DOI 10.25789/YMJ.2021.73.16

S.S. Sleptsov, .S.S. Sleptsova, Z.N. Alekseeva

MORTALITY OF THE INDIGENOUS POPULATION OF YAKUTIA IN THE XIX AND EARLY XX CENTURIES (ACCORDING TO METRIC BOOKS)

The article assesses the level, seasonality, and structure of mortality of the indigenous population of Yakutia in the late 19th - early 20th centuries, based on the analysis of information from the birth registers of the Bilyuchansky, Nikolaevsky, and Sheinsky Georgievsky churches of the Vilyui district. The scientific novelty of the work lies in the fact that such studies in Yakutia have never been conducted before. The sample size was 3014 people, including 1518 men, 1496 women.

The proportion of children under 5 years old was 41.7% for the total number of deaths, and this corresponds to the official statistics of the beginning of the 20th century. In addition, the data established by the medical and sanitary detachment of the Yakut expedition of the USSR Academy of Sciences in 1925-1926 on infant mortality among the Yakut population, are exaggerated due to the inclusion of children under 5 years. This indicator is similar to those in Germany (1910-1914) or Japan (1920-1922). The data on the mortality of Yakut women in the pre-revolutionary period due to childbirth or postpartum complications were specified. A significant part of the population died from respiratory diseases, such as tuberculosis. In contrast to other regions of Russia, the peak of mortality of the population, regardless of age, fell in the spring, which was primarily due to the deterioration in the nutrition of the population at this time of the year. Presumably, the widespread of diseases identified by the authors of the article as infectious diseases (typhus, scarlet fever, measles, smallpox, influenza, and others) could be hindered by the dispersed residence of the local population across the territory of parishes. In the general structure of mortality, mortality from external causes was insignificant (1.4%). However, most of the deaths in this group were due to careless handling of fire and drowning.

Keywords: historical demography, history of Yakutia, Yakut, mortality, infant mortality, causes of mortality, metric books.

Introduction. The data of the registers of births (metric books) are a valuable source for the study of the local history of the population, although they have some problems related to the reliability and accuracy of the data, for example, with regard to the diagnosis of some deaths, which were recorded by priests, and sometimes only from the words of the relatives of the deceased. Often, even the alleged cause of death was missing. Nevertheless, church documents make it possible to quite accurately trace such indicators as the level, seasonality or structure of mortality of the local population, as well as some other issues of demography in the pre-revolutionary period.

Materials and research methods. The analysis of mortality was carried out according to the metric books of the Bilyuchansky Nikolaevsky (1897-1917) and Sheinsky Georgievsky churches of the Vilyui district of the Yakutian region (1891-1919), published in "Write my name" books [11; 12]. The sample size is 3014 people, including 1518 men, 1496 women.

The causes of death indicated in the documents are conventionally divided into the following groups: 1) diseases of the abdominal organs ("pain in the stomach", "abdominal disease", "abdominal", "bloating", "internal", "dropsy", "catarrh") ; 2) diseases of the respiratory system ("pneumonia", "chakhotka", "cough", "kolotyo"); 3) nervous diseases ("head", "hysterical seizure", "opiectal (apoplexy) stroke"); 4) infectious diseases ("fever", "typhoid", "scarlet fever", "measles", "smallpox", "flu", "zhelunitsa", "scrofula"); 5) surgical diseases ("osteomyelitis", "tumor", "gangrene"). Separate groups also include mortality "infant", "childbirth", "old age", "unknown" and mortality from external causes (accidents, suicides, murders). The results were processed using Microsoft Excel.

Results and discussion. Calculations have shown that the average life expectancy of the indigenous population in the study period was 27.9 ± 0.8 years (27.7 ± 0.8 years for men and 27.9 ± 0.8 for women). Low values are due to the high mortality rate of children under 5 years of age, whose share was 41.7% of the total number of all deaths, or 1,255 people, including 665 boys, 590 girls. These figures are similar to the data of official statistics for the Vilyui district for 1910, according to which the proportion of deaths under the age of 5 was 44.9%, or 922 people, including 480 boys, 442 girls [13, C . 276]. By the way, according to R. Maack [9, p. 69], the mentioned indicator was equal to 18.9% (from 1850 to 1854), but he explained this by the share of "unwritten in church books" for various reasons was still significant. A later, in 1866, according to the memorable books, this figure was 15.6%, in 1879 - 29.4%.

At the age of less than 1 year, 15.9% died, although it is possible that the calculated figure may be somewhat underestimated due to the fact that stillborns or those who died before the baptism ceremony could remain unaccounted for. Nevertheless, these data are also similar (14.6%) with the official statistics for 1910 [13]. For comparison, at the beginning of the XX century in the Oryol province, about 25% of babies died, and in some areas of Buryatia in the 1920s-1930s. - 39.2% [2; 6]. Thus, the information of P.

SLEPTSOV Spiridon Spiridonovich - Candidate of Biological Sciences, Associate Professor, Senior Researcher, Yakutian Scientific Center of Complex Medical Problems Laboratory of clinical-population and medico-social research, Yakutsk, e-mail: sachaja@yandex.ru, +7 924 165 78 35; **SLEPTSOVA Snezhana Spiridonovna** - Doctor of Medical Sciences, Associate Professor, Head of the Department of Infectious Diseases, Phthisiology and Dermatovenereology of the Medical Institute of the North-Eastern Federal University named after M.K. Ammosov ", Yakutsk, e-mail: sssleptsova@yandex.ru, +7 914 271 87 70; SLEPTSOV Spiridon Spiridonovich - Candidate of Biological Sciences, Associate Professor, Senior Researcher, Yakutian Scientific Center of Complex Medical Problems Laboratory of clinical-population and medico-social research, Yakutsk, e-mail: sachaja@yandex.ru, +7 924 165 78 35; SLEPTSOVA Snezhana Spiridonovna - Doctor of Medical Sciences, Associate Professor, Head of the Department of Infectious Diseases, Phthisiology and Dermatovenereology of the Medical Institute of the North-Eastern Federal University named after M.K. Ammosov ", Yakutsk, e-mail: sssleptsova@yandex.ru, +7 914 271 87 70; **ALEKSEEVA Zinaida Nikolaevna** - junior researcher, Yakutian Scientific Center of Complex Medical Problems Laboratory of Neurodegenerative Diseases, Yakutsk, e-mail: gzinaida@mail.ru, +7 924 160 87 38 - junior researcher, Yakutian Scientific Center of Complex Medical Problems Laboratory of Neurodegenerative Diseases, Yakutsk, e-mail: gzinaida@mail.ru, +7 924 160 87 38

Bushkov [4] that both in the Vilyui district and “in other parts of Yakutia” infant mortality was 64.9-68.8%, is doubtful. This assumption is confirmed by the words of S.E. Schreiber [19, p. 365], who admitted that “the percentage is increased by many incorrect data obtained from parents who have forgotten in what year their children died, and confusing age up to a year with an age of up to 5 years” (it is necessary to indicate that in the dictionary “Russian words adopted and mastered by the Yakuts”, compiled by A.E. Kulakovsky [8, p. 351], the word “myladyanas” means a deceased child, that is, without indicating his age). At the same time, among the Yakuts examined by Schreiber under the age of 50 (n = 287), the average number of children was 5.1 ± 0.2 people, and 16.0% gave birth at least 10 times, and only 9.4% were childless. According to the calculations made by us based on the materials of statistical collections of the Yakutsk region for 1866, 1970, 1879, 1884, 1895, 1910, the coefficient of natural growth of the population in the district averaged 8.6 ‰.

Analysis of the structure of infant mortality showed that the level among boys was significantly higher (471 people) than among girls (387 people), however, after the onset of reproductive age, these indicators change in the opposite direction (Table 1).

Regardless of age, people more often died in spring than in winter, as indicated in the work of Schreiber [19, p. 146]. As can be seen from Fig. 1, the main peak fell in May, during which the mortality rate was 1.8 times higher than the average annual indicators. It is interesting that in other regions of Russia, similar peaks of mortality occurred in the summer period [1; 3; 7, p. 121; ten; 15]. Some authors, referring to the work of doctors, associated this fact with the difficult living conditions of the peasant population and outbreaks of infectious diseases [5]. As for Yakutia, the main reason for the high mortality rate of the population in the spring was most likely the deterioration in the nutrition of the population during this period, as evidenced by such researchers as R.K. Maak [9, p. 52] or V.L. Seroshevsky [16, p. 315]. Perhaps it is due to the facts noted that Russians traditionally calculate their age in years, and *Yakut*s - in springs. By the way, *Yakut*s also has a stable expression “*күөх окко үктэммит*” (“stepped on the green grass”), implying that a person survived the spring, passed all the hardships of the current year.

In the majority of children who died before 1 year (55.9%, or 480 cases) the cause of death was indicated as "infant" (Table 2). Infectious diseases (21.8%, or 187 cases) and respiratory diseases (18.9%, or 162 cases) occupied a special place in this age group. As they got older, the risk of dying in children gradually decreased, and the most “safe” period was considered as the age from 6 to 17 years (8.6% of all deaths).

The risk group for *Yakut*s of reproductive age included women. So, in the age group from 17 to 50 years (n = 401) 23.4% or 94 people died during childbirth or due to postpartum complications, including at the age of 17 - 1 person, 18-20 years old - 9 people, 21-30 years old - 40 people, 31-40 years old - 33 people, 41-45 years old - 6 people, 46-49 years old - 4 people, 50 years old - 1 person For comparison, among the peasant women of the Southern Trans-Ural, this figure was 13.6-16.0% [18]. The age indicators above demonstrate that the high mortality rate of women during childbirth was not due to early marriages, as stated by Bushkov [4], but primarily due to

Table 1

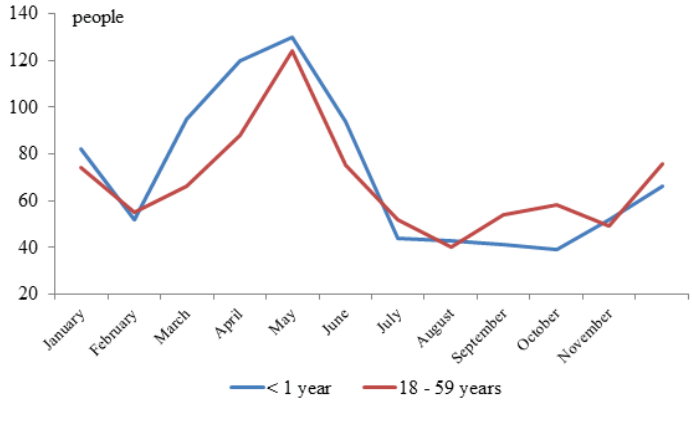
Distribution of deaths by age and sex (1897-1919)

Age (years)	Male		Female		Total	
	N	%	N	%	N	%
< 1	471	31	387	25.9	858	28.5
2 - 5	194	12.8	203	13.6	397	13.2
6 - 17	137	9.0	124	8.2	261	8.6
8 - 44	234	15.4	333	22.3	567	18.8
45 - 59	123	8.1	120	8.0	243	8.1
60 - 74	201	13.2	198	13.2	399	13.2
75 - 90	148	9.8	125	8.4	273	9.1
> 91	10	0.7	6	0.4	16	0.5
Total	1518	100	1496	100	3014	100

Table 2

Causes of death of parishioners (people) in Bilyuchansky Nikolaevsky and Sheinsky Georgievsky churches of the Vilyui district of the Yakutian region (1897-1919)

Age, years	Sex	Cause of death									
		«Infant»	Diseases of					Labor mortality	«old age»	Eternal causes	«Unknown»
			Abdominal organs	Respiratory system	Nervous	Infectious	Surgical				
0-1	m	264	12	82	1	109	-	-	-	3	-
	f	216	10	80	1	78	1	-	-	1	-
2-5	m	18	22	41	6	83	-	-	-	3	21
	f	27	12	49	9	74	-	-	-	5	27
6-17	m	-	24	36	19	42	2	-	-	2	12
	f	-	17	33	16	47	1	1	-	3	6
18-44	m	-	29	122	20	40	4	-	-	8	11
	f	-	26	153	22	31	3	83	-	4	11
45-59	m	-	28	62	11	10	4	-	-	2	6
	f	-	28	54	8	12	-	10	2	1	5
60-74	m	-	35	92	18	8	1	-	36	5	7
	f	-	30	78	18	5	1	-	55	1	10
75-90	m	-	15	29	7	5	1	-	79	2	9
	f	-	8	14	5	3	-	-	92	1	2
90+	m	-	-	2	-	-	-	-	8	-	-
	f	-	-	-	-	-	-	-	6	-	-
Total	m	282	165	466	82	297	12	-	123	25	66
	f	243	131	461	79	250	6	94	155	16	61



Suntarsky ulus local population seasonality of mortality in the period from 1891 to 1918.

difficult social and living conditions, lack of elementary obstetric and gynecological care for the population, as well as the use of useless and sometimes extremely harmful measures. For example, S.E. Schreiber mentioned that he more than once had to see "fresh cow droppings in the vagina of a woman in labor during difficult childbirth and delay of the placenta" [19, p. 356].

Both during this period and at a mature age, the main causes of death of the population were respiratory diseases (30.7%), especially tuberculosis (410 cases), pneumonia (106 cases), "kolotyo" (330 cases), implying, according to N.A. Romanov et al. [14], pleuritis, and pleuropneumonia.

The share of diseases that we classified as infectious was 18.1%. The most common deaths were from dysentery (173 cases), measles (149 cases), scarlet fever (76 cases), typhoid (30 cases), smallpox (25 cases), etc. Perhaps the widespread of these diseases was hampered by the dispersed residence of the local population across the territory of parishes. Nevertheless, it should be recognized that the figures are given only superficially reflect the real epidemiological situation at that time.

Death "from old age" in some rare cases was stated at 57-58 years old, and the bulk of those who died, for this reason, were noted in the range from 75 to 90 years. The share of those who crossed the 90-year line of life was 0.5% (16 people), but it is also possible that these data may be overestimated due to the widespread distortion of age data among the elderly Yakut population [17].

The proportion of mortality from external causes was about 1.4%, or 41 cases, of which 19 people died due to careless handling of fire, including 15 children, 9 people drowned. There were also cases of death from freezing, a bear attack, "cutting a leg", "bruising", etc. There were 3 cases of suicide, 1 case of murder.

Conclusion. The studies have shown that the first statistics on the mortality of children under 5 years of age in Yakutia were underestimated due to insufficient coverage of the population. Conversely, the infant mortality data at the beginning of the 20th century were overestimated by including older children in this group. Moreover, the calculated values of this indicator allow us to conclude that its level on the territory of the Vilyui district was even lower than in some regions of Russia and was at the level of the indicators of Germany (1910-1914) or Japan (1920-1922) - 16.3-16.6% [19, p. 363].

The most unfavorable period for the life of the local population was the spring, during which the mortality rate increased 1.8 times higher than the average annual indicators. The main causes of death, regardless of age, were respiratory diseases, mainly tuberculosis. The mortality rate of women during or shortly after childbirth was extremely high.

References

Авдеев А. Сезонный фактор в демографии российского крестьянства в первой половине XIX века: брачность, рождаемость, младенческая смертность / А. Авдеев, А. Блюм, И. Троицкая // Демоскоп. – 2003. URL: http://www.demoscope.ru/weekly/2003/0135/analit04.php (дата обращения: 03.01.2021). [Avdeev, A., Bljum A, Troiskaya I. The seasonal factor in the demography of the Russian peasantry in the first half of the 19th century: marriage, fertility, infant mortality. *Demoskop*. 2003. URL: http://www.demoscope.ru/weekly/2003/0135/analit04.php (due to: 03.01.2021) (in Russ).].

Афанасова, Е.Н. Изменение уровня младенческой смертности в Восточной Сибири в 1920–1930-е гг. // Е.Н. Афанасова / Irkutsk Historical and Economic Yearbook. – Иркутск, 2013. – С. 467-473. [Afanasova, E.N. Changes in the level of infant mortality in Eastern Siberia in the 1920s – 1930s.// E.N. Afanasova / Irkutskij istoriko-jekonomicheskij ezhegodnik. – Irkutsk, 2013. – S. 467-473 (in Russ).].

Бекшаев, И.А. Смертность детского населения и ее причины в начале XX века (на примере села Орехово Покровского уезда Владимирской губернии) / И.А. Бекшаев, Т.В. Дьякова // Геополитика и экогеодинамика регионов. – Т. 4 (14). – Вып. 4. – 2018. – С. 136–147. [Bekshaev I.A., Dyakova T.V. Child mortality and its causes at the beginning of the 20th century (on the example of the village of Orekhovo, Pokrovsky district, Vladimir province). *Geopolitics and ecogeodynamics of regions*. 2018; 4(14): 136–147 (in Russ).].

Бушков, П. Охрана материнства и младенчества в Якутии / П. Бушков // Автономная Якутия. – 1927. – № 46 (1317). – С. 5. [Bushkov, P. Protection of motherhood and infancy in Yakutia. *Autonomic Yakutia*. 1927; 46 (1317): 5. (in Russ).].

Егорышева, И.В. Проблема детской смертности в России в трудах русских врачей и ученых (XVIII – начало XX века) / И.В. Егорышева // Здравоохранение Российской Федерации. – 2012. – № 4. – С. 53-56. [Egorysheva, I.V. The problem of infant mortality in Russia in the works of Russian doctors and scientists (XVIII - early XX centuries). *Russian Federation healthcare*. 2012; 4; 53-56. in Russ).].

Жиров, Н.А. Уровень детской смертности в крестьянской среде Орловской губернии в начале XX в. / Н.А. Жиров // Вестник ТГУ. – Вып. 5 (133). – 2014. – С. 1-10. [Zhirov, N.A. The infant mortality rate in the peasant environment of the Oryol province at the beginning of the twentieth century / N.A. Zhirov // TSU Herald. – Vyp. 5 (133). – 2014. – S. 1-10.]

Зверев, В.А. Люди детные: воспроизводство населения сибирской деревни в конце имперского периода. – Новосибирск: Изд-во НГПУ, 2014. – 278 с. [Zverev, V.A. Children's people: reproduction of the population of a Siberian village at the end of the imperial period. Novosibirsk: Izd-vo NGPU, 2014: 278]

Кулаковский А. Е. Русские слова, перенятые и усвоенные якутами (кроме собственных имен и названий) / А. Е. Кулаковский // Научные труды. – Якутск: Кн. изд-во, 1979. – С. 316-378. [Kulakovskiy A. E. Russian words adopted and learned by Yakuts (except for proper names and titles) *Scientifical works*. Yakutsk: Kn. izd-vo, 1979: 316-378.]

Маак, Р.К. Вилюйский округ Якутской области. – СПб: Типография и Хромолитография А. Траншеля, 1887. – Ч. 3. – 192 с. [Maak, R.K. Vilyui district of the Yakutsk region. - St. Petersburg: A. Tranchel Printing House and Chromolithography, 1887; Part 3: 192 (in Russ).].

Машарипова, А.Х. Детская смертность у коми-зырян Нижнего Притоболья в конце XIX – начале XX в. / А.Х. Машарипова // Вестник археологии, антропологии и этнографии. – 2014. – № 1 (24). – С. 133-137. [Masharipova, A.H Infant mortality in the Komi Zyryans of the Lower Tobol region in the late 19th - early 20th centuries. *Bulletin of archeology, anthropology and ethnography*. 2014; 1(24): 133-137 (in Russ).].

Напиши имя моё... (Метрические книги Билючанской Николаевской церкви и списки жителей Вилючанского и Нахаринского наслегов Сунтарского улуса): сборник архивных документов / Нац. архив РС (Я), Сунтарский улусный архив; [сост. А.Е. Яковлев, А.А. Моякунова, С.К. Григорьев]. – Якутск: 2017. – 496 с. [Write my name ... (Metric books of the Bilyuchansk Nicholas Church and lists of residents of the Vilyuchansky and Nakharinsky districts of Suntarsky ulus): a collection of archival documents. *Yakutan national archive, Suntars ulus archive*; [coll. A.E. Jakovlev, A.A. Moyakunova, S.K. Grigoriev] Yakutsk: 2017: 496 (in Russ).].

Напиши имя моё... (Метрические книги Шеинской Георгиевской церкви Сунтарского улуса): сборник архивных документов / Муниципальный архив муниципального района «Сунтарский улус (район)»; [сост. А.Е. Яковлев]. – Якутск: Чопчу, 2019. – 372 с. [Write my name ... (Metric books of the Bilyuchansk Nicholas Church and lists of residents of the Vilyuchansky and Nakharinsky districts of the Suntarsky ulus): a collection of archival documents. *Municipal archive of Suntarskiy ulus (district)*; [coll. A.E. Jakovlev]. Yakutsk: Chopchu, 2019; 372 (in Russ).].

Обзор Якутской области...: приложение к всеподданейшему отчету Якутского губернатора. – Якутск: Типография Якутского областного правления за 1910 год. – 1912. – 284 с. [Overview of the Yakutsk region ...: an appendix to the most submissive report of the Yakutsk governor. - Yakutsk: Printing house of the Yakutsk regional government for 1910. 1912: 284 (in Russ).].

Романов, Н.А. О лихорадке в «лечебнике» Иоганна Фридриха Рибеля / Н.А. Романов, А.Е. Доросевич, И.В. Дмитриев // Вестник Смоленской государственной медицинской академии. – 2019. – Т. 18. – № 2. – С. 230-235. [Romanov N.A., Dorosevich A.E., Dmitriev I.V. About fever in the "clinic" by Johann Friedrich Riebel .*Bulletin SGMA*. 2019; 18(2): 230-235 (in Russ).].

Сарафанов, Д.Е. Сезонность младенческой смертности в Барнауле во второй половине XIX – начале XX в. (по материалам метрических книг) / Д.Е. Сарафанов // Известия УрФУ. – Серия 2. Гуманитарные науки. – 2020. – Т. 22. – № 2 (198). – С. 59-78. [Sarafanov, D.E. Seasonality of infant mortality in Barnaul in the second half of the 19th - early 20th centuries. (based on materials from registers). *News UrFU. Humanistic sciences*. 2020; T. 22. 2 (198): 59-78 (in Russ).].

Серошевский, В.Л. Якуты. Опыт этнографического исследования [Текст]: монография. – 2-е изд. – М., 1993. – 736 с. [Seroshevskiy V.L. Experience of ethnographic research [Text]:

monograph. – 2nd edit. M., 1993: 736 (in Russ).].

Слепцов, С.С. Феномен долгожительства в Якутии – миф или реальность / С.С. Слепцов, С.С. Слепцова, А.Г. Егорова, З.Н. Алексеева // Якутский медицинский журнал. – 2019. – № 1 (65). – С. 102-104. DOI 10.25789/YMJ.2019.65.30 [Slepsov S.S., Sleptsova S.S., Egorova A.G., Alekseeva Z.N. The phenomenon of longevity in Yakutia - myth or reality. *YMJ*. 2019; 1 (65): 102-104. DOI 10.25789/YMJ.2019.65.30 (in Russ).].

Черная, О.В. Причины смертности крестьян репродуктивного возраста в конце XIX – начале XX века (на материалах Южного Зауралья) / О.В. Черная // Омский научный вестник. – 2009. – № 2 (76). – С. 55-59. [Chernaya, O.V. Causes of mortality of peasants of reproductive age in the late 19th - early 20th centuries (based on materials from the Southern Trans-Urals). *Omsk scientific bulletin*. 2009; 2 (76): 55-59.]

Шрейбер, С.Е. Медико-санитарное обследование населения Вилюйского и Олекминского округов. – Л.: Изд-во АН СССР, 1931. – 372 с. [Schreiber S.E. Medical and sanitary examination of the population of the Vilyui and Olekminsky districts. – L.: Publ. House AS SSSR, 1931; 372 (in Russ).].

TOPICAL ISSUE

DOI 10.25789/YMJ.2021.73.17

T.E. Popova, O.G. Tikhonova, A.N. Romanova, A.A. Tappakhov, M.E. Andreev

ANALYSIS OF THE EPIDEMIOLOGICAL SITUATION ON COVID-19 : A SECOND WAVE

Summary. The analysis of prevalence, morbidity, mortality and lethality from COVID-19 for the period from September 1, 2020 to January 4, 2021 was carried out. It was revealed that during the analyzed period (18 weeks), the prevalence and incidence rates of new coronavirus infection increased significantly. The highest prevalence of COVID-19 is registered in the USA, Spain, France. China and Thailand have the lowest prevalence and incidence rates for new coronavirus infection.

Key words: new coronavirus infection, COVID-19, epidemiology, prevalence, morbidity, mortality, lethality.

Introduction. On December 31, 2019, the Chinese authorities informed the World Health Organization (WHO) of an outbreak of unknown pneumonia. The pandemic of the new coronavirus infection began with the detection of a group of cases of idiopathic pneumonia in hospitals in Wuhan (Hubei Province, China) as of December 31, 2019 [3, 4]. Coronavirus 2019 (COVID-19) as an infectious viral disease has spread throughout the world, leading to an ongoing pandemic [9, 13]. As of 01/04/2021, the total number of infected COVID-19 around the world was 83,934,188, and the number of deaths was 1,840,028. [15-23].

It was assumed that the disease would be cyclical in its course for an indefinite time. According to forecasts of epidemiologists, the beginning of the second wave should cover the autumn months [2, 6, 7]. The repeated increase in the number of patients with a new coronavirus infection was associated with the absence of the so-called herd immunity and the weakening of anti-epidemic measures [8, 12]. Since November 2021, vaccination of the population began, primarily from risk groups, which should affect the rate of spread of infection in the future through an increase in the population stratum with persistent immunity [5, 10].

In a previous article, we analyzed the dynamics of the spread of COVID-19 in the Republic of Sakha (Yakutia) in comparison with other regions of the Russian Federation and a number of foreign countries from the beginning of the pandemic to July 31, 2020.The highest prevalence of a new coronavirus infection was registered in the USA - 1433.8 , in Brazil - 1227.7, in Spain - 712.3, followed by Russia with an indicator of 572.4 cases per 100 thousand of the population. Three zones were identified on the basis of the analysis of the spread of infection [1]. As the pandemic continues, we decided to continue our analysis of the COVID-19 epidemiological situation for a "second wave" in the same countries that were included in the previous study.

Aim of the work: to analyze of the dynamics of the spread of COVID-19 during the second wave in the Republic of Sakha (Yakutia) in comparison with other regions of the Russian Federation and a number of foreign countries.

Tasks:

1. Calculate the growth rate of the spread of COVID-19 in different regions during the "second wave"
2. Conduct a comparative analysis of the spread of COVID-19 during the "first" and "second wave"
3. Compare mortality and lethality in the first and second waves of a new coronavirus infection.

Materials and methods. Epidemiological data for SARS-CoV-2 was obtained using an online platform that collects data from government agencies from September 1, 2020 to January 4, 2021 December, the coverage was 18 weeks of observation [15-23]. The study included countries the following countries: China, USA, Spain, Italy, France, Germany, Great Britain, Russia, Brazil, Norway, Finland, Thailand. For the Russian Federation, a comparison was made of data in Moscow, St. Petersburg and the Republic of Sakha (Yakutia). We analyzed the following indicators: the number of confirmed cases, new cases of COVID-19 in 18 weeks, mortality per 100 thousand of the population, lethality in % during the observation period as of 01/04/2021.

Research results. Analysis of the total number of patients in the compared countries in dynamics in terms of 100 thousand of the population (prevalence) for 18 weeks of follow-up (end date 01/04/2021) showed that the highest prevalence of new coronavirus infection was registered in the USA - 6342.8, then

POPOVA Tatyana Egorovna - Doctor of Medical Sciences, deputy director, Scientific center of complex med. problems, Yakutsk, tata2504@yandex.ru, **ROMANOVA Anna Nikolaevna** - Doctor of Medical Sciences, director, Scientific center of complex med. problems, Yakutsk, **TIKHONOVA Olga G** - Scientific secretary, Scientific center of complex med. problems, Yakutsk, **TAPPAKHOV Aleksey Alekseevich** - candidate of medical sciences, associate professor of Medical Institute of M.K. Ammosov Northeastern Federal University, senior researcher, ESL of neuropsychophysiological researches, Clinics of M.K. Ammosov NEFU; senior researcher, the Center for neurodegenerative diseases of the YSC CMP; **ANDREEV Michil Egorovich** - research assistant ESL Clinics of NEFU; senior researcher of YSC CMP.