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TO THE QUESTION OF ORGANIZATION OF OUTPATIENT ONCOLOGICAL CARE CENTERS FOR RESIDENTS OF THE LENINGRAD REGION

© Vladimir Yu. Startsev[1], Gleb V. Kondratiev[1], Nikolay I. Tyapkin[2, 3], Igor O. Belogortsev[2], Pavel S. Kondrashkin[4]

[1] Saint Petersburg State Pediatric Medical University. Lithuania 2, Saint Petersburg, Russian Federation, 194100
[2] Leningrad Regional Clinical Hospital. Lunacharsky prospect 45, 1/A, Saint Petersburg, Russian Federation, 194291
[3] Russian Scientific Center of Radiology and Surgical Technologies named after Academic A.M. Granov. Leningradskaya Street 70, Pesochny settlement, Saint Petersburg, Russian Federation, 197758
[4] Clinical Hospital of Russian Railways-Medicine, Saint Petersburg. Mechnikov 27B, Saint Petersburg, Russian Federation, 195271

Contact information: Nikolay I. Tyapkin — Head of the Department of Oncourology, Leningrad Regional Clinical Hospital. E-mail: nikt1982@gmail.com ORCID ID: 0000-0002-2479-0436 SPIN: 5063-1890

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ABSTRACT. According to the data provided by the World Health Organization, the number of detected cases of malignant neoplasms is steadily increasing. Deaths from malignant tumors are classified as "preventable", mainly due to prevention, early detection followed by high-quality dispensary observation. One of the ways to solve the problem of early diagnosis of malignant neoplasms is organization of outpatient cancer care centers. We have studied the statistical data of the Medical Information and Analytical Center of the Department of health of the Leningrad Region Administration and information from the publications of peer-reviewed journals for 2019–2022 topic research. As a result of the analyses of official statistical data and information from publications, measures are proposed to optimize the activities of the healthcare system and, in particular, regional centers for outpatient oncological care, to improve the quality of specialized oncological care for residents of the Leningrad Region. New approaches to the organization of medical care will help preserve the quality of life of patients and will reduce the mortality rate of the region's population from the increased number of malignant neoplasms.

KEY WORDS: malignant neoplasms; Leningrad Region; healthcare organization; diagnostics of malignant neoplasms; outpatient center for cancer care.

К ВОПРОСУ ОРГАНИЗАЦИИ ЦЕНТРОВ АМБУЛАТОРНОЙ ОНКОЛОГИЧЕСКОЙ ПОМОЩИ ЖИТЕЛЯМ ЛЕНИНГРАДСКОЙ ОБЛАСТИ

© Владимир Юрьевич Старцев[1], Глеб Валентинович Кондратьев[1], Николай Иванович Тяпкин[2, 3], Игорь Олегович Белогорцев[2], Павел Сергеевич Кондрашкин[4]

[1] Санкт-Петербургский государственный педиатрический медицинский университет. 194100, Российская Федерация, г. Санкт-Петербург, ул. Литовская, д. 2
[2] Ленинградская областная клиническая больница. 194291, Российская Федерация, г. Санкт-Петербург, пр. Луначарского, д. 45, корп. 1, лит. А
[3] Российский научный центр радиологии и хирургических технологий имени академика А.М. Гранова. 197758, Российская Федерация, г. Санкт-Петербург, пос. Песочный, ул. Ленинградская, д. 70
[4] Клиническая больница РЖД-Медицина г. Санкт-Петербург. 195271, Российская Федерация, г. Санкт-Петербург, пр. Мечникова, д.27 Б

Контактная информация: Николай Иванович Тяпкин — заведующий отделением онкоурологии Ленинградской областной клинической больницы. E-mail: nikt1982@gmail.com ORCID ID: 0000-0002-2479-0436 SPIN: 5063-1890

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РЕЗЮМЕ. По данным Всемирной организации здравоохранения, число вновь выявленных случаев злокачественных новообразований неуклонно растет. Смертельные случаи от злокачественных опухолей относятся к категории «предотвратимых», в основном за счет профилактики, раннего выявления и последующего качественного диспансерного наблюдения. Одним из вариантов решения вопроса ранней диагностики злокачественных новообразований признана организация центров амбулаторной онкологической помощи. Нами были изучены статистические данные Медицинского информационно-аналитического центра Комитета по здравоохранению Ленинградской области и сведения из публикаций рецензируемых журналов за 2019–2022 гг. по теме исследования. В результате изучения официальных статистических данных и сведений из публикаций предложены мероприятия по оптимизации деятельности системы здравоохранения и, в частности, региональных центров амбулаторной онкологической помощи, для повышения качества оказания специализированной онкологической помощи жителям Ленинградской области. Новые подходы в организации оказания медицинской помощи будут способствовать сохранению качества жизни пациентов и позволят снизить показатель смертности населения региона от развития ряда злокачественных новообразований.

КЛЮЧЕВЫЕ СЛОВА: злокачественные новообразования; Ленинградская область; организация здравоохранения; диагностика злокачественных новообразований; центр амбулаторной онкологической помощи.

According to the World Health Organization, 19.3 million new cases of malignant neoplasms (MN) will be detected worldwide in 2020, including 4.4 (22.8%) million cases in European countries [5]. According to the forecasts of the Medical Cancer Research Agency, by 2040 the number of newly detected cases of MN will reach 30.2 million (20-year increase +56.5%) [10].

Malignant tumors are included in the list of socially significant diseases in the Russian Federation (according to the RF Government Decree N 715 of 01.12.2004 "On Approval of the List of Socially Significant Diseases and the List of Diseases that pose a danger to others"), characterized by social and economic damage to patients in the form of disability and premature mortality [13]. According to the text of the Decree of the President of the Russian Federation from 21.07.2020 N 474 "On national development goals of the Russian Federation for the period up to 2030", the National project "Health Care" is currently being implemented [18]. In order to solve the task of "Increasing life expectancy to 78 years", the Decree of the President of the Russian Federation from 07.05.2018, N 204 "On national goals and strategic objectives of the development of the Russian Federation for the period up to 2024" [17] was announced. It is planned to reduce the mortality rate from MN to 185.0 per 100 thousand people.

Pulmonary and bronchial MNs predominate in morbidity structure among the male population of developing countries, which is explained by smoking tobacco and its derivatives. In Western countries, prostate cancer is the leader [9]. The incidence of breast cancer in the female population is increasing all over the world [21, 22]. The change in attitude to reproductive age, participation in assisted reproductive technology programs, and other behavioral characteristics of young women are considered to be one of the main reasons for this increase. Despite the development of diagnostic equipment, high imaging capabilities of a number of MNs, and the availability of conditions for screening tumors of various localizations, the proportion of MNs detected in advanced stages, such as tumors of the organs of the female genital system, is still high in the Russian Federation [1].

According to official data, in 2019, 295.5 thousand cases of lethal outcomes from oncological diseases were registered (16.4% in the structure of mortality from all causes) [19]. Such deaths are categorized as "preventable": they can be prevented by primary (including the formation of a healthy lifestyle), secondary (early detection of diseases) or tertiary prevention (quality dispensary monito-

ring of patients who have undergone treatment). Sanitary and preventive measures and care about healthy lifestyle, which was much discussed in previous years, as well as the issues of increasing the notorious "cancer caution" of primary care physicians [6, 11], are insufficient to ensure the proper level of MN diagnostics [3].

The organization of outpatient oncological care centers (OOCC) is recognized as one of the solutions to the issue of early detection of MNs. According to the Order of the Ministry of Health of the Russian Federation N 48 dated 05.02.2019 "On Amendments to the procedure for providing medical care to the population in the profile "Oncology", approved by the Order of the Ministry of Health of the Russian Federation No. 915N dated 15.11.2012 [14], amendments were made to the procedure for providing medical care to the population in the profile "Oncology", which envisages an integrated multidisciplinary approach at the stage of primary specialized care for patients with MNs. In 2019, the subjects of the Russian Federation identified 532 medical centers to provide medical care to the population in the profile "oncology" within the framework of regional projects "Fighting cancer" [20]. These centers should serve as a model of primary specialized medical and sanitary care in 2019–2024. The activity of these centers is organized in accordance with the Rules given in Appendix No. 5 to the Procedure for the provision of medical care to the adult population for oncological diseases (approved by Order of the Ministry of Health of the Russian Federation from 19.02.2021, N 116n "On Approval of the Procedure for the provision of medical care to the adult population for oncological diseases" [16]) as well as

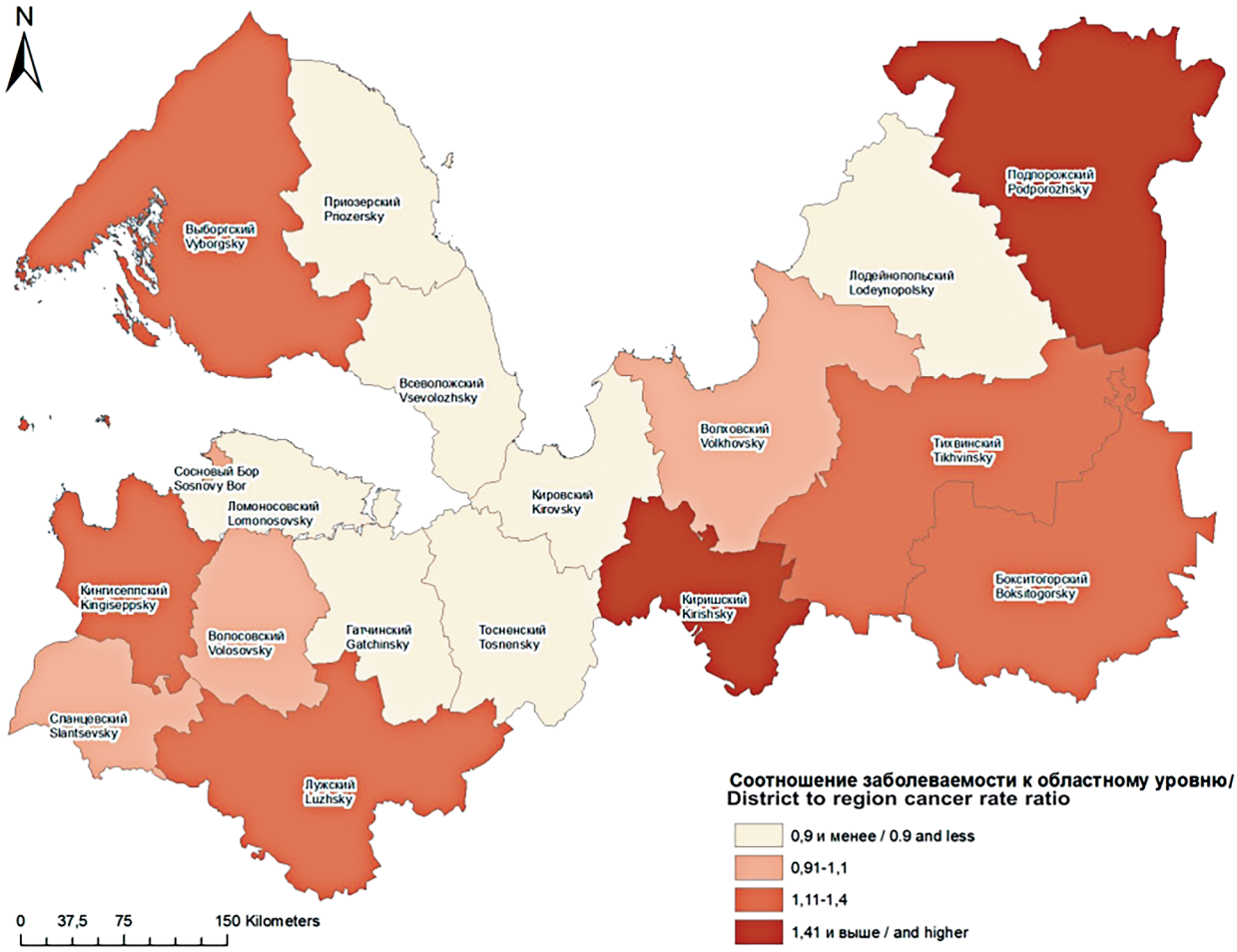

Fig. 1. Distribution of districts of the Leningrad Region according to the average (for 2008–2018) indicators of the primary incidence of malignant neoplasms in relation to the regional level [4]

Рис 1. Распределение районов Ленинградской области по усредненным (за 2008–2018 гг.) показателям первичной заболеваемости ЗНО в соотношении к областному уровню [4]

Table 1

Incidence rates of malignant neoplasms (per 100 thousand population) in the districts of the Leningrad Region in 2008–2018

Таблица 1

Показатели заболеваемости ЗНО (на 100 тыс. населения) в районах Ленинградской области в 2008–2018 гг.

Районы Ленинградской области / Districts of the Leningrad Region	Год / Year											Усредненное значение за 2008–2018 гг. / Average value for 2008–2018
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Бокситогорский / Boksitogorsky	389,4	424,3	386,9	277,4	290,8	307,6	356,2	283,0	423,6	370,9	443,8	359,5
Волосовский / Volosovsky	273,9	241,1	234,4	238,2	276,1	247,9	317,0	289,8	264,4	281,2	352,2	274,2
Волховский / Volkhovsky	282,4	301,2	280,5	263,3	262,1	263,3	345,3	283,2	321,7	351,7	408,1	305,7
Всеволожский / Vsevolozhsky	203,2	261,0	221,4	315,9	353,0	207,9	285,6	229,4	290,8	194,9	200,4	251,2
Выборгский / Vyborgsky	356,0	343,6	319,4	305,9	299,1	305,8	370,1	339,9	326,5	344,7	358,8	333,6
Гатчинский / Gatchina	240,5	199,0	232,6	224,7	235,6	195,3	277,0	285,1	273,6	304,9	420,9	262,7
Кингисеппский / Kingisepp	397,3	298,6	349,6	383,0	405,6	321,8	428,1	403,0	395,7	429,5	460,4	388,4
Киришский / Kirishi	**372,5**	**437,6**	**426,6**	**453,4**	**392,5**	**506,1**	**514,0**	**448,1**	**498,7**	**424,1**	**452,5**	**447,8**
Кировский / Kirovsky	228,9	256,5	260,2	257,2	236,6	221,6	260,8	240,4	391,0	200,8	214,8	251,7
Лодейнопольский / Lodeynopolsky	218,5	235,1	255,4	231,4	236,4	199,4	331,5	301,6	306,8	308,0	332,0	268,7
Ломоносовский / Lomonosovsky	235,5	333,7	284,4	258,0	236,1	247,4	291,5	253,8	252,7	251,9	231,0	261,5
Лужский / Luga	360,4	415,7	388,5	351,3	372,4	350,0	364,0	414,1	421,3	352,1	422,6	383,0
Подпорожский / Podporozhsky	**339,3**	**418,5**	**393,6**	**325,1**	**407,7**	**389,3**	**487,3**	**491,4**	**427,0**	**383,4**	**625,8**	**426,2**
Приозерский / Priozersky	365,8	234,0	254,5	234,4	218,6	269,2	240,3	128,5	327,5	120,9	327,4	247,4
Сланцевский / Slantsevsky	379,4	331,8	293,8	264,1	271,5	433,7	308,3	396,4	346,3	300,7	320,2	331,5
Тихвинский / Tikhvinsky	263,7	370,2	333,2	384,6	305,8	311,3	389,0	428,4	468,4	388,3	383,4	366,0
Тосненский / Tosnensky	285,7	255,2	312,4	217,6	225,3	263,0	291,7	273,8	177,7	266,0	235,8	254,9
Сосновый Бор / Sosnovyy Bor	193,1	207,5	288,8	260,2	237,4	294,2	241,5	329,4	285,5	335,1	370,5	276,7
Ленинградская область / Leningrad Region	**291,3**	**298,7**	**291,8**	**289,1**	**293,1**	**271,3**	**323,5**	**302,4**	**324,4**	**291,2**	**331,9**	**300,8**

methodological recommendations on the OOCC organization (approved by the Deputy Ministry of Health of the Russian Federation).

AIM

To determine the role of OOCC in early detection of MNs in the Leningrad Region (LR), Russia.

MATERIALS AND METHODS

Statistical data from the Medical Information and Analytical Center of the Health Care Committee of the Leningrad Oblast, as well as information from publications presented in refereed journals for 2019–2023 have been studied.

RESULTS

According to the Petrostat data, the mortality rate from MNs among the residents of the LR decreased slightly in 2019–2021: from 4156 to 3912 people, or from 224.9 to 207.7 people per 100 thousand population (–5.9%) [2]. A decline (–3.9 per cent) in the incidence rate of MNs (from 6886 to 4204 people, or from 369.8 to 221.0 per 100,000 population) was also registered. This is partly explained by the COVID-19 pandemic in 2020, which deteriorated the oncological registration of LR residents due to implementation of anti-epidemic measures.

Incidence rates of oncological diseases among LR residents have been studied. Therefore, "crude" indicators for 2008–2018 show that the most significant excess was observed in Kirishskiy and Podporozhsky districts (Fig. 1, Table 1) [4], which is associated not only with the quality and technical equipment of medical institutions, but also with the activities of harmful production enterprises located in these regions. The issue has been studied and the data published earlier [8].

In 2008–2018, the Podporozhsky and Kirishskiy districts of the LR registered high levels of standardized incidence rates of MNs (exceeding the LR average by 1.36 and 1.47 times, respectively), showing statistically significant differences ($p < 0.001$). The average level of the standardized incidence rate for the Russian Federation was also exceeded (1.1 and 1.19 times; $p=0.068$ and $p=0.001$, respectively) [19]. The unfavorable situation has remained by 2022: this indicator was 625.75 per 100,000 population in the Podporozhsky District, 460.78 in the Kingisepp District, and 451.52 in the Kirishsky District [12].

OOCCs are located in 5 districts of the Leningrad Region (5 beds in 4 districts, 3 beds in Kingisepp District). The staffing and location of OOCCs are presented in Table 2.

In 2019, Tikhvin was the first town in the Leningrad region which opened the OOCC. The center was based on the A.F. Kalmykov Interdistrict Hospital (IDH) (Table 2). The OOCC of the Vsevolozhsk District is characterized by the largest contingent of assigned population and staffing, the center is located on the basis of a regional oncological institution — the Leningrad Clinical Oncological Hospital named after L.D. Roman. The areas of OOCC location are schematically represented in Figure 2.

As follows from Figure 2, 4 out of 5 OOCCs are located in the western part of the Leningrad Region, providing outpatient medical care to 1,520,000 residents of the region (82.2%). There is 1 center in the eastern part of the region providing outpatient care to 330 thousand people (17.8%).

The Petrostat report shows that in 2019–2021, the number of medical outpatient organizations increased by 5.4% (from 300 to 317), which corresponds to the information concerning creation of OOCCs [2]. At the same time, the number of oncological profile beds decreased by 12.0%: from 482 to 424. The relative number of physicians and nursing staff in the region remained almost the same: the number of nursing staff is decreasing, but unreliably (Fig. 3).

The creation of OOCCs in LR allowed to improve the availability of specialized medical care for patients with MNs by organizing courses of chemotherapeutic (adjuvant and neoadjuvant) treatment. Creation of OOCCs in Leningrad Region made it possible to improve the availability of specialized medical care for patients with MNs by organising courses of chemotherapeutic (adjuvant and neoadjuvant) treatment. In 2019–2023, Tikhvin OOCC provided chemotherapeutic treatment to 1092 patients, Vyborg — 601 patients, Gatchina — 1193 patients, Kingisepp — 647 patients. This type of care was possible due to staffing with medical oncologists and constant consultative telecommunication with the staff of the head regional

Table 2

General data about the activities of the OCC of the Leningrad Region

Таблица 2

Общие сведения о деятельности ЦАОП Ленинградской области

Район / Area	**Место расположения / Location**	**Год начала работы / Starting year**	**Контингент приписного населения, тыс. чел. / The contingent of the registered population, thousand people**	**Кадровый состав / Personnel composition**
Выборгский / Vyborgsky	Выборгская МРБ*. г. Выборг, ул. Октябрьская, д. 2 / Vyborg MRB*. Vyborg, st. Oktyabrskaya, 2	2020	260	1) Заведующий ЦАОП, врач-онколог / Head of CAOP, oncologist; 2) врач-онколог / oncologist; 3) врач-онколог / oncologist; 4) врач-эндоскопист / endoscopist
Гатчинский / Gatchina	Гатчинская клиническая МРБ. г. Гатчина, ул. Урицкого, д. 1 / Gatchina clinical IH. Gatchina, st. Uritsky, d. 1	2020	495	1) Заведующий ЦАОП, врач-онколог / Head of CAOP, oncologist; 2) врач-онколог/ oncologist; 3) врач-онколог/ oncologist; 4) врач-эндоскопист / endoscopist
Всеволожский / Vsevolozhsky	Ленинградский клинический онкологический диспансер им. Л.Д. Романа. Всеволожский район, пос. Кузьмоловский, ул. Заозерная, д. 2 / Leningrad Clinical Oncological Dispensary named after L.D. Roman. Vsevolozhsk district, pos. Kuzmolovsky, st. Zaozernaya, 2	2020	505	1) Заведующий ЦАОП, врач-онколог / Head of CAOP, oncologist; 2) врач-онколог (уролог) / oncourologist; 3) врач-онколог (торакальный хирург) / thoracic surgeon; 4) врач-онколог (маммолог) / mammologist 5) врач-онколог (специалист голова-шея) / oncologist specialist head-neck
Тихвинский / Tikhvinsky	Тихвинская МРБ им. А.Ф. Калмыкова. г. Тихвин, ул. Карла Маркса, д. 66 / Tikhvin IH named after A.F. Kalmykov. Tikhvin, st. Karl Marx, 66	2019	330	1) Заведующий ЦАОП, врач-онколог / Head of CAOP, oncologist; 2) врач-онколог / oncologist; 3) врач-онколог / oncologist; 4) врач-эндоскопист/ endoscopist
Кингисеппский / Kingisepp	Кингисеппская МРБ им. П.Н. Прохорова. г. Кингисепп, ул. Воровского, д. 20 / Kingisepp IH named after P.N. Prokhorov. Kingisepp, st. Vorovskogo, 20	2020	260	1) Заведующий ЦАОП, врач-онколог / Head of CAOP, oncologist; 2) врач-онколог/ oncologist; 3) врач-эндоскопист/ endoscopist

* МРБ — межрайонная больница / IH — interdistrict hospital.

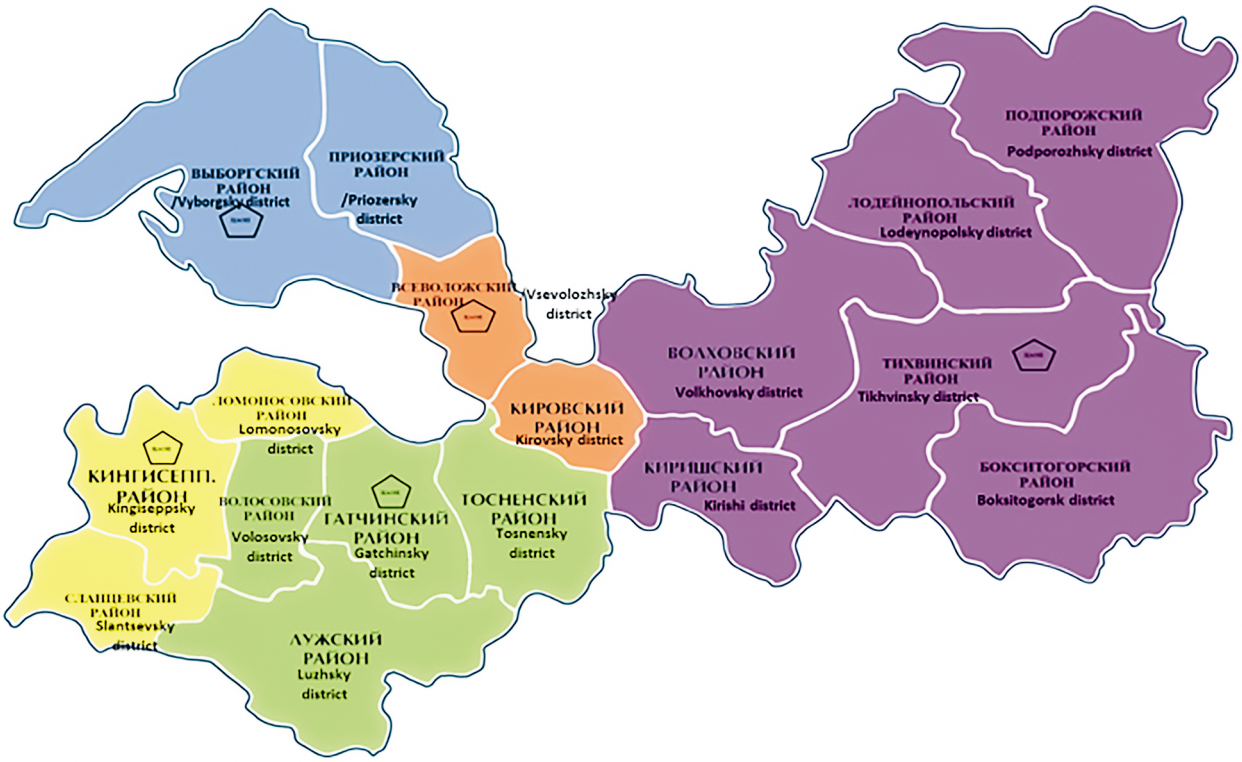

Fig. 2. Schematic distribution of OCC in the districts of the Leningrad Region

Рис. 2. Схематическое распределение ЦАОП в районах Ленинградской области

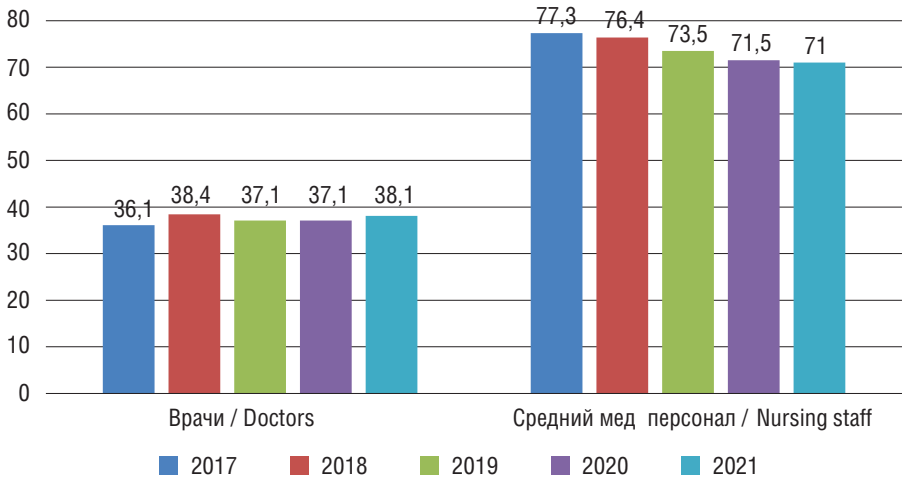

Fig. 3. The number of doctors and nurses in healthcare facilities in the Leningrad Region for 2017–2021

Рис. 3. Численность врачей и среднего медицинского персонала в учреждениях здравоохранения Ленинградской области за 2017–2021 гг.

institution of Leningrad Oblast — the State Budgetary Institution LOCOD.

DISCUSSION

Since 1 January 2022, the Order of the Ministry of Health of the Russian Federation from 15.11.2012 N 915n 'On Approval of the Procedure for the provision of medical care to the population in the profile of "oncology"' is no longer in force [15], but the Order of the Ministry of Health of the Russian Federation from 19.02.2021 N 116n 'On Approval of the Procedure for the provision of medical care to

the adult population in cancer' is relevant at the moment [16]. The order includes Appendix N 5, which sets out the basic requirements for the organization of OOCC. According to the methodological recommendations in relation to OOCCs which are located in the constituent subjects of the Russian Federation (approved by the Ministry of Health of the Russian Federation on 16.08.2021) [7], the goals of OOCC are to provide RF residents with MNs with high-quality and affordable primary specialized medical care: to establish the diagnosis of MNs and its stage within the timeframe defined by the state guarantee program.

As a result of the OOCC organization, it is expected to improve the territorial and transport accessibility of specialized medical care for patients with MNs [7]. In order to justify the necessity in a certain OOCC, climatic and geographical features of an area, transport accessibility, population density of a district and peculiarities of the material and technical base of medical centers are taken into account.

In recent years, oncological morbidity in LR has been increasing among residents of the eastern territories of the region, where 1 OOCC is located (in Tikhvin). Without analyzing the reasons for the growth of this indicator (this issue will be discussed in our subsequent publications), it is necessary to state that transport accessibility for diagnostics and treatment of MNs in the population of the eastern districts is as difficult as in the western districts.

Despite of increasing incidence rate of MNS among the residents of the Kingisepp district, citizens could specifically address the staff of the Kingisepp IDH. In contrast, residents of other LR districts (Podporozhsky and Kirishsky), which are unfavourable in terms of oncological statistics, apply to the neighbouring OOCC (in Tikhvin town). Alternatively, they are referred by a physician of their local health care center to the OOCC of the Vsevolozhsky district (polyclinic of the LOCOD hospital), where the inpatient base of the head oncological institution in the region is located.

CONCLUSION

Optimisation of the health care system continues, so the number of beds for providing specialized oncological care to the residents of LR decreases. Moreover, qualification of medical staff at IDHs of the region is insufficient, and this situation requires certain administrative and organizational solutions. It is necessary to review the staffing structure of medical centers in the eastern districts of the Leningrad Oblast, with additional training of medical and nursing staff. Material and technical base of treatment facilities of Podporozhsky and Kirishi districts should be examined and, if necessary, reformed in order to ensure early diagnosis of miligant turmors among the residents of these territories. As a result, territorial measures can be taken to reorganise a number of primary oncological offices and transfer them to the status of OOCCs, with further optimisation of their structure and staffing of outpatient departments. One of the options may be the organization of OOCC in Volkhov IDH, since the hospital is located at the intersection of transport routes of the region.

As a result, these measures will contribute to preserving the patients' quality of life, reduce the MN mortality rate (in accordance with the National Project) and raise the status of the oncological service in the region.

ADDITIONAL INFORMATION

Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

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