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Оригинальная статья

ОРГАНИЗАЦИЯ И ОКАЗАНИЕ СПЕЦИАЛИЗИРОВАННОЙ МЕДИЦИНСКОЙ ПОМОЩИ ПОСТРАДАВШИМ С ОЖОГАМИ В РОССИЙСКОЙ ФЕДЕРАЦИИ

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Резюме. *Цель исследования* – изучить состояние организации и оказания специализированной медицинской помощи по профилю «хирургия (комбустиология)» на основе данных информационно-аналитической системы «Комбустиологическая помощь в России».
Материалы и методы исследования. В основе работы – отчеты 120 лечебных медицинских организаций (ЛМО) за 2021 г., а также некоторые данные из отчетов за предыдущие годы.
Результаты исследования и их анализ. В 2021 г. в Российской Федерации специализированное лечение пострадавших с ожогами осуществлялось в 63 ожоговых отделениях/центрах, в том числе в 7 детских, а также на профилированных ожоговых койках хирургических и травматологических отделений. Всего на лечении находилось 44886 пациентов с ожогами и их последствиями. При этом более 79% взрослых и 95% детей с ожогами поступали на этап специализированного лечения в сроки до 72 ч после травмы. Средняя длительность пребывания на койке пациентов с ожогами составила 17,8 койко-дней – для взрослых и 11,0 койко-дней – для детей. Общая летальность у взрослых с ожогами составила в среднем по Российской Федерации 7,7%; у детей с ожогами – 0,3%.
Сделан вывод, что совершенствование организации и оказания медицинской помощи на всех этапах медицинской эвакуации и лечения пострадавших с ожогами позволяет улучшить ближайшие и отдаленные результаты лечения пациентов этой категории.

Ключевые слова: *комбустиология, ожоги, ожоговые отделения, последствия ожогов, пострадавшие с ожогами, Российская Федерация, специализированная медицинская помощь*

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***Original* article**

ORGANIZATION AND PROVISION OF SPECIALIZED MEDICAL TREATMENT FOR VICTIMS WITH BURNS IN THE RUSSIAN FEDERATION

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Summary. *Investigation purpose* – to research the conditions of organization and provision of specialized medical treatment on the profile "surgery (combustiology)" basing on the data from informational-analytic system "Combustiological treatment in Russia".
Material and methods of the investigation. In the basis of research – reports from 120 medical treatment organizations (MTO) in the year 2021 and some date from previous years reports.
Investigation results and their analysis. In 2021 in the Russian Federation a specialized treatment for victims with burns was provided in 63 burns departments/centers, including 7 children departments/centers, and on profiled burns bunks in surgical and combustiological departments. Summary there were 44886 patients with burns and their consequences got treatment. More than 79% of adults and 95% of children with burns entered the stage of specialized treatment at the time less than 72 hours after injury. Average duration of patients stay on the bunks was 17,8 bunk-days – for adults and 11,0 bunk-days – for adults, Summary lethality among the adults was in average number for the Russian Federation 7,7%; among the children – 0,3%.
A conclusion was made that improvement of organization and provision of medical treatment on all stages of medical evacuation and treatment of victims with burns allow to improve the nearest and far results of this category of patients treatment.

Key words: *burns consequences, burns departments, burns, combustiology, Russian Federation, specialized medical treatment, victims with burns*

Conflict of interest. The authors declare no conflict of interest

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Introduction

The organization of medical care at all its stages, regardless of the profile, is always aimed at creating a unified system for its delivery. Currently, the most important components and tools in the organization of medical care in our country are the procedure for its delivery, clinical guidelines and standards for diagnosis and treatment, and prevention of diseases or their complications[1].

The burn service in the Russian Federation has been established for many decades. Invaluable research work has been carried out to study the epidemiology of burn injuries, specific features of the course of the wound process in burns, burn disease and its complications. Unique experience has been accumulated for effective conservative and surgical treatment of burn victims.

The advances in medical care for burn victims are quite significant. It is no coincidence that combustiology, i.e. the branch of medicine studying the etiology, pathogenesis, diagnosis, treatment and prevention of burns and related pathological conditions, has been separated into a separate profile "surgery (combustiology)". Effective medical care for burn victims is closely connected with the work of the Emergency Medical Service (EMS), the Disaster Medicine Service (DMS) and medical organizations of various levels.

According to the Order of rendering medical aid on the profile of "surgery (combustiology)"[2], the primary medical and sanitary aid is rendered in the out-patient conditions.

Specialized, including high-tech, medical care for burn victims is provided under inpatient conditions in burn units/centers, which are created in medical treatment organizations (LMOs) in the number that covers the need for such care in the Russian Federation. In the absence of a burn unit/center in the region, specialized medical care is provided in the specialized burn beds of the surgical departments. It is allowed to provide specialized medical care of the 1st level in the beds of surgical or trauma departments of different LMOs — Table 1.

Every year the Federal State Statistics Service publishes data on the total number of first-time medical care calls for victims of thermal and chemical burns, i.e. on burn injuries. Over the last 15 years there has been a downward trend in the number of burn injuries among adults and children in Russia[3] — Fig. 1.

[1] On Fundamentals of Health Protection in the Russian Federation: Federal Law No. 323-FZ of 21 November 2011.йской Федерации: Федеральный закон от 21.11.2011 г. №323-ФЗ

[2] On approval of the "Procedure of providing medical care to the population on the profile of surgery (combustiology)": Order of the Ministry of Health of Russia from 09.06.2020, No. 559n

Таблица 1/ Table No. 1

Маршрутизация пациентов с ожогами в Российской Федерации
Route management of patient with burns in the Russian Federation

Уровни оказания медицинской помощи пострадавшим с ожогами Stages of medical help for victims with burns		
1-й уровень /1st stage	2-й уровень / 2nd stage	3-й уровень /3rd stage
Первичная медико-санитарная помощь, в т.ч. первичная доврачебная, первичная врачебная медико-санитарная помощь, первичная специализированная медицинская помощь Специализированная (первичная) медицинская помощь на хирургических или травматологических койках ЛМО (ГКБ, ЦРБ, БСМП и т.д.) Primary healthcare including primary pre-medical help, primary medical healthcare, primary specialized care. Specialized (primary) healthcare on surgical or traumatological bunks in MTO (CCH, CDH, EH and etc.)	Специализированная, за исключением высокотехнологичной, медицинская помощь в ожоговых отделениях или на профилированных ожоговых койках, выделенных в составе хирургических отделений многопрофильных ЛМО Specialized (not including high technologies treatment) medical care in hospital bur units or on profiled burn bunks, that contain in surgical units of multi-profiled MTO	Специализированная высокотехнологичная медицинская помощь в ожоговых отделениях или центрах ЛМО Specialized high technologies medical treatment in burn units or in MTO

Примечание. ЛМО – лечебная медицинская организация, ГКБ – городская клиническая больница, ЦРБ – центральная районная больница, БСМП – больница скорой медицинской помощи
Note. MTO – medical treatment organizations, CCH – city clinical hospital, CDH – central district hospital, EH – emergency hospital

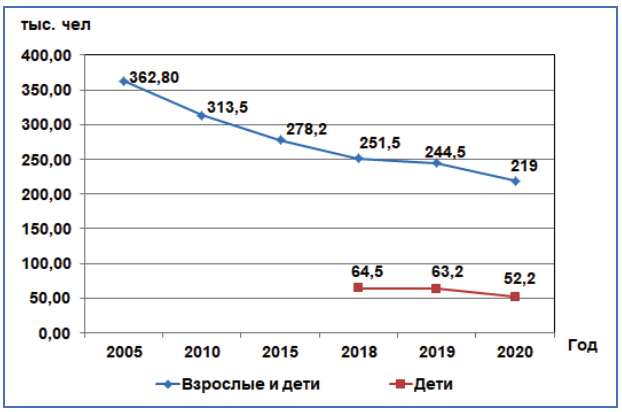

Рис. 1. Число пострадавших (взрослых и детей) с термическими и химическими ожогами в России в 2005-2020 гг., тыс. чел., по данным Росстата

Fig. 1. The number of victims (adults and children) with thermal and chemical burns in Russia in 2005-2020, thousand people, according to Rosstat

It should be noted that the analysis of statistical indicators is a duty and is part of the job description of the head of any medical organization. It is impossible to evaluate and to plan the activity of a medical organization or its subdivision without having statistical information about the industry as a whole, about the condition of the service in the region and the country. The availability of structured professional statistical information is a prerequisite for planning work and its effectiveness.

The Rosstat annually publishes official data summarizing the number of patients with burns at the stages of their primary and specialized medical care. At the same time, there are few statistical studies on the provision of specialized medical care for burn victims in burn units/centers and specialized burn beds in LMOs and its effectiveness. The first such work dates back to 2008, when questionnaires were sent to burn departments/centers and ministries/departments of health care, with indicators describing the work in the regions in 2007 in providing care to burn victims in the respective hospitals [1]. Reports were received on the results of treatment of burn victims from 60 medical institutions, on the basis of which the above statistical study was performed.

The Second Congress of Russian Combustiologists (2008) proposed to analyze the reports on the treatment of burn victims on an annual basis. The specialists of the All-Russian Public Organization "Association of Combustiologists "World without Burns" developed and approved a unified form of the annual report "Main Statistical Indicators of the Burns Unit/Center for a Year", which, since 2009, has been sent to the heads of burn hospitals and chief out-of-state specialists in combustiology regions for completion.

In 2022, specialists of the IT Department of the National Medical Research Center for Surgery named after A.V. Vishnevskiy of the Ministry of Health of Russia together with the service of the chief outpatient combustiologist of the Ministry of Health of Russia developed an information and analysis system (IAS) for collecting and processing statistical forms for the profile "surgery (combustiology)" based on previously used forms of annual reports "Combustiology care in Russia" (URL: https://sh.ixv.ru/). This system, which operates on the principle of consecutive data collection from LMOs of the subjects and their transfer to the four levels for examination and analysis, provides interaction between the chief combustiology specialists of federal districts, regions, heads of burns departments of LMOs and chief outpatient combustiology specialist of the Russian Ministry of Health by exchanging information in real time (online).

Based on the analysis of the data obtained using the medical IAS "Combustiology Care in Russia", the authors have attempted to assess the state of organization and provision of specialized, including high-tech, medical care in the Russian Federation in the profile "surgery (combustiology)" in 2021.

The aim of the study is to investigate the state of organization and rendering of specialized medical care in the field of "surgery (combustiology)" on the basis of the information-analytical system "Combustiology Care in Russia".

Materials and methods.

We used 120 LMO reports, and also some data from the reports of the previous years.

The retrospective comparative analysis in the dynamics was carried out in the following directions:

- bed capacity for burn patients in LMOs;
- staffing of the burn unit/center;
- general statistical indicators for burn units and beds;
- distribution of discharged patients by nosologies;
- statistical indicators on burn patients;
- channels of hospitalization of patients with burns;
- timing of hospitalization of patients to the specialized medical care stage;
- funding channels for burn patients;
- distribution of burn patients by age;
- etiology of burn injury;
- type of trauma;
- total area affected;
- severity of burn injury;
- burn injury mortality;
- number of treatment cases in which telemedicine consultations - TMK - were conducted.

Results of the study and their analysis.

In 2021 in the Russian Federation specialized treatment of burn victims was provided in 63 burn departments/centers, including 7 pediatric ones (Table 2).

In 53 of 85 subjects (62.3%) there were burn departments, while in 8 subjects there were 2 or more burn departments: in Moscow — 4, in Moscow region — 2, in Saint-Petersburg — 2, in Nizhny Novgorod region — 2, in Kemerovo region — 2, in Rostov region — 2, in Republic of Bashkortostan — 2, in Sverdlovsk region — 2.

In 32 subjects (37.7%), which have no burn departments, the burned persons are treated in the specialized "burn" beds of the surgical and trauma departments of LMOs (Table 3).

In Russia in 2021, the total number of burn beds was 2377, of which: 1984 beds in adult burn units; 143 beds in pediatric burn units; 180 profiled burn beds in surgical units — pediatric and adult; and 70 beds in trauma units — pediatric and adult. The number of resuscitation beds allocated for the treatment of burn patients in the anesthesiology and resuscitation departments of LMOs was 318.

After a significant reduction in 2020 in the number of specialized burn beds due to the re-profiling of some hospitals to work as covid-hospitals, in 2021 there was a partial recovery in the number of burn beds, especially resuscitation beds for the treatment of severely burned patients.

[3] Health Care in Russia, 2021: Statistical Digest. Moscow: Rosstat, 2021. 171p.

Таблица 2 / Table No.2

Ожоговые отделения/центры в федеральных округах, 2021 г.
Burn units/burn-profiled centers in federal districts, 2021

Федеральный округ Federal district	Количество отделений/центров Number of units/centers	Регион/город Region/city
Центральный Central	17	Москва (4), Московская обл. (гг. Подольск, Люберцы), Ярославль, Тверь, Тула, Белгород, Воронеж, Брянск, Тамбов, Липецк, Кострома, Рязань, Курск Moscow (4), Moscow region (cities: Podolsk, Lyubertsy), Yaroslavl, Tver, Tula, Belgorod, Voronezh, Bryansk, Tambov, Lipetsk, Kostroma, Ryazan, Kursk
Приволжский Volga	14	Н.Новгород (2), Казань, Самара, Саратов, Пермь, Уфа, Стерлитамак, Оренбург, Пенза, Йошкар-Ола, Чебоксары, Ижевск, Саранск Nizhniy-Novgorod (2), Kazan, Samara, Saratov, Perm, Ufa, Sterlitamak, Orenburg, Penza, Yoshkar-Ola, Cheboksary, Izhevsk, Saransk
Сибирский Siberian	8	Кемерово, Новокузнецк, Красноярск, Барнаул, Кызыл, Омск, Иркутск, Новосибирск Kemerovo, Novokuznetsk, Krasnoyarsk, Barnaul, Kyzyl, Omsk, Irkutsk, Novosibirsk
Уральский Ural	6	Екатеринбург (2), Курган, Челябинск, Тюмень, Сургут Ekaterinburg (2), Kurgan, Chelyabinsk, Tyumen, Surgut
Южный Southern	6	Краснодар, Астрахань, Ростов-на-Дону (2), Волгоград, Симферополь Krasnodar, Astrakhan, Rostov-on-Don (2), Volgograd, Simpheropol
Северо-Западный North-Western	5	Санкт-Петербург (2), Ленинградская обл. (п.Токсово), Калининград, Череповец Saint-Petersburg (2), Leningrad region (town Toksovo), Kaliningrad, Cherepovets
Дальневосточный Far Eastern	4	Благовещенск, Якутск, Владивосток, Хабаровск Blagoveshchensk, Yakutsk, Vladivostok, Khabarovsk
Северо-Кавказский North Caucasian	3	Махачкала, Владикавказ, Грозный Makhachkala, Vladikavkaz, Grozny
Всего / Total	63	

A total of 44886 patients with burns and their sequelae were treated in the burn beds of LMOs in 2021. At the same time, 89.4% of cases were treated in burn units; 10.6% of cases were treated in specialized burn beds in traumatology and surgery departments. There was also an increase in the number of patient admissions compared to 2019-2020 — mainly due to adult patients (Table 4).

The main performance indicators of burn units in 2019-2021 are presented in Table 5.

It should be noted that in addition to patients with burns and their sequelae, there were "non-core" patients in the burn beds (Table 6).

In 2021, the average length of stay in a bed for patients with burns was: 17.8 bed-days for adults; 11.0 bed-days for children.

In 2021 the gender distribution of the hospitalized patients with burns was as follows: in adults: women — 37,7%; men — 62,3%; in children: girls — 41,5%; boys — 58,5%.

The main causes of burn injuries were: boiling water, 44.9% in adults and 76.6% in children; flame, 37.2% in adults and 7.8% in children; contact burns, 9.8% in adults and 9.0% in children.

Mostly (94.7% of cases) adult patients received burn injuries at home. At the same time there was a downward trend

Таблица 3 / Table No.3

Регионы, не имевшие ожоговых отделений/центров, 2021 г.
Regions without burn units/ burn-profiled centers, 2021

Федеральный округ Federal district	Регионы Regions
Центральный Central	5 регионов: Владимирская, Ивановская, Смоленская, Калужская, Орловская области 5 regions: Vladimir, Ivanovo, Smolensk, Kaluga and Orel areas
Приволжский Volga	1 регион: Кировская область / 1 region: Kirov area
Сибирский Siberian	2 региона: Респ. Алтай, Респ. Хакасия 2 regions: Republic Altay, Republic Khakassia
Уральский Ural	1 регион: Ямало-Ненецкий автономный округ (АО) 1 region: Yamalo-Nenentsky autonomous district
Южный Southern	3 региона: Респ. Калмыкия, Респ. Адыгея, г.Севастополь[1] 3 regions: Republic Kalmykia, Republic Adygea, city of Sevastopol[1]
Северо-Западный North-Western	7 регионов: Архангельская, Мурманская, Псковская, Новгородская области, Респ. Карелия, Респ. Коми, Ненецкий АО 7 regions: Arkhangelsk, Murmansk, Pskov and Novgorod areas, Republic Karelia and Republic Komi, Nenetsky autonomous district
Дальневосточный Far Eastern	7 регионов: Респ. Бурятия, Забайкальский край, Еврейская автономная область (АО), Чукотский АО, Камчатский край, Магаданская, Сахалинская области 7 regions: Republic Buryatia, Zabaykalsky Krai, Jewish autonomous region, Chukotka autonomous district, Kamchatsky Krai, Magadan and Sakhalin areas
Северо-Кавказский North Caucasian	4 региона: Ставропольский край, Респ. Ингушетия, Карачаево-Черкеская Респ., Кабардино-Балкарская Респ. 4 regions: Stavrapolsky Krai, Republic Ingushetia, Republic Karachayevo-Cherkessia, Republic Kabardino-Balakria
Всего / Total	

[1] г. Севастополь – субъект Российской Федерации / [1]City of Sevastopol is the subject of the Russian Federation

Таблица 4 / Table No. 4

Общее количество госпитализаций в ожоговые отделения и на профилированные койки пострадавших с ожогами и их последствиями в 2019–2021 гг., чел./%

A total number of victims with burns and burn consequences which were hospitalized into burn units or to burn-profiled bunks in 2019-2021 years, people/%

Год Year	Взрослые Adults	Дети Children	Итого Total
2019	27029/62,4	16237/37,6	43266/100,0
2020	24360/61,6	15207/38,4	39567/100,0
2021	29393/65,4	15493/34,5	44886/100,0

in the frequency of occupational injuries compared to 2020 — from 6.3% to 5.3% of cases.

The main channel of hospitalization of patients with burns remains the emergency medical service (EMT): 50.1% of hospitalizations in adults; 52% of hospitalizations in children.

At the same time, the proportion of hospitalizations to burn units/centers due to transfers from other LMOs was small (up to 16%), which with insufficient "occupancy" of burn beds may indicate untimely application for consultation and transfer of patients to burn units or to specialized "burn" beds due to the lack of clear routing of burn trauma patients.

An important performance indicator was the hospitalization (transfer) of a patient to a burn unit after trauma (Table 7). According to the Procedure for the provision of medical care to the population in the field of surgery (combustiology), after consultation with a specialist of the burn unit/center, the period of transfer of a burn patient to the burn unit/center to provide specialized, including high-tech, medical care in the absence of medical contraindications for transportation should not exceed 72 hours after the injury. Currently, more than 79% of adults and 95% of children with burns are admitted to the specialized treatment stage within the specified period.

Patients of working age comprise the majority of burn victims. Burns in children under 18 years of age occurred in 39.1% of cases (Table 8). In 82.8% of cases, the victims were diagnosed with burns with a total area of up to 30% of the total body surface area (Table 9).

Таблица 5 / Table No. 5

Показатели работы ожоговых отделений в 2019– 2021 гг.

Burn units performance indicators in 2019-2021 years

Показатель / Indicator	2019	2020	2021
Средняя длительность пребывания на койке, дней Average length of stay on bunk, days	16,3	16,4	16,7
Занятость койки, дней в году Bunk occupation, days per year	262,7	228,6	346,1
Оборот койки – пролечено пациентов на 1 койке в год Bunk turnover – a number of patients which were cured on 1 bunk per year	18,2	15,2	20,6

According to the 2021 report, 11.3% of adults and 4.1% of children were treated in burn units with a total lesion area of 30-49% of the total body surface area; 5.9% of adults and 1.0% of children with a total lesion area of more than 50.0% of the total body surface area. In the past three years, there has been an increase in the number of adults hospitalized whose total burn area was more than 30.0% of total body surface area.

In 2021, mortality among adults with burns averaged 7.7%; mortality among children with burns averaged 0.3%.

A comparative analysis of mortality over the years showed that in recent years there has been an increasing trend in the number of fatal outcomes among adult patients with burns (Fig. 2). At the same time, mortality in children with burns remained at the same level: in 2018 — 0.3% of cases; 2019, 0.23; 2020, 0.35; and 2021, 0.3% of cases.

In 2021, the majority of fatalities in adults with burns were associated with the admission of severe patients over 60 years of age with comorbid somatic pathology, including a new coronavirus infection, and with late transfer to burn units of patients with already developed complications of burn disease. The mortality rates in adults depending on the severity of the burn injury are presented in Table 10.

In 2021 the financing of specialized medical care for adults and children with burns and their sequelae was conducted mainly through the channel of compulsory medical insurance (clinical and statistical groups) — CMI (CSG) — up to 87.8% of adults and up to 92.4% of children. Specialized, including high-tech, medical care for patients with

Таблица 6 / Table No. 6

Распределение пациентов в ожоговых отделениях по нозологиям в 2019–2021 гг., %

Distribution of patients in burn units according to their nosology in 2019-2021 years, %

Пациенты Patients	Взрослые / Adults			Дети / Children		
	2019	2020	2021	2019	2020	2021
С ожогами With burns	71,5	75,0	72,3	79,9	83,6	78,8
С холодовыми поражениями With frizzy injures	4,8	5,0	8,3	0,4	0,6	0,9
С последствиями ожогов With burn consequences	4,8	4,9	5,4	11,3	9,1	13,4
«Непрофильные» пациенты «Unprofiled» patients	18,9	15,1	14,0	8,2	6,7	6,9
Всего / Total	100,0	100,0	100,0	100,0	100,0	100,0

Таблица 7 / Table No. 7

Распределение пациентов с ожогами по срокам госпитализации (перевода) в ожоговые отделения в 2020– 2021 гг., %

Distribution of patient with burns according to the time of hospitalization (redirection) to burn units in 2020-2021 years, %

Сроки госпитализации –*сутки после травмы* / Time of hospitalizetion – *days after injury*	2020		2021	
	взрослые adults	дети children	взрослые adults	дети children
1-е / 1st	49,1	77,7	50,9	78,1
2-е / 2nd	18,0	11,9	16,7	11,0
3-и /3rd	12,4	6,2	11,7	6,1
72 ч / 72 hours	79,5	95,8	79,3	95,2
4–7-е /4-7th	11,9	2,6	10,8	2,7
8–10-е /8-10th	3,8	0,7	3,9	0,9
Позднее 10 сут Later than 10 days	4,8	0,9	6,0	1,2
Всего / Total	100,0	100,0	100,0	100,0

Таблица 8 / Table No. 8

Распределение госпитализированных с ожогами по возрасту в 2019– 2021 гг., %

Distribution of people hospitalized with burns according to their age in 2019-2021 years, %

Возраст, лет Age, years old	2019	2020	2021
До 1 года Less than 1 year	6,6	7,1	6,5
1-3	20,3	18,8	18,7
4-17	10,7	11,8	13,9
18-19	3,1	1,5	1,5
20-29	8,2	7,7	7,0
30-39	12,5	13,1	12,2
40-49	12,1	12,1	12,2
50-59	10,5	10,7	10,8
60-69	8,9	9,7	9,5
70-79	4,3	4,6	5,0
80-89	2,4	2,6	2,3
90 и более 90 and more	0,4	0,4	0,4
Всего / Total	100,0	100,0	100,0

Таблица 9 / Table No. 9

Распределение госпитализированных с ожогами по общей площади поражения в 2019– 2021 гг., %

Distribution of people hospitalized with burns according to the summary square of injury in 2019-2021 years, %

Общая площадь поражения, % от общей площади поверхности тела Summary square of injury, % from summary square of body surface	Взрослые Adults			Дети Childre		
	2019	2020	2021	2019	2020	2021
Менее 10,0 Less than 10,0	55,4	50,3	51,6	67,6	64,3	67,4
10-19,0	22,9	24,8	22,2	21,3	23,2	21,8
20-29,0	8,4	9,2	9,0	5,9	5,9	5,6
30-39,0	6,2	7,3	8,0	3,1	4,4	3,3
40-49,0	2,7	3,0	3,3	1,0	1,1	0,8
50-59,0	1,7	2,4	2,5	0,5	0,5	0,5
60-69,0	1,1	1,1	1,3	0,2	0,2	0,3
70-79,0	0,6	0,7	0,9	0,1	0,2	0,1
80-89,0	0,5	0,6	0,6	0,1	0,1	0,1
90,0 и более 90,0 and more	0,4	0,6	0,6	0,1	0,1	0,0
Всего / Total	100,0	100,0	100,0	100,0	100,0	100,0

extensive burns is currently provided through the channel of high-tech medical care / compulsory health insurance in only 69.8% of the burn units.

According to the reports, in 2021 the average staffing level of burn departments and centers with medical personnel in accordance with the current staffing list in the regions was 75.7%. At the same time, depending on the region, the staffing level of doctors averaged 69-78%; that of paramedics 71-86%; and that of medical attendants 69.2%.

In most regions there are conditions for remote consultations, including the use of telemedicine technologies, between medical specialists of burns departments, district medical organizations and federal medical centers. The number of patients with burns and their sequelae for whom telemedicine consultations were conducted at different levels of treatment is presented in Table 11.

Conclusion

At present specialized, including high-tech, medical care for burn victims in the Russian Federation is provided in 63 burn departments and centers. In addition, treatment of burn victims is carried out on specialized burn beds in surgical and trauma departments in regions that have no specialized departments. In this connection it is advisable to create interregional burn centers in a number of federal districts.

At the same time, there is a reduction in the number of burn beds due to the changing needs of the regions in providing medical care in the "surgery (combustiology)" profile. It should also be borne in mind that "non-core" patients in adult burn units account for up to 15% of all hospitalized patients. In all likelihood, in the near future the tendency to optimize the bed fund will continue.

The analysis has shown that at present in the Russian Federation the main indicators of the effectiveness of medical care for the victims of burns correspond to the long-term indicators of the previous years. At the same time the increase of lethality in adult patients with burns is associated with a large number of patients with extensive burns and severe

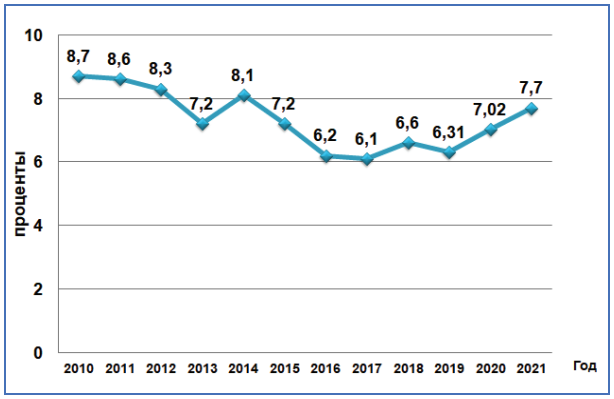

Рис. 2. Динамика летальности у взрослых с ожогами в 2010–2021 гг., %
Fig. 2. Dynamics of lethality indicator with adults with burns in 2010-2021

Таблица 10 / Table No. 10

Летальность у взрослых в зависимости от общей площади ожогов в 2020– 2021 гг., %

Lethality among the adults in addiction from summary square of injury in 2020-2021 years, %

Общая площадь ожогов, % от общей площади поверхности тела Summary square of injury, %, from summary body surface square	Летальность Lethality	
	2020	2021
Менее 30,0 / Less than 30,0	2,0	2,6
30–49,0	18,0	18,9
50,0 и более / 50,0 and more	60,1	53,5

Таблица 11 / Table No. 11

Количество телемедицинских консультаций, выполненных по профилю «хирургия (комбустиология)» в 2021 г.

Number of tele-medical consultations held with surgical (combustiological) profile in 2021

Телемедицинские консультации Tele-medical consultations	Число пациентов, чел. Number of patients, persons		Итого, чел./% Total, persons./%
	взрослые adults	дети children	
Региональные –внутри региона и федерального округа Regional –were held in the borders of region and federal district	1137	719	1856/86,4
С привлечением НМИЦ хирургии им. А.В.Вишневского* Минздрава России With attracting of NMRC of surgery named after A.V.Vischnevsky*	158	10	168/7,8
С привлечением ПИМУ** Минздрава России With attracting of PRMU** by Ministry of Health of Russia	60	63	123/5,7
Всего / Total	1355	792	2147/100,0

* НМИЦ –ФГБУ «Национальный медицинский исследовательский центр хирургии им. А.В.Вишневского» Минздрава России

* NMRC –Federal state budget organization «National medical researching center of surgery named after A.V.Vischnevsky» by Ministry of Health of Russia

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** PRMU –Federal state budget study organization of high education «Privolzhsky research medical university» by Ministry of Health of Russia

thermoinfarction trauma, as well as with the problems of organization of medical care and lack of clear routing of patients with burn trauma in a number of regions. In this regard, it is important to highlight the importance of timely telemedicine consultations for victims with extensive burns, conducted by burn specialists at the A.V. Vishnevsky Research Medical Center of the Russian Ministry of Health (adults) and the Privolzhsky Research Medical University of the Russian Ministry of Health (adults and children).

Further improvement of the work of combustiology specialists in interaction with emergency physicians and the Emergency Medicine Service of the Russian Ministry of Health, aimed at timely and adequate treatment of the injury at all stages of medical evacuation of burn victims, as well as early medical care in a specialized hospital, will improve the immediate and long-term results of treatment of this difficult category of patients.

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