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Healthcare System Development in Samarkand Region: Trends and Strategic Measures

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Abstract: The analysis in this research offers an extensive review of healthcare delivery in Samarkand region which is a part of Uzbekistan. The study highlights three principal development aspects which include state policies and financial arrangements together with technological advancements. A major knowledge gap has been closed by evaluating both regional disparities alongside healthcare delivery inefficiencies. Through qualitative methodology the research implements SWOT and PEST examinations to inspect systemic internal and external elements. Progressive research indicates that the country has expanded infrastructure while developing more public-private partnerships together with advancing digital transformation. Service distribution inequalities along with monetary restrictions and staff deficit continue to be major issues affecting the system. The research demonstrates that healthcare sustainability improves with digital health investments and diverse funding and preventive medical care strategies. Surmounting challenges demand serious policy reforms which combine multiple strategies to increase medical service quality and reduce patient facility barriers. Other locations seeking sustainable healthcare development could adopt and adjust the Samarkand region's model for scalable implementation.

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1. Introduction

The healthcare system is an important component of any country's economy, and its effective functioning is closely related to social stability and the quality of life of the population. Therefore, it is important to assess and analyze the healthcare system of the Samarkand region. This analysis considers the state of the region's medical infrastructure, sources of financing, and opportunities for improving the quality of services. Based on the results, the necessary strategic measures and proposals for the development of the healthcare system are formulated [1].

1.1 Factors for the development of the regional healthcare system

This section considers the main factors influencing the development of the healthcare system of Uzbekistan, in particular, the Samarkand region. The main attention is paid to such aspects as state policy, sources of financing, and technological modernization, since it is these factors that are crucial for the successful functioning and sustainable development of the territorial system [2].

1.1.1 State policy and strategic plans

A number of strategic measures and policies are being implemented by the state to develop healthcare in the Samarkand region. In particular, the government has recognized the healthcare sector as a priority area and has adopted relevant decrees and resolutions. These resolutions are aimed at the widespread introduction of public-private partnership (PPP) mechanisms, the active involvement and support of the private sector. As a result, PPP projects for the development of healthcare institutions are expanding - which serves to attract additional investments into the system and implement innovative approaches. National programs aimed at expanding the population's access to medical services and improving the quality of services have also been adopted as part of state policy [3].

1.1.2 Sources of financing

The sustainable development of the healthcare system largely depends on its financial support. Healthcare financing in Uzbekistan is carried out mainly from the state budget and special funds. In the case of the Samarkand region, the state budget is also the main source of healthcare spending, and many medical institutions in the region are financed by the state. The share of private investment is also increasing - investments in private clinics, diagnostic centers and pharmacies serve as an additional financial source for the system. In recent years, international grants and donor programs have also been attracted to regional health projects, which makes it possible to implement some programs at the expense of additional resources. As a result of diversification of funding sources, the stability of the system is increasing, but it remains urgent to improve the financing mechanism and establish effective use of funds [4].

1.1.3 Technological modernization

In the modern era, technological modernization plays a crucial role in the development of the healthcare system. In recent years, significant work has been done in the Samarkand region to upgrade the medical infrastructure and introduce technologies. In particular, special attention is paid to upgrading the material and technical base of hospitals, polyclinics and other medical institutions and providing them with modern medical equipment. Many medical institutions have undergone major repairs, and their diagnostic and treatment capabilities have been expanded with modern equipment [5].

In addition, digitization processes are also accelerating. An electronic healthcare system has been introduced, creating opportunities for electronic recording of medical data, providing telemedicine services and conducting remote consultations. It is planned to increase the efficiency of medical services through the phased introduction of an electronic healthcare system. This, in turn, will facilitate the management of patient data, their online monitoring and analysis, and increase the quality and speed of services. Due to technological innovations, the number of high-tech medical practices (for example, complex surgical operations, endoscopic methods) in the region is also increasing [6].

1.2 Current state of the medical infrastructure of the Samarkand region

This section analyzes the current state of the healthcare system in the Samarkand region. The structure of the medical infrastructure of the region, the role of the state and private sectors, the scope of medical services, and state support programs are considered. As a result of reforms in recent years, significant changes have been observed in the infrastructure [7].

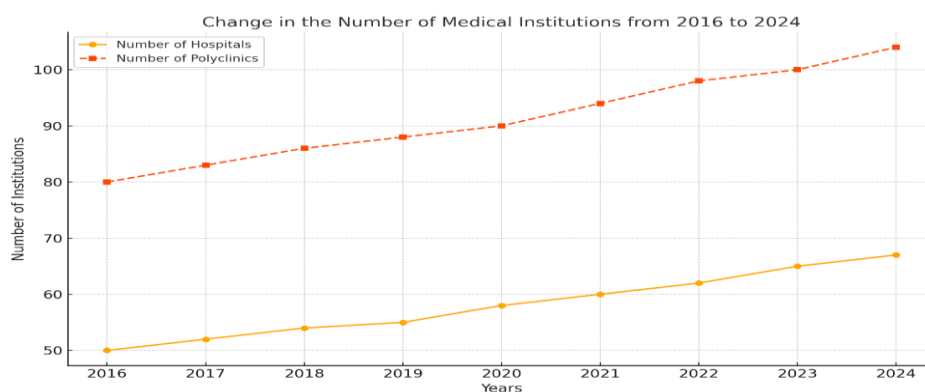
The healthcare system of the Samarkand region consists of several main components: state and private hospitals, outpatient clinics, the pharmaceutical sector, and medical educational institutions. The reforms carried out in the healthcare sector in the region are aimed at providing the population with quality medical services. Based on the relevant resolutions of the President of the Republic of Uzbekistan, the material and technical base of medical institutions in the region is being improved and the level of equipment with modern equipment is being increased [8].

The number of medical institutions is also increasing from year to year. For example, in Samarkand region, the number of hospitals in 2016 was 50, but by 2024 they had reached 67. Similarly, the number of polyclinics increased from 80 to 104. These indicators indicate that the healthcare infrastructure is expanding. However, these institutions are unevenly distributed within the region: medical institutions are concentrated mainly in the city of Samarkand and large districts, and their number and capacity are relatively small in remote rural areas. Below are the main directions that characterize the development of healthcare infrastructure in the region [9].

1.3 Public and private sector participation

The mutual participation of the public and private sectors in the provision of health services in Samarkand region is of great importance. There are many specialized public hospitals, family clinics, city and district hospitals in the region, which provide a wide range of medical services to the population. The public sector mainly covers large hospitals and primary health care institutions, serving a wide range of the population [10].

As shown in Figure 1, the number of medical institutions in Samarkand region increased significantly between 2016 and 2024.



Source: <https://www.ifc.org/en/pressroom/2023/ifc-assists-uzbekistan-to-modernize-healthcare-services-through-public-private-partnership>.

Figure 1. Change in the number of Medical Institutions from 2016 to 2024.

2. Materials and Methods

This study uses qualitative evaluation as its methodology to assess the present healthcare situation while predicting its future growth in the Samarkand region. The research analyzes healthcare data by adopting descriptive methods through the analysis of 2021-2024 official statistics and government reports and healthcare infrastructure records. The research focused on understanding systemic patterns alongside investment patterns and performance results of regional healthcare policy implementation. A comprehensive analysis includes examination of healthcare institutions together with service coverage data along with workforce numbers and public private partnership development. The assessment of internal healthcare system potential as well as external conditions relied on the application of SWOT (Strengths, Weaknesses, Opportunities, Threats) and PEST (Political, Economic, Social, Technological) analytical models. Through these evaluative models healthcare leaders discovered major systemic problems and potential areas for positive transformation. The research examined technological modernization strategies which included electronic health systems and telemedicine services to understand their effects on medical service quality and efficiency. The researcher checked data agreement through the combined analysis of official publications with healthcare policy records together with published results from past regional studies. The research framework brings together healthcare infrastructure development and policy interventions and service diversification strategies with human resources management

approaches to form an integrated assessment system. Results from this methodological evaluation will enable the development of strategic actions that boost financial stability and medical service excellence as well as healthcare accessibility throughout Samarkand.

3. Results and Discussion

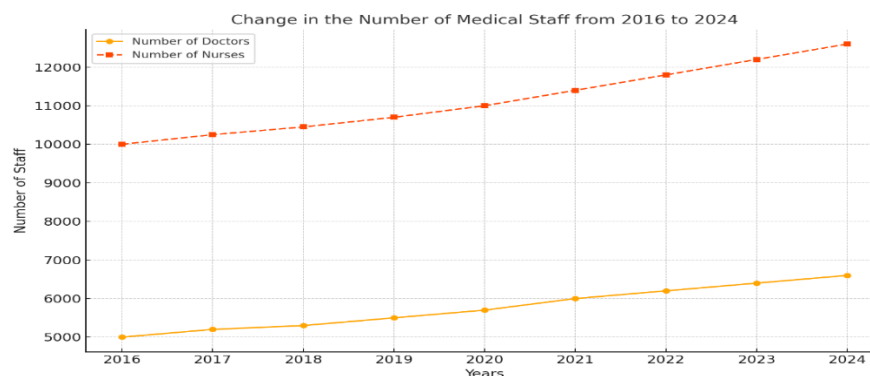
As shown in Table 1, the number of medical institutions in the Samarkand region has grown steadily from 2021 to 2023, indicating a broad expansion of healthcare infrastructure.

Table 1. Number of medical institutions by region.

| name of districts | Healthcare facilities | | | | | | private | | | | | |
|-------------------|-----------------------|------------|------------|-------------|--------------|--------------|------------|------------|------------|-------------|-------------|-------------|
| | Number | | | place | | | number | | | place | | |
| | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 |
| total | 770 | 862 | 977 | 9651 | 10386 | 11204 | 506 | 575 | 660 | 2862 | 3557 | 4300 |
| 1 Samarkand | 296 | 330 | 370 | 2792 | 3242 | 3728 | 270 | 303 | 341 | 1757 | 2207 | 2660 |
| 2 Kattakurgan | 19 | 20 | 22 | 492 | 492 | 509 | 14 | 15 | 16 | 80 | 80 | 80 |
| 3 Akdarya | 21 | 24 | 27 | 325 | 345 | 365 | 7 | 9 | 11 | 30 | 50 | 70 |
| 4 Burungur | 35 | 38 | 43 | 365 | 395 | 420 | 15 | 17 | 21 | 55 | 85 | 100 |
| 5 Jomboy | 26 | 30 | 33 | 380 | 405 | 430 | 11 | 14 | 16 | 50 | 75 | 100 |
| 6 Istikhan | 33 | 37 | 41 | 450 | 480 | 500 | 17 | 20 | 23 | 35 | 65 | 85 |
| 7 Kattakurgan | 35 | 40 | 45 | 410 | 455 | 500 | 20 | 24 | 28 | 80 | 125 | 150 |
| 8 Help | 31 | 34 | 36 | 300 | 325 | 325 | 15 | 17 | 18 | 70 | 95 | 95 |
| 9 Narpay | 19 | 22 | 25 | 410 | 430 | 430 | 9 | 11 | 12 | 45 | 65 | 65 |
| 10 Payarik | 28 | 34 | 41 | 450 | 490 | 530 | 7 | 9 | 11 | 0 | 20 | 45 |
| 11 I'm low | 55 | 60 | 65 | 690 | 690 | 720 | 33 | 35 | 38 | 170 | 170 | 200 |
| 12 Cotton | 38 | 43 | 50 | 368 | 368 | 393 | 20 | 23 | 28 | 90 | 90 | 115 |
| 13 Samarkand | 34 | 36 | 42 | 640 | 660 | 685 | 20 | 21 | 25 | 210 | 210 | 235 |
| 14 Nurabad | 23 | 28 | 37 | 240 | 270 | 300 | 9 | 11 | 16 | 25 | 55 | 85 |
| 15 Urgut | 46 | 52 | 59 | 890 | 890 | 920 | 20 | 24 | 29 | 90 | 90 | 120 |
| 16 Toylok | 31 | 34 | 41 | 449 | 449 | 449 | 19 | 22 | 27 | 75 | 75 | 95 |

At the same time, the number of private medical institutions is also increasing. Private clinics, diagnostic centers and pharmacy chains are becoming an important part of the health care system in the region. The private sector mainly complements the state system in the provision of additional diagnostics and specialized services [11]. The state's incentives to the private sector - including tax breaks and preferential loans - are giving impetus to the development of this sector. As a result, the market share of private clinics and pharmacies is gradually increasing, creating a choice for the population. Nevertheless, the share of the private sector in the region's health care is still limited and there is room for its full use. In the future, one of the important tasks is to strengthen cooperation between the state and the private sector and expand the scope of medical services by increasing partnership projects.

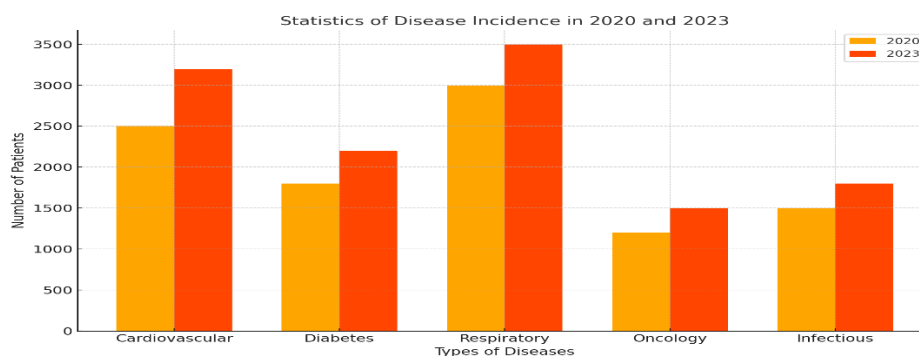
Figure 2 illustrates the parallel growth in medical personnel numbers, reflecting expanded healthcare capacity.



Source: <https://www.ifc.org/en/pressroom/2023/ifc-assists-uzbekistan-to-modernize-healthcare-services-through-public-private-partnership>

Figure 2. Change in the number of medical staff from 2016 to 2024.

According to Figure 3, notable changes in disease incidence were recorded between 2020 and 2023, indicating shifting public health priorities.



Source: <https://www.ifc.org/en/pressroom/2023/ifc-assists-uzbekistan-to-modernize-healthcare-services-through-public-private-partnership>

Figure 3. Statistics of Disease Incidence in 2020 and 2023.

3.1 Diversification of medical services

The medical services infrastructure of Samarkand region is increasingly diversified, offering various levels and types of services. Currently, the region is specialized and branched in the following main areas:

Specialized hospitals: special medical institutions operate in the region in such areas as cardiology, oncology, orthopedics, neurology. These hospitals are staffed by highly qualified specialists in the relevant field, and complex diagnostic and treatment procedures are performed. For example, in recent years, high-tech surgical operations, including transplantation operations, have been introduced in Samarkand region. The fact that 7 liver transplants and 98 kidney transplants were performed in the region in 2024 is one of the achievements in this regard. These indicators indicate that innovative medical services are expanding in the region [12].

Family clinics (primary medical care): the system of providing primary medical and sanitary care for the population is improving. In recent years, the number of family clinics has increased, and their coverage is expanding in rural areas. These clinics perform such functions as preventive examinations of the population, treatment of everyday diseases, and referrals to specialized institutions. Due to the strengthening of the primary link, the possibility of preventing complex diseases and their early detection is increasing.

Ambulance service: In Samarkand region, attention is being paid to improving the material and technical base of the ambulance service. Recently, the number of ambulance stations and brigades has increased, and their fleets are being updated. However, there is still a problem of a shortage of ambulances, and this issue needs to be resolved. Expanding the territorial coverage of the ambulance service and reducing the response time to calls remains a priority.

As a result of such diversification of medical services, the spectrum of services provided to the population is expanding. This, in turn, contributes to the economic sustainability of the healthcare system and an increase in the quality of services. Research shows that as the number and quality of services increase, public-private partnerships are strengthened, and investments in innovative technologies are also increasing.

Diversification of medical services is one of the priority areas of the modern healthcare system, which serves to improve the health of the population and increase economic efficiency. The diversification process is associated with the introduction of innovative technologies in the healthcare sector, increasing the territorial distribution of services and financial sustainability. Reforms in the healthcare system of Samarkand region are also being carried out in this direction. In recent years, the number of high-tech operations in oncology services has increased in Samarkand region. This is due to the development of medical infrastructure financed through public-private partnership. The table below reflects the oncological operations performed in recent years and their economic efficiency [13].

Table 2 illustrates the increasing cost-effectiveness of oncology services, particularly due to the introduction of high-tech procedures.

Table 2. Economic efficiency of oncology services (2023-2024).

| Indicators | 2023 | 2024 | Increase |
|--|------|------|----------|
| Number of high-tech surgeries | — | 5645 | — |
| Minimally invasive endosurgical procedures | 1034 | 1673 | 61.8% |
| Cancer detected by mammography | — | 29 | — |

The increase in such operations will help reduce the costs of long-term treatment of patients and increase the cost-effectiveness of medical services. This trend will help ensure the sustainability of the healthcare system.

The development of cardiology services in the Samarkand region is largely due to the financial support of high-tech operations. The graph below illustrates the growth in the number of cardiology operations.

The improvements in cardiology services, detailed in Table 3, reflect a sharp increase in advanced operations, including open heart and endovascular surgeries.

Table 3. Cost-effectiveness of cardiology services (2024)

| Indications | 2024 |
|------------------------------|------|
| Open heart surgery | 450 |
| Complex heart rhythm surgery | 284 |
| X-ray endovascular surgery | 5174 |

The growth of these surgeries is aimed at solving the problem of the introduction of high technologies and the shortage of qualified personnel. The development of cardiology services can be economically beneficial by creating an effective system of prevention and

treatment of cardiovascular diseases. The widespread introduction of electronic health systems plays an important role in eliminating disparities in the geographical distribution of services. Telemedicine technologies help to increase the efficiency of the healthcare system by reducing the cost of medical services and expanding access to them [14].

The increasing number of high-tech transplantation procedures indicates the innovative development of the healthcare system. The table below shows the main transplantation operations performed.

Table 4 presents data on transplantation services in 2024, showing a rise in life-saving procedures such as liver and kidney transplants.

Table 4. Transplantation services (2024).

| Indications | 2024 |
|-------------------|------|
| Liver Transplant | 7 |
| Kidney Transplant | 98 |

The expansion of transplant services plays an important role in the economic diversification of medical services, as it not only increases medical efficiency, but also reduces long-term health care costs.

Diversification of medical services serves to ensure the economic sustainability of the health system and improve the quality of services. Studies conducted in the Samarkand region show that with an increase in the number and quality of services, public-private sector cooperation, as well as investments in innovative technologies, are also increasing.

3.2 State support programs

Special state support programs play an important role in the development of the regional health system. Special funds and programs have been established in the Samarkand region for the development of the sector, which provide financial and organizational support in the following areas:

Strengthening the material and technical base of medical institutions: The material and technical base of hospitals and polyclinics in the region is being updated with funds allocated from the state budget. In particular, work is underway to purchase new diagnostic equipment, repair and expand existing buildings. This allows the population to receive medical services that meet modern standards.

Improving the skills of medical personnel: Special programs are being implemented to train and retrain specialists working in the healthcare sector. The state finances advanced training courses for doctors and nurses, and talented specialists are provided with internships in leading medical centers, including abroad. This will serve to expand the base of highly qualified personnel in the region in the future.

Development of public-private partnerships: In order to attract the private sector to the healthcare sector, the state is providing incentives (the tax and credit benefits mentioned above). Through this, favorable conditions have been created for large investors to implement projects in the medical sector. As a result, the network of private clinics in the region is expanding and new treatment and diagnostic centers are being opened.

The above infrastructure and systematic approaches are creating the basis for the consistent development of the healthcare sector in the Samarkand region. In the future, it is planned to further expand cooperation between the public and private sectors, as well as increase population coverage by expanding the scope of existing programs. This is

expected to further improve the quality and coverage of medical services for the population of the region [15].

3.3 SWOT and PEST analysis

In order to comprehensively assess the healthcare system of the Samarkand region, a SWOT analysis was conducted to identify its internal strengths and weaknesses, as well as external opportunities and threats, as well as a PEST analysis to study macro-factors affecting the system. The results of these analyses are presented below. SWOT analysis shows the internal state of the regional healthcare system, while PEST analysis reflects its external environment.

3.3.1 SWOT analysis

Strengths:

Constant attention of the state: The constant attention of the state leadership to the development of the healthcare system and the presence of political will to support the sector. This is manifested in the form of state programs and investments.

Modernization of infrastructure: In recent years, the material and technical base of medical institutions has been consistently updated, many hospitals have been renovated and equipped with modern medical equipment. This helps to improve the quality of healthcare services.

Public-private partnership (PPP) projects: The expansion of PPP mechanisms in the healthcare sector and the active participation of the private sector. This creates the basis for the opening of new clinics, attracting additional funds, and offering innovative services.

Weaknesses:

Inadequate financing system: The healthcare financing system has not yet been fully reformed. Although the state budget contribution is high, the efficiency of funding allocation and alternative sources (insurance, local budget) are not sufficiently developed.

Staff shortage: There is a problem of a shortage of qualified medical personnel in the region. Especially in rural areas, there is a high demand for doctors and qualified nurses in narrow specialties, and their motivation and retention are an urgent issue.

Low level of digitalization: Information technologies have not been sufficiently implemented in the healthcare system. Due to the fact that electronic medical records, telemedicine and other digital solutions have not yet been fully implemented, service delivery processes are sometimes slow and inefficient.

Opportunities:

Private sector development: There is a high potential for attracting private investment in the healthcare sector. The opening of new clinics and diagnostic centers will not only expand the range of services, but also create jobs and lead to an increase in quality due to competition.

Regional and international cooperation: There is an opportunity to expand cooperation with other regions and foreign organizations in the field of health care. Foreign investments and grants, participation in international health projects can bring new technologies and knowledge to the region.

Implementation of digital technologies: The quality of services can be improved and the scope of services expanded by introducing modern information and communication technologies into health care. For example, by developing telemedicine services, patients in remote areas will be able to receive remote consultations from qualified specialists.

Threats:

Global iqtisodiy beqarorlik: Dunyo miqyosidagi iqtisodiy o'zgarishlar va inqirozlar sog'liqni saqlash tizimiga salbiy ta'sir ko'rsatishi mumkin. Davlat byudjeti

daromadlarining pasayishi yoki inflyatsiya tibbiyotga ajratiladigan mablag'larning qisqarishiga olib kelishi ehtimoli mavjud.

Talabning tez o'sishi: Aholi sonining ko'payishi va ularning tibbiy xizmatlarga bo'lgan ehtiyojining ortishi tizimga bosim o'tkazadi. Agar infratuzilma va kadrlar soni talabalarga mos ravishda oshmasa, xizmat ko'rsatish sifati pasayishi yoki navbatlar uzunlashishi mumkin.

Raqobatbardoshlik muammolari: Yuqori rivojlangan mamlakatlar yoki hatto respublikaning boshqa hududlari bilan solishtirganda, Samarqand viloyati sog'liqni saqlash tizimi raqobat qilishda qiynalishi mumkin. Innovatsion texnologiyalarni sekin joriy etish va kadrlar oqib ketishi tufayli tizim orqada qolib ketish xavfi bor.

3.3.2 PEST analysis

Political factors (Political):

Decrees and decisions adopted by the government on the development of healthcare have a direct positive impact on the regional system. Due to the political will of the state, the sector has been declared a priority and the necessary reforms are being implemented.

Strategies for the development of public-private partnerships are supported at a high political level. This includes measures such as improving the legal and economic environment for the private sector, approving and protecting partnership projects.

Economic factors (Economic):

Complexity of the financing system: The economics of healthcare are still complex, involving a multi-tiered budget system and several sources. The share of the state budget remains high, which indicates that the economic burden is mainly borne by the state.

Increasing the share of the private sector: In a market economy, the share of private medicine is gradually increasing. The increase in private clinics and pharmacies may change the structure of total healthcare expenditure, increasing the importance of out-of-pocket expenditure and the insurance system.

Social factors:

Demographic growth: The demand for medical services is constantly increasing due to population growth and urbanization. This requires the opening of new clinics and hospitals, as well as the expansion of existing ones.

Promotion of a healthy lifestyle: In recent years, state and public organizations have intensified their efforts to promote a healthy lifestyle among the population. As part of social programs, preventive measures, vaccination campaigns, and initiatives aimed at increasing physical activity are being implemented. This factor is expected to have a positive impact on the health of the population in the long term and reduce the burden on the healthcare system.

Technological factors:

Innovative medical technologies: Plans have been developed throughout the country, including in the Samarkand region, to introduce innovative medical technologies. New treatment methods, high-tech surgical procedures, and advanced diagnostic methods are being gradually implemented.

Development of the electronic health system: The process of integrating information technologies into medicine continues. Electronic medical records, remote consultations (telemedicine), and other digital healthcare solutions are being widely implemented. These technologies allow for improving the quality of medical care, accelerating information exchange and analysis.

Conclusion of SWOT and PEST analyses: The above analyses show that the healthcare system of the Samarkand region is developing based on strong state support and infrastructure modernization. Internal strengths and external opportunities create the basis for further improvement of the system. In particular, strengths such as state political

will, infrastructure renewal and private sector participation, as well as additional investments and opportunities for digitalization, can accelerate the development of the system. However, existing weaknesses - shortcomings in financing, staff shortages and low levels of digitalization - should not be ignored, as well as external threats - economic instability, growing demand and competitiveness problems. Therefore, the next section proposes necessary measures to ensure the sustainable development of the healthcare system.

3.4 Measures to ensure the sustainable development of the healthcare system

Based on the above analysis, measures are recommended in the following strategic areas to further develop and ensure the sustainability of the healthcare system in Samarkand region:

3.4.1 Ensuring financial sustainability

Expanding public-private partnership projects and attracting private investment: It is necessary to implement new PPP projects in the healthcare sector, encourage the opening of private clinics, and attract local and foreign investors to the sector. This will provide additional funding for medicine, easing the burden on the state.

Introduction of new financing mechanisms: It is necessary to develop traditional extra-budgetary financing methods. For example, the possibility of gradually introducing a compulsory health insurance system, the formation of health funds, or the introduction of differential service fees based on the ability of the population to pay can be considered. These methods will increase the sources of funds and increase their targeted spending.

3.4.2 Improving personnel policy

Improving the skills of medical personnel: It is necessary to expand the system of courses and trainings in order to constantly update the skills of doctors and nurses in the region. It is necessary to continue programs for sending talented specialists for internships in advanced medical centers in the republic or abroad. This will allow them to study modern medical achievements and exchange experience.

Attracting and retaining qualified personnel: It is important to attract specialists in narrow specialties that are lacking in the region (for example, anesthesiologists, resuscitators, oncologists, etc.) through the private sector or through special state programs. To do this, they should be offered competitive salaries, housing and social packages. Also, special support measures should be provided to encourage existing personnel to work in remote areas (for example, additional payments to workers in rural medical stations).

3.4.3 Development of medical infrastructure

Modernization of hospitals: It is necessary to continue the reconstruction of regional hospitals, further strengthening their material and technical base. In particular, it is necessary to gradually upgrade district hospitals that need major repairs, equip them with modern diagnostic and treatment equipment. This will not only increase existing capacities, but also create the basis for high-quality treatment of patients on site.

Expansion of the network of private clinics: It is necessary to create more favorable conditions for the private sector and encourage the opening of new clinics and diagnostic centers in the region. For this purpose, measures such as allocating land, providing tax benefits, and simplifying the licensing procedures can be taken. As a result, alternative and additional institutions that meet the population's needs for various medical services will increase.

Development of high-tech services in regional centers: It is advisable to establish complex services such as cardiac surgery, oncology surgery, and organ transplantation, which have already been established in the Samarkand region, not only in the regional center, but also in other large cities of the region. Creating a network of regional specialized

centers will allow residents to receive high-tech assistance in their immediate vicinity, without having to travel long distances.

3.4.4 Widespread introduction of information technologies

Full transition to an electronic health system: It is necessary to accelerate the implementation of an electronic documentation system in regional health departments and institutions. All polyclinics and hospitals should switch to maintaining electronic medical records of patients, and a single database should be created for the exchange of information between doctors. This will speed up the treatment process, reduce paperwork, and prevent errors.

Expansion of telemedicine and remote services: Widespread introduction of telemedicine services - will allow connecting patients in remote villages to qualified doctors in the regional center and even the capital. Remote consultations, diagnostics (for example, remote interpretation of X-ray images), and even some therapeutic services should be established. This is especially relevant in areas with difficult transportation.

Use of artificial intelligence and analytical systems: The introduction of artificial intelligence capabilities (for example, analytical programs for early detection of diseases, models for predicting epidemic situations) in the healthcare system is a promising direction. This will help in decision-making and contribute to the effective allocation of resources.

3.4.5 Strengthening preventive measures

Promotion of a healthy lifestyle: It is necessary to consistently continue the work on the widespread promotion of a healthy lifestyle among the population. Educational campaigns should be carried out through the media, educational institutions and primary health care on topics such as proper nutrition, physical activity, and giving up harmful habits. If a healthy lifestyle is promoted more widely, the possibility of preventing diseases in the future will increase.

Expansion of prevention and screening programs: It is necessary to expand the establishment of regular preventive medical examinations and screening programs in the region. For example, early detection programs for cardiovascular diseases, oncological diseases or diabetes should be organized in high-risk groups. At the same time, it is necessary to increase vaccination coverage and strengthen important sanitary measures. These measures will prevent diseases, allow them to be detected at an early stage and treated more easily, and reduce the burden on the system.

By implementing the above strategic measures, it will be possible to ensure the sustainable development of the healthcare system in the Samarkand region, increase the population's access to quality medical services, and strengthen the system's resilience to specific threats.

4. Conclusion

According to the results of this analysis, although the healthcare system of Samarkand region has achieved significant development in recent years, there are important areas for its further improvement. The strengths of the system - state support, infrastructure renewal and increasing private sector participation - create a solid foundation for the effective use of existing opportunities. At the same time, the identified weaknesses (old financing methods, staff shortage, low level of digitalization) and external threats (economic volatility, demand growth, competitive pressure) are issues that require further attention.

In the process of analysis, the current state and development prospects of the system were studied using SWOT and PEST analyses, and a number of specific proposals were made above. The most priority recommendations can be summarized as follows:

Financial reforms and investments: Reforming the healthcare financing system, including the introduction of mandatory medical insurance, actively attracting private investment in the sector, and expanding PPP projects. This will ensure the financial stability of the system and improve the scope and quality of services.

Increasing human resource capacity: Improving the system of training and advanced training of medical personnel, measures to retain specialists in the region and attract them to remote areas. Without a stable concentration of highly qualified personnel, no reform will be effective.

Infrastructure and technology development: Modernizing existing hospitals and clinics, opening new medical centers, updating medical equipment. Also, widely introducing information technologies and innovative solutions (e-health, telemedicine, artificial intelligence) into healthcare. This will not only increase the quality and speed of service provision, but also increase the efficiency of the system in the long term.

Prevention and healthy lifestyle: Strengthening preventive measures aimed at preventing diseases, encouraging the population to adhere to a healthy lifestyle. Analysis has confirmed that investing in prevention will bring significant economic and social benefits in the long term, preventing unnecessary costs. In conclusion, it can be said that a comprehensive approach and continuous reforms are necessary for the further development of the healthcare system in Samarkand region. It is expected that the phased implementation of the above recommendations will bring the healthcare system of the region to a new level. This, in turn, will serve such lofty goals as strengthening the health of the population, extending life expectancy, and increasing social well-being. The experience of the region will serve as an example for other regions of the country in the future and will be of great importance in achieving sustainable development in the healthcare sector.

REFERENCES

- [1] World Health Organization, "Transforming the health system in Uzbekistan: two-year implementation review," 2023. [Online]. Available: <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7859-47627-70163>.
- [2] World Bank, "Uzbekistan Health System Improvement Project," 2020. [Online]. Available: <https://documents1.worldbank.org/curated/en/207551599142919624/pdf/Uzbekistan-Health-System-Improvement-Project.pdf>.
- [3] Wikipedia, "Uzbekistan and the World Bank," 2024. [Online]. Available: https://en.wikipedia.org/wiki/Uzbekistan_and_the_World_Bank.
- [4] United Nations Office for Project Services, "Advancing healthcare, safety and equality in Uzbekistan," Dec. 2024. [Online]. Available: <https://www.unops.org/news-and-stories/news/advancing-healthcare-safety-and-equality-in-uzbekistan>.
- [5] United Nations in Uzbekistan, "World Health Day 2024: how UNOPS ensures 'My Health, My Right' through its projects in Uzbekistan," Apr. 2024. [Online]. Available: <https://uzbekistan.un.org/en/265326-world-health-day-2024-how-unops-ensures-my-health-my-right-through-its-projects-uzbekistan>.
- [6] Republic of Uzbekistan State Committee on Statistics, "Main statistical indicators of health care in the Republic of Uzbekistan," Jan. 2024. [Online]. Available: https://stat.uz/img/eng_zdravookhraneniya_2024-ch_p65538.pdf.
- [7] P4H Network, "Key Voices: State Health Insurance Fund on how insurance is rolled out in the Samarkand region," 2024. [Online]. Available: <https://p4h.world/en/news/key-voices-state-health-insurance-fund-on-how-insurance-is-rolled-out-in-the-samarkand-region/>.
- [8] Organization of Turkic States, "The 2nd Turkic World Medical Congress and Uzbekistan-Türkiye Health Forum convened in Samarkand," Oct. 2023. [Online]. Available: <https://www.turkicstates.org/en/news/the-2nd-turkic-world-medical-congress-and-uzbekistan-turkiye-health-forum-convened-in-samarkand>.

-
- [9] International Finance Corporation, "IFC Assists Uzbekistan to Modernize Healthcare Services Through Public-Private Partnership," May 2023. [Online]. Available: <https://www.ifc.org/en/pressroom/2023/ifc-assists-uzbekistan-to-modernize-healthcare-services-through-public-private-partnership>.
 - [10] Inter-Parliamentary Union, "Uzbekistan Parliament prioritizes the nation's health," Jul. 2024. [Online]. Available: <https://www.ipu.org/news/case-studies/2024-07/uzbekistan-parliament-prioritizes-nations-health>.
 - [11] Government of Uzbekistan, "Digitization of healthcare will accelerate," 2024. [Online]. Available: <https://davlat.uz/en/toshkent/news/view/4609>.
 - [12] Federal Ministry for Economic Cooperation and Development, "Modernising and expanding healthcare," 2024. [Online]. Available: <https://www.bmz.de/en/countries/uzbekistan/core-area-health-social-protection-and-population-policy-56052>.
 - [13] Civitta, "Uzbekistan's Ministry of Health — Advancing Digital Healthcare Transformation," 2024. [Online]. Available: <https://civitta.com/our-work/uzbekistans-ministry-of-health-advancing-digital-healthcare-transformation/>.
 - [14] Asian Development Bank, "Primary Health Care Improvement Project," 2024. [Online]. Available: <https://www.adb.org/projects/50190-002/main>.
 - [15] A. et al., "COVID-19 in Central Asia: Uzbekistan's new approach to quarantine measures," *Int. J. Infect. Dis.*, vol. 104, pp. 302–303, 2021, doi: 10.1016/j.ijid.2021.01.065.