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COVID-19 TREATMENT IN THE RUSSIAN FEDERATION: STATE SUPPORT OF MEDICAL WORKERS TREATING COVID-19 IN THE RUSSIAN FEDERATION AND QUALITY MANAGEMENT WITH INDUSTRIAL AND MANUFACTURING ENGINEERING

Abstract: *The current situation in the fight against the spread of the coronavirus COVID-19 has demonstrated that the most affected category of citizens (in terms of morbidity and mortality) around the world are healthcare workers. High workloads, the risk of infection and death from coronavirus against the background of sometimes insufficient protection, both physically and socially, leads to the fact that the risks of an increase in the outflow of medical workers from the industry and an increase in the personnel shortage. Most of the states agreed to provide medical workers with a wide range of benefits, guarantees and compensations. At the same time, measures to support medical workers are important not only in themselves, but also as a tool for managing personnel in the industry. This publication examines the experience of the Russian Federation in state support for persons associated with the treatment of coronavirus infection, including in comparison with the experience of some other countries. An assessment of the effectiveness and feasibility of using various measures to support medical workers is given and the conclusion is substantiated that in order to improve the staffing of health care to improve the quality of provided medical services, it is necessary, if possible, to "monetize" benefits and guarantees. Extensive opportunities for this are opened on the basis of industrial and manufacturing engineering of digital healthcare.*

Keywords: *Quality; Quality Management; COVID-19; Health Workers; State (Social) Support for Health Workers; Guarantees; Benefits; Compensations; Incentive Payments; Digital Healthcare; Industrial and Manufacturing Engineering.*

1. Introduction

The spread of the coronavirus infection COVID-19 is associated with huge financial, human and other losses. First of all, this concerns the sphere that takes on the main blow associated with the treatment of this disease - healthcare.

The provision of medical care to patients with coronavirus infection COVID-19 is associated with a number of factors unfavorable for medical workers:

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- The risk of contracting a dangerous infection;
- Increased emotional and psychological stress;
- Increased physical activity (in the case of a large number of patients).

It is no coincidence that there is an increase in the number of medical workers who have contracted and died from coronavirus infection worldwide. Many lose their ability to work and become disabled. There is a tendency for the outflow of medical workers, fearing for their health, from the healthcare sector. All of this in the long term may aggravate the situation with health workforce and worsen the ability to fight not only directly with the coronavirus infection COVID-19, but also with other diseases, and lead to a deterioration in the health of the entire population.

National governments understand this threat and are trying to counter it by managing the quality of medical services. Taking into account financial capabilities and other factors, measures are being taken to support medical workers, primarily, as a rule, by raising wages.

All this should have affected the overall level of remuneration for medical and other workers involved in the treatment of patients with coronavirus infection. A number of other measures are being established to provide state support to people involved in the treatment of coronavirus infection.

However, inherently positive decisions that target only a fraction of health professionals often cause dissatisfaction among others and lead to conflicts. This causes risks to the quality of medical services, which is an urgent problem of the health economy in the context of the COVID-19 pandemic. Let's look at the example of the Russian Federation, including in comparison with other countries. In the Russian Federation, support measures for health workers are quite diverse, but, as practice shows, not all of them are effective enough (in terms of achieving the goals of establishing these support measures) and need to be constantly adjusted to meet changing conditions and high requirements for quality.

2. Literature Review

This article draws on publications on state support of medical workers by such scientists as Kadyrov (2014), Kadyrov et al. (2020a), Kadyrov et al. (2020b), Kadyrov (2020), Starodubov et al. (2020a), Starodubov et al. (2020b), Starodubov et al. (2020c), Chililov and Kadyrov (2020).

The paper also uses works on the topic of providing medical services in the context of the COVID-19 pandemic by such experts as French (2020), Khilnani et al. (2020), Mani and Mishra (2020), Marciano et al. (2020), Remko (2020), Sharma and Bhatta (2020), Popkova et al. (2020).

The theoretical basis of the research is also made up of publications on the topic of quality of medical services by such authors as Bratukhina et al. (2020), Devetyarova et al. (2020), Gritsuk et al. (2019).

3. Results

3.1 Guarantees, benefits and compensations for working with coronavirus infection and their contribution to ensuring the quality of medical services

For all its specificity, COVID-19 is an infection. Therefore, as with the treatment of any infection, persons engaged in the treatment of coronavirus infection, in accordance with the current legislation of the Russian Federation, are entitled to certain guarantees, benefits and compensation. However, a number of these measures were taken before the appearance of coronavirus infection, and a number appeared only in connection with the spread of coronavirus infection.

The labor legislation of the Russian Federation guarantees the right of an

employee to work in conditions that meet the requirements of labor protection. Every employee has the right to:

- have a workplace that meets the requirements of labor protection;
- obtain reliable information from the employer, relevant state authorities and public organizations on the conditions and safety of work at the workplace, on the existing risk of health damage, as well as on measures to protect against exposure to harmful and (or) dangerous industrial factors;
- guarantees and compensations established in accordance with legislation, collective agreements between employees and employers, and an employment contract, if the employee is engaged in work w ith harmful and (or) dangerous working conditions.

Let's first have a look at the measures of state support for medical workers that were taken before the appearance of coronavirus infection, which continue to operate including during its spread.

Thus, the described guarantees, benefits and compensations for working with coronavirus infection do not have a direct impact on the quality of medical services, because they are automatically paid to medical professionals involved in the treatment of COVID-19 patients, regardless of quality.

3.2 Traditional measures of state support for medical workers, CoV COVID-19

Measure 1: Reduced working hours

Reduced working hours established for employees whose working conditions are classified as harmful or dangerous working conditions based on the results of the so-called special assessment of working conditions. The procedure for conducting a special assessment of working conditions is regulated by a special law.

For employees of infectious diseases hospitals, departments, wards, offices, the working time may not exceed 36 hours per week. The usual working week in the Russian Federation is 40 hours, and for medical workers-no more than 39 hours.

Measure 2: Annual additional paid vacation for employees engaged in work with harmful and (or) dangerous working conditions

Annual additional paid vacation is granted to employees whose working conditions are classified as harmful or dangerous working conditions based on the results of a special assessment of working conditions. The minimum duration of annual additional paid vacation for employees is 7 calendar days. These days are combined with the usual vacation duration, which is 28 calendar days in the Russian Federation.

Measure 3: Preferential order of formation of pension experience

There is a grace period for the formation of retirement experience for medical workers. The time spent working in medical positions (depending on the specific working conditions) is counted as an increased length of service (for example, 1 year is counted as 1 year and three months, or 1 year and 6 months, etc.).

Measure 4: Insurance coverage in accordance with the law on compulsory social insurance

The legislation of the Russian Federation provides mandatory social insurance of employees against industrial accidents and occupational diseases.

Social provision for this type of insurance is provided:

1) in the form of a temporary disability benefit assigned in connection with an insured event;
2) in the form of insurance payments:

- one-time insurance payment to the insured person or persons entitled to

receive such payment in the event of his death;
- monthly insurance payments to the insured person or persons entitled to receive such payments in the event of their death;

3) in the form of payment of additional expenses related to medical, social and professional rehabilitation of the insured in the presence of direct consequences of the insured event, for:
- medical assistance until restoration of working capacity or establishment of permanent loss of professional working capacity;
- purchase of medicines for medical use and medical devices;
- outside (special medical and household) care for the insured, including those provided by his / her family members;
- Spa treatment;
- manufacture and repair of prostheses, prosthetic and orthopedic products and orthoses;
- provision of technical means of rehabilitation and their repair;
- provision of vehicles with appropriate medical indications and the absence of contraindications to driving, their current and major repairs and payment of expenses for fuel and lubricants
- professional training and additional professional education.

Measure 5: Remuneration of employees engaged in work with harmful and (or) dangerous working conditions

The remuneration of employees engaged in work with harmful and (or) dangerous working conditions is set at an increased amount. We are talking about so-called compensation payments. The amount of the increase cannot be less than 4 % of the salary.

As we can see, people associated with the treatment of coronavirus infection are entitled to a fairly wide range of guarantees, benefits and compensation. In general, the current legislative regulation of measures of state support for medical services was rather adequate for the case of the spread of coronavirus infection. Therefore, it seems that there are no special problems with providing employees engaged in providing medical care to people who have been diagnosed with a coronavirus infection. But in practice, the situation is different sometimes.

Usually, the most attention is paid only to incentive payments and additional insurance guarantees. However, many of the guarantees, benefits and compensations listed above are often not implemented. First of all, we are talking about the following:
- the right of employees to a reduced working week;
- employees' right to additional paid vacation;
- the right of employees to a preferential procedure for calculating the length of service for early retirement;
- the right of employees to compensation payments.

This situation usually applies to cases when not only infectious disease doctors and epidemiologists are involved in the fight against coronavirus infection, but also doctors of other specialties – usually as part of the temporary conversion of beds of other profiles into infectious ones.

Therefore, at present, there is a situation when employees of "traditional" (established before the appearance of coronavirus infection) infectious hospitals (departments) receive all state – provided social support measures, and employees of "new" ("covid") hospitals and departments-sometimes only part of these guarantees.

Often the management of medical organizations and medical professionals themselves simply do not think about the fact that employees even temporarily repurposed departments rely on state-established support

measures. There are also other reasons for this: financial (the desire to save money in conditions of their limitations); legal (ambiguity of legal norms in relation to cases of temporary change of bed profiles), organizational (shortcomings, inconsistency of actions, etc.

Often the decision not to provide employees with statutory benefits, etc., is a forced measure. According to our estimates, this most often applies to the length of the working week, which should not exceed 36 hours per week when working with infectious diseases. In practice, there were quite often cases of processing, violations of restrictions on part-time work and overtime. And this situation occurs in many countries during periods of peak morbidity - medical workers in such periods may simply not be enough to ensure the legal regime of work.

As we can see, the benefits, guarantees and compensations provided by the legislation are not always provided. But this can not always be blamed on the heads of medical organizations. Often these are forced situations related to the priority of medical care over labor legislation (priority of health protection legislation over labor legislation). And here the question arises about the measures of legal responsibility of heads of medical organizations who violated labor legislation in order to organize timely medical care (for the sake of saving people's lives).

3.3 Measures for additional state support for medical professionals specifically taken in connection with the spread of COVID-19 coronavirus infection: from the point of view of quality

3.3.1 Additional insurance guarantees for certain categories of medical professionals

For additional state support for the employees of medical institutions in the performance of their employment duties in terms of the spread of the new coronavirus infection COVID-19, medical staff and drivers of ambulances who work directly with patients confirmed the presence of a new coronavirus infection COVID-19, and patients with suspected infection, are provided with additional insurance guarantees in the form of a one-time insurance payment.

Insured events that result in a one-time insurance payment are:

a) death of a medical worker as a result of infection with a new coronavirus infection (COVID-19) in the performance of their work duties;

b) causing harm to the health of a medical worker in connection with a disease (syndrome) or a complication caused by a new coronavirus infection (COVID-19);

c) established permanent loss of working ability by a medical worker as a result of complications after a previous illness caused by a new coronavirus infection (COVID-19) if the disease occurred during the performance of their work duties.

In case of the death of a medical worker, the recipients of a one-time insurance benefit (beneficiaries) are nearest relatives, the list of which has been approved.

The one-time insurance payment is made in excess of the payments provided for by the legislation on compulsory social insurance against industrial accidents and occupational diseases, which were mentioned above.

The decision on payments is made upon confirmation of the occurrence of the insured event after the investigation provided for by the legislation of the Russian Federation in relation to the case of a medical worker with a new coronavirus infection (COVID-19).

However, there are ambiguous provisions in this order. For example, the main condition for receiving payments is the provision of medical care by the relevant employees. However, first of all, not all medical professionals are engaged in providing medical care. For example, orderlies whose functional responsibilities do not include providing medical care: they are required to provide sanitary maintenance of hospital rooms, offices, moving material objects and

medical waste, and caring for the body of a deceased person.

Payments are made to medical professionals directly involved in providing medical care to patients who have confirmed the presence of a new COVID-19 coronavirus infection, and patients with suspected infection. This category clearly includes employees of "covid" hospitals (departments). However, the same criterion logically applies to medical professionals who provide medical care for injuries, cardiac and other "non-COVID" diseases to patients who have been diagnosed with a coronavirus infection. The regulations that establish one-time payments do not say that payments are made only to those who treat COVID-19 directly. The documents refer to "working with patients who have confirmed the presence of a new coronavirus infection (COVID-19), and patients with suspected infection." This can lead to ambiguous interpretations.

There are other questions about this from the point of view of "falling out" categories of employees. For example, in relation to cleaners. The situation is compounded by the fact that cleaners de facto work with biological materials of patients, including measures for the collection, decontamination and disposal of hazardous medical waste, which causes a high risk of infection with coronavirus infection in the performance or their work duties.

There are also disputes over which relatives of deceased medical workers are entitled to payments. They are mainly related to attempts to expand the list of persons entitled to receive payments for deceased relatives.

Often there are questions about who is responsible for proving that "the disease occurred in the performance of employees 'work duties", and not at home, in transport, etc.? In this regard, the Ministry of healthcare of the Russian Federation took the side of medical professionals, stating that doubts in summing up the results of the investigation should be interpreted in favor of the medical worker.

Another issue that is often discussed is whether employees are deprived of the right to payments if the disease was caused by their fault (violation of the sanitary and epidemiological regime: no mask, gloves, etc.)?

As already mentioned, in accordance with the current legislation, the decision on the occurrence of an insured event and the provision of payments must be made after an investigation into the case of a medical worker with a new coronavirus infection as a result of infection during the performance of work duties.

At the first stages, there were often conflicts over the refusal of commissions set up in medical organizations to recognize some employees ' right to receive payments because they allegedly became infected through their own fault, without using personal protective equipment in accordance with the established procedure, etc. The real reason for such refusals was often that some managers of medical organizations, trying to hide the number of diseases with coronavirus infection within the walls of the medical organization itself, tried to prove that the employee was infected outside the medical organization (not in the process of providing medical care). They did it for the sake of favorable statistics. Other medical organizations, shifting the blame for the infection to employees, hid their own shortcomings in providing employees with personal protective equipment, disinfectants, etc. And at the first stages of the spread of coronavirus infection such shortcomings, indeed, were.

The Ministry of health of the Russian Federation also supported medical workers in this situation, stating that the insurance payment is made regardless of the established fault of the employee or employer in the occurrence of the insured event during the investigation.

3.3.2 Additional measures for early appointment of an old-age insurance pension

The Government of the Russian Federation has established that for medical workers who have provided care to patients with COVID-19 since the beginning of 2020, each day of such work will be counted in the preferential ("covid") pension experience for two days. The list of employees entitled to additional ("covid") seniority was approved. It includes:

- medical professionals who provide medical care to patients with a new COVID-19 coronavirus infection and suspected new COVID-19 coronavirus infection;
- medical professionals who provide medical care to patients with symptoms of SARS and out-of-hospital pneumonia, including the selection of biological material of patients for laboratory testing for the presence of a new COVID-19 coronavirus infection;
- employees performing medical evacuation of patients with suspected new COVID-19 coronavirus infection.

When analyzing the list of categories of employees entitled to "covid" experience, you should pay attention to the following. Although the list of categories of employees is generally formulated quite correctly, there are still questions about some categories of employees, for example, x-ray technicians who have one of the highest chances of infection with COVID-19 from sick patients: it is not clear from the wording of regulatory documents whether this regulation applies to them. It is not difficult to assume that we may have mutually exclusive interpretations on similar points.

In addition, for a number of situations, there are cases of exclusion of double-counting of preferential experience as prescribed by applicable law and an additional set by Government Decree. This means that the additional preferential "covid" experience is not always combined with the previously existing one. In some cases, only the "covid" length of service will be valid for medical workers – that is, part of the preferential "covid "length of service will be "eaten up" by the cancellation of previously valid grace periods.

At the same time, it should be noted that there are discrepancies in the established procedure for calculating the "covid" length of service in comparison with the previously announced one. The establishment of a preferential procedure for calculating "covid" pensions was announced in May 2020. The information stated that in 2020, the day of work in inpatient and outpatient medical organizations, in emergency departments with patients with coronavirus will be counted as 3 days. For example, an ambulance paramedic who spent 2 months responding to calls to patients with COVID-19 will be credited with a 6-month grace period (Ministry of Labour of Russia, 2020).

In practice, as it turned out, 1 day is counted only as 2, not 3 days. In addition, we see a number of exceptions.

As a result, many medical workers received a preferential length of service 2 times less than announced in the original projects. This is one of the additional factors that can cause social tension among medical workers.

Although the state has not officially committed itself to setting a preferential length of service 1 as 3 (it was only a project of one of the ministries), we see how important it is to be correct and careful when voicing any promises.

In general, the establishment of preferential seniority is perceived by medical professionals as an attractive measure especially against the background of the recent increase in the retirement age for citizens of the Russian Federation. Russia, by increasing its retirement age, followed the example of other Western countries.

The experience of other countries on pension provision can also be useful for the Russian

Federation in connection with COVID-19.

Many countries have changed their pension laws in connection with or for the duration of COVID-19. We find the example of the UK interesting in this regard.

In the UK a regulatory act (Coronavirus Act 2020) (Gov.UK, 2020) was adopted, establishing innovations in national legislation in connection with the COVID-19 pandemic. It was done quite quickly, on March 25, 2020. One of the measures was to change a number of regulations related to pension programs of the National health service.

In particular, retired medical workers who returned to work could now receive a full pension in addition to their regular salary. The reduction in the amount of pension was canceled after the increase in the amount of pensionable salary.

This was an additional economic incentive to attract as many health professionals as possible.

As we can see, the UK has taken the path of "monetization" of benefits for retired pensioners, without revising the retirement age itself.

In the Russian Federation, there are also some differences in the levels of pensions received by working and non-working pensioners (since 2016, pensions of working pensioners are not indexed). Therefore, pensioners who have joined medical organizations to participate in the treatment of COVID-19 lose the right to index their pensions in the corresponding period. In fact, this is an economic demotivation of pensioners' employment. And if this approach can still be justified in conditions of high unemployment, since it frees up jobs for young unemployed people by pensioners, then in the context of the spread of coronavirus infection and the presence of personnel problems in health care, it cannot be considered justified in relation to medical workers.

It seems that an approach similar to that used in the UK could be used in the Russian Federation. In particular, for the period of going to work former medical worker, they could increase their pension or at least continue to index it, as well as non-working pensioners. This would have a positive impact on the health care workforce during this difficult period.

3.3.3 Physical protection measures for medical workers

Of course, the need for social protection measures and support for medical workers would not be so urgent if there were reliable ways to protect them physically. Unfortunately, with all the advances in technology, personal protective equipment, antiseptics, sterilization, etc. only reduce the risk of infection, but do not guarantee the complete safety of employees and patients.

Such measures aimed at reducing the risk of infection include maintaining a social distance between people. The logical conclusion of social distancing is the complete absence of direct contact between medical workers and patients, as well as between themselves. In a number of cases, this can be achieved through remote technologies, telemedicine, and remote work of medical professionals.

Despite the fact that the use of telemedicine technologies and remote work is provided for by the legislation of the Russian Federation, the situation with the spread of coronavirus infection has revealed the need to improve legislation in these areas. The relevant draft laws have already been developed.

But in general, this is a problem that is typical for the whole world.

Understanding the significance of these problems leads to the fact that not only representatives of individual expert communities and states, but also authoritative international organizations express their concern in this regard. An example is the results of reviews and studies of the world health organization (WHOб 2020a) and the Organization for economic cooperation and development (OECD, 2020).

Thus, according to the World Health Organization (2020b), legal issues are one of the main obstacles to the introduction of telemedicine.

3.3.4 Incentive payments to persons associated with the treatment of COVID-19 coronavirus

The salary structure of employees of state medical organizations in the Russian Federation consists of three main components:

- salary (fixed part of salary);
- compensation payments (related to working conditions at a particular workplace, etc.);
- incentive payments (aimed at encouraging the achievement of certain results).

In accordance with the current legislation, compensation payments for working conditions are made in two ways:

- based on the results of the procedure for special assessment of working conditions (SAWC), defined by special legislation;
- in accordance with the procedure established by regulatory legal acts (for employees engaged in the provision of psychiatric care, treatment of HIV infection and tuberculosis) - without the procedure of SAWC.

Currently, compensation payments for work "with infection" are based on the results of the SAWC.

Thus, payments for working with an infection (including the new COVID-19 coronavirus infection) are credited to employees in the form of compensation payments.

And they are, indeed, paid, but only in medical organizations where the infection profile was created before the advent of COVID-19. Therefore, there is an important caveat: "traditional" ("pre-covid") infectious diseases hospitals (departments) employees receive compensation for working with the infection, and in the "new" ("covid") infectious diseases hospitals or units established for the treatment COVID-19 by conversion from other profiles do not receive compensation.

In principle, it is not prohibited for employees of "new" ("covid") hospitals (departments) to make compensation payments for working with "infection". But only based on the results of a special assessment of working conditions.

In general, this should have happened - the conversion of beds of any profile to infectious means new working conditions for employees and falls under the concept of "commissioning of newly organized workplaces", provided for by the law on special assessment of working conditions. In this case, an unscheduled special assessment of working conditions should be carried out.

But the procedure for conducting a SAWC takes a lot of time. In addition, in the current conditions (the risk of infection with coronavirus for those conducting the assessment), it is almost impossible to carry out SAWC. Not accidentally, the validity of the results of special assessment of working conditions, expiring in the period from April to September 2020, has been extended until the end of 2020, and, obviously, according to epidemiological situation, will be prolonged.

Therefore, SAWC is likely to lose its meaning for most medical organizations that have temporarily changed their profile.

If a medical organization tries to independently establish compensation payments without conducting a SAWC, they may be considered illegal, or inappropriate use of mandatory medical insurance (MHI) funds. The intended use of MHI funds includes only expenses of a medical organization related to the payment of employees in an increased amount engaged in work with harmful and dangerous working conditions, made based on the results of a special assessment of working conditions.

It is with these factors in mind that federal incentive payments, rather than compensation payments, have been introduced by the Government of the Russian Federation to support workers engaged in the treatment of coronavirus infection with the new COVID-19 coronavirus infection. For the same purpose, regional incentive payments are being introduced in most regions.

Thus, in" traditional "("before-covid") infectious diseases hospitals (departments), employees receive both compensation payments (which are actually permanent) and incentive payments (which are temporary - for the period of the acute phase of the fight against coronavirus infection). And in "new" ("covid") infectious diseases hospitals or departments created for the treatment of COVID-19 by re-profiling from other profiles-employees are only entitled to incentive payments (which are temporary).

However, the problem of compensation payments for employees who provide medical care to patients with coronavirus infection must have its solution. In our opinion, a variant of legislative granting of the right to executive authorities to introduce compensation payments for relevant employees (similar to the procedure in the Russian Federation for cases of tuberculosis, HIV infection, and psychiatric diseases) is appropriate here. In addition, this may be a factor that reduces the painful reaction of employees to the termination of Federal incentive payments in the future.

At the same time, we can take advantage of the experience of Germany, which has taken the path of making changes to regulatory legal acts in order to establish a special procedure for making compensation payments (Bundesges und heits ministerium, 2020).

3.3.5 Categories of employees eligible for federal benefits

Currently, the Russian Federation has established two main types of additional federal payments for employees who provide medical care to patients with coronavirus infection (so-called "government" and so-called "presidential").

The main categories of employees eligible for the corresponding federal benefits are shown in table 1.

As can be seen from table 1, payments in accordance with "government" and "presidential" regulations differ quite significantly both in the categories of personnel to which they apply and in the amount of payments. But the main problem is that these regulations do not define who (what type of employees) are concerned with payments. This sometimes causes disputes and conflicts.

The following issues are key when deciding on the right of employees holding specific positions to receive payments and determining the specific amount of payments:

1) do we have to pay only to those who directly treats COVID-19, or to those who treats any disease of the patient, which revealed a coronavirus infection (e.g., trauma patient, which identified coronavirus infection)?
2) do we need to pay only those who participate in the treatment of patients who have been diagnosed with a coronavirus infection, or anyone who, in the course of their professional activities, may encounter a patient who has been diagnosed with a coronavirus infection (for example, cleaners, security guards, etc.)?
3) should the level of risk of infection with coronavirus infection be taken into account (should the amount of payments be differentiated depending on the degree of risk)? How do we measure risk?
4) should the amount of payments depend on the intensity of contacts with patients with COVID-19? For example, the doctor of the covid Department has all patients with COVID-19, and the doctor who conducts an outpatient appointment may have a small percentage of patients with COVID-19.

Table 1. Categories of employees who are eligible for incentive payments, and the amounts of benefits they are entitled to

Categories of employees who are entitled to benefits	The amount of payment	
	«The Government» payments	«The Presidential» payments
	% of the average monthly income from employment in the region	% of the average monthly income from employment in the Russian Federation
The doctors of the hospitals	100	200
Emergency medical doctors	80	125
Doctors who provide outpatient care	80	-
Nursing staff of the hospitals	50	125
Nursing staff of emergency medical care	40	100
Nursing staff of polyclinics	40	-
Junior medical staff of the hospitals	30	62,5
Junior medical staff of the polyclinics	20	-
Junior medical staff of emergency medical care	-	62,5
Ambulance drivers	-	62,5

Source: compiled by the authors based on materials from Mednet (2020).

The position on these issues may vary due to the variety of situations that arise and the lack of clear unambiguous criteria. This leads to disputes and conflicts and to the need for periodic changes to the regulations that establish the procedure for making payments. It is no coincidence that both resolutions defining the procedure for making payments have already been amended several times.

3.3.6 Amount of incentive payments

In international comparisons, the use of absolute numbers is often uninformative. Moreover, in this case we are more interested in the relative increase in wages due to additional payments for work with coronavirus infection.

"Government" payments are set as a multiple of the "average monthly income from employment" in the relevant region. This indicator is recommended by the International labour organization (ILO) to compare the pay levels of workers in different countries. The maximum payout value is set for hospital doctors engaged in COVID-19 treatment and is 100 % of the average monthly income from work.

At the same time, it is necessary to note some disadvantages of linking incentive payments to the average monthly income from work in the corresponding region. The risks of infection with coronavirus infection in "covid" hospitals (departments), etc. are the same and do not depend on what region they are located in, and the values of the average monthly income from work and, accordingly, the amount of incentive payments vary quite significantly by region. The risk is the same, but the payout amount is different.

Obviously, with this in mind, the second type of federal payments (the so-called "presidential" payments) was established in absolute terms. In terms of the "average monthly income from work" indicator, the average amount of payments for hospital doctors engaged in COVID-19 treatment in the Russian Federation corresponds to approximately 200% of the average monthly income from work.

Table 1 shows the categories of employees who are eligible for incentive payments and the amount of benefits they are entitled to. At the same time, "presidential" payments are recalculated by the value of the average monthly income from labor activity in the Russian Federation as a whole.

Taking into account that the average salary of doctors in the Russian Federation before the spread of coronavirus infection was 200% of the average monthly income from work, hospital doctors who are entitled to both payments will thus receive a total amount of 300% of the value of the average monthly income from work. As a result, the total amount of their salary is 500% of the value of the average monthly income from work. This is equivalent to a 2.5-fold increase in wages due to Federal payments, which can certainly be considered a very significant increase.

In addition, most regions have established their own additional regional payments.

At the same time, personal income tax (income tax) is not deducted from federal and regional payments for work with coronavirus infection. Therefore, the real income of such doctors may be even higher.

However, in practice, real salaries may differ significantly from the estimated ones. It is not uncommon for employees who have high levels of federal and/or regional benefits to receive reduced incentive payments from mandatory health insurance.

At the same time, the funds saved by canceling previous payments made at the expense of the MHI to such employees often went to the additional salary of those medical workers who, for formal reasons, were not included in the lists that give the right to receive federal or regional payments. Therefore, it is difficult to clearly assess as negative the actions of heads of medical organizations in such cases.

Another reason for the possible reduction in the salaries of doctors and other medical professionals is that in the context of the spread of coronavirus infection, many medical organizations stop or reduce the volume of high-tech medical care, which was paid especially high. Moreover, payments for work with a coronavirus infection were not always higher than losses from canceling or reducing wages for performing high-tech operations. This is especially true for federal clinics.

Thus, it should be borne in mind that often the real increase in wages of medical and other workers associated with providing medical care to patients with coronavirus infection is not so great: the introduction of federal and regional incentive payments is often accompanied by the cancellation or reduction of other types of payments.

3.4 Impact of federal payments on the overall salary level of medical workers and implications for quality

Let's consider the impact of federal payments on the overall salary level of medical workers in the Russian Federation based on official statistics.

To assess this process, we analyzed 3 periods: the average salary of doctors for the 1st quarter of 2020, as well as for the 1st half of 2019 and 2020 - all in the Russian Federation and by region. When comparing the average salary of doctors for these periods, the jurisdiction of medical organizations (federal and regional) was also taken into account. The results are summarized in Table 2.

When comparing the average salaries in the regions for the 1st quarter and the 1st half of 2020, as expected, there was an increase in the second quarter. Payments started in the second quarter of 2020.

Table 2. Dynamics of doctors' salaries in the Russian Federation in 2019-2020

Doctors' salaries	Russian Federation as a whole	Medical organizations	
		Federal	Regional
1st half of 2020 compared to 1st quarter of 2020	106,47%	106,80%	106,35%
1st half of 2020 in comparison with 1st half of 2019	110,00%	104,17%	111,25%

Source: compiled by the authors based on materials from Mednet (2020).

However, in two regions, this indicator still fell slightly.

Some of the reasons for the relatively low growth in doctors' salaries against the background of additional federal payments have already been shown above - against the background of economic problems associated with the spread of coronavirus infection, the financial situation of many medical organizations has deteriorated significantly, which has led to a decrease in wages paid from the main source - mandatory medical insurance funds, as well as through the provision of paid medical services.

Another reason is that the amounts of incentive payments discussed above are set for a relatively small part of doctors – the main part of doctors have significantly lower or no payments at all.

When comparing average salaries for the first half of 2020 and the corresponding period of 2019, an increase of 10% was noted on average in the Russian Federation. However, the analysis of these indicators showed that the growth of salaries in Federal medical organizations was much lower than in regional ones.

At the same time, it should be noted that the allocated federal funds are a source of additional income for medical workers to whom they apply, but they are not the actual additional income of medical organizations that received funds for these purposes.

These funds pass through medical organizations for established purposes – the heads of these medical organizations cannot dispose them at their own discretion (in accordance with financial needs). Funds for the basic salary (taking into account the compensation payments and incentive payments established by the current payment systems) should be sought by medical organizations themselves at the expense of the MHI. Therefore, we must be aware that federal and regional payments are a way to support medical professionals, but not to improve the financial situation of medical organizations.

Therefore, these payments do not guarantee an increase in the quality of medical services. Industrial and manufacturing engineering of digital healthcare can solve this problem and ensure high efficiency of stimulating the work of medical workers in order to improve the quality of medical services. In digital healthcare, quality management is transformed from a corporate function (performed by the management of healthcare organizations) to a state-public function.

With the help of industrial and manufacturing engineering of digital healthcare, it is possible to conduct systematic monitoring of the quality of medical services through digital surveys of the population in the e-government system (on the portal of electronic public services in Russia). The results of surveys can serve as a basis for determining the nature and amount of incentive payments to medical professionals.

4. Conclusion

Benefits, guarantees and compensation provided to medical workers associated with the treatment of a coronavirus infection are an important way of supporting healthcare providers. However, for systematic and guaranteed improvement of the quality of medical services it is necessary to assess the

validity of choosing the most rational and effective types of benefits, guarantees and compensations – the analysis shows that they are not always justified.

For example, additional benefits, guarantees, and compensations expressed in reduced working hours (reduced working week, additional vacations, preferential seniority, etc.) have a negative impact on health care staffing.

Thus, in the context of a difficult situation with the personnel provision of health care, it is not entirely logical to make decisions to expand the grounds for early retirement of medical workers, since this only exacerbates the personnel problem. It would be more appropriate to set a higher level of wages, which at the same time would partially counter the trend of outflow of medical workers from the industry due to the risks of infection with coronavirus infection.

An important measure for state support in the field of pension provision could be an increase in the amount of pensions for employees who have returned to medical organizations during the fight against coronavirus infection.

Thus, it is necessary to expand the practice of monetary forms of compensation, while making the health sector more attractive and countering negative trends in the outflow of medical workers from the industry. Therefore, an audit is required, a review of benefits, guarantees and compensation in terms of the possibility of their "monetization".

Government support for health care workers during the COVID-19 fight, and especially federal incentive payments, often create conflict and resentment for a large portion of employees who have not received the appropriate payments or are receiving them in less than expected amounts. This creates and increases the risks of reducing the quality of medical services.

In general, it is impossible to introduce any electoral payments that would suit everyone. Especially when payments that are intended only for a part of employees are introduced. The procedure for calculating "covid" length of service, implementing incentive payments, etc. has become another example of how inherently positive decisions can cause dissatisfaction among some medical professionals. Therefore, in situations like the current one, it is extremely important to meet the following conditions:

- unambiguity of wording in documents that introduce payments, etc.;
- detailed analysis of possible situations that arise in connection with the provision of medical care to patients with coronavirus infection in order not to miss certain categories of employees;
- development of scenarios for the response of employees who do not receive payments and development of clear arguments.

The fight against COVID-19 will continue for quite a long time, even with widespread vaccination and the creation of effective medicines. Therefore, measures to support employees involved in providing medical care to patients with COVID-19 will also remain relevant for a long time. It is therefore necessary to carefully analyze and adjust if necessary the state policy in respect of the subject matter and specific legal acts, conducted their audit based on the developed practice and research in this area. Industrial and manufacturing engineering of digital healthcare should play a key role in managing the quality of medical services.

We have identified only part of the problems. In practice, there are many more of them. Therefore, research in this area should be continued.

It seems that the experience of the Russian Federation, including the problems encountered, can also be useful for other countries in developing a strategy for state support of medical workers during the fight against coronavirus infection.

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