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ORGANIZATION OF HEALTHCARE, MEDICAL SCIENCE AND EDUCATION

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EPIDEMIOLOGICAL SITUATION AND ORGANIZATION OF SPECIALIZED MEDICAL CARE FOR INFECTIOUS DISEASES IN THE REPUBLIC OF SAKHA (YAKUTIA)

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The article presents a content analysis of the epidemiology of infectious diseases in the Republic of Sakha (Yakutia) in the period from 2020-2023. An increase in the incidence of infectious pathology in the Republic of Sakha (Yakutia) by 20 nosological forms was revealed. Taking into account the epidemiological situation, as well as the available capacities of medical facilities and staffing, recommendations are proposed to improve the organization of specialized medical care for infectious diseases in the Republic of Sakha (Yakutia).

Keywords: infectious diseases service, morbidity, infectious diseases, pandemic, mortality, bed stock, staffing, Yakutia.

Introduction. The coronavirus pandemic has shown society's vulnerability to infectious threats. The measures taken in the Russian Federation partially prevented the scale of losses for society, but showed the need to improve the healthcare system in the fight against epidemics [1, 2, 4, 5]. This was especially acute in the regions of the Arctic zone of the Russian Federation and the Far Eastern Federal District.

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In this regard, an analysis of indicators of infectious pathology, reflecting the state of the infectious disease health service in the regions of the Russian Federation, can be the basis for developing directions for modernizing the infectious disease service. The state of the infectious disease service may largely reflect the problems that have developed in the healthcare system. Problems identified in the organization of specialized medical care for patients with infectious diseases require management decisions aimed at providing staff and beds in hospitals, introducing modern diagnostic and treatment technologies, with a corresponding increase in funding [3, 6, 7].

Purpose of the study: to conduct a content analysis of the main performance indicators of the infectious disease service of the Republic of Sakha (Yakutia) and determine the main directions for development.

Materials and methods of research: the reporting data of medical organizations and the Ministry of Health of the Republic of Sakha (Yakutia) for 2021-2022, data on the demographic situation and morbidity structure, statistical data of the main morbidity indicators in the Russian Federation were studied.

Results and discussion. Epidemiological situation in the Republic of Sakha (Yakutia). Compared to 2021, in 2022, an increase in the incidence of infectious pathology in the Republic of Sakha (Yakutia) was observed in 20 nosological forms: salmonellosis - by 48.2%, dysentery - by 10.9 times, rotavirus infection - by 6.8%, acute intestinal infections of unknown etiology - by 39.2%, enterovirus infection - by 8.3 times, acute hepatitis - by 2.0 times, incl. acute hepatitis C - by 2.2 times, chronic hepatitis B - by 11.1%, chronic hepatitis C - by 37.8%, scarlet fever - by 4.9 times, chicken pox - by 1.5 times, tick bites - by 1.7 times, pediculosis - by 25.5%, infectious mononucleosis - by 1.6 times, syphilis - by 36.1%, gonorrhea - by 22.8%, HIV infection - by 9.6%, ARVI - by 15.7%, flu - 5 times, COVID-19 - 2.1 times.

The situation in the republic remains tense regarding the incidence of chronic viral hepatitis. According to the register "Chronic viral hepatitis in the Republic of Sakha (Yakutia)" in 2022, 14,781 people were registered, including 484 people with liver cirrhosis of viral etiology, and 47 people with primary liver cancer. (Table 1). Due to viral hepatitis in the region in 2022, 188 people died. At the same time, 113 people (60.1%) hepatitis was the main cause of death.

The situation regarding HIV infection is very tense. The spread of the human immunodeficiency virus among the population and the increase in the cumulative number of infected and sick people continues. The incidence rate of HIV infection was 16.7 people per 100 thousand people, which is 9.6% higher than in 2021 (15.2 people per 100 thousand people, or 149 cases). The highest prevalence of this infection is observed in industrial areas, where there are a large number of migrants coming for seasonal work.

Since 2001, an annual increase in tick attacks on humans has been recorded. From 2019 to 2022, the number of calls due to tick bites increased by more than 2.5 times - from 221 to 565 cases per year.

For 2020-2022, a decrease in the population mortality rate among people over working age from infectious diseases was recorded by 28.7% (from 25.4 to 18.1 people per 100 thousand people), but at the same time the mortality rate from tuberculosis increased – by 37.1% (from 3.5 to 4.8 per 100 thousand population).

The COVID-19 pandemic has affected the overall infectious and parasitic morbidity of the population. At the end of 2022, 651,876 residents of the Republic of Sakha (Yakutia), of which 50.2% were children, suffered from infectious and parasitic diseases. Compared to 2021, there was an increase in infectious morbidity by 30.8%, and among children under 14 years old - by 19%. In 2022, in the structure of general infectious morbidity, the share of ARVI and influenza was 70.2%, coronavirus infection (CVI) - 26.3%. It should be noted that the decrease in the level of dispensary observation during the period of restrictive measures due to COVID-19 not only caused a subsequent increase in complications from viral hepatitis, HIV infection and tuberculosis, but also reduced the official morbidity rates.

Organization of specialized medical care for infectious diseases. As of January 1, 2023, the infectious disease service of the Republic of Sakha (Yakutia) employs 89 infectious disease doctors, of which 77 people work in practical healthcare. (86.5%). 58 people (65.2%) work in Yakutsk, 31 people work in the districts. (34.8%). In total, in practical health care there are 24 infectious disease doctors with the highest qualification category (31.1%); with the first category - 4 (5.2%); with the second category – 8 (10.4%), the total categorization was 40.4%. The number of specialists of retirement age (over 50 years old) is 27 people (35.0%), people under 50 years old - 62 (80.5%), of which 31 people (50%) are under 35 years old. The average age of infectious disease specialists in practical healthcare is 36.5 years. On the basis of the Medical Institute of the North-Eastern Federal University, training and advanced training of medical personnel is carried out through residency (10 people) and postgraduate studies (5 people).

The number of people with chronic viral hepatitis who are undergoing dispensary observation in the Republic of Sakha (Yakutia), 2022

Index	Chronic hepatitis				
	B	C	D	mixed	Total
absolute number, people	6260	6779	1241	501	14781
mass fraction, %	42.4	45.9	8.3	3.4	100
people/per 100 thousand population	0.63	0.68	0.12	0.05	1.48

Primary specialized health care is provided in 30 infectious diseases rooms of city and regional medical organizations. There are 23.7 full-time positions of infectious disease doctors, 84.2% are occupied, and the actual number of doctors in clinics is 27 people.

Specialized medical care is provided in the State Budgetary Institution of the Republic of Sakha (Yakutia) "Children's Infectious Diseases Clinical Hospital", the infectious diseases department of the State Budgetary Institution of the Republic of Sakha (Yakutia) "Yakut Republican Clinical Hospital", the infectious diseases hospital of the State Budgetary Institution of the Republic of Sakha (Yakutia) "Mirny Central district hospital" and infectious diseases departments of 29 district and city medical organizations. In the region, the number of infectious disease beds in 2022 is represented by 676 beds (annual average), of which there are 301 adult beds, 128 children's beds, and 247 mixed beds. The increase in the number of adult and children's beds is primarily due to their repurposing for the treatment of patients with COVID-19 throughout the republic.

In 2022, 9 temporary infectious diseases hospitals were deployed for patients with COVID-19, the maximum number of beds reached 533 units, of which 160 beds were with oxygen supply, 210 with non-invasive ventilation, 42 with access to invasive ventilation. The average annual bed occupancy for 2022 is 270 days. Availability of beds for 10 thousand of us. increased by 2022 from 2.28 to 5.96 - 2 times, however, taking into account the climatic and geographical characteristics of the region and the transport accessibility of medical organizations in certain territories of the republic, a further increase in the bed capacity is required. Today, 12 infectious diseases departments require major overhaul; departments in 7 districts of the Republic of Sakha (Yakutia) need reconstruction.

There are only 34 full-time infectious disease doctors to work in hospitals, of which 91.2% are employed; 28 individuals work in infectious disease departments with an estimated number of 1 doctor for 15 patients.

Since 2021, the Republican Hepatology Center began operating on the basis of the State Budgetary Institution of the Republic of Sakha (Yakutia) "Yakut Republican Clinical Hospital" - an organizational structure that combines the stages of dispensary observation, hospital and organizational and methodological center. In connection with the unfavorable situation in the territory of Yakutia regarding the incidence of viral hepatitis and their consequences (cirrhosis and liver cancer), a draft target program "Improving methods of providing medical care to patients with chronic hepatitis B, C and D for 2022-2024" has been prepared. in the Republic of Sakha (Yakutia)" with a complex of preventive, diagnostic and therapeutic measures, which will reduce the morbidity and mortality from viral hepatitis and its consequences, such as cirrhosis and liver cancer, leading to disability and premature mortality. The routing of patients with chronic viral hepatitis in the region is regulated by orders of the Ministry of Health of the Republic of Sakha (Yakutia) "On the organization of medical care for patients with chronic viral hepatitis in the Republic of Sakha (Yakutia)", "On the Commission for the selection of patients with chronic viral hepatitis for etiological therapy".

During 2022, 351 people with chronic hepatitis underwent a course of antiviral therapy, 86% were with hepatitis C, the rest with HBV infection, including 47 patients who began antiviral therapy for HD hepatitis with the drug "Bulevirtide". In the future, it is planned to increase the coverage of patients with chronic hepatitis C with etiotropic therapy to 60% by 2025.

Over the past 12 years, 95 orthotopic liver transplantations have been performed in patients with chronic viral hepatitis with cirrhosis (76.8%) and liver

cancer (23.2%). 80 transplants were performed in federal clinics, 15 transplants in the republic.

In 2022, 329 telemedicine consultations on coronavirus infection were conducted, 73 patients with COVID-19 from remote areas of the region were hospitalized, and 34 teleconsultations on other infectious diseases were organized.

Scientific and scientific-practical conferences are systematically held in the republic, including traditional republican schools of hepatologists, well known outside of Yakutia. The event has been held for 22 years with the invitation of leading experts from Moscow, St. Petersburg, Vladivostok, Chelyabinsk and other cities of the country. In total, 891 specialists with higher medical education were trained as part of CME in infectious diseases in 2022. Schools for patients with viral hepatitis are held quarterly at the NEFU clinic; educational work is carried out on an ongoing basis in the media, social networks, and television.

In the Republic of Sakha (Yakutya) February 27, 2023 a comprehensive action plan has been adopted to prevent the spread and treatment of hepatitis C until 2030, which provides for measures to improve the system for identifying and preventing chronic hepatitis C, ensuring registration and provision of medical care, raising awareness and conducting additional professional education for workers of medical organizations and laboratory services, prevention of infection with the hepatitis C virus during the provision of medical care.

The work plan of the Ministry of Health of the Republic of Sakha (Yakutia) "On approval of the Comprehensive Departmental Plan (Road Map) for reducing the mortality rate of the population from infectious diseases in the Republic of Sakha (Yakutia) for 2023-2024" was adopted.

Based on the above, to further limit the spread of infectious diseases and reduce mortality from their consequences, it is necessary:

- implementation of a set of measures to achieve target indicators for the implementation of state programs on HIV infection, tuberculosis;

- ensuring increased infectious alertness in connection with the increase in external biological risks and increased migration flows;

- ensuring readiness for an increase in the incidence of natural focal diseases through vaccination within the framework of calendar according to epidemic indications;

- improvement of diagnosis, observation and recording of patients with infectious pathology;

- integration of testing and treatment of socially significant infectious diseases with other services, decentralization of medical care;

- increasing drug provision for patients with chronic viral hepatitis using all possible sources of financing, incl. within the framework of a regional program;

- increasing the availability of beds and effective management of beds.

Conclusion. The situation with infectious diseases in the Republic of Sakha (Yakutia), despite achievements in the field of healthcare in recent years, remains unstable; there is an increase in the incidence of 20 infectious nosologies. Due to the difficult situation regarding infectious pathology, it is necessary to gradually implement a comprehensive plan for the development of the infectious disease service of the republic with the construction of an infectious diseases hospital and the reconstruction (overhaul) of 95% of the bed capacity. Reorganization of departments is required to increase boxed departments with subsequent redistribution of bed capacity.

There is a need for effective interaction between government agencies and medical organizations at all levels, including with regard to the introduction of restrictive measures and the effective management of forces and resources.

Comprehensive measures are needed to eliminate the personnel shortage, this includes increasing the prestige of the infectious disease doctor profession, creating comfortable working conditions, increasing wages, improving the system of training personnel in infectious diseases, and increasing the number of targeted areas.

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