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THE IMPORTANCE OF HYGIENIC ASSESSMENT OF THE IMPACT OF ATMOSPHERIC AIR POLLUTION ON PUBLIC HEALTH (ON THE EXAMPLE OF THE CITY OF FERGANA)

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Abstract: The relationship between the incidence rate of the population living in Fergana and different levels of air pollution was studied. The statistical reliability of the relationship between the incidence rate and the average annual emissions of pollutants into the atmospheric air of the region and different years was determined.
Keywords: Atmospheric air pollution, population health indicators, morbidity indicators.

Introduction:
In order to ensure the effective and sustainable socio-economic development of the republic, in recent years, in our country, as an important basis of state policy in the field of ecology and environmental protection, deep reforms have been carried out aimed at creating favorable conditions for the health of the population and improving the maintenance of ecological balance. One of the most important issues today is maintaining clean air. According to scientists, due to human economic activity, about 500 million tons of sulfur dioxide, sulfide oxide, nitrogen oxide and other pollutants are emitted into the atmosphere every year. According to data, in our time, the amount of dust in the atmosphere has increased by 20% compared to the 20th century. Most of the toxic substances that pose a threat to human health, including 65-97% of carbon monoxide, 56-75% of carbohydrates. and 46-63% of nitrogen is produced as pollutants from existing vehicles in cities, where more than half of the country's population lives.

Analysis of literature on the topic
The atmospheric air of large industrial cities is subject to high anthropogenic impact [1–3]. Along with general gaseous pollutants in the atmospheric air
suspended solids containing particles of various sizes are emitted. A particular hazard to human health is dust, the diameter of which
components (particles) less than 10 and 2.5 microns
(PM10 and PM2.5), which has been confirmed by many studies
Russia, Europe and the USA, as well as the World Health Organization (WHO) [4-8]. For example, short-term (within hours)
or days) or long-term (months or years) exposure to fine particles leads to respiratory and cardiovascular diseases, including asthma and exacerbation of respiratory symptoms and mortality, hospitalizations,
cardiovascular diseases [4, 5]. Respirable ultrafine particles
not only damage the vascular system and directly the heart, causing cardiac arrhythmias and a decrease in cardiac muscle and coronary blood flow; but also changes blood parameters [6-8]. According to studies by Russian scientists, dust is a factor in the development of oncological diseases of the human respiratory system [9]. European scientists have proven that air pollution with suspended PM10 particles from motor vehicle traffic leads to a 6% increase in total mortality from various diseases.

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Population groups in Austria, Switzerland and France or an additional 40,000 deaths per year and more than 25,000 cases of chronic bronchitis in adults, an additional 290,000 cases of bronchitis in children and 500,000 asthma attacks [10].

fine dust PM10 and PM2.5 were developed and legislated in 2010. Thus, there is every reason to take into account fine particles in the existing ecological and hygienic assessment. The latter is especially important in urbanized areas, since a large number of sources of dust emissions of various origins and dispersed composition are concentrated in industrialized cities. Particulate matter enters the atmosphere as a result of the operation of automobile engines and processes, such as the movement of cars on the roads, as well as during the operation of boilers, from the burning of coal and wood, and from industrial waste [11]

Research methodology

The chemical composition of the atmospheric air of the city of Fergana was taken as the object of study.

The subjects of the study were the incidence rates of the population and their appeals to medical institutions.

The research used sanitary-hygienic methods, questionnaires , and statistical methods.

Results

The raids conducted by the Fergana Regional Department of Ecology and Environmental Protection, the regional Internal Affairs Department, the regional SEO and JS Department together with the employees of the Fergana city department during 2020-2022 revealed the following: During the joint event, 245 cases were found at organizations and enterprises with motor vehicles, the Fergana Oil Refinery, the Fergana Azot Plant, 1 post at the entrance to Fergana from Margilan city (near the Oblgai), 283 cases were found at the entrance to Fergana district from Fergana city (at the Qorasuv post), 189 cases were found at the entrance to Kuvasoy city from the Okhunboboev area, 241 cases were found at the entrance to Al Ferghaniy street, 21 cases were found at the entrance to Qori Niyoziy On the street - 89 - 15 of them were higher, on the street A. Navoiy - 301 - 31 of them were higher, on the street Kuvasoy - 276 - 25 of them were higher, and out of a total of 1714 vehicles, 174 exceeded the norm, which was 10.1 percent. The amount of harmful SO2 gases and smoke emitted by vehicles was measured using the Avtotest gas analyzer.

As a result of the inspections, 84 vehicles were re-adjusted on site.

If we divide Fergana city into two, namely the conditionally clean area (uslovno chistiy) Okhunboboev district and the Kirguli district as a polluted area. The pollution of the environment is mainly caused by the industrially developed area, namely the Kirguli district. Data analysis shows that in 2020-2021-2023, the morbidity of the urban population is directly related to air pollution, with an increase in respiratory diseases among children, adolescents and adults, 2nd place among adults is occupied by diseases of the digestive system (7-10%), 3rd place is occupied by allergic diseases, endocrine, kidney, genital diseases (5-7%), 4th place is occupied by hypertension, and ischemic heart diseases (5-6%) and anemia. Having studied the incidence of the population of Holdayk, which arose from the analysis of data, we obtained the following results. We included the following sources of atmospheric air pollution in the observation region: There are a total of 815 enterprises and organizations in the city, of which 15 are large enterprises, 10 are enterprises producing consumer goods, and 738 are small enterprises and micro-firms.

In order to assess the level of atmospheric air pollution in 2020, 1,201 air samples were tested for the following indicators : Dust, sulfur dioxide, carbon monoxide, nitrogen oxides, sulfuric acid.

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Of these 1,201 air samples, 824 were tested for dust , of which 244 did not meet hygienic requirements, which was 30 percent. Of the 241 samples taken from the Fergana Nitrogen Plant, 25 out of 241 samples were found to exceed the standard, 21 out of 185 from FNQIZ-16 out of 165 from gas stations, 194 out of 406 at intersections, and 28 out of 66 at car washes.

In order to assess the level of atmospheric air pollution in 2021, 1,281 air samples were tested for the following indicators : Dust, sulfur dioxide, carbon monoxide, nitrogen oxides, sulfuric acid. Of these 1,281 air samples, 890 were tested for dust , of which 282 did not meet hygienic requirements, which was 31 percent. All of them were dust. Of the 254 samples taken from Fergana, 25 exceeded the norm for nitrogen, 14 out of 185 at FNQIZ, 13 out of 160 at gas stations, 210 out of 428 at intersections, and 20 out of 96 at car washes.

In order to assess the level of atmospheric air pollution in 2022, 1286 air samples were tested for the following indicators : Dust, sulfur dioxide, carbon monoxide, nitrogen oxides, sulfuric acid. Of these 1286 air samples, 892 were tested for dust , of which 261 did not meet hygienic requirements, which was 29 percent. All of them were dust. Of the 254 samples taken from Fergana, nitrogen exceeded the norm in 23 of them, FNQIZ-16 out of 185, 12 out of 160 gas stations, 192 out of 428 at intersections, and 18 out of 96 at car washes.

Discussion

In order to study the impact of the atmosphere on the health of the urban population, a retrospective analysis of the health status of the population by primary morbidity in 2020-2022 revealed an increase in eye and ocular diseases, respiratory diseases. When analyzing the distribution of the general morbidity of the population, it was found that respiratory diseases, circulatory system diseases, skin and subcutaneous tissue diseases, mental disorders, and parasitic diseases have increased over the years in the polluted Kyrgyz region, where there are large industrial enterprises.

The results of the analysis show that atmospheric air pollution in 2021 was higher than in other years. Dust remained the main source of pollution in all years.

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