

Let me remind you that the Sverdlovsk region ranks 5th in Russia in terms of population (4.3 million people) and, due to its size, ranks 44th in terms of population density (22.2 inhabitants per 1 km²). In the north of the region, the density is low - up to 0.3 inhabitants per 1 km², in Ekaterinburg the density is more than 3,000 inhabitants per 1 km². Population density is one of the factors influencing the spread of infectious diseases, including those caused by new coronavirus COVID-19 infections. More than 90% of patients with COVID-19 are residents of the capital of the Sverdlovsk region - the city of Ekaterinburg.

As of 30 June 2020, a total of 12,792 cases of COVID-19 disease had been detected in the Sverdlovsk region since 17 March 2020, of which 276 cases per day as of 30 June 2020;

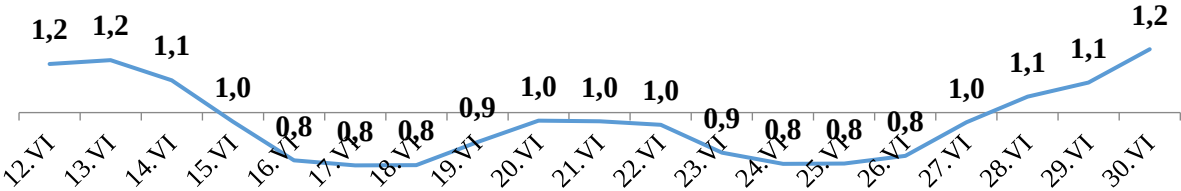
As of June 30, a total of 7,459 patients had been discharged;

There were 95 deaths from COVID-19, 2 of which were reported in the last 24 hours

The spread rate of the infection, calculated as the average number of people infected with one patient before isolation, was 1.2 by 30 June.

Coronavirus prevalence rate in the Sverdlovsk region

Chart



This coefficient fell twice below 1.0 during June and then rose again. This can be partly influenced by the warm weather, when the population leaves the house for walks, socialization and spending time together.

A total of 40,618 contacts with patients with new coronavirus infections are under medical supervision in the region, of which 18,676 are children.

32,877 contacts (81%) are observed by medical facilities in Ekaterinburg and 7741 contacts (19%) are observed by regional medical facilities in other cities.

Of the observed contacts, 4684 are first-order contacts, of which 1725 are children.

Private laboratories can determine the level of antibodies to the COVID-19 virus in healthy citizens. To date, 5 large laboratory networks have performed 12,987 studies using an enzymatic immunosorbent assay and determined the presence of antibodies in 808 people, leaving 6.2%. Thus, it can be assumed that up to 6.2% of the Sverdlovsk region population is immune to the new coronavirus infection COVID-19. If we draw an analogy with the flu virus, the likelihood of an influenza epidemic is virtually ruled out in the presence of immunity in 30% of the population. In our case, we see that the collective immunity in the population is insufficient, only 6%, which will not allow us to avoid an epidemic when all restrictive measures are lifted.

According to our estimates, the following are currently the most effective ways to organize medical care:

- 1) creation of conditions for independent isolation of people older than 65 years who are at risk in case of COVID-19 infection.

In the Sverdlovsk region, trips and accommodation are allowed in summer cottages and personal land, where there is a large number of elderly people in summer. People over the age of 65 living in cities are supported by student volunteers who bring food, medicine and help solve other issues so that people can monitor isolation. In the region, a remote declaration of electronic incapacity for work was organized for workers over the age of 65.

- 2) reduction of the number of personal contacts at the clinic due to the development of remote (non-contact) medical assistance to the population using telemedicine technologies. In the 1st quarter of 2020, 7734 telemedicine consultations took place, of which 7601 consultations for the doctor-doctor type and 133 consultations for the doctor-patient type. In the 2nd quarter of 2020, 10,690 telemedicine consultations took place, including consultations of doctor-physician type 9435, type of doctor-patient - 1,255 consultations. In addition, 3 remote counseling centers for adults, children and pregnant women have been set up for the diagnosis and treatment of COVID-19 and pneumonia, which advise doctors and patients in intensive care.

In addition, some patients with asymptomatic and mild COVID-19 have the ability to isolate themselves at home and their health and movement are monitored using a special mobile phone given to the patient by a clinician. Using this phone, the healthcare professional makes video calls and keeps a diary of the patient's health, and the region's informatization department monitors the patient's movement and adherence to the isolation regimen.

As an express diagnosis of pneumonia, including a diagnosis of COVID-19, computed tomography is used in specially designed outpatient CT diagnostic centres, where patients with suspected pneumonia are delivered either by ambulance crews or by vehicles assigned to the clinic. COVID-19 laboratory diagnostic material is collected from all individuals with pneumonia.

All patients with severe pneumonia COVID-19 are subject to specially organized 39 infectious hospitals with a total capacity of more than 6,000 beds. Patients with a mild and asymptomatic course as well as recovering patients are sent for the purpose of isolation and medical supervision to temporary places of residence to organized 14 hotels, resorts and recreation centres with a total of more than 1,200 beds. Healthy citizens coming from other countries are isolated for two weeks in 2 observation facilities with a capacity of 400 seats.

In order to reduce the risks of introducing COVID-19 into hospitals, a CT scan of the lungs (if there are signs of acute respiratory viral infections) is carried out for patients coming for specialized care. An express test for antibodies to COVID-19 - a nasopharyngeal swab - is taken to perform PCR for COVID. Before receiving PCR results, the patient is in an isolated room.

The most effective treatments for patients with COVID-19 were as follows:

1) Combination of dexamethasone and tolicizumab with active disease development;

2) Connection to the fan only as a last resort, if

other treatments are ineffective and the condition worsens.

3) Non-invasive mechanical ventilation and high flow ventilation are preferred because the secondary hospital flora joins invasive mechanical ventilation and the prognosis of the outcome of the disease worsens.

4) Patients are forced to move on their feet for at least 3 hours a day, lie on their stomachs (abdomen) and breathe pure oxygen for prophylactic purposes (oxygen therapy).

5) Plasma obtained from patients who had COVID-19 and high levels of antibodies was used for experimental purposes. The condition of the patients infused with this plasma improved.

The Sverdlovsk Region is interested in cooperating with Czech and European physicians in resolving the global COVID-19 pandemic in the following areas:

- 1) Regular exchange of information on effective methods of treatment, vaccination against COVID-19;
- 2) telemedicine consultations on practical issues for the treatment of patients with COVID-19, including patients with mechanical ventilation;
- 3) Exchange of information on new COVID-19 express diagnostic methods that have high accuracy and reliability.