

**ICEST 2021****II International Conference on Economic and Social Trends for Sustainability of Modern Society****THE TELEMEDICINE'S PROSPECTS IN THE FRAME OF THE  
DIGITALIZATION OF HEALTHCARE**

V. A. Bondarenko (a)\*, A. A. Voronov (b), N. V. Guzenko (c), N. N. Zubareva (d)

\*Corresponding author

(a) Rostov State University of Economics, 69 B. Sadovaya Street, Rostov-on-Don, Russian Federation, b14v@yandex.ru

(b) Kuban State University, Krasnodar, Russian Federation, a.voronov@mail.ru

(c) Rostov State University of Economics, Rostov-on-Don, Russian Federation, musamav@mail.ru

(d) Belgorod National Research University, Belgorod, Russian Federation, nzubareva73@mail.ru

**Abstract**

The authors justify the positive transformations in the life of society based on digital solutions implemented on the platform type in the article. The importance of the quality and life expectancy of the population for the competitive parameters of socio-economic systems, which confirmed by the validation of human capital in the ratings of international competitiveness or innovative development of regions, is emphasized. This underscores the demand for the application of digital solutions in healthcare. The article examines examples of the active and successful use of telemedicine solutions in the interaction with patients and physicians in foreign practice. This fact has actualised the study of the prospects of telemedicine in the commercial medical segment as part of the digitalization of healthcare in Russia. The interest in the commercial medicine segment is justified by the fact that the number of commercial medical organizations in the country has grown in recent years and there has been an increase in public confidence in the medical services they provide. An analysis of the results of a large-scale empirical study demonstrating the attitudes of market practitioners towards the prospects of telemedicine determines the barriers to its full deployment. They relate to legislation, insensitivity of the population and resistance of medical personnel. The difficulties and contradictions noted addressed with the help of expert professional opinion and established international experience.

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## 1. Introduction

Digitalization brings its own changes to the functioning of various spheres of activity, creates additional opportunities through instant communication, access to necessary information, application of artificial intelligence technologies (Bondarenko et al., 2020a), uniting professionals and consumers into network communities, platform-type ecosystems, giving, in the end, a new quality of interaction and quality processes of consumer goods and services. At present, Russia is lagging behind some countries in terms of the intensity of digitalization of the economy now, but at the same time, there are positive trends directly related to the transformation of the work of industries on the platform basis of digitalization (Bondarenko & Guzenko, 2021).

The indicator of the population's health, quality and life expectancy act as a guarantee of societal development and the possibility of positive evolution of socio-economic systems. For this reason, in various rating systems, indicators that take into account the validation of human capital (this is characteristic of innovative development potential and international competitiveness) (Global Innovation Index, 2019; Global Competitiveness Index, 2019), which actualizes the importance of digitalization in the field of health. One of the key areas within the framework of digitalization of healthcare, which is actively implemented in Russia (supported by regulatory and legal support) (Decree of the Government of the Russian Federation of 28.07.2017 N 1632-r "On Approval of the Digital Economy of the Russian Federation", 2017; Presidential Decree No. 203 of 09.05.2017 "On the Strategy for the Development of Information Society in the Russian Federation for 2017-2030", 2017) is telemedicine, carried out in the doctor-doctor and doctor-patient format. According to the existing foreign experience (Rock Health..., 2016) and estimates of a number of domestic experts. This direction is leading importance in expanding the coverage of the population, involving it in diagnostics at an early stage, along with optimizing the costs of medical organizations for interaction with partners and clients (patients) (Bondarenko et al., 2020b). This fact raises some interest in terms of assessing the realistic sentiments of representatives of medical organizations from the for-profit medicine segment, which intended this direction to practically test.

## 2. Problem Statement

The experience of other countries, which has been largely positive, and the projects implemented in Russia in the practice of public medicine, may not fully justify themselves in the operation of commercial medical centres. In Russia, however, there has been an increase in facilities from the commercial medicine segment and the confidence of patients in the services they provide is evident (Izvestia Russians consider paid medical services to be of higher quality, 2017). This circumstance suggests a study of the applicability of telemedicine practices in the segment of commercial medicine in Russia.

## 3. Research Questions

Our research tasks include a study of the significance of the digitalization of healthcare in the scientific literature, an analytical review of the benefits of telemedicine with reference to foreign practices

and an analysis of the results of a large-scale empirical study in the segment of commercial medicine to draw conclusions about the reality in Russian practice and the possible prospects for positive change.

#### **4. Purpose of the Study**

The purpose of this article is to analyse the current situation in the use of telemedicine technologies by commercial medical institutions and to assess the prospects for their further implementation, taking into account the Russian realities.

#### **5. Research Methods**

Most of the researchers are positive about the focus on digitalization of health, which they see as a way to optimise resources (Khabriev et al., 2013; Muslimov, 2018). In Russia, digital solutions, namely the possibility of telemedicine consultations, could have a positive impact because, according to practitioners, currently "in Russia 17% of people never go to a doctor. 54% of the Russian population only go to a doctor in case of emergency" (Roscongress, 2019, p.1).

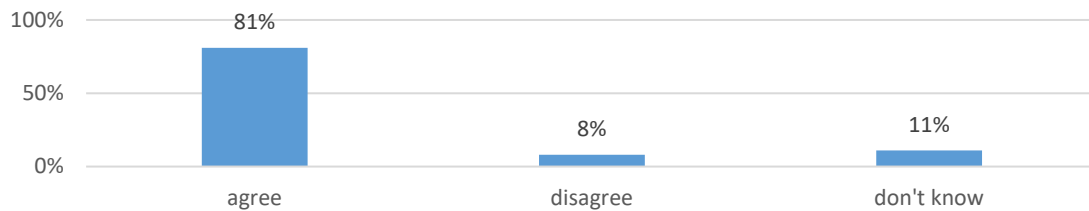
Within the framework of the development of digital and telemedicine technologies, the experience of the USA is illustrative, where there is a trend of annual growth in investment in this area (Accenture, 2016).

In Russia, the digitalization of healthcare is currently at its peak in Moscow, St. Petersburg and the Republics of Tatarstan and Bashkortostan. Pilot projects are being implemented in terms of telemedicine related to monitoring the condition of patients living in remote areas and having trouble in organizing regular visits to specialists. However, to date, for example, such technology as electronic medical records, the introduction of which announced quite a long time ago, used only in 10% of Russian regions, and about 30-40% of the working time of nurses and doctors is spent on the maintenance of various paper documents (Digital/McKinley team expert report, 2017).

In terms of implementation of the telemedicine component, some countries are setting up professional medical call centres, which makes it possible to reduce the workload of medical staff and provide services to those patients for whom they are not fully accessible offline. Such solutions are available in India, Mexico and the UK. In India, according to expert data, accessibility of medical care for remote areas has increased five times (Digital/McKinley team expert report, 2017).

In addition to teleconsultation of patients in remote areas, telemedicine uses telemonitoring, which includes an alert system for patients, monitoring, and diagnosis of their condition by medical staff. In the Netherlands, similar programs implemented to provide care for systematic remote monitoring of patients with cardiovascular disease. In the USA, remote monitoring of 44,000 veterans has reduced hospital admissions by 20%, which has also contributed to an overall reduction in their costs of care of almost 8%. (Digital/McKinley team expert report, 2017). In the US, 30% of initial health care calls are made via telemedicine (Gartner IT glossary, 2012), allowing for early detection of problems and health-promoting solutions (Skryl & Paramonov, 2017). Telemedicine also has some potential in teleconsultations and the training of doctors. This is the possibility of organizing quick profile consultations with narrow specialists, which helps in making a diagnosis, choosing the right treatment regimen (Tele-Avc, 2011).

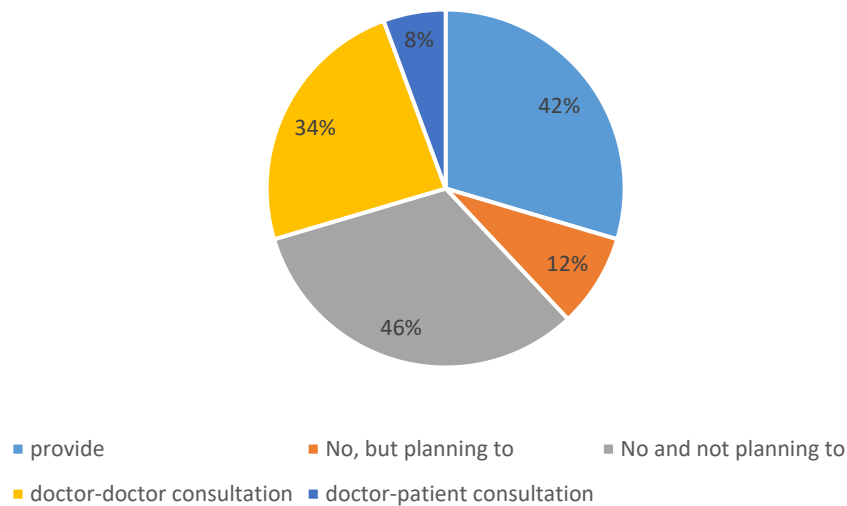
However, to date, a realistic assessment of the expectations for telemedicine in the segment of commercial medicine differs from the intended effect. Thus, according to empirical data, a modest number of participants in the segment of commercial medicine believe that the initial expectations have been meeting (Figure 1).



**Figure 1.** Distribution of respondents' opinions regarding the opinion that telemedicine projects have failed in the commercial medicine segment, % (EY Russia, 2020)

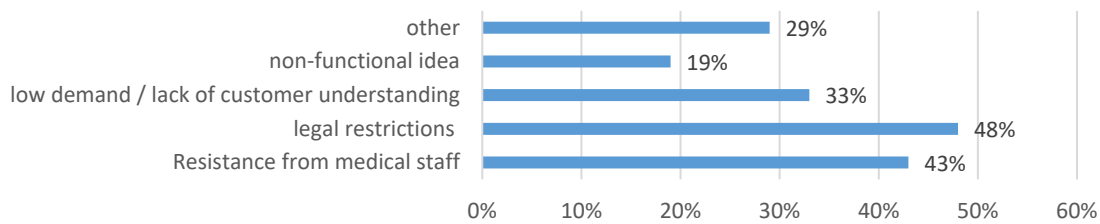
The reality of telemedicine projects in the segment of commercial medicine seen as falling short of expectations by around 81% of professionals and only 8% think otherwise.

Data on the provision of telemedicine services in commercial health centers, according to a large-scale empirical study, illustrated in Figure 2.



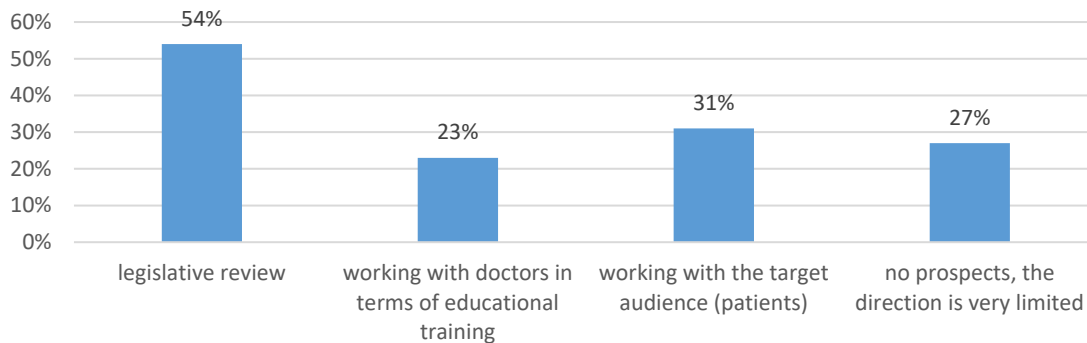
**Figure 2.** Distribution of responses to the question regarding the provision of telemedicine services by commercial organizations, % (EY Russia, 2020)

According to the data cited, 42% of the organizations currently provide telemedicine services, of doctor-patient consultations account for 8% of the cases and doctor-patient relations account for 34% of the cases, 12% of the respondents indicated that they plan to introduce these services. However, 46% of the surveyed representatives of the practice segment of commercial medicine indicated that they do not plan to use telemedicine projects in their practice. According to practitioners, there are the following reasons that constrain their intension to implement telemedicine projects (Figure 3).



**Figure 3.** Distribution of opinions regarding constraints in the development of telemedicine projects, % (EY Russia, 2020)

The most pronounced factors are those related to legislation (48%). Within the framework of the existing regulations, effective doctor-doctor interactions and medical consultations are possible, but there is no possibility to diagnose the patient remotely. In addition, patients themselves are not involved in this format of receiving services (33%), which requires advocacy and promotion of remote diagnosis in Russia, where this culture has not yet been established. The reluctance of medical staff to engage in remote working with patients, which implies adequate training and time resources for the practice, is also seen as a barrier. Possible steps to overcome this situation, according to representatives of the commercial medicine segment, shown in Figure 4.



**Figure 4.** Distribution of respondents' answers regarding overcoming constraints in implementing telemedicine projects, % (EY Russia, 2020)

As we can see, great hopes are placing on changing legislation in the format of doctor-patient interaction, allowing for primary diagnosis. The study participants also see a certain resource in working with staff (doctors and nurses), as well as conducting communication and promotional work with potential consumers (patients). However, 27% of specialists see the future of telemedicine in a truncated format, associating it with the monitoring of existing chronic diseases, working with patients in remote areas and the ability to transfer data.

## 6. Findings

We can conclude that digitalization is, objectively speaking, creating significant benefits for work in the field of healthcare. The digital platform solutions being implemented make it possible to speed up doctor-patient contact processes, reduce the risks of late referral to a specialist, and minimize (in some

cases) the cost of interaction, which helps to improve the quality of services provided to the population and the quality of life of Russians. Since there are remote areas in Russia with a shortage of medical staff (Bondarenko et al., 2020c), the expansion of doctor-doctor and doctor-patient interaction is highly relevant for them.

At the same time, in the segment of commercial medicine, experts note the difficulties associated with the legislation, medical staff training and unpreparedness of the market (patients) for the active consumption of telemedicine services. Since this direction is successful in world practice, we believe that it will be justified for further use in Russia.

## 7. Conclusion

In our view, for commercial health care organizations, which initially focused on customer satisfaction, expanding consumer outreach and establishing a long-term doctor-patient relationship is a priority and has an impact on improving the quality of life of the population. Communication efforts to promote early diagnosis, including remote diagnosis, among potential users of health services are justified. Additional training and professional development of medical personnel with regard to the use of telecommunication technologies is important. Changes in legislation and technical regulations are also important. The difficulties and contradictions noted above should be overcome by relying on the opinion of the expert professional community and established international experience.

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