

ORGANIZATION OF HEALTHCARE, MEDICAL SCIENCE AND EDUCATION

D.I. Kicha, E.E. Komissarov, Yu.A. Tyukov, V.V. Tsareva,
O.V. Rukodayny

THE IMPACT OF THE INTRODUCTION OF THE INTERNAL EVALUATION SYSTEM ON THE PERFORMANCE OF THE MEDICAL ORGANIZATION

DOI 10.25789/YMJ.2022.78.10

УДК 614.2: 614.25;

The requirements of Russian legislation for quality control and safety of medical care include the creation of internal performance appraisal system (PAS) of medical personnel involved in the provision of medical services. The effectiveness of such a system can be determined by changes in the performance of a medical organization.

The aim of the work: to study the results of the implementation of internal performance appraisal system of medical personnel on the performance indicators of a medical organization.

Materials and methods. This paper presents an analysis of the performance indicators of a medical organization after the introduction of internal PAS of employee of medical structural units in a state medical organization. The system was developed in the course of previous studies, and its feature was the combined use of personnel performance evaluation and the level of development of his competencies. The data were collected by anonymous questionnaire using medical information system, statistical, sociological, analytical and expert methods were used, comparative and content analysis of a number of indicators of the work of a medical organization, personnel and patients before and after the implementation of internal PAS.

Results. The implementation of the internal PAS of medical personnel on the performance showed a statistically significant ($p < 0,05$) positive dynamics of the performance indicators of the medical organization and patient satisfaction indicators.

Conclusion. The use of an internal PAS is an important factor for improving the performance of a medical organization, improving the quality of medical care and patient satisfaction.

Keywords: performance appraisal, satisfaction, heads, competence, management, medical organization, effectiveness.

Introduction. Quality control and safety of medical care in medical organizations is one of the priority tasks facing Russian healthcare. Ensuring this type of activity should be carried out by complying with a number of regulatory requirements, including the creation of PAS of medical personnel involved in the provision of medical services [8; 9]. Currently, the Russian healthcare system has not developed unified methodological approaches that allow objectively and systematically assess the impact of the activities of specific medical heads and workers on the work of medical organizations.

The aim of the work: to study the results of the implementation of internal PAS of the activities of personnel of medical structural units on changes in hospital performance indicators.

The objectives of the study: analysis of the studied performance indicators of medical organization and personnel, including the satisfaction of personnel and patients of medical organization before and after the implementation of an internal PAS of medical personnel to identify statistically significant changes.

Materials and methods. The basis of the study was the State budgetary healthcare institution "Chelyabinsk Regional Children's Clinical Hospital". Three groups of indicators were selected by the expert method to analyze the impact of the new internal PAS on the performance indicators of medical organization:

Group of indicators No. 1. "Hospital performance indicators" (Table No. 1). The data were obtained using medical information system and analyzed in comparison before and after the introduction of a new assessment system the performance of medical heads (2020 to 2018).

Group of indicators No. 2. "Satisfaction of hospital personnel with the evaluation of their work". The number of employees who consider subjective the evaluating methods of personnel performance. The number of employees who have a need for an objective evaluation of activity. The

number of employees who disagree with the management style and methods. The study of the opinion of personnel was carried out using an electronic questionnaire (Google form) by the method of double anonymous questioning. Responses were taken into account to calculate the indicators: "Agree" and "Partially agree". Initial survey (January, 2019, $n = 273$) was carried out when the performance of heads was evaluated by the traditional method: according to the indicators described in effective contracts.

A new system of internal PAS of medical personnel was developed and implemented, the peculiarity of which was that in addition to evaluating the effectiveness of work, an assessment of the severity of competencies was carried out [5]. Procedure of performance appraisal consisted of comparing the planned indicators and the actual results of the work. To assess competencies, an organizational model of competencies has been developed, where each competence and the degree of its development are described by precise definitions and numbers(indicators). Procedure of performance appraisal consisted in determining the degree of competence development on a 4-point scale. At the first stage, employee independently assessed his activities for 1 year. At the second stage, performance appraisal of the effectiveness and the degree of competence development was carried

KICHA Dmitry Ivanovich – MD, Professor, Peoples' Friendship University of Russia, d_kicha@mail.ru, ORCID: 0000-0001-6529-372X; **KOMISSAROV Evgeny Evgenievich** – Head of the paid medical care department of the Chelyabinsk Regional Children's Clinical Hospital, ORCID: 0000-0003-1275-9164, SPIN: 3095-3372; **TYUKOV Yuri Arkadyevich** – MD, Professor, Head of the Department of the South Ural State Medical University, SPIN: 9238-8507; **TSAREVA Valentina Viktorovna** – Candidate of Medical Sciences, Associate Professor of the Southern State Medical University, ORCID: 0000-0002-6695-7388, SPIN: 7966-9068; **RUKODAYNY Oleg Vladimirovich** – Candidate of Medical Sciences, Associate Professor, Head of the Department of FGAOU IN RUDN, ORCID: 0000-0001-9134-7189.

Performance indicators of a medical organization before and after the introduction of a system for evaluating the activities of personnel of medical structural units

№ п/п	Indicator	2018 (n = 16328)		2020 (n = 17291)		Difference in data
		abs., n	relates., % [95% CI]	abs., n	relates., % [95% CI]	
1	Total hospital mortality, people.	71	0.43% [0.34; 0.54]	46	0.27% [0.20; 0.35]	- 0.16% $\chi^2_{(1)} = 6.90$ $p = 0.009$
2	Number of defects in outpatient records	1883	11.53% [11.05; 12.03]	1325	7.66% [7.27; 8.07]	-3.87% $\chi^2_{(1)} = 145.7$ $p < 0.001$
3	Number of defects in medical records	1786	10.94% [10.47; 11.42]	1586	9.17% [8.75; 9.61]	-1.77% $\chi^2_{(1)} = 14.64$ $p < 0.001$

out by his direct supervisor. The repeated survey (November, 2019, $n = 259$) was conducted after the introduction of internal PAS.

Group of indicators No. 3. "Patient satisfaction with commercial medical services and willingness to recommend a hospital." The study of patients' opinions was carried out using an electronic questionnaire (Google form) by double anonymous questionnaire ($n = 60$). To calculate this indicator, the answer "Yes" to the questionnaire question was taken into account: "Would you recommend our hospital to provide paid medical services to relatives and friends?"

During the statistical analysis of the survey results, absolute and relative values (in %) were calculated. Relative values were provided with a 95% binomial confidence interval (95% CI) calculated by the Jeffries method (Bayesian apriority interval). The significance of differences in independent samples was assessed by the Pearson *chi*-square criterion and in partially overlapping samples of respondents – by the presence or absence of transgression of the calculated 95.0% CI ($p > 0.05$ or $p < 0.05$, respectively). The calculations were performed using MS Excel 2016 and the Epitools package [12].

The results of the study. Data analysis showed that, after the implementation of PAS of medical employees, positive statistically significant changes occurred in the studied indicators:

1. Improvement of hospital results: reduction in the number of defects when filling out medical documentation and reduction in total hospital mortality (Table No. 1).

2. Increasing the satisfaction of hospital personnel with the evaluation of their work by reducing the number of employees who consider evaluation methods subjective (25,7% [20,74; 31,06] to

40,2%, [34,32; 46,21], $p \leq 0.05$) and by reducing the number of employees who disagree with the management style and methods of their immediate supervisors (11,7% [8,31; 15,94] to 35,5% [29,88; 41,48], $p < 0.05$).

3. Increased patient satisfaction with commercial medical services and their willingness to recommend a hospital (83,3% [72,45; 91,10] to 53,3%, [40,80; 65,55], $p < 0.05$).

Discussion. The mechanism of influence of the evaluation of the activity of a particular employee on its effectiveness is the personalization and use of numbers when setting tasks. This helps to increase the accuracy and objectification when monitoring the results of work, which leads to stimulation of self-control, increased internal motivation and increased employee responsibility for the result of work. Such a work environment is formed, among other things, if there is an objective and fair evaluation of the employee's activity [6]. An objective evaluation of the labor activity of healthcare workers makes it possible to understand not only the effectiveness and potential, but also contributes to the development of labor motivation and satisfaction with the work performed [1;11]. More than 60,0% of employees in public medical organizations and about 50,0% of employees of private clinics agree with the need to use such an evaluation [6]. To increase the competitiveness of medical institutions, it is important to create and develop key competencies of personnel [2; 4; 7; 10]. The indicator showing the attitude of employees to the performance of their work and its results is the indicator of satisfaction of employees of medical organizations with the evaluation of their activities, which can be evaluated in relation to patient satisfaction with the quality of medical services [3].

Conclusions: After the implementation of internal PAS of personnel of medical structural units based on performance indicators and the degree of competence development, statistically significant trends were noted in all groups of the studied indicators: improvement of hospital results (reduction in the number of defects when filling out medical documentation, reduction in total hospital mortality), increase in personnel satisfaction with the evaluation of their work, growth in patient satisfaction with medical services. Thus, the use of internal PAS of medical personnel activities based on performance indicators and the expression of competencies is an important factor contributing to improving the quality of medical care by improving hospital performance, patient and personnel satisfaction.

References

1. Bashkueva, E. YU. Udovletvorennost' vrachebnogo personala mnogoprofil'noj bol'nicy kak faktor povysheniya kachestva i bezopasnosti medicinskoj deyatel'nosti [Satisfaction of the medical personnel of a multidisciplinary hospital as a factor in improving the quality and safety of medical activities]. Obshchestvo: sociologiya, psihologiya, pedagogika [Society: sociology, psychology, pedagogy]. 2019;12 (68): 30-34 (In Russ.).
2. Guseva N.K., Berdutin V.A. Nekotorye voprosy ocenki kachestva medicinskoj pomoshchi v sisteme zdravoohraneniya Rossijskoj Federacii [Some issues of assessing the quality of medical care in the healthcare system of the Russian Federation]. Zdravoohranenie Rossijskoj Federacii [Healthcare of the Russian Federation]. 2016; 60 (5): 228-233 (In Russ.).
3. Danilchenko Ya.V., Karas D.V., Popsuiko A.N., Artamonova G.V. Udovletvorennost' medicinskogo personala – udovletvorennost' pacienta kachestvom pomoshchi: est' li svyaz? [Satisfaction of medical personnel – patient satisfaction with the quality of care: is there a connection?] Social'nye aspekty zdorov'ya naseleniya [Elektronnyj nauchnyj zhurnal]. Social aspects of Population Health [Electronic scientific journal]. 2020; 66 (3):2 (In Russ.). DOI: 10.21045/2071-5021-2020-66-3-2.

4. Kamasheva A.V., Zhavoronkov V.V. Ocenka personala medicinskoj organizacii po modeli kompetencij [Evaluation of the personnel of a medical organization according to the competence model]. *Menedzher zdravoohraneniya* [Manager of healthcare]. 2020; 2: 57 – 65 (In Russ.).

5. Komissarov E.E. Razrabotka i vnedrenie vnutrennej ocenki deyatel'nosti personala v medicinskoj organizacii [Elaboration and implementation of internal appraisal of employee performance in healthcare]. *Pediatricheskij vestnik YUzhnogo Urala* [Pediatric Bulletin of the South Ural]. 2019; (1) 27-36 (In Russ.). <https://doi.org/10.34710/Chel.2019.53.88.005>

6. Komissarov E.E., Kicha D.I., Tsareva V.V., Abramov A.Yu., Rukodaynyy O.V. Izuchenie udovletvorennosti personala medicinskih organizacij vnutrennej ocenкой deyatel'nosti [Employee satisfaction with internal performance appraisal in healthcare]. *Problemy standartizacii v zdravoohraneni* [Problems of standardization in

healthcare]. 2020; 11-12: 59-66 (In Russ.). DOI 10.26347/1607-2502202011-12059-066

7. Manerova, O.A. Professional'nyj rost i kar'era v zdravoohraneni: prioritety i problemy [Professional growth and career in healthcare: priorities and problems]. *Medicinskie tekhnologii. Ocenka i vybor* [Medical technologies. Evaluation and Selection]. 2011; 2 (4):77- 83 (In Russ.).

8. "Ob osnovah ohrany zdorov'ya grazhdan v Rossijskoj Federacii" Federal'nyj Zakon RF № 323-FZ [On basics of public health protection in the Russian Federation. Federal Law of the Russian Federation No. 323-FZ]. *Rossiyskaya gazeta. Federal'nyj vypusk* [Russian Gazette. Federal Issue]. 2011; 5639, November 23, 2011 (In Russ.). [<https://rg.ru/2011/11/23/zdorovie-dok.html>].

9. Prikaz Minzdrava Rossii ot 31 iyulya 2020 g. № 787n «Ob utverzhenii poryadka organizacii i provedeniya vedomstvennogo kontrolya kachestva i bezopasnosti medicinskoj deyatel'nosti» [Order of Ministry of Health of the Russian

Federation № 787n, July 31, 2020. On approval of the procedure for organizing and conducting departmental quality and safety control of medical activities]. (In Russ.). <https://www.garant.ru/products/ipo/prime/doc/74610266/>

10. Groene O. Suggestions of WHO for comprehensive hospital performance / O. Groene // *Gesundheitsökonomie Qualitätsmanagement*. - 2006; 11: 226-233. DOI 10.1055/s-2005-858979

11. Kang J.Y. Relationships Among Organizational Values, Employee Engagement, and Patient Satisfaction in an Academic Medical Center / Kang J.Y., Lee M. K., Fairchild E. M., Caubet S. L., Peters D.E., et al. // *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*. - 2020; 4 (1):8-20. DOI:10.1016/j.mayocpiq.2019.08.001

12. Sergeant E.S.G. Epitools epidemiological calculators. Ausvet Pty Ltd., 2020. URL: <http://epitools.ausvet.com.au/content.php?page=CIP-roportion> (date of application: 09.06.2021)

DOI 10.25789/YMJ.2022.78.11

УДК 614.2

A.A. Kalininskaya, A.V. Alekhovich, A.V. Lazarev, M.V. Kizeev MEDICAL AND DEMOGRAPHIC SITUATION AND INCIDENCE OF THE POPULATION OF THE AMUR REGION

Summary. The situation with the COVID-19 pandemic has to some extent changed the structure of morbidity and mortality in the Russian Federation and its regions.

Aim of the study. Based on an analysis of the medical and demographic situation in the Amur Region, the Far Eastern Federal District and the Russian Federation in the context of the COVID-19 pandemic, recommendations are given for making managerial decisions at the municipal, regional and federal levels.

Materials and methods of research: statistical, analytical. The materials of official state statistics of the Ministry of Health of the Russian Federation and Rosstat were used.

Results and discussion. The mortality rates of the population of the Amur Region, the Far Eastern Federal District and the Russian Federation for the years of analysis (2016-2020) have been studied. It was revealed that in the Amur region. the indicators are higher for all the years of analysis, in 2020 they amounted to 16.2%, in the Far Eastern Federal District - 13.9%, in the Russian Federation - 14.6%. The difference in mortality rates in the administrative entities of the Amur Region (2020) is 2.3 times. The mortality rate of the population of the Amur Region from COVID-19 (in 2020) was 0.84‰, for the urban population it is higher - 0.93‰, than for the rural population - 0.67‰. The first detected incidence of the population in the Amur Region, the Far Eastern Federal District and in the Russian Federation (2020) was studied. It has been established that in the Amur Region the figures are higher - 80294.8 per 100 thousand of the population than in the Far Eastern Federal District (74596.5), in the

Russian Federation (75840.1). In the Amur Region, there are higher rates of primary morbidity with diseases of the digestive system. Very high rates were noted in Tynda and Zeya, which determines the need for an in-depth study of the causes of this incidence in the region. The frequency of detected COVID-19 in the Amur Region was 3141.3 per 100 thousand of the population (3.9% of the total number of primary incidence), in the Far Eastern Federal District - 3394.9‰ (4.55%), in the Russian Federation - 3384.5‰ (4.46%). The primary incidence of the entire population of the Amur Region has decreased over the years of analysis (2016-2020). Higher rates of newly diagnosed morbidity were noted in children (0-14 years old) and adolescents (15-17 years old) than in the general population, which requires strengthening preventive work with this age group of the population.

Conclusion. The identified features of the medical and demographic situation in the Amur Region should be taken into account by the heads of governments at the municipal regional and federal levels in order to develop management decisions. Taking into account the COVID-19 pandemic and with a focus on the health of the future.

Keywords: medical and demographic situation, mortality, newly diagnosed morbidity, age groups, administrative units.

KALININSKAYA Aleftina Aleksandrovna - Doctor of Medical Sciences, Professor, Chief Researcher of the Public Health Research Department of the National Research Institute of N.A. Semashko Public Health, e-mail: akalininskaya@yandex.ru, <https://orcid.org/0000-0002-7142-5503>, SPIN: 3315-1595, Scopus Author ID: orcid.org/0000-0002-6984-6536; **ALEKHNOVICH Alexander Vladimirovich** - Doctor of Medical Sciences, Professor, Deputy Head for Research and Scientific Work of the Federal State Budgetary Institution A.A. Vishnevsky Central Military Clinical Hospital No. 3 Ministry of Defense of Russia, e-mail: vmnauka@mail.ru, <https://orcid.org/0000-0002-8942-2984>; **LAZAREV Andrey Vladimirovich** - Candidate of Medical Sciences, Researcher N.A. Semashko National Research Institute of Public Health named after, e-mail: andrey.v.lazarev@gmail.ru, <https://orcid.org/0000-0001-6574-7875>; **KIZEEV Mikhail Vladimirovich** - Ph.D. ON. Semashko, 105064, (<https://orcid.org/0000-0002-0293-8372>)

Improvement of the medical and demographic situation in the country and public health indicators ultimately leads to economic growth in any territory [8, 4]. Decreasing the mortality of the population, increasing the birth rate and healthy life expectancy are among the key goals of the national project "Demography" [3].

Achieving the goals and strategic objectives outlined by the National Healthcare Project is possible only with the use of all available reserves - both at the level of managing the health care system as a whole and at the level of the region [7]. The territorial and climatic and geographical features of the Russian Federation