

НЕОБХОДИМОСТЬ РАСШИРЕНИЯ ДЕЙСТВУЮЩЕГО В РОССИЙСКОЙ ФЕДЕРАЦИИ ОФИЦИАЛЬНОГО ПЕРЕЧНЯ СОСТОЯНИЙ, ПРИ КОТОРЫХ ОКАЗЫВАЕТСЯ ПЕРВАЯ ПОМОЩЬ

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Резюме. Цели исследования – определить общий спектр критических состояний, при которых своевременно и правильно оказанная первая помощь (ПП) может способствовать сохранению жизни; оценить целесообразность расширения действующего в Российской Федерации официального перечня состояний, при которых оказывается первая помощь.

Материалы и методы исследования. Материалы исследования – национальные и международные рекомендации по оказанию первой помощи; данные официальной статистики; нормативные правовые акты Российской Федерации, регулирующие оказание первой помощи; отечественные и зарубежные научные публикации. Для поиска научных публикаций использовались библиографические базы данных Google Scholar, Pubmed/Medline и Российский индекс научного цитирования (РИНЦ). Поиск и анализ материалов выполнен в июле–августе 2022 г.

Результаты исследования и их анализ. Представлены результаты анализа международных и национальных рекомендаций и соответствующих научных публикаций по оказанию первой помощи, предпринятого с целью определения общего спектра угрожающих жизни состояний, при которых своевременно и правильно оказанная первая помощь может определить благоприятный исход для больного или пострадавшего. Показано, что утвержденный в 2012 г. официальный перечень состояний, при которых оказывается ПП, не включает ряд широко распространенных и опасных для жизни нарушений здоровья, в их числе острый коронарный синдром и инсульт – состояния, в совокупности обуславливающие наибольшее количество случаев смерти среди взрослого населения страны. Обоснована целесообразность расширения действующего в России официального перечня состояний, при которых оказывается первая помощь.

Ключевые слова: боль в груди, инсульт, инфаркт миокарда, острое нарушение мозгового кровообращения, острый коронарный синдром, официальный перечень состояний, первая помощь, Российская Федерация

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NEED TO EXPAND OFFICIAL LIST OF CONDITIONS FOR WHICH FIRST AID IS PROVIDED IN THE RUSSIAN FEDERATION

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Summary. The objectives of the study were to determine the general spectrum of critical conditions in which timely and correctly rendered first aid can contribute to the preservation of life; to assess the feasibility of expanding the official list of conditions in which first aid is rendered in the Russian Federation.

Research materials and methods. The study materials are national and international recommendations for first aid; data of official statistics; legal acts of the Russian Federation regulating first aid; domestic and foreign scientific publications. Bibliographic databases Google Scholar, Pubmed/Medline and Russian Science Citation Index (RSCI) were used to search for scientific publications. The materials were searched and analyzed in July-August 2022.

Study results and their analysis. The results of the analysis of international and national recommendations and relevant scientific publications on first aid, undertaken to identify the general spectrum of life-threatening conditions in which timely and properly provided first aid can determine a favorable outcome for the patient or victim are presented. The official list of conditions for

which first aid is provided, approved in 2012, does not include a number of widespread and life-threatening health disorders, including acute coronary syndrome and stroke — conditions that cumulatively cause the largest number of deaths among adult population of the country. The article substantiates the expediency of expanding the official list of conditions for which first aid is provided in Russia.

Key words: acute coronary syndrome, acute impairment of cerebral circulation, chest pain, first aid, myocardial infarction, official list of conditions, Russian Federation, stroke

Conflict of interest. The authors declare no conflict of interest

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Introduction

First aid is a complex of measures performed for various health disorders before medical aid to eliminate the threat to life and to prevent possible complications [1]¹.

The early provision of first aid by witnesses of sudden critical conditions, in which the outcome depends largely on the speed of intervention, has a proven effect in the form of a significant reduction in mortality [2, 3].

For example, the first aid is crucial in cases of out-of-hospital cardiac arrest, when due to progressive hypoxia the probability of recovery is reduced by about 10% with each minute of delay of care, as it is difficult to count on the immediate arrival of ambulance to a victim in most cases [4]. At the same time, the performance of basic cardiopulmonary resuscitation (CPR) by witnesses of cardiac arrest before the arrival of the ambulance increases the chances of survival by 2-3 times [5, 6]. Given the initial high incidence of out-of-hospital cardiac arrest, on the scale of the Russian Federation, this mortality reduction effect may contribute to saving tens or hundreds of thousands of lives annually [7].

In general, the high mortality rate of Russian population determines the necessity of maximum effective use of first aid as a strategic resource for prevention of premature death and reduction of the corresponding socio-economic losses of the state.

The aim of the study is to determine the general spectrum of critical conditions in which timely and properly provided first aid can contribute to the preservation of life, and to assess the feasibility of expanding the of-

ficial list of conditions in the Russian Federation, in which first aid² is provided.

It should be noted that, to the best of the authors' knowledge, no corresponding analysis has been undertaken to date.

Materials and methods of the study. The study materials were national and international recommendations on first aid, data of official statistics, normative legal acts of the Russian Federation regulating the provision of first aid, domestic and foreign scientific publications. Bibliographic databases Google Scholar, Pubmed/Medline and Russian Science Citation Index (RSCI) were used to search for scientific publications. Materials were searched and analyzed in July-August 2022.

Results of the study and their analysis. According to article 31 "First aid" of the Federal law from November 21, 2011 No. 323-FZ (ed. from 11.06.2022, with amendments from 13.07.2022)³ the list of conditions under which first aid is provided and the list of activities on provision of first aid are approved by the authorized federal executive body, unless otherwise provided for by federal laws.

The current list of conditions for which first aid is provided was approved by the Russian Ministry of Health and Social Development in 2012. It includes eight conditions: 1. unconsciousness; 2. respiratory and circulatory arrest; 3. external bleeding; 4. foreign bodies of upper airways; 5. injuries of various body areas; 6. burns, effects of high temperatures, thermal radiation; 7. frostbite and other effects of low temperatures; 8. poisoning.

¹ International First Aid Resuscitation and Education Guidelines. International Federation of Red Cross and Red Crescent Societies. Red Cross Red Crescent Networks. 2020. URL: https://www.globalfirstaidcentre.org/wp-content/uploads/2021/02/EN_GFARC_GUIDELINES_2020.pdf [Accessed 07.09.2022]

² URL: http://www.consultant.ru/document/cons_doc_LAW_129862 [Accessed date: 07.09.2022]

³ URL: http://www.consultant.ru/document/cons_doc_LAW_121895 [Accessed date: 07.09.2022]

In order to determine the general spectrum of life-threatening conditions for which the world scientific and medical community recommends the provision of first aid, we have analyzed international and national recommendations on first aid (21 documents). The content of each of them was studied in order to determine the most complete list of conditions for which recommendations on first aid are given. The array of data with the results of the analysis was published in free access in the online repository Mendeley Data [8]. The number of conditions presented in one document ranged from 1 to 52. The total number of unique states (without duplication) was 57. From the total number of conditions, the conditions posing an immediate threat to life were singled out (n=21; table).

Comparison of the obtained list of life-threatening conditions with the approved in Russia official list of conditions for which first aid is provided, has shown that the latter does not include many critical health disorders, in which early and correct provision of first aid can af-

fect the outcome for the victim and for which evidence-based recommendations on first aid are formulated (see table).

Among such disorders, chest pain is one of the most frequent reasons for seeking medical care [9]. In 12-32% of emergency department patients complaining of chest pain, acute coronary syndrome – ACS – a life-threatening complication of coronary heart disease is diagnosed [9-11]. The risk of death in ACS and its variant, myocardial infarction, increases significantly as the time from the onset of chest pain to treatment increases [12]. Therefore, the earliest possible detection of chest pain as a potential manifestation of myocardial ischemia, timely seeking medical care and providing first aid before the arrival of EMT specialists to the victim play a key role in preventing a lethal outcome [13, 14]. At the same time, the complex of first aid measures for the patients with chest pain is easy to learn and perform. According to modern international recommendations, the victim should calm down, exclude physical

Таблица / Table

Угрожающие жизни состояния, включенные в международные и национальные рекомендации по первой помощи, в сравнении с действующим в России официальным перечнем состояний, при которых оказывается ПП
Life-threatening conditions included in international and national recommendations on first aid, compared to the official list of conditions for which first aid is provided in Russia

Угрожающие жизни состояния, представленные в международных/национальных рекомендациях по ПП Life-threatening conditions presented in international/national first aid guidelines	Наличие (+) или отсутствие (-) состояния в действующем в России перечне состояний, при которых оказывается ПП Presence (+) or absence (-) of the condition in the list of conditions for which first aid is provided in Russia
1. Анафилаксия / Anaphylaxis	-
2. Бессознательное состояние/нарушенное сознание / Unconsciousness/disturbed consciousness	+
3. Боль в груди/инфаркт миокарда / Chest pain/ myocardial infarction	-
4. Гипогидратация/дегидратация / Hypohydration/dehydration	-
5. Гипогликемия/неотложное состояние, вызванное диабетом / Hypoglycemia/emergency condition caused by diabetes	-
6. Гипотермия / Hypothermia	+
7. Затруднённое дыхание, в т.ч. бронхиальная астма, круп / Difficulty breathing, including bronchial asthma, croup	-
8. Инсульт / Stroke	-
9. Кровотечение / Bleeding	+
10. Лихорадка/гипертермия (эндогенная) / Fever/hyperthermia (endogenous)	-
11. Неотложное состояние, вызванное воздействием радиоактивного излучения / Emergency condition caused by exposure to radiation	-
12. Обструкция дыхательных путей инородным телом / Airway obstruction by a foreign body	+
13. Остановка сердца –отсутствие дыхания и кровообращения / Cardiac arrest –no breathing or circulation	+
14. Отравление/химическое воздействие / Poisoning/chemical exposure	+
15. Роды экстренные / Labor emergency	-
16. Судороги / Seizures	-
17. Травма / Trauma	+
18. Утопление / Drowning	-
19. Шок / Shock	-
20. Электротравма / Electrical injury	-
21. Эффект воздействия высокой температуры –тепловые судороги, тепловое истощение, тепловой удар / High temperature effects –heat cramps, heat exhaustion, heat stroke	+

activity, take a comfortable position, ensure the reception of medicines prescribed by the doctor — antianginal drugs and acetylsalicylic acid (early administration of the latter in case of chest pain reduces mortality in myocardial infarction by more than 2 times) and stay with the victim until the arrival of the ambulance, closely monitoring the condition [15-17]⁴.

Another widespread critical condition that requires the fastest possible first aid, but is not on the approved list of conditions for which first aid is provided in Russia, is acute cerebrovascular accident (CVA) — stroke. As in the case of ACS, in stroke the shortening of the time from the onset of symptoms to medical care determines the outcome; however, even in countries with a high level of healthcare development, only 20-36% of stroke victims are hospitalized in a timely manner [18]. That is why in the international recommendations on first aid the importance of early recognition of stroke signs by means of simple estimation systems, such as FAST (Face, Arm, Speech, Time) or CPSS (Cincinnati Prehospital Stroke Scale), and immediate call of the ambulance at suspected stroke is underlined [17]⁵.

Before the arrival of the ambulance it is necessary to put the victim in a comfortable and safe position (taking into account the risk of falling due to nervous system dysfunction), to stay beside the victim, monitor condition, provide emotional support. Because some of the symptoms of stroke coincide with hypo- or hyperglycemia, the first aider can measure blood glucose levels with a glucose meter and appropriate skills to clarify the cause of the condition. In both stroke and ACS, if the condition worsens, such as loss of consciousness and loss of normal breathing, cardiopulmonary resuscitation should be started immediately and continued until the arrival of an ambulance crew; in case of loss of consciousness with normal breathing, the victim should be placed on his/her side, with the head tilted back to maintain airway and it is necessary to monitor his/her condition until help arrives.

Diseases of the circulatory system invariably occupy the leading position in the mortality structure of the Russian population. In 2021 this pathology caused the death of 934 thousand people (38% of all deaths)⁶.

At the same time the share of ischemic heart disease and its complications and acute cerebrovascular accidents (132 thousand cases) in the total number (508 thousand cases) of deaths from circulatory diseases accounted for 54 and 14%, respectively. Given the high incidence and significant contribution of coronary heart disease and strokes to mortality and the resulting

socio-economic damage to the state, reducing the number of preventable deaths caused by these diseases is an important task facing the national health care system [19-21]. Along with the intensification of primary and secondary prevention, increasing the efficiency of medical care and informing the population about the symptoms and rules of action in case of stroke and ACS, which is provided by the federal project "Combating Cardiovascular Diseases"⁷, to reduce mortality and disability due to this pathology, it is necessary to ensure the most effective use of the resource of the domestic first aid system, which involves the inclusion of chest pain as a typical manifestation of ACS and stroke in the official list of conditions which require first aid.

ACS and stroke, being the most frequent causes of death among adults all over the world⁸, are obviously a priority for the organization of effective mass delivery of first aid in order to reduce mortality.

At the same time, in many other urgent conditions for which at present in Russia there are no formal bases to render first aid (in particular, in anaphylactic reactions, hypo- and hyperglycemia, convulsions, conditions accompanied by difficulty breathing; see the table), also development of sudden death which nevertheless is potentially preventable if the first aid is rendered timely [22-25]. Inclusion of these conditions in the official list of conditions for which first aid is provided will create basic conditions for increasing frequency, efficiency and effectiveness of medical care in the prehospital period in the Russian Federation, which should eventually contribute to a significant reduction in mortality in life-threatening health disorders and mortality in the country.

Conclusion

The performed analysis has revealed a number of health disorders that require timely first aid to save lives, but are not included in the official list of conditions in which first aid should be provided in the Russian Federation. Among them are chest pain as a characteristic manifestation of ACS and stroke, while ACS and stroke together cause the largest number of deaths in Russian adults. Given the high potential of first aid as a resource that can significantly reduce mortality for these conditions and a number of other life-threatening disorders not included in the official list, there is a need to expand the current list of conditions for which first aid is provided, and to modify the list of measures for the provision of first aid. It will be possible after the introduction of amendments to the text of Art. 31 "First Aid" of the Federal Law No. 323-FZ from 21.11.2011⁹ that provides for the possibility of providing first aid for additional conditions.

In addition, the amendments provide for the approval, as a regulatory document, of rules for the provision of

⁴ ANZCOR Guideline 9.2.1 — Recognition and First Aid Management of Suspected Heart Attack. The Australian and New Zealand Committee on Resuscitation. 2021. URL: https://resus.org.au/download/9_2_medical/anzcor-guideline-9-2-1-suspected-heart-attack-apr-2021.pdf [Accessed date: 07.09.2022]

⁵ ANZCOR Guideline 9.2.2 - Stroke. The Australian and New Zealand Committee on Resuscitation. 2021. URL: https://resus.org.au/download/9_2_medical/anzcor-guideline-9-2-2-stroke-apr-2021.pdf [Accessed date: 07.09.2022]

⁶ URL: https://rosstat.gov.ru/storage/mediabank/demo24-2_2021.xlsx [Accessed date: 07.09.2022]

⁷ URL: <https://minzdrav.gov.ru/poleznye-resursy/natsproekt-zdravoohranenie/bssz> [Accessed date: 07.09.2022].

⁸ World Health Organization. Fact sheets. Detail. The top 10 causes of death. 2020. URL: <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death> [Accessed date: 07.09.2022]

⁹ URL: <https://sozd.duma.gov.ru/bill/466977-7> [Accessed date: 07.09.2022]

first aid, which will be able to include the necessary first aid measures. Along with this, to ensure the effectiveness of the provision of first aid in the domestic system of first aid will require the implementation of a set of additional interrelated organizational changes with their extension to all states from the expanded list, including: organization of mass training of the population in principles and skills of first aid provision; equipping the participants of first aid provision; organization of accounting and analysis of the effectiveness of first aid pro-

vision; creating conditions for popularization of first aid and motivation to provide first aid; as well as the introduction of remote counseling by dispatchers. The solution of such a complex task will require the coordinated interaction of specialists in the field of health care organization and public health, first aid and emergency medicine, and, according to the authors, can be most effectively implemented within the framework of the work of expert councils under the profile commission of the Russian Ministry of Health on the direction "First Aid".

СПИСОК ИСТОЧНИКОВ

1. Дежурный Л.И., Шойгу Ю.С., Гуменюк С.А., Неудахин Г.В., Закурдаева А.Ю., Колодкин А.А. и др. Первая помощь: Учебное пособие для лиц, обязанных и (или) имеющих право оказывать первую помощь. М.: ФГБУ ЦНИИОИЗ Минздрава России. 2018. 68 с.
2. Couper K., Abu Hassan A., Ohri V., Patterson E., Tang H.T., Bingham R., et al. Removal of Foreign Body Airway Obstruction: A Systematic Review of Interventions // *Resuscitation*. 2020. No. 156. P. 174-181. doi: 10.1016/j.resuscitation.2020.09.007.
3. Eberhard K.E., Linderoth G., Gregers M.C.T., Lippert F., Folke F. Impact of Dispatcher-Assisted Cardiopulmonary Resuscitation on Neurologically Intact Survival in out-of-Hospital Cardiac Arrest: a Systematic Review // *Scand. J. Trauma Resusc. Emerg. Med.* 2021. V.29, No. 1. P. 70. doi: 10.1186/s13049-021-00875-5.
4. Böttiger B.W., Van Aken H. Kids Save lives - Training School Children in Cardiopulmonary Resuscitation Worldwide is Now Endorsed by the World Health Organization (WHO) // *Resuscitation*. 2015. No. 94. P. A5-7. doi: 10.1016/j.resuscitation.2015.07.005.
5. Holmberg M., Holmberg S., Herlitz J. Effect of Bystander Cardiopulmonary Resuscitation in out-of-Hospital Cardiac Arrest Patients in Sweden // *Resuscitation*. 2000. No. 47. P. 59-70. doi: 10.1016/s0300-9572(00)00199-4.
6. Hasselqvist-Ax I., Riva G., Herlitz J., Rosenqvist M., Hollenberg J., Nordberg P., et al. Early Cardiopulmonary Resuscitation in Out-of-Hospital Cardiac Arrest // *N. Engl. J. Med.* 2015. V.372, No. 24. P. 2307-2315. doi: 10.1056/NEJMoa1405796.
7. Биркун А.А., Фролова Л.П., Буглак Г.Н., Олефиренко С.С. Внегоспитальная остановка кровообращения в Республике Крым: анализ эпидемиологии и практики оказания помощи // *Журнал им. Н.В.Склифосовского Неотложная медицинская помощь*. 2020. Т. 9. № 3. С. 338-347. doi: 10.23934/2223-9022-2020-9-3-338-347.
8. Birkun A. Coverage of Disorders / Conditions where First Aid is Recommended in Guidelines / Consensuses on First Aid // *Mendeley Data*. 2022. No. V1. doi: 10.17632/jjh9nkz6pm.1.
9. Bjørnsen L.P., Naess-Pleym L.E., Dale J., Grenne B., Wiseth R. Description of Chest Pain Patients in a Norwegian Emergency Department. *Scand. Cardiovasc. J.* 2019. V.53, No. 1. P. 28-34. doi: 10.1080/14017431.2019.1583362.
10. Knockaert D.C., Buntinx F., Stoens N., Bruyninckx R., Deloof H. Chest Pain in the Emergency Department: the Broad Spectrum of Causes // *Eur. J. Emerg. Med.* 2002. V.9, No. 1. P. 25-30. doi: 10.1097/00063110-200203000-00007.
11. George T., Ashover S., Cullen L., Larsen P., Gibson J., Bilesky J., et al. Introduction of an Accelerated Diagnostic Protocol in the Assessment of Emergency Department Patients with Possible Acute Coronary Syndrome: the Nambour Short Low-Intermediate Chest Pain Project // *Emerg. Med. Australas.* 2013. V.25, No. 4. P. 340-344. doi: 10.1111/1742-6723.12091.
12. Hanifi N., Rezaee E., Rohani M. Time-to-Treatment and Its Association with Complications and Mortality Rate in Patients with Acute Myocardial Infarction: a Prospective Cohort Study // *J. Emerg. Nurs.* 2021. V.47, No. 2. P. 288-298.e4. doi: 10.1016/j.jen.2020.05.013.
13. Erhardt L., Herlitz J., Bossaert L., Halinen M., Keltai M., Koster R., et al. Task Force on the Management of Chest Pain // *Eur. Heart J.* 2002. V.23, No. 15. P. 1153-1176. doi: 10.1053/euhj.2002.3194.
14. Perkins G.D., Handley A.J., Koster R.W., Castrén M., Smyth M.A., Olasveengen T., et al. European Resuscitation Council Guidelines for Resuscitation 2015: Section 2. Adult Basic Life Support and Automated External Defibrillation // *Resuscitation*. 2015. No. 95. P. 81-99. doi: 10.1016/j.resuscitation.2015.07.015.

REFERENCES

1. Dezhurnyy L.I., Shoygu Yu.S., Gumenyuk S.A., Neudakhin G.V., Zakurdayeva A.Yu., Kolodkin A.A., et al. *Pervaya Pomoshch = First Aid. A Training Manual for Persons Obligated and (or) Entitled to Provide First Aid.* Moscow Publ., 2018. 68 p. (In Russ.).
2. Couper K., Abu Hassan A., Ohri V., Patterson E., Tang H.T., Bingham R., et al. Removal of Foreign Body Airway Obstruction: a Systematic Review of Interventions. *Resuscitation*. 2020;156:174-181. doi: 10.1016/j.resuscitation.2020.09.007.
3. Eberhard K.E., Linderoth G., Gregers M.C.T., Lippert F., Folke F. Impact of Dispatcher-Assisted Cardiopulmonary Resuscitation on Neurologically Intact Survival in out-of-Hospital Cardiac Arrest: a Systematic Review. *Scand. J. Trauma Resusc. Emerg. Med.* 2021;29;1:70. doi: 10.1186/s13049-021-00875-5.
4. Böttiger B.W., Van Aken H. Kids Save lives - Training School Children in Cardiopulmonary Resuscitation Worldwide is Now Endorsed by the World Health Organization (WHO). *Resuscitation*. 2015;94:A5-7. doi: 10.1016/j.resuscitation.2015.07.005.
5. Holmberg M., Holmberg S., Herlitz J. Effect of Bystander Cardiopulmonary Resuscitation in out-of-Hospital Cardiac Arrest Patients in Sweden. *Resuscitation*. 2000;47:59-70. doi: 10.1016/s0300-9572(00)00199-4.
6. Hasselqvist-Ax I., Riva G., Herlitz J., Rosenqvist M., Hollenberg J., Nordberg P., et al. Early Cardiopulmonary Resuscitation in out-of-Hospital Cardiac Arrest. *N. Engl. J. Med.* 2015;372;24:2307-2315. doi: 10.1056/NEJMoa1405796.
7. Birkun A.A., Frolova L.P., Buglak G.N., Olefirenko S.S. Out-of-Hospital Cardiac Arrest in the Republic of Crimea: Analysis of Epidemiology and Practice of Care. *Zhurnal im. N.V.Sklifosovskogo Neotlozhnaya Meditsinskaya Pomoshch = Russian Sklifosovsky Journal of Emergency Medical Care*. 2020;9;3:338-347 (In Russ.). doi: 10.23934/2223-9022-2020-9-3-338-347.
8. Birkun A. Coverage of Disorders / Conditions Where First Aid is Recommended in Guidelines / Consensuses on First Aid. *Mendeley Data*. 2022;V1. doi: 10.17632/jjh9nkz6pm.1.
9. Bjørnsen L.P., Naess-Pleym L.E., Dale J., Grenne B., Wiseth R. Description of Chest Pain Patients in a Norwegian Emergency Department. *Scand. Cardiovasc. J.* 2019;53;1:28-34. doi: 10.1080/14017431.2019.1583362.
10. Knockaert D.C., Buntinx F., Stoens N., Bruyninckx R., Deloof H. Chest Pain in the Emergency Department: the Broad Spectrum of Causes. *Eur. J. Emerg. Med.* 2002;9;1:25-30. doi: 10.1097/00063110-200203000-00007.
11. George T., Ashover S., Cullen L., Larsen P., Gibson J., Bilesky J., et al. Introduction of an Accelerated Diagnostic Protocol in the Assessment of Emergency Department Patients with Possible Acute Coronary Syndrome: the Nambour Short Low-Intermediate Chest Pain Project. *Emerg. Med. Australas.* 2013;25;4:340-344. doi: 10.1111/1742-6723.12091.
12. Hanifi N., Rezaee E., Rohani M. Time-to-Treatment and Its Association with Complications and Mortality Rate in Patients with Acute Myocardial Infarction: a Prospective Cohort Study. *J. Emerg. Nurs.* 2021;47;2:288-298.e4. doi: 10.1016/j.jen.2020.05.013.
13. Erhardt L., Herlitz J., Bossaert L., Halinen M., Keltai M., Koster R., et al. Task Force on the Management of Chest Pain. *Eur. Heart J.* 2002;23;15:1153-1176. doi: 10.1053/euhj.2002.3194.
14. Perkins G.D., Handley A.J., Koster R.W., Castrén M., Smyth M.A., Olasveengen T., et al. European Resuscitation Council Guidelines for Resuscitation 2015: Section 2. Adult Basic Life Support and Automated External Defibrillation. *Resuscitation*. 2015;95:81-99. doi: 10.1016/j.resuscitation.2015.07.015.

15. Barbash I., Freimark D., Gottlieb S., Hod H., Hasin Y., Battler A., et al. Outcome of Myocardial Infarction in Patients Treated with Aspirin is Enhanced by Pre-Hospital Administration // *Cardiology*. 2002. V.98, No. 3. P. 141-147. doi: 10.1159/000066324.
16. Freimark D., Matetzky S., Leor J., Boyko V., Barbash I.M., Behar S., et al. Timing of Aspirin Administration as a Determinant of Survival of Patients with Acute Myocardial Infarction Treated with Thrombolysis // *Am. J. Cardiol.* 2002. V.89, No. 4. P. 381-385. doi: 10.1016/s0002-9149(01)02256-1.
17. Zideman D.A., Singletary E.M., Borra V., Cassan P., Cimpoesu C.D., De Buck E., et al. European Resuscitation Council Guidelines 2021: First Aid // *Resuscitation*. 2021. No. 161. P. 270-290. doi: 10.1016/j.resuscitation.2021.02.013.
18. Yang H., Huang X., Yang C., Zhu S., Chen X., Zhang M., et al. Time Window for Acute Stroke Management: a Cross-Sectional Study among Community Healthcare Practitioners in Primary Care // *Int. J. Gen. Med.* 2022. No. 15. P. 4483-4493. doi: 10.2147/IJGM.S361189.
19. Концевая А.В., Баланова Ю.А., Имаева А.Э., Худяков М.Б., Карпов О.И., Драпкина О.М. Экономический ущерб от гиперхолестеринемии на популяционном уровне в Российской Федерации // *Рациональная фармакотерапия в кардиологии*. 2018. Т.14, № 3. С. 393-401. doi: 10.20996/1819-6446-2018-14-3-393-401.
20. Концевая А.В., Драпкина О.М., Баланова Ю.А., Имаева А.Э., Суворова Е.И., Худяков М.Б. Экономический ущерб от сердечно-сосудистых заболеваний в Российской Федерации в 2016 году // *Рациональная фармакотерапия в кардиологии*. 2018. Т.14, № 2. С. 156-166. doi: 10.20996/1819-6446-2018-14-2-156-166.
21. Самородская И.В., Семёнов В.Ю. Потерянные годы потенциальной жизни от болезни системы кровообращения экономически активного населения Российской Федерации в 2013-2019 годах // *Российский кардиологический журнал*. 2021. Т.26, № 5. С. 82-87. doi: 10.15829/1560-4071-2021-4161.
22. Moneret-Vautrin D.A., Morisset M., Flabbee J., Beaudouin E., Kanny G. Epidemiology of Life-Threatening and Lethal Anaphylaxis: a Review // *Allergy*. 2005. V.60, No. 4. P. 443-451. doi: 10.1111/j.1398-9995.2005.00785.x.
23. Zhuo L., Zhang Y., Zielke H.R., et al. Sudden Unexpected Death in Epilepsy: Evaluation of Forensic Autopsy Cases // *Forensic Sci. Int.* 2012. V.223, No. 1-3. P. 171-175. doi: 10.1016/j.forsciint.2012.08.024.
24. Kumar J.G., Abhilash K.P., Saya R.P., Tadipani N., Bose J.M. A Retrospective Study on Epidemiology of Hypoglycemia in Emergency Department // *Indian J. Endocrinol. Metab.* 2017. V.21, No. 1. P. 119-124. doi: 10.4103/2230-8210.195993.
25. Sessa F., Esposito M., Messina G., Di Mizio G., Di Nunno N., Salerno M. Sudden Death in Adults: a Practical Flow Chart for Pathologist Guidance // *Healthcare (Basel)*. 2021. V.9, No. 7. P. 870. doi: 10.3390/healthcare9070870.
26. Дежурный Л.И., Бояринцев В.В., Неудакhin Г.В. Система первой помощи в России и ее взаимодействие со службой скорой медицинской помощи // *Скорая медицинская помощь*. 2013. Т.14, № 2. С. 44-50.
27. Биркун А.А., Дежурный Л.И. Диспетчерское сопровождение при угрозе внегоспитальной остановки кровообращения // *Журнал им. Н.В.Склифосовского Неотложная медицинская помощь*. 2019. Т.8, № 1. С. 60-67. doi: 10.23934/2223-9022-2019-8-1-60-67.
28. Дежурный Л.И., Гуменко С.А., Закиров Р.Р., Максимов Д.А., Трофименко А.В. Первая помощь в Российской Федерации. Последние изменения и ближайшие перспективы // *Кремлевская медицина. Клинический вестник*. 2019. № 3. С. 15-22.
29. Журавлев С.В., Колодкин А.А., Максимов Д.А., Трофименко А.В., Дежурный Л.И., Бояринцев В.В. Организация учета частоты, объема и результативности мероприятий первой помощи // *Проблемы социальной гигиены, здравоохранения и истории медицины*. 2020. Т.28, № 4. С. 616-620. doi: 10.32687/0869-866X-2020-28-4-616-620.
30. Биркун А.А., Дежурный Л.И. Нормативно-правовое регулирование оказания первой помощи и обучения оказанию первой помощи при внегоспитальной остановке сердца // *Журнал им. Н.В.Склифосовского Неотложная медицинская помощь*. 2021. Т.10, № 1. С. 141-152. doi: 10.23934/2223-9022-2021-10-1-141-152.
15. Barbash I., Freimark D., Gottlieb S., Hod H., Hasin Y., Battler A., et al. Outcome of Myocardial Infarction in Patients Treated with Aspirin is Enhanced by Pre-Hospital Administration. *Cardiology*. 2002;98;3:141-147. doi: 10.1159/000066324.
16. Freimark D., Matetzky S., Leor J., Boyko V., Barbash I.M., Behar S., et al. Timing of Aspirin Administration as a Determinant of Survival of Patients with Acute Myocardial Infarction Treated with Thrombolysis. *Am. J. Cardiol.* 2002;89;4:381-385. doi: 10.1016/s0002-9149(01)02256-1.
17. Zideman D.A., Singletary E.M., Borra V., Cassan P., Cimpoesu C.D., De Buck E., et al. European Resuscitation Council Guidelines 2021: First Aid. *Resuscitation*. 2021;161:270-290. doi: 10.1016/j.resuscitation.2021.02.013.
18. Yang H., Huang X., Yang C., Zhu S., Chen X., Zhang M., et al. Time Window for Acute Stroke Management: a Cross-Sectional Study among Community Healthcare Practitioners in Primary Care. *Int. J. Gen. Med.* 2022;15:4483-4493. doi: 10.2147/IJGM.S361189.
19. Kontsevaya A.V., Balanova YU.A., Imayeva A.E., KHudyakov M.B., Karpov O.I., Drapkina O.M. Economic Burden of Hypercholesterolemia in the Russian Federation. *Ratsionalnaya Farmakoterapiya v Kardiologii = Rational Pharmacotherapy in Cardiology*. 2018;14;3:393-401 (In Russ.). doi: 10.20996/1819-6446-2018-14-3-393-401.
20. Kontsevaya A.V., Drapkina O.M., Balanova Yu.A., Imayeva A.E., Suvorova Ye.I., Khudyakov M.B. Economic Burden of Cardiovascular Diseases in the Russian Federation in 2016. *Ratsionalnaya Farmakoterapiya v Kardiologii = Rational Pharmacotherapy in Cardiology*. 2018;14;2:156-166 (In Russ.). doi: 10.20996/1819-6446-2018-14-2-156-166.
21. Samorodskaya I.V., Semenov V.Yu. Years of Potential Life Lost from Cardiovascular Diseases of the Economically Active Russian Population in 2013-2019. *Rossiyskiy Kardiologicheskii Zhurnal = Russian Journal of Cardiology*. 2021;26;5:4161 (In Russ.). doi: 10.15829/1560-4071-2021-4161.
22. Moneret-Vautrin D.A., Morisset M., Flabbee J., Beaudouin E., Kanny G. Epidemiology of Life-Threatening and Lethal Anaphylaxis: a Review. *Allergy*. 2005;60;4:443-451. doi: 10.1111/j.1398-9995.2005.00785.x.
23. Zhuo L., Zhang Y., Zielke H.R., et al. Sudden unexpected death in epilepsy: Evaluation of forensic autopsy cases. *Forensic Sci. Int.* 2012;223;1-3:171-175. doi: 10.1016/j.forsciint.2012.08.024.
24. Kumar J.G., Abhilash K.P., Saya R.P., Tadipani N., Bose J.M. A Retrospective Study on Epidemiology of Hypoglycemia in Emergency Department. *Indian J. Endocrinol. Metab.* 2017;21;1:119-124. doi: 10.4103/2230-8210.195993.
25. Sessa F., Esposito M., Messina G., Di Mizio G., Di Nunno N., Salerno M. Sudden Death in Adults: a Practical Flow Chart for Pathologist Guidance. *Healthcare (Basel)*. 2021;9;7:870. doi: 10.3390/healthcare9070870.
26. Dezhurnyy L.I., Boyarintsev V.V., Neudakhin G.V. The System of First Aid in the Russian Federation and its Interaction with the Emergency Services. *Skoraya Meditsinskaya Pomoshch' = Emergency Medical Care*. 2013;14;2:44-50 (In Russ.).
27. Birkun A.A., Dezhurnyy L.I. Dispatcher Assistance in out-of-Hospital Cardiac Arrest: Approaches for Diagnosing Cardiac Arrest by Telephone. *Zhurnal im. N.V.Sklifosovskogo Neotlozhnaya Meditsinskaya Pomoshch' = Russian Sklifosovsky Journal of Emergency Medical Care*. 2019;8;1:60-67 (In Russ.). doi: 10.23934/2223-9022-2019-8-1-60-67.
28. Dezhurnyy L.I., Gumenyuk S.A., Zakirov R.R., Maksimov D.A., Trofimenko A.V. First Aid in the Russian Federation. Latest Changes and Immediate Prospects. *Kremlevskaya Meditsina. Klinicheskii Vestnik = Kremlin Medicine Journal*. 2019;3:15-22 (In Russ.).
29. Zhuravlev S.V., Kolodkin A.A., Maksimov D.A., Trofimenko A.V., Dezhurnyy L.I., Boyarintsev V.V. The Organization of Registration of Rate, Capacity and Effectiveness of First Aid Measures. *Problemy Sotsialnoy Gigiyeny, Zdravookhraneniya i Istorii Meditsiny = Problems of Social Hygiene, Public Health and History of Medicine*. 2020;28;4:616-620 (In Russ.). doi: 10.32687/0869-866X-2020-28-4-616-620.
30. Birkun A.A., Dezhurnyy L.I. Legal and Regulatory Framework for Provision of First Aid and Education in First Aid in out-of-Hospital Cardiac Arrest. *Zhurnal im. N.V.Sklifosovskogo Neotlozhnaya Meditsinskaya Pomoshch' = Russian Sklifosovsky Journal of Emergency Medical Care*. 2021;10;1:141-152 (In Russ.). doi: 10.23934/2223-9022-2021-10-1-141-152.

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