving the qualifications of doctors not only in city or district centers, but also in rural areas by training them in leading medical clinics of foreign countries. This will save people's time and money by enhancing primary healthcare even in remote areas. The goal is to reduce the flow of patients to central facilities and provide quality medical services directly on site to increase the competitiveness of medical organizations.

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