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Territorial Organization of Medical Care for the Rural Population on the Example of Russia

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Abstract: This article discusses the features of the territorial organization of medical services for the rural population of Russia, taking into account the development of new technologies and the use of these services during the period of the Covid 19 coronovirus infection pandemic. The foreign experience of some countries in the provision of medical services to rural residents at the present stage is analyzed. In particular, what measures are being taken in different countries to improve the provision of primary health care to the rural population, including how telemedicine is used in different regions of the world for this and historical, social-economic and natural factors of the territorial differences in medical care for the rural population in Russia. Among the socio-economic factors, special attention is paid to regional differences in the system of population resettlement, population density, and the level of economic development of the regions. The authors also present regional differences in the development of telemedicine in rural areas of Russia.

Keywords: Medical services, Rural population, Russia, Factors of territorial differences, Telemedicine

Introduction

Since the 1990s, in connection with the transition to a market economy, significant shortcomings in the healthcare system have become obvious in Russia, and urgent reforms were required to maintain and continue to function effectively. One of the main tasks facing the government at that time was the creation of additional sources of funding, since in a market economy, publicly available free medicine, which was of a state nature, did not bring the necessary positive results. This is how compulsory health insurance, private clinics, and paid medical services appeared. To maintain the quality of medical care, with a lack of funding, there was a rapid optimization of the system of medical institutions, as a result of which the number of medical workers sharply decreased, and the load on the outpatient clinic link increased rapidly.

In 2005, the government of the Russian Federation developed the National Health Project, the main task of which is to improve the quality of medical services, improve the material condition of medical institutions, and develop primary medical care. This project, despite the changes made, did not give the desired positive result. And already in 2011, the process of reforming the healthcare system was launched, aimed at optimizing public spending, eliminating inefficient medical institutions, introducing high-tech equipment, all this was supposed to improve the quality of medical services provided. However, all the ongoing reforms did not take into account the regional specifics of the country, its territorial organization of medical care, the existing structure of uneven settlement, the lack of certain regions with the necessary infrastructure. Therefore, part of the rural population was cut off for long distances from the nearest medical facilities, unable to receive prompt medical care and purchase the necessary medicines.

Currently, telemedicine is of particular relevance, which makes it possible to receive medical advice via the Internet, and therefore the distance between the doctor and the patient does not matter. Other developed forms of providing large services are also widely developed and developed, but there is experience in remote countries and our own reform experiences in our country. The use of new technologies is necessary taking into account the specifics of remote regions.

The insufficiency of economic and geographical research in the field of application of new trends in medical care for the population of Russia, as well as their effectiveness in the context of the new coronovirus infection COVID-19, determined the relevance, scientific and practical assessment of this work. The purpose of the study is to identify features in the territorial organization of new trends in medical care for the population in Russia and their application in the new period of the COVID-19 coronovirus infection.

Results and Discussion

Both our country and other countries are characterized by a shortage of medical workers in rural areas. In Russia, this problem is solved with the help of targeted recruitment to universities and programs to attract medical personnel to the regions. One of these programs is the Zemsky Doctor program, under its terms, medical workers who have moved to the countryside for further work receive lifting payments of up to 1 million rubles. This program started in 2012 and continues to this day. Let's consider how the bottom problem is solved in other countries.

In the US, there are two main programs to attract medical students to further work in rural areas.

1. The state shall pay scholarships to students of medical schools, which are enough to cover the cost of education and other living expenses. In return for these scholarships, students must work for at least 2 years after graduation in a proposed region where there is a shortage of doctors.

2. The state pays up to $50,000 to pay off student loans in exchange for a commitment to work for at least 2 years in a region with a shortage of medical workers. And also under the program "Students for work", in the last academic year, students of medical universities are provided with up to 120 thousand US dollars, in exchange for the mandatory provision of primary health care, during a full day, at least 3 years after graduation learning.

Other support measures in the US include financial - direct and indirect incentives. Direct incentives include wages and tuition reimbursement, while indirect incentives include, for example, so-called lifting incentives - double salary, travel compensation and a company car. Social support measures also include the possibility of continuous professional development, increased vacation, external incentives - internship at a medical school (Nurlybaev, 2014).

In Japan, there is a program according to which a graduate of a medical university after training must work out 9 compulsory years, 6 of them exclusively in rural areas - in his prefecture. In exchange, for participants in this program, all tuition fees at the Faculty of Medicine are canceled (Nurlybaev, 2014).

In Australia, New Zealand, Viet Nam, Iran, Mongolia and other countries, the problem of a shortage of medical workers in rural areas is being solved with the help of medical students. They are required to practice medicine in rural areas in order to be able to enter graduate school or obtain a license to practice medicine.

The most important problem for Russia is the remoteness of rural settlements from the nearest points of medical care. This problem arose in the 1990s, when the optimization of medical institutions was actively taking place. Since that time, the state has been taking various measures to solve this problem, the most effective are the preservation of ambulance stations in the nearest larger settlements, as well as the creation of mobile mobile medical complexes. In settlements with a population of less than 100 people, primary health care is provided by mobile medical teams, including using mobile medical complexes, at least 2 times a year (Chubarova, 2007).

In foreign countries, this problem is solved with the help of telephone and Internet connections. So, in the UK, Canada and the USA there is a 24-hour free telephone connection with the national health service. By calling it, anyone can receive free consultative nursing care, as well as the necessary medical information. This way of providing medical advice makes it more accessible.

In Norway and Sweden, there is telemedicine, which allows you to contact the patient using the Internet connection. Telemedicine contributes to an increase in the level of medical care, since the distance between the doctor and the patient is not important, and also increases the efficiency of the use of budgetary funds. In the US, telemedicine is organized in the state of Alaska to implement the health policy of indigenous peoples (Tragakes & Lessof, 2003).

The development of medical care for the rural population is influenced by a number of factors, one of the most important being: the resettlement of the population, the features of demographic development and the socio-economic security of the regions. Differences in population density were formed under the influence of historical, socio-economic factors, and also due to the natural conditions of the territory.

In the northern part of Russia and in its northeast, a rare focal settlement has developed. The settlements here are located along the banks of the seas and rivers, at a great distance from each other. Also, settlements of indigenous peoples engaged in fishing or reindeer herding are highly dispersed.

In the zone of steppes and forest-steppes, with the most favorable conditions for agriculture, settlements are large and numerous, located close to each other, most of the population is engaged in agriculture and processing of agricultural products. Such resettlement is typical for the Central Black Earth region and other southern regions of Russia. Settlement near large cities is of great importance. Around all the major cities of Russia there is a large number of rural settlements, and the closer to the city, the larger and more frequently located these settlements.In addition to reasons related to natural conditions, rural settlement also depends on the national and cultural characteristics of individual peoples and their more traditional way of life. Therefore, the regions of the North Caucasus are characterized by a large proportion of rural residents, more than 45%, living in settlements of different sizes.

The development of medical institutions is also influenced by the level of socio-economic development of individual regions. In small rural settlements that do not have large enterprises, with a low income of the population, paid medical services have not been developed, in contrast to settlements located near large cities. Also, the most important factor affecting the availability of medical services is the provision of regions with transport infrastructure, since a developed network of roads allows residents of rural areas to easily get to the nearest medical institution.

The process of reforming the health care system has led to a decrease in the role of the primary links of medical institutions in the countryside. In the current situation, in order to increase the availability of medical services for rural residents, it is rational to use new methods of obtaining medical care, such as telemedicine, air ambulance, mobile diagnostic complexes and various types of remote diagnostics.

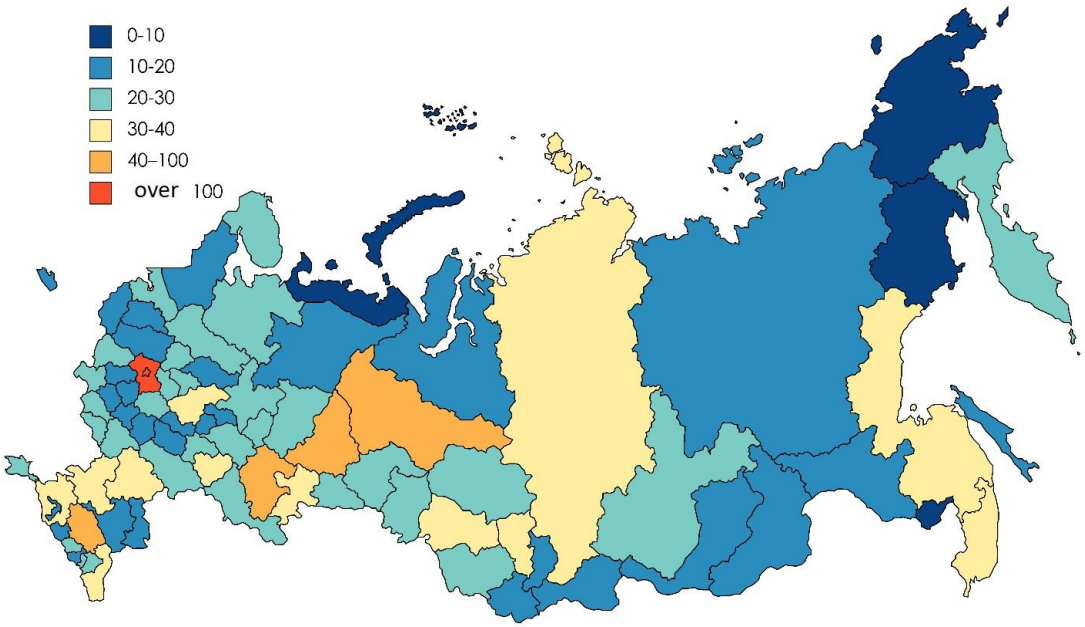

Figure 1. Number of organizations connected to the telemedicine system, units, 2021
(EMISS state statistics, 2022)

The development of telemedicine is one of the most promising areas in the modern healthcare system in Russia. As of 2022, 2085 medical institutions are connected to the telemedicine system of the Ministry of Health of the Russian Federation. Figure 1 shows data on the number of medical institutions connected to the telemedicine system. On it, we see that telemedicine is represented in all regions of Russia, but the number of connected organizations is small. The exception is the city of Moscow and the Moscow region. Also, most of these medical institutions are located in the city, which does not make them more accessible to rural residents.

Telemedicine has become widespread in foreign countries. In Russia, this direction began its development in 2001, when the "Concept for the development of telemedicine technologies in the Russian Federation" was adopted (Chubarova, 2007). In addition to the state system of telemedicine, a fairly large block of mobile telemedicine services operates in Russia, they are available to all residents of our country, for this you need to download the application from this telemedicine service to your phone or use it through a desktop computer. Figure 2 shows the most popular telemedicine services and their percentage in terms of the number of downloads by users.

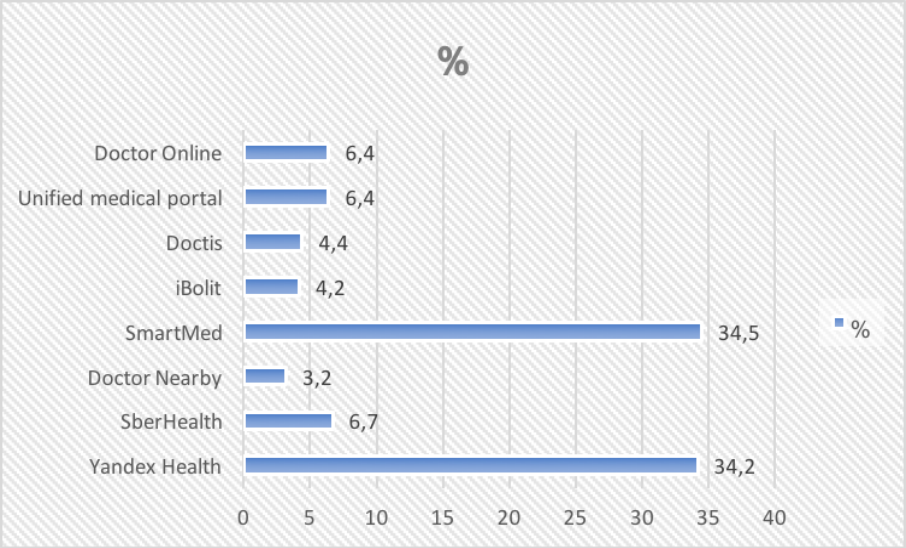

Figure 2. Most popular telemedicine services by number of downloads, %, 2021 (Google Play Store, 2022)

Other services not shown in the diagram include: ONDOC, TeleMed, Online Doctor, DocDoc, BestDoctor, SOGAZ telemedicine, Medved.Telemed, Medzdrav, they also provide standard telemedicine services.

All the services presented above make it possible to make an appointment with a doctor, receive a remote medical consultation, exchange the necessary electronic files with a medical institution, and receive a transcript of tests. These services also have additional functionality, in particular, reminding the user to take medication, to make an appointment with a doctor, and also collect data on the user's activity and vital signs.

Despite the many positive aspects of telemedicine, there are some challenges that patients face when using it. The main such problem is the payment of telemedicine services, since not every citizen of our country can afford to pay for medical advice, especially for rural residents, whose incomes differ significantly from urban residents. Also, residents of rural areas are faced with the fact that medical institutions connected to the telemedicine system of the Ministry of Health of the Russian Federation are located in large cities, most often regional ones, and those patients who are assigned to these institutions can use these telemedicine services.

In addition to the problem of payment, patients often face problems with insufficiently good telephone communication and low Internet connection speed, which does not allow them to contact a doctor remotely. Also, many rural residents are characterized by information and computer illiteracy, since most of the rural populations are people over 60 years old who do not know how to use smartphones, computers and the Internet. Therefore, for this part of the population, it is more efficient to use other means of providing medical services.

Mobile medical diagnostic complexes are mobile polyclinics, feldsher-obstetric stations equipped with all necessary life support systems and appropriate medical equipment. The distribution of new forms of medical services in the regions of the Russian Federation is shown in Figure 3. The northern regions and regions of the

Far East are characterized by the predominance of air ambulance, and mobile diagnostic complexes are not widely used here.

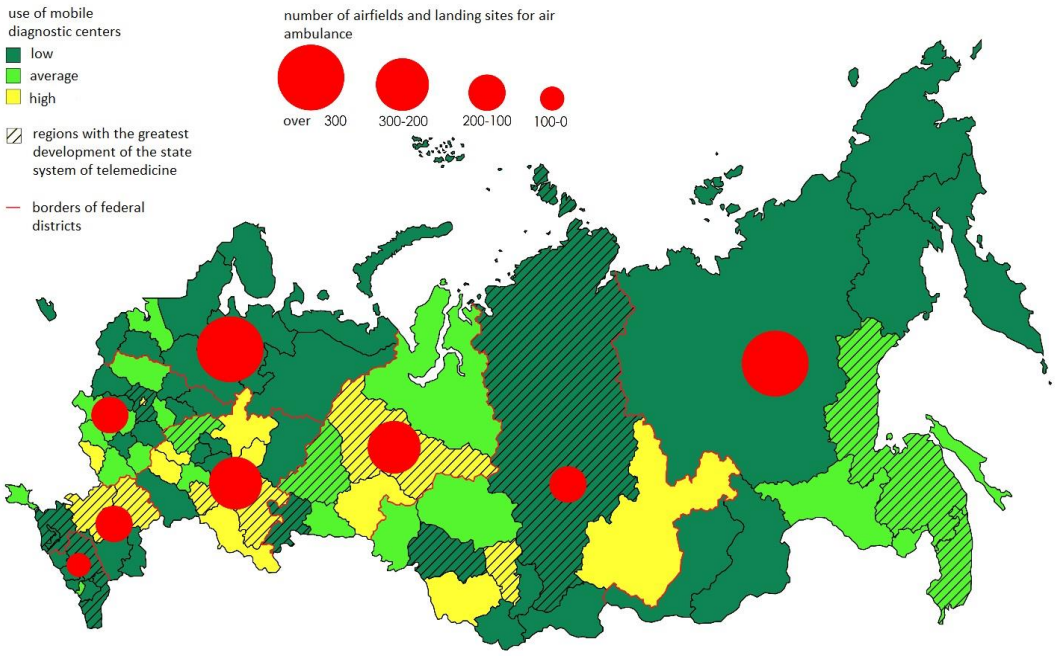

Figure 3. Distribution of new forms of medical services in the regions of the Russian Federation (EMISS state statistics, 2022; FBGU, 2022; Federal Air Transport Agency, 2022)

The North Caucasian Federal District is characterized by low values for all three indicators, although the state is actively trying to introduce a state telemedicine system into medical institutions. The regions of the central part of Russia, the Volga region, the Urals Federal District, as well as the western regions of the Siberian Federal District and the Irkutsk Region are characterized by rather high rates in the use of new forms of medical services. This is due to the fact that most of the population of Russia lives in these regions, and various infrastructure is most developed here.

Conclusion

It is rather difficult to judge the development of telemedicine services, since the state has just begun to introduce this system into medical institutions, while there are quite a few paid mobile telemedicine applications that any resident of our country can use on their own, but data on the number of users is not provided. According to the results of the survey, we can say that the use of telemedicine services is more widely represented in the northern regions, in particular in the Murmansk region. This is due to the large distances between neighboring settlements, as well as the fact that the Murmansk region borders on the Scandinavian countries, where the practice of using telemedicine services is widespread.

In our study, we also examined the effectiveness of the use of new forms of medical services in the fight against a new coronovirus infection COVID-19. We came to the conclusion that new forms of medical care contributed to a decrease in the spread of diseases, allowed residents of even the most remote settlements to receive qualified medical care and free round-the-clock medical advice, and also made it possible to reduce the burden on inpatient medical institutions and separate patients with different forms. diseases. Despite the fact that most of the rural population of Russia receives medical care by contacting hospitals and polyclinics, the introduction of new forms of medical services is a promising direction in the development of the healthcare system, as it significantly increases its accessibility.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

Acknowledgements or Notes

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