https://doi.org/10.54500/2790-1203-2024-4-124-68-73
UDC 614.2; 616-006
IRSTI 76.13; 76.29.49; 76.75.31

Brief communication

Monitoring of organizational processes aimed at improving the quality of cancer care

Bekzat Turmakhanbetov [1], Zakira Kerimbayeva [2], Reeti Debnath [3], Gulnara Tokmurziyeva [4]

[1] PhD-doctoral student of the Kazakhstan Medical University, Higher School of Public Health, Almaty, Kazakhstan. E-mail: bmaratuly@gmail.com
[2] Professor of the Department of Public Health and Management, Astana Medical University, Astana, Kazakhstan. E-mail: zakira.k@mail.ru
[3] National Coordinator of Public Health Programs, Maulana Abul Kalam Azad University of Technology, Kolkata, West Bengal, India. E-mail: reeti.debnath@nshm.com
[4] Deputy Director General for Science, Masgut Aikimbayev National Research Center for Especially Dangerous Infections, Almaty, Kazakhstan. E-mail: tokmurziyeva@yandex.ru

Abstract

Objective. Analysis of monitoring quality and volume of cancer care, focusing on three key aspects: quality of health services, organizational measures, and patient perceptions of quality.

Methods. The studies are descriptive and questionnaires were conducted for those who underwent inpatient treatment. We studied reporting forms on defective cases and control data on volume and quality from 36 medical organizations.

Results. In the provision of medical care, defects were found in 7631 cases (2.6%), the most common violation is "unreasonable deviation of treatment and diagnostic measures and the provision of services from standards and rules in the field of health care/clinical protocols" - 53%. In second place is "incorrect registration of accounting and reporting documentation and data entry into the information system" - 8%, and in third - "unreasonable overestimation of the volume of treatment" - 12.6%. The psychosocial aspect of treatment is practically absent, since the proportion of consultations with a psychologist and a sociologist among the treated cases does not exceed 1%. The results of the survey showed that patients highly appreciate the behavior and professionalism of medical personnel, as well as the quality of treatment provided. The least positive aspects are: information on side effects, rehabilitation services, continuity between sectors and professional qualifications in primary care.

Conclusion. Monitoring is a necessary but insufficient condition to ensure high quality patient care. Achieving this goal requires management attention, professional engagement and the allocation of resources to the implementation of modern technologies, including artificial intelligence, machine learning and other innovative approaches.

Keywords: oncology, organization of care, public health, quality of care, monitoring.

Corresponding author: Bekzat Turmakhanbetov, PhD-doctoral student of the Kazakhstan Medical University, Higher School of Public Health, Almaty, Kazakhstan.
Postal code: 050060
Address: Kazakhstan, Almaty, St. Utepova 19 A
Phone: +7 (727) 377-33-30
E-mail: bmaratuly@gmail.com

2024; 4 (124): 68-73
Recieved: 21-11-2024
Accepted: 19-12-2024

Introduction

Cancer is the leading cause of mortality both worldwide and in the Republic of Kazakhstan [1]. According to the World Health Organization (WHO), in 2022 oncological diseases led to 9.7 million deaths around the world, of which 13.8 thousand are in Kazakhstan [2, 3].

About 35 thousand new cases of cancer are registered in the republic annually, which is equivalent to the fact that every fifth resident of the country faces this diagnosis during his life. The increase in cases is partly due to an increase in life expectancy, which is accompanied by an increase in the number of people surviving the disease. This, in turn, leads to significant human, social and economic costs for treatment, care, rehabilitation and palliative care [4, 5].

To improve the quality of oncological medical care, it is necessary to monitor it, which shows many scientific works.

In the article by Bilimoria K.Y. et al. [6], 26 indicators were selected to monitor the quality of cancer care, aimed at assessing the structure (n = 1), process (n = 24) and results (n = 1). Compliance rates ranged from 11.8% to 96.5% at the patient level and from 3.7% to 83.0% at the hospital level. In more than half of the hospitals, individual performance remained at or below 50%. At the same time, diagnostic indicators were performed with a higher level of compliance compared to treatment indicators.These data suggest that the rate of compliance with quality standards for cancer care in the United States is about 50%.

The study by D'Amico T.A. et al. Presents 22 indicators of the quality of cancer care. The analysis showed that for some of these indicators there is not enough data for their complete assessment [7].

The Ziukov O.L. study includes an analysis of the activities of the oncoproctology department of the city hospital before and after the implementation of the quality management program for medical care. The use of variational statistics methods confirmed the positive impact of the program on the use of bed capacity and on the improvement of key indicators, such as the incidence of postoperative complications [8].

The current situation emphasizes the need for constant monitoring of the quality of the health care system in the field of oncology, especially considering that the causes of higher mortality from some types of cancer in Kazakhstan compared to other countries are not fully understood. This article is intended to deepen the understanding of the organizational aspects of monitoring the quality of cancer care and contribute to the development of effective measures to improve it.

The aim of this study is to analyze the monitoring of the quality and volume of cancer care, focusing on three key aspects: the quality of medical services, organizational measures and the perception of quality by patients.

Material and methods

To assess the effectiveness of organizational measures to monitor the quality of cancer care, information systems of the Ministry of Health of the Republic of Kazakhstan were used, including the «Quality Management System for Medical Care», «Electronic Register of Cancer Patients», «Unified Payment System» and medical information systems that track the patient's path from the moment of suspicion of cancer.

The work covers the period from 2021 to 2023. To assess the quality of medical care, reporting forms on defective cases and control data on volume and quality from 36 medical organizations, including two research institutes, were used.

In addition, 47 outpatient medical records from the patient information system registered during the specified period were randomly selected to monitor the waiting time for the start of treatment of cancer patients. Thus, during the research work, medical records of inpatients and outpatients (forms No. 001/y and No. 052/y) were analyzed, which made it possible to assess the volume and quality of medical care provided.

The study included patients who received care within the guaranteed volume of free medical care, and the data were grouped by type of oncological diseases (for example, cancer of the genitourinary system, breast, lungs, cervix, stomach and esophagus, colorectal cancer, cancer of the lymphatic and hematopoietic systems), classified by ICD-10.

To assess the perception of the quality of medical services, a survey of patients who underwent inpatient treatment was carried out. The questionnaire was developed by the Kazakhstan Medical University «KSPH» and approved by the local ethical commission (protocol number 04-09-26 dated February 4, 2022). Informed consent was obtained from all survey participants.

The study method is descriptive; at the same time, personal data of patients were not stored in databases, which ensures confidentiality.

The study analyzed data to determine various aspects of quality of care, including expert opinion and patient perceptions. Medical quality is a set of characteristics of medical services determined by compliance with the standards of clinical practice and effectiveness in achieving therapeutic goals. Organizational quality - the degree of effectiveness of the processes of planning and coordination of medical activities, ensuring the timeliness and optimal organization of medical care. Patient perceived quality - a patient's assessment of the quality of care based on their individual experiences and expectations.

Results

The analysis showed that qualified personnel are needed to provide quality medical care. In 2022, the number of oncologists increased by 2.9% (from 482 to 496), while the number of radiologists decreased by 4% (from 101 to 97 people). Nevertheless, the shortage of specialists remains and amounts to 106 doctors, and excluding part-time workers - up to 179 people. The overall level of provision of oncologists and radiologists in the country remains stable and amounts to 0.25 and 0.05 specialists per 10 thousand population, respectively.

According to the data obtained for the period from 2021 to 2023, defects in the provision of medical care were found in 7631 cases (2.6%), of which 76% are potential defects identified by information systems. The number of treated cases during the study period was 289,794.

In the course of monitoring the quality of medical care, the most common violation is «unreasonable deviation of medical and diagnostic measures and services from standards and rules in the field of health care/clinical protocols» - 53%. In second place is «incorrect registration of accounting and reporting documentation and data entry into the information system» - 8%, and in third – «unreasonable overestimation of the volume of treatment» - 12.6%.

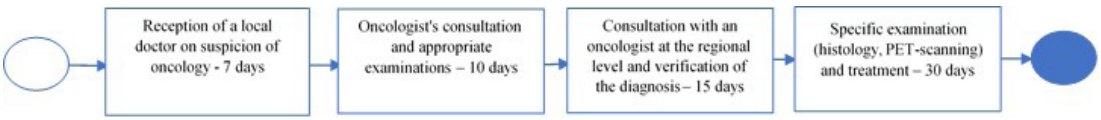
Table 1 - Characteristics of the applied defects based on the results of monitoring the quality and volume of oncological care

№	Name of the defect	Quantity	%
1	Unjustified deviation of medical and diagnostic measures, provision of services from standards, rules in the field of healthcare/clinical protocols	4018	52,7
2	Incorrect registration of accounting and reporting documentation, data entry into the information system	2130	27,9
3	Unjustified overestimation of the volume of medical care/services provided	960	12,6
4	Unjustified hospitalization	310	4,1
5	Unsubstantiated rehospitalization (per calendar month for the same disease)	44	0,6
6	Unconfirmed medical case (services)	1	0,01
7	Substantiated complaints about the quality of medical services	6	0,1
8	Death preventable at hospital/health centre level	11	0,1
9	Clinical and morphological diagnosis discrepancies	2	0,01
10	Services of high-tech medical services and according to the list of medical services not included in the contract	149	2
	In total	7631	100%

At the same time, during the provision of oncological care, there are cases of unjustified hospitalization, unjustified re-hospitalization within one month, preventable death, discrepancies between clinical and morphological diagnoses, the provision of oncological care in the absence of contracts for this type of medical services, substantiated complaints about the quality of services provided and unconfirmed cases of medical care (services), which may indicate falsification of medical documentation.

The existing standards for monitoring the quality of medical care provided are mainly focused on the medical and technical aspect of treatment in hospitals, while the psychosocial aspect is practically absent. For example, the proportion of consultations with a psychologist and sociologist among treated cases does not exceed 1%. In addition, information systems used for quality control are often overflowing with ineffective format and logical checks: of the identified potential defects registered in the information system, only 3.4% are confirmed by experts.

Figure 1 - The business process of providing cancer care to patients with suspected cancer



Monitoring the quality and volume of medical services is of a medical and economic nature, that is, the identification of defects is considered as an economic measure of influence on a medical organization, which in turn can worsen its economic stability and lead to accounts payable.

As part of the research work, cases of incorrect coding of patients are also observed: often somatic diseases are encoded as malignant neoplasms, which means that the patient is registered for oncology, although during hospitalization he has a predominant clinical picture of infectious diseases due to a decrease in immunity. When monitoring treatment, there is no specialized treatment for cancer.

In addition, it is necessary to emphasize the lack of a systematic assessment of the quality of rehabilitation and rehabilitation treatment carried out at regional levels.

The Electronic Register of Cancer Patients (ERCP) is used to regularly track the implementation of standard programs for cancer patients and is the main source of data for monitoring organizational quality. However, there are other data sources, including clinical protocols and treatments, that may be of limited use in assessing this quality category.

Studies indicating the growth of tumors, relapses and, therefore, patient survival, became the basis for the creation of a comprehensive plan to combat cancer in the Republic of Kazakhstan for 2023-2027. This plan promotes the establishment of standard cancer management programs, including waiting time monitoring.

According to the standards of oncological care, the waiting time for the start of treatment of cancer patients should be from 7 to 15 days from the moment of initial treatment (Figure 1). However, as part of the research work, 47 outpatient charts were analyzed, in which the average diagnosis time was 22 days, indicating low organization on the part of primary health care.

Within the framework of this analysis, it can be concluded that there are no automated waiting time monitoring defect registers at the primary health care level. Thus, at the moment, the data in ERCP do not always meet the quality requirements, and the estimate of waiting time is an exception. Nevertheless, ERCP is able to cope with the task of monitoring with a significant improvement in the quality of data recording, such as the date of initial access, etc.

In addition, a survey of patients was conducted to determine the quality of medical services in terms of their perception.

The questionnaire was organized to assess the perception of patients undergoing treatment in hospitals. This study provides a snapshot of data based

on post-discharge questionnaires. The results of the study showed that patients highly appreciate the behavior and professionalism of medical personnel, as well as the quality of treatment provided. The least positive aspects are: information on side effects, rehabilitation services, continuity between sectors and professional qualifications in primary care.

Discussion

In addition to the Comprehensive Plan for the Fight against Cancer in the Republic of Kazakhstan for 2023-2027, continuous monitoring of all efforts in this area is required to achieve compliance of oncological medical care with the highest international standards. However, the conditions for full monitoring have not yet been fully created. Despite significant improvements in some areas, such as the emphasis on the quality of cancer care at the inpatient level and improved registration in ERCP, monitoring of cancer treatment processes remains fragmented both by stage and by quality categories. The hospital phase of treatment, as mentioned earlier, is part of the process, where monitoring is carried out most systematically, while medical care in primary health organizations does not cover all stages. This hypothesis is consistent with the conclusions made by D.A. Andreev [9] when analyzing data on monitoring the quality of cancer care in Russia.

Monitoring of medical care outside hospitals remains insufficient, while the smallest amount of monitoring is carried out in primary medical practice, that is, in polyclinics. This leads to a lack of data on quality in the initial stages - from the appearance of the first symptoms to diagnosis and the post-hospital period. Given the fact that morbidity and survival continue to grow, this lack of monitoring is becoming an increasingly serious problem for improving quality.

The main challenges for effective monitoring are to provide timely, relevant, reliable and reliable data on the entire treatment process, as well as to establish links between three categories (polyclinic-hospital-rehabilitation) to form a holistic picture of the quality of cancer treatment. It is necessary to collect data that allows you to create a general view of all three quality parameters within the entire process or the entire oncological sphere. The need to ensure interaction between medical organizations in the provision of oncological rehabilitation care is confirmed in the scientific work of Fisher M.I. [10].

According to UN, Kazakhstan ranks 24th in the world ranking for the development of electronic systems, including electronic government. Despite the huge volume of registered cancer data, it is still difficult to answer relatively simple questions about quality. For example, it is impossible to accurately determine the waiting time from the moment of referral from a doctor to the start of treatment in the hospital. It is also unacceptable that expensive and lengthy research is required to obtain this information.

At key stages of the treatment process, it is necessary to continuously collect high-quality and significant data, including the patient's point of view. This implies the need for more careful data recording in the primary sector, while in the hospital sector the number of additional registrations may be limited. Current registration practices should be reviewed to ensure emphasis on the main aspects of the process and avoid duplication of work. This will require prioritizing documentation tasks, better integrating different systems, and improving data quality. Consider strengthening reporting with data scientists to capture and ensure information quality.

This hypothesis is consistent with the conclusions of the scientific works of Indonesian researchers Purwono Purwono and co-authors [11], which emphasize that the quality control cycle should be completed not only by recording and storing data in information systems, but also by processing them and then presenting them in a clinically relevant form for use in medical organizations.

Conclusion

Thus, data and monitoring represent necessary but insufficient conditions to ensure high quality treatment of patients. Achieving this goal requires management attention, professional engagement and the allocation of resources to the implementation of modern technologies, including artificial intelligence, machine learning and other innovative approaches. In addition, it is important to note that at the moment there are no specific prescriptions at the local level to eliminate the identified shortcomings in the quality of cancer care.

Conflict of interests. The authors declare that there is no conflict of interest.

Acknowledgments. The authors express their gratitude to the patients who participated in the survey.

Funding. This study did not receive any specific grants from funding organizations in the public, commercial or non-profit sectors.

Author contribution. Conceptualization, research, preparation of the original project, visualization – B.T.; Methodology, data processing, author supervision, project administration – Z.K.; writing-review and editing – R.D.; investigation, writing-review and editing – G.T.

References

1. Турмаханбетов Б.М., Керимбаева З.А., Самарова У.С., Токмурзиева Г.Ж. Распространённость злокачественных опухолей верхних дыхательных путей и причины возникновения //Наука и здравоохранение. - 2022. - 6(24). - С. 78-85. [Crossref]

Turmakhanbetov B.M., Kerimbaeva Z.A., Samarova U.S., Tokmurzieva G.Zh. Rasprostranennost' zlokachestvennykh opukholey verkhnikh dykhatel'nykh putey i prichiny vozniknoveniya (The prevalence of malignant tumors of the upper respiratory tract and the causes of their occurrence) [in Russian]. Nauka i Zdravookhranenie, 2022; 6(24): 78-85. [Crossref]

2. Global cancer burden growing, amidst mounting need for services. News WHO. 2024. [Google Scholar]

3. Indicators of the oncology service of the Republic of Kazakhstan, 2021 (statistical and analytical materials). «Kazakh institute of oncology and radiology» JSC. Almaty: 2022. [Crossref]

4. Turmakhanbetov B.M., Tokmurzieva G.Z., Kerimbaeva Z.A., Debnath R. et al. Incidence of malignant neoplasms and organizational aspects of cancer care in the Republic of Kazakhstan. Clinical Epidemiology and Global Health, 2024; 30: 101838. [Crossref]

5. Turmakhanbetov B.M., Tokmurzieva G.Zh., Kerimbayeva Z.A., Akhmadiyeva K.E. Analysis of morbidity and mortality

from malignant new growths. Biomedicine, 2018. 38(3); 413-422 [Google Scholar]

6. Bilimoria K.Y., Raval M.V., Bentrem D.J., Wayne J.D. et al. National assessment of melanoma care using formally developed quality indicators. J Clin Oncology, 2009; 27(32): 5445-5451. [Crossref]

7. D'Amico T.A., Bandini L.A., Balch A., Benson A.B. et al. Quality Measurement in Cancer Care: A Review and Endorsement of High-Impact Measures and Concepts. J Natl Compr Canc Network, 2020; 18(3): 250-259. [Google Scholar]

8. Ziukov OL. [Efficiency of introduction of the program for quality management of medical care of oncological patients]. Lik Sprava, 2008; (1-2): 119-123. [Google Scholar]

9. Андреев Д.А., Завьялов А.А. Особенности проведения контроля качества и безопасности медицинской деятельности в онкологии // Здравоохранение РФ. - 2021. - Т. 65. - №5. - С. 492-497. [Google Scholar]

Andreev D.A., Zav`yalov A.A. Osobennosti provedeniya kontrolya kachestva i bezopasnosti medicinskoj deyatel`nosti v onkologii (Features of quality control and safety of medical activities in oncology) [in Russian]. Zdravooxranenie RF, 2021; 6(5): 492-497. [Google Scholar]

10. Fisher M.I., Morris G.S. Rehabilitation Practices Not Maximized. Rehabilitation Oncology, 2024; 42(2): 59-60. [Crossref]

11. Purwono P., Islahati A.K., Sari Y., Faroek D. et al. Challenges and Opportunities: Integration of Data Science in Cancer Research Through A Literature Review Approach, 2023; 1: 128-141. [Google Scholar]

Онкологиялық көмектің сапасын жақсартуға бағытталған ұйымдастыру процестерінің мониторингі

Тұрмаханбетов Б.М. [1], Керімбаева З.А. [2], Reeti Debnath [3], Токмурзиева Г.Ж. [4]

[1] Қазақстан медицина университетінің PHd-докторанты, Қоғамдық денсаулық сақтаудың жоғары мектебі, Алматы, Қазақстан. E-mail: bmaratuly@gmail.com

[2] Қоғамдық денсаулық сақтау және менеджмент кафедрасының профессоры, Астана медицина университеті, Астана, Қазақстан. E-mail: zakira.k@mail.ru

[3] Қоғамдық денсаулық сақтау бағдарламаларының ұлттық үйлестірушісі, Маулана Абул Калам Азад технологиялық университеті, Калькутта, Батыс Бенгалия, Үндістан. E-mail: reeti.debnath@nshm.com

[4] Директордың ғылым жөніндегі орынбасары, Масғұт Айқымбаев атындағы аса қауіпті инфекциялар Ұлттық зерттеу орталығы, Алматы, Қазақстан. E-mail: tokmurziyeva@yandex.ru

Түйіндеме

Қазақстанда қатерлі ісік ауруының өсуі және қатерлі ісіктің кейбір түрлерінен болатын жоғары өлім-жітім себептерін анықтау және жою үшін онкологиялық көмектің сапасына мониторингті күшейтуді талап етеді.

Зерттеудің мақсаты. Үш негізгі аспектіге (медициналық қызметтердің сапасы, ұйымдастырушылық шаралар және пациенттердің сапаны қабылдауы) назар аудара отырып, онкологиялық көмектің сапасы мен көлемін бақылау нәтижелерін талдау.

Әдісі. Зерттеулер сипаттамалық болып табылады және стационарлық емдеуден өткендер үшін сауалнамалар жүргізілді. Біз 36 медициналық ұйымның ақаулы істер бойынша есеп беру нысандарын және көлемі мен сапасы бойынша бақылау деректерін зерттедік.

Нәтижелер. Медициналық көмек көрсету кезінде ақаулар 7631 жағдайда анықталды (2,6%), ең көп таралған бұзушылық «емдеу-диагностикалық іс - шаралардың және денсаулық сақтау саласындағы стандарттар мен ережелерден/клиникалық хаттамалардан қызметтер көрсетудің негізсіз ауытқуы» болып табылады-53%. Екінші орында – «бухгалтерлік және есептік құжаттаманы дұрыс ресімдемеу және деректерді ақпараттық жүйеге енгізу» - 8%, ал үшінші орында – «емдеу көлемін негізсіз арттыру» - 12,6%. Емдеудің психоәлеуметтік аспектісі іс жүзінде жоқ, өйткені емделген жағдайлар арасында психологпен және әлеуметтанушымен кеңесу үлесі 1% - дан аспайды. Сауалнама нәтижелері пациенттердің медициналық қызметкерлердің мінез-құлқы мен кәсібилігін, сондай-ақ ұсынылатын емнің сапасын жоғары бағалайтынын көрсетті. Ең аз оң аспектілер: жаңама әсерлер туралы ақпарат, оңалту қызметтері, секторлар арасындағы сабақтастық және алғашқы медициналық-санитарлық көмек көрсетудегі кәсіби біліктілік.

Қорытынды. Мониторинг пациенттерге қызмет көрсетудің жоғары сапасын қамтамасыз ету үшін қажетті, бірақ жеткіліксіз шарт болып табылады. Бұл мақсатқа жету басшылықтың назарын, кәсіби қатысуды және жасанды интеллект, машиналық оқыту және басқа да инновациялық тәсілдерді қоса алғанда, заманауи технологияларды енгізу үшін ресурстарды бөлуді талап етеді.

Түйінді сөздер: онкология, медициналық көмекті ұйымдастыру, қоғамдық денсаулық сақтау, медициналық көмектің сапасы, мониторинг.

Мониторинг организационных процессов, направленных на улучшение качества онкологической помощи

Турмаханбетов Б.М. [1], Керимбаева З.А. [2], Reeti Debnath [3], Токмурзиева Г.Ж. [4]

[1] PhD-докторант Казахстанского медицинского университета, Высшая школа общественного здравоохранения, Алматы, Казахстан. E-mail: bmaratuly@gmail.com

[2] Профессор кафедры общественного здравоохранения и менеджмента, Медицинский университет Астана, Астана, Казахстан. E-mail: zakira.k@mail.ru

[3] Национальный координатор программ общественного здравоохранения, Технологический университет Мауланы Абул Калам Азад, Калькутта, Западная Бенгалия, Индия. E-mail: reeti.debnath@nshm.com

[4] Заместитель генерального директора по науке, Национальный исследовательский центр особо опасных инфекций имени Масгута Айкимбаева, Алматы, Казахстан. E-mail: tokmurziyeva@yandex.ru

Резюме

Рост заболеваемости ЗНО и высокая смертность от некоторых видов рака в Казахстане требуют усиления мониторинга качества онкологической помощи для выявления и устранения причин.

Цель исследования: проанализировать результаты мониторинга качества и объема онкологической помощи, сосредоточив внимание на трех ключевых аспектах: качестве медицинских услуг, организационных мерах и восприятии качества пациентами.

Методы. Исследования носят описательный характер, и для тех, кто проходил стационарное лечение, были проведены анкетирования. Мы изучили формы отчетности по бракованным случаям и контрольные данные по объему и качеству от 36 медицинских организаций.

Результаты. При оказании медицинской помощи дефекты были выявлены в 7631 случае (2,6%), наиболее распространенным нарушением является «необоснованное отклонение лечебно-диагностических мероприятий и предоставления услуг от стандартов и правил в области здравоохранения/клинических протоколов» - 53%. На втором месте находится «неправильное оформление бухгалтерской и отчетной документации и ввод данных в информационную систему» - 8%, а на третьем – «необоснованное завышение объема лечения» - 12,6%. Психосоциальный аспект лечения практически отсутствует, поскольку доля консультаций с психологом и социологом среди пролеченных случаев не превышает 1%. Результаты опроса показали, что пациенты высоко оценивают поведение и профессионализм медицинского персонала, а также качество предоставляемого лечения. Наименее позитивными аспектами являются: информация о побочных эффектах, реабилитационные услуги, преемственность между секторами и профессиональная квалификация в первичной медико-санитарной помощи.

Выводы. Мониторинг является необходимым, но недостаточным условием для обеспечения высокого качества обслуживания пациентов. Достижение этой цели требует внимания руководства, профессионального участия и выделения ресурсов на внедрение современных технологий, включая искусственный интеллект, машинное обучение и другие инновационные подходы.

Ключевые слова: онкология, организация медицинской помощи, общественное здравоохранение, качество медицинской помощи, мониторинг.