

## ORGANIZATION OF HEALTHCARE, MEDICAL SCIENCE AND EDUCATION

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THE STATE OF THE SYSTEM OF CONTINUOUS MEDICAL EDUCATION ACCORDING TO THE RESULTS OF SURVEYS OF HEALTHCARE PROFESSIONALS IN THE FAR EASTERN FEDERAL DISTRICT

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The aim of the research is a sociological survey of doctors of various specialties to identify the dynamics and potential for the development of changes in the system of medical education. This survey was conducted in two time periods: at the initial stage of the practical implementation of the system in the years 2013–2015 (341 respondents) and 7-9 years later in the year 2022 (93 respondents). The data were evaluated by calculating relative values and errors of relative values, as well as comparative analysis. According to the results of the study, it was revealed that more negative attitudes towards the system of continuing medical education prevailed at the initial stage, due to both low information of potential users and defects in the organization of the system (functioning of the Internet platform, defects in the legislative framework, organizational problems). At the second stage of the research, a definitely positive trend was revealed, in addition, new problems of applying this education system and possible ways to solve them were discussed. In the initial phase of reforming medical education, the main part of the target audience remained unprepared. The reasons for the rejection of the new system were the increased level of distrust of specialists in the actions of the Ministry of Health of Russia, as well as their low motivation to change the education system. In relation to the introduction of the standard of continuing medical education, positive changes were observed: 47.3±5.2% of positive reviews in the year 2022 against 13.3±1.8% in the years 2013-2015. It was expected that the regulatory documents over the course of observation should streamline the process and increase the effectiveness of the new model of postgraduate education. Improvement in reviews towards the system of continuing medical education among medical workers implies a higher interest in acquiring professional skills as well as the level of medical care. However, gaps in legislation that have not been resolved reduce the effectiveness of this new system. Thus, over the course of observation, a streamlining of the process of including healthcare professionals in the model of continuous medical education and carrying out appropriate activities within the new system of postgraduate education was observed. Further active interaction of control and regulatory systems with direct participants in the executive processes of medical education is necessary to increase the overall satisfaction of citizens with the work of the Russian healthcare system.

Keywords: continuing medical education, sociological research, educational modules

**Introduction.** The aim of state policy regarding additional professional training of medical and pharmaceutical specialists is an effective management of the quality of medical care in the Russian Federation. The development of continuing professional education in the field

of healthcare is carried out within the framework of federal laws and orders of Healthcare Ministry [4,6,7,8], which provide for the transition from traditional postgraduate advanced training once every 5 years to new educational practices: continuous medical education (CME) and accreditation during a five-year training cycle.

The organizational and motivational problems were indicated on at the initial stage. Expected that regulatory documents over time should streamline the process of conducting and increase the effectiveness of the new model of postgraduate education.

**Materials and methods.** The object of observation were high medical education specialists from nine subjects of the Far Eastern Federal District (FEFD). To obtain scientific information, a sociological research method was used. The units of observation were determined by the method of simple random sampling. The observation periods were 2.5 years (2013–2015) and 1 year (2022). The study involved doctors of various specialties, including healthcare organizers (341 respondents in the first observation period and 93 respondents in the second observation period). The collection of primary information was carried out at both stages by means of a questionnaire survey. The questionnaire, developed by the authors in accordance with domestic and foreign guidelines for medical and sociological monitoring [13,15], consisted of 30 questions. The questionnaires touched upon the main provisions of the reform of education of healthcare professionals, respondents' assessments of the availability and quality of medical care, individual awareness of specialists in the field of vocational education using closed and semi-closed questions. The data obtained were evaluated by calculating relative values and errors of relative values, as well as comparative analysis.

**Results.** Of the total number of respondents in the first stage, 89 were men (26%), 252 were women (74%), in the second stage 21 men (23%) and 72 women (77%) participated. Respondents aged 51–60 years formed the largest groups at both stages of observation (33% at the first stage and 29% at the second stage).

It should be noted that by the second

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stage of the study, each of the surveyed medical workers (100%) was already familiar with this system: 87 out of 93 specialists actively participated in CME. Positive dynamics on the main issues of additional professional education (APE) among the respondents is presented in the table 1.

As in the first stage of the study, there was a need for new information in the work in the specialty and, in particular, in raising the level of knowledge in the section of cardiovascular pathology. The technical ability to use the Internet increased and amounted to 93.5% compared to 89.5% [2]. Of the 6 people in the 2022 survey who do not use the Internet at work, 5 planned to complete work in their specialty by the time of personal periodic accreditation.

Half of all respondents at the first stage of the study reacted negatively to the introduction of the CME standard, and a third found it difficult to answer the question. The second survey showed a significant improvement in the perception of the CME system (positive feedback already from 47.3% (44) of the respondents, mostly those who passed the stage of periodic accreditation, against  $13.3\pm1.8\%$  of the respondents of the first stage).

At the same time, the subjective explanation of the negative assessment of the transformations by the respondents did not change significantly: the system "is still not fully developed", there is not enough available information on a given topic.

In the 2013-2015 survey  $23.0 \pm 3.2\%$  of respondents noted the possibility of mastering new practical skills, subject to mandatory separation from work, as an undoubted positive aspect of the new education system. During the second survey in 2022, it became obvious that the employer often has the opportunity to organize training on the job, which more

than 35% (35.5±5.0%) of respondents already noted as a negative factor.

**Discussion.** The obligatoriness of changing the existing education system in health care has not lost its relevance: according to experts, knowledge is completely updated every 6 years (by 15% per year) [16].

Negative attitude of physicians towards the CME system at the first stage of the study (2013-2015) was determined by an increased level of distrust of the innovations of the Healthcare Ministry of Russia and its ability to implement the tasks assigned to it.

It is obvious that the attitude of physicians towards the new CME system has improved over time. On the one hand, due to the fact that the number of APE programs and their participants is growing dynamically due to the inclusion of CME in the process of periodic accreditation of specialists. On the other hand, more positive reviews were received taking into account the dynamic amendments to the legislation from the beginning of the practical use (not a pilot project) of the new education system [11]. However, the total number of positive respondents is still only close to 50%.

A superficial look of NMO and unwillingness to perceive it as a whole was revealed in 36.4% of the respondents [2]. 28.7% of respondents (98) did not know the main provisions of CME, 55.4% (189) complained about the lack of information about CME [2]. By 2022, less than a third of respondents, 30.1%, found it difficult to answer questions about the organization of CME (28).

At the first stage of the study, none of the respondents paid attention to the fact that in the new system the number of required training hours increased significantly over 5 years: from 144 to 250, which additionally testified to the low awareness of health workers about the CME system. The second stage of the survey of respondents showed that the reduction in the number of study hours that would be required to increase the level of knowledge to 144 hours had a positive response from 26% (24) of the respondents.

The system of educational loans came to us from abroad, where it is quite common [17]. Merging into domestic conditions, the system began to acquire its own characteristics, often not in favor of itself.

If at the first stage of the study, the respondents justified their negative attitude towards the CME system being introduced mainly by the fact that by 2015 the necessary conditions for its implementation and functioning of the system had not been created, then at the moment, under the new conditions, it became possible to formally study and obtain relevant documents. This became possible due to the fact that some of the educational organizations of the APE have the ability to circumvent the requirements. Having nothing to do with medical education, without having the resources and teaching staff to implement medical training programs, these organizations receive educational licenses and conduct training without restrictions in specialties, including medical ones. This is facilitated by the growth of interested parties and shortcomings in the current regulatory documents.

Interested persons are physicians (especially the more experienced generation), who do not consider it necessary to improve their own qualifications in cycles of additional university programs (training cycles), simply having the opportunity not to spend time on education due to low interest in their own professional growth, or considering the knowledge gained in this way obsolete. In fact, a competent system is being created that allows even motivated specialists to circumvent the requirements of the APE without engaging in advanced training in additional programs.

Dynamic survey of healthcare	professionals on the state of the sy	stem of additional	professional education
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Questions		Answers 2013-2015 гг. (р±m), % n-341 (*n-174)		Answers 2022 г. (р±m), % n-93		
		Negative	Difficulty answer	Positive	Negative	Difficulty answer
How do you feel about the implementation of the CME standard?		50.5±2.7	36.4±2.6	47.3±5.2	32±4.8	20.7±4.2
Do you think that the specialist himself should pay for his education?		82.6±2.1	10.0±1.6	10±3.1	72±4.7	18±4.0
Do you feel the need for new information in your specialty?*		8.0±2.1	6.9±1.9	82±4.0	13±3.5	5±2.3
Do you feel the need for new information on modern methods of diagnosis and treatment of cardiovascular diseases?*		7.5±2.0	4.0±1.5	78±4.3	6.5±2.6	5.5±2.4
Do you use medical information from the Internet in your work?*		11.5±2.4	2.3±1.1	92±2.8	6.5±2.6	-



The continuing problem of staff shortages (especially in small towns and rural areas), combined with the emerging opportunities to "bypass" mandatory fulltime forms of education, provokes heads of medical institutions to formal full-time training in reality on the job, even against the background of a decrease in the number of hours (points) gained from 250 to 144 [8,11].

As a result, on a paid basis, a specialist can formally undergo training in any specialty without conflicts at the place of work.

One of the three main components of acquiring points in the CME system - various events (conferences, congresses, etc.) in the face-to-face format are still not available to most specialists, and the implemented on-line format, with all attempts to "bind" event participants to drying of reports has the possibility of formal presence, participation is often carried out in parallel with the work process (work on the days of events "no one canceled").

Electronic educational modules are not sufficient for the development of a five-year program, their quantity and quality should be regulated. In addition, there are no uniform requirements for the semantic content of the modules.

To increase the motivation of specialists for learning, the issue of distance learning is being actively addressed. The problem of training at a convenient time for doctors is more complicated [1].

Time restrictions on on-line events for certain regions of the country, which has 9 time zones, are at best solved by transferring records of events off-line, and often they are not solved at all and become problems for the student.

The results of a survey of 4276 respondents on the educational platform of the Healthcare Ministry of showed that 56% of specialists with less than 5 years of experience do not support the use of Internet content in the CME system, while 41% of those with longer experience expressed the opposite opinion [3].

Under these conditions, probably, young specialists experience not only a lack of knowledge, but also a lack of live communication with more experienced colleagues. The problem can be partially solved by including practice-oriented cycles in the content. At the same time, the problem of practice orientation remains relevant in the context of short training cycles in the CME system.

At the second stage of the study, 36.6% (34) of respondents independently noted a positive effect from the offset of points scored in related specialties. This algorithm, indeed, greatly facilitated the work in the system for doctors with several specialties.

The practical use of the CME system has shown that with all the advantages of re-crediting points in related specialties, there are also disadvantages. A transfer option that has a positive effect on experience in the specialty: cycles for clinical specialties in various diagnostic methods and, conversely, for diagnostic specialists, in clinical aspects of pathology. An application that does not affect skills in the main specialty: cycles in general education programs (for example, on topical infectious diseases, blood transfusion, pre-trip examinations, etc., which are also mandatory. As a result, the situation is real, when over a five-year period of study a specialist may not complete educational cycles directly in the specialty. Interdisciplinary training actively introduced in this way should be more harmoniously integrated into the main process of a five-year continuous education of a specialist.

As a result, a more optimal option for a five-year training cycle seems to be a mandatory combination of full-time cycles mainly in the specialty (2 out of 5), correspondence courses mainly in related specialties (2 out of 5) and practical skills (simulation centers - 1 cycle). However, it should be understood that simulation training cannot replace clinical experience, but is only its valuable addition [9,17].

Continuing medical education remains subject to state regulation. However, gaps in legislation that have not yet been resolved reduce the effectiveness of the system being implemented. The growth of a formal attitude to education, which was assumed at the first stage of the study [2], received additional prerequisites under these conditions. In order to overcome the problems of CME, special organizations and associations have been created, for example, the association "Rosmedobr" (association of teachers of medicine, https://www.rosmedobr. ru/), but today their efforts are not enough in the fight against unresolved gaps in the legislation.

Until now, more than half of the citizens are not satisfied with the work of the Russian healthcare system (53% in 2008, 59% in 2014, 58% in 2019) and more and more citizens are pessimistic about the prospects for the development of domestic healthcare in the next decade (2008 - 18%, 2014 - 24%, 2019 - 30%) [16].

In addition to the previously recommended events to improve the efficiency of legal regulation in the field of further vocational education and the development of professional communities [12], it makes sense, as part of the development of high-quality educational events for CMEs, to more actively develop and improve practice-oriented technologies and simulation courses, as well as conduct targeted training of qualified personnel. reserves of the teaching staff of universities.

The organization of the educational process is based on the methodology, where the basis is the competence-based approach [16]. This approach should be supplemented with an adaptive approach, which will allow, based on feedback, to offer students an individual educational plan.

The medical university, as the main organizer of the healthcare workforce, must undeniably undergo innovative changes in the system of organizing continuous professional postgraduate training of specialists. Various forms of education are being widely introduced using interactive methods and distance learning technologies [14]. The possibilities of the university should be used as widely as possible.

Conclusions. Thus, over the course of observation, there is an ordering in the perception of the CME model by healthcare professionals and the implementation of appropriate activities in the new system of postgraduate education. The improvement in attitudes towards the CME system among medical professionals implies a higher interest in acquiring professional skills, as well as an increase in the level of acquiring professional skills and, accordingly, the level of medical care. To counteract unscrupulous educational organizations, it is necessary to take additional legal decisions. Further active interaction of control systems and regulatory bodies with direct participants in the executive processes in the field of medical education is necessary to increase the overall satisfaction of citizens with the work of the Russian healthcare system.

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## HYGIENE, SANITATION, EPIDEMIOLOGY AND MEDICAL ECOLOGY

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## S. V. Pryanichnikov FEATURES OF STRESS-IMPLEMENTING AND REGULATORY SYSTEMS OF THE BODY OF MEDICAL STUDENTS IN HIGH LATITUDES

The aim of the study was to study the influence of the level of situational (SA), personal anxiety (PA) on the psycho-emotional state of the body and the cardiovascular system (CS) in high latitudes. The study involved 65 people (girls, age 18.67± 3.75 years) who filled out questionnaires of differentiated self-assessment of functional status (WAM), the methodology for determining the level of situational anxiety and personal anxiety by C. D. Spielberger and Y. L. Khanin. The heart rate variability (HRV) indicators were recorded using the Omega-M hardware diagnostic medical complex. To quantify the concentration of cortisol in blood serum, the method of solid-phase enzyme immunoassay was used. To analyze the prevalence of vitamin D deficiency, an enzyme immunoassay was used to quantify 25-OH in serum and plasma. It is shown that with a change in the level of anxiety, the subjective assessment of well-being, activity, and mood decreases. At the functional level of the work of the cardiovascular system, significant differences were found in the form of changes in the temporal and frequency characteristics of the HRV, in which the influence of the mechanisms of sympathetic modulation of the heart rhythm prevails. The functional state of the hypothalamic-pituitary-adrenal system (HPAS), estimated as the quantitative content of cortisol in the blood and does not change depending on the level of anxiety. Significant differences in the level of vitamin D in the blood and its general deficiency in the study participants were shown.

**Keywords:** well-being, activity, mood, situational and personal anxiety, cortisol, vitamin D, heart rate variability.

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Introduction. The Geneva Conference of 1964 defined the territories lying north of 66°33 north latitude to be designated by the term "high latitudes" [1].Living here is determined by the influence of a number of external factors, among which the cold factor, contrast photoperiodics, heliogeomagnetic effects, color

56