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CLINICAL STUDY

COVID-19 incentive payments for long-term care workers

Irina BOCHAROVA[1], Alexander RYMANOV[2]

Ssuwt University, Novosibirsk, Russia. **rymanov@yandex.ru**

ABSTRACT
OBJECTIVE: Amid the COVID-19 pandemic in the Russian Federation, social care providers received incentives such as bonuses and welfare payments. The study examines the association between COVID-19 pandemic indicators and distribution of incentives to care providers in Russia.
METHODS: To test the hypotheses, regression analysis is employed.
RESULTS: Hypothesis $H_{1,}$ regarding the correlation between the COVID-19 case rate in a specific region of the Russian Federation and the actual monetary amount of bonus payments compensating for challenging working conditions of care workers in that region is supported. Hypotheses H_2-$H_{3,}$ regarding the relationship between the COVID-19 cases/recovery rate and the monetary amount of special welfare payments to care workers distributed across the country during a given calendar month are also supported. Hypothesis $H_{4,}$ pertaining to the relationship between the Fiscal Year End and the monetary amount of special welfare payments distributed throughout the country to care providers during a given calendar month, is likewise supported.
CONCLUSION: There is a correlation between payments to social care providers and coronavirus pandemic indicators *(Tab. 5, Ref. 31)*. Text in PDF www.elis.sk
KEY WORDS: welfare payment, bonus, care providers.

Introduction

Incentives for care workers during the period of COVID-19 in the Russian Federation included bonus payments for challenging working conditions, additional work compensation (applicable for 2020) and welfare payments (applicable for the period of 2020–2022). These types of payments resemble lump-sum or periodic payments commonly used in many countries to remunerate care workers.

The background on care providers' remuneration highlights several key issues in the sector, including workforce shortages, low wages, reliance on migrant workers, and informal care.

1) Workforce shortages

Human resource shortages have long plagued both the health care and long-term care sectors, a problem exacerbated by Covid-19 pandemic (1). Many countries responded by implementing special programs to retain existing care workers and attract new ones (2–4). For instance, many OECD member countries allocated additional funds to hire unemployed individuals and former social workers to address these shortages (5).

2) Low wages

In China, even prior to the COVID-19 pandemic, the care providers' wages have traditionally been less than half the average wage across all industries (6–8).

Similarly, in the United Kingdom, over one-third of social workers in the UK reported not being paid during the pandemic, while in isolation or ill, with more than half of social workers receiving less than 10 GBP per hour (9).

3) Reliance on migrant workers

To address workforce shortages, Germany and Austria introduced initiatives to t attract additional workers to the care sector by offering increased wages, including loyalty bonuses for migrant care workers (2, 4).

In Austria, care providers are eligible for a bonus of 500 EUR under this program (2, 4).

Policy challenges in long-term care, highlighted in WHO technical guidance, have been exacerbated by the pandemic but existed prior to its onset (10). These challenges include the perception that long-term care work is low-skilled (11).

This observation may elucidate the reason why care workers in many European countries are mostly migrants (10, 12).

Underpaid care workers often seek additional employment, increasing their risk of contracting infection. This predicament underscores the necessity for higher wages for social workers (10). The reviews of best practice in long-term care during the coronavirus outbreak in certain European countries support this notion.

For instance, in Austria, at the beginning of the outbreak, the government provided a flat-rate payment of 500 EUR for immigrant care providers (10, 13).

Similarly, in Germany, the minimum wage for care workers was raised during the pandemic, and in some regions, workers received fixed allowances (10, 14).

Additionally, during the early months of the pandemic in the United Kingdom, care providers in the long-term care sector received one-time bonuses and wage increases (10).

[1]Parakhin Orelsau University, Orel, Russia, and [2]Ssuwt University, Novosibirsk, Russia

Address for correspondence: Alexander RYMANOV, Ssuwt University, 77, Schetinkina str., 630090, Novosibirsk, Russia.
Phone: 7 998143942

4) Informal care

The employment of informal care workers in EU countries has been examined in a number of studies (15–17). Daly (16) reports that while many countries compensate informal care workers, no additional payments or benefits were extended to them during the coronavirus pandemic.

The International Labor Organization (ILO) (18) advocates for the improvement of challenging working conditions faced by female care workers, constituting 71% of the global healthcare and social care workforce (18).

Germany's experience with collective bargaining in this regard is considered as the best practice for enhancing the remuneration of care workers. Notably, female social workers are recognized as the primary beneficiaries given their majority representation in the care workforce (18).

Parapid et al (19) highlighted significant wage disparities between female and male health and care workers and urged for the crisis situation of the coronavirus pandemic to be leveraged to address gender inequalities.

Types of Covid-19-related remuneration and incentives for long-term care providers in some OECD countries took two forms: (a) wage increases and (b) one-time COVID-19 payments (20).

a) Wage increase

In *France,* the government increased the salaries of medical workforce and care workers by an average of 15–30% during the coronavirus pandemic (21).

Best practices for pandemic incentive payments to social workers in France are highlighted by Hemmings et al (22). During the pandemic, care workers in residential care and nursing homes received a wage increase ranging from 160 to 183 EUR.

In *Germany*, the minimum wage for care workers was raised during the pandemic, and in some regions, workers were paid fixed allowances (10, 14).

The coronavirus pandemic prompted legislative changes in the social care sector, mandating payment of workers based on rates aligned with the regional average wage level for the sector. In 2022, a prominent local union in Germany spearheaded new collective bargaining agreements with a major international provider of social care services operating in two nursing homes. These agreements entailed (1) setting wages for workers in these nursing homes above the level for the public sector, (2) instituting a bonus of 25–30% for night work and 35–50% for weekend and holiday work, and (3) reducing their working hours (9).

The United Kingdom responded in the early months of the pandemic by providing long-term care workers with wage increases and one-time bonuses (10).

Anderson et al (23) advocate for aligning the increase in the pay of care workers in the United Kingdom with the projected rise in the average wage.

In the *United States,* initiatives were undertaken to support direct care workers in home and community-based services (HCBS) settings. In Colorado, these saw their base pay increase to 15 USD per hour in 2021.

Similarly, in Michigan, direct care workers received a wage increase of 2 USD per hour in 2020, with wage hikes further increasing to 2.35 USD per hour in 2021 owing to additional state funding (24).

The state level initiatives aimed at retaining nursing home staff involved several strategies, including (a) providing financial assistance to nursing homes to incentivize their staff, (b) offering stipends directly to nursing home staff, (c) implementing temporary changes in Medicaid rates to supplement workers' pay, (d) introducing shift differentials, (e) providing bonuses, and (f) offering incentive payments (3).

b) Bonuses

The response to the COVID-19 pandemic in various countries included the provision of bonuses to care providers.

In Austria, at the beginning of the outbreak, the government provided a lump sum of 500 EUR to migrant care workers (10, 13, 25).

As for the *United Kingdom,* Hemmings et al (22) highlighted the practice of providing pandemic lump sum payments to social workers in some UK jurisdictions as a commendable approach.

In the *United States,* California responded to the pandemic by issuing a lump sum payment of 500 USD to each direct care worker (24).

Additionally, in *California*, direct care providers were reimbursed for hotel expenses to prevent potential contraction of SARS-CoV-2 in their families (24).

Furthermore, disparities in supporting care providers were examined by Reed et al (26), who conducted a comparative analysis of the legislations and legal bases underpinning emergency payments provided to social workers across certain high-income countries during the first year of the coronavirus outbreak. The study encompassed countries including the United States, Canada, the United Kingdom and Australia, shedding light on measures implemented to curb the spread of infection, such as restrictions on multi-site work. Reed et al (26) concluded that the economic support for social workers was deemed inadequate, as evidenced by the number of COVID-19 cases and mortality rates, with notable variations in support levels among the countries studied,

Objective. The study aims to assess the correlation between pandemic indicators and distribution of incentives to care providers in Russia.

Methods

The study is based on official data regarding budget allocation for incentives to social care workers during the COVID-19 pandemic (27–29).

Regression analysis is used to test the hypotheses outlined below, while Hypothesis H_1 and Hypotheses H_2-H_4 involve bonus payments distributed in 2020 and Special Welfare Payments distributed in the period of 2020-2022, respectively.

- H_1: A statistically significant relationship exists between the number of COVID-19 cases in a specific region of the Russian Federation in 2020 and the actual monetary amount of

Tab. 1. Analysis of variance.

Source	Sum of squares	df	Mean square	F-value	p-value, Prob > F
Model	7.13	3	2.38	26.52	< 0.0001
x	3.73	1	3.73	41.55	< 0.0001
x^2	2.66	1	2.66	29.67	< 0.0001
x^3	4.38	1	4.38	48.82	< 0.0001
Residual	7.17	80	0.090		

bonus payments distributed within that region to care workers, compensating for special working conditions and additional workload.

- H_2: A statistically significant relationship exists between the number of COVID-19 cases and the volume of Special Welfare Payments distributed to care workers across the country within a given calendar month.
- H_3: A statistically significant relationship exists between the number of COVID-19 recovery rate and the monetary amount of Special Welfare Payments distributed to care workers across the country within a given calendar month
- H_4: A statistically significant relationship exists between the Fiscal Year End and the monetary amount of Special Welfare Payments to care workers across the country within a given calendar month.

The study received ethical approval from the SibMed Medical University (No. 9390).

Results

To test the relationship outlined in H1, a cubic regression model was employed:

$$y = \beta_0 + \beta_1 x + \beta_2 x^2 + \beta_3 x^3 + \epsilon \quad (1)$$

In equation (1), *y* denotes the proportion of the monetary amount of bonus payments distributed to care workers within the specific region in the Russian Federation, relative to the total amount of these bonus payments across the country, while *x* represents the proportion of the number of COVID-19 cases within that specific region relative to the total number of COVID-19 cases across the country 2020.

Tab. 2. Summary of fit.

R-square	0.4986
R-square adj.	0.4798
Adeq. precision	28.039
Std. deviation	0.30
Mean	1.01

Tab. 3. Analysis of variance.

Source	Sum of squares	df	Mean square	F-value	p-value, Prob > F
Model	1.55	5	0.31	5.18	0.0132
x_1	0.42	1	0.42	7.07	0.0239
x_2	1.10	1	1.10	18.33	0.0016
x_3	0.43	1	0.43	7.08	0.0239
x_1x_2	0.86	1	0.86	14.37	0.0035
x_1x_3	0.42	1	0.42	7.08	0.0239
Residual	0.60	10	0.060		

The fitted regression model is represented as follows:

$$\mathrm{Sqrt}(y) = 0.41650 + 0.88950x - 0.14690x^2 + \\ + 0.00447x^3 + \epsilon \quad (2)$$

The square root transformation is applied to the response variable y.

In this model, both the independent variable and the model as a whole are statistically significant (Tab. 1).

Table 2 indicates that 48% of the variance in the response variable is accounted for by the independent variable.

Therefore, the hypothesis H_1 is thus supported.

To test the relationships described in Hypotheses H_2–H_4, a linear regression model is used:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_1 x_2 + \beta_5 x_1 x_3 + \epsilon \quad (3)$$

In this model:

y represents the volume of Special Welfare Payments distributed to to care workers across the country within a given calendar month,

x_1 denotes the number of COVID-19 cases within a given calendar month,

x_2 signifies the number of COVID-19 recovery cases within a given calendar month,

x_3 is a categorical variable indicating the fiscal year's close-out period lasting one month, with value of 0 representing the data up to the close-out period and value of 1 representing the data encompassing the entire fiscal year.

x_1x_2 represents the interaction between x_1 and x_2,

x_1x_3 represents the interaction between x_1 and x_3.

Fitted regression models for the period of the entire fiscal year (($x_3 = 1$) and for the timeline preceding the one-month fiscal year's close-out period (($x_3 = 0$) are as follows:

For $x_3 = 1$:

$$1/Sqrt(y) = +1479.71844 - 1712.24822 \times x_1 - \\ - 0.015140 \times x_2 - 0.30693 \times x_1 \times x_2 \quad (4)$$

Tab. 4. Summary of fit.

R-square	0.7214
R-square adj.	0.5822
Adeq. precision	7.851
Std. deviation	0.24
Mean	1.27

Tab. 5. Bonus payments to Social Care Organization employees vs. Healthcare Organization employees (2020).

Beneficiary organizations	Ministry Affiliation	Funding Source	Unit of time for the accrual of the bonus payments
Social care Organizations	Russian Ministry of Labor and Social Protection	Interbudgetary transfers from federal to regional budgets to co-finance their expenditures	14 days (employee's shift)
Healthcare Organizations	Russian Federation Health Ministry		Hour

For $x_3 = 0$:

$$1/Sqrt(y) = +0.79877 + 1.06421 \times x_1 - \\ - 0.015140 \times x_2 - 0.30693 \times x_1 \times x_2 \quad (5)$$

In these models, the reciprocal square root response transformation is employed.

Both independent variables and interaction terms are significant (Tab. 3).

Table 4 indicates that 58% of the variability in the response variable is accounted for by the independent variables.

The hypotheses H_2–H_4 are thus supported.

Discussion

1. *Bonus payments allocated to social care and healthcare workforce in 2020*

In 2020, incentive payments were allocated to employees of social care and healthcare organizations to compensate for challenging working conditions and increased workload. These payments targeted employees of organizations providing social services to citizens either diagnosed with COVID-19 or deemed at risk of infection with SARS-CoV-2. These payments were based on the Resolution of the Government of the Russian Federation No 681 (30) which outlined the funding scheme for care-providing institutions. This initiative was effective from mid-April to mid-November 2020. Notably, the Resolution No 681 bears resemblance to an earlier resolution, No. 415 (31), which was adopted to provide similar payments to workforce employed by healthcare organizations.

These payments are also facilitated through interbudgetary transfers from federal to regional budgets.

However, while the Ministry of Healthcare was administering the aforementioned bonuses for employees of healthcare institutions, the bonus payments for employees of social care organizations were managed by the Ministry of Labor and Social Protection of the Russian Federation (Tab. 5).

The budget allocation for these bonus payments was contingent upon the implementation of a special operating regime within social care organizations. This includes temporary isolation or observation of citizens residing in social care organizations, as well as the employees themselves. Furthermore, the duration of work shifts for social care employees was standardized at 14 calendar days.

2. *Parity of pandemic key indicators and incentive payments to social care workers*

As previously discussed, under some national jurisdictions, the practices incentivizing the care providers are commonly associated with disparities between payments to care providers and key indicators of the COVID-19 pandemic. Conversely, the hypothesis testing showed that the Russian regions exhibit parity between payments to care workers and key indicators of a coronavirus pandemic.

Conclusion

The confirmation of our hypotheses indicates that there is indeed parity between payments to social care providers and key indicators of COVID-19 pandemic. This stands in contrast to some national jurisdictions, where such parity was not observed.

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