

BELARUSIAN STATE UNIVERSITY

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Establishment of Education  
«International Sakharov Environmental Institute»



# ACTUAL ENVIRONMENTAL PROBLEMS

Proceeding of the VII International  
Scientific Conference of young scientists,  
graduates, master and PhD students



November 23–24, 2017  
Minsk, Republic of Belarus



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# DYNAMICS OF BACTERIAL AND VIRAL INFECTIONS OF RESPIRATORY TRACT IN SLUTSK REGION

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In this paper the results of health status monitoring of the population of Slutsk and Slutsk district for the period 2011–2015 on the main incidence of morbidity of respiratory tract infections are represented. The comparative analysis of the morbidity of bacterial and viral respiratory tract infections has been implemented, the structure of nosologies, the age composition of the diseased and the annual dynamics of the incidence of respiratory infections in the district has been examined.

*Keywords:* respiratory tract, morbidity of infection, contagiousity, epidemic situation, vaccination, dynamics.

The present stage of epidemiology and infectology is characterized by the recognition that infectious diseases occupy leading positions in human pathology. Respiratory infections take the first place in the structure of infectious pathology and appear the most common and uncontrolled diseases causing significant damage to the health of population and the economies of countries around the world.

The aim of this work is to monitor the health status of residents of Slutsk and Slutsk district with the study of the dynamics of the incidence of bacterial and viral respiratory tract infections.

To realize this aim, the annual bulletins of Slutsk Zonal Hygiene and Epidemiology Center were analysed on the main incidence of morbidity and health of the inhabitants of Slutsk district, data of the National Statistical Committee of the Republic of Belarus.

The study found out that in Slutsk district for the period of 2011–2015 the greatest contribution in the structure of the morbidity of bacterial infections of the airways is made by tuberculosis (70,89 %) and scarlet fever (27,48 %).

The analysis of long-term dynamics of active tuberculosis morbidity of the population of Minsk region and Slutsk district demonstrates a moderate downward trend, however, there is a tendency to increase the proportion of patients with multidrug-resistant (MDR), which in 2015 was recorded at the level of 22,22 % of newly diagnosed patients with active tuberculosis. The major part of the sick accounts for the asocial layers of the population (2015 – 48,52 %) and the age from 45 to 64 years. Among patients, 66,67 % with bacilli (BK +). In 2015 6 cases of death from tuberculosis infection (MDR 80 %) were registered. The peak of morbidity was registered in 2011.

The highest morbidity of scarlet fever in the last 5 years was recorded in 2012. It was found out that the incidence of scarlet fever in the urban population (2015 – 7,91 cases per 100,000 population) is higher than the level of the incidence of the rural population (5,97 cases per 100,000 population). In the age structure of the diseased, children of 3–8 years old predominate (86,36 %).

There is a stable epidemic situation for meningococcal infection: the last time cases of meningococcal disease were registered in 2013 – 8,11 % of all bacterial infections of the respiratory tract (3 cases, or 3,22 per 100,000 population). In the region, cases of infectious mononucleosis are also recorded: In 2015 15 cases were registered, or 16,14 cases per 100 thousand people, this is 1,31 times higher than the regional indicator. There were no cases of diphtheria, pertussis, paracoccus, and there are also no so-called "managed" viral infections: measles, mumps and rubella.

Since the end of 2010 a high morbidity of chicken pox is marked. The morbidity rate is cyclical and is determined by ups and downs. For the analyzed period, the peak incidence occurred in 2013 (703 cases, or 754,32 per 100,000 of the population), while the morbidity of urban population was by 4,85 times higher than the incidence of rural population. The bulk of the cases falls on the group of children from 0 to 17 years (99,24 %).

Acute respiratory infection (ARI) occupies a major share in the structure of viral airborne infections. During the analyzed period, there are slight fluctuations in the incidence of ARI. In 2015, the incidence of this group of infections was by 1,1 times higher than the regional morbidity rate. In the structure of the affected 62,59 % falls on children under 17 years. The morbidity of all ARIs among the population is by 1,12 times higher than the incidence of the population's population due to the adult contingent. The morbidity of urban children is by 1,21 higher than the morbidity of rural children. These figures indicate a high degree of contagiousness of these diseases and the lack of effectiveness of preventive measures.

Medical science has developed powerful tools to combat infectious diseases; every year, medical practice enriches new effective methods of prevention and treatment. However, despite the improvement of preventive and curative methods and the appearance in the arsenal of doctors of new highly effective drugs, respiratory infections continue to be a major problem in modern medicine.

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### SECTION 3

#### PROBLEMS OF MODERN ENVIRONMENTAL SAFETY

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#### SECTION 4

#### CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT RENEWABLE ENERGY SOURCES AND ENERGY CONSERVATION

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