

## ОЦЕНКА УРОВНЯ ГОТОВНОСТИ МЕДИЦИНСКИХ СПЕЦИАЛИСТОВ РАЗНЫХ ВЕДОМСТВ В СОСТАВЕ НЕШТАТНЫХ ФОРМИРОВАНИЙ СЛУЖБЫ МЕДИЦИНЫ КАТАСТРОФ К ЛИКВИДАЦИИ МЕДИКО-САНИТАРНЫХ ПОСЛЕДСТВИЙ ЧРЕЗВЫЧАЙНЫХ СИТУАЦИЙ

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**Резюме.** Цель исследования – изучить и оценить показатели готовности и удовлетворенности работой военно-медицинских специалистов и гражданского персонала военно-медицинских организаций (ВМО) Минобороны (МО) России центрального и окружного подчинения (группа ВМО-МО), а также показатели готовности и удовлетворенности работой медицинских специалистов из состава медицинских организаций Минздрава России и Федерального медико-биологического агентства (группа МЗ-ФМБА) в составе нештатных формирований (НФ) Службы медицины катастроф (СМК) к деятельности по ликвидации медико-санитарных последствий чрезвычайных ситуаций (ЧС).

**Материалы и методы исследования.** Материалы исследования: анкеты социологического обследования медицинских специалистов НФ, распределенных на 2 группы (группа МЗ-ФМБА, n = 255; группа ВМО-МО, n = 227). Оценивались: общая характеристика медицинского специалиста, его профессиональная деятельность по основному месту работы и в составе НФ при работе в режимах повышенной готовности и чрезвычайной ситуации; готовность медицинских специалистов НФ к ликвидации медико-санитарных последствий ЧС. Методы исследования: аналитический, логический, статистический (описательная статистика, корреляционный и факторный анализ).

**Результаты исследования и их анализ.** Отмечена удовлетворенность работой военно-медицинских специалистов и гражданского персонала ВМО МО России центрального и окружного подчинения, а также медицинских специалистов из состава медицинских организаций Минздрава и ФМБА России. Определено, что среди факторов, влияющих на профессиональную деятельность медицинских специалистов разных ведомств в составе НФ, наиболее важными следует считать специальную подготовку и обеспеченность НФ медицинским и другим материально-техническим имуществом, готовность НФ при работе в режиме повседневной деятельности к выполнению задач по предназначению.

**Ключевые слова:** медико-санитарные последствия, медицинские специалисты разных ведомств, нештатные формирования, показатели готовности, Служба медицины катастроф, чрезвычайные ситуации

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Оценка уровня готовности медицинских специалистов разных ведомств в составе нештатных формирований Службы медицины катастроф к ликвидации медико-санитарных последствий чрезвычайных ситуаций // Медицина катастроф. 2022. №3. С. 23-31. <https://doi.org/10.33266/2070-1004-2022-3-23-31>

## ASSESSMENT OF THE LEVEL OF PREPAREDNESS OF MEDICAL STAFF OF DIFFERENT DEPARTMENTS IN THE NON-STAFF UNITS OF THE EMERGENCY MEDICINE SERVICE TO ELIMINATE MEDICAL AND SANITARY CONSEQUENCES OF EMERGENCIES

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**Summary.** The aim of the study was to investigate and to evaluate the readiness and job satisfaction rates of military medical specialists and civilian personnel of military medical organizations of the Russian Ministry of Defense of central and district subordination (ММО-MOD group), as well as the readiness and job satisfaction indicators of medical specialists from medical organizations of the Russian Ministry of Health and the Federal Medical and

Biological Agency (MOH-FMBA group) within the non-staff units of the Disaster Medicine Service for medical and sanitary consequences of emergencies elimination activities.

**Materials and research methods.** Materials of the study: sociological survey questionnaires of the non-staff medical specialists divided into 2 groups (MOH-FMBA group, n = 255; MMO-MOD group, n = 227). The following was assessed: general characteristics of a medical specialist, his/her professional activity at the main place of work and in the non-staff formations when working in high readiness and emergency modes; readiness of non-staff medical specialists to eliminate medical and sanitary consequences of emergencies. Research methods: analytical, logical, statistical (descriptive statistics, correlation and factor analysis).

**Results of the study and their analysis.** Satisfaction with the work of all military medical specialists and civilian personnel of the Russian Ministry of Defense of central and district subordination, as well as medical specialists from medical organizations of the Ministry of Health and the Federal Medical and Biological Agency of Russia were noted. It is marked that among the factors influencing professional activity of medical specialists of different departments in non-staff formations the most important should be considered special training and provision of non-staff formations with medical and other material and technical equipment, readiness of non-staff formations when working in the mode of daily activity to perform tasks on purpose.

**Key words:** Disaster Medicine Service, emergencies, medical and sanitary consequences, medical specialists of various departments, non-staff formations, readiness indicators

**Conflict of interest.** The authors declare no conflict of interest

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#### **Introduction**

According to the current regulations, medical aid to the victims of emergencies is provided by mobile emergency medical teams (EMTs), emergency response teams (ERTs), medical workers of multidisciplinary hospitals and medical organizations (MOs), providing assistance in outpatient and inpatient conditions, as well as by staff and non-staff formations (hospitals, detachments, brigades, groups), which in case of an emergency come under the operational subordination of the management bodies of the All-Russian Disaster Medicine Service of the corresponding level [1].

In 2020 in the Russian Federation 4.3 thousand different medical teams were engaged to eliminate medical and sanitary consequences of emergencies, and almost all of these teams that provided medical aid to victims of emergencies in the pre-hospital period belonged to the Disaster Medicine Service (DMS) of the subjects of the Russian Federation (hereinafter – subjects). In particular, a landmark event in that year was the medical support of events with a large number of participants, such as the forum "Tavrida" (Sudak) and "Big Change" (Artek), where medical care for Roscosmos employees (Baikonur, Svobodny) was provided by specialists of the combined mobile medical unit (CMU) of the Federal Medical and Biological Agency (FMBA) – [2].

Despite changes in the foreign policy of the Russian Federation, work continues to be done on certification, improving the level of medical and logistical equipment, improving the organization of work at the national and international levels of international emergency medical teams (EMTs) [3, 4].

The involvement of specialists from military-medical organizations (MMO) of district and central subordination into non-staff formations (NF) of the Emergency Medicine Service of the Russian Ministry of Defense is a significant aid for EMT specialists [5]. These formations are designed to reinforce special-purpose medical units and civil and military health care organizations which carry out mass reception of victims in emergencies. The peculiarity of the formation of non-staff units of the Ministry of Defense of Russia is that in determining their composition an important role is played by the definition, taking into account the experience of military medicine, of the structure and medical and evacuation characteristics of sanitary losses in emergencies of natural and man-made nature [6]. The organizational core of the non-staff formations are the specialized medical aid brigades (SMAB) in the structure of which the surgical (19,0%), therapeutic (11,8%), anesthesiologist-resuscitation (9,5%), infectious (8,8%) and traumatology (8,6%) profile brigades prevail. Visiting brigades are represented by paramedic (72.0%), general practitioner (21.0%), and physician specialized teams (7.0%) – [7].

An actively developing concept is the achievement of comprehensive interaction of the involved forces and means of ministries, agencies and services, solving the task of elimination of medical and sanitary consequences of emergencies and included in the All-Russian Medical Center, with unified levels of management and interaction under the current regulatory legal framework, unified views on the organization of medical and evacuation support of population af-

affected in emergencies, unified systems of personnel training, information and statistical work and comprehensive support. At the same time, medical specialists of different departments often have different views on the organization of medical support of the population affected in emergencies, which, in turn, may have a negative impact on the continuity and sequence of measures for the wounded, sick and injured. The effective operation of non-staff formations of DMS (hospitals, detachments, brigades, groups) of different departments is impossible without vertical and horizontal feedback, first of all, in the format of responses to the emerging requests from the medical specialists within the non-staff formations of DMS, taking part in the liquidation of medical and sanitary consequences of the emergency. Thus, the optimization of the involvement of medical staff of hospital-type organizations in various formations in the liquidation of medical and sanitary consequences of emergencies is an urgent problem.

**The aim of the study** was to investigate and to evaluate the readiness of military medical specialists and civilian personnel of the Ministry of Defense of Russia's central and district military units, as well as of medical specialists from organizations of the Ministry of Health and FMBA of Russia, involved in the non-staff units to work on the elimination of medical and sanitary consequences of emergencies.

**Materials and Methods.** The study was conducted by two groups of respondents: medical specialists of different levels in the medical institutions of the Russian Ministry of Health and the Federal Medical and Biological Agency (MOH-FMBA group,  $n = 255$ ) and military medical specialists and civilian personnel of the Russian Ministry of Defense, central and district levels of responsibility (MMO-MD group,  $n = 227$ ). The source of the data was the questionnaires of the sociological study of non-staff specialists from the MOH-FMBA and MMO-MD. The general characteristic of a medical specialist was studied, his/her professional activity was evaluated both at the main place of work and as a member of the DMS non-staff formations in the modes of high alert and emergency situations. A separate block of the questionnaire was an assessment of medical specialists' readiness to work to eliminate medical and sanitary consequences of emergencies. In addition, their satisfaction with their practical work was assessed (in parentheses the abbreviations are given):

- staffing of the DMS non-staff units with medical personnel when working in the modes of high readiness and emergency (staffing);
- compliance of the organizational and staff structure of control bodies of the DMS non-staff units with the mission objectives (adequacy);
- indicators of readiness of the DMS non-staff units (readiness);
- availability of medical specialists trained in air ambulance evacuation (air evacuation staff\*);
- level of theoretical knowledge and practical skills of medical specialists of the DMS non-staff units (knowledge and skills);
- system of professional training of medical and paramedical staff of the DMS non-staff units (training system);
- availability of necessary collective and personal protective equipment (PPE) and the possibility of using it in the emergency area (provision of PPE);
- procedure for staffing and inspections of the DMS non-staff units (order of staffing);

- availability of a set of medical equipment appropriate for work in the emergency zone (availability in the emergency zone);

- availability of governing documents regulating the activities of the medical service of the Armed Forces of the Russian Federation in response to the medical and sanitary consequences of an emergency (emergency regulations).

Responses to the questionnaire questions were evaluated on a five-point scale: "not satisfied" — 1 point; "difficult to answer" — 2 points; "not fully satisfied" — 3 points; "more satisfied than not satisfied" — 4 points; "fully satisfied" — 5 points.

For the statistical analysis of the data, we selected a number of programs that are most suitable for the solution of the set tasks. In particular, we used the PAST program (<https://www.nhm.uio.no/english/research/resources/past/>), which uses the most reliable modern nonparametric procedures for statistical processing and checking the statistical significance of the observed effects. The bulk of the obtained data was statistically processed using the software product IBM® SPSS® Statistics version 25. Normality of distribution of the studied groups was assessed using the Shapiro-Wilk criterion. Continuous normally distributed data were presented as mean and standard deviation ( $M(SD)$ ); in case of distribution different from normal, data were presented as median and interquartile range —  $Me(Q1-Q3)$ . Categorical data are presented as units and percentages (fractions). In some cases, in addition to the median and interquartile range, the survey results are presented as absolute values of the number and frequency of responses for each categorical score, as well as the mean score and standard deviation. Significance of differences between groups of variables compared for continuous data was assessed using: t-test for normal distribution of data; Mann-Whitney U-test for independent groups in case of non-normal distribution. When analyzing categorical data, the significance of differences between the groups was determined using the  $\chi^2$  criterion. Correlation analysis with calculation of Spearman's rank correlation coefficient ( $r_s$ ) was performed to study the dependence between quantitative characteristics [8]. The method of exploratory factor analysis was used to identify the most significant features [9]. In all cases differences were considered statistically significant at  $p < 0.05$  values.

**Results of the study and their analysis.** The mean age of the respondents from the MOH-FMBA group ( $n = 255$ ) was significantly greater than that of the MMO-MOD group ( $n = 227$ ). Women predominated in the MOH-FMBA group (60.6%); men predominated in the WMO-MOD group (69.2%). The WMO-MOD specialists had a narrower specialization of the teams, while the MOH-FMBA group had more general and broader team profiles. In both groups, the physician-nursing teams dominated among the various SMAB, but whereas in the WMO-MOD group the therapeutic general and surgical general teams ranked second and third in prevalence, 14.5% and 11.0%, respectively, in the MOH-FMBA group, the emergency medical team and toxic-therapeutic team ranked second and third, 16.9% and 14.5%, respectively. Subspecialized SMABs accounted for the smallest share (Fig. 1).

\*In the scientific literature on disaster medicine the term "air ambulance evacuation" is used to refer to medical evacuation with the use of air transport. In this article, the terms "air ambulance evacuation" and "air evacuation" are equivalent

The specialists of the MOH-FMBA group had significantly more years of service in the non-staff formations and more experience in dealing with medical and sanitary consequences of emergencies. In addition, employees of the MOH-FMBA group were significantly more likely to be involved in the elimination of medical and sanitary consequences of emergencies.

In most cases, the respondents were completely satisfied with the state of readiness and the results of the practical work of medical specialists of DMS non-staff formations to eliminate medical and sanitary consequences of emergencies. At the same time, the attribute "availability of medical specialists for air ambulance evacuation" caused confusion among the respondents when choosing the appropriate assessment — in most cases (34.9%) the answer "difficult to answer" was preferred (Table 2).

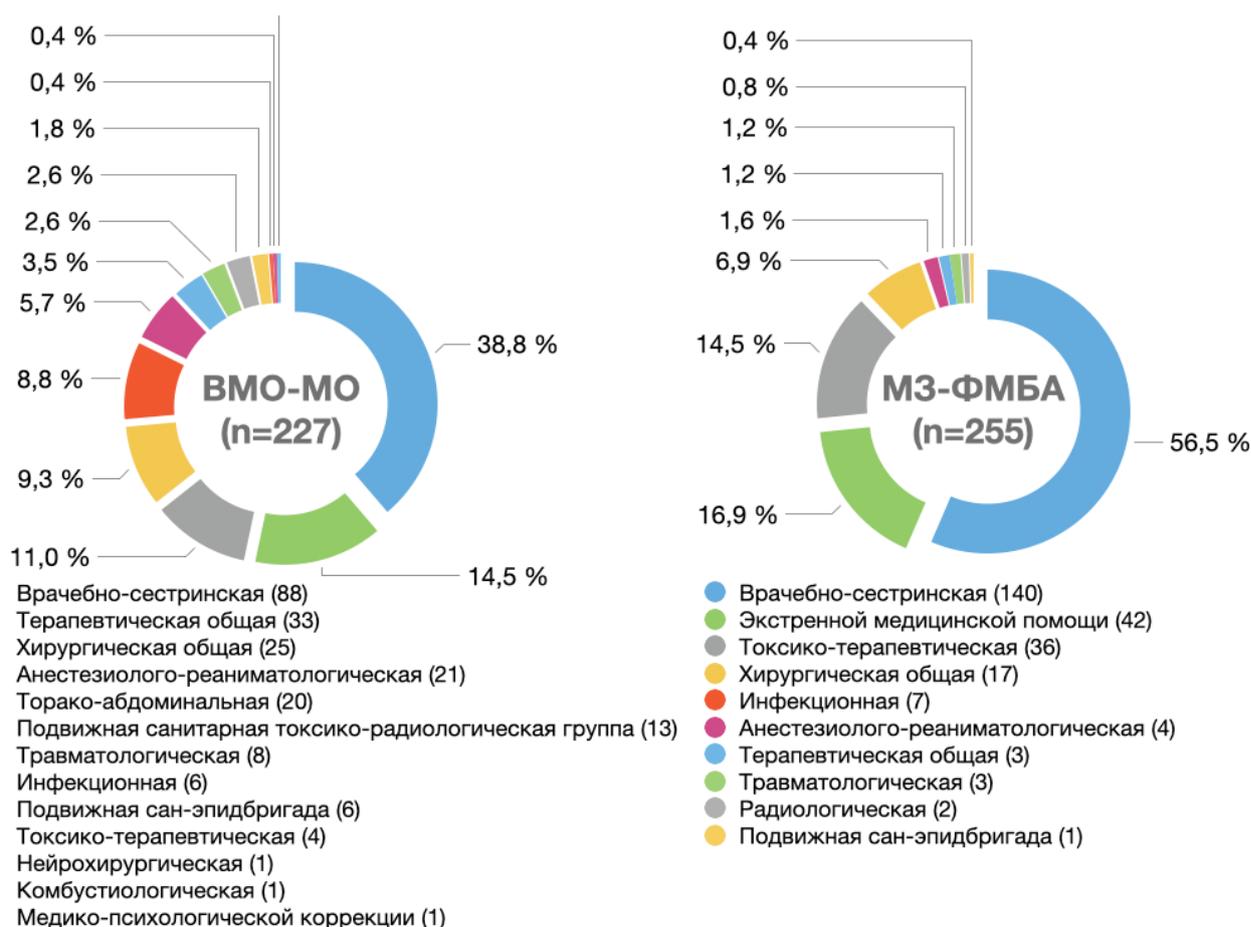
Thus, with the exception of the question about air evacuation staffing, most respondents in both groups were satisfied with the state of readiness and the results of practice (28.4-42.9%). Nevertheless, there were a number of nuances behind the respondents' positive responses and satisfaction, which necessitated a detailed analysis of all responses.

At least a quarter of the respondents gave each questionnaire item the highest rating; in almost all questions the median was 4, i.e., at least half of the respondents gave rat-

ings of 4 and 5. The correlation analysis of the respondents' answers revealed the following significant correlations between the indicators of readiness for emergency response and satisfaction with the results of practical activity: questions 5 (knowledge and skills) and 6 (training system),  $r = 0.780$ ; 7 (provision with protective equipment) and 9 (provision in the emergency zone),  $r = 0.600$ ; 2 (compliance of organizational and staff structure with the tasks) and 3 (readiness) —  $r = 0.580$ . All correlations were positive, i.e. there were no such pairs of questions when a positive answer to one question implies a negative answer to the second question (Fig. 2).

For two of the three items with statistically significant differences ("knowledge and skills" and "provision with protective equipment") the answers of medical specialists of the MOH-FMBA group, compared to the answers of respondents of the MMO-MOD group, were more positive (significance of differences  $p = 0.011$  and  $p = 0.014$  respectively, 2 criterion). Only on the issue of air ambulance evacuation were the specialists of the MMO-MOD group more satisfied,  $p = 0.014$  (Table 3).

Correlation analysis of the respondents' within-group responses revealed significant differences in opinions and judgments. The number of high correlation coefficients in the MMO-MOD group was lower than in the MOH-FMBA



**Рис. 1.** Профили бригад специализированной медицинской помощи нештатных формирований групп МЗ-ФМБА и ВМО-МО (в скобках приведено число специалистов)  
 Примечание. МЗ-ФМБА – медицинские организации Минздрава и ФМБА России; ВМО-МО – военно-медицинские организации Минобороны России центрального и окружного подчинения  
**Fig. 1.** Profiles of specialized medical care teams of non-staff groups of MZ-FMBA and VMO-MO (number of specialists is given in parentheses)  
 Note: MZ-FMBA – medical organizations of the Russian Ministry of Health and Federal Medical Biological Agency; VMO-MO – military medical organizations of the Russian Ministry of Defense of central and district subordination

**Характеристика респондентов групп ВМО-МО и МЗ-ФМБА**  
 Characteristics of respondents of WMO-MO and MZ-FMBA groups

Характеристика Characteristic	Группа ВМО-МО, n=227 WMO-MO group, n=227		Группа МЗ-ФМБА, n=255 MZ-FMBA group, n=225		Р
Средний возраст, лет – M(SD) Mean age, years - M(SD)	38,4/6,8		46,1/11,4		<0,001
Число /доля мужчин, чел./% Number/proportion of men, people/%	157/69,2		100/39,4		<0,001
Служебный статус, чел./% Service status, people/%	Военнослужащие Servicemen	174/76,7	Сотрудники МО Минздрава России Russian Ministry of Health medical organisation employee	206/80,8	-
	Лица гражданского персонала Civilian Personnel	53/23,3	Сотрудники МО ФМБА России FMBA medical organisation employee	49/19,2	
Стаж работы в составе нештатных формирований, лет – Me(Q1-Q3) Length of service in non-staff units, years - Me(Q1-Q3)	3,0/1,0-5,0		6,0/2,0-15,0		<0,001
Наличие опыта работы по ликвида- ции медико-санитарных послед- ствий ЧС, чел./% Experience in dealing with the medical and sanitary consequences of emergencies, persons/%	62/24,4		123/54,4		<0,001

Примечания. М – среднее значение; Me – медиана; Q1 – значение 25-го перцентиля; Q3 – значение 75-го перцентиля;  
 SD – стандартное отклонение  
 Notes. M – mean; Me – median; Q1 – 25th percentile value; Q3 – 75th percentile value; SD – standard deviation

Таблица 2/ Table No. 2

**Общие результаты анкетирования (n=482) по вопросам готовности к работе по ликвидации  
 медико-санитарных последствий ЧС и удовлетворенности результатами работы, чел./%**

Total questionnaire results (n=482) on readiness to work to eliminate  
 medical and sanitary consequences of emergencies and on satisfaction with the results of the work, people/%

№ вопро- са анкеты Question number	Показатель Indicator	Ответы / Responses				
		не удовле- творён not satisfied	затрудняюсь ответить difficult to answer	удовлетворён не в полной мере not fully satisfied	больше удовлетворён, чем не удовлетворён more satisfied than dissatisfied	полностью удовлетворён fully satisfied
1	Укомплектованность / Staffing	12/2,5	82/17,0	92/19,1	98/20,3	<b>198/41,1</b>
2	Соответствие задачам / Compliance with the objectives	6/1,2	119/24,7	69/14,3	105/21,8	<b>183/38,0</b>
3	Готовность / Readiness	18/3,7	106/22,0	81/16,8	130/27,0	<b>147/30,5</b>
4	Штаты авиаэвакуации Air evacuation staff	27/5,6	<b>168/34,9</b>	79/16,4	71/14,7	137/28,4
5	Знания и навыки Knowledge and skills	16/3,3	92/19,1	75/15,6	120/24,9	<b>179/37,1</b>
6	Система подготовки Training system	21/4,4	88/18,3	88/18,3	114/23,7	<b>171/35,5</b>
7	Обеспеченность средствами защиты Availability of protective equipment	22/4,6	91/18,9	105/21,8	93/19,3	<b>171/35,5</b>
8	Порядок комплектования Order of staffing	25/5,2	126/26,1	79/16,4	110/22,8	<b>142/29,5</b>
9	Обеспеченность в зоне ЧС Provision in the emergency area	15/3,1	70/14,5	86/17,8	104/21,6	<b>207/42,9</b>
10	Регламенты в ЧС Regulations in emergencies	12/2,5	98/20,3	79/16,4	86/17,8	<b>207/42,9</b>

group civilian specialists. This may indirectly point to the fact that for military-medical specialists and civilian MMO personnel each indicator of readiness for emergency medical and sanitary consequences elimination and their satisfaction with the results of practical activity have their own separate semantic context, while for civilian medical specialists many indicators are interrelated in their semantic context and are close to each other. For example, the order of staffing and inspections of non-staff formations (item 8) among civilian specialists is inseparable from all other items – the correlation coefficients are 0.5-0.7. At the same time, strong cor-

relations were revealed for virtually all other indicators (Figure 3).

Thus, in the MMO-MOD group a significant relationship was found only between the following questions: 5 (knowledge and skills) and 6 (training system) with  $r = 0.76$ , as well as a weak correlation between questions 4 (aviation evacuation staff) and 5 (knowledge and skills) with  $r = 0.51$ . Otherwise, military medical specialists and MMO civilian personnel did not correlate the indicators presented with any of the others - the values of all correlation coefficients were below 0.5.

The results we obtained were subjected to factor analysis, which made it possible to rank the studied indicators reflected in questions and to process them for subsequent interpretation and presentation in the form of macrocategories. Among all the respondents the first factor (factor 1) distributed its load on the following strongly correlated criteria: the level of theoretical knowledge and practical skills of the medical specialists of DMS non-staff units — factor load (FL) - 0.76; the system of professional training of medical and paramedical personnel from the DMS non-staff units — FL — 0.74; availability of guidance documents regulating the medical service of the Armed Forces in response to the medical and sanitary emergency consequences — FL — 0.6; availability of protective equipment and its possible usage in emergency — FL — .55. As a result, the contribution of factor 1 in the total variance of the initial attributes was maximum — 28,1%, and was defined by us as "Special training and provision with medical and other material and technical equipment of the DMS non-staff units in the mode of daily activities to perform tasks according to the intended purpose" (abbreviated as "Professionalism and comprehensive provision of medical specialists"). The second factor (factor 2) distributed its load on the following attributes: the indicators of advance readiness of the DMS non-staff units — FL — 0,79; correspondence of the organizational and staff structure of the DMS non-staff units management bodies to the tasks for mission — FL — 0,66; the indicators of staffing with medical personnel of the DMS non-staff units — FL—0,57; availability of medical specialists in medical and aviation evacuation — FL — 0,47. As a result, the contribution of factor 2 to the total variance of the initial characteristics was the maximum — 22.6%, and was designated by us as "Assessment of readiness of non-staff formations in the mode of daily activity to perform tasks on mission" (abbreviated as "Readiness for activity" (Fig. 4).

The analysis of the factors influencing the training of medical specialists in the DMS non-staff units and their practical

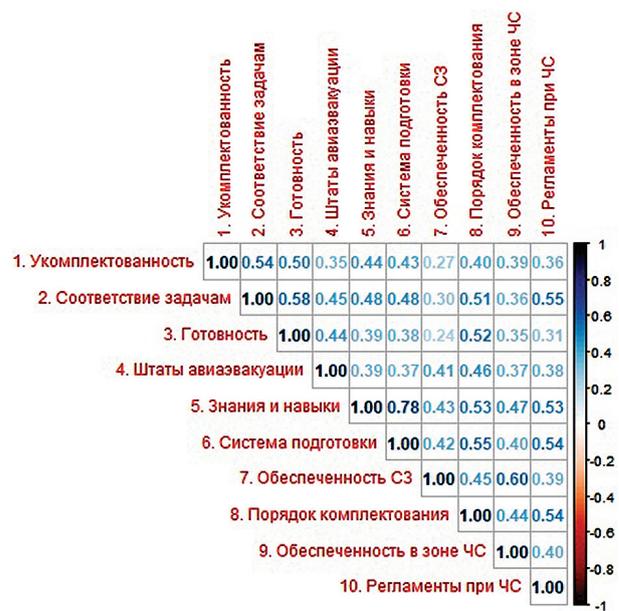


Рис. 2. Коэффициенты корреляции Спирмена для ответов всех респондентов. СЗ — средства защиты  
Fig. 2. Spearman correlation coefficients for all respondents' answers

activity in the elimination of medical and sanitary consequences of emergencies resulted in the formation of 2 groups of factors, the total variance of which was 50.7%, and the content analysis of the results allowed us to identify 2 fundamental generalizing factors: "Professionalism and comprehensive provision of medical specialists" and "Readiness for activity" (Fig. 5).

Factor analysis of the respondents' answers was performed separately for each group under study. It was determined that the principal structure of the factors did not change, but the totality of the indicators changed. It is interesting to note that the "System of professional training of med-

Таблица 3/ Table No. 3  
Результаты опроса респондентов групп ВМО-МО (n=227) и МЗ-ФМБА (n=255) по вопросам готовности к работе по ликвидации медико-санитарных последствий ЧС и удовлетворенности результатами работы

Survey results of WMO-MO (n=227) and MZ-FMBA (n=255) groups respondents on readiness to work to eliminate medical and sanitary consequences of emergencies and on satisfaction with the results of the work

№ вопроса анкеты Question number	Показатель Indicator	Группа ВМО-МО (n=227) WMO-MO group (n=227)		Группа МЗ-ФМБА (n=255) MZ-FMBA group (n=227)		P
		Me(Q1-Q3)	M(SD)	Me(Q1-Q3)	M(SD)	
1	Укомплектованность / Staffing	4,0 (3,0-5,0)	3,9(1,2)	4,0 (3,0-5,0)	3,8(1,3)	0,260
2	Соответствие задачам Compliance with the objectives	4,0 (3,0-5,0)	3,7(1,2)	4,0 (2,0-5,0)	3,7(1,3)	0,650
3	Готовность / Readiness	4,0 (3,0-5,0)	3,6(1,2)	4,0 (2,0-5,0)	3,6(1,3)	0,570
4	<b>Штаты авиаэвакуации Air evacuation staff</b>	<b>3,0 (2,0-5,0)</b>	<b>3,4(1,3)</b>	<b>2,0 (2,0-5,0)</b>	<b>3,2(1,4)</b>	<b>0,014</b>
5	<b>Знания и навыки Knowledge and skills</b>	<b>4,0 (3,0-5,0)</b>	<b>3,6(1,2)</b>	<b>4,0 (3,0-5,0)</b>	<b>3,9(1,2)</b>	<b>0,011</b>
6	Система подготовки / Training system	4,0 (3,0-5,0)	3,7(1,2)	4,0 (2,50-5,0)	3,7(1,3)	0,720
7	<b>Обеспеченность средствами защиты Availability of protective equipment</b>	<b>3,0 (3,0-5,0)</b>	<b>3,5(1,2)</b>	<b>4,0 (2,5-5,0)</b>	<b>3,7(1,3)</b>	<b>0,014</b>
8	Порядок комплектования Order of staffing	3,0 (2,5-4,0)	3,4(1,2)	4,0 (2,0-5,0)	3,6(1,3)	0,090
9	Обеспеченность в зоне ЧС Provision in the emergency area	4,0 (3,0-5,0)	3,8(1,2)	4,0 (3,0-5,0)	3,9(1,2)	0,350
10	Регламенты в ЧС Regulations in emergencies	4,0 (3,0-5,0)	3,7(1,2)	4,0 (2,0-5,0)	3,9(1,3)	0,080

Примечания. M — среднее значение; Me — медиана; Q1 — значение 25-го перцентилья; Q3 — значение 75-го перцентилья; SD — стандартное отклонение  
Notes. M — mean; Me — median; Q1 — 25th percentile value; Q3 — 75th percentile value; SD — standard deviation

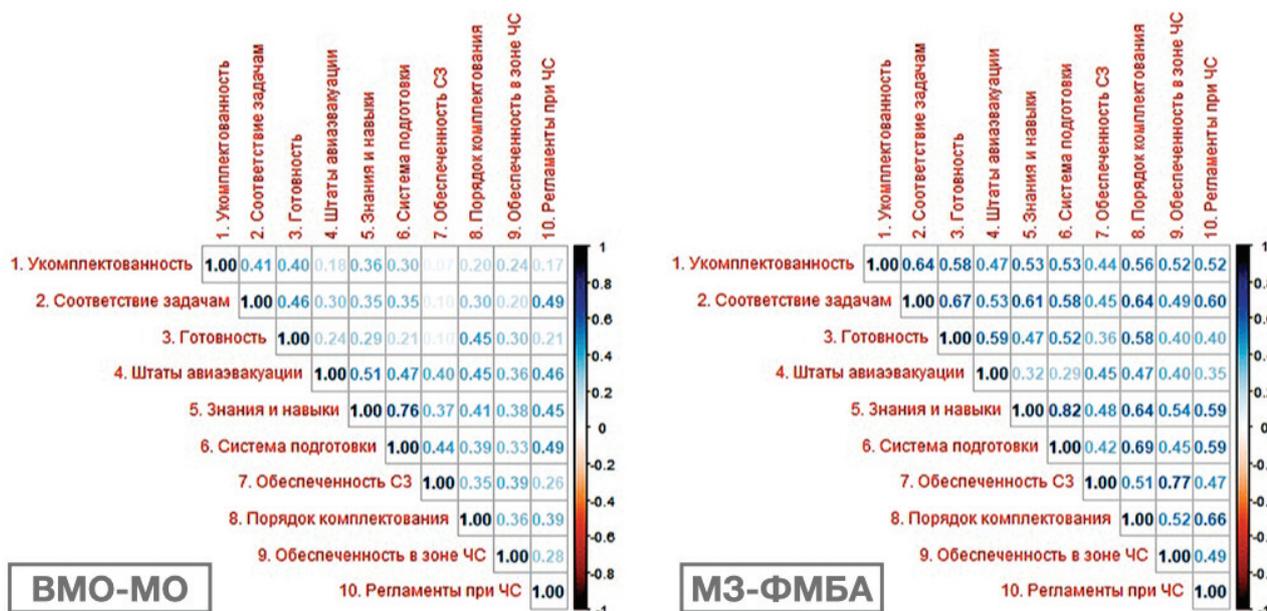


Рис. 3. Корреляционные связи между ответами на разные вопросы респондентов групп ВМО-МО и МЗ-ФМБА (критерий Спирмена). В ячейках таблицы приведены значения коэффициентов корреляции  
 Fig. 3. Correlations between answers to different questions of respondents of VMO-MO and MZ-FMBA groups (Spearman criterion). The values of correlation coefficients are given in the table cells

ical and paramedical staff from the DMS non-staff units" (FL — 0.74) in the MMO-MOD group was regarded as an element of the special training process of the DMS non-staff units in the mode of daily activity to perform tasks for destination, and for the MOH-FMBA group it was an element of the final readiness for activity for destination (FL — 0.86). Thus, for civilian medical specialists the main factor is the current readiness to perform activities to eliminate medical and sanitary consequences of emergencies, and for military-medical specialists the main factor is the system of special training of persons included in the DMS non-staff units. Indicators 5 (knowledge and skills = 0.72) and 6 (training system = 0.74) had the highest loadings on this question. Regarding the current readiness factor, the most important indicators for respondents in both groups were 1 (staffing = 0.53 and 0.59 for military medical specialists and civilian medical specialists, respectively), 2 (task appropriateness =

0.65 and 0.62 for MMO-MOD and MOH-FMBA groups, respectively), and 3 (readiness = 0.74 and 0.63 for MMO-MOD and MOH-FMBA groups, respectively). It is also interesting that indicator 4 (air evacuation staffs) proved to be the most important factor (with the highest load of 0.7) in the current readiness of civilian medical specialists, while for military medical specialists, in contrast, this indicator was significant in the factor of planned training (0.64). Accordingly, the contribution of factor 1 to the total variance of baseline traits for military medical specialists was 26.9%, and for factor 2 = 18.3%, a total of 45.2%. The contribution of factor 1 to the total variance of baseline traits for civilian medical specialists was 30.2%, factor 2 = 28.3% - total = 58.5% (Figure 6).

### Conclusion

As a result of the analysis we obtained the results reflecting the private opinion of the respondents in the general population of different professional groups of medical specialists included in the DMS non-staff units. It was noted that the majority of respondents present job satisfaction and readiness for the activities of medical and sanitary consequences of emergencies. The respondents from the medical organizations of the Russian Ministry of Health and FMBA of Russia included the most experienced medical specialists in the liquidation of medical and sanitary consequences of emergencies, which affected the general trend of their responses in assessing the readiness of the DMS non-staff units specialists to work in various modes of operation. For more frequent involvement of medical specialists of the DMS non-staff units of the Ministry of Defense of Russia it is necessary to actively promote at the regional and federal levels the use of forces and means of the medical service of the Armed Forces of the Russian Federation during joint actions of all federal executive bodies for liquidation of medical and sanitary consequences of emergencies [10].

The most important factors influencing the professional activity of medical specialists in the DMS non-staff units of dif-

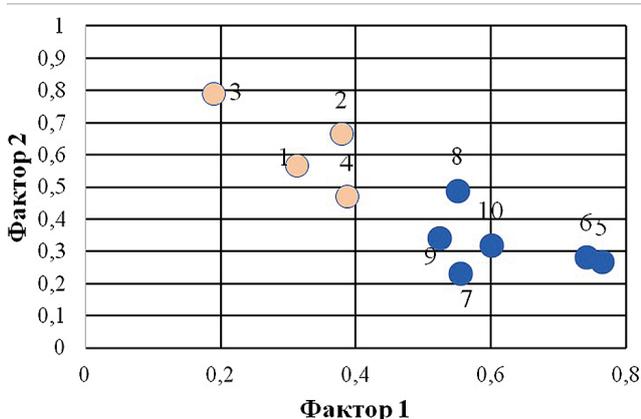


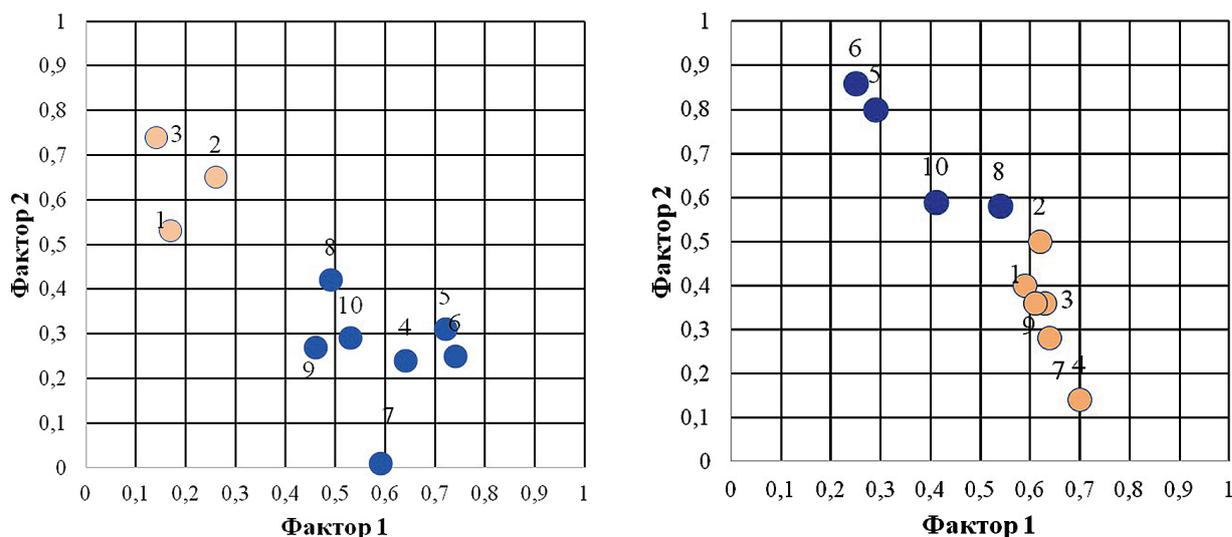
Рис. 4. Факторные нагрузки ответов всех респондентов групп ВМО-МО и МЗ-ФМБА. Цифрами обозначены номера вопросов анкеты  
 Fig. 4. Factor loadings of answers of all respondents of VMO-MO and MZ-FMBA groups. Numbers indicate the numbers of the questions in the questionnaire



**Рис. 5.** Факторные нагрузки главных факторов и их структура по ответам всех респондентов групп ВМО-МО и МЗ-ФМБА  
**Fig. 5.** Factor loadings of the main factors and their structure according to the answers of all respondents of VMO-MO and MZ-FMBA groups

ferent departments should be considered special training and provision with medical and other material and technical equipment in the mode of daily activity to perform tasks as intended, and assessment of readiness of the DMS non-staff units in the mode of daily activity to perform tasks as intended. Accordingly, health authorities of different levels should pay attention to the state of material and technical base of medical (military-medical) organizations designed (oriented) to eliminate medical and sanitary consequences of emergencies, the need to equip them with medical equipment in case of medical and aviation evacuation (on board the aircraft), availability and quality condition of medical

evacuation vehicles and their equipment, as well as the availability of sufficient means of individual protection. Assessment of readiness, in our opinion, should include both assessment of qualitative measures on organization of interaction with management bodies and medical specialists of other federal ministries, agencies and services, participating in liquidation of medical and sanitary consequences of emergency situations, and normative-legal regulation of their activity in DMS non-staff units. The studied indicators of readiness to work on liquidation of medical and sanitary consequences of emergencies, satisfaction with the results of practical activities as well as the opinion of medical spe-



**Рис. 6.** Факторные нагрузки ответов респондентов из группы «военно-медицинские специалисты и гражданский персонал ВМО Минобороны России центрального и окружного подчинения» (слева) и группы «медицинские специалисты из состава медицинских организаций Минздрава и ФМБА России» (справа)  
**Fig. 6.** Factor loadings of the answers of respondents from the group "military-medical specialists and civilian personnel of the Ministry of Defense of Russia of central and district subordination" (left) and from the group "medical specialists from medical organizations of the Russian Ministry of Health and the Federal Medical Biological Agency of Russia" (right)

cialists of different departments will allow in the medium term to eliminate drawbacks that directly or indirectly influence the organization of medical support of the population during the liquidation of medical and sanitary consequences of emergencies.

#### Final conclusion

1. The results of the study of the peculiarities of the work of the DMS non-staff units allow to conclude about the relevance of this direction in the general system of ensuring the liquidation of medical and sanitary consequences of emergencies.

2. The most important factors are special training and provision of the DMS non-staff units with medical and other logistical equipment when working in the mode of daily activities to fulfill the tasks, as well as the readiness of the DMS non-staff units.

3. The assessment of readiness should be formed of qualitative measures on the organization of interaction with the management bodies and medical specialists of federal ministries, agencies and services involved in the elimination of medical and sanitary consequences of emergencies, and normative legal regulation of their activities within the DMS non-staff units.

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