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Современные подходы к привлечению кадров в медицинские организации сельской местности на примере Воронежской области

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АННОТАЦИЯ

Введение. Актуальность данного исследования обусловлена необходимостью поиска эффективного решения проблем обеспечения медицинскими кадрами сельского здравоохранения с целью повышения доступности и качества медицинской помощи населению.

Цель. Научно обосновать и разработать предложения по привлечению и формированию кадрового потенциала медицинских организаций сельской местности.

Материалы и методы. Для оценки состояния кадрового обеспечения здравоохранения Воронежской области (ВО) были использованы данные формы статистического учета № 17, № 30. Методом сравнительного анализа проведено исследование показателей обеспеченности врачебными кадрами и укомплектованности врачебными должностями в медицинских организациях ВО, основных показателей деятельности медицинских организаций сельских районов области. С целью изучения факторов, способствующих привлечению молодых специалистов в медицинские организации сельской местности, было проведено анонимное онлайн анкетирование.

Результаты. Анализ кадрового обеспечения здравоохранения ВО показал удовлетворительный уровень обеспеченности медицинскими работниками. Дефицит кадров более выражен на сельских территориях — снижается укомплектованность штатных должностей, сокращается приток молодых специалистов, растет удельный вес лиц пенсионного возраста. Углубленный анализ позволил выявить «слабые места» в формировании кадрового резерва и учесть их при формировании кадровой политики региона. На основе полученных в ходе исследования данных создана многоуровневая модель воспроизводства кадрового потенциала с использованием кластерного подхода. Разработан механизм взаимодействия потенциальных работодателей с субъектами образовательного пространства.

Заключение. Объединение ресурсов в рамках кластерного межведомственного взаимодействия привело к расширению профориентационного пространства и позволило выстроить практико-ориентированную образовательную деятельность на основе преемственности между общим, средним профессиональным и высшим образованием. Выводы исследования могут быть использованы при формировании эффективной кадровой политики, направленной на опережающее прогнозирование процесса их воспроизводства в системе здравоохранения.

Ключевые слова: *сельское здравоохранение; обеспеченность медицинскими кадрами; кадровый потенциал; кластерный подход*

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Modern Approaches to Attracting Personnel to Medical Organizations in Rural Areas on an Example of the Voronezh Region

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ABSTRACT

INTRODUCTION: The importance of this study stems from the necessity to search for an effective solution to the problem of provision of the rural healthcare with medical personnel to increase the quality of medical care and its availability for the population.

AIM: To scientifically substantiate and develop proposals for attracting and developing the human resources potential of rural medical organizations.

MATERIALS AND METHODS: To assess the state of provision of healthcare in the Voronezh Region (VR) with human resources, the data from statistical accounting forms No. 17 and No. 30 were used. The comparative analysis method was used to study the provision of medical organizations of the VR with medical personnel and staffing with medical positions, and the main parameters of the activity of medical organizations in rural areas of the region. To study the factors contributing to the attraction of young specialists to medical organizations in rural areas, an anonymous online survey was conducted.

RESULTS: The analysis of provision of healthcare organizations of the VO with personnel showed a satisfactory level of provision with medical workers. The personnel shortage is more pronounced in rural areas the staffing of full-time positions is decreasing, the influx of young specialists is decreasing, the proportion of people of retirement age is increasing. In-depth analysis permitted to identify 'weak points' in the formation of the personnel reserve and take them into account when forming the regional personnel policy. Based on the data obtained during the study, a multi-level model of reproduction of human resources was created using the cluster approach. A mechanism for interaction between potential employers and subjects of the educational system was developed.

CONCLUSION: The pooling of resources within the framework of cluster interdepartmental interaction led to the expansion of the career guidance space and permitted to build practice-oriented educational activities based on continuity of general, secondary vocational and higher education. The findings of the study can be used in the formation of an effective personnel policy aimed at advanced forecasting of the process of their reproduction in the healthcare system.

Keywords: *rural healthcare; provision with medical personnel; human resources; cluster approach*

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ECO•VECTOR

LIST OF ABBREVIATIONS

BHI — Budgetary Healthcare Institution
CFD — Central Federal District
DH — district hospital
HM — Healthcare Ministry
RF — the Russian Federation
VCCECH — Voronezh City Clinical Emergency Care Hospital
VR — the Voronezh region
VRCATBD — Voronezh Regional Clinical Anti-Tuberculosis Dispensary

INTRODUCTION

The state of human resources in medical organizations determines the quality of medical care and its availability for the population, as well as the effectiveness of functioning of the healthcare sector as a whole [1]. The main proportion of the doctors' staff is concentrated in large cities, while the rural area continues to experience shortage of doctors' staff. The situation now is especially serious in small sparsely populated settlements and villages located in remote and hard-to-reach areas. This is a global problem involving almost all countries irrespective of the economic development level [2, 3].

In our country, medicine in rural regions presents a problems for 37.8 million people — 25.7% of the total population of the country. According to the Ministry of Health of the Russian Federation (RF), the need for personnel is 29 thousand doctors and 63 thousand mid-level medical workers. The main reasons for the growing shortage in the profession are aging and 'burnout' of medical workers, migration, and transition to other professions. The persistent trend towards an increase in the proportion of doctors over 50 years of age observed in recent years, indicates the risk of a probable increase in the shortage of personnel in the next decade [4].

One of the important characteristics of the replenishment of the labor market is the share of young personnel in the overall age structure of doctors. Despite a positive tendency to the influx of young specialists into the sector observed in recent years, their share does not exceed 4%. Due to the low attractiveness of the profession and the lack of motivational mechanisms, the level of employment of university graduates does not exceed 87%. Insufficient influx of young specialists hinders the formation of the human resource potential of medical institutions in rural areas, which may subsequently lead to limited availability of medical care for the rural population. Without a certain 'rejuvenation' of the sphere, its further functioning in modern conditions will be increasingly difficult [4, 5].

The leading role in resolving the problem of personnel shortage in healthcare is laid upon the active involvement of young specialists in the sector, who, when looking for a job, are guided by a range of factors, especially when choosing a rural medical organization [6].

To solve the problems under discussion, a number of measures are being implemented to attract and retain medical workers in rural healthcare: economic measures (material incentives, preferential loans, free transport, grants, etc.), personal and professional support measures (rural doctors associations, rural medical publications, awards for the best specialists, etc.), educational measures, targeted training [7–10]. Nevertheless, most young people are not ready to link their professional activities with work in rural areas due to the socio-economic lag of the village compared to the city (insufficient financial support, poorly developed infrastructure, etc.) [10–13].

Thus, the solution to this problem should be comprehensive and rely on a scientific analysis of the factors that can attract young specialists to rural healthcare.

The **aim** of this study to scientifically substantiate and develop proposals on attracting human resources to medical organizations in the rural areas.

MATERIALS AND METHODS

The works of domestic authors on the personnel problem in healthcare, as well as regulatory documents on the topic of the study, were studied and analyzed. Official statistical data of the Federal State Statistics Service of the Russian Federation, the Ministry of Health of the Russian Federation, materials of official state statistical reports for the Voronezh Region (VR) — statistical accounting forms No. 17, No. 30, were used.

A comparative analysis was used to study the parameters of provision of medical organizations of the

VR with medical personnel and staffing with medical positions in the period from 2019 to 2023.

To study the factors contributing to the attraction of young specialists to medical organizations in rural areas, an anonymous online survey was conducted among 505 V–VI year students studying at a medical university in the targeted direction of district hospitals (DH). The answers to questions concerning the prerequisites for making a decision on the chosen educational institution, as well as strategies and prospects for employment were obtained and analyzed. Mathematical processing of materials and visualization of the obtained results were carried out using Microsoft Excel (USA).

RESULTS

There are currently 49,683 people working in the state healthcare system of the VR, including 9,328 doctors and 20,947 mid-level medical workers. The provision of the population with doctors in 2023 decreased by 0.4 and amounted to 40.0 per 10 thousand people (in 2022 in the Central Federal District (CFD) — 38.7, in the Russian Federation — 38.0), with a predicted value of 41. The authors think that the outflow of medical personnel, mainly of retirement age, occurred, first of all, due to the difficult epidemiological situation against the background spread of the new coronavirus infection.

The staffing level with doctors in 2023 was 85.1%, however, there was a disproportion in the provision of the VR with medical personnel— the staffing percentage varied significantly. The proportion of doctors working in rural areas was 9.8%, while the proportion of rural population was 31.5% (2022). The staffing level of the DHs with doctors does not exceed 60.9%. The districts of the VR with a high provision of medical personnel include Ramonsky, Bobrovsky, Semiluksky, Verkhnekhavsky, Liskinski, Kashirsky districts. The least provided with medical personnel are Povorinsky, Bogucharsky, Kantemirovsky, Ternovsky districts. The analysis showed that the farther from the regional center (Voronezh) the administrative district is located, the more pronounced the personnel shortage. Heterogeneity in staffing and provision with doctors is observed not only at the regional level, but also at the level of a district. Thus, a higher proportion of occupied medical positions is observed in district hospitals (54.4%) and community hospitals (41.4%).

The annual total number and dynamics of the number of doctors in rural medical organizations demonstrates a downward trend in the total number of medical personnel in rural healthcare institutions in the region in the mid-range forecast.

Of the total need for medical personnel, 75% are district general practitioners, district pediatricians, general practitioners (family doctors), infectious disease specialists, surgeons, neurologists, otolaryngologists, ophthalmologists, anesthesiologists-resuscitators, radiologists, etc. The greatest need for the above specialists is in the Anninsk, Buturlinovka, Kantemirovka, Liski, Pavlovskaya, Petropavlovka, Povorino, Rossosh, Ternovka district hospitals.

The lack of specialists is partially compensated by part-time work — the part-time work coefficient over the past few years in the region was about 1.25. Combining medical positions is, on the one hand, a forced measure caused by shortage of medical personnel, but on the other hand, it creates preconditions for limiting the availability of medical care.

To eliminate the personnel shortage and personnel imbalances established in the sector, the executive authorities undertake targeted measures of social support for medical workers of various categories of the most wanted specialties. In a number of districts of the region, medical organizations provide compensation for the rental of official housing (25.0%), compensation for the accommodation expenses (11.5%), a place for a child in a kindergarten out of turn (29.1%), subsidies or preferential loans for the purchase or construction of housing (25.2%), one-time payments upon employment in a medical organization (19.6%).

An important role in provision of medical organization of the VR with personnel was played by Zemsky Doctor program. With participation of the government in the implementation of the program measures for the organization and financing of healthcare, it was possible to attract 112 medical workers to the districts of the region, 52 persons to the remote regions. All of them received one-time payment in the amount from 1 to 1.5 million rubles. However, only every tenth participant in the program (1.3%) said that the funding covered the real needs, 89.9% considered the funding insufficient.

The survey results showed that 34.5% of doctors are not satisfied with their work and plan to change the place of activity. Every sixth doctor has not yet decided on the necessity to change the place of work, therefore, with a certain positive dynamics of the governmental support, among other things, within national projects, this position can be evaluated as the most important factor of retaining qualified personnel in municipal healthcare of the region.

The most promising group in terms of replenishing personnel are graduates of medical universities. Currently, 579 people are studying at all faculties of Burdenko Voronezh State Medical University on a targeted referral from the DH. The number of students increases annually and in 2022 it amounted to 90 people, in 2023 — 135 people (Figures 1, 2). It is important to note that the effectiveness of targeted training in solving personnel problems is complicated by the risks of returning of specialists and their employment at the

place of targeted referral after graduating from the university (Figure 3).

The structure of employment risks for medical university students in medical organizations that sent them for targeted training is multifaceted. Of the targeted training graduates, only 53.5% are ready to work in medical organizations in accordance with the contract on targeted training. Significant motives for returning to the DH for employment were 'availability of housing' (51.0 ± 2.1%), 'developed infrastructure' of the locality (47.7 ± 2.2%), 'family ties' (37.5 ± 2.0%), 'opportunity for professional and career growth' (31.0 ± 2.1%). Of the total number of respondents, 30.1% do not plan to work according to the contract on targeted training, 26.4% found it difficult to answer. We dare to assume that despite the anonymous character of the survey, this figure may actually be higher.

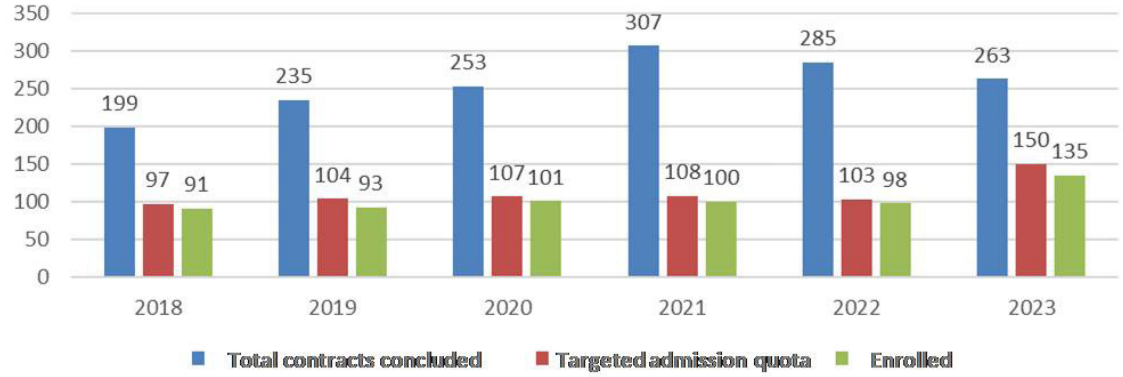

Fig. 1. Dynamics of admission to targeted training at Burdenko Voronezh State Medical University in 2018–2023 to fill the personnel shortage in the healthcare system of the Voronezh Region.

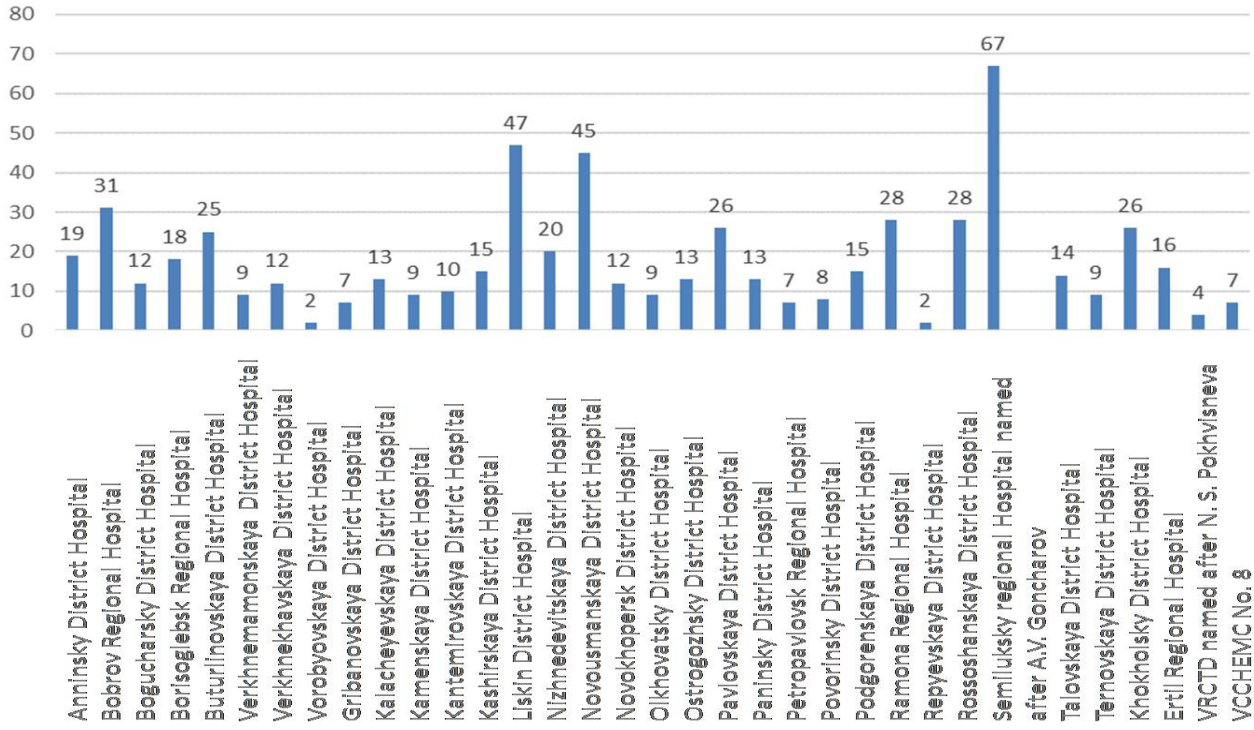

Fig. 2. Structure of medical organizations, students from which underwent targeted training at Burdenko Voronezh State Medical University in 2018–2023.

Notes: BMI — budgetary medical institution, VCCECH — Voronezh City Clinical Emergency Care Hospital, VR — the Voronezh region, VRCATBD — Voronezh Regional Clinical Anti-Tuberculosis Dispensary, DH — district hospital.

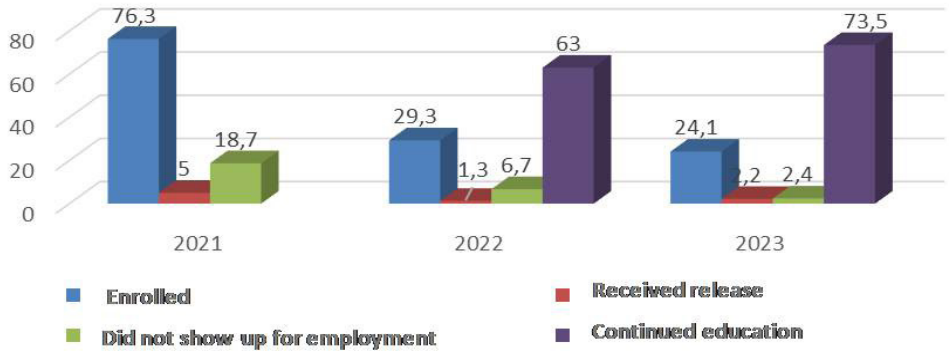

Fig. 3. Employment rates of graduates of Burdenko Voronezh State Medical University studying in a targeted direction.

The most common arguments of the graduates that play a role in refusal to be employed according to the contract on the targeted training are continuation of education and admission to residency (60%–70%), family circumstances (34%), lack of a job for a spouse (26%), lack of opportunities for professional growth (23%), insufficient material and technical support of the medical organization (10%).

The reasons for deciding to leave the given locality after fulfilling the obligations under the contract on targeted training were 'low salary' (39.3 ± 2.1%), 'family circumstances' (21.3 ± 1.73%), 'legal insecurity of the doctor' (33.4 ± 1.0%), 'lack of leisure' (20.1 ± 1.0%) and 'difficulties in professional development' (19.7 ± 1.7%). Fifty three point nine percent of the surveyed students believe that to grow professionally, a doctor should be engaged in scientific activities.

To test the proposed mechanism for implementing the cluster initiative for training personnel for rural healthcare, a decision was made to create a specialized medical cluster based on one of the municipal districts of the VR. The formation of the cluster was associated with the need to reduce the incoordination between the labor and the educational services markets and the problem of personnel shortage, and with the need for potential employers to participate in the training of specialists for practical healthcare.

Organizational and managerial mechanisms were implemented within the long-term contractual obligations. For this purpose, an agreement was signed on the interaction of the project participants and the formation of a chain of continuous specialized education 'secondary general school — medical college — medical university — DH (employer)'. The core of the regional professionally oriented cluster was Burdenko Voronezh State Medical University — a specialized university for training specialists for healthcare. The unification of resources within the cluster interdepartmental interaction led to the expansion of the career guidance space and permitted to build practice-oriented educational activities based on continuity of general, secondary vocational and higher education.

The aim of pre-university training in the cluster is to conduct targeted work on the formation and education of contingent of applicants professionally oriented to rural healthcare. The cooperation of the school with specialized organizations of higher and secondary vocational education permitted to flexibly use the mechanism of the transition of students from general secondary schools in the district to certain schools with medical classes, and further to certain professional educational institutions of medium and higher professional education. The result of such training is formation of a personnel reserve of the required specialists possessing stable practical skills acquired by them in the process of staged training.

The next block of the model is effective forms of interaction between students of medical universities and colleges with potential employers. The most effective ways to attract young specialists to municipal medical organizations are practical training directly on the basis of district or local hospitals and mentorship by future colleagues. In the process of gradual immersion of young specialists in the profession, competent healthcare specialists, representatives of medical organizations of DHs use active learning technologies, various innovative forms that meet the needs of students. This is a realistic perception of professional experience, the acquisition of which will be rewarded with the solid knowledge and consolidation of professional competencies.

In addition, within the cluster, it becomes possible to promptly resolve such issues as reorientation of specialists by training for more popular professions,

changing of the requirements to the level of professional knowledge permitting to raise the quality of training and competitiveness of specialists and developing certain moral and business qualities in future employees that determine their responsible attitude to work and successful fulfilment of their professional functions.

DISCUSSION

The obtained data once again demonstrated the personnel problems of regional healthcare, the main ones being low satisfaction of medical personnel with working conditions and the related shortage and migration of medical personnel. Low wages do not contribute to attracting and retaining specialists in the section, but lead to outflow of young specialists from the sector.

The following factors are of the greatest importance in the process of assessing personnel risks: outflow of qualified personnel, discrepancy between the terms of regional motivation programs and the real needs of medical workers not bringing the expected return on investment, low wages and lack of opportunities for career growth. An extremely important issue is the motivation of young specialists and their conscious choice of future profession. As practice shows, high school students often choose a university under the influence of social stereotypes, parents, teachers, friends or current hobbies. Without full understanding of the specifics and functional content of the chosen profession, they become disappointed over time and finally lose all interest in it. As a result, no more than 15% of medical university graduates remain in rural healthcare. This, in turn, lead to slowdown of the natural renewal of personnel, the aging of current medical workers and inefficient use of human resources. The reduction in the human resource potential of the sector has a negative impact on the availability and quality of medical care for the population.

Although there exist positive examples of working on the problem of formation of human resources, it should be noted that there is still no systematic approach, consistency and continuity of training of specialists at all stages of medical education. Inconsistency of priorities and tools, as well as the lack of a clear understanding of the role of each stage in education in the development of an integrated system of personnel training for the sector prevents the formation of effective chains of professional growth and development.

To attract highly qualified medical personnel and eliminate inequality in the territorial distribution of human resources, it is necessary to construct a systematic work with medical personnel at all stages of his formation and development. Existing strategies in the world indicate an increased interest in technologies and mechanisms of long-term integration-based interaction of professional education with potential employers. The most promising direction is the expansion of the educational space based on cluster cooperation 'school — college — university — employer (medical organization interested in attracting personnel)'. The cluster model implies the unification of intangible, educational and corporate resources of the subjects of the system, which creates conditions for constant interaction both within this system and outside it. An effective indicator of efficiency is not an increase in the number of entities and connections in the sphere, but their stability in solving joint problems.

The integrated multi-stage system of continuous education, due to its flexible structure and rapid adaptation to demand fluctuations in the labor market, creates favorable conditions for the implementation of targeted individual training of specialists of various qualification levels using individual educational routes.

Thus, the new quality of system-forming forms of interaction of social institutions within the cluster entailed a synergy effect, and opportunities for the continuity of training specialists, for rural healthcare as well, were created.

CONCLUSION

The conducted study showed that the Voronezh Region is one of the regions with a satisfactory level of provision with doctors (40.0 per 10 thousand population). However, quantitative comparisons of human resources in healthcare in some districts of the region showed a rather 'variegated' picture of staffing with specialists, which requires careful interpretation. In-depth analysis permitted to identify the 'weak points' of rural healthcare and take them into account when forming the region's personnel policy.

An effective tool in solving the problems of staffing the healthcare section is a cluster approach based on the integrated career guidance system 'school — college — university — employer'. This model involves immersion in the profession at the pre-university, university and postgraduate stages of work. This allows the student to understand the multi-stage character of professional development, assess the risks, see the difficulties and outline the points of application of personal efforts. Through professional immersion, it is possible to attract the most prepared young people to medical work, who have a stable motivation for future professional activity and possess the necessary level of formed professionally important qualities. The effectiveness of the proposed model is confirmed by high rates of student satisfaction with the content of training and affiliation with the university.

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ADDITIONALLY

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Вклад авторов: *Есауленко И. Э.* — концепция и дизайн исследования, ответственность за все этапы работы; *Петрова Т. Н.* — написание текста, редактирование; *Фурсова Е. А.* — организация исследования, сбор материала; *Петров И. С.* — проведение исследования, сбор, анализ и интерпретация данных; *Сычев Е. В.* — проведение исследования, применение статистических, математических, вычислительных методов для анализа и синтеза данных. Авторы подтверждают соответствие своего авторства международным критериям ICMJE (все авторы внесли существенный вклад в разработку концепции, проведение исследования и подготовку статьи, прочли и одобрили финальную версию перед публикацией).

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