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INCLUSION, DIVERSITY OR DISPARITY IN TELEHEALTH DURING THE COVID-19 PANDEMIC

M. Dvoryashina*. E. Tarasenko**

* V. A. Trapeznikov Institute of Control Sciences of RAS, Moscow, Russia
(e-mail: dvoryashina@gmail.com)

**Higher School of Economics, Moscow, Russia
(e-mail: etarasenko@hse.ru)

Abstract: The COVID-19 pandemic has led to an explosive growth in telemedicine solutions. On the one hand, this is an important moment for the development of telehealth, which promotes inclusion and diversity, and reduces inequalities in health care. On the other hand, telehealth may be less accessible to minorities such as people with cancer, heart disease or rural patients. As telehealth begins to play an increasing role in healthcare delivery in Russia, telemedicine solutions need to be more socially responsive and to transform practices at the individual and organizational levels, helping the organization's efforts to reduce inequality. Workflows for video conferencing should be designed based on the experience of outpatient teams with video conferencing experience. The authors recommend that telemedicine engineering companies use the ISA 315 Organization's Internal Control System with its D&I component.

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1. INTRODUCTION

Diversity and inclusion are very important for healthcare. The COVID-19 pandemic has driven explosive growth for the digital transformation of many services, including healthcare and medicine in most developed and developing countries in the world. Many Russian hospitals (public and private) and telemedicine platforms have announced the opening of chargeless patient-doctor consultations on COVID-19 questions. On the one hand, the demand for high-quality information and recommendations from doctors has skyrocketed, and on the other, lockdown measures, self-isolation, and a massive shift to remote work have led to a rapidly growing need for remote health-related counseling. There is a favorable moment for a breakthrough development of the telehealth services market to promote inclusion and diversity and to reduce disparity in healthcare.

2. RESEARCH RESULTS AND DISCUSSIONS

The dispersed population of most of Russia (for example, the population density of our country in 2017 was 8.6 people per sq. km, in the UK - 271.9, Italy - 200.9, the USA - 33.8), relatively low mobility and tourist activity of the population both within the country and in foreign destinations in the first months of the COVID-19 pandemic restrained the spread of the virus in Russia regions and gave the possibility to prepare the health system to respond to the pandemic COVID-19.

At the beginning of the COVID-19 epidemic, the number of outpatient visits to patients decreased by 25%, but the volume of virtual visits by doctors increased significantly. Moscow and other big Russian cities were the epicenters of the COVID-19 pandemic. Thousand Muscovites with

coronavirus infection were treated at home because their disease was mild and did not require inpatient care. However, it was necessary to constantly monitor the condition of patients. Experts from the Telemedicine Center of the Moscow Department of Health help to do it under lockdown conditions. All citizens with a confirmed diagnosis must follow quarantine. Telehealth experts are at reception round-the-clock, you can contact them via video link.

Working hours of the doctor's consultation remotely last 12 hours, the schedule is two days' work and two days' vacation. Therapists work mainly. They work according to special algorithms. The main task of these doctors is, first, to assess the pronounced symptoms of coronavirus infection. Doctors have access to the special telehealth system UMIAS (unified information and analytical system of Moscow). Each doctor, starting an appointment, enters the patient's electronic card, can evaluate comorbidities, and decide on the need for an in-person consultation or outpatient treatment. Telemedical consultations are carried out according to a strict scenario. For a patient, it all starts with a doctor's visit at a medical clinic or home visit. Doctors carry out the necessary tests, find out if there are concomitant diseases, prescribe treatment, and enter these data into the UMIAS. If the test is positive, but the patient's condition is satisfactory (no serious breathing problems and high fever), he is left in quarantine for 14 days. The patient's data is transmitted to the Center and tells how to register on a special platform through which video reception is conducted. It is also important to note the success of medical rehabilitation training online courses and fitness lessons for elderly people conducted online as part of the Moscow Longevity project in the city of Russia.

To combat the new coronavirus infection COVID-19, regional telemedicine centers have been created in all

provinces of the Russian Federation. Over 1.3 million consultations have been provided to patients in march 2020 – march 2021. The National Medical Research Center of the Ministry of Health of Russia held more than 72 thousand telemedicine consultations and consultations on complex cases at the request of doctors of regional medical organizations.

If there is no computer or smartphone for video communication, doctors also consult patients by phone. It is very important for elderly patients who live alone and have no access to computers or smartphones. So, we can talk about the inclusive nature of telehealth services in Moscow.

After the visit, all the data is entered into an electronic card, where another specialist can study them, if necessary.

Patients treated at home can call several times a day, the number of calls to the telemedicine center is not limited in any way. Usually, people talk about new symptoms, high fever, and general malaise. And sometimes, according to doctors, patients just need support. Especially for this, a psychological service is working in the adjacent room, and doctors, before taking up their posts, get additional psychological training. Because they are ready to help different groups of patients, we can talk that telehealth promotes diversity.

But achieving full health equity and inclusion is so hard in the telehealth age in Russia. There are a lot of barriers to healthcare equity and inclusion. It is important to note that there are risks for increasing disparities in access to telehealth during the COVID-19 pandemic for several ethnic, socioeconomic, and other minority groups. The following groups of patients have a low chance for telemedicine assistance:

- ✓ patients with speech disorders,
- ✓ deaf patients,
- ✓ elderly patients and disabled people with a low level of technology education and have no Internet access,
- ✓ people with such dangerous chronic diseases as oncology,
- ✓ Roma people,
- ✓ migrants from other countries with lack of proficiency and understanding in the Russian language,
- ✓ people in rural and remote areas with the absence of full Internet access.

For them, it is difficult to make a doctor's appointment with telehealth technologies and they have low access to "traditional" care during the COVID-19 pandemic. Face-to-face visits to doctors have become dangerous or impossible for them.

The COVID-19 epidemic has posed numerous challenges for all types of health care, including "non-covid care" for people with acute and chronic illnesses. The first problem is related to the "cumulative effect", which means that the number of patients with chronic diseases is increasing (for example, cancer, and cardiovascular disease), as well as the problems of healthcare access for patients with chronic diseases. Experts think that the detection of cancer at later stages will increase. The first complaints of patients about the reduced accessibility of healthcare sounded in the regions in early April 2020. By this time, the Order of the Ministry of Health

of the Russian Federation No. 198n and the Decree of the Government of the Russian Federation No. 432 of April 3, 2020. temporarily - until the end of 2020 - limit routine medical care, especially in a hospital - hospitalization should be carried out "exclusively" in the direction issued by the attending physician, regional authority, or the Ministry of Health itself. "In full" was promised medical care to patients with cancer, cardiovascular, endocrinological diseases, and those in need of dialysis.

Order No. 198n additionally states that medical organizations providing outpatient care and treatment in day hospitals should work "with the priority of providing patients with acute respiratory viral disease symptoms in primary health care at home, with the additional involvement of medical workers." The same institutions organize remote prescriptions of drugs and deliver them to home. At the same time, regional health authorities have been given the authority to consider the possibility of transferring routine medical care in day hospitals.

The Federal Service for Surveillance on Consumer Rights Protection and Human Welfare (Rospotrebnadzor) also gave the same recommendations. In addition to the rules for working for "covid" institutions, the department has developed a checklist for hospitals that are not involved in the fight against coronavirus. The document states that the chief physician of the hospital during the COVID-19 pandemics can opportunity to make an order to suspend/restrict planned hospitalization and operational activity. The chief sanitary doctors of the regions also acted ad hoc.

In St. Petersburg, for example, by order of the head of the city Rospotrebnadzor Bashketova N., all planned hospital and outpatient medical care in private and public clinics was limited. This tough decision caused huge public resonance that Bashketova N. had to amend her document, leaving medical care in full for patients with socially significant diseases (tuberculosis, diabetes, HIV, and others) and diseases that are dangerous to others, as well as for those patients whose condition may worsen markedly if care is delayed.

In the Republic of Tatarstan, all hospitals and clinics have been banned from planned hospitalization since April 1, 2020, the restriction did not apply to patients with socially significant diseases, as well as those cases when a delay in treatment is impossible.

The All-Russian Society of Oncohematology "Assistance" at the beginning of 2021 conducted an anonymous survey among specialized patients about the difficulties they faced in 2020 due to the COVID-19 pandemic and how much it affected the availability of diagnostics and therapy. It turned out that more than 60% of respondents experienced various difficulties when visiting a doctor.

The survey involved 788 people from 76 regions of Russia. Among the respondents, 53.2% noted that medical institutions only accepted emergency patients, and about 9% of the participants complained that they were able to see a doctor only a month after making an appointment.

Most respondents (75%) reported that they were not satisfied with the provision of medical care in the hematological profile in their region. First, the difficulties were associated

with the problems of access to treatment. Many patients faced a significant number of difficulties, ranging from the difficulty of making a doctor's appointment and ending with access to modern diagnostics and treatment. It is important to understand that the pandemic has only exacerbated the existing problems with internet access and rural healthcare delivery.

The telehealth technologies are currently being built for a narrow socioeconomic profile, for someone who speaks Russian first, who has smartphones computers, or laptops, has internet access, can make sense of patient portals, and know how to work with Zoom, MS Teams, or WhatsApp.

Patients with low technological education often need help on how to install and use many new tools and programs. It is an open question: "Can a doctor or the public medical clinic contact remotely with patients to help them download MS Teams or WhatsApp, to show how to organize WhatsApp meetings or send an email to doctor?"

However, the situation is changing. In November 2020, the official regulations for remote treatment with telemedicine technologies usage were approved in Russia. The Ministry of Health of Russia again amended Order No. 198n "On the temporary procedure for organizing the work of medical organizations to implement measures to prevent and reduce the risks of the spread of a new coronavirus infection COVID-19." The Ministry of Health gave recommendations to regional ministries of health to organize the provision of medical care with telemedicine technologies usage for patients with COVID-19 and with suspicion of it as well as to patients with confirmed community-acquired pneumonia, acute respiratory viral infections, and influenza (or with signs of these diseases) if the condition of the patients allows them to be monitored at home.

For this case, the Ministry of Health approved "temporary regulations for the organization and provision of consultative medical care with telemedicine technologies usage" to these groups of patients. According to the regulations, regional ministers of health, chief doctors, and heads of structural divisions of clinics are authorized to ensure the prompt provision of telemedicine assistance, determine the clinics which will be involved in such telehealth assistance, analyze statistical data on the provision of consulting assistance, and ensure the registers of accounts for telemedicine services formation.

The regulations note that remote interaction between a doctor and a patient is carried out, *inter alia*, for "correcting the previously prescribed treatment, provided that the attending physician establishes a diagnosis and prescribes treatment at an in-person appointment (examination, consultation), including the formation of an electronic prescription for a medicinal product from its subsequent referral to the patient through Unified portal of state and municipal services". In electronic form, certificates of incapacity for work and other medical documents can also be drawn up. The order additionally notes that telemedicine technologies are used in the provision of advisory medical care to patients in an emergency (to determine the indications for calling an ambulance), emergency, and planned forms. Also, consultations should be conducted daily and around the clock. The Ministry of Health also recommended to regional

health authorities to provide medical organizations with "the necessary premises, communication facilities, and equipment for conducting consultations (consultations of doctors) for remote interaction of medical workers with patients." "One-stop consulting centers" can also be created.

In the new order, the regional ministries of health are also recommended to organize outpatient centers for the diagnosis and treatment of COVID-19, which will interact with clinics that provide emergency medical care and medical care in outpatient and inpatient settings.

The Ministry of Health also advises equipping such centers with transport for the delivery of patients and medical personal, for the transport of biological materials, and the delivery of drugs. The order also approved the regulation on the organization of the work of outpatient centers. They are recommended to be created based on clinics providing primary health care and having a computed tomography room. If there is no such room, the clinic must agree with another medical organization that has a tomography device or provides tomography scanning in the center using mobile medical complexes. Another important recommendation was that the outpatient center needs to be open 24 hours a day. The center should be divided into zones that limit the intersection of different patients. At the entrance to the center, all employees of the center and patients must be provided with personal protective equipment. If the patient does not have a test result for COVID-19, the collection of biomaterials for laboratory diagnostics is carried out in the center. Among other innovations of the order - the heads of the regional ministries of health and the chief doctors of clinics providing emergency and specialized medical care, it is now necessary to define "general field ambulance teams" sent to call patients with coronavirus infection. Previously, such teams were assigned only to visit patients with influenza symptoms and community-acquired pneumonia. The chief physicians of such medical organizations could engage in the provision of such assistance after completing additional training of third-year students in higher medical education programs and second-year students in the specialty "nursing". Such people will be enrolled in the staff as nursing staff, they will work under the guidance of a doctor or paramedic. Under the same conditions, such specialists and people with higher pharmaceutical education can be employed in clinics that provide medical care on an outpatient basis or in a day hospital.

3. CONCLUSIONS AND RECOMMENDATIONS

The telehealth services market allows promoting inclusion and diversity, to make healthcare more patient-centered. We can note that telehealth technologies are currently being built for a narrow socioeconomic profile. Groups of patients have a low chance of telemedicine assistance. Recognizing that telehealth was creating new barriers to inclusion and equitable access to medical care, we recommend creating a video platform with easy access to doctors or medical clinics with a one-click, browser-based solution with integrated medical interpretation on demand. Patients need professional assistance trying to learn telemedicine technologies. Perhaps students of medical universities and colleges and volunteers from NGO could help patients with a low level of education

in the field of telemedicine technologies to lower the barrier for the disparity in telehealth during the COVID-19 pandemics.

It is important that video conferencing workflows are designed with the experience of outpatient teams with video conferencing experience. For telemedicine engineering companies we recommend:

- On the recruiting side: changing the procedure for hiring specialists, primarily in the field of R&D, marketing and sales. New hires will help companies launch more socially responsive products and expand into new markets.
- On the promotion&sponsorship side: sponsorship, participation in the promotion of pilot projects for the development of telehealth solutions. Removing constraints and empowering leads to new and previously unacceptable ideas.

As telehealth begins to play an increasing role in healthcare delivery in Russia, telemedicine solutions need to be more socially responsive and to transform practices at the individual and organizational levels, helping the organization's efforts to reduce inequality and be more diverse and inclusive.

The authors recommend that telemedicine engineering companies use the ISA 315 Organization's Internal Control System with its D&I component.

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