

COVID-19 GEORGIA

COVID-19 Report of the National Center for
Disease Control and Public Health

2020-2021

The-8th
Revision

TBILISI 2022



საქართველოს ჯანდაცვის
მინისტროს ეპიდემიოლოგიური
სამსახური, ეპიდემიოლოგიის
და სოციალური ფაქტორების
სამსახური



დაავადებათა კონტროლისა და
საზოგადოებრივი ჯანმრთელობის
ბერძნული ცენტრი
GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH



საქართველოს ჯანდაცვის
დადამცავი და ადამიანთა
რესურსების სამსახური



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Introduction

The pandemic caused by the novel coronavirus (SARS-CoV-2) is humanity's greatest challenge and the modern global health crisis faced by the entire world today. This is the third coronavirus outbreak in the XXI century, when the human-to-human transmission of the infection occurred. The origin of the virus is linked to the city of Wuhan in the Chinese province of Hubei which by the end of 2020 reached all continents. The WHO assessed the situation as a public health emergency of international concern on January 30, 2020, and as a pandemic on March 11.

As of January 1, 2022, worldwide:

- More than 280 million people were infected, of which 87,637,636 in the Europe
- More than 250 million people recovered
- More than 5 million people died, including up to 1.5 million in the Europe
- Up to 9.43 billion doses of vaccines have been administered.

The novel coronavirus pandemic was followed by a joint, health and socio-economic crisis. Each country, in addition to the loss of people, is experiencing the negative effects caused by the spread of the virus, which will leave unfavorable consequences for a long time. In 2022, the third year of the pandemic, the economic and social impacts of COVID-19 still represent a critical threat to the world. Inequality in provision of COVID-19 vaccine to population puts countries in an uneven conditions and deepens the risk of delaying economic recovery, leading to a number of geopolitical difficulties. Dealing with the pandemic requires a complex effort, which implies an unprecedented mobilization of the population, governments, science. However, existing inequalities jeopardize the multinational, complex, unified response needed to address existing challenges, and make it difficult to achieve the coordination needed to address pre-pandemic problems such as climate change, poverty alleviation, migration control, better access to healthcare, security and etc.

The first COVID-19 case in Georgia was confirmed on February 26, 2020. However, the country started preparing for the epidemic at an early stage:

- In early January 2020, the National Center for Disease Control and Public Health submitted full information to the Ministry of Health on the ongoing unusual pneumonia outbreak in China and immediately equipped the Emergency Operation Center to respond to public health threats;
- On January 28, 2020, the Interagency Coordination Council was established, which developed and implemented a set of measures to enable the country to prepare and respond;
- Decree N164 of the Government of Georgia On Approving the Measures to Prevent the Possible Spread of Novel Coronavirus in Georgia and the Operational Response Plan to Respond to Cases of Novel Coronavirus Diseases was issued;
- Air traffic with China was suspended and thermal screening at airports began;
- The diagnosis of a novel coronavirus (COVID-19) infection was approved and the country moved to active surveillance;
- The testing started at the Richard Lugar Laboratory, which was later expanded to include a powerful laboratory-diagnostic network working on public-private partnership principles;

Risk communication was activated, video lectures and educational materials were replicated;

- A desk exercise was conducted with members of the Coordinating Council and the other participating agencies;
- Various methodological recommendations and protocols have been developed;
- The COVID
- -19 clinical management capacity (network of specialized hospitals and beds, clinical hotels and isolation facilities, online clinics and outpatient management centers, hotline networks, and etc.) has been gradually expanded and developed.

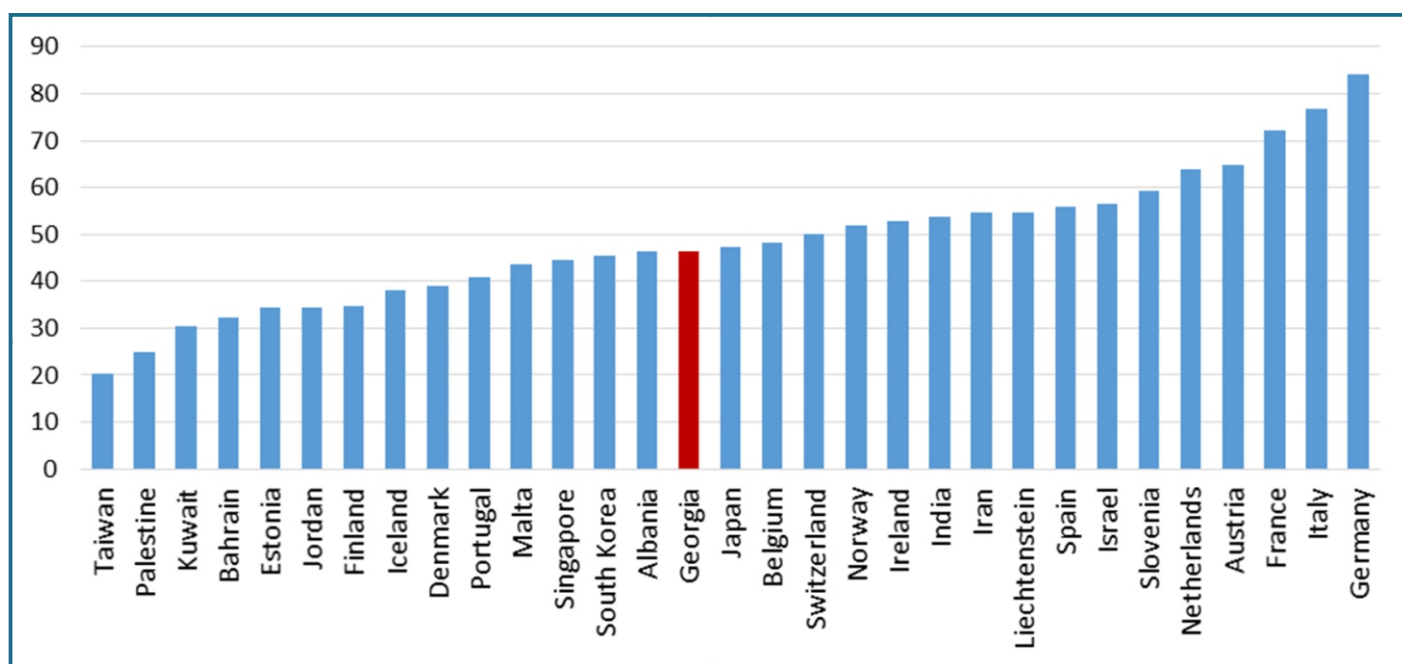
Since the first confirmed case to date, the priority of the government and the country has been the organized management of the pandemic, its constant monitoring and control. During the pandemic, the country intensively implements anti-epidemic measures (detection, isolation, surveillance and tracing), expands the capacity for testing, constantly monitors the quality of performed tests. Significant supply of COVID -19 vaccines is provided and it is universally available for the population. The measures needed for vaccination intensification are being gradually developed. In addition, treatment and medical supervision protocols are updated, and internationally authorized medications are introduced. Seroprevalence studies are being conducted for analyzing the spread and necessary modeling is performed for the analysis of possible epidemic scenarios, risk communication is activated, preventive measures are provided and their implementation is monitored (wearing a mask, social distancing, observance of sanitary – hygiene rules, refraining from attending crowded places, limited number of participants in the meeting, etc.), various restrictions are set from time to time, which aim to reduce mobility and slow down the disease transmission. All confirmed cases are medically monitored (inpatient facilities, special COVID hotels, primary healthcare/outpatient surveillance in isolation conditions, fever centers, respective online services, COVID application and etc.) and various electronic information management systems of COVID-19 have been developed/expanded. “Healthcare Sector Capacity Building and Emergency Preparedness for the Next Waves of COVID-19. Healthcare Sector Action Plan 2020-2021” has been developed with donor support. Currently, updated response plan for 2022 is being drafted with the participation of experts.

Georgia, like other countries, is learning cohabitation with COVID-19, gradually updating and changing the recommendations. Tight restrictive measures, which were taken in the early stages of the pandemic due to the unexplored characteristics of the virus, have been replaced by relatively light, local measures that, in terms of targeting, place less burden on the economy and the other sectors. The Oxford University researchers in the framework of the "Oxford COVID-19 Government Response Tracker (OxCGRT)" project, based on information from 180 countries, are evaluating the activities carried out by governments against the COVID -19 pandemic since January 1, 2020. For this purpose, the so-called "Stringency Index" was designed, calculated on the basis of many indicators, including the closure of schools, job closures, cancellation of public events, restriction of public gatherings, stoppage of public transport, stay at home requirement, conducting public outreach campaigns, restriction of internal mobility, international travel control, vaccination and more. The index is measured on a scale from 0 to 100 units (100 corresponds to the most stringent measures). The Stringency Index does not measure or reflect the appropriateness or effectiveness of a country's response to the COVID -19 pandemic and only describes the difference in government policy activities at the national and local levels. The current situation as of January 1, 2022 is shown on Figure 1.

The Eighth Revision



Figure 1. Evaluation of Activities against COVID -19 Pandemic (Stringency Index), 01.01.2022



Source: Oxford COVID -19 Government Response Tracker OurWorldInData.org/coronavirus CC BY

One year after the epidemic start, scientists developed a vaccine against COVID-19. Currently, the vaccination represents the main weapon in fighting the virus, and according to the scientific evidence available worldwide, vaccines together with the other preventive measures are the most important means against pandemic with their benefits far outweighing the possible risks. World Health Organization developed a target indicator, according to which, globally, all countries should be able to vaccinate at least 70% of their population in the first half of 2022 to take pandemic management to a new level and gradually recognize it as an endemic infection. The National COVID -19 Vaccination Program was launched in Georgia on March 15, 2021, for which intensive preparations had been underway since the fall of 2020. For continuous implementation of the program, the country joined the COVAX platform and in parallel intensive communications started with vaccine producer companies, negotiations have been held via diplomatic channels with the governments of different countries on the supply and sharing vaccines, and the national vaccination program has been supported by the international organizations. In the fall of 2020, the Interagency Coordinating Committee, chaired by the Minister of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs, developed the "Georgia COVID -19 Vaccine National Deployment Plan". The preparation of the plan was coordinated by the National Center for Disease Control and Public Health. In addition, a group of experts was mobilized and involved in the process with the support of donors. At the current stage, the plan is being updated and the targets are being revised in accordance with the existing reality. The government mobilized 5,034,500 doses of 4 vaccines authorized by WHO throughout 2021. The government introduced a number of incentives, including monetary one for old-age group and booster dose administration, to improve the vaccination coverage of the population. Various campaigns and special events were held, e.g. the "Vaccination Marathon" and etc. to improve the involvement of remote regions.

According to data as of January 27, 2022, in total 2,686,220 doses have been administered in the country, with at least one dose given to 1,327,689 individuals (46.2% of the adult population), of which 1,215,005 (42.3% of the adult population) have been fully vaccinated. The booster dose is currently administered to 141,319 people.

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Georgia, like most countries, has gone through several cycles of increase and decline of new cases since the beginning of the pandemic. The waves generated by the increase in the number of infected individuals are caused by the spread of new, mutated variants and the premature lift of preventive-restrictive measures. Several new mutated strains were circulating globally. The newly emerged variants have different characteristics and behavior, both in terms of transmission and course. Several new variants represent a variant of concern: Alpha / so-called British (B.1.1.7) Strain, Beta / so-called South African Strain (B.1.351), Delta / so-called Indian Strain (B.1.617.2) and gamma / so-called Brazil-Japanese Strain (P.1). The emergence of mutated strains continues, which may be distinguished with the other new features. On November 8, 2021, a new variant of the SARS-CoV-2 virus (B.1.1.529) was first recorded in South Africa, and on November 26, it was given the status of the Variant of Concern and named Omicron. It has the ability to reinfect and escape immunity, which at some extent changed the trajectory of the pandemic and the response developed by the countries. Since December 2021, the number of infected people worldwide has increased dramatically, with new cases doubling at an average of 3 day-interval. The number of globally registered daily new cases went beyond the 1 million mark and is ranging within 2-3 million, determined by more rapidly spreading mutated strain. Omicron has a similar prevalence in Georgia and a sharp increase in new cases since January 2022 was noticed, reaching a fairly high level on certain days (11,039 laboratory-confirmed cases were registered on January 21, 15,762 laboratory-confirmed cases on January 24 and 17,530 laboratory-confirmed cases on January 26). All epidemiological parameters have deteriorated, including incidence rate, reproduction index, testing positivity rate, and the number of infected sharply increased among the younger age groups. Omicron is becoming the circulating dominant strain fairly quickly. However, in parallel with the rise in new cases, hospitalization is not increasing at the respective rate and also, mortality is not growing. Analysis of these indicators shows that another new wave of infection has begun to rise in the country, which will reach its peak in Georgia in February 2022 according to the number of projections (The Institute for Health Metrics and Evaluation, University of Washington, IHME), however on the most critical days, the cases identified through daily testing will reach 15-20 thousand. Despite the relatively light course, given the expected scale of the transmission, the situation will place a heavy burden on the health sector and complicate the response against the epidemic. Strict adherence to existing regulations is critical, which requires, on the one hand, constant monitoring of enforcement and, continuous communication with the public and the provision of relevant recommendations on the other. Despite the somewhat reduced effect on Omicron, vaccination against COVID -19 and the administration of an additional booster are the main tools of prevention and protection even in the conditions of this strain.

The National Center for Disease Control and Public Health plays a leading role in Georgia's response to COVID-19. Its representatives are part of the Interagency Coordination Council. The Center's area of responsibility includes the development of preparedness and response measures, epidemiological surveillance of detected and suspected cases, tracing, monitoring, real-time epidemiological surveillance, new coronavirus laboratory diagnostics and compliance monitoring, drafting reference documents, vaccination process, information support, raising public awareness, communication and etc.

This document is a summary report on the epidemiological situation related to the spread of the new coronavirus in 2020-2021 and the measures taken in Georgia (The Eighth Revision). The information contained herein is based on the data obtained within the competence of the National Center for Disease Control and Public Health. All figures are presented in the document for the reporting period unless otherwise specified.



Coronaviruses include a large family of viruses that generally cause mild illness, which is unpleasant to most people, but is self-healing and not life-threatening. However, in some cases, illness can be severe or complicated by bacterial infections such as bronchitis, pneumonia, and etc. Children, the elderly and people with various chronic diseases are at particular risk of developing complications.

Infection caused by seasonally circulating coronaviruses is mainly prevalent during the fall-winter period, although single sporadic cases can be reported throughout the year. Infection is transmitted from person to person through drip and contact.

The emergence of two new coronavirus serotypes in recent decades - SARS-CoV (beta coronavirus, which causes severe acute respiratory syndrome or SARS) and MERS-CoV (beta coronavirus, which causes Middle East respiratory syndrome, or MERS) caused two outbreaks.

SARS is caused by the SARS-CoV coronavirus. It was first discovered in Asia in February 2003, but a retrospective study found that the first case of the disease was reported back in November 2002 in Guangdong Province, China. In total, 8,098 cases were registered in 26 countries, including 774 (9.55%) lethal ones.

Middle East Respiratory Syndrome (MERS) is a respiratory disease caused by the MERS-CoV coronavirus. It was first identified in 2012 in Saudi Arabia and has spread to the Arabian Peninsula and neighboring countries.

Overall MERS-CoV coronavirus was detected in 27 countries, infecting 2,583 people from 2012 to the end of December 2021, including 888 deaths due to infection and related complications, with a lethality rate of 34.4%.

Coronavirus 2, also known as SARS-CoV-2, originally referred to as 2019-nCoV by the World Health Organization (WHO), emerged in December 2019 in Wuhan, Hubei Province, China, and was later officially named as COVID -19. It spread fairly quickly outside China's borders. WHO assessed the situation on January 30, 2020, as the Public Health Emergency International Concern and on March 11 as a pandemic.

This has been the third coronavirus outbreak of the XXI century when human-to-human transmission of the infection and the emergence of a global health problem occurred. COVID-19 is characterized by a high frequency of transmission, in which cases the course of the disease varies considerably in severity - from asymptomatic to fatal. Various factors including age, sex, comorbidity are considered with the current characteristics of COVID-19.

Since the outbreak of the COVID -19 pandemic, countries have launched intensive efforts to combat it, including preparedness and response measures, real-time surveillance, management of new coronavirus laboratory diagnostics, monitoring compliance with standards, epidemiological surveillance over existing and suspicious cases, tracing, recommendations and monitoring for quarantine and isolation and etc.

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The main purpose of COVID-19 monitoring is to reduce its transmission of COVID-19 and associated morbidity and mortality. The objectives of epidemiological surveillance are :

- Testing and rapid detection of cases;
- Monitoring COVID-19 -induced lethality trends;
- Contact identification, tracing and quarantine;
- Detecting and limiting clusters and outbreaks, especially in vulnerable population;
- Manage the implementation and adjustment of targeted control measures to enable safe resumption of social and economic activities;
- Assessing the impact of the pandemic on the health care system and society;
- Monitoring long-term epidemiological trends and evolution of SARS-CoV-2 virus;
- Determination of co-circulation of SARS-CoV-2, influenza and the other respiratory viruses and pathogens..

Comprehensive COVID -19 oversight includes the following key actions:

- Using, adapting and strengthening existing oversight systems;
- Expanding and improving laboratory and testing capabilities;
- Introduction of a contact tracing system;
- Using, adapting and enhancing public health human resources for case investigation, contact tracing, and testing;
- Inclusion of COVID-19 in the list of diseases subject to mandatory notification;
- Immediate reporting.

It is important to maintain routine syndromic / sentinel surveillance for other infectious diseases, especially those caused by respiratory pathogens such as influenza and respiratory syncytial virus, influenza-like illness (ILI), severe acute respiratory infection (SARI), atypical pneumonia, and unexplained fever, which includes taking samples and laboratory examination of all cases and case subgroups.

The Georgian health care system, since the confirmation of the first case of COVID-19, has been monitoring COVID-19 in accordance with the established activities, including contact tracing, laboratory testing and preventive measures to contain subsequent transmission when cases are detected and confirmed. Due to the fact that COVID-19 and the other acute respiratory infections are characterized by similar symptoms, in Georgia, as in other countries, the COVID -19 surveillance system has been integrated into the other acute respiratory infection surveillance systems.

This integrated system is of particular importance when the pandemic and flu season coincide.

Laboratory testing of relevant samples from the bases was routinely performed by the Influenza Laboratory of the National Center for Disease Control and Public Health. This function was later decentralized and the research of influenza, SARS-CoV-2 and other respiratory viruses was conducted in the other laboratories of the Center across the country (Kutaisi, Batumi, Zugdidi, etc.).



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საბჭო COVID-19-ის
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და პრევენციის საკითხებში



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დახმარების ცენტრი
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TESTING

Coverage of the population through testing is one of the main criteria for assessing the prevalence of COVID -19 and pandemic trends in the country. Without valid data on the number of infected, it is impossible to control and assess the epidemiological situation in the countries.

Testing for COVID-19 in Georgia began on January 30, 2020, with the first case reported on February 26.

Until May 2020, testing was performed using only the PCR method, which is considered the gold standard in the COVID -19 diagnostics. It has a high sensitivity and specificity, which minimizes the risk of a false positive (as well as a false negative) result, although a single negative PCR result does not rule out COVID-19, especially if the nasopharyngeal swab is taken in the early stages of the disease. It can be used only in the presence of high-tech laboratory space and highly qualified staff.

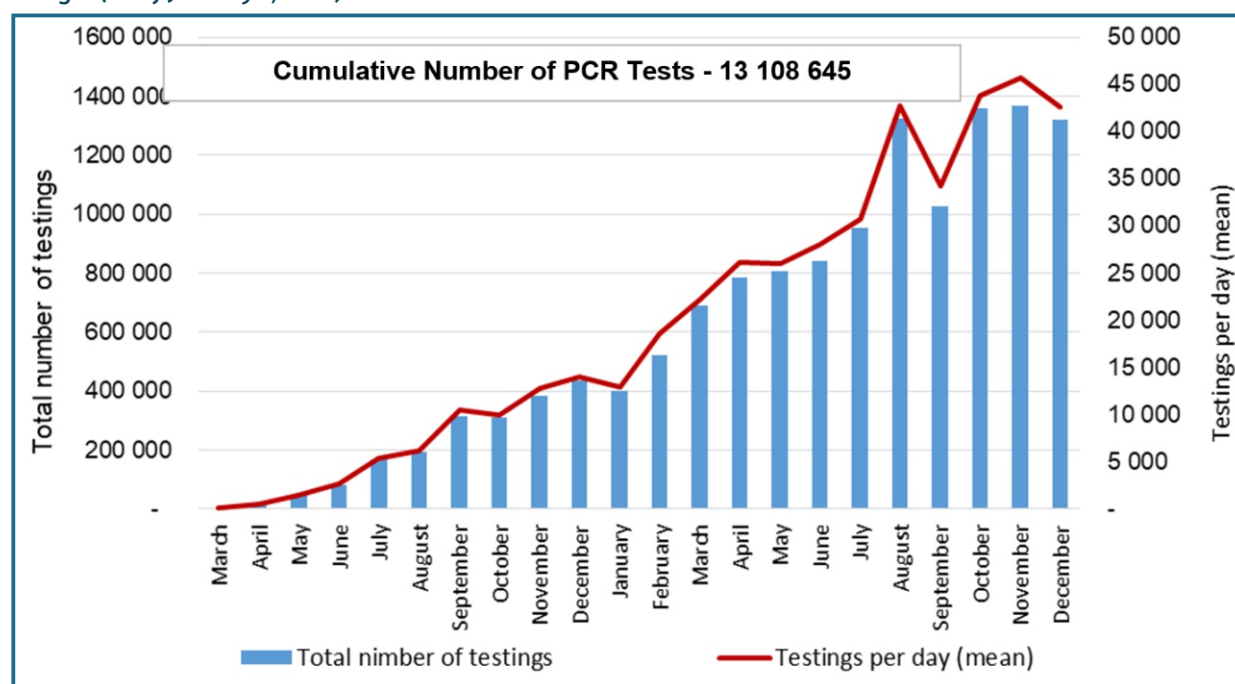
For PCR testing, a nasopharyngeal swab or sputum, bronchoalveolar lavage or respiratory biopsy material is taken, although other materials such as feces / blood / urine / corpse (lung tissue) may be used for PCR testing with special indications.

In May 2020, together with the PCR testing, the country began antigen and antibody-based testing in certain groups, although case confirmation was only possible through PCR testing.

Antigen-based testing with Ag-RDTs test kits, certified by the World Health Organization as having the highest hypersensitivity and specificity, with minimal risk of false-positive or negative results, began nationwide on November 12 to confirm COVID-19 cases.

As of January 1, 2022, the total number of tests performed in the country was 13,108,645 (3,523 tests per 1000 population), including PCR – 5,883,013 and antigen – 7,225,632 tests.

Figure 2. Total and daily average number of tests performed on COVID -19 (PCR and antigen-based), by months, Georgia (as of January 1, 2022)



As of January 1, 2022, per 1,000,000 of population, 1,582,774 PCR tests and 1,943,994 antigen-based tests were conducted.

¹Real-time reverse transcript polymerase chain reaction/ RT-PCR

Figure 3. Total and Daily Number of PCR tests performed on COVID -19 in Georgia (as of January 1, 2022)

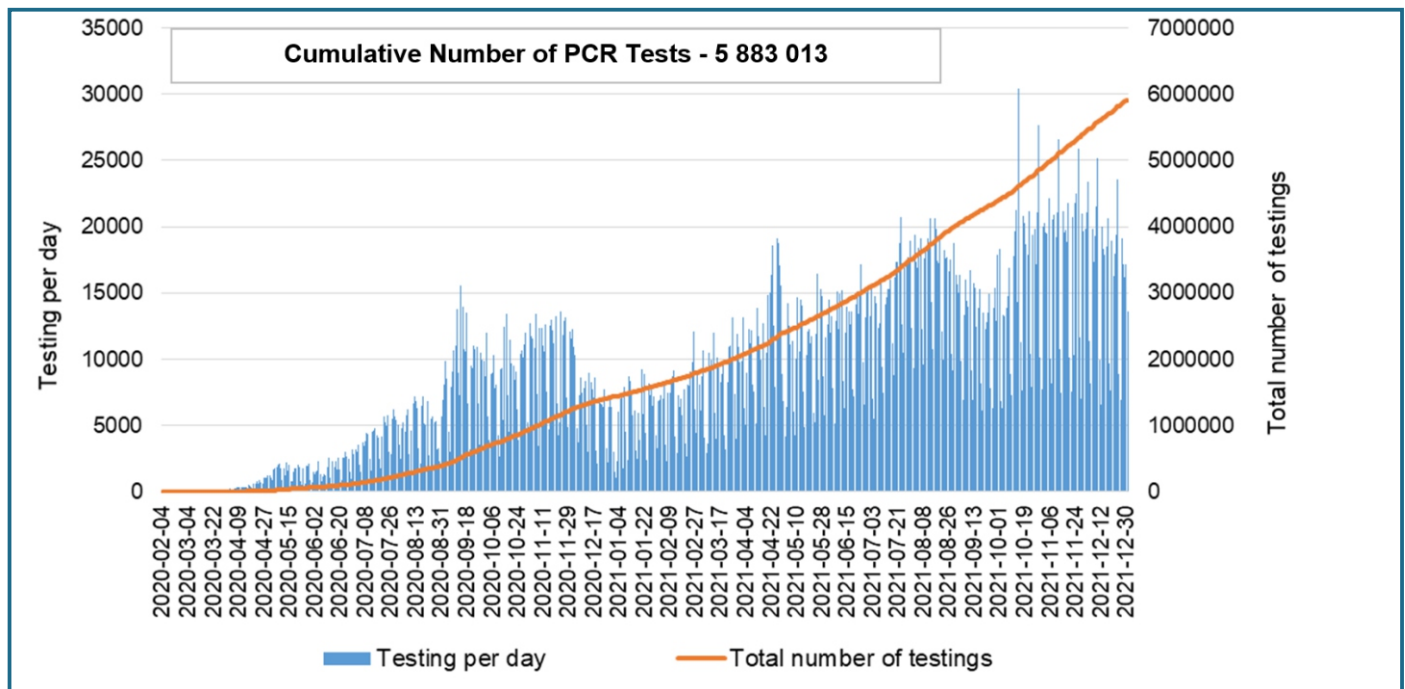
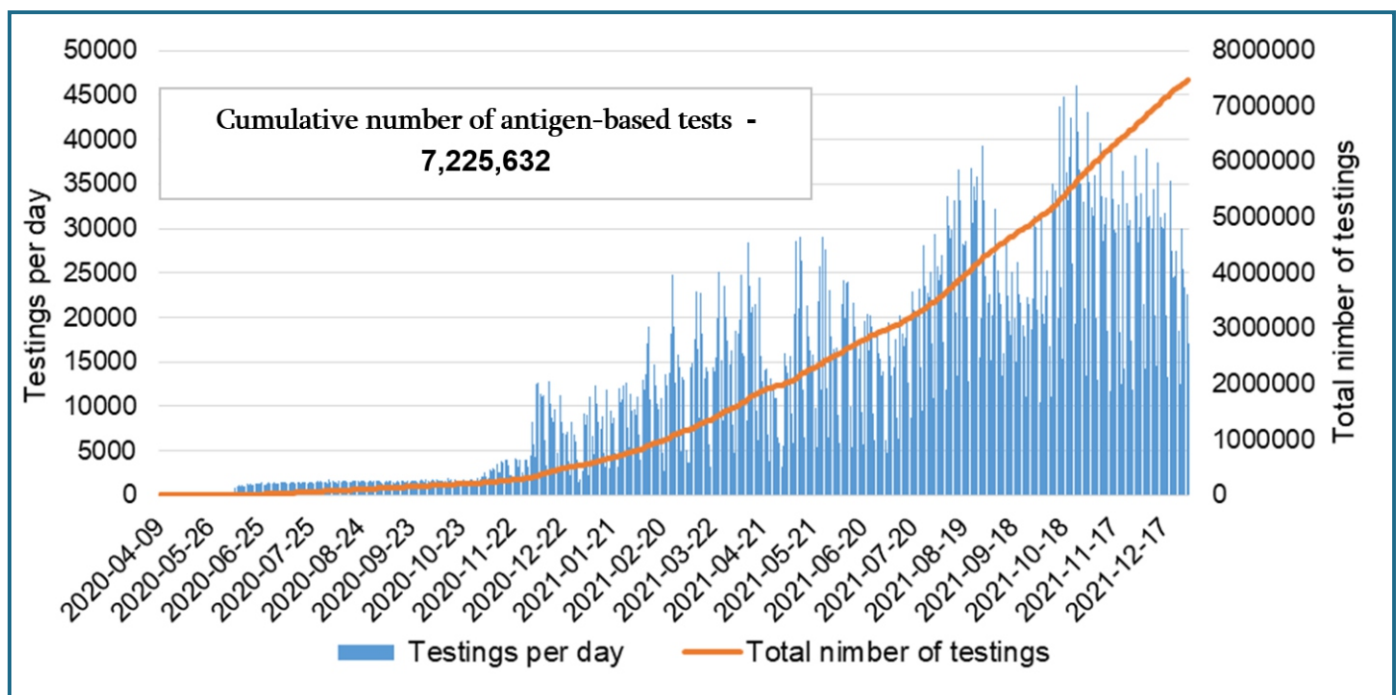


Figure 4. Dynamics of Antigen-based Tests, Georgia (as of January 1, 2022)



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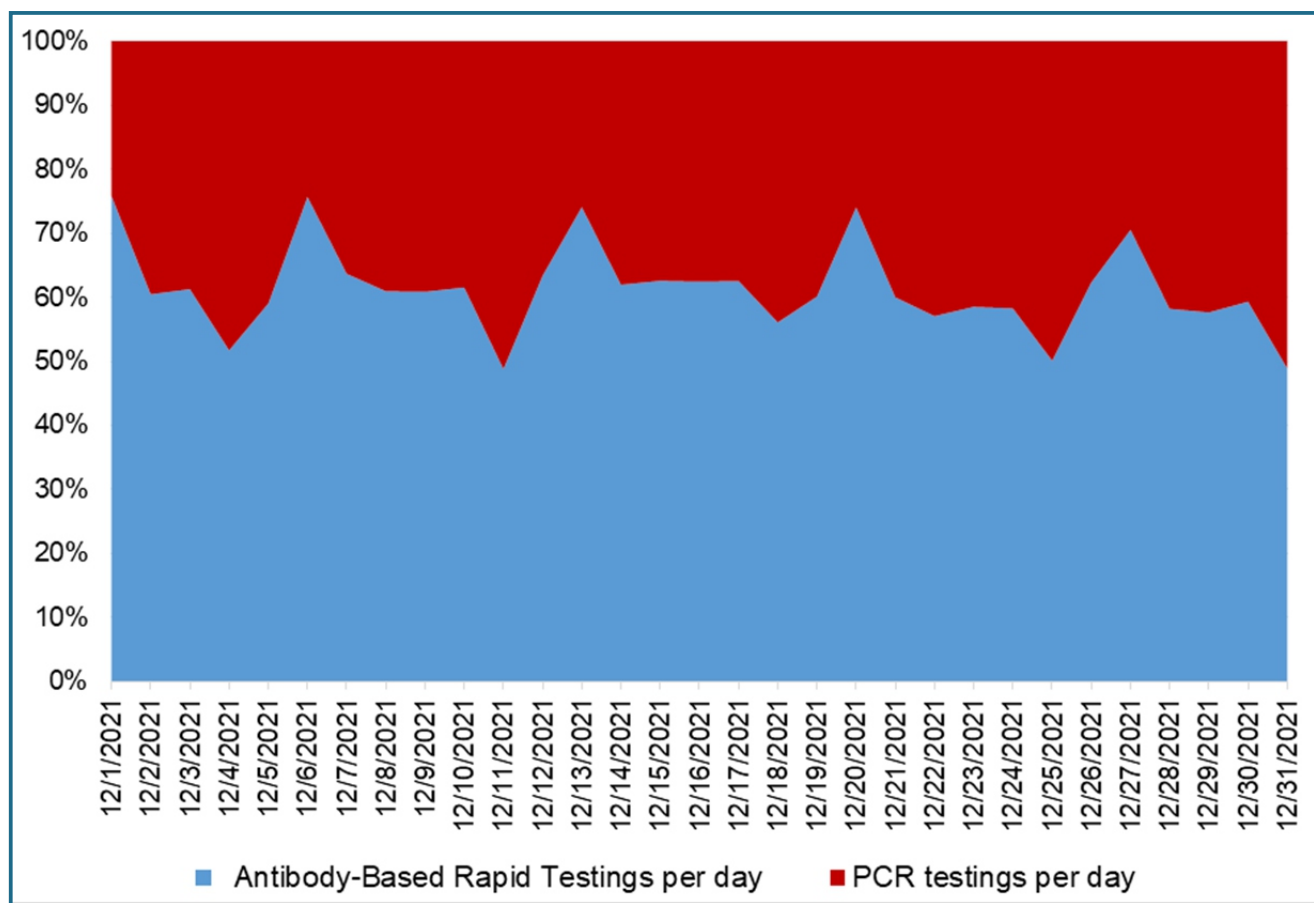


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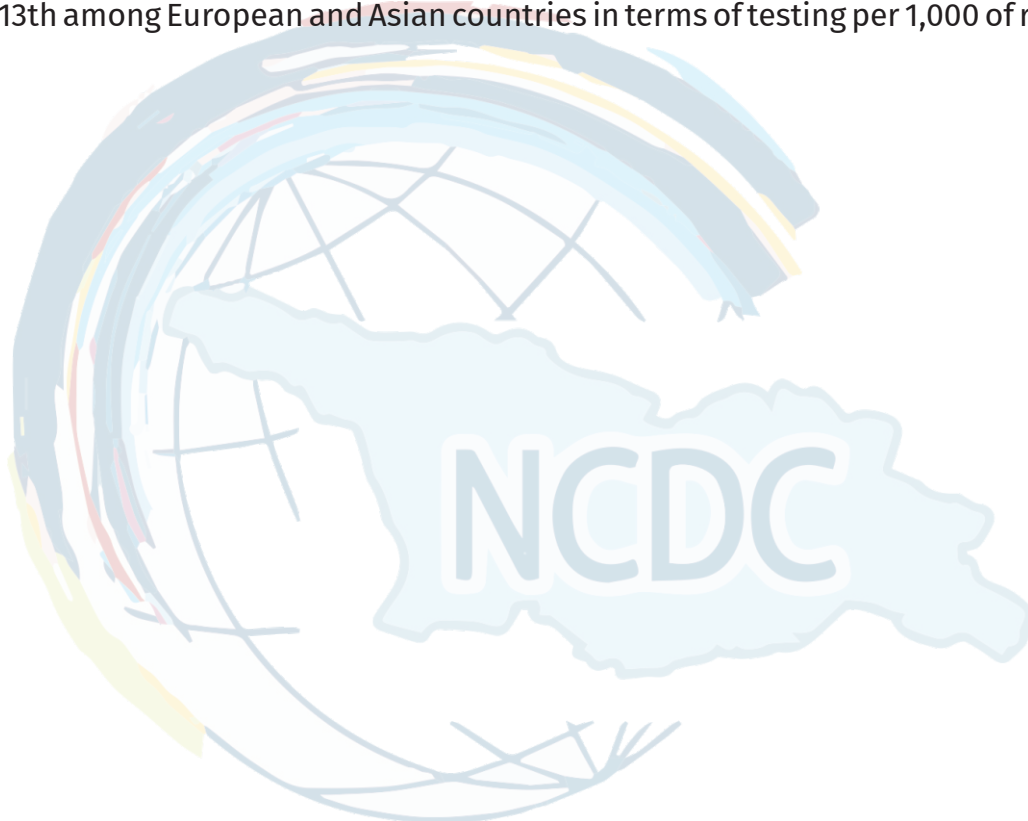


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Figure 5. Daily Share of COVID -19 PCR and Antigen-based Tests, Georgia (01.12.2021 – 01.01.2022)



As of January 1, 2022, a total of 325,785 antibody-based rapid tests have been performed in the country. Georgia ranks 13th among European and Asian countries in terms of testing per 1,000 of residents.



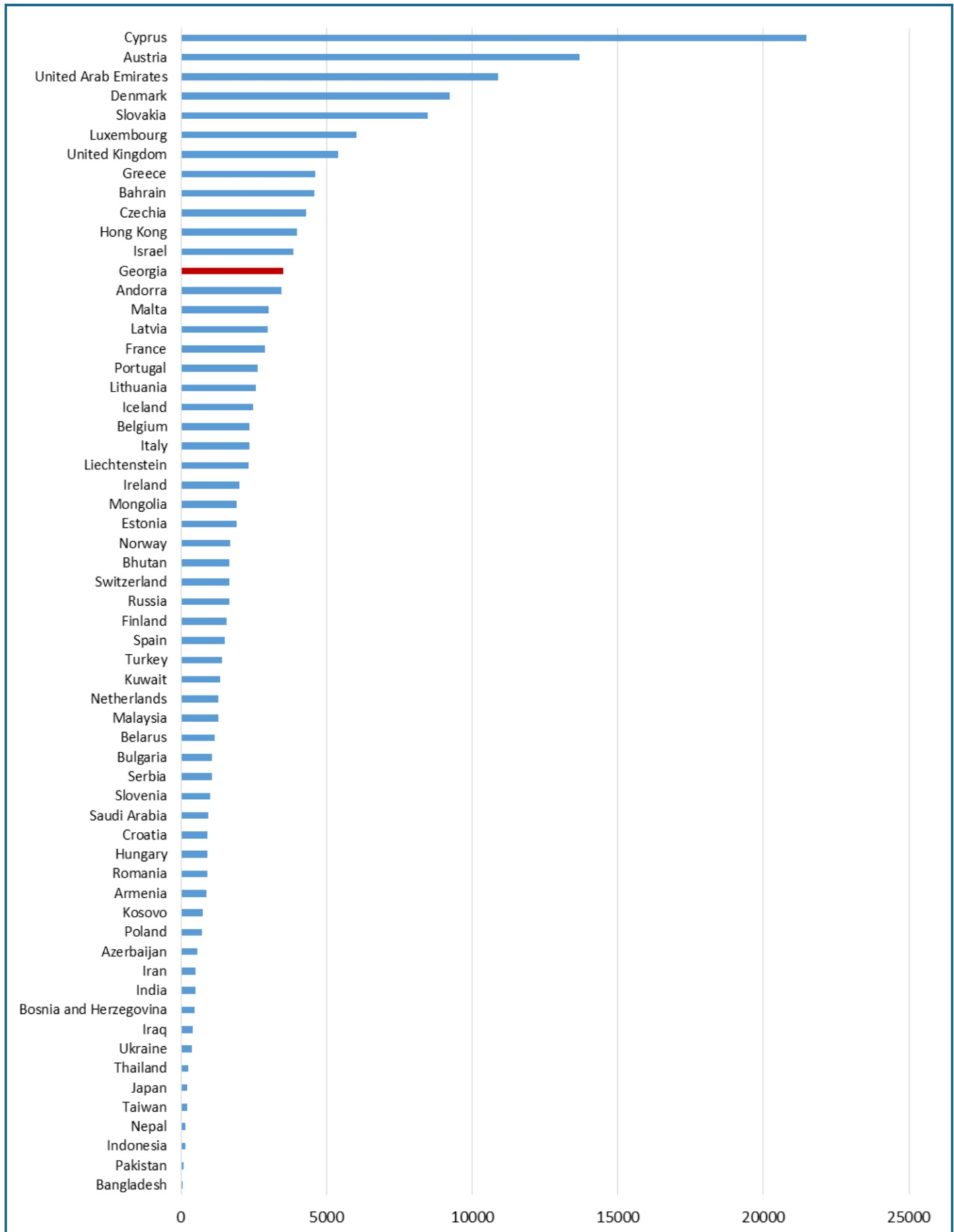


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საზოგადოებრივი ჯანდაცვის

Figure 6. COVID -19 testing rate per 1,000 of population, European and Asian countries (01.01.2022)



source: <https://ourworldindata.org/coronavirus>

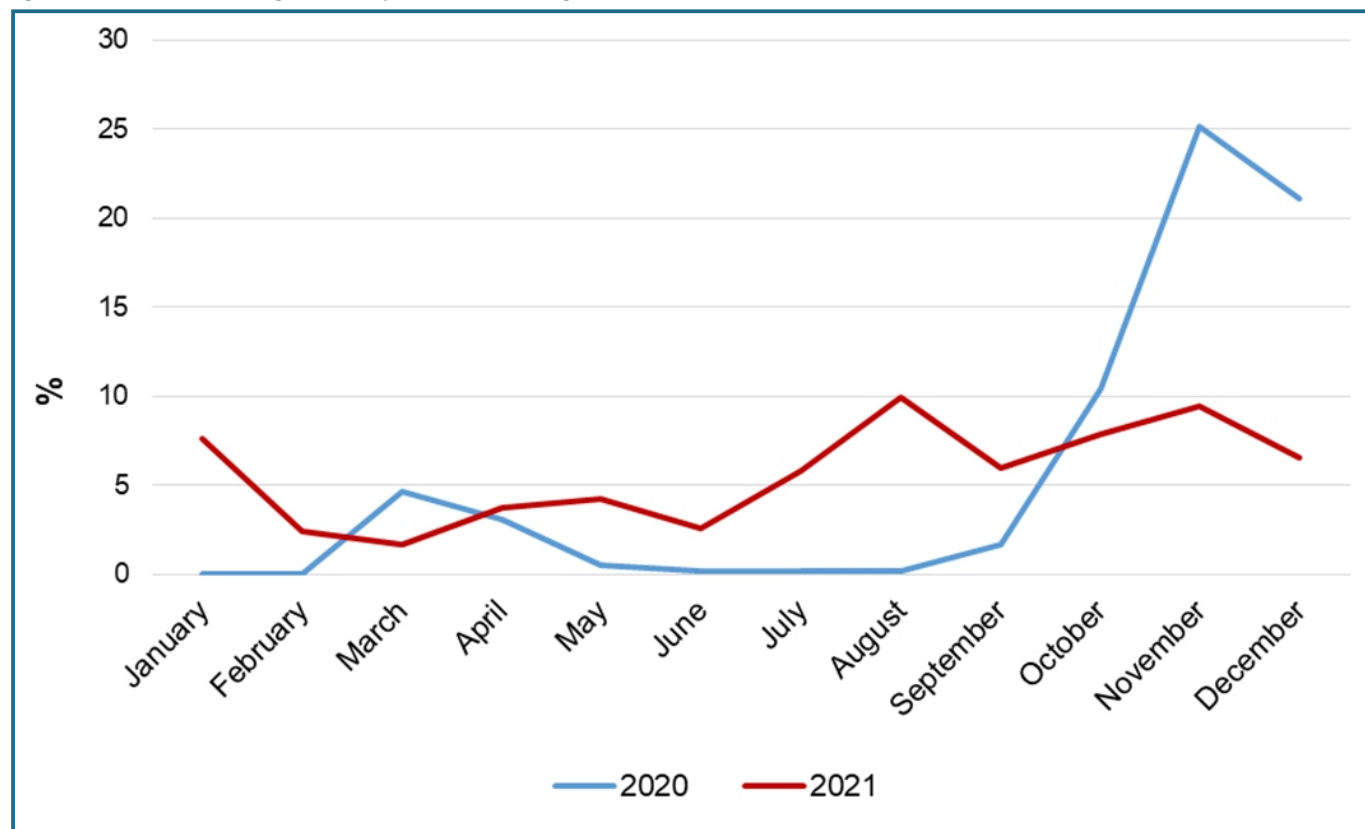
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According to the criteria published by the WHO in May 2020, a testing positivity rate lower than 5% points at the optimal detection of cases and is one of the indicators that the epidemic in the country is under control.

In 2020-2021 the total testing positivity rate in Georgia was 7.1%, with the maximum values of 25.2% in November 2020 and 9.9% in August 2021.

Figure 7. COVID-19 Testing Positivity Rate (%), Georgia, 2020 - 2021



The testing positivity rate as of December 31, 2021 was 6.14%, while the testing positive rate for the last 30 days it equaled 6.5%.

The testing volume with respect to the epidemic is also estimated by the number of confirmed cases, i.e. how many tests are performed in a country to detect a single case of COVID-19. According to the WHO recommendation, approximately 10-30 tests per confirmed case are taken as an adequate test rate. The ratio of the number of tests conducted in Georgia to the number of confirmed cases is 14 and meets the recommended standard.

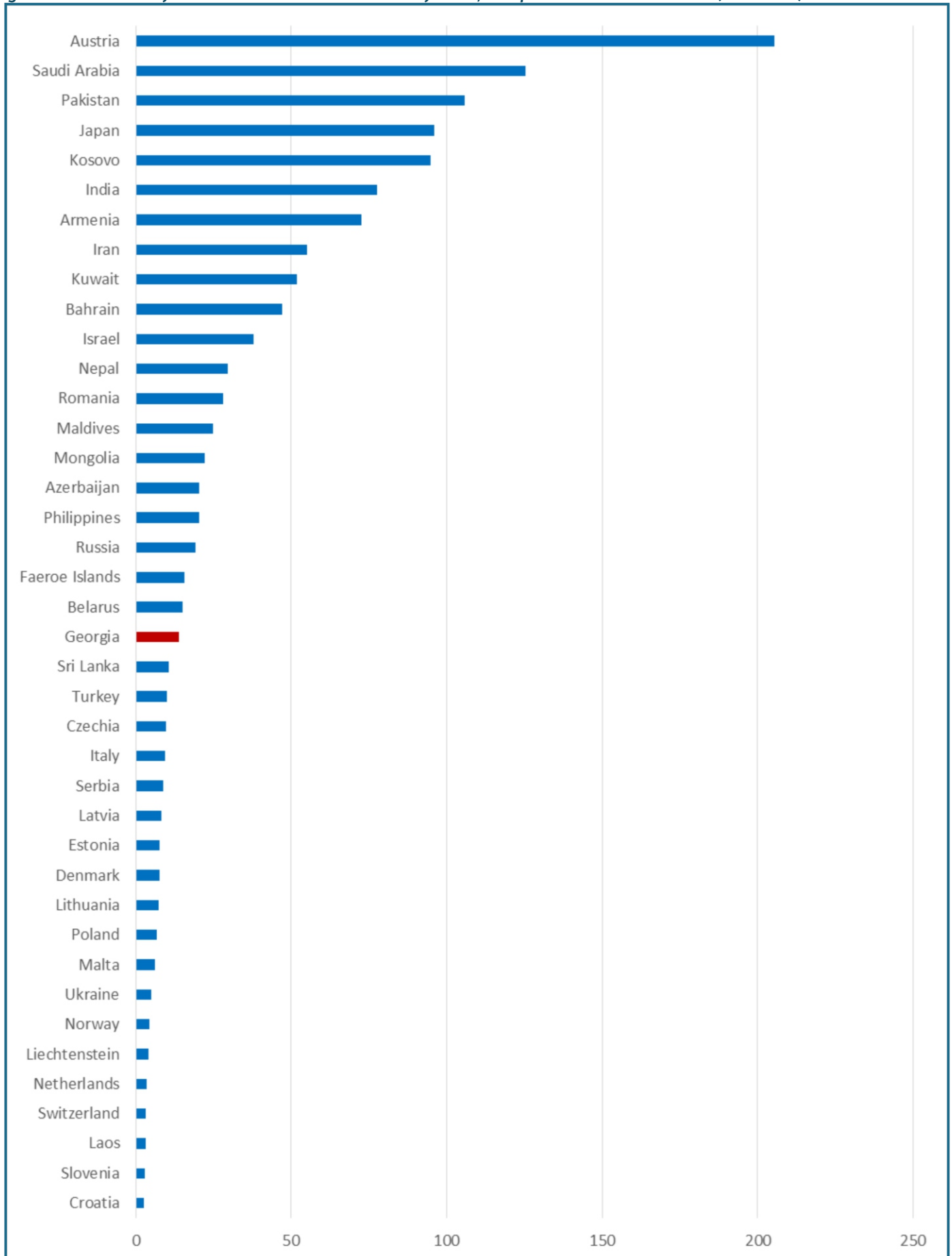


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სამსახური



საქართველოს ჯანდაცვის
მინისტრო
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საბჭოს განყოფილება

Figure 8. Correlation of COVID-19 tests with the number of cases, European and Asian countries (01.01.2022)





COVID - 19 RELATED MORBIDITY

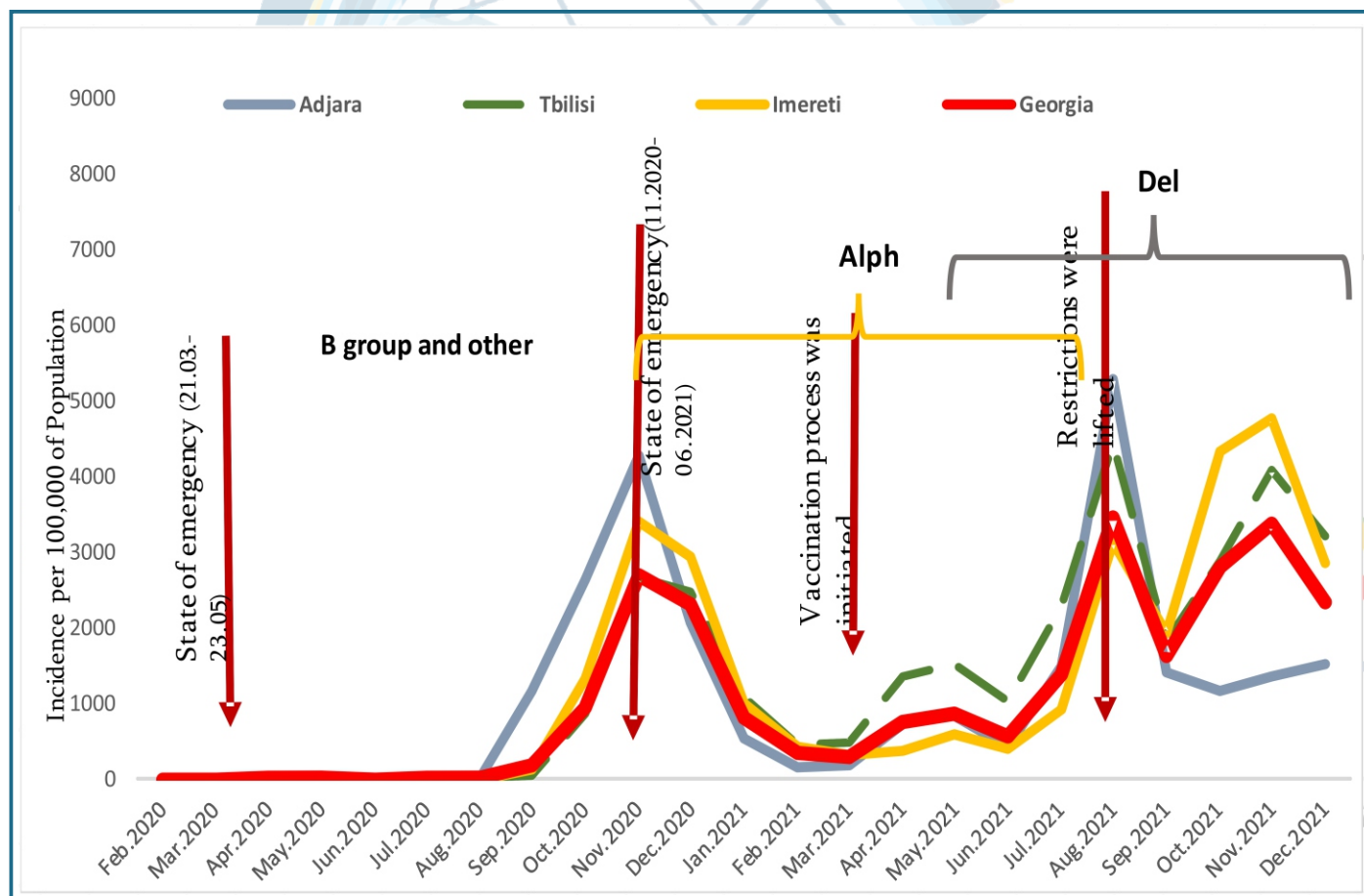
As of January 1, 2022, the cumulative number of confirmed COVID-19 cases in Georgia was 936,844, including 228,410 cases registered in 2020 (incidence per 100,000 of population - 6135.6), and 708,434 in 2021 (Incidence per 100,000 of population - 19 000,0). As a result of relatively strict regulations and restrictive measures introduced in Georgia, the situation remained calm until mid-September 2020, with a minimum number of confirmed cases and deaths (as of September 30, 2020, 6,640 people tested positive for COVID-19 and 39 died).

Against the background of lifting restrictions, increased mobility during the summer holiday season and pre-election and post-election periods and non-compliance with regulations, the number of cases in all regions of Georgia peaked in November. Disease at that time with high probability was caused by the primary variant of SARS-CoV-2.

Large-scale restrictive measures were introduced at the end of November 2020, and a declining trend began in January 2021. Although the Alpha variant got spread since February 2021, low morbidity rates have been maintained in the country amid restrictive measures. The Delta variant appeared in the country at the end of May 2021, with the sequential ease of restrictions being followed by their complete removal from July 1. The Delta variant became fully dominant from August through December 2021.

The sharp increase in cases started in late July 2021 and peaked in August due to the spread of the Delta variant, the low rate of COVID-19 vaccine coverage, and the lift of restrictive measures in the country.

Figure 9. Incidence of COVID-19 per 100,000 population in Georgia and some regions (Adjara, Imereti, Tbilisi) Georgia, 2020-2021





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In 2020 and 2021, a high (higher than the average country incidence) cumulative incidence of COVID-19 (per 100,000 of population) was observed in Adjara, Imereti and Tbilisi.

Figure 10. Cases of COVID-19 by Gender, Georgia, 2020 -2021

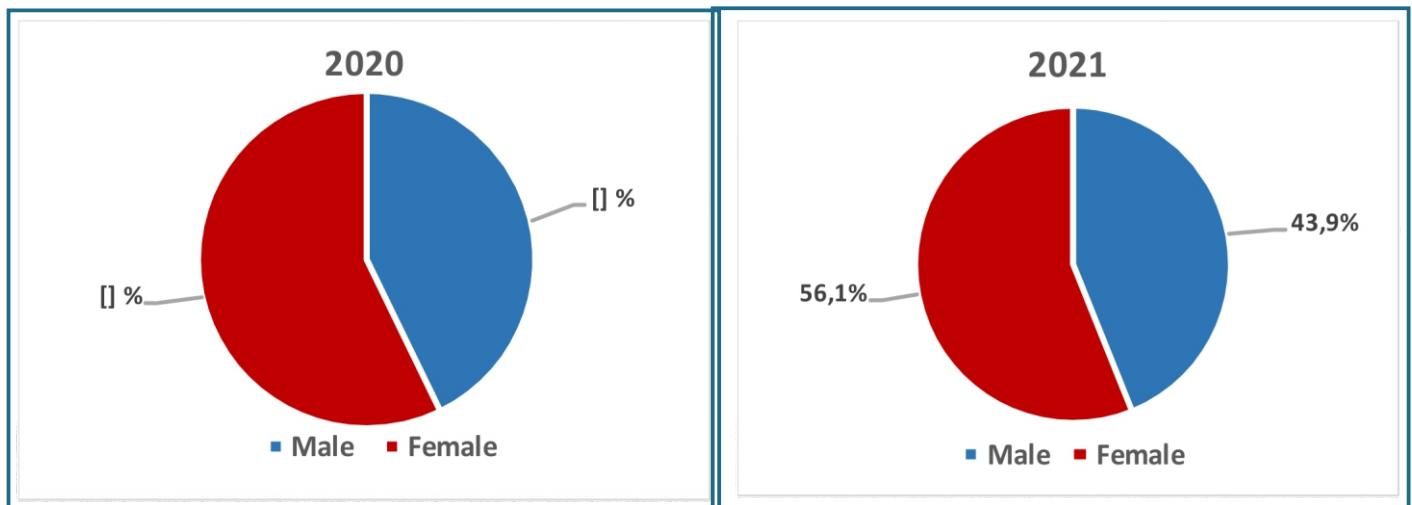
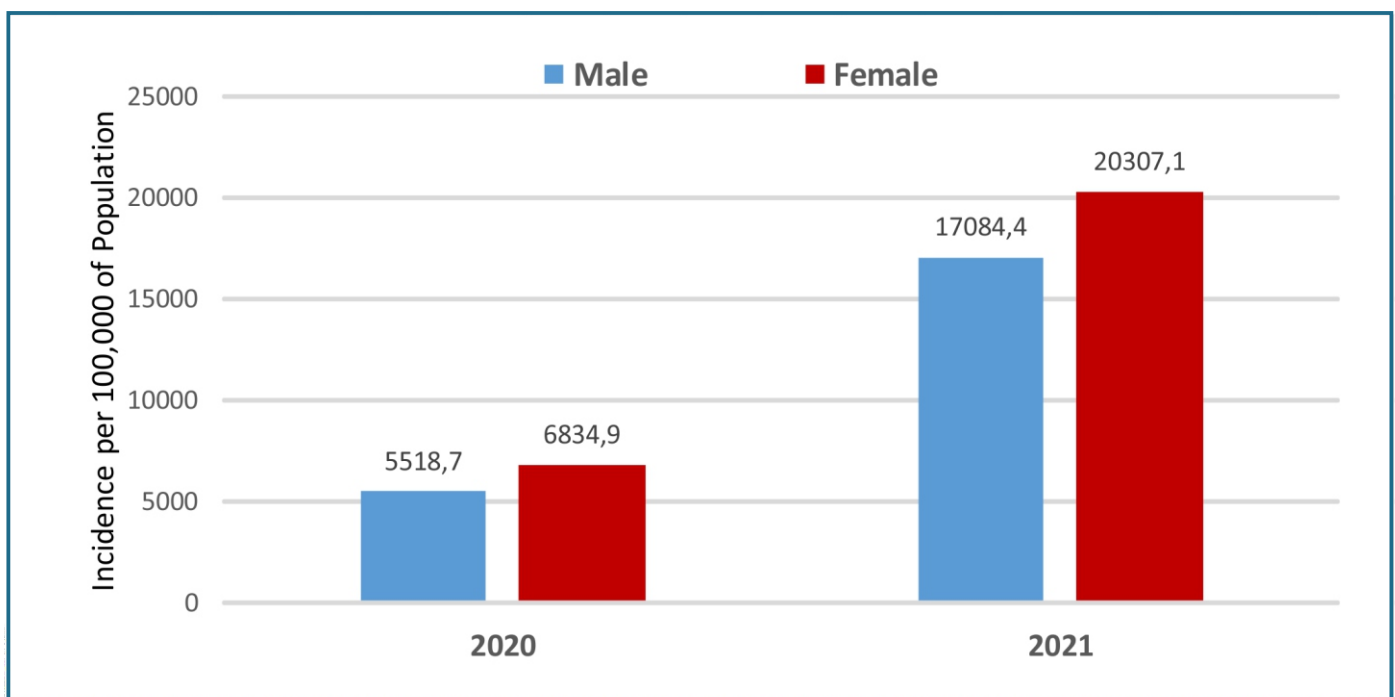


Figure 11. Incidence of COVID-19 per 100,000 of population by Gender; Georgia 2020 - 2021



In 2020 and 2021, the number and incidence of COVID-19 cases per 100,000 of population were higher in females than in males.

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მხარდაჭერის ჯგუფის მიერ



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მხარდაჭერის ჯგუფის მიერ

Figure 12. COVID-19 age-specific incidence per 100,000 of population, Georgia, 2020-2021

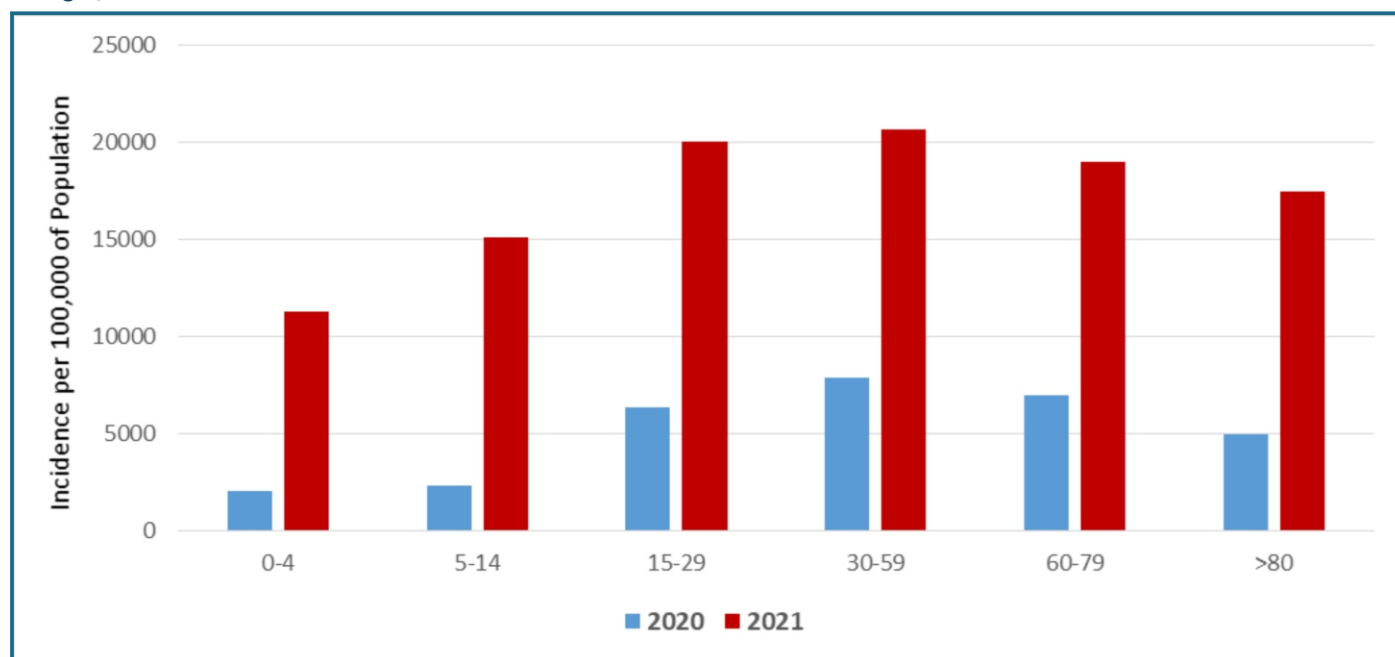
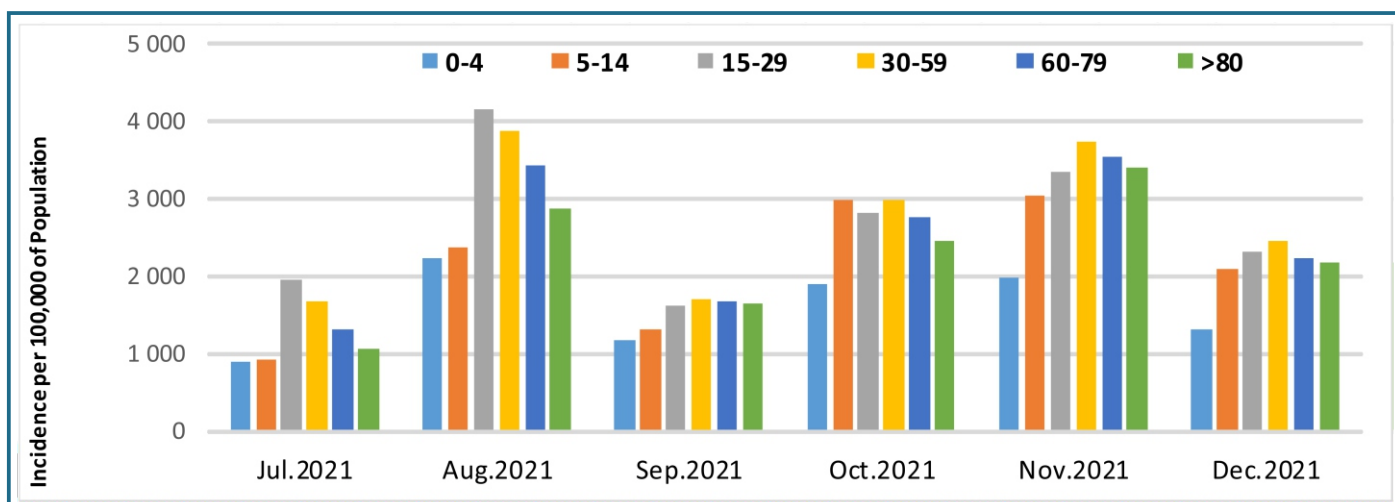
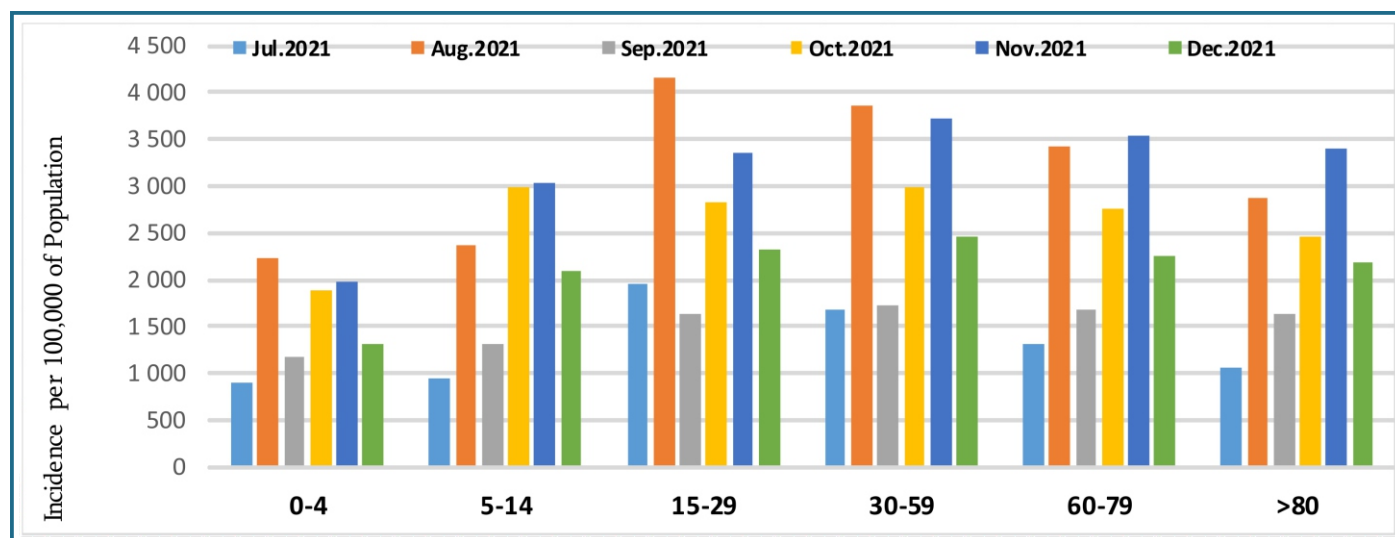


Figure 13. COVID-19 age-specific incidence per 100,000 of population, Georgia, July-December, 2021





Incidents by age groups repeat the situation in the country. It should be noted that in August, the 15-79- year age group was the most affected, to which 80+ group was added in November and reached the peak morbidity rate for this group. As for the morbidity in the age group of 0-14 years, October-November was the peak period for this age group as well due to the activation of educational processes (schools and kindergartens were switched to classroom teaching). For young adults (15-29 years old) August was peak, which was associated with high mobility during the summer (holidays).

Figure 14. COVID-19-induced lethality and COVID-19 incidence, Georgia 2020-2021

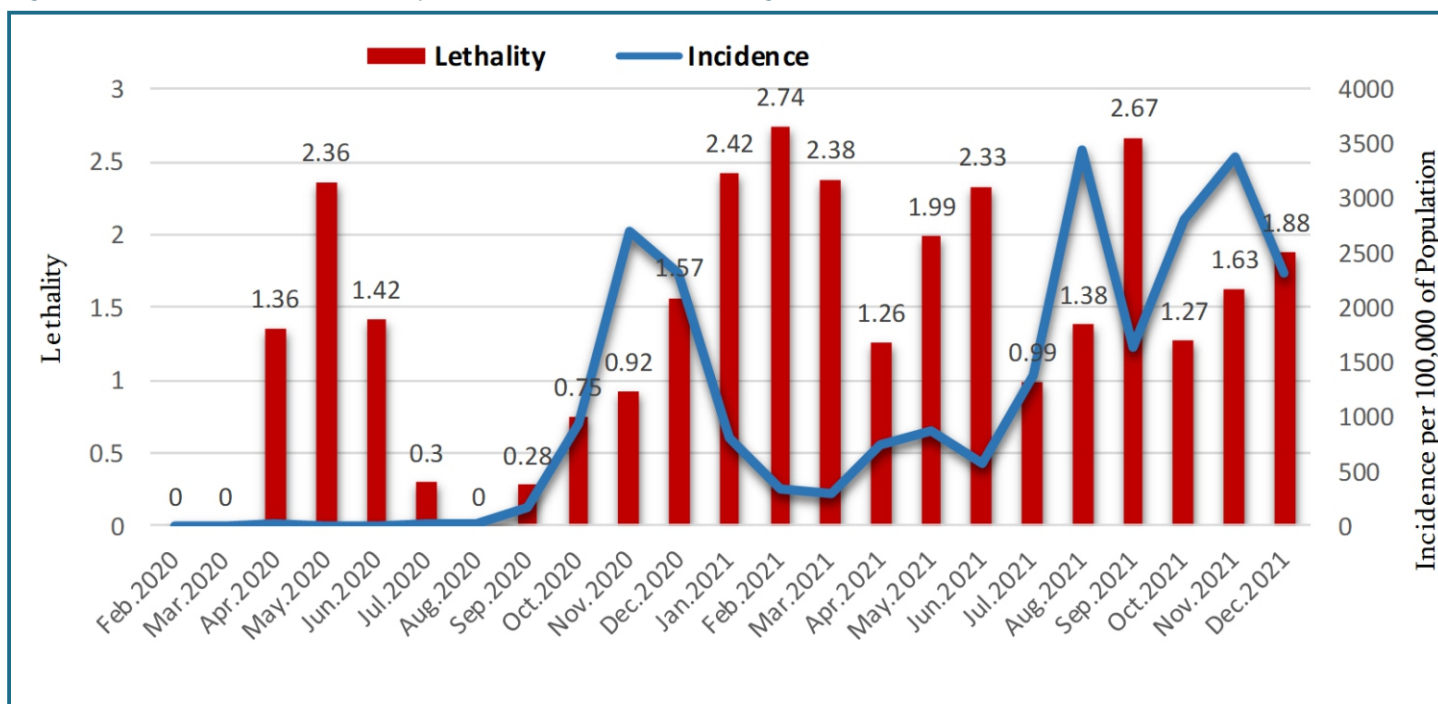
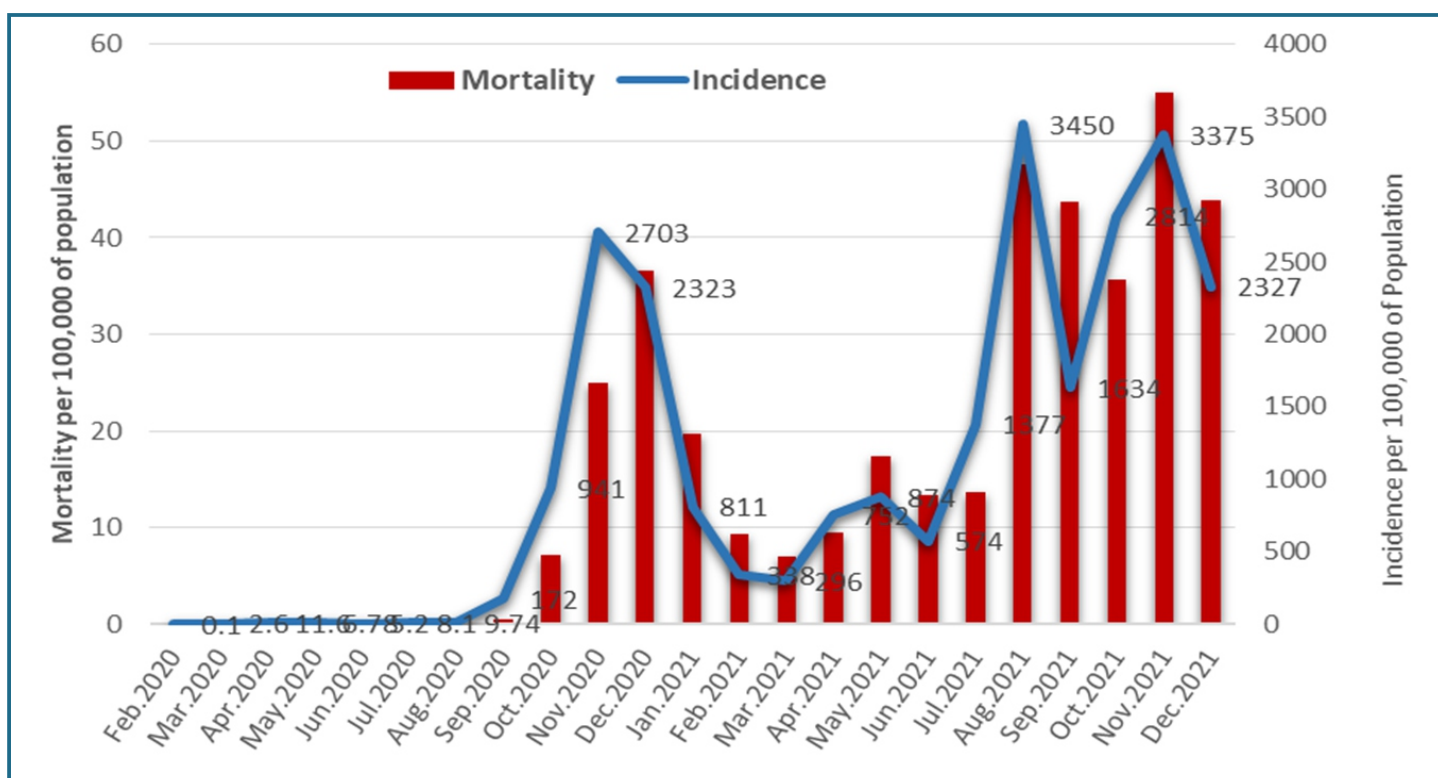


Figure 15. COVID-19 Mortality per 100,000 of population and COVID-19 Incidence, Georgia 2020-2021





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საბჭო COVID-19-ის
დაავადების გამომწვევის
აგენტის შესახებ



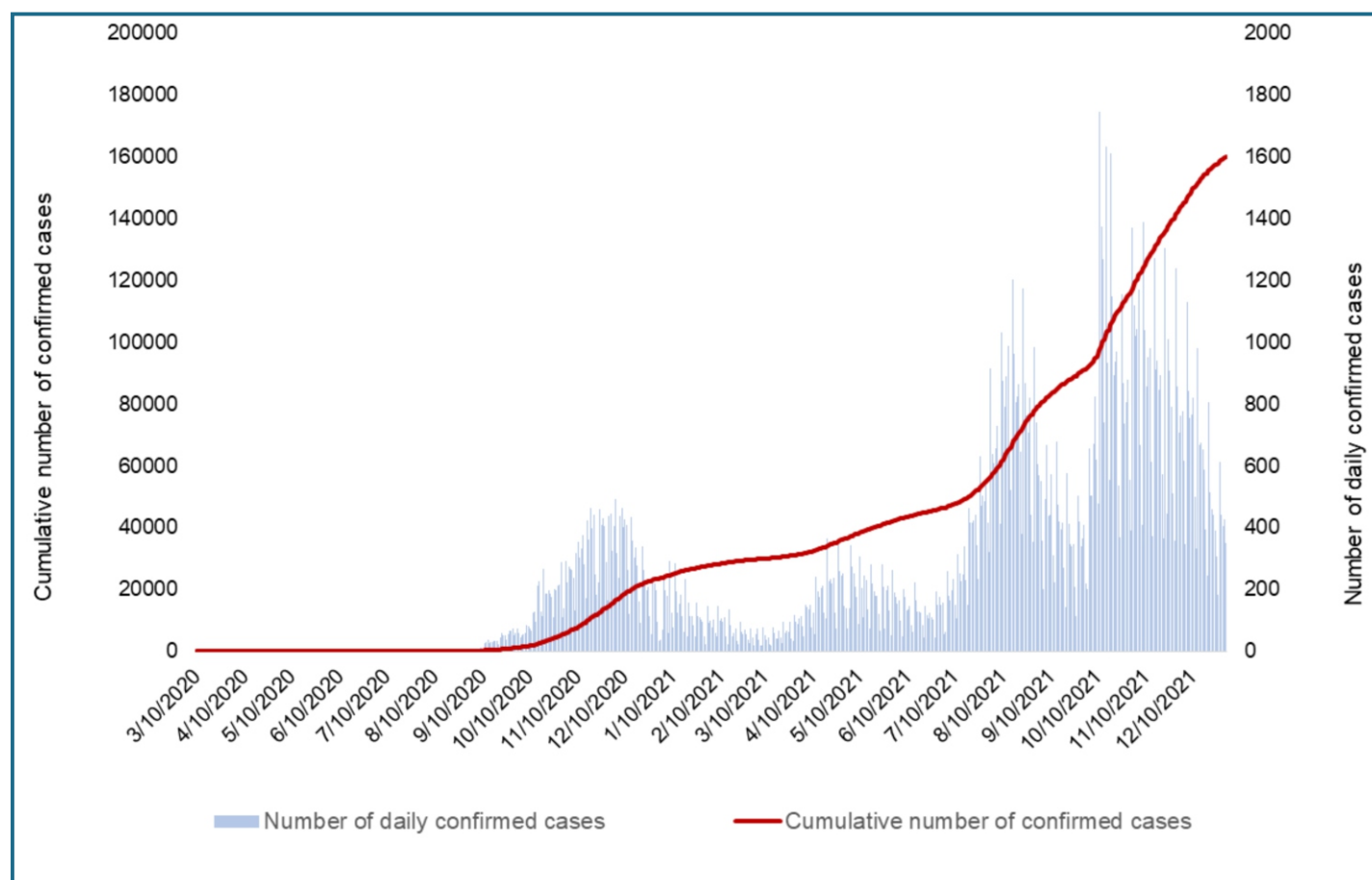
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საბჭო COVID-19-ის
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აგენტის შესახებ

COVID-19 morbidity burden in 0-18-year old children and adolescents

The first case of COVID-19 in Georgia in the 0-18-year age group was confirmed on March 10, 2020. As of January 1, 2022, 159,977 children and adolescents got infected, accounting for 17.1% of confirmed cases:

- In 2020 (10 months) – 23,554;
- In 2021 – 136,426.

Figure 16. Daily and total number of confirmed COVID-19 cases among children and adolescents aged 0-18 years, Georgia (as of January 1, 2022)



In 2020-2021, growing trend of confirmed cases among children and adolescents was noticed with the cumulative incidence rate per 10,000 children equaling 253.7 in 2020 and 1469.7 in 2021.

The chart displays daily new cases for two age groups: 0-18 Age (light blue bars) and Adults (dark blue bars). The Y-axis represents the number of cases, ranging from 0 to 25,000. The X-axis shows dates from 03.03.20 to 15.12.21. The data shows two major waves of infection. The first wave begins in late 2020, peaking in early November 2020 with approximately 22,000 cases in the 0-18 age group. The second wave begins in late 2021, peaking in early November 2021 with approximately 23,000 cases in the 0-18 age group. The adult population shows lower case counts throughout the period, with peaks around 10,000 in late 2020 and 15,000 in late 2021.

Date	0-18 Age	Adults
03.03.20	0	0
01.09.20	100	0
01.11.20	22000	10000
01.01.21	1000	500
01.03.21	5000	2000
01.05.21	1000	500
01.07.21	20000	10000
01.09.21	1000	500
01.11.21	23000	15000
01.12.21	1000	500

The graph displays the cumulative number of COVID-19 cases per 10,000 of population by week for two age groups in the United States: 0-18 Age (red line) and Adults (blue line). The x-axis represents time from March 3, 2020, to December 15, 2021. The y-axis represents the number of cases per 10,000 of population, ranging from 0 to 3000. Both groups show a sharp increase in cases starting around late September 2020, with the adult population reaching a much higher peak than the 0-18 age group.

Date	0-18 Age (per 10,000)	Adults (per 10,000)
03.03.20	0	0
24.03.20	0	0
14.04.20	0	0
05.05.20	0	0
26.05.20	0	0
16.06.20	0	0
07.07.20	0	0
28.07.20	0	0
18.08.20	0	0
08.09.20	0	0
29.09.20	0	0
20.10.20	0	0
10.11.20	100	200
01.12.20	200	500
22.12.20	300	700
14.01.21	350	800
04.02.21	400	900
25.02.21	400	900
17.03.21	400	900
07.04.21	450	1000
28.04.21	500	1100
19.05.21	550	1200
09.06.21	600	1300
30.06.21	650	1400
21.07.21	700	1500
11.08.21	800	1700
01.09.21	900	1800
22.09.21	1000	1900
13.10.21	1100	2100
03.11.21	1300	2400
24.11.21	1500	2700
15.12.21	1700	2800

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საბჭო COVID-19-ის
დაზიანების რისკის
დასაბუთების მიზნით



საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაზიანების რისკის
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Figure 19. COVID-19 incidence rates for 0-18-year-old children and adolescents per 10,000 children and adolescents

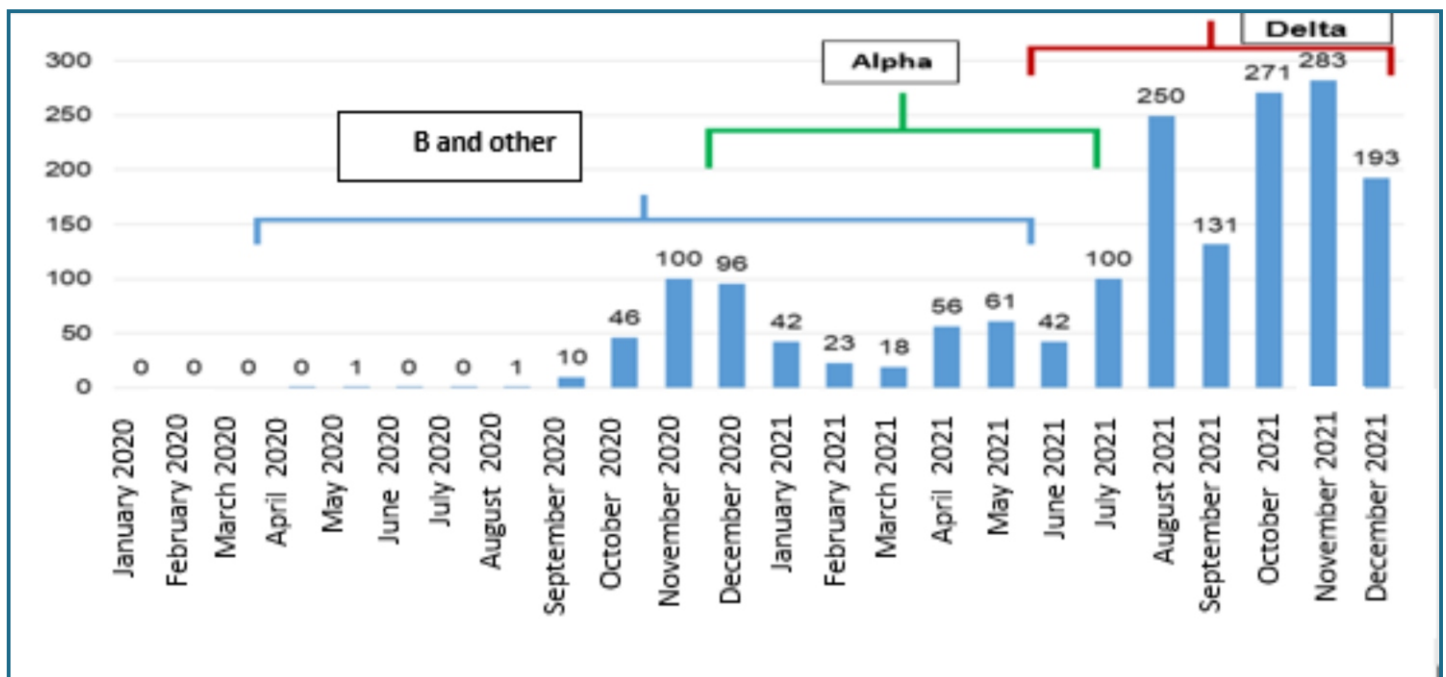
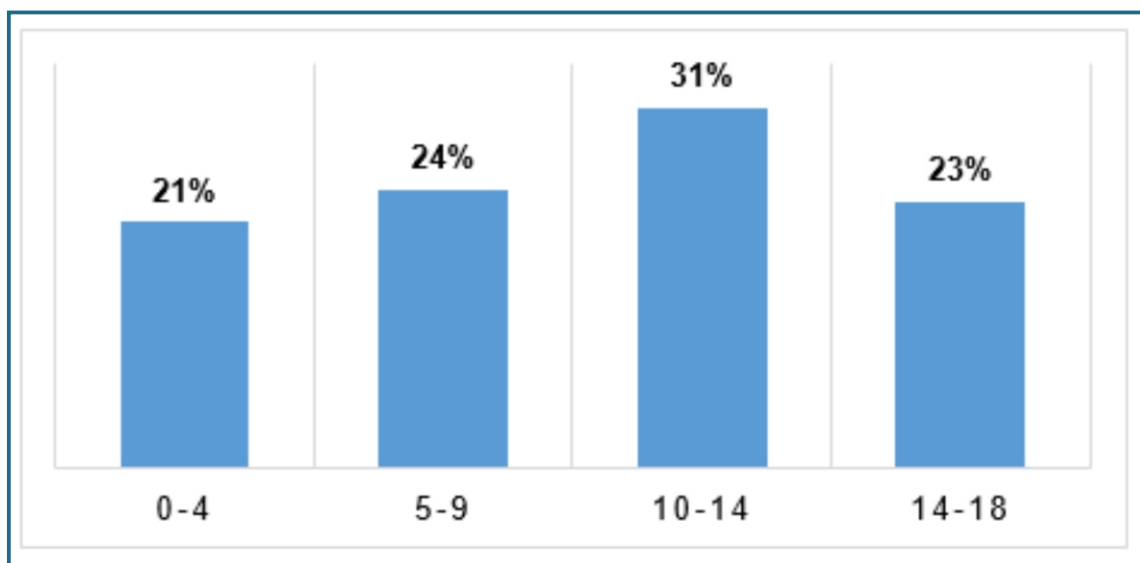
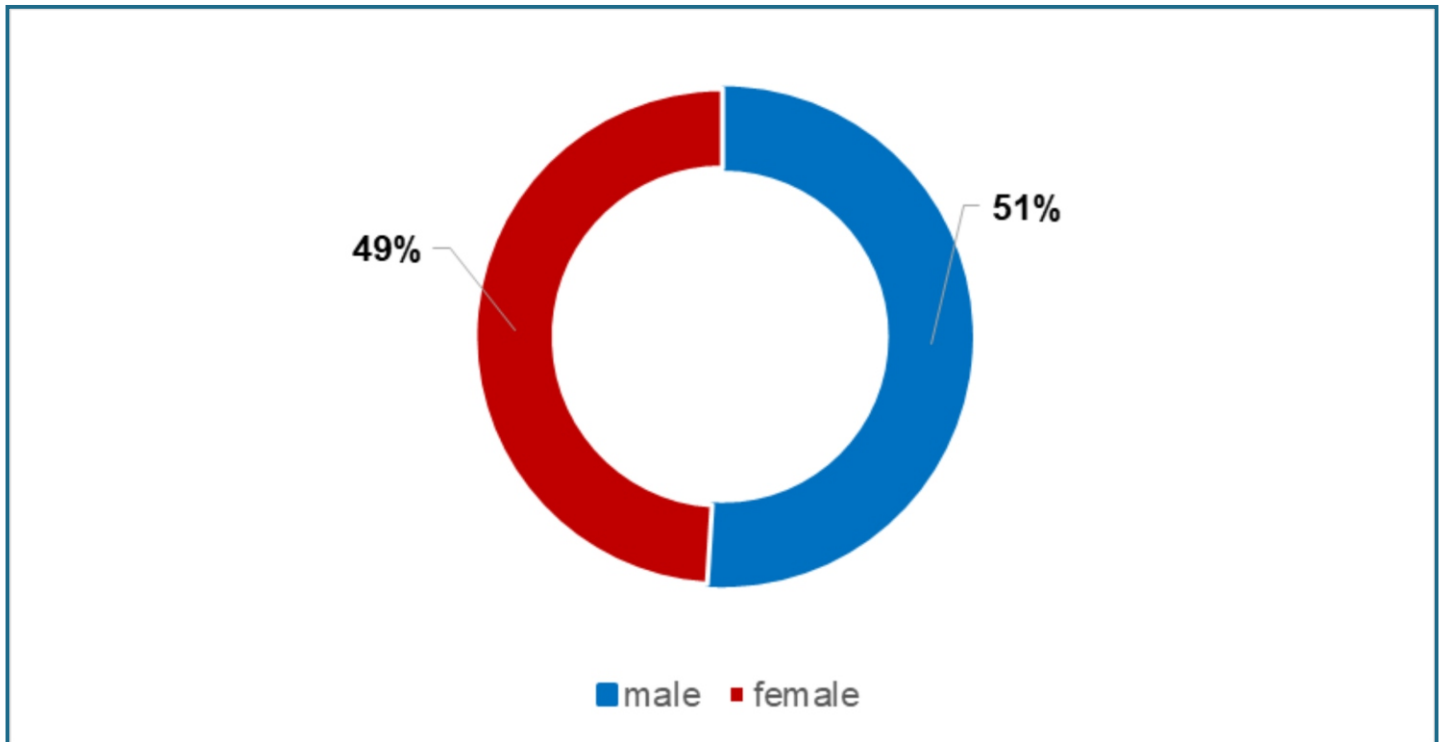


Figure 20. Proportion of confirmed COVID-19 cases among 0-18-year-old children and adolescents by age groups, Georgia (as of January 1, 2022)

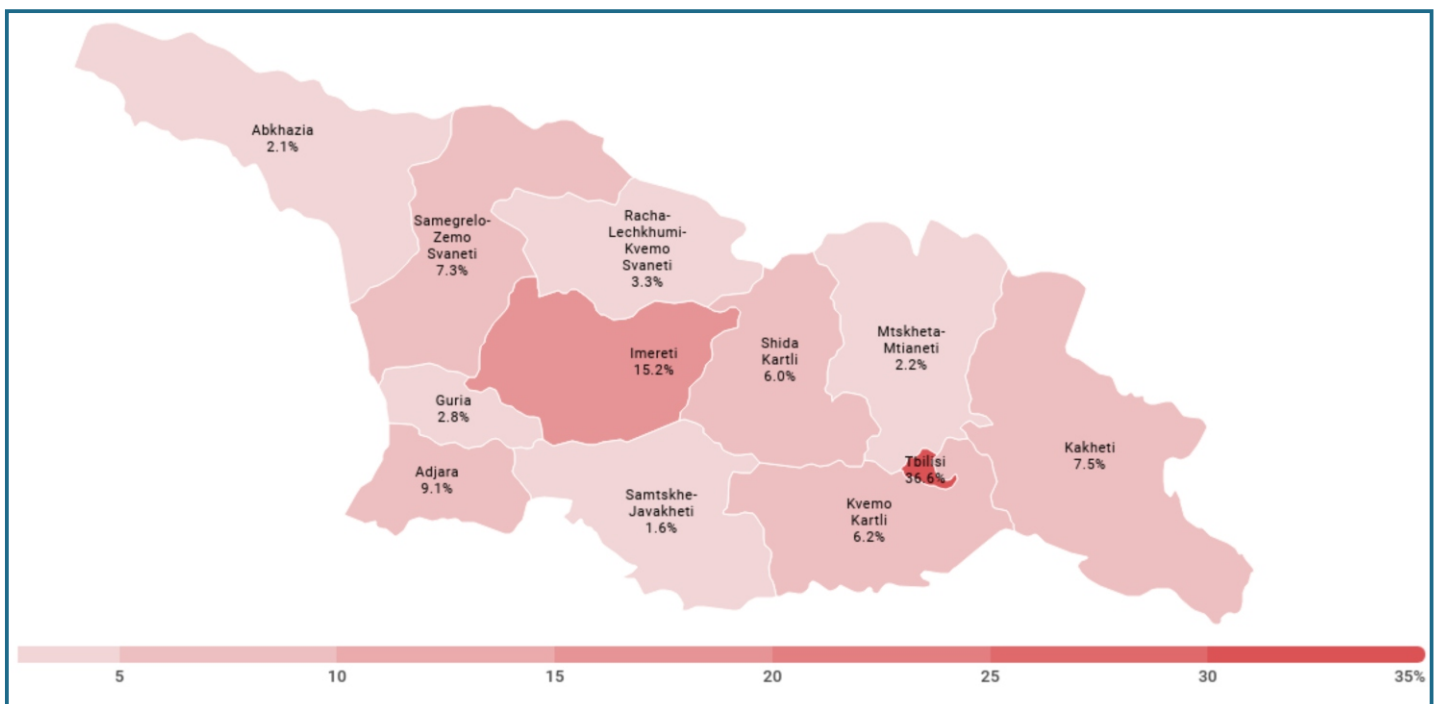


Among children and adolescents, the shares of girls and boys in COVID-19 cases confirmed by testing were 49% and 51% respectively.

Figure 21. Distribution of confirmed COVID-19 among 0-18-year-old children by gender (as of January 1, 2022)



Map 1. Distribution of confirmed COVID-19 cases among 0-18-year-old children and adolescents by region (as of January 1, 2022)



In the age group from 0 to 1 year, as of January 1, 2022, 6611 cases of COVID-19 infection were registered: in 2020 - 1552, in 2021 - 5059.

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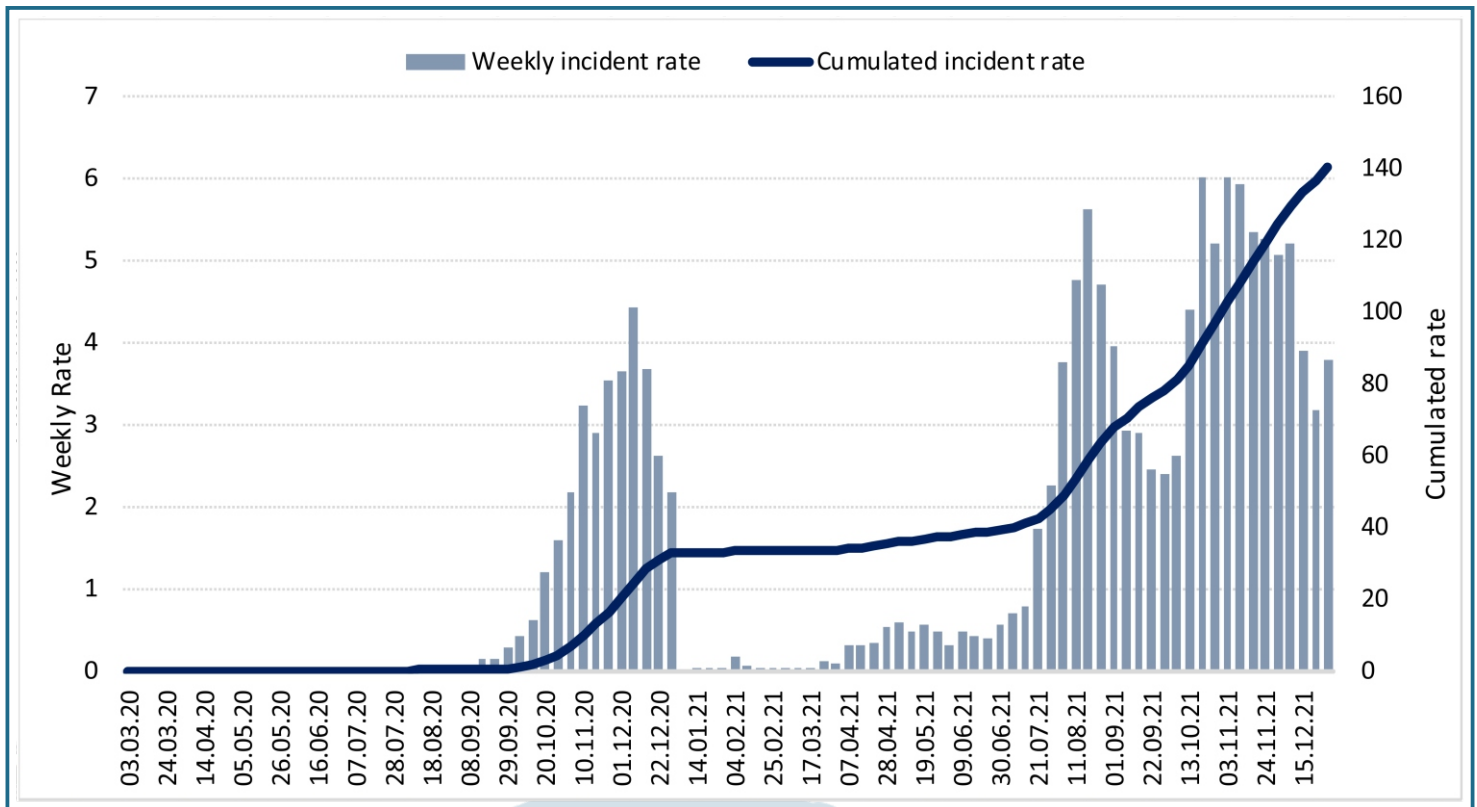


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დიაგნოსტიკის, პრევენციისა და
კონტროლის საკითხებში



საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაავადების გამომწვევების
დიაგნოსტიკის, პრევენციისა და
კონტროლის საკითხებში

Figure 22. Incidence rate of COVID-19 among 0-1-year-old children per 1,000 of population in 2020 and 2021, by weekly data





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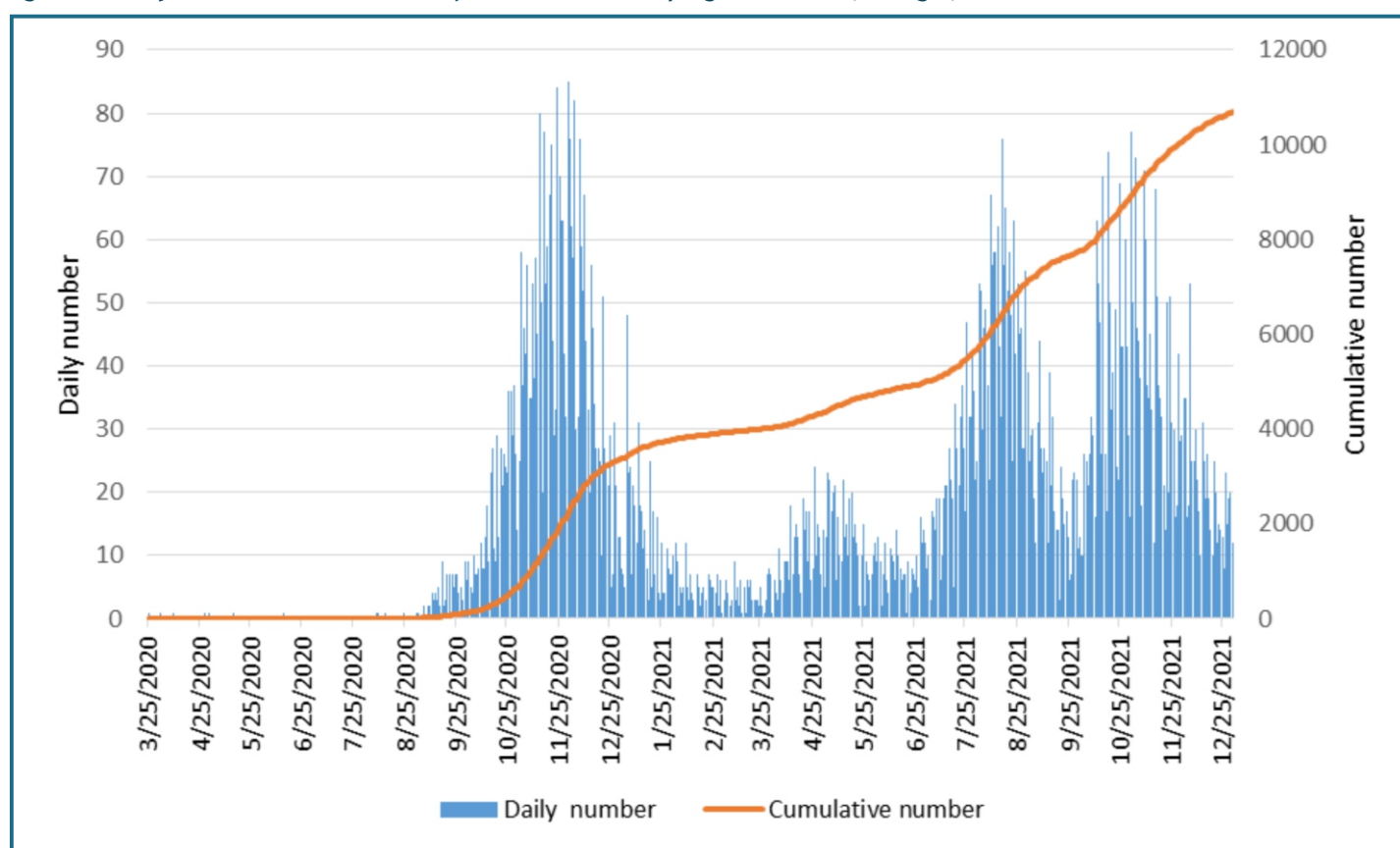
The COVID-19 morbidity burden in pregnant women

From the beginning of the COVID-19 pandemic until January 1, 2022, 129,341 pregnant women were registered for antenatal care in Georgia:

- In 2020 - 66,359
- In 2021 - 62,982.

The total number of COVID-19 confirmed cases among pregnant women is 10,687 (percentage rate of infected pregnant women - 8.2%), including 3,362 in 2020 (5.1% of pregnancies registered in 2020), 7,326 in 2021 (11.6% of pregnancies registered in 2021).

Figure 23. Daily and cumulative number of COVID-19 cases in pregnant women, Georgia, 2020-2021



The highest proportion of confirmed cases in pregnant women falls in the 25-29-year-old age group.

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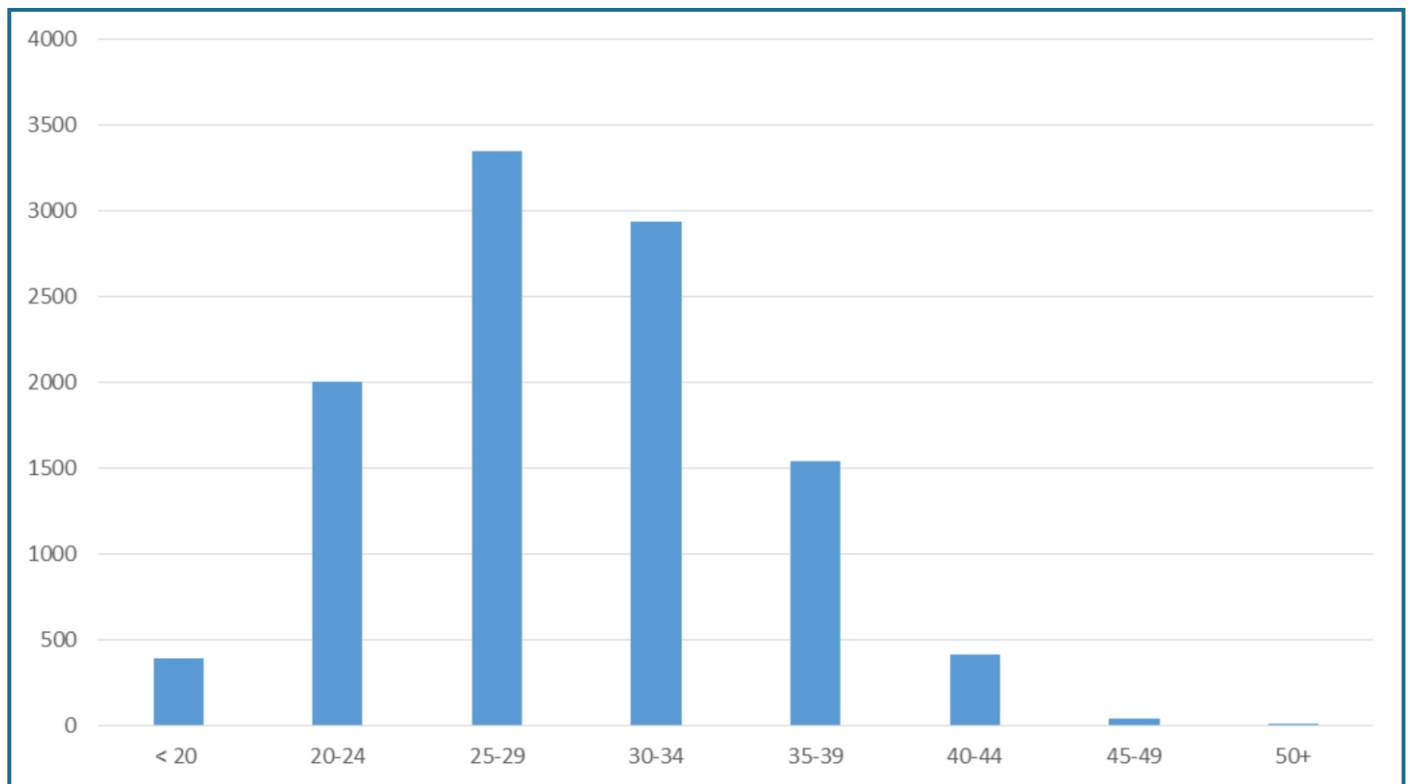


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სახელმწიფო ცენტრი



საქართველოს ექსპერტული
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დაავადებათა პრევენციის
სახელმწიფო ცენტრი

Figure 24. Distribution of COVID-19 confirmed cases in pregnant women by age groups, Georgia, 2020-2021



The share of confirmed cases by the region of residence of a pregnant woman is high in Tbilisi, Imereti and Adjara.

Map 2. Share of COVID-19 confirmed cases in pregnant women by regions (by actual region of residence), Georgia, 2020-2021

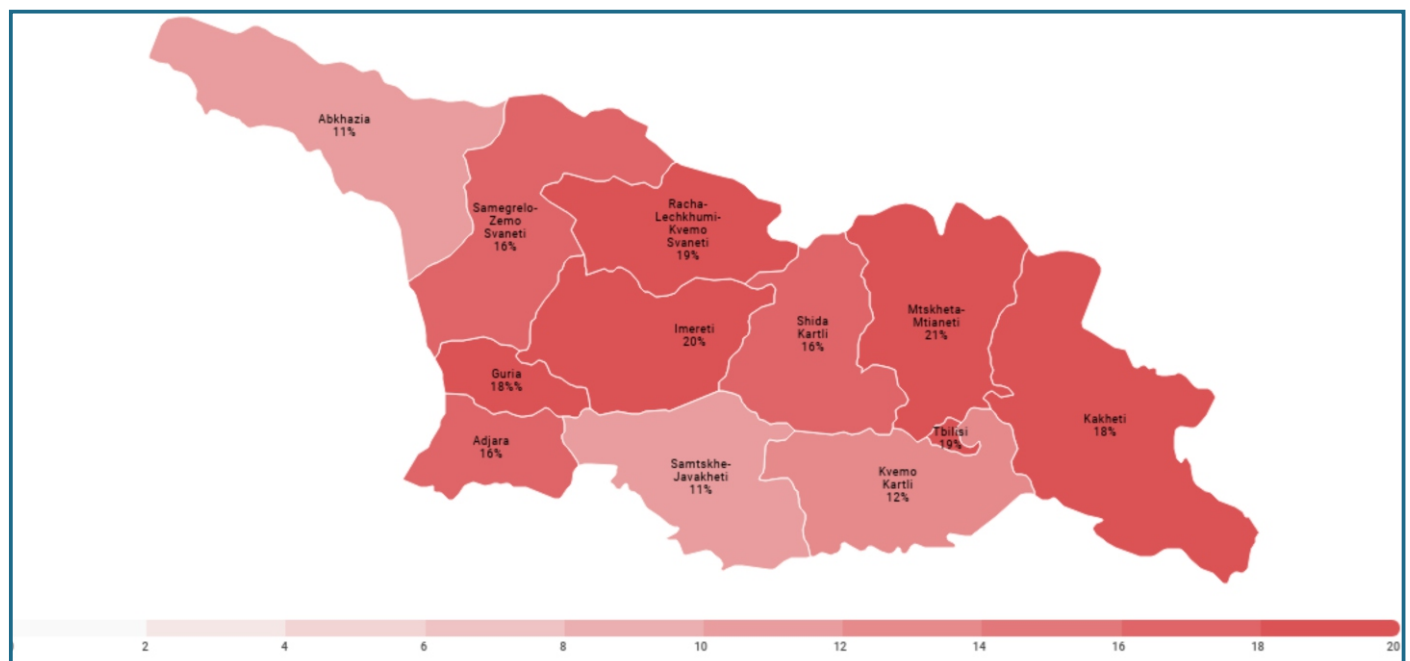
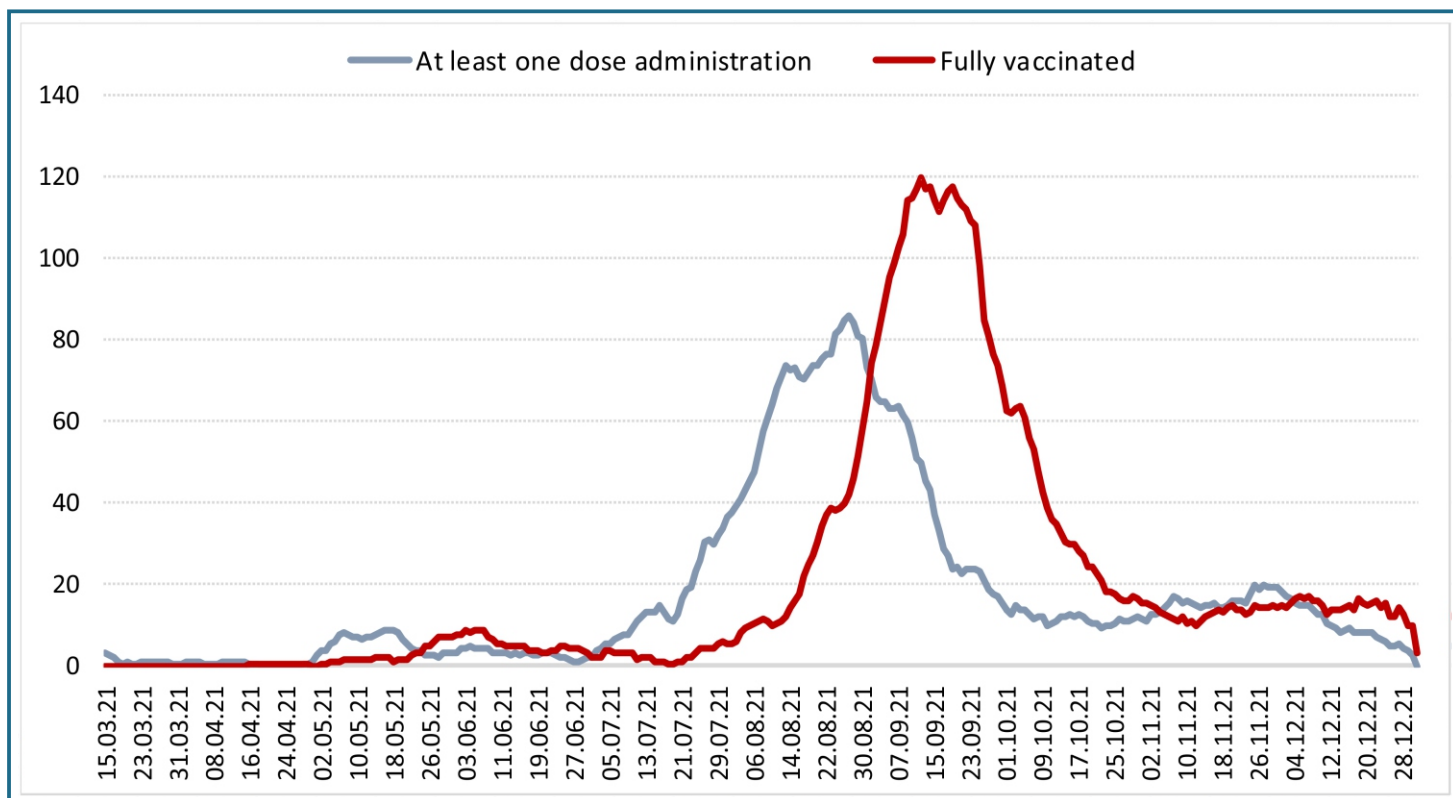
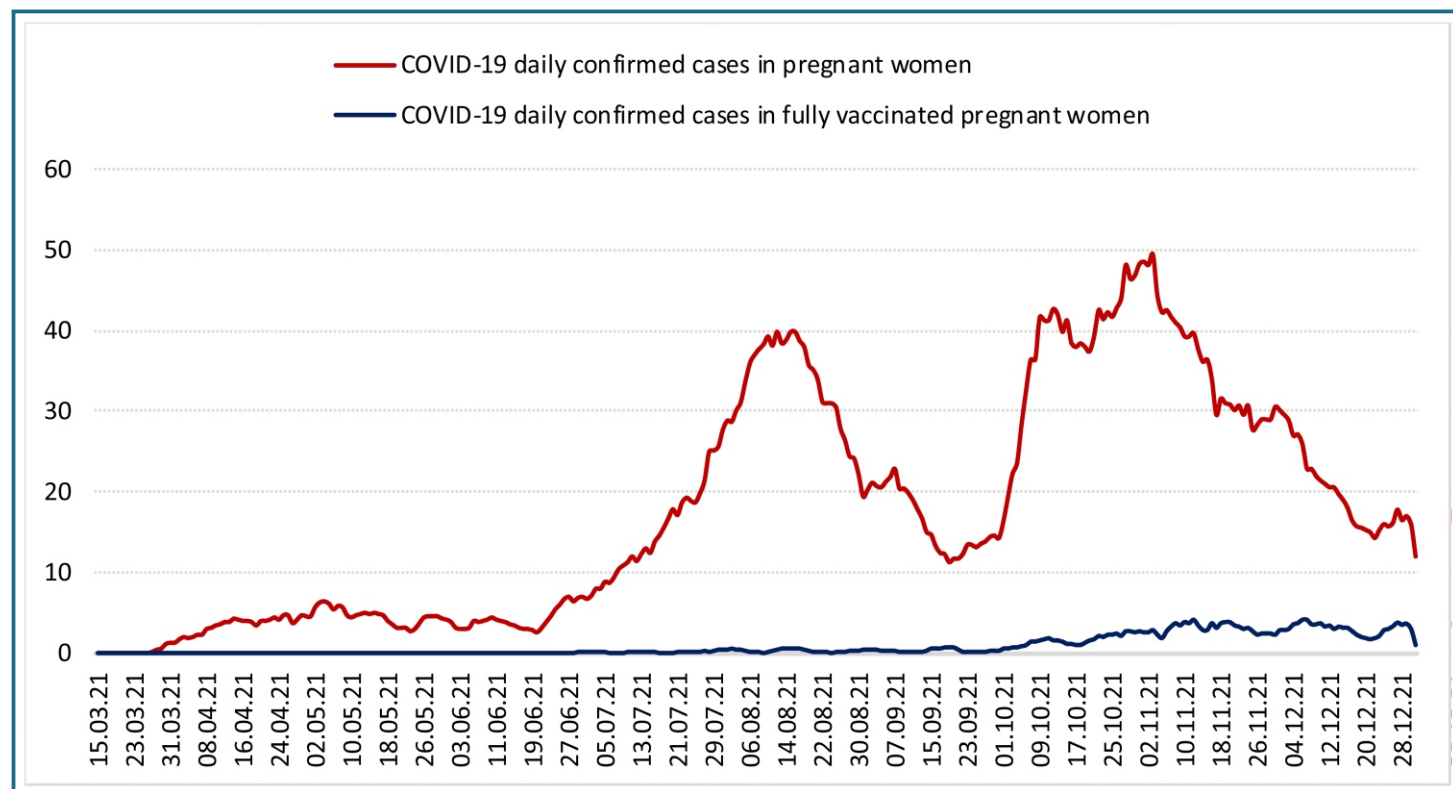


Figure 25. Daily data on pregnant women vaccination, Georgia



COVID-19 infection rate is very low in fully vaccinated pregnant women.

Figure 26. Daily number of confirmed COVID-19 cases in total number of pregnant women, including fully vaccinated pregnant women, Georgia



Vaccination rate grows among pregnant women with age increase, including those vaccinated with at least one dose and fully vaccinated.

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Figure 27. Percentage distribution of vaccinated pregnant women in age groups, Georgia

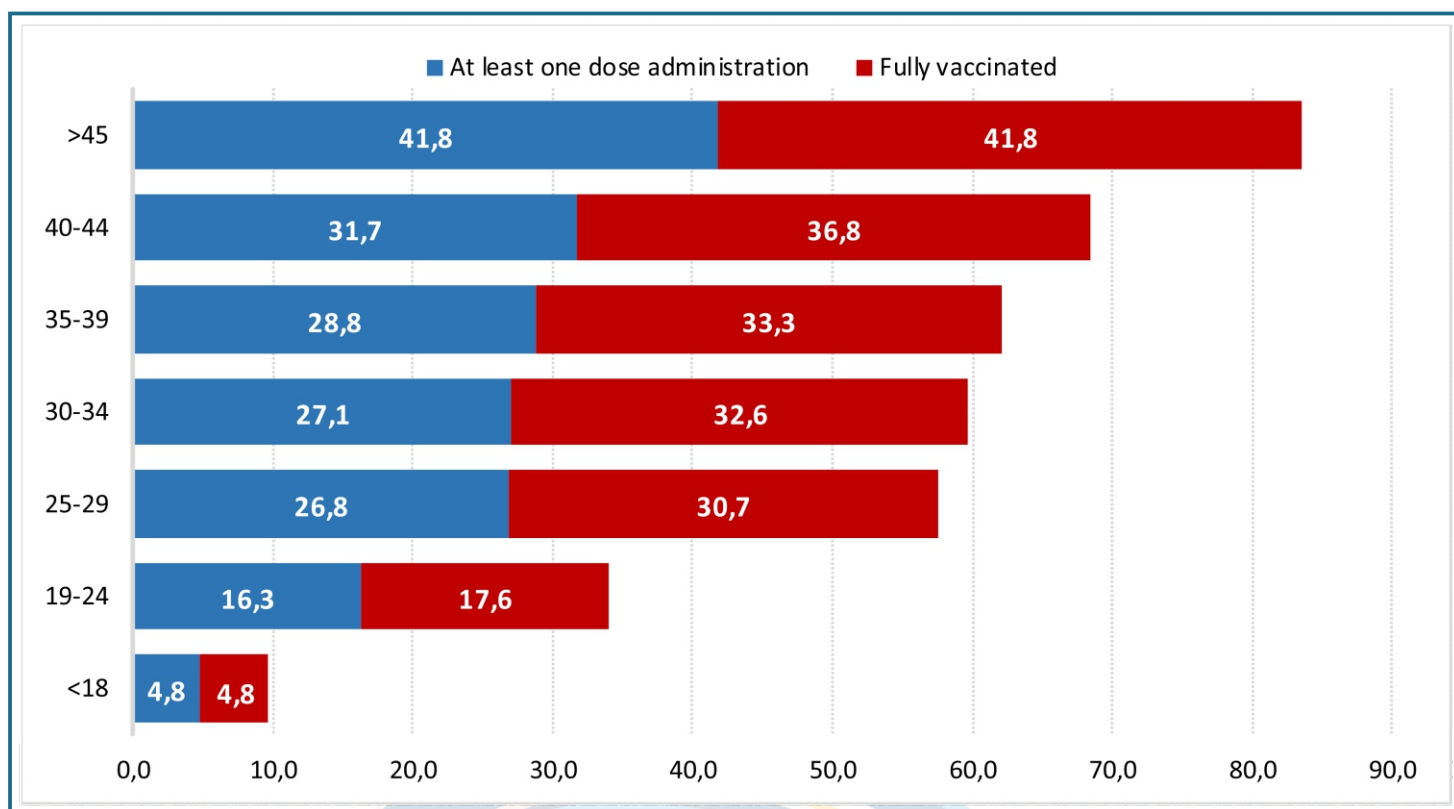
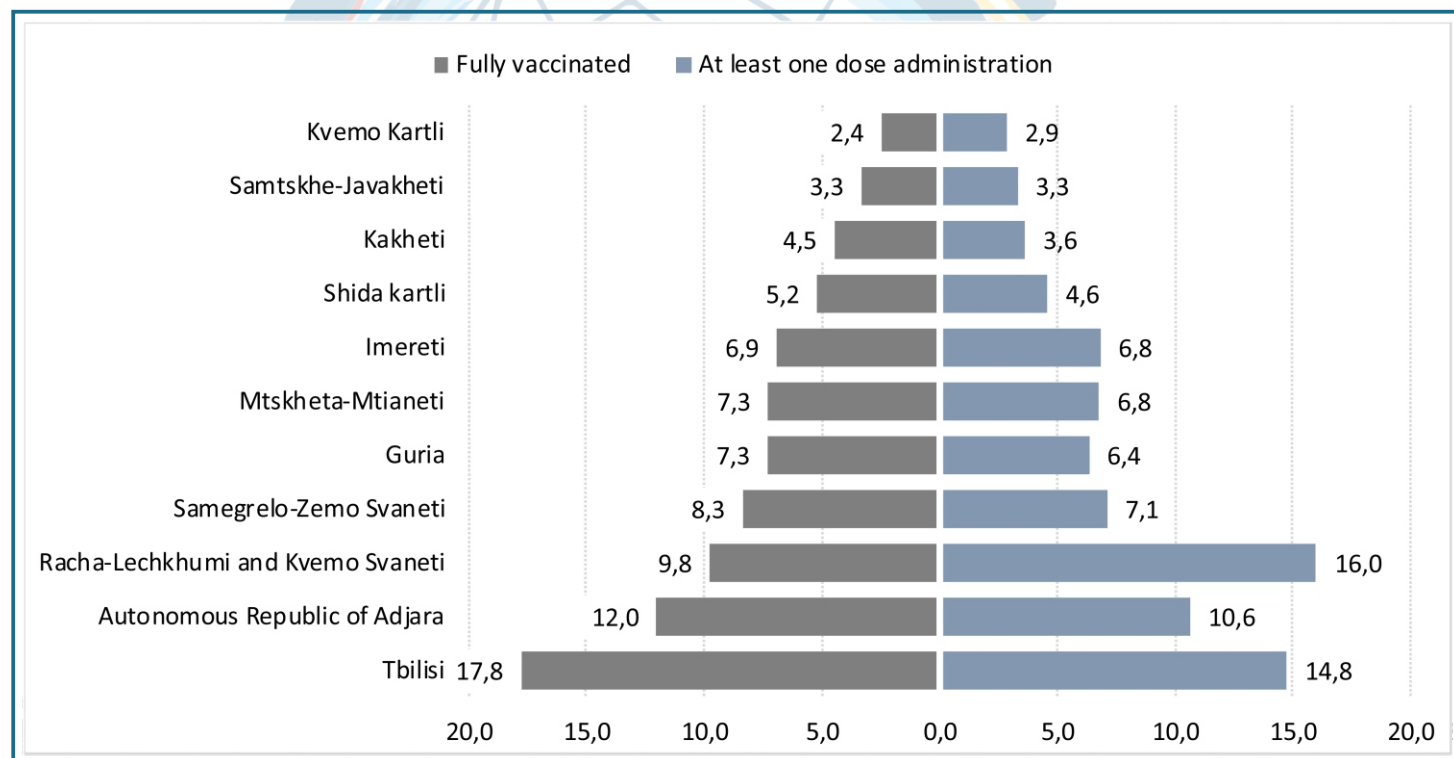


Figure 28. Percentage distribution of vaccinated pregnant women by actual region of residence, Georgia



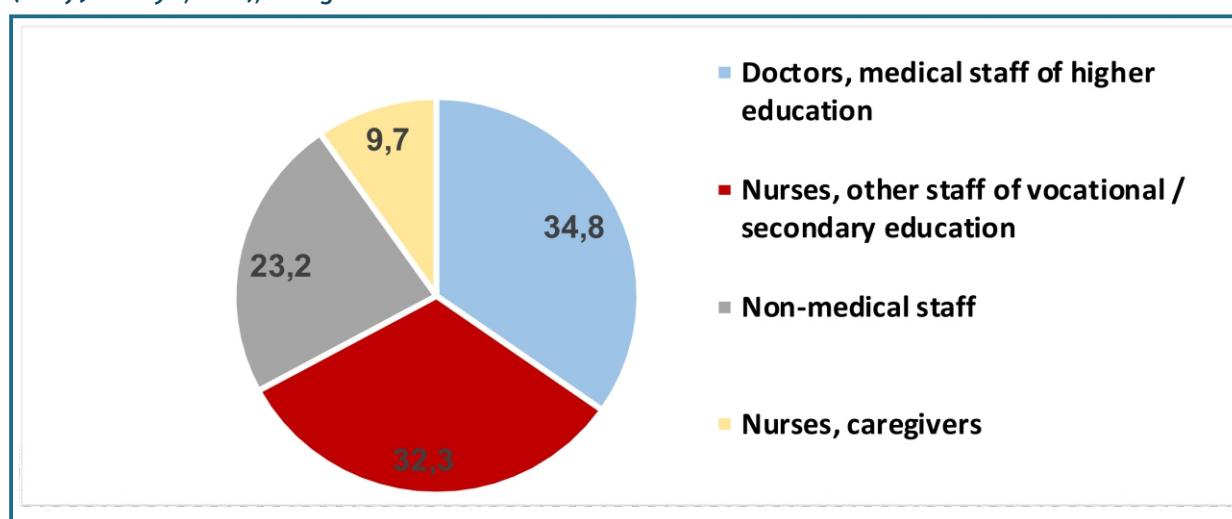


THE BURDEN OF COVID-19 MORBIDITY AMONG HEALTHCARE WORKERS

Pursuant to the Decree N975 of the Government of Georgia (June 15) on Approving the List of Persons Subject to Mandatory Testing for Coronavirus (SARS-CoV-2) Infection (COVID-19) and Testing Procedure, the risk groups defined by the said decree were tested in the country and the routine testing of medical personnel was identified as a priority. The share of healthcare workers among COVID-19 patients was 3.8%.

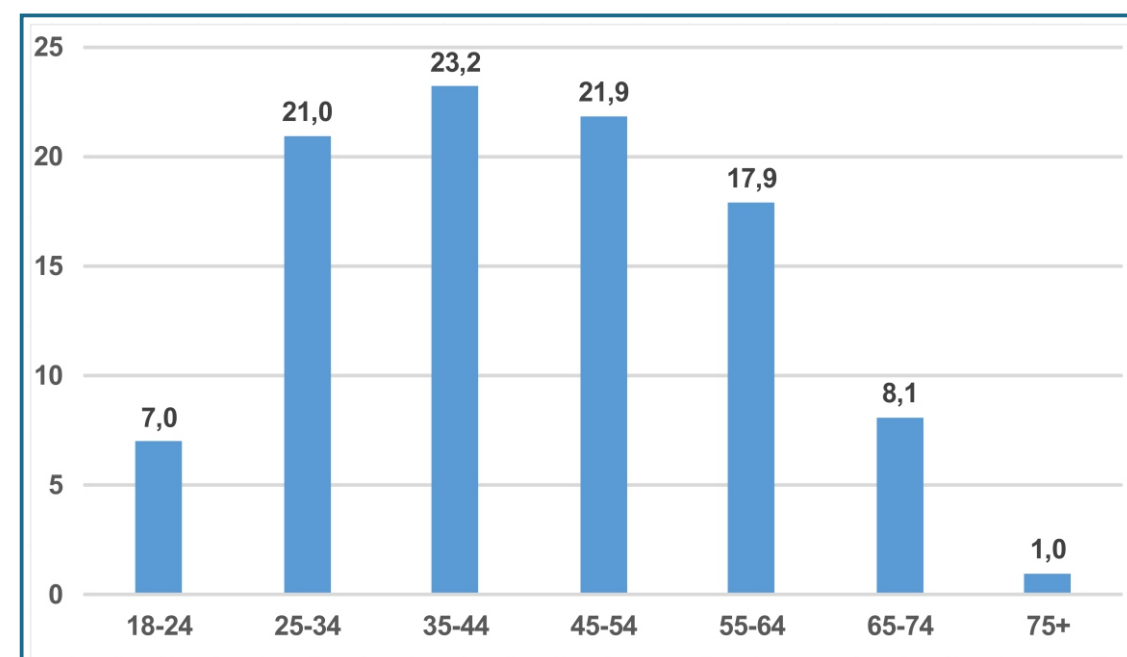
81% of infected medical staff were employees of inpatient facilities, specifically of emergency and intensive care units, fever centers, COVID or online clinics.

Figure 29. Percentage distribution of COVID-19 positive cases among healthcare workers by activity subgroups (as of January 1, 2022), Georgia



Among the infected medical staff, 81.5% were women and 18.5% were men. 80% belonged to the 30- to 70-year-old age group.

Figure 30. Percentage distribution of COVID-19 positive cases among healthcare workers by age groups (as of January 1, 2022), Georgia



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As of January 1, 2022, the highest share (%) of COVID-19 infected staff at medical institutions was recorded in Imereti, Tbilisi and Adjara regions.

Table 1. Share of COVID-19 infected medical staff in the total number of medical personnel by regions (as of January 1, 2022), Georgia

	Number of staff working in medical institutions	Including the number of infected	%
Adjara	7 262	3 502	48.2
<u>Guria</u>	1 608	512	31.8
Tbilisi	38 386	19 317	50.3
<u>Imereti</u>	9 914	5 200	52.5
Kakheti	3 707	1 667	45.0
<u>Mtskheta-Mtianeti</u>	1 686	642	38.1
<u>Racha-Lechkhumi</u> and <u>Kvemo Svaneti</u>	1 119	243	21.7
<u>Samegrelo</u> and <u>Zemo Svaneti</u>	4 345	1 875	43.2
<u>Samtskhe-Javakheti</u>	2 112	717	33.9
<u>Kvemo Kartli</u>	5 005	2 225	44.5
<u>Shida Kartli</u>	3 689	1 564	42.4
Georgia	7 8457	37 464	47.8

The maximum number of COVID-19 cases among the staff working in medical institutions was observed in Imereti region.

The total number of deaths due to COVID-19 among the staff working in medical facilities equaled 143, which is 0.4% of the total number of confirmed cases among healthcare professionals working in medical facilities.

38.5% of the deceased medical staff were males while 61.5% females. The 30-70-year-old group accounted for 69% of the deaths.

Table 2. Distribution of lethal COVID-19 cases among medical staff by age and gender (n=143)

	Quantity	%
Male	55	38.5
Female	88	61.5
Age groups:		
30-39	2	1.4
40-49	5	3.5
50-59	31	21.7
60-69	64	44.8
70+	41	28.7
Total	143	100

Table 3. COVID-19 deaths and mortality among medical facility staff by region² (n=143)

Region	Quantity	Lethality
Adjara	59	1.7
Tbilisi	29	0.2
<u>Imereti</u>	18	0.3
<u>Samtskhe-Javakheti</u>	11	1.5
<u>Kvemo Kartli</u>	7	0.3
Kakheti	7	0.4
<u>Mtskheta-Mtianeti</u>	5	0.8
<u>Samegrelo</u> and <u>Zemo Svaneti</u>	3	0.2
<u>Shida Kartli</u>	4	0.3
Total	143	0.4

68.5% of lethal cases among the staff working in medical facilities were reported for inpatient medical staff or employees of fever, COVID or primary healthcare institutions and all inpatient, intensive care and resuscitation departments.

Table 4. Distribution of COVID-19 lethal cases among medical staff by risk groups (n=143)

	Quantity	%
Inpatient medical staff (14 day- testing)	65	45.5
Staff of Fever / <u>Covid</u> Clinic / Online Clinic and All Inpatient, Intensive Care and Resuscitation Unit	33	23.1
Primary health care staff	20	14.0
Emergency staff	15	10.5
Quarantine space staff	3	2.1
Dialysis service staff	1	0.7
Primary healthcare facility laboratory staff	2	1.4
Psychiatric / Tuberculosis facility staff	2	1.4
Epidemiologist	2	1.4
Total	143	100

In lethal cases complications of coronavirus illness mostly included respiratory diseases.

Table 5. Distribution of complications in COVID-19 -induced lethal cases, staff of medical institutions, Georgia, 2020-2021 (in some cases there were more than one complication)

Complications	Quantity	%
Pneumonia	73	71.6
Acute respiratory failure	70	68.6
Respiratory Distress Syndrome	32	31.4
<u>Polyorgan</u> failure	23	22.5
Septicemia	16	15.7

²The place of residence and the place of death are identical

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საერთაშორისო
საჯანდაცო სისტემის
საერთაშორისო ცენტრი



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სააგენტო
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საერთაშორისო ცენტრი

Various comorbidities were reported in 45 lethal cases (31.5%), of which the majority represented cardiovascular diseases.

Table 6. Distribution of concomitant diseases in lethal cases caused by COVID-19, staff of medical institutions, Georgia, 2020-2021, (in some cases there was more than one concomitant disease)

Concomitant diseases	Quantity	%
Cardiovascular diseases (except hypertension)	28	19.6
Hypertension	16	11.2
Diabetes	13	9.1
Cancer	6	4.2
Disease of the hematopoietic organs	5	3.5





COVID-19 INDUCED MORTALITY

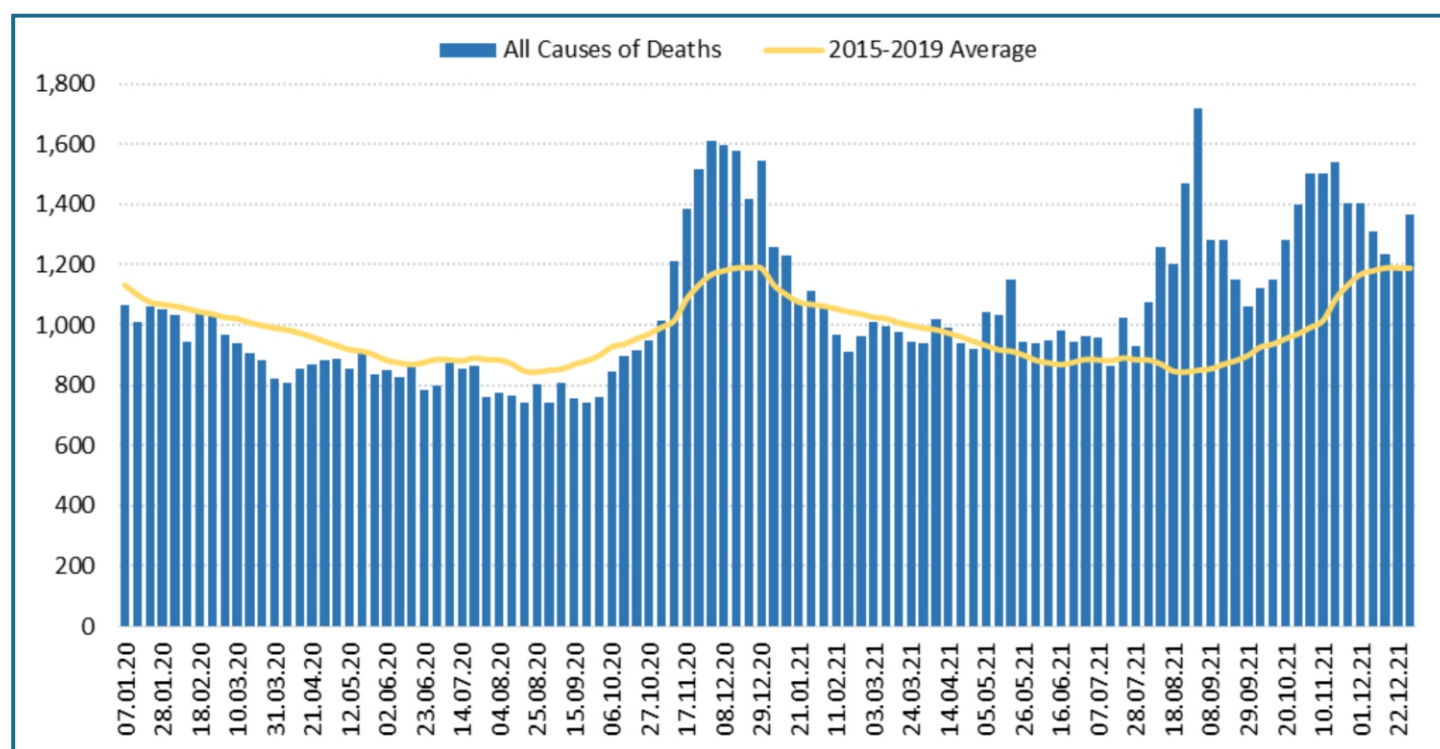
The key indicators for identifying, monitoring and evaluating COVID-19 induced mortality are:

- COVID-19 mortality rate (per 100,000 or 1 million of population);
- Case fatality rate (%);
- Excess mortality from all causes.

COVID-19 excess mortality assesses whether the rapid spread of the disease and its associated deaths have affected the overall mortality rate. The excess mortality rate in the sample population is defined as the mortality rate that exceeds the estimated rate. Excess mortality has been observed in many European countries between 2020-2021.

Excess mortality is calculated as the ratio of the average number of deaths for previous years to the figure of the current year. To derive the average number, mortality recorded in previous years was calculated and compared to 2020 and 2021.

Figure 31. Comparison of excess mortality in 2020 and 2021 with the average number of deaths in 2015-2019, Georgia



In 2020 and 2021, excess mortality varied by age groups: in the age group above 60 it was significantly higher than in the age group below 60. Compared to the average number of lethal cases in 2015-2019, in 2020, excess mortality was not recorded in the age group below 60, while in the age group above 60 it was observed starting from October. In 2021, the excess mortality in the age group below 60 was observed from August, and in the age group above 60 years - throughout the year.

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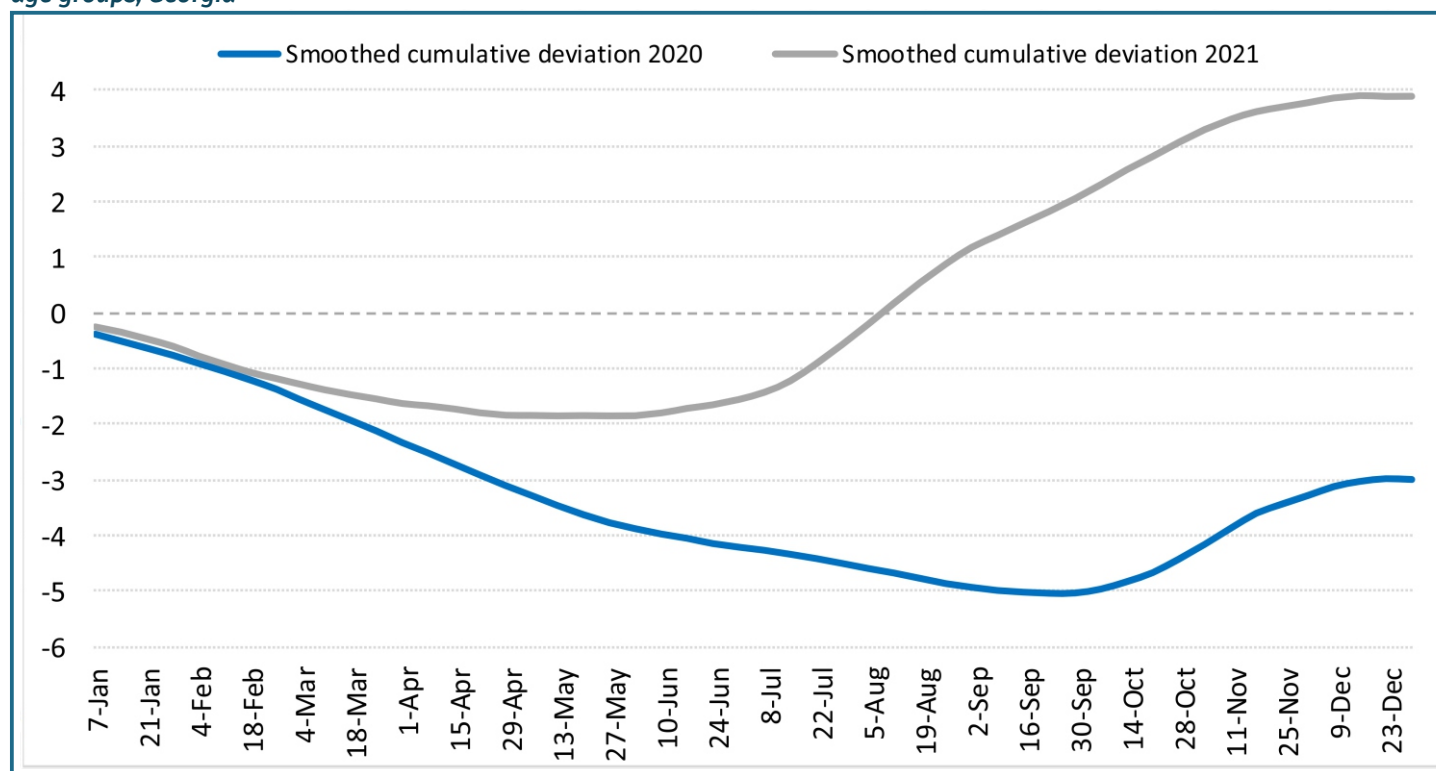


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გავრცელების მართვის
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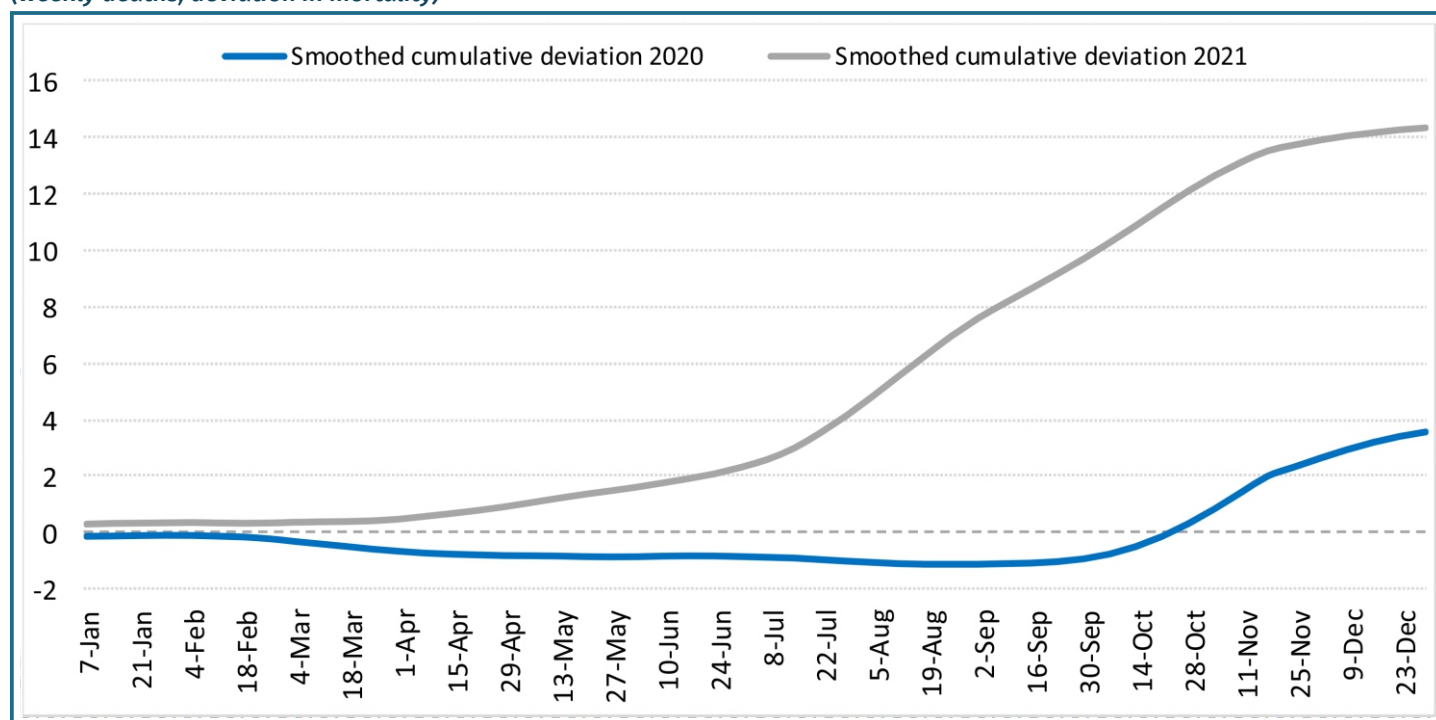


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საბჭო COVID-19-ის ეპიდემიის
გავრცელების მართვის
საქმეების განხილვის
საკუთრება

Figure 32. Comparison of excess mortality in 2020 and 2021 with the average number of deaths in 2015-2019 by age groups, Georgia



2020-2021 all causes of excess mortality above 60 Age compared 2015-2019 average numbers (weekly deaths, deviation in mortality)



COVID-19-induced mortality represents one of the most important and significant issues and the subject of in-depth study worldwide. Due to the importance of the issue, in Georgia, the study of COVID-19-induced mortality, is carried out with the involvement of clinician groups in coordination with the Ministry of Health. The information on mortality presented in this chapter is based on data obtained within the competence of the National Center for Disease Control.

Since the beginning of the pandemic in Georgia (26.02.20) up to January 1, 2022, the cumulative COVID mortality rate is 13,860 (lethality rate 1.48%).



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პროექტი, სეროლოგიური
და კლინიკური კვლევები
საქართველოს ექსპერტული
საბჭოს მიერ



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Figure 33. Daily and cumulative number of lethal COVID-19 cases, Georgia, 2020-2021

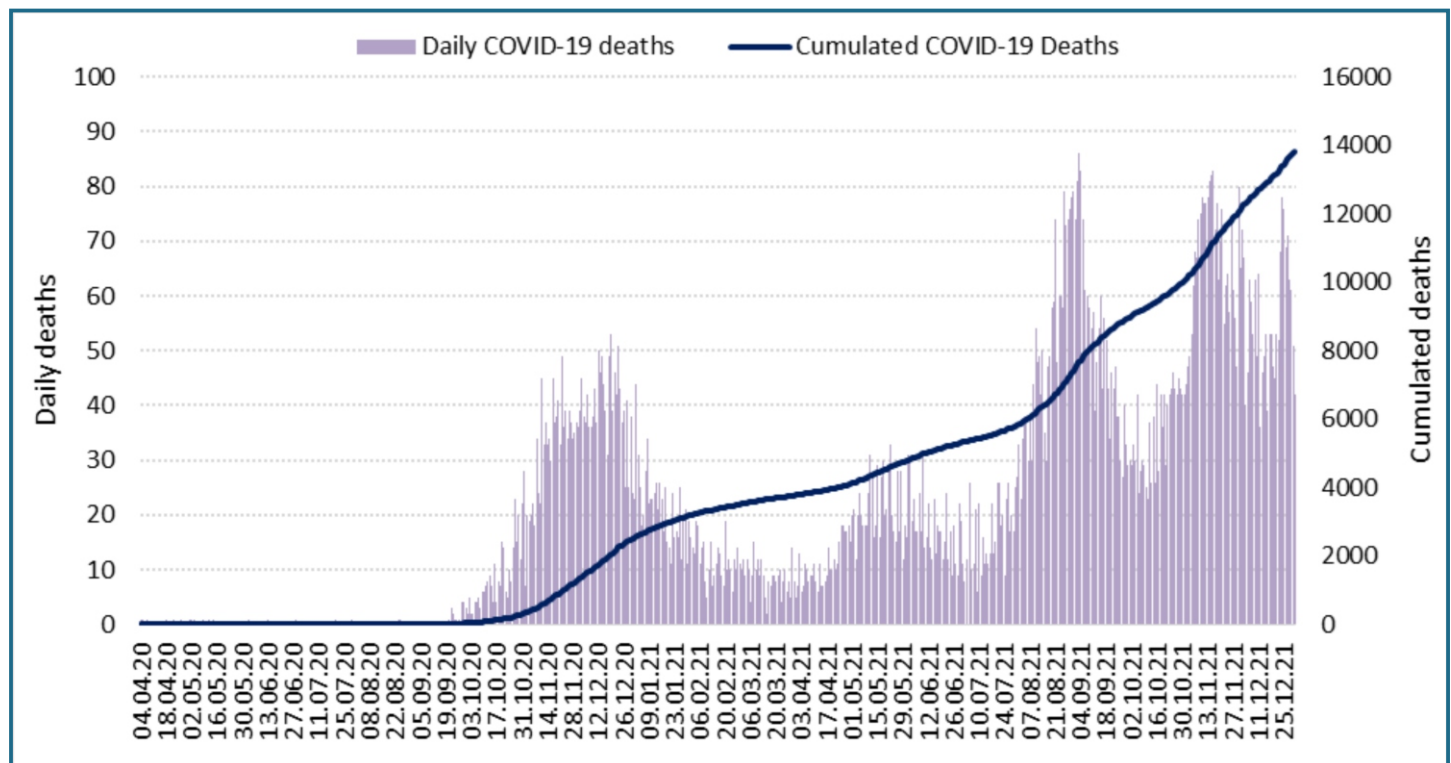
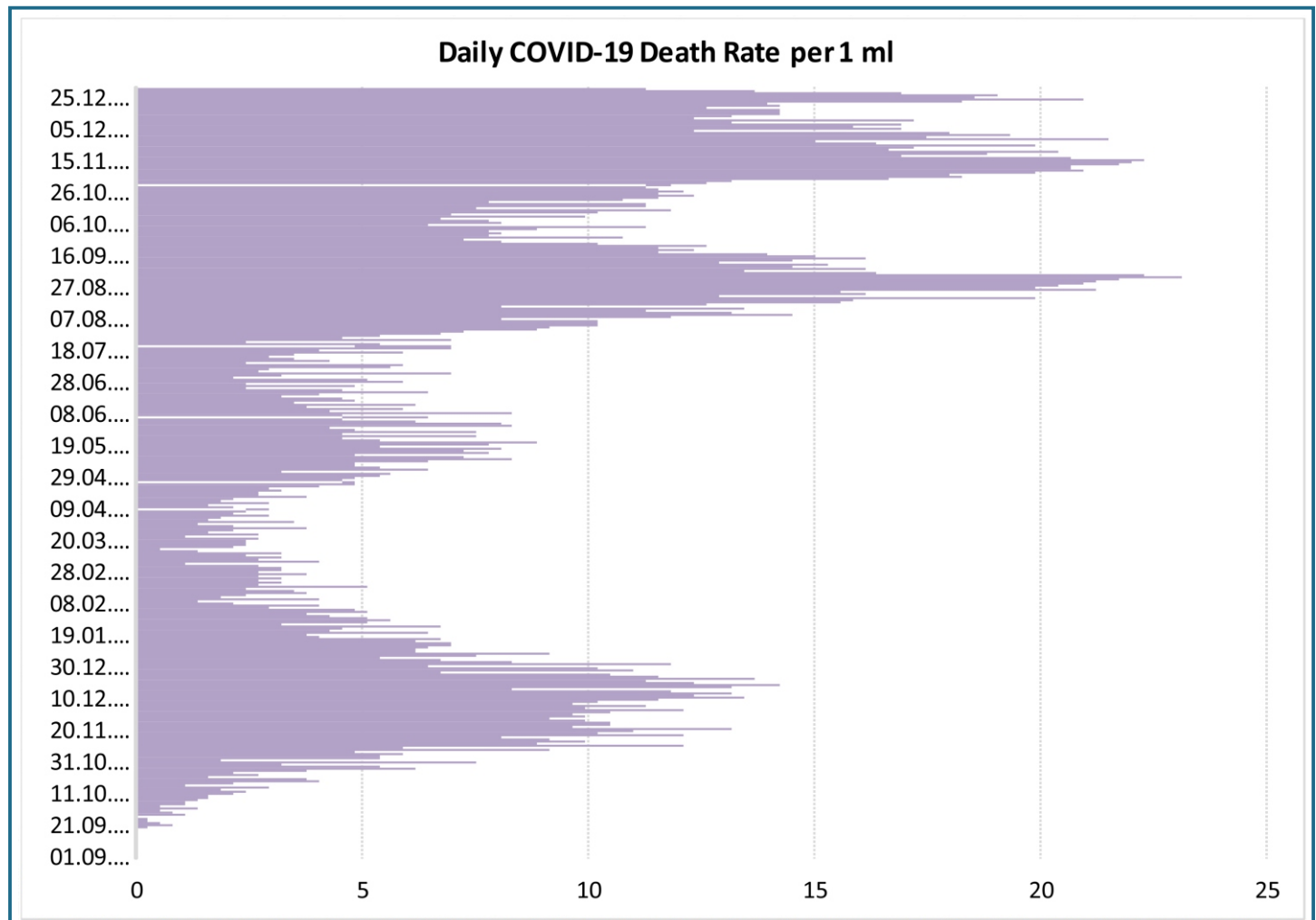


Figure 34. Daily COVID -19 mortality rate per 1 million of population, Georgia, 2020-2021



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საბჭო COVID-19-ის
დაზიანების მართვის
საქმეში



საქართველოს ჯანდაცვის
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საერთაშორისო COVID-19-ის
დაზიანების მართვის
საქმეში

35. COVID-19 Daily Lethality Rate, Georgia, 2021

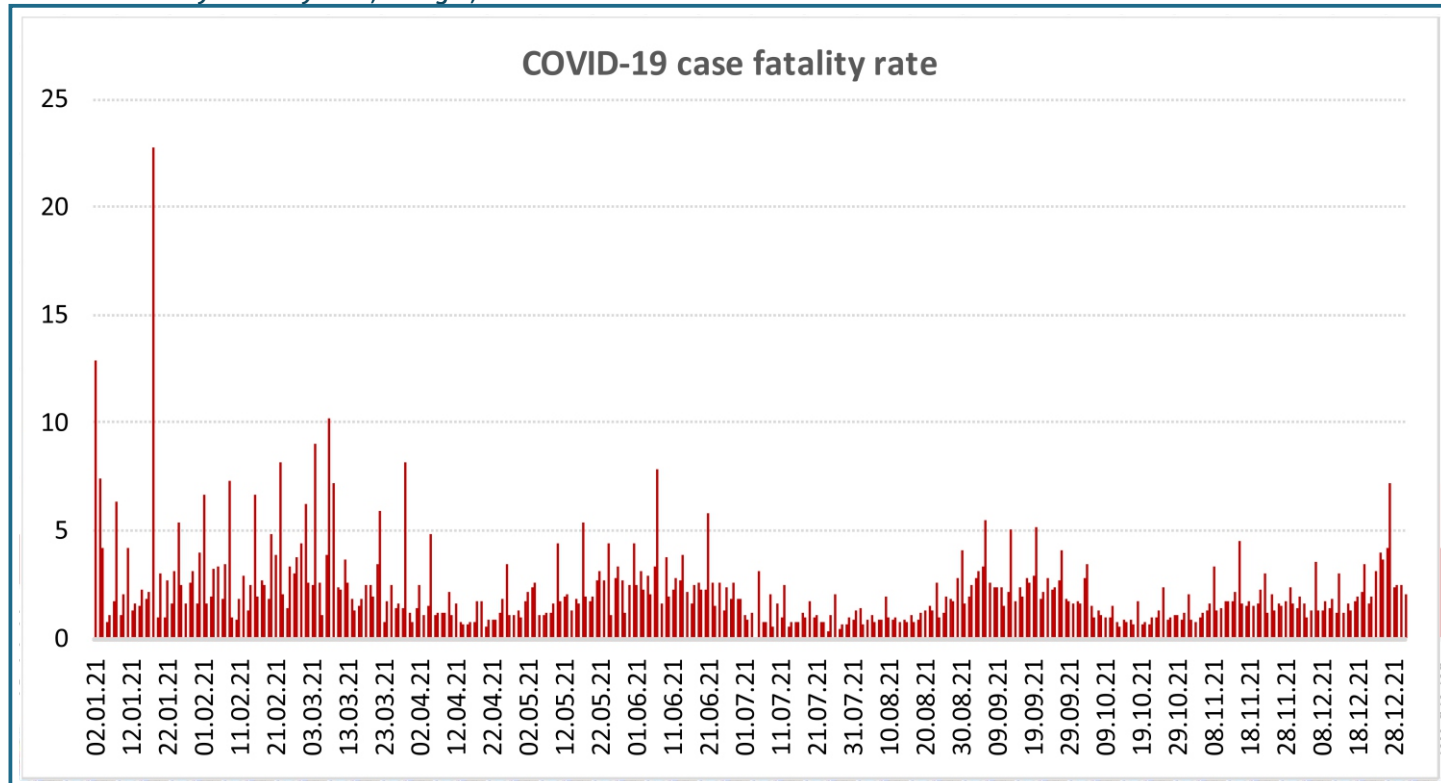
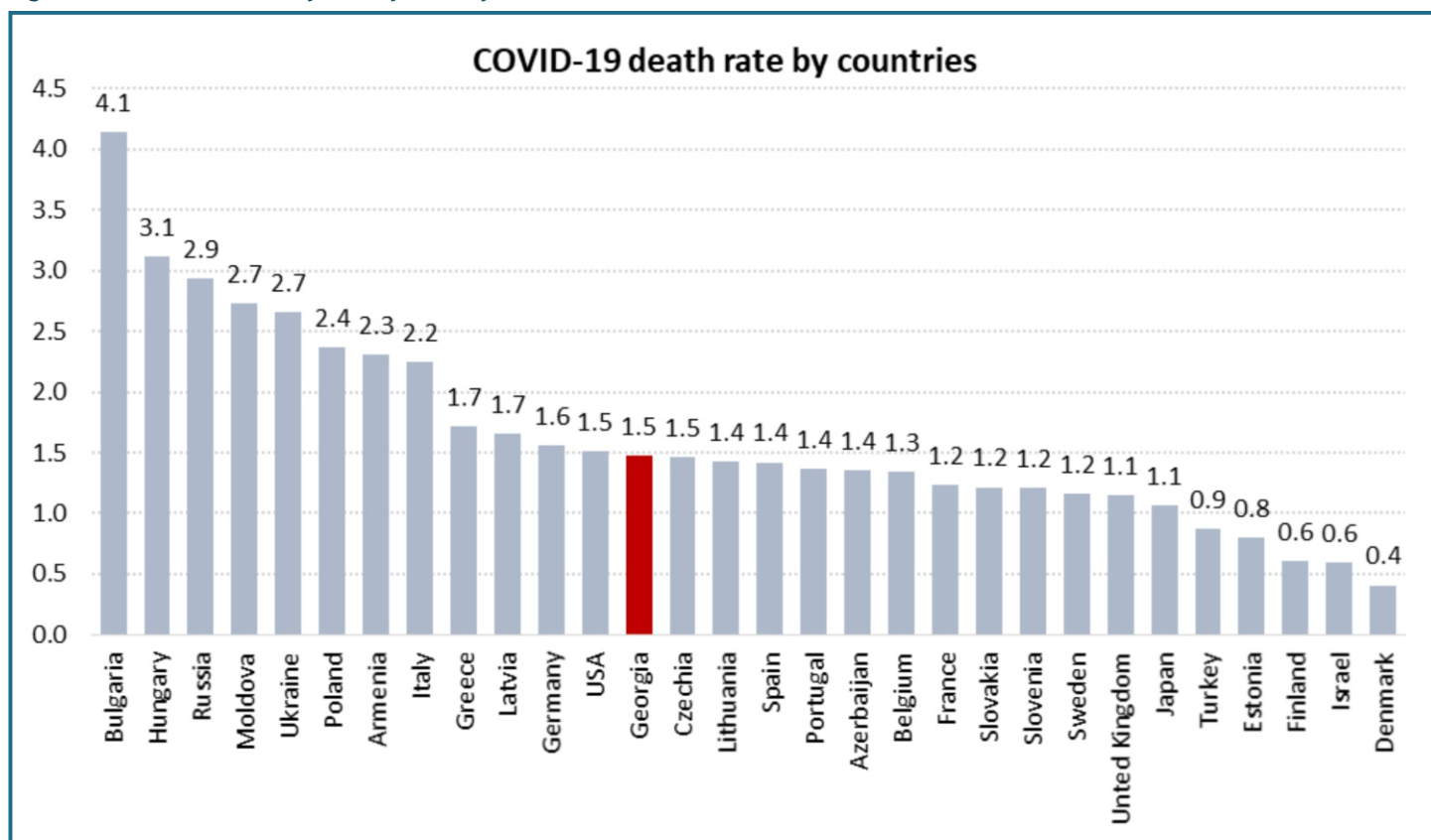


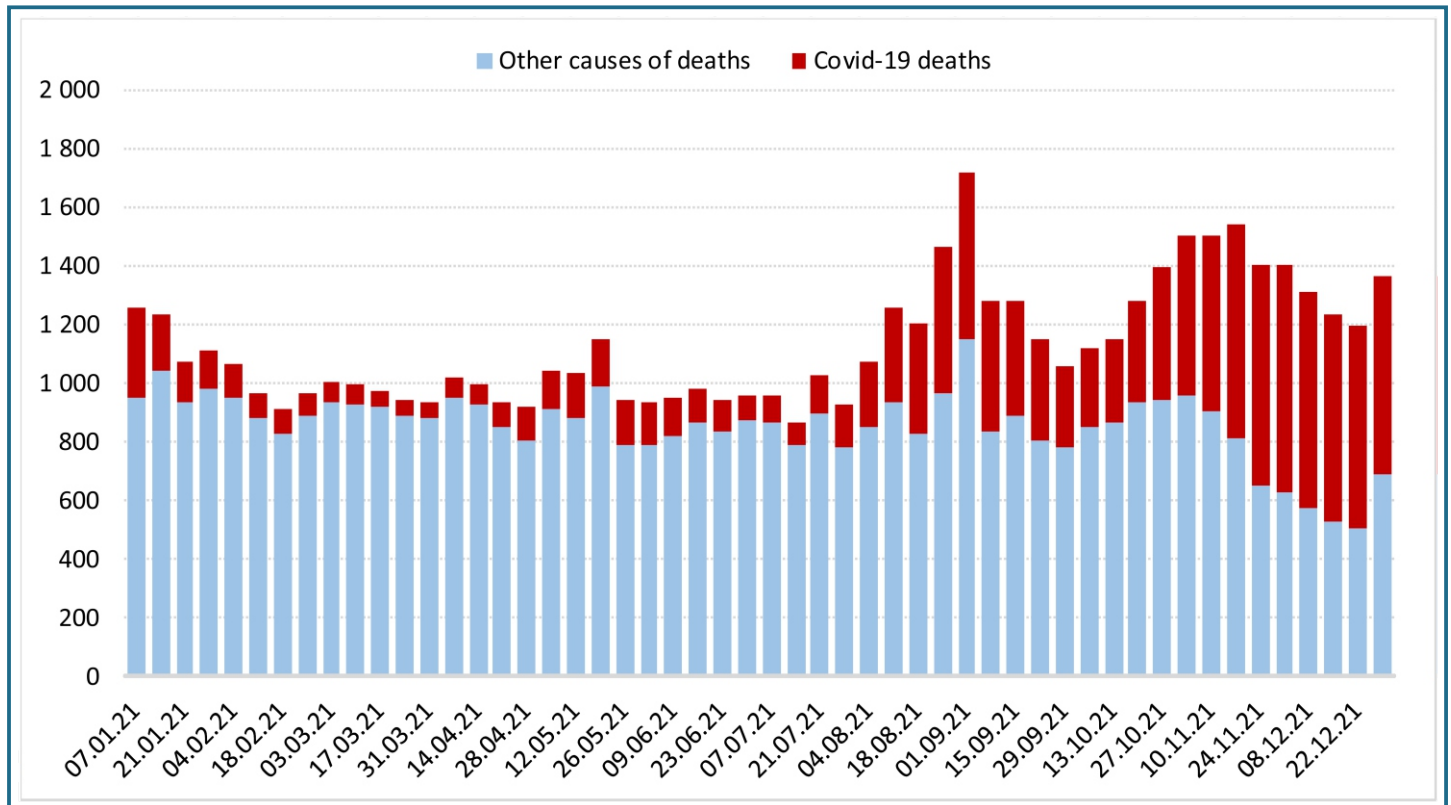
Figure 36. COVID-19 lethality rate by country

source: <https://ourworldindata.org/coronavirus>



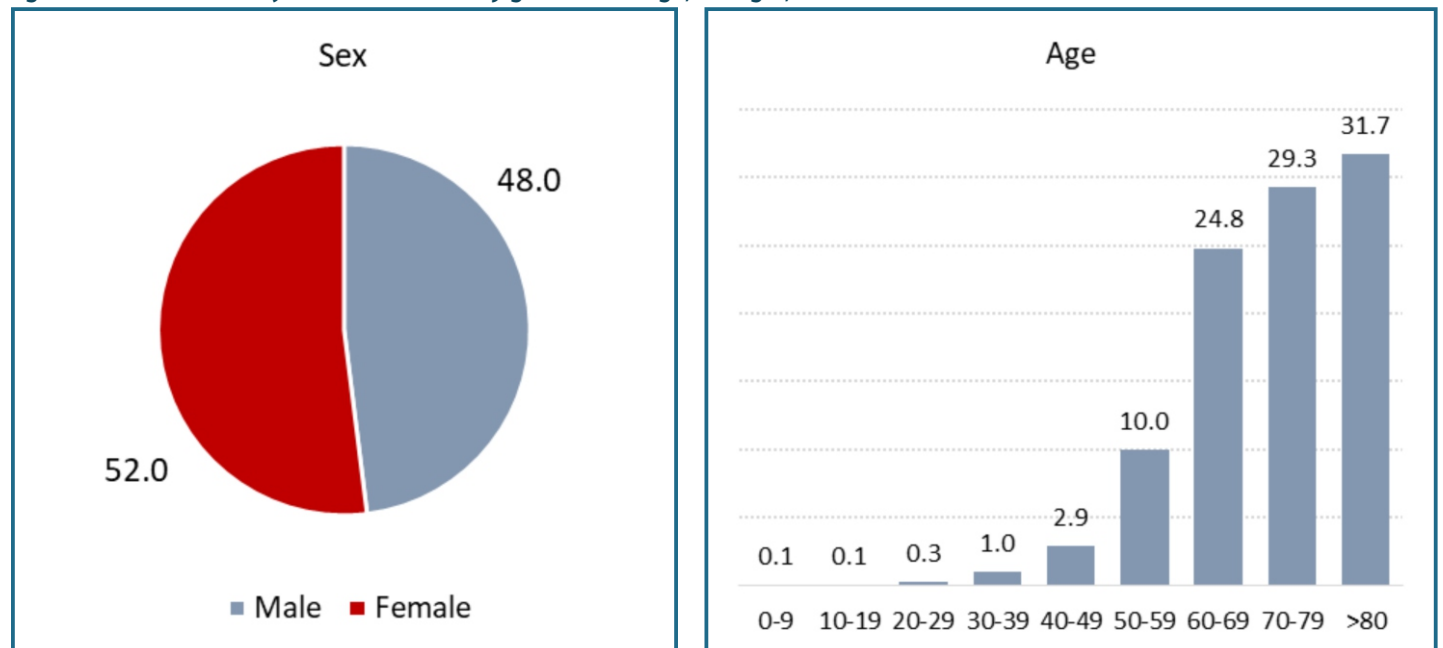
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Figure 37. Distribution of deaths due to COVID-19 and other causes by weeks in 2021



The age structure of COVID-19-induced deaths shows that the patients under the age of 70 accounted for 39.2%, 70-79-year-old patients - 29.3%, and 79 + patients for 31.7%, while by gender, 52% were males and 48% females.

Figure 38. Distribution of COVID-19 deaths by gender and age, Georgia, 2020-2021



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Figure 39. Distribution of deaths due to COVID-19 and other causes in age groups, Georgia, 2021

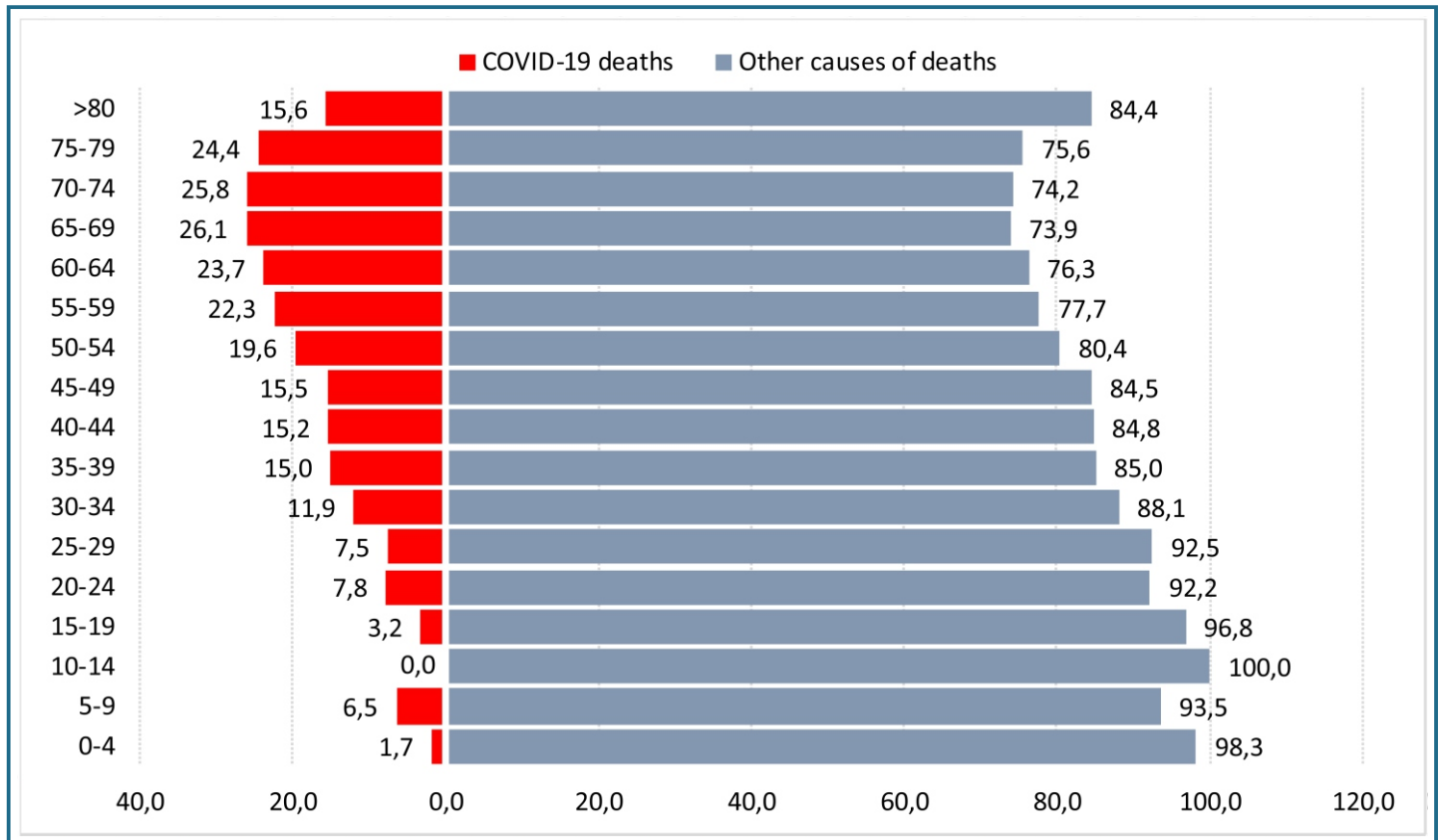
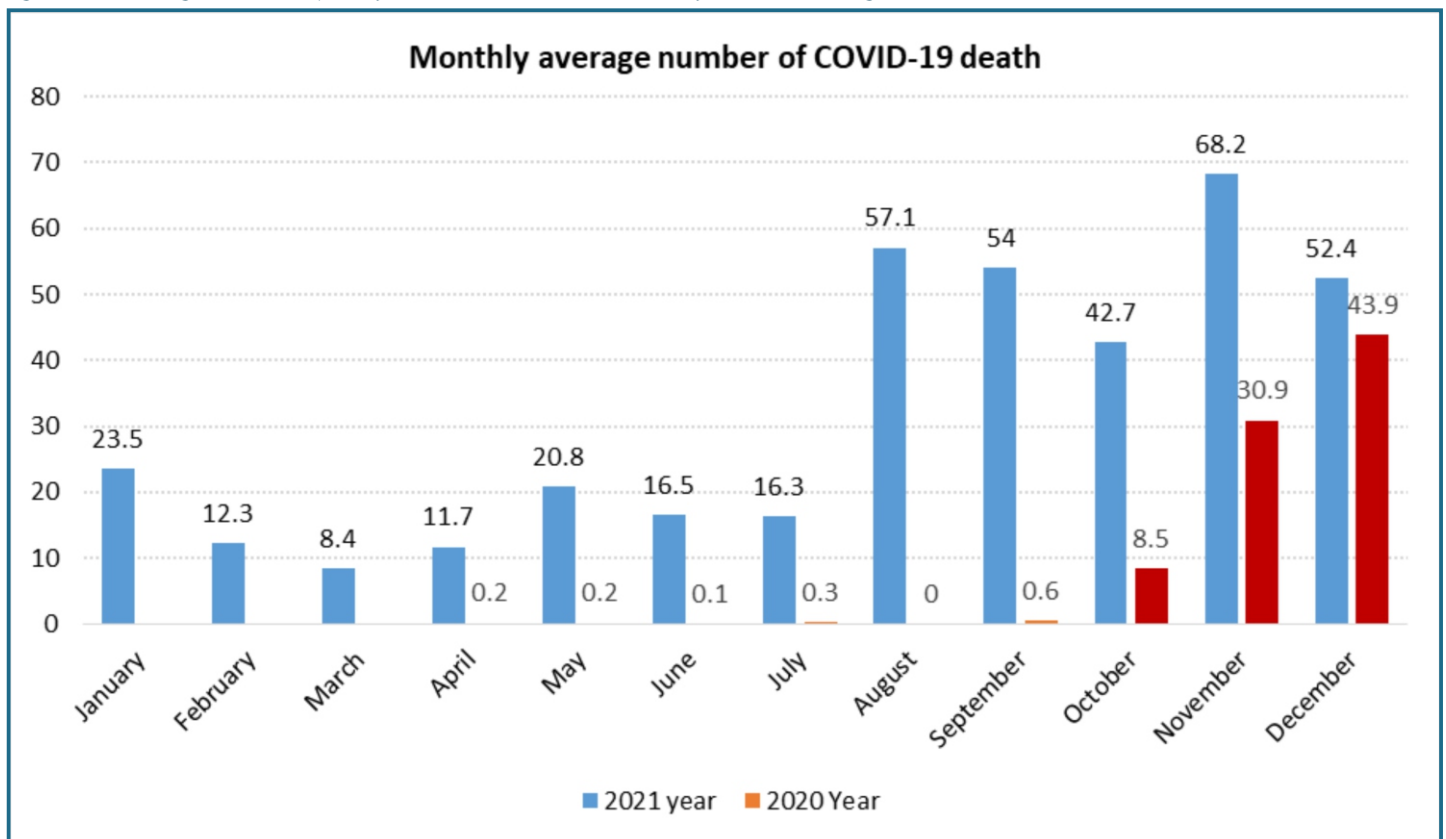


Figure 40. Average number of daily COVID-19-induced deaths by months, Georgia, 2020-2021



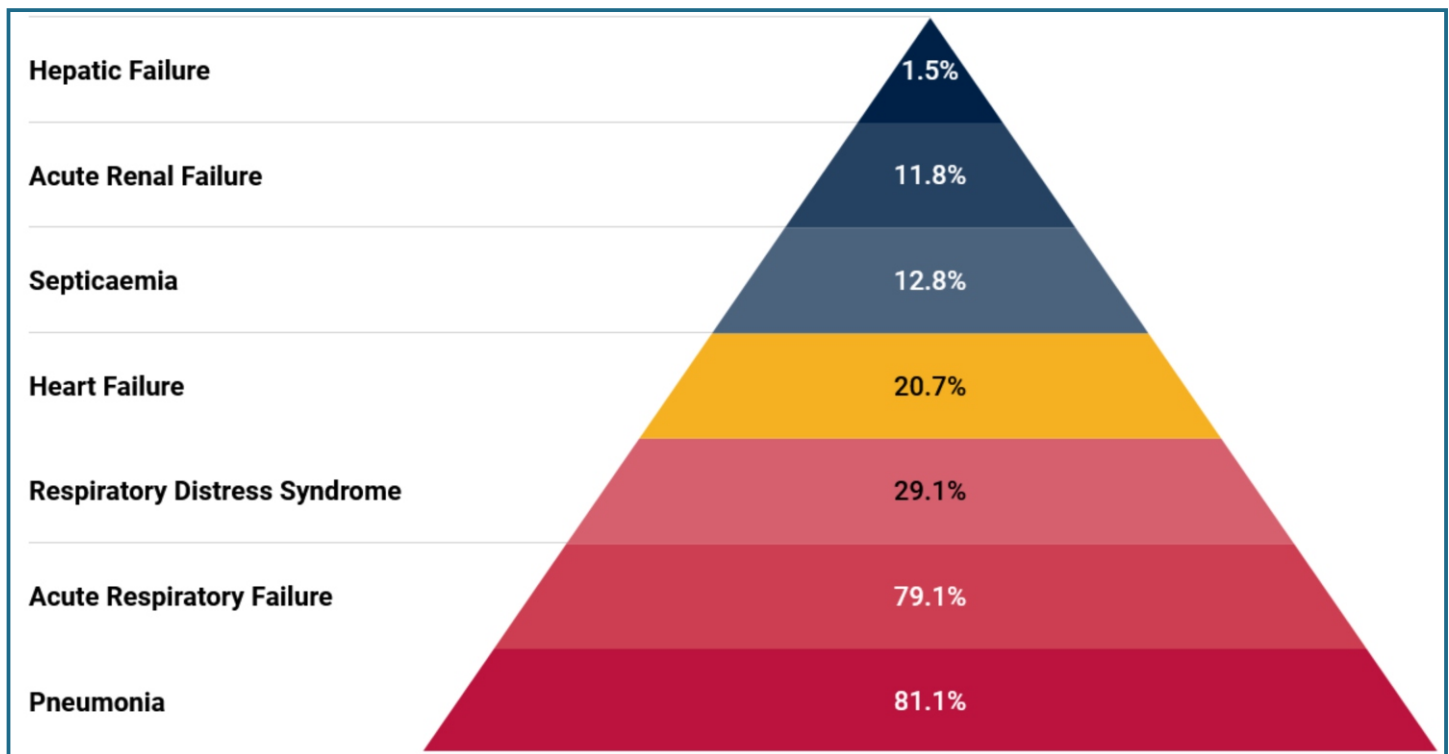
50.2% of patients who died of COVID-19 had a history of various underlying health conditions, including cardiovascular disease and hypertension accounting for 57% (95% CI 56.2-57.9), diabetes for 25.9% (95% CI 24.9-26.9), and oncological disease for 5.6% (95% CI 5.0-6.1).



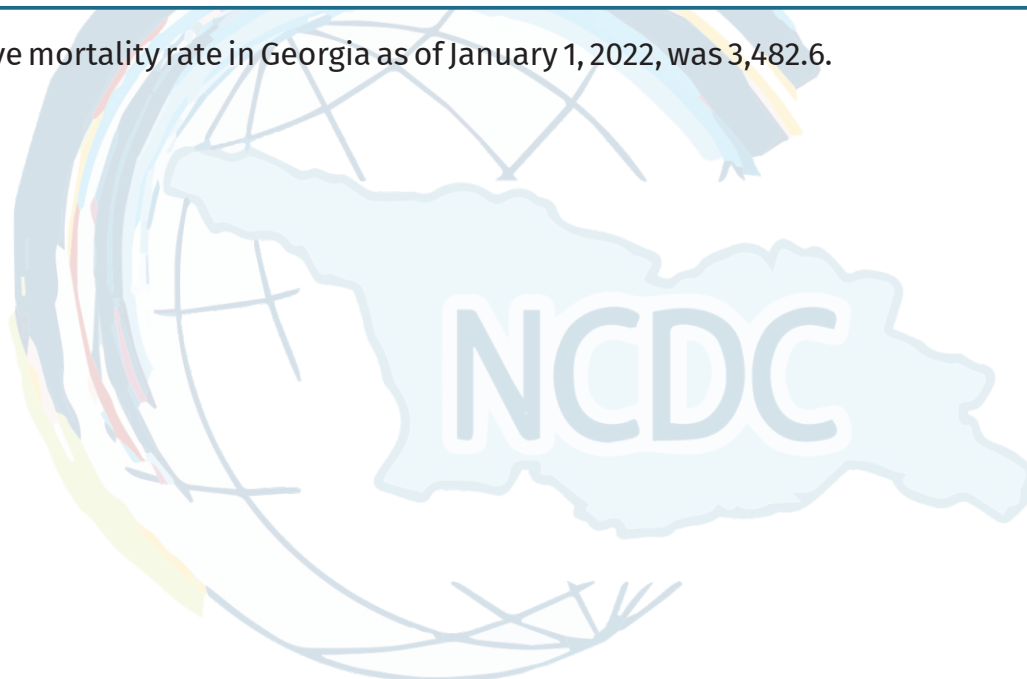
Table 7. Distribution of COVID-19 deaths by comorbidities, Georgia, 2020-2021

	%	95% CI
Hypertension	41.0	39.9-42.2
Diabetes	25.9	24.9-26.9
Embolism	8.2	7.6-8.9
Oncological disease	5.6	5.0- 6.1
Chronic lung disease	4.7	4.2-5.2

Figure 41. Distribution of COVID-19 -induced deaths by complication, Georgia, 2020-2021



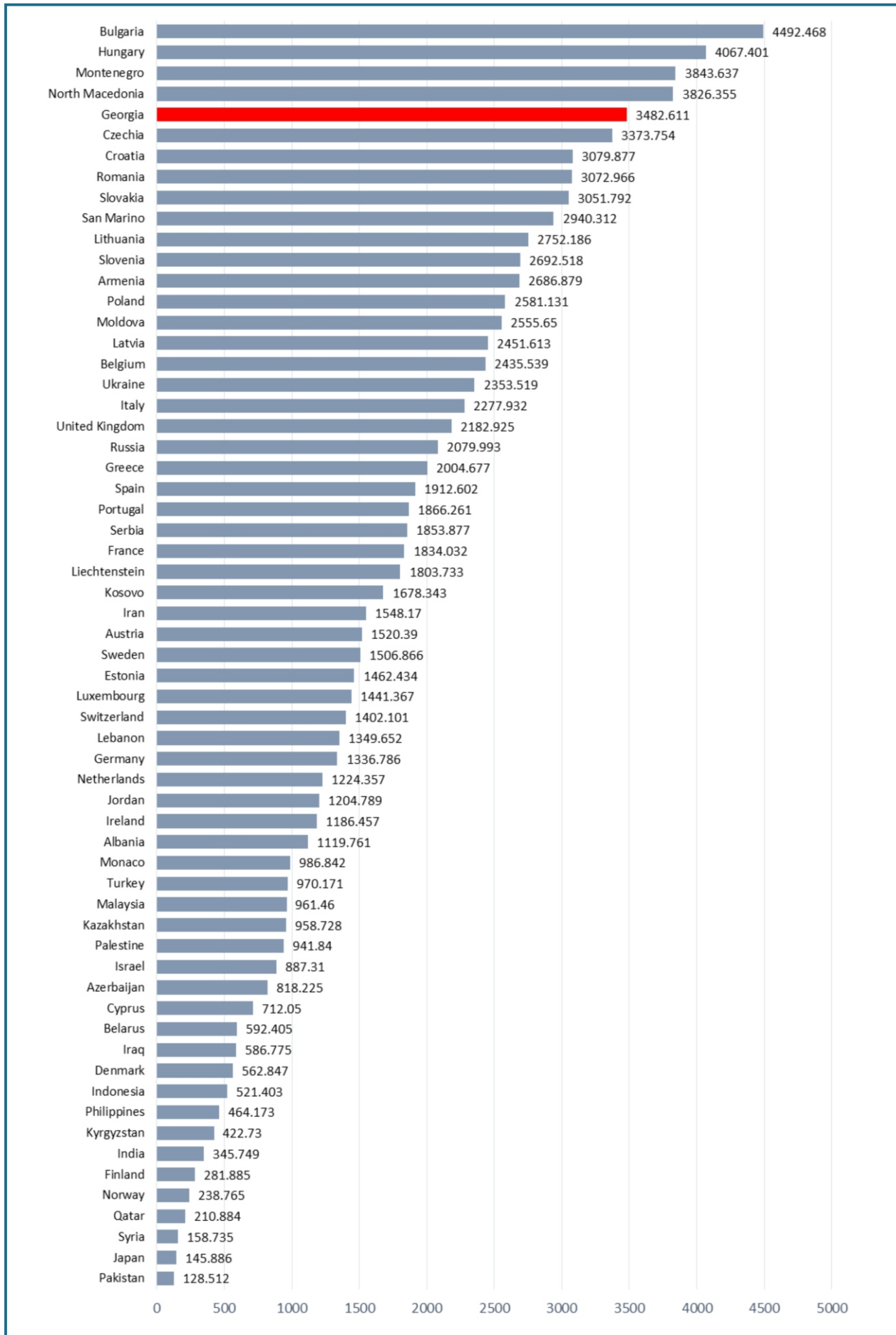
The cumulative mortality rate in Georgia as of January 1, 2022, was 3,482.6.



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Figure 42. Cumulative mortality rate with COVID-19 in Europe and Asia as of January 1, 2022

source: <https://ourworldindata.org/coronavirus>

Public Health Emergency Operations Center (PHEOC)

Preparing and responding to public health risks is one of the most important issues for Georgia and an important priority in the field of healthcare. Public Health Emergency Operations Center aims to monitor public health hazards nationally and internationally, strengthen preparedness and response capacity, implement international regulations and initiatives to respond to emergencies effectively and in a timely manner or mitigate those at maximum extent. In this direction, there is constant cooperation going both within the country in the form of intersectoral cooperation, as well as with organizations and structural units outside the country.

The Public Health Emergency Operations Center (PHEOC) was established and became operational in January 2020 at the NCDC. This activity was accelerated to provide rapid and targeted response to the COVID-19 pandemic. The World Health Organization stated that "the idea of an Emergency Operations Center (EOC) should be widely considered, as the concept of physical space for collecting, analyzing and presenting information for conducting and coordinating emergency operations implies the need for management systems to use existing resources efficiently."

The establishment of a Public Health Emergency Operations Center (PHEOC) was one of the key recommendations of the 2019 World Health Organization's Joint External Evaluation (JEE) and the European Centre for Disease Prevention and Control (ECDC) ANECC report. The PHEOC serves as a control and coordination point for the strategic allocation of resources and the management of policy issues. PHEOC is the central point of direction, control and coordination of operations during an emergency. Main functions of the Operations Center are information collection, operations management, coordination, data storage. The center receives, processes and shares information about the disease situation from Georgia and other countries, as well as mobilizes and coordinates all resources for emergency response. PHEOC aims to make timely operational decisions on a particular event with the best possible information using policies, technical advice and plans, to communicate and coordinate with the respondent, to collect, reconcile, analyze, present and use event data and information, to obtain and distribute resources, to communicate, prepare and coordinate with respondents to support audience awareness. The operations center was the main area, from which the current epidemic was managed and relevant recommendations were made.



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An Incident Management System (IMS) was set up under the Operations Center to integrate all of its units in response to the COVID-19 pandemic. IMS is an internationally recognized model for emergency response. The IMS defines the roles and responsibilities of the respondent group. It is a temporary, formal organizational structure that is activated for response, adapted to meet the rapidly changing requirements of that response, and deactivated at the end of it.

On November 5, 2021, the Kutaisi Regional Public Health Risk Response Center was established and equipped to prepare for and respond to public health emergencies. In order to strengthen regional preparedness and response to COVID-19, rapid response teams have been trained throughout Georgia. At this stage, COVID-19 rapid response teams have been trained in Adjara, Guria, Samegrelo-Zemo Svaneti, Kakheti and Imereti. A standard operating procedure (SOP) for rapid response teams on COVID-19 has also been established.

One of the components of rapid response team training is fieldwork. Kakheti COVID-19 Rapid Response Team was formed with the aim of launching a joint response team for visiting the field and conducting monitoring and evaluation in the selected area. As a result of the work carried out, shortcomings were identified, which were reflected in a specially created field work report, and relevant recommendations were issued.

In terms of international communication, the National Center for Disease Control and Public Health, as the National Coordinator of International Health Regulations, provides the World Health Organization with daily COVID-19 statistics.

The NCDC also reports weekly to the European Platform for Disease Control and Prevention (ECDC) (Tessy) on COVID-19 confirmed deaths and vaccinations.

In the future, it is planned to further strengthen preparedness and response capabilities and to develop an appropriate program for this purpose.

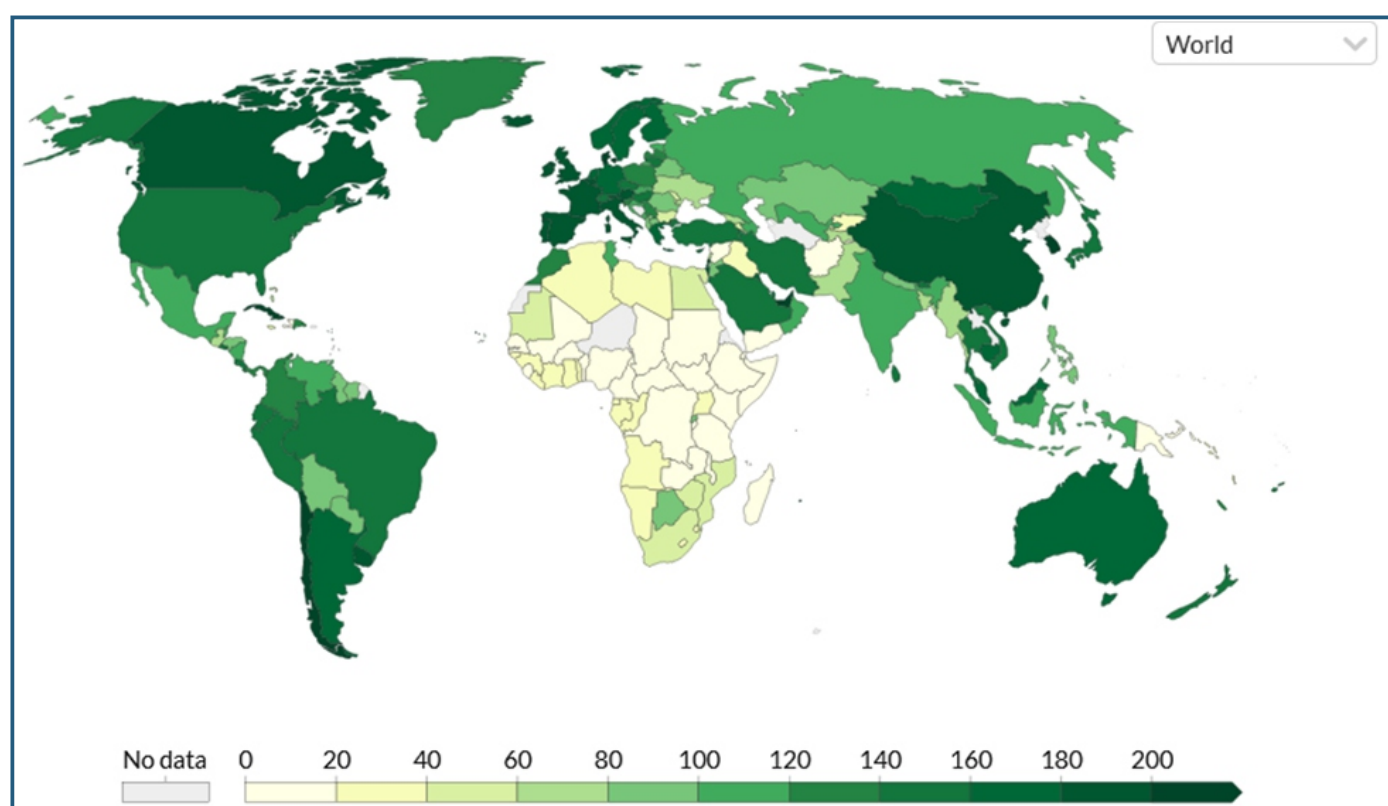


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VACCINATION AGAINST COVID-19

Vaccination is of particular importance for the prevention and reduction of damage inflicted by COVID-19 pandemic. Vaccines are the most effective tool in the fight against pandemics, enabling the world to overcome this great challenge. There are currently 321 different types of COVID vaccines being worked on globally, 137 in clinical and 194 in pre-clinical trials. As of January 1, 2022, vaccination was underway in 233 countries and territories, with 9.43 billion doses administered globally, an average of 30 million doses of vaccine consumed daily, and 59.1% of the world's population vaccinated with at least one dose of COVID-19 vaccine. Noteworthy, the coverage with at least one dose is the highest in the United Arab Emirates (99% of the population), Cuba (92% of the population) and Portugal (91% of the population).

Figure 43. Administered Doses of COVID-19 Vaccine per 100 of Population as of January 1, 2022



source: <https://ourworldindata.org/coronavirus>

The target of the World Health Organization is to vaccinate at least 70% of the population by July 1, 2022. The map shows forecasts of reaching the 70% threshold by country.

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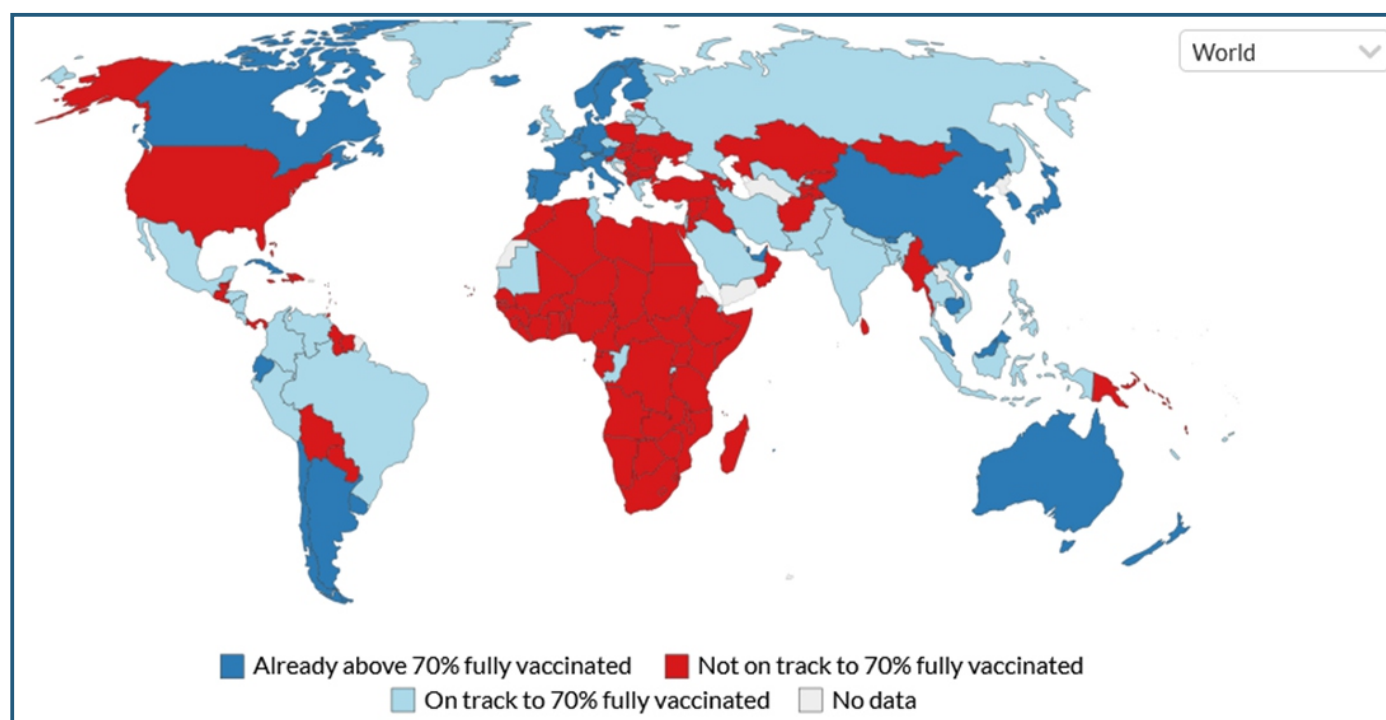


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Figure 44. Forecasts for the 70% COVID-19 vaccine target by country as of January 1, 2022



წყარო: <https://ourworldindata.org/coronavirus>

Georgia's readiness for vaccination against COVID-19 has been determined by the following several preconditions: the priority of the state immunization program and increase in the immunization budget by almost 6 times in the last 8 years before the pandemic; procurement by the country only of WHO pre-qualified vaccines for routine vaccination; routine immunization system having the appropriate cold chain; 4 new vaccines introduced in the country in recent years (mainly with the assistance of GAVI) and several trainings conducted for medical staff involved in immunization; cooperation with the international partners (WHO, UNICEF, GAVI, COVAX, WB, USAID, ADB, etc.) with respect to the immunization program.

Georgia has been preparing for the COVID-19 vaccination since the summer of 2020. The country joined the COVAX platform established with the support of WHO, UNICEF, GAVI and CEPI. The negotiations held in the fall ended with the signing a cooperation agreement and the transfer of the corresponding amount, thus guaranteeing Georgia supply of 1.4 million doses for vaccinating 20% of adult population (700,000 people for vaccination with two doses) from COVAX Platform throughout 2021. For reasons beyond the control of the country, mainly due to the limited availability of vaccines worldwide, the COVAX platform failed to deliver the agreed quantities in 2021, and a total of 160,020 doses of vaccines were provided to the country. The government was also in intensive negotiations with the vaccine companies while through diplomatic channels it was working on the sharing scheme with the governments of different countries. In total, by 2021, the country mobilized 4 vaccines (authorized by WHO) Pfizer-BioNTech, AstraZeneca, Sinopharm and Sinovac, and a total of 5,034,500 doses of COVID-19 vaccine were gradually introduced in Georgia.

In parallel with the emergence of promising vaccines on the world market in the fall and the commencement of 2/3 research phase, the country has started intensive preparations for a mass program of vaccine deployment, introduction and inoculation and large-scale vaccination which started and is going in accordance with the national vaccination plan against COVID-19 approved



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პროფილაქტიკის ცენტრი
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under the Ordinance №67 of the Government of Georgia (January 21, 2021). In order to protect the population of the country and recover and develop economy, 60% of the adult population was identified as the vaccination coverage target. The plan describes the vaccination process in the country, taking into account the relevant legislation. The process is led by the Interagency Coordination Commission with the guidance of the Minister of Internally Displaced Persons from the Occupied Territories, Labor, Health, and Social Affairs. The technical work competence is organized by the National Center for Disease Control and Public Health, and the expertise is provided by consultants, whose mobilization was made possible with the financial support of the Asian Development Bank. A technical committee of immunization experts was involved in the development of the plan. Representatives of donor organizations, universities, and the Public Defender were asked to participate in the work of the Interagency Coordination Commission.

Intensive preparations for receiving the vaccines in the country began during the planning period. Based on international recommendations and the Georgian COVID-19 National Vaccine Deployment Plan, gradual expansion of the immunization process of 2021 was planned, taking into account vaccine supply and resources. In parallel with the provided doses, the priority (high risk) groups were covered and then the rest of the citizens. The selection of the groups was based on the recommendations of the ETAGE and aimed at protecting the high-risk population from severe disease caused by COVID-19 and reducing mortality, while at the same time gradually restoring normal economic activity.

Table 8. Target population and stages of COVID-19 vaccination coverage, Georgia, 2021

Stages	Priority (High Risk) Groups and Sequence	Target Population*	Coverage Target	Total number of people to be vaccinated**
Ia	Healthcare workers	71,415	65%	46,420
Ia	Beneficiaries and personnel of long-stay care institutions	2,600	60%	1,560
Ia	>75 -year-old persons	226,800	60%	136,080
Ib	65-74 -year-old persons	329,183	60%	197,510
IIa	Providers of essential services	180,373	60%	108,224
IIa	55-64	478,400	60%	287,040
IIb	18-54 people with chronic diseases	89,400	60%	53,640
Total (high risk and essential groups)				830,474
III	Other Groups of Population	1,434,567	60%	860,740
Total				1,691,214
Adult Population %				60%

Vaccination-related consumables were calculated - syringes, safe boxes, personal protective equipment and other necessary financial resources were identified.



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became possible to administer 4 different types of vaccines at the same time, it became possible to get vaccinated at mass vaccination centers open in big cities of the regions besides Tbilisi. There is also a "vaccination bus" in the capital, and for a number of citizens with limited mobility, it is possible to provide a mobile vaccination group service throughout the country.

An important component of the National Vaccination Program is the information campaign and raising public awareness about vaccination. With the involvement of experts, a communication action plan for the introduction of the COVID-19 vaccine was prepared. Various information and educational interventions have been carried out with the support of the Center and donor organizations, an information campaign on the introduction of the COVID-19 vaccine is underway, which includes social media activities, a series of shows in regional media and online webinars. Informational-educational videos were prepared in Georgian, Armenian and Azerbaijani languages. Citizens can find information about evidence-based vaccination on the website www.ncdc.vaccines.ge. In order to support the vaccination process, informational meetings are held with state representatives in the regions, heads of local municipalities and primary healthcare representatives.

A vaccination marathon was launched across Georgia on October 18, 2021 to promote vaccination against COVID-19 and increase its availability in regions under the initiative of the National Center for Disease Control and Public Health and the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs. The main message of the marathon was "At Georgia's service - we get vaccinated for the benefit of each other! The vaccination is the right choice for saving lives of our children, parents, friends and relatives." Representatives of the Ministry of Health, the National Center for Disease Control and Municipal Centers for Public Health, village trustees, local government representatives, NGOs and other stakeholders took part in the marathon.



38 municipalities / villages from 10 regions were selected to participate in the COVID Marathon within the scope of the micro-planning. Preparatory work was carried out and the immunization process was organized / started in the selected villages with the involvement of the Center's representatives. Meetings were held with local governments, heads of district public health centers, village doctors and the population on a door-to-door basis. In the first phase of the COVID marathon, 16,176 people were vaccinated from selected villages.

⁴For more information, see the Communication Campaign on COVID-19 of the National Center for Disease Control and Public Health.

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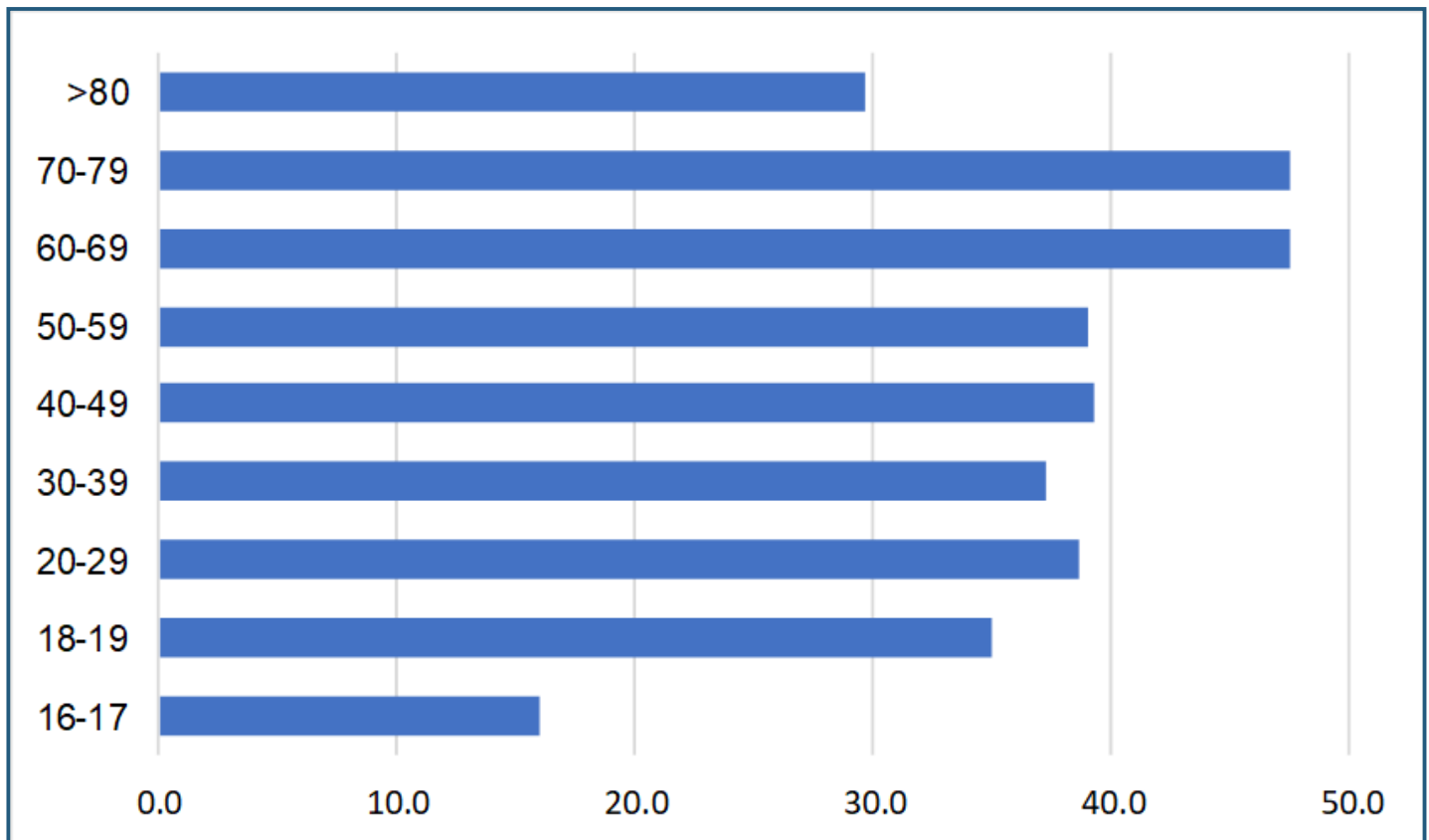


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According to the IMEM as of January 1, 2022, a total of 2,514,871 vaccinations were administered in the country, with at least one dose given to 1,291,830 persons (45.4% of the population aged >18), of which 1,150,870 (40.5% of the population aged 18) were fully vaccinated. The booster doses were administered to 73,665 people.

Figure 45. Two-dose COVID-19 vaccination (%) coverage in the respective age group, Georgia (as of January 1, 2022)



On January 1, 2022, the 7-day rate equaled 283 doses of vaccine per 100,000 of population, with an average of 10,569 doses of vaccine administered daily, although the highest daily vaccination was recorded on August 24, with 30,067 doses of vaccine.

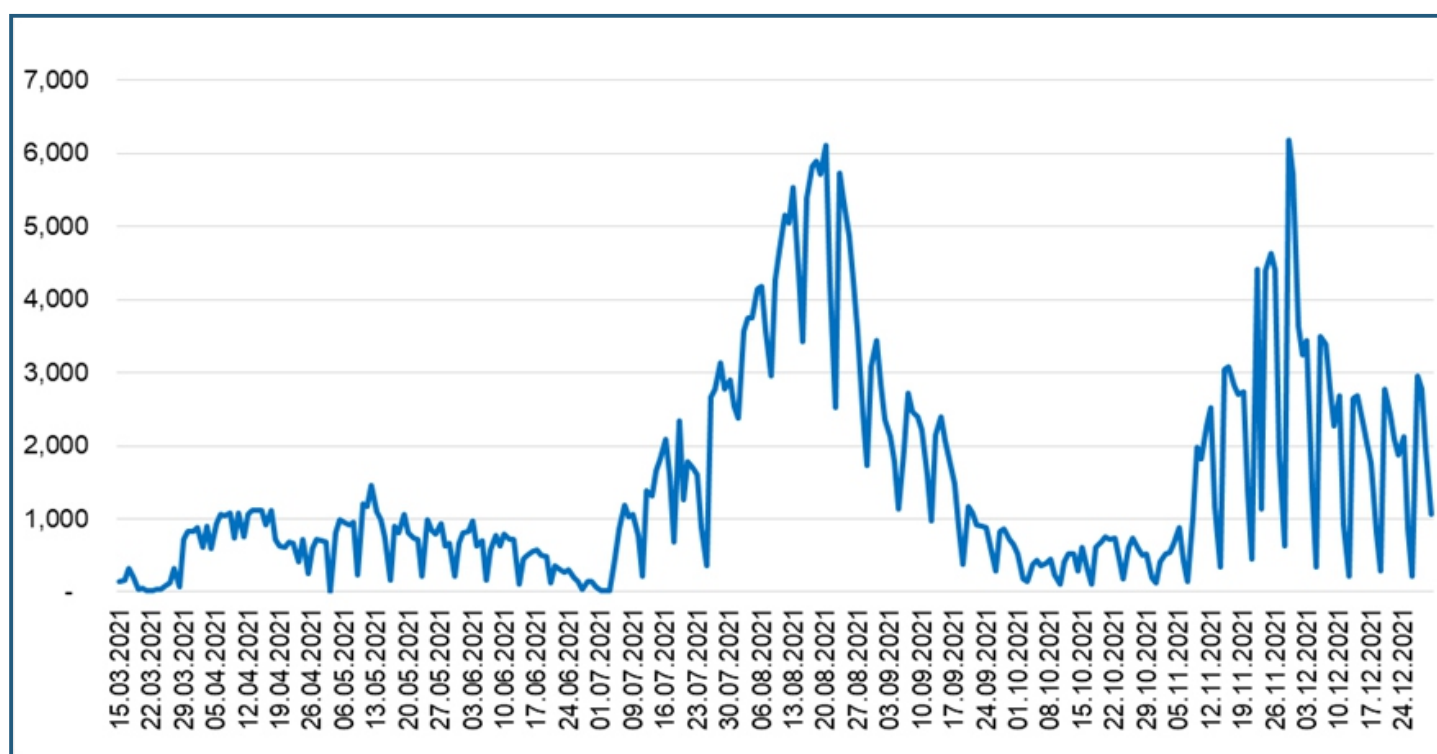
Overall, the following doses of 4 different vaccine types were administered in the country:

- 1,413,299 doses of Pfizer BioNTech
- 759,549 doses of Sinopharm
- 218,552 doses of Sinovac
- 121,458 doses of AstraZeneca

714,002 people have been fully vaccinated with Pfizer BioNTech vaccine, 400,840 people with Sinopharm, 114,567 people with Sinovac and 61,561 people with AstraZeneca.

In terms of the percentage of fully vaccinated people, most vaccinations were given in the age group of 60-79 years (47.5%) and then in the population aged 40-59 (39.2%). It should be noted that the vaccination process first started in the 65+ age group and at the last was the 12-16 -year group. It is noteworthy that the Government of the country introduced a monetary incentive of GEL 200 for the population aged 60+ since November 8, which contributed to the intensification of vaccinations and an additional 121,307 vaccinations in this age group (by January 1, accounting for 29% of vaccinated people in this group). Due to the increase in vaccination coverage of the target group, under the decision of the Interagency Coordination Council, from January 1, 2022, a monetary incentive of GEL 200 was also introduced for the population over the age of 50. In addition, from September 13 to December 31, according to the decision of the Government of Georgia, a lottery to encourage vaccination was held for all age groups. The prize fund of the lottery was GEL 2,800,000, and the prize for the final draw was set at GEL 100,000.

Figure 46. Dynamics of first dose vaccination against COVID-19 in ≥60 age group (as of January 1, 2022)



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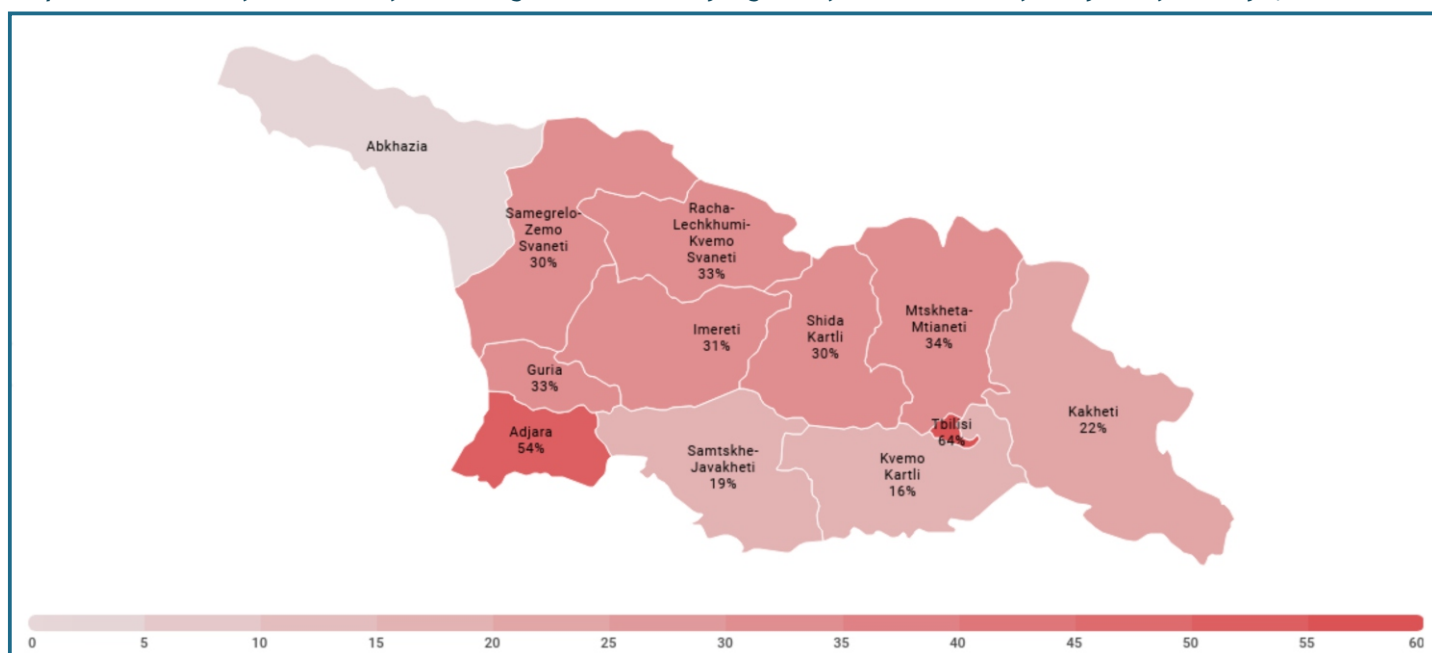


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In absolute numbers, the most vaccinations were administered in Tbilisi (48.9% of vaccinations), Adjara and Imereti. Given the full vaccination of the adult population (over 18 years old), the highest number of vaccinations was registered in Tbilisi (54.2%), Adjara (49.2%) and Racha-Lechkhumi and Kvemo Svaneti (45.3%).

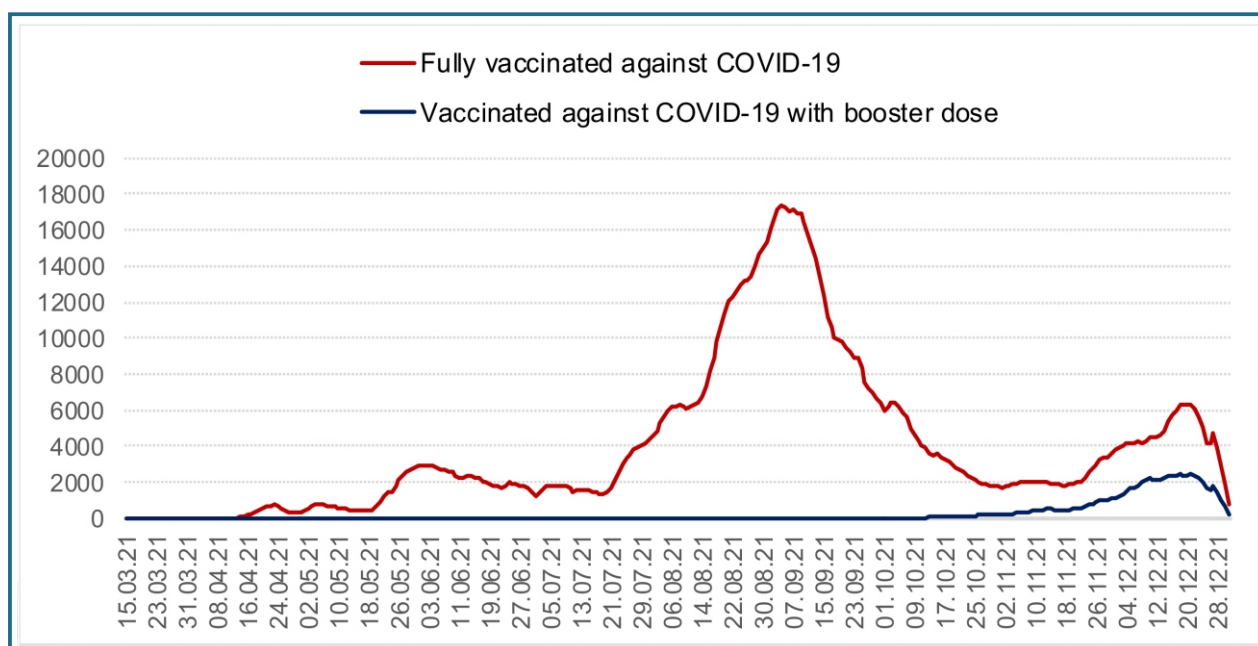
Since the launch of the National Vaccination Program, various institutions and businesses have been trying to encourage staff to maximize vaccination coverage. Vaccination of the healthcare workers is important along with vaccination of the risky age groups. As of January 1, 2022, 83.1% of physicians, 66.7% of nurses, 56.9% of nursing aids, and 79% of administrative and technical staff were vaccinated with at least one dose.

Map 3. Distribution of two doses of vaccine against COVID-19 by regions of the vaccination facility (as of January 1, 2022)



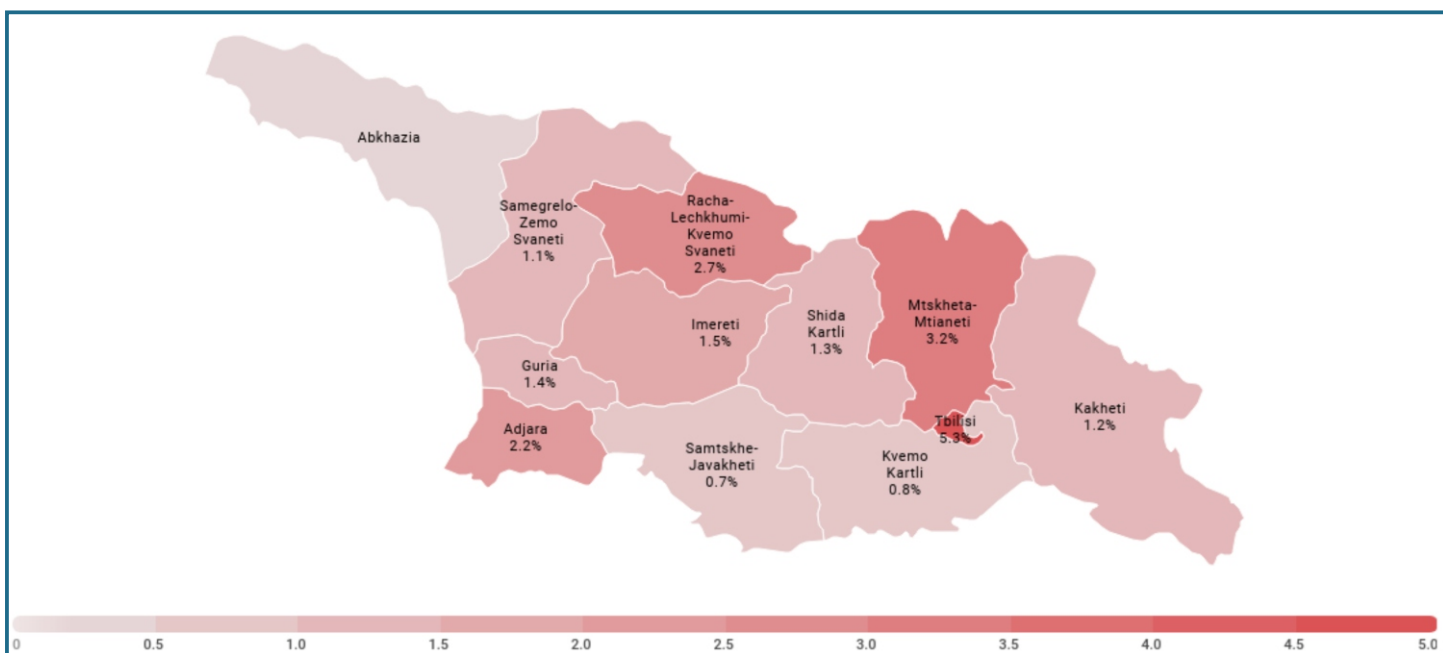
Following the emergence of relevant evidence of booster efficacy in the international arena, the country decided to start administration of booster doses from October 2021.

Figure 47. Number of people vaccinated against COVID-19 with booster dose, Georgia

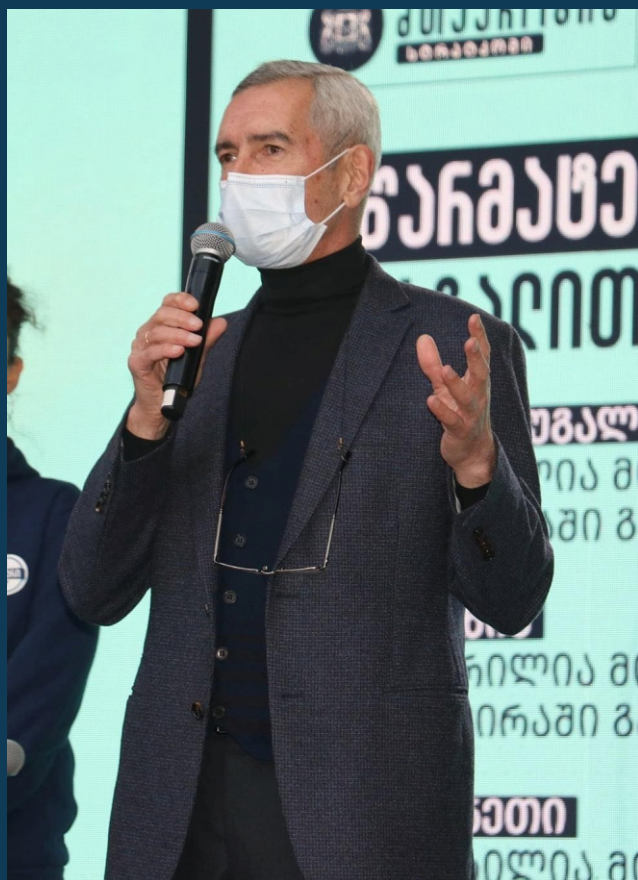




Map 4. Distribution of people vaccinated against COVID-19 with booster doses by regions (share in adult population)



The average daily vaccination rate from the start of vaccination through December 31 was 8,702. The technical loss of AstraZeneca was 3%, for Pfizer - 1.1% and for Sinopharm - 0.5%.





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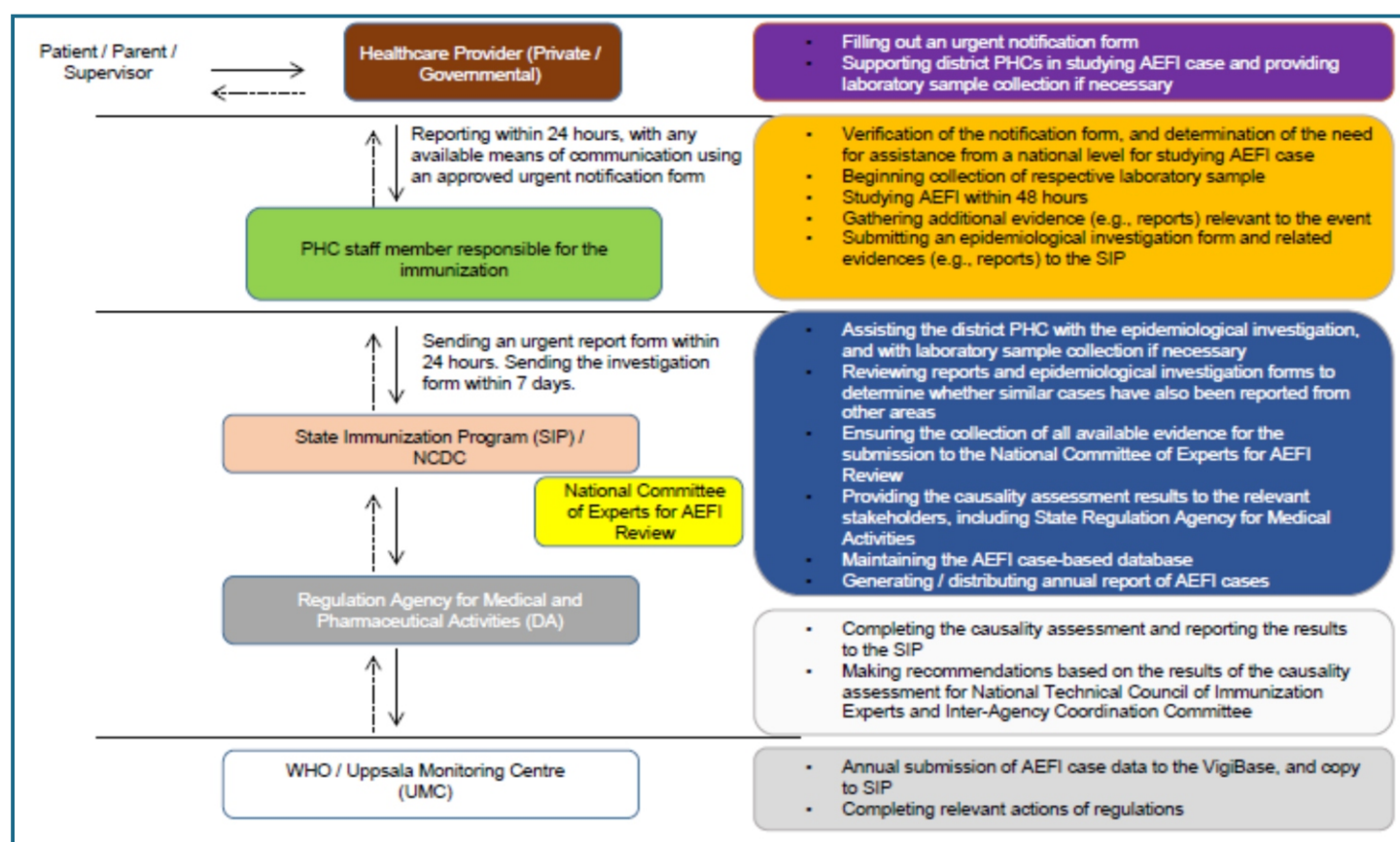


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Adverse Events Following Immunization and Monitoring

Any AEFI is registered in the relevant reporting form (Form 58) by the medical staff / epidemiologist of the medical facility and notified to the respective unit of public health system. The working group of the National Center for Disease Control and Public Health checks the completeness and accuracy of AEFI forms (dosage, brand name, expiration date, and etc.), prepares and analyzes the material - which is submitted to the National Committee of Experts that reviews AEFIs and the other interested parties.

Figure 48. Algorithm of the actions, flow and time limits for reporting AEFI cases, Georgia



AEFI notifications are currently being provided to 3 vaccine manufacturers - Sinopharm, Sinovac and Pfizer-BioNTech (the latter via the website www.cvdvaccine.com).

The National Committee of Immunization Safety Experts is an independent deliberative body established on a pro bono basis under the order of the Minister of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia according to the recommendation of the World Health Organization to determine the causal adverse effects of post-immunization.

The committee meeting is held usually once a week and its functions are:

1. Assess potential cause-and-effect relationships between AEFI and the relevant vaccine;
2. Monitoring of reported AEFI data for early detection of unknown possible vaccine safety concerns;
3. Review all serious AEFI submitted for expert evaluation and, if necessary, make recommendations for further detailed studies;
4. Develop recommendations to eliminate problems;
5. Make a final decision on the assessment of cause and effect and facilitate the improvement of the



immunization safety monitoring system; if necessary, liaise with other national and international experts to determine issues related to causality and vaccine quality;

6. Develop recommendations on issues related to the safety of vaccines and immunizations, as well as issues related to AEFI at the request of the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs (hereinafter-Ministry) or the State Agency for Regulation of Medical Activities (hereinafter-Regulatory Agency).

The National Committee of Immunization Safety Experts includes the following specialists: Infectionist, Allergologist-Immunologist, Neurologist, Microbiologist, Pathologist, Pediatrician, Epidemiologist, Forensic Physician, Nephrologist, Therapist, Cardiologist.

As of January 1, 2022, a total of 2,514,871 vaccinations were administered in Georgia, of which 1,929 cases were registered as AEFI.

Out of 1,929 AEFI cases, 206 were considered serious, of which 177 patients received emergency care.

The National Committee of Immunization Safety Experts reviewed 152 from the 206 cases to study the causal association, of which 96 were compatible with the causal link to immunization (including 51 cases related to fear of immunization, in 45 cases the reaction related to vaccine was identified), 34 cases were classified as incompatible with immunization, and 20 cases as uncertain. Due to the lack of adequate information, 1 case could not be classified.

In the defined period after immunization, 7 lethal cases were registered, of which 5 were classified as incompatible with immunization. 1 case has not yet been considered by the committee. Review of 1 case is suspended until further documentation is submitted to the Committee.

Table 9. Most commonly reported AEFIs by COVID-19 vaccine, For 2,514,871 doses (15.03.2021 - 01.01.2022)

	Pfizer BioN Tech	AstraZeneca	<u>Sinopharm</u>	<u>Sinovac</u>	Total Number
Fever $\geq 38^{\circ}\text{C}$	311	151	46	18	526
Temperature rise $<38^{\circ}\text{C}$	274	66	58	20	418
Lymphadenopathy	42	2	2	0	46
Allergic reactions	106	34	72	25	237
Probable anaphylaxis	1	3	6	1	11
Arthralgia	191	60	37	11	299
Myalgia	106	52	28	10	196
Arterial hypertension	50	30	41	13	134
Chill-like event	53	63	18	9	143
Common weakness	241	64	74	35	414
Pain and swelling at the injection site	235	80	20	12	347
Headache	201	69	59	30	359
Syncope and collapse	19	7	10	9	45
Other (exacerbation of the disease, dizziness, nausea, vomiting, sweating, arterial hypotension, tachycardia, sore throat, numbness, and etc.)					812

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საბჭო COVID-19-ის
დაცვის, აღმოფხვრისა და
გავრცელების საკითხებში



საქართველოს ჯანდაცვის
მინისტროს
საერთაშორისო ურთიერთ-
დახმარების ცენტრი
საერთაშორისო COVID-19-ის
დაცვის საკითხებში

Table 10. Individual AEFIs per 100,000 doses by vaccine (15.03.2021 - 01.01.2022)

	Pfizer BioN Tech	AstraZe- neca	Sinopharm	Sinovac	Total points
Fever $\geq 38^{\circ}\text{C}$	22.0	124.3	6.1	8.2	20.9
Temperature rise $<38^{\circ}\text{C}$	19.4	54.3	7.6	9.1	16.6
Lymphadenopathy	3.0	1.6	0.3	0	1.8
Allergic reactions	7.5	28.0	9.5	11.4	9.4
Probable anaphylaxis	0.1	2.5	0.8	0.5	0.4
Arthralgia	13.5	49.4	4.9	5.0	11.9
Myalgia	7.5	42.8	3.7	4.6	7.8
Arterial hypertension	3.5	24.7	5.4	5.9	5.3
Chill-like event	3.7	51.9	2.4	4.1	5.7
Common weakness	17.0	52.7	9.7	16.0	16.5
Pain and swelling at the injection site	16.6	65.9	2.6	5.5	13.8
Headache	14.2	56.8	7.8	13.7	14.3
Syncope and collapse	1.3	5.8	1.3	4.1	1.8
Other (exacerbation of the disease, dizziness, nausea, vomiting, sweating, arterial hypotension, tachycardia, sore throat, numbness, and etc.)					32.3

The table shows not the number of cases but the number of AEFIs (one beneficiary may develop several AEFI at once)

Table 11. Quantities of mild and severe AEFIs by vaccines (15.03.2021 - 01.01.2022)

Vaccine	Number of mild AEFI	Number of serious AEFI	Total Number
Pfizer BioN Tech	2089	57	2146
AstraZeneca	776	38	814
Sinopharm	603	77	680
Sinovac	263	34	297

Table 12. Mild and severe AEFI rates by vaccines per 100,000 doses (15.03.2021 - 01.01.2022)

Vaccine	The rate of mild AEFI per 100,000 doses	The rate of serious AEFI per 100,000 doses	Overall a rate of mild and serious AEFI per 100,000 doses
Pfizer BioN Tech	147.7	4.0	151.7
AstraZeneca	639.0	31.3	670.3
Sinopharm	79.3	10.1	89.5
Sinovac	120.2	15.5	135.7

AEFI Percentage per 2,514,871 doses - 0.1%;

Percentage of severe AEFIs per 2,514,871 doses - 0.01%.

In August 2021, a representative of the WHO Regional Office for Europe visited Georgia to assess issues related to the introduction of COVID-19 vaccination, in particular the AEFI case management system in Georgia. As it is known, since June, in order to improve the quality of reporting on AEFIs, regular meetings have been held with medical staff in major cities of Georgia.

WHO/Europe prepared a publication for its website, where the innovative approach of the Georgian AEFI monitoring, recording and management system has been evaluated as one of the most successful models in the region.

Table 13. Distribution of AEFIs registered in Europe by vaccines and countries (08.12.2020 – 15.12.2021), n = 7 271

Country	Pfizer AEFIs	AstraZeneca AEFIs	<u>Moderna</u> AEFIs	Total Doses Administered	Relevant % of AEFIs
England	113,503	198,242	20,225	103,790,317	0.3 %
Wales	7,271	10,615	941	5,972,617	0.3 %
Northern Ireland	2,645	2,937	202	3,292,432	0.2 %
Scotland	10,928	17,051	2,278	10,664,257	0.3 %
Germany ⁵	113.792	46.325	28.289	123,347,849	0.2 %

Source: <https://www.gov.uk/government/publications/coronavirus-covid-19-vaccine-adverse-reactions/coronavirus-vaccine-summary-of-yellow-card-reporting>
https://www.pei.de/SharedDocs/Downloads/DE/newsroom/dossiers/sicherheitsberichte/sicherheitsbericht-27-12-20-bis-30-11-21.pdf?__blob=publicationFile&v=7





In order to assess the ongoing vaccination process against COVID-19 in Georgia and the protective impact of the vaccines used, based on international experience and national surveillance data, the main characteristics of the prevalence and course of COVID-19 in the country were evaluated.

The evaluation used: Descriptive analysis of COVID-19 National Surveillance System Data and Methodology for calculating indicators provided by CDC <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html> , in addition, the approaches used in various international publications were taken into account. Data sources included the immunization electronic module, laboratory module, birth and death electronic module, hospitalization module, and data provided by the National Health Agency.

Any person, receiving at least two doses of COVID-19 vaccine and being infected with the SARS-CoV-2 virus, is considered as infected vaccinated case when infection is confirmed after > 14 days following administration of the second dose.

The following indicators were selected to assess the protective effect of COVID-19 vaccine due to vaccination against COVID:

1. Infection protection rate (%);
2. Protection rate from hospitalization (%);
3. Rate of protection from the need for intensive and critical care (%);
4. Rate of protection from lethal outcome (%).

From the start of vaccination against COVID-19 in the country from March 15, 2021 through December 31, 2021, 74,804 SARS-CoV-2 virus-infected cases confirmed by a laboratory were identified among 1,151,070 fully vaccinated individuals.

During the same period, SARS-CoV-2 virus infection was confirmed by laboratory in 21,288 cases vaccinated with a single-dose and 133 cases vaccinated with a booster dose.

From March 15 through December 31, 2021, a total of 661,696 laboratory-confirmed cases of SARS-CoV-2 virus infection were registered in the country.

Table 14. Share of Infected Persons among Population Vaccinated with respective dose, 15.03.2021-31.12.2021, Georgia

Dosage	Vaccinated infected person	Number of vaccinated persons	The share of infected people
2	74,671	1,151,070	6.49%
3	133	73,774	0.19%

*Katikireddi, S. V., Cerqueira-Silva, T., Vasileiou, E., et al., Two-dose ChAdOx1 nCoV-19 vaccine protection against COVID-19 hospital admissions and deaths over time: a retrospective, population-based cohort study in Scotland and Brazil, *Lancet* 2022; 399: 25–35, DOI: [https://doi.org/10.1016/S0140-6736\(21\)002754-9](https://doi.org/10.1016/S0140-6736(21)002754-9); Grange, Z., Buelo, A., Sullivan, C., Moore, E., Agrawal, U., Boukhari, Kh., et al., Characteristics and risk of COVID-19-related death in fully vaccinated people in Scotland, *Lancet* 2021, Volume 398, DOI: [https://doi.org/10.1016/S0140-6736\(21\)002316-3](https://doi.org/10.1016/S0140-6736(21)002316-3); Tenforde, M. W., Self, W. H., Adams, K., et al, Association Between mRNA Vaccination and COVID-19 Hospitalization and Disease Severity. *JAMA Network*. 2021;326(20):2043-2054. DOI: 10.1001/jama.2021.19499



Some characteristics of the fully vaccinated infected population: an average age of the vaccinated infected persons is 48.94 years (with 16.566 standard deviation).

Table 15. Age Characteristics of Vaccinated Infected Persons, 15.03.2021-31.12.2021, Georgia

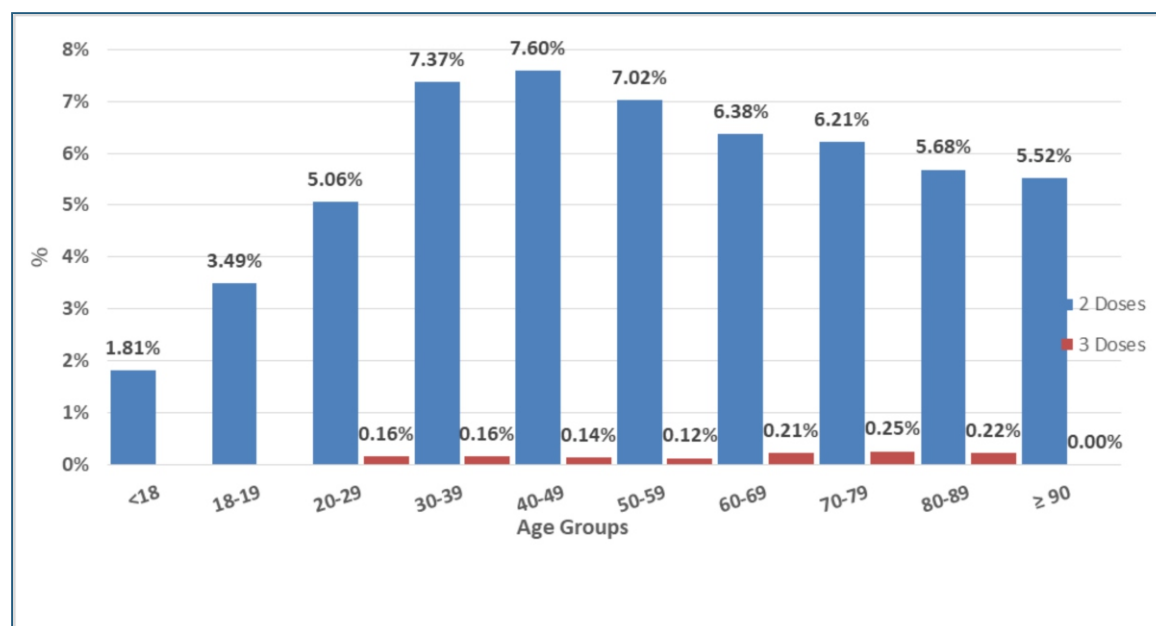
N = 74804	Minimum	Maximum	Medium	Standard deviation
Age	12	99	48.94	16.566

Table 16. Age Characteristics of Vaccinated Infected Persons by administered doses, 15.03.2021-31.12.2021, Georgia

Dosage	Number of infected	Minimum age	Maximum age	Average age	Standard deviation
2	74671	12	99	48,92	16,561
3	133	21	87	59,00	16,678

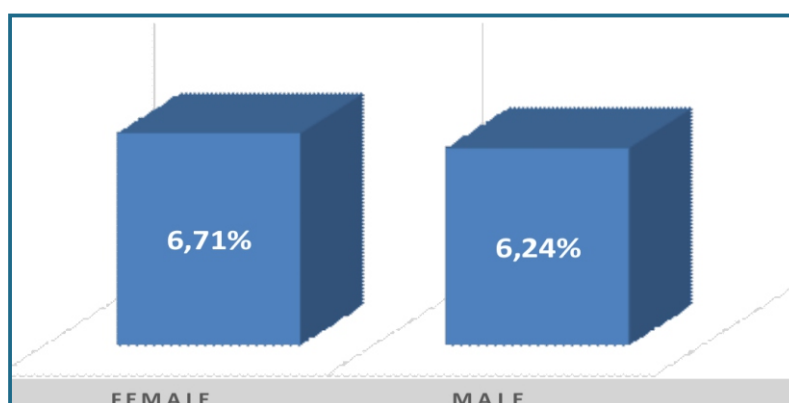
From the fully vaccinated population, the highest infection rate 7.6% was reported in the 40-49 age group, and the infection rate is higher than 7% in the 30-59 age group.

Figure 49. Share of infected people in vaccinated population by age group and administered dose, 15.03.2021-31.12.2021, Georgia



The proportion of infections varies slightly by gender.

Figure 50. Percentage of Infected Persons among Vaccinated People of the same sex, 15.03.2021-31.12.2021, Georgia



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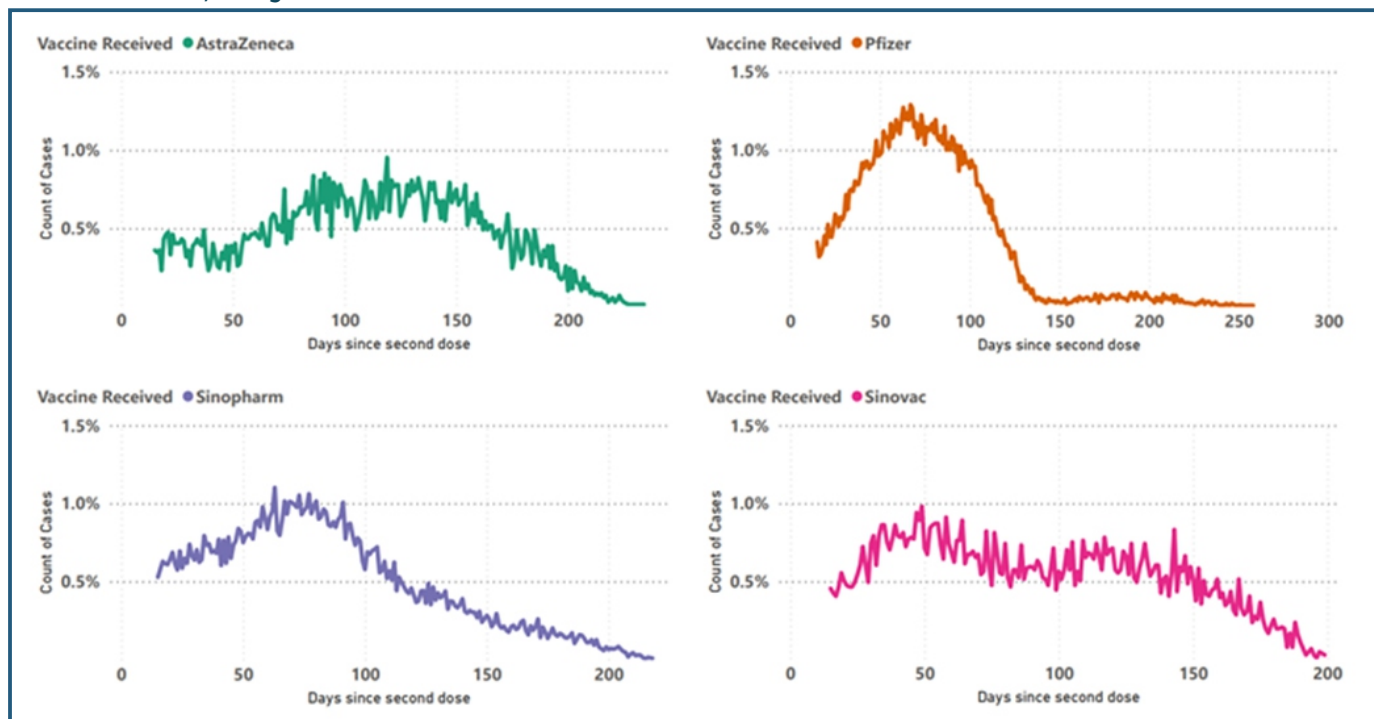
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გავრცელების შესახებ



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გავრცელების შესახებ

The analysis of time from the administration of the second dose to the confirmation showed that the peak of this period of time for all vaccines (more or less deviated) comes 50-70 days after the administration of the second dose.

Figure 51. Period of time from administration of the second dose to confirmation of case by vaccines, 15.03.2021-31.12.2021, Georgia



The analysis of key indicators showed that the risk of infecting unvaccinated persons during the period from March 15 through December 31, 2021 was 7.7 times higher than of those who were fully vaccinated during the same period.

Vaccination against COVID-19 in vaccinated individuals reduces the probability (risk) of infection by 86.94% (95% CI 86.83% - 87.04%, $P < 0.0001$), with a single booster dose increasing this rate to 99.66% (95% CI 99.60%).

The second indicator of evaluation is - protection from the need for hospitalization: In assessing the impact of COVID-19 vaccination in terms of protection against hospitalization, the analysis covered all laboratory-confirmed cases of SARS-COV-2 infection with a hospital stay of ≥ 24 hours and also cases with hospital stay of < 24 hours, where lethal outcome occurred.

According to the above definition, during the period from March 15, 2021 through December 31, 2021, there was a need for hospitalization among the vaccinated infected persons in 8,414 cases, including 6 cases of vaccination with 1 booster dose.

During the same period, 130,648 Covid - infected people were hospitalized across the country, according to which COVID-19 vaccination reduced the need for hospitalization by 90.56% (95% CI 90.44% - 90.76%, $P < 0.0001$) compared to the non-vaccinated population. In case of 1 booster dose this figure is 99.9% (95% CI 99.77% - 99.95%, $P < 0.0001$).

The third evaluation indicator is protection from the need for intensive and critical / resuscitation care: of adding 1 booster dose this rate was reaching 99.78% (95% CI 98.41% - 99.97% $P < 0.0001$).

During the reporting period, treatment in the intensive care unit became necessary in 434 vaccinated cases, while in the same period, 10,805 unvaccinated Covid-infected people needed intensive care and resuscitation assistance.

Based on the analysis of these data, we can conclude that COVID-19 vaccination reduces the need for intensive and critical care by 94.14% (95% CI 93.55% - 94.67%, $P < 0.0001$) compared to the unvaccinated population.

In case of administration of 1 booster dose this rate is 99.79% (95% CI 99.49% - 99.97%, $P < 0.0001$).

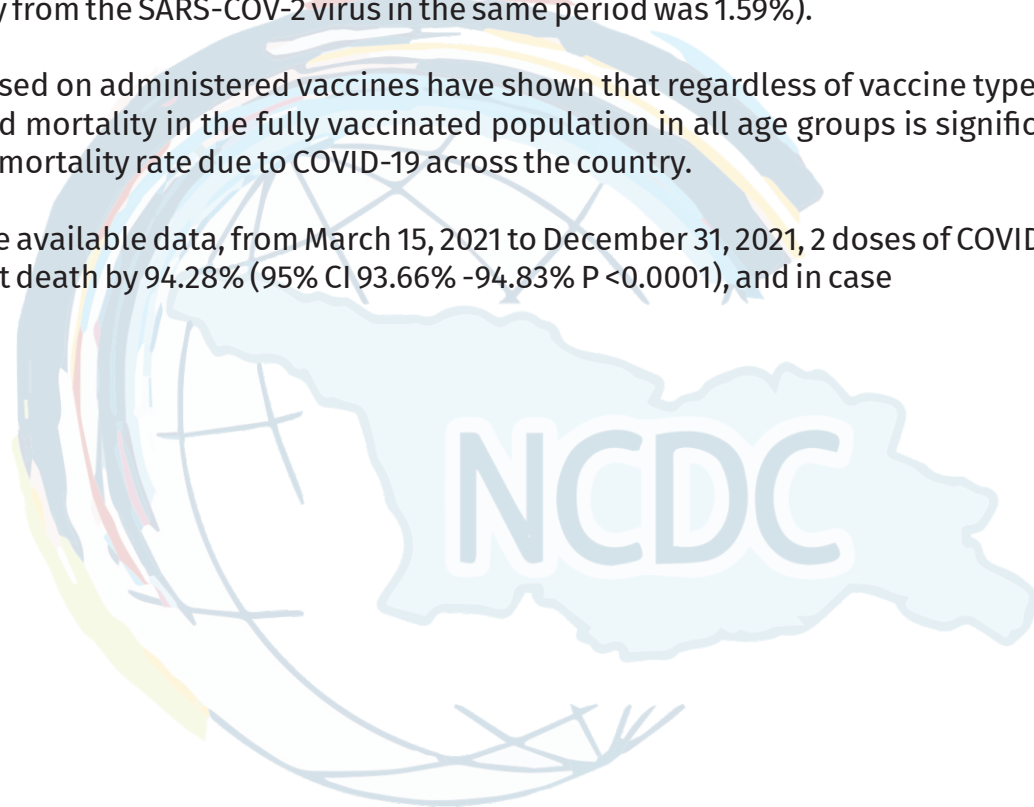
The fourth indicator of evaluation is protection against lethal outcome: The evaluation identified any lethal outcome as the death of a vaccinated person due to COVID-19, where COVID-19 is registered as the primary cause of death in the medical report and at the same time infection with the SARS-CoV-2 virus is laboratory confirmed after > 14 days following administration of at least 2 doses of any vaccine against CoVID-19.

A total of 385 deaths due to COVID-19 were reported among the vaccinated population (1,151,070) between March 15 and December 31, while 10,532 deaths due to the same disease were recorded in the country during the same period.

The mortality rate among those fully vaccinated against COVID-19 during this period was 0.52% (overall mortality from the SARS-COV-2 virus in the same period was 1.59%).

Assessment based on administered vaccines have shown that regardless of vaccine type, the rate of COVID-19-induced mortality in the fully vaccinated population in all age groups is significantly lower than the specific mortality rate due to COVID-19 across the country.

According to the available data, from March 15, 2021 to December 31, 2021, 2 doses of COVID-19 vaccine protected against death by 94.28% (95% CI 93.66% - 94.83% $P < 0.0001$), and in case





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სამსახური



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დაავადებების კონტროლის
სამსახური

Review of SARS-COV-2 variants of the new coronavirus circulating in Georgia and molecular epidemiology

The Lugar Research Center of the National Center for Disease Control and Public Health has been continuously deciphering the entire genomes of SARS-COV-2 strains since the beginning of the pandemic using new generation sequencing technology on the Illumina MiSeq platform. The aim of the study was to genetically characterize the virus strains common in Georgia, their phylogenetic analysis and monitor newly formed mutations. Complete genomic sequences of the sequenced SARS-COV-2 strains were uploaded to the international databases GISAID and BaseSpace and compared with the genetic data of the worldwide strains.

Figure 52. Example of SARS-COV-2 strains uploaded to GISAID database

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Accession ID Virus name ☐ complete ☐ high coverage ☐
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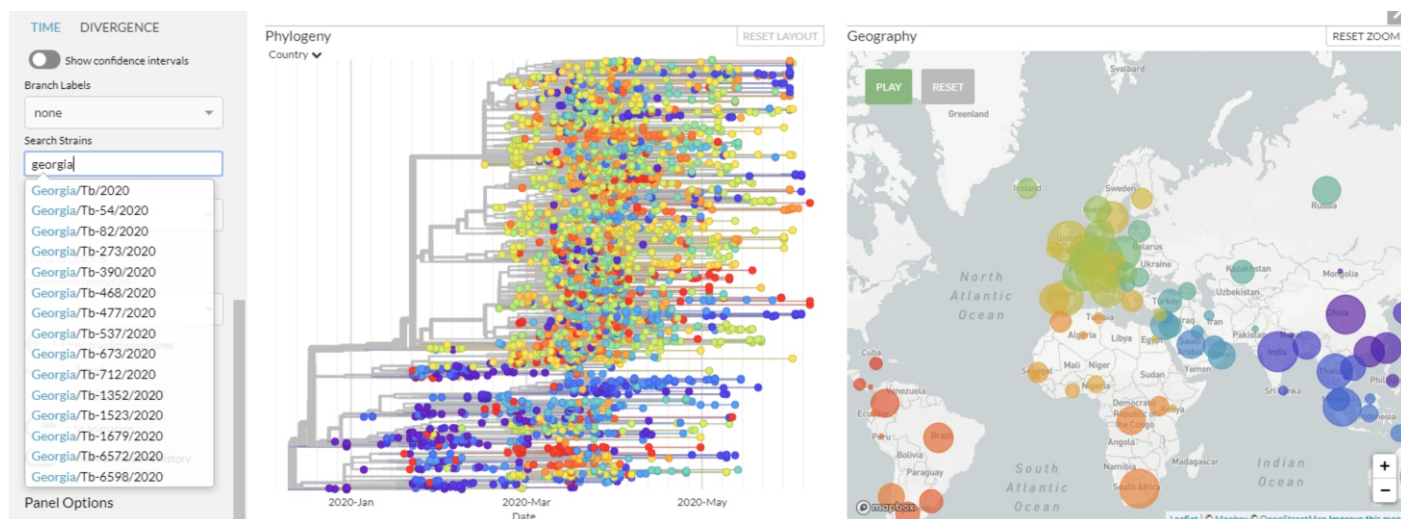
<input type="checkbox"/>	Virus name	Passage d	Accession ID	Collection da	Submission I	<input type="checkbox"/>	Length	Host	Location	Originating
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1619/2021	Original	EPI_ISL_5813303	2021-09-14	2021-11-01	<input type="checkbox"/>	29,830	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1618/2021	Original	EPI_ISL_5813300	2021-10-18	2021-11-01	<input type="checkbox"/>	29,812	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1616/2021	Original	EPI_ISL_5813293	2021-10-17	2021-11-01	<input type="checkbox"/>	29,822	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1615/2021	Original	EPI_ISL_5813286	2021-10-17	2021-11-01	<input type="checkbox"/>	29,823	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1612/2021	Original	EPI_ISL_5813280	2021-10-17	2021-11-01	<input type="checkbox"/>	29,828	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1610/2021	Original	EPI_ISL_5813272	2021-10-17	2021-11-01	<input type="checkbox"/>	29,846	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1608/2021	Original	EPI_ISL_5813264	2021-10-15	2021-11-01	<input type="checkbox"/>	29,845	Human	Asia / Georgia / T	Departme
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<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1605/2021	Original	EPI_ISL_5813245	2021-10-15	2021-11-01	<input type="checkbox"/>	29,840	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1604/2021	Original	EPI_ISL_5813242	2021-10-15	2021-11-01	<input type="checkbox"/>	29,859	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1603/2021	Original	EPI_ISL_5813237	2021-10-15	2021-11-01	<input type="checkbox"/>	29,846	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1602/2021	Original	EPI_ISL_5813229	2021-10-15	2021-11-01	<input type="checkbox"/>	29,813	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1601/2021	Original	EPI_ISL_5813223	2021-10-15	2021-11-01	<input type="checkbox"/>	29,810	Human	Asia / Georgia / T	Departme
<input type="checkbox"/>	hCoV-19/Georgia/Tb-SNGS1600/2021	Original	EPI_ISL_5813217	2021-10-15	2021-11-01	<input type="checkbox"/>	29,838	Human	Asia / Georgia / T	Departme

Total: 395 viruses

<< < 1 2 3 4 5 > >>

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Important note: In the [GISAID EpiFlu™ Database Access Agreement](#), you have accepted certain terms and conditions for viewing and using data regarding influenza viruses. To the extent the Database contains data relating to non-influenza viruses, the viewing and use of these data is subject to the same terms and conditions, and by viewing or using such data you agree to be bound by the terms of the [GISAID EpiFlu™ Database Access Agreement](#) in respect of such data in the same manner as if they were data relating to influenza viruses.



Clinical specimens taken by the National Center for Disease Control and Public Health under COVID-19 surveillance and confirmed by Polymerase Chain Reaction (PCR) for the SARS-COV-2 virus were used for sequencing. The samples were subjected to full SARS-COV-2 genome sequencing using new generation sequencing technology on Illumina MiSeq platforms.

At the beginning of the pandemic, the method of direct sequencing of positive samples was used, which allowed only a few samples to be run at a time. Since 2021, a much higher productivity method has been introduced at the Lugar Center that could sequence 90 or more viruses simultaneously. With the help of the Bundeswehr Institute of Microbiology (IMB) and the US Centers for Disease Control (CDC), the Lugar Center's capacity for SARS-COV-2 sequencing has been significantly increased. In September 2021, an online training was organized by CDC colleagues, which provided details of updated methods of sequencing and database analysis in the BaseSpace database, provided by CDC and Illumina representatives.

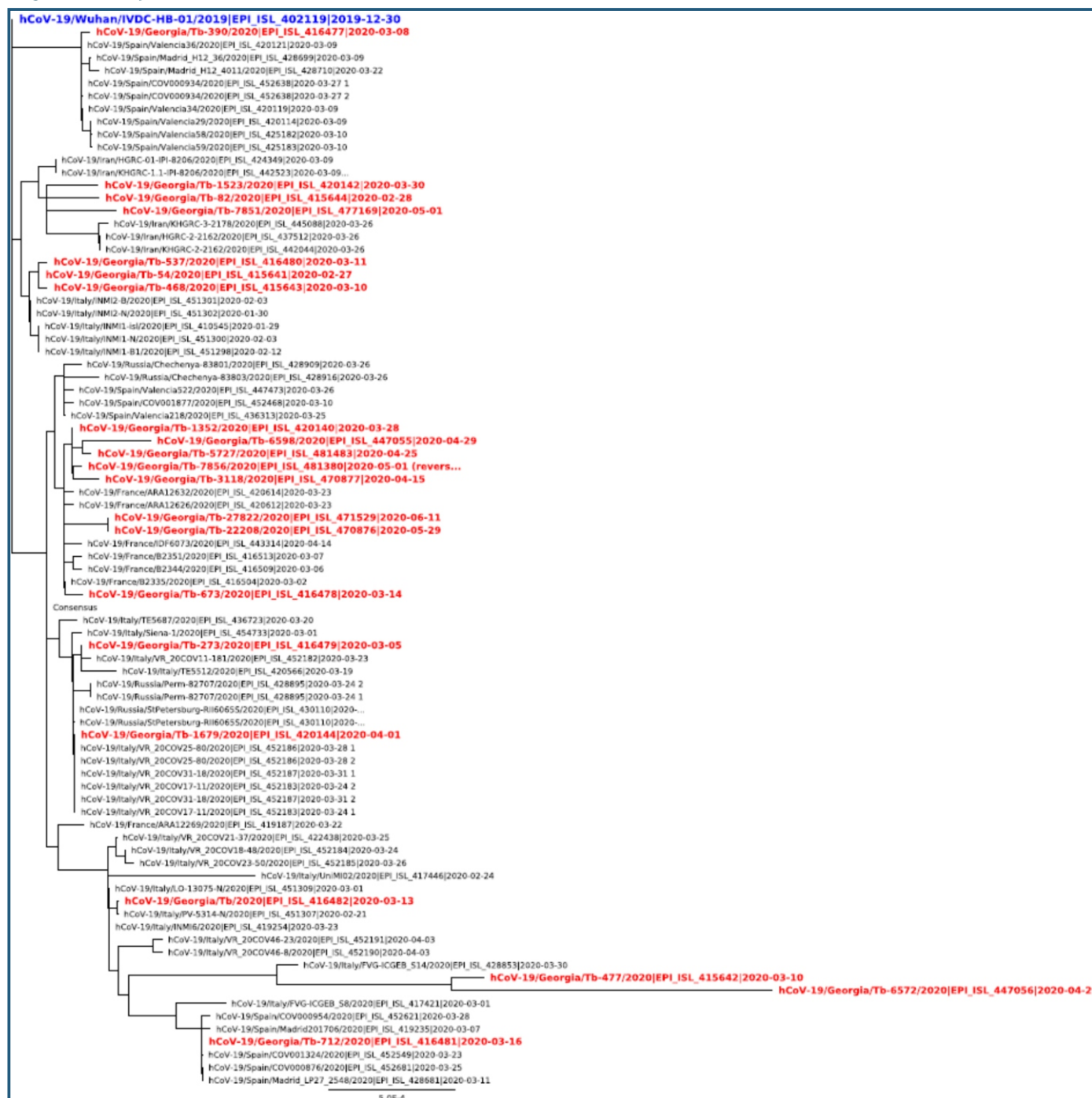
Phylogenetic analysis of sequenced SARS-COV-2 strains was performed in the first months of the pandemic and compared with world strains, as a result of which SARS-COV-2 strains spread during the first wave of the disease in Georgia were divided into several groups according to their source. The cases were brought from different countries: Iran, Spain, Italy, France, Russia ... for example, two local cases hit two different clusters of strains common in Spain, which confirmed the stories of their travels; and a number of cases imported from Italy, as well as their contacts, were grouped together with the strains of the same country.

Later internal transmission started and local outbreaks occurred in different regions of Georgia, one part of which was related to the Iranian strains (Marneuli outbreak), and the other - to the Russian / French case cluster (Tetritskaro and Bolnisi outbreaks).

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Figure 53. Phylogenetic tree (red) of 21 SARS-COV-2 strains circulating during the first wave in Georgia and comparison with their world strains



Overall, the complete genomes of 66 samples collected in February-March 2020 were uploaded to the GISAID database. As a result, it was identified that at the beginning of the pandemic, various variants of Group B.1 were circulating in Georgia. Also, one case of group A.2 and five cases of group B.4 were reported.

In August-September 2020, a new major wave of Covid infection began in Georgia, as well as around the world, caused by the first major mutation in the virus spike protein (S) gene sequence, D614G. Due to this fact, the virus acquired the ability to replicate rapidly in the upper respiratory tract and lung epithelial tissue and consequently acquired the ability of increased infectivity.

In December 2020, several cases of 69-70 deletions in spike protein (B.1.1.10) were observed in the country that did not have other mutations of the S gene characteristic of the variant representing concern.

However, the Alpha variant, the so-called British strain (B.1.1.7) was detected shortly, which started spreading intensively since February 2021 and in a short period of time practically completely replaced most of the SARS-COV-2 strains previously circulating in Georgia. This strain was characterized by a number of new mutations in the S gene sequence (del69-70, del144, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H), which contributed to its more intense and rapid transmission. For example, the N501Y mutation increased the ability of the virus to spread. According to the data published on the website of the British government, with the spread of the alpha variant, the reproductive index, hospitalization and, consequently, the lethality rates were expected to increase.

ThermoFisher-made PCR kit (TaqPath COVID-19 CE-IVD RT-PCR Kit) was actively used for primary screening of Alpha strains in Georgia, as a drop of the S gene from the three target genes (N, Orf-ab, S) in this kit indicated at the deletion of 69-70 amino acids in spike protein. Because of this feature, the Thermo kit played a crucial role in monitoring the spread of the alpha strain (which was characterized by 69-70 deletions) first and later of the Delta strain (which no longer had this deletion). Confirmation testing for Alpha strain was performed by PCR testing of N501Y mutation and complete sequencing of virus genome.

The first cases of Alpha strain in Georgia, which were imported from a neighboring country, were detected in late 2020. From mid-January 2021, a cluster of 6 cases related to travel to the UK was identified. The largest cluster that emerged since late January included 18 cases, one of which ended with lethal outcome. New clusters appeared soon, which were related to import of cases from overseas and then traveling within Georgia to Adjara, Imereti and Samegrelo. By March 2021, Alpha Strain was already fully dominant compared to the other variants.

A total of 113 genomes of the Alpha variant sequenced in the Lugar Center were uploaded to the GISAID database.

In addition, B.1.351 / beta, the so-called South African strain was detected in Georgia but did not spread further. The E484K mutation characteristic to this variant was inhibiting the neutralization of the virus by the antibodies.

In May 2021, Delta /so-called Indian Strain (B.1.617.2) appeared in Georgia. This “disturbing” variant was spreading even faster and had increased infectivity due to new mutations in the S gene sequence (L452R, D614G, P681R, ± (E484Q, Q107H, T19R, del 157/158, T478K, D950N)).

For the initial screening of the Delta variant, a ThermoFisher-made PCR kit (TaqPath COVID-19 CE-IVD RT-PCR Kit) was still used, where drop of S gene allowed to distinguish between alpha and delta strains. Confirmation testing was performed by PCR testing of other specific mutations (L452R, P681R, E484Q, T478K) and complete genome sequencing of SARS-CoV-2 samples. The share of Delta strains was rapidly increasing and by August 2021 this variant was already fully dominant compared to all other strains circulating previously. The nomenclature of this variant was soon supplemented by the so-called Delta + (AY) variants with additional mutations (K417N, Y145H, A222V ...), which continued to spread in different countries with new combinations. As can be seen in the graphs below, the most common delta variants in Georgia were AY.121, AY.122 and AY.128. The latter strain AY.128 was first introduced to Georgia by an Egyptian citizen and this variant, according to data uploaded to GISAID, was the most widespread in the world only in Estonia and Georgia. AY.121 variant was more widely spread and Syria, Georgia, Turkey and Israel were leading by the degree of prevalence. The AY.122 variant was the largest group and circulated in many more countries: the highest prevalence rates (according to the sequences uploaded to GISAID) were reported in Seychelles (83%), followed by our virus because it can still cause serious illness, especially in unvaccinated individuals.

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საქართველოს ექსპერტული
საბჭო COVID-19-ის
დიაგნოსტიკის, მკურნალობის
და პრევენციის საკითხებში



საქართველოს ჯანდაცვის
მინისტროს
საერთაშორისო ურთიერთ-
დახმარების ცენტრი
(საერთაშორისო COVID-19-ის
ცენტრი)

Tunisia (56%), Armenia (53%), Russia (46%), Kazakhstan (41%), Moldova (35%), Ukraine (22%), Finland (21%), China (19%), Georgia (18%) and other countries.

A total of 670 specimens of different delta strains were sequenced at the Lugar Center by 2021.

In mid-December 2021, the Omicron strain (B.1.1.529) appeared in Georgia. It has more than 30 mutations in the S protein, many of which have been found in previous variants and which have caused significant changes in the virus life cycle. Of these mutations, E484A, N501Y, S477N, and K417N are located in the RBD region of the virus and are responsible for enhancing the binding of the virus to the host cell's ACE receptor. This is so-called affinity, which in turn leads to the rapid penetration, multiplication and spread of the virus; mutations T547K, H655Y, N679K, and P681H also increase the virus's ability to spread, while mutations A67V, T95I, G142D are likely to help the virus escape from the antibody.

Due to the numerous mutations in the spike protein, the Omicron variant has become even more contagious and resistant to immunity, although, at the same time, these mutations have also reduced its virulence. It was the combinations of the above mutations that altered the mechanisms of virus invasion into the host cells, which also altered the disease clinic. Changes such as a decrease in the ability of a lung cell protein to bind to TMPRSS2, or an increase in affinity for the ACE2 protein (combination of N501Y and Q498R mutations is responsible), reduced the degree of lung cell damage and ultimately alleviated the disease. However, despite all of these, Omicron is not considered a "mild" clinical course virus because it can still cause serious illness, especially in unvaccinated individuals.

Table 17. List of major disturbing variants (VOCs) and their characteristic mutations in the spike protein

WHO / Pango Name	The first detection	Characteristic mutations in the Spike (S) protein
Alpha B.1.1.7	UK, Sep-2020	69/70del, 144del, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H
Beta B.1.351	South Africa, May-2020	D80A, D215G, 241/243del (Del242, Del243, Del244), K417N, E484K, N501Y, D614G, A701V
Gamma P.1	Brazil, Nov-2020	L18F, T20N, P26S, D138Y, R190S, K417T, E484K, N501Y, D614G H655Y, T1027I, V1176F
Delta B.1.617.2 +K417N	India, Oct-2020	L452R, D614G, P681R, ± (E484Q, Q107H, T19R, del 157/158, T478K, D950N) +K417N
Omicron B.1.1.529 (BA.1; BA.2)	South Africa, Nov-2021	A67V, Δ69-70, T95I, G142D, Δ143-145, Δ211, L212I, ins214EPE, G339D, S371L, S373P, S375F, K417N, N440K, G446S, S477N, T478K, E484A, Q493K, G496S, Q498R, N501Y, Y505H, T547K, D614G, H655Y, N679K, P681H, N764K, D796Y, N856K, Q954H, N969K, L981F

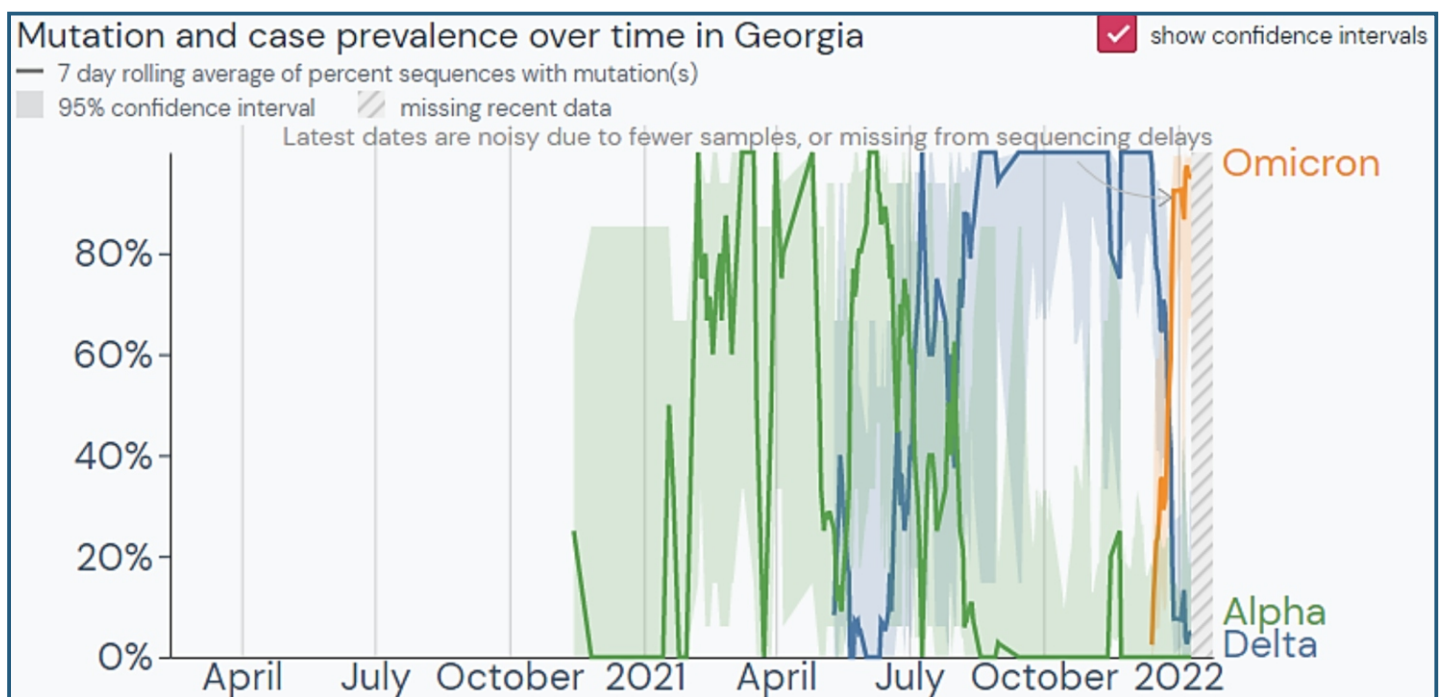
ThermoFisher PCR kit (TaqPath COVID-19 CE-IVD RT-PCR Kit) was still used for the initial screening of Omicron in Georgia, drop from which of S gene was characteristic for Omicron BA.1 variant, indicating at deletion of 69-70 amino acids. However, the second variant of Omicron BA.2 was detected soon. Therefore, confirmatory testing is performed by PCR testing and subsequent sequencing of other specific mutations characteristic to Omicron (S371L / S373P; 67V-del69 / 70; ins214EPE; E484A, etc.).



The spread of the Omicron strain has been growing rapidly since late 2021, and by the end of December, 144 laboratory-confirmed official cases had been reported, while by the end of the third week of January, 90-95% of cases were caused by Omicron variants BA.1 and BA.2. However, the BA.2 variant tended to spread much faster and became the cause of half of the cases in just three weeks.

The graphs and tables below show the dynamics of the spread of different variants of SARS-COV-2 in Georgia during the pandemic. The graphs clearly show that Omicron practically replaced the previously circulating Delta variant in January, while the Alpha and Delta strains took 2-3 months to do so.

Figure 54. Distribution of disturbing SARS-COV-2 variants in Georgia according to the strains uploaded to the GISAID database (<https://outbreak.info/>) - a) Dynamics of the major disturbing variants spread in 2020-22; b) Distribution dynamics of variants subgroups in 2020-22; c) Distribution dynamics of variants subgroups in the last 60 days



a)



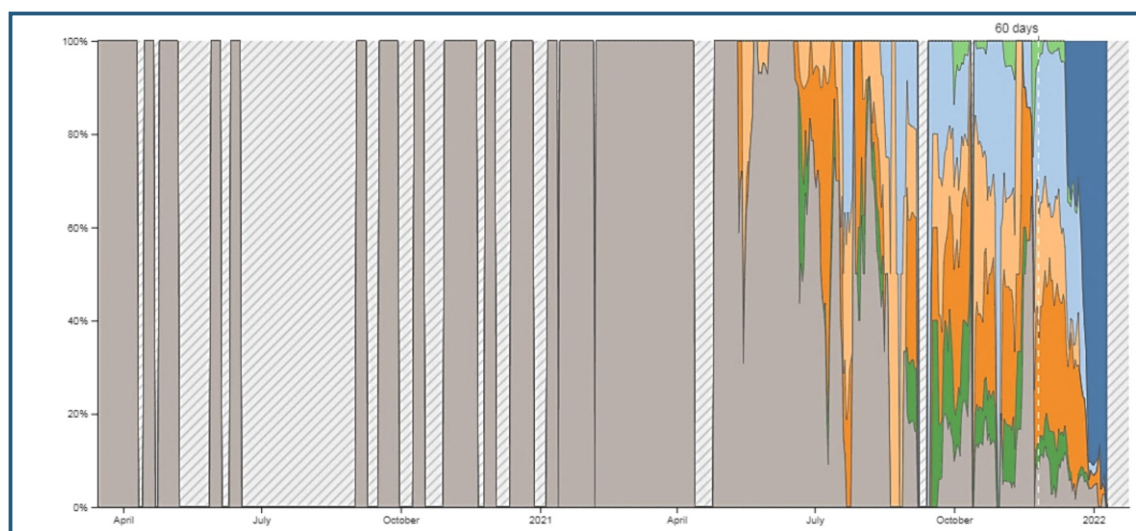
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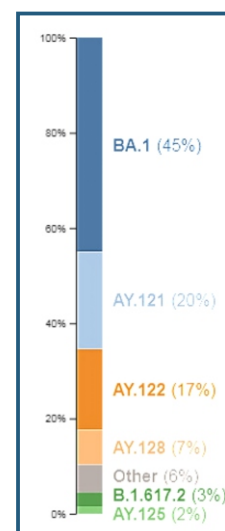
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B)



C)

As of December 31, 2021, 1,005 sequenced SARS-CoV-2 strains distributed in Georgia were uploaded to the GISAID database. As of January 20, 210 Omicron sequences were shown.

Table 18. Distribution of Georgian SARS-COV-2 strains uploaded to GISAID database by variant detection period and subgroups (as of December 31, 2021)

Variant Detection Period	Subgroup	Quantity
02/20	B.4	5
03/20	B.1	15
03/20	B.1.1	38
03/20	A.2	1
03/20	B.1.91	2
11/20	Alpha B.1.1.7	107
12/20	B.1.1.54	2
12/20	B.1.1.10	2
01/21	B.1.1.141	11
01/21	Zeta P.2	1
02/21	B.1.258	1
03/21	B.1.1.163	2
05/21	C.36	3
05/21	Iota B.1.526	1
05/21	Alpha Q.1	1
05/21	Delta AY.75	1
05/21	B.1.177.86	1
05/21	Delta AY.122	197



05/21	Delta AY.128	131
05/21	Beta B.1.351	1
06/21	Delta AY.86	18
06/21	None	1
06/21	Alpha Q.4	5
06/21	Delta B.1.617.2	60
06/21	Delta AY.54	3
07/21	Delta AY.4	3
07/21	Delta AY.1	16
07/21	Delta AY.45	2
07/21	Delta AY.121	178
08/21	Delta AY.9.2	2
08/21	Delta AY.112	4
08/21	Delta AY.32	2
08/21	Delta AY.129	1
08/21	Delta AY.126	6
09/21	Delta AY.46	5
09/21	Delta AY.4.6	2
10/21	Delta AY.125	16
10/21	Delta AY.33	3
10/21	Delta AY.98.1	1
10/21	Delta AY.109	1
10/21	Delta AY.107	1
10/21	Delta AY.127	1
10/21	Delta AY.37	2
10/21	Delta AY.42	4
11/21	Delta AY.106	1
11/21	Delta AY.43	5
11/21	Delta AY.120	1
12/21	Delta AY.114	2
12/21	Delta AY.78	1
12/21	Omicron BA.1	126
12/21	Omicron BA.2	4
Total		1005

The Lugar Center continues to systematically monitor the strains prevalent in the country, for the timely detection of possible new mutations and variants. Up to 100 samples are being sequenced weekly, and the results are added to the international database, which provides great assistance for COVID-19 epidemiological surveillance and monitoring the emergence of new variants both in Georgia and around the world.

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The First Cases Caused by the Omicron Variant of COVID-19 in Georgia

The first imported case of COVID-19 Omicron variant was detected in Georgia on December 14, 2021. From 14.12.2021 through January 23, 2022, 1,532 laboratory-confirmed cases of SARS-CoV-2 Omicron infection were identified by the National Surveillance System. All cases have been identified by PCR tests for specific mutations characteristic to Omicron, and in 210 cases further sequencing was performed.

By January 23, 2022, 900 out of the 1,532 laboratory-confirmed cases had recovered, resulting in the completion of supervision and some leaving the country.

Structured questionnaire interviewing, laboratory and immunization modules were used to collect the characteristics of those infected with the Omicron variant.

The average age of the 1,151 cases researched was 33.86 years, with a minimum of 3 months and a maximum of 87 years, with 149 infected in the under-18-year-old age group, of whom 26 were under the age of 5 and 4 were under the age of 6 months.

Within 1-7 days before the case confirmation and / or the onset of symptoms, the fact of traveling abroad was confirmed in 10.3% of cases (118/1,151); most of them was related to travel to the United Arab Emirates; Several cases were imported from France, the United States, Hungary, various African countries, and individual cases - from Canada, the United Kingdom, Turkey, Italy, Iran and etc. The share of imported cases was particularly high at the initial stage, although some imported cases are detected continuously.

8.1% (93 / 1151) of cases related getting infected with the travel within the country; 47.3% (44 / 93) of persons having the travel history within Georgia noted the fact of visiting skiing resorts, Gudauri and Bakuriani (29% (27 / 93)) before showing symptoms; in 10.7% (10 / 93) of cases infection import was reported from Tbilisi to various municipalities.

88.96% of cases are citizens of Georgia (1024/1151).

61.5% of the cases are reported in Tbilisi (708/1151), 19.6% in Imereti (226/1151), 6.9% in Adjara (80/1151), 3.9% in Kvemo Kartli (46/1151) and 1.3% in Samegrelo (16/1151).

In 14% of the traced cases, the fact of past SARS-COV-2 virus infection was confirmed.

36.1% of cases (415/1151) did not receive a single dose of the vaccine, and 50% (576/1151) were fully vaccinated.

Progression of disease in most cases were mild, with temperature ranging from 37.50C to 38.50C, sore throat, wheezing, cough, severe headache, and muscle and joint pain.

Of the investigated cases, 38 (3.3% (38/1151)) cases were hospitalized, 3 cases ended with fatal outcome (lethality rate 0.3%).

According to mathematical modeling, as of January 25, 2022, more than 90% of all positive cases in the country were caused by the Omicron variant.



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VARIOUS STUDIES RELATED TO COVID_19

The National Center for Disease Control conducted several prevalence studies in conjunction with routine epidemiological surveillance to monitor the spread of COVID-19 in the country:

1. In the period of May 22-26, 2020, a survey of current seroprevalence was conducted in two selected municipalities (Telavi and Bolnisi) of two regions of Georgia, Kvemo Kartli and Kakheti, with similar demographic parameters. 15 clusters identified by random sampling were studied within each municipality. A total seroprevalence study included 30 clusters, with 300 individuals surveyed. A rapid coronavirus antibody test was used in the study. The type of sample used in the study was capillary blood.

During the study, positive results against SARS-CoV-2 antibodies (IgM, IgG) were observed in 2 cases, both of them were Bolnisi residents. The current seroprevalence study showed that in those municipalities where the surveillance system did not register a COVID-19 case at the time of the study, no positive antibody (IgM and / or IgG) results were detected. The share of positive cases in Bolnisi Municipality was 1.3% (2/150) and 0% in Telavi Municipality. The overall share of positive cases across the study was 0.67%.

2. On August 17-25, 2020, under the auspices of WHO, a seroprevalence survey was conducted in 4 municipalities of Georgia (Khelvachauri, Martvili, Borjomi, and Kobuleti). Elecsys AntiSARS-CoV-2 Electrochemiluminescent Immunoassay (ECLIA) was used in the study. The sample type was Blood / Plasma.

1,222 persons were interviewed and 1,222 samples were collected (Khelvachauri - 305, Martvili - 302, Borjomi - 311, Kobuleti - 304), of which the presence of human SARS-CoV-2 antibodies (in Martvili resident) was confirmed in only one. The positivity rate within the study was 0.08%.

3. A seroprevalence study was conducted in August 2020, which included serological examination of blood samples taken from patients and donors in hospitals and blood banks. The number of samples from each facility was tested according to predetermined sample size. The study examined 744 blood samples from blood banks and hospitals across the country, five of which identified IgG antibodies to SARS-CoV-2. The positivity rate within the study was 0.67% (5/744).

4. In the first half of November 2020, instant seroprevalence study among medical service providers was conducted on the basis of COVID clinics, fever centers and on-site emergency coordination centers in Adjara and Imereti regions. 725 medical staff were involved in the study across both regions. Laboratory test method: Elecsys AntiSARS-CoV-2 Electrochemiluminescent immunoassay (ECLIA) method. Sample type venous blood / plasma. The proportion of positive cases for total antibodies was 40% (290/725).

5. From November 27 to December 12, 2020 - a study of seroprevalence was conducted in the outpatient service providers of the cities - Tbilisi and Rustavi. 10 institutions in Tbilisi and 5 institutions in Rustavi participated in the study. 6,200 individuals were included in the seroprevalence study. The study involved interviewing each person with a standard questionnaire and sampling for laboratory research. Sample type: blood / plasma. Laboratory tests confirmed the presence of human SARS-CoV-2 total antibodies in 31.5% of the samples collected in Tbilisi institutions and in 30.7% of the samples taken from Rustavi institutions.

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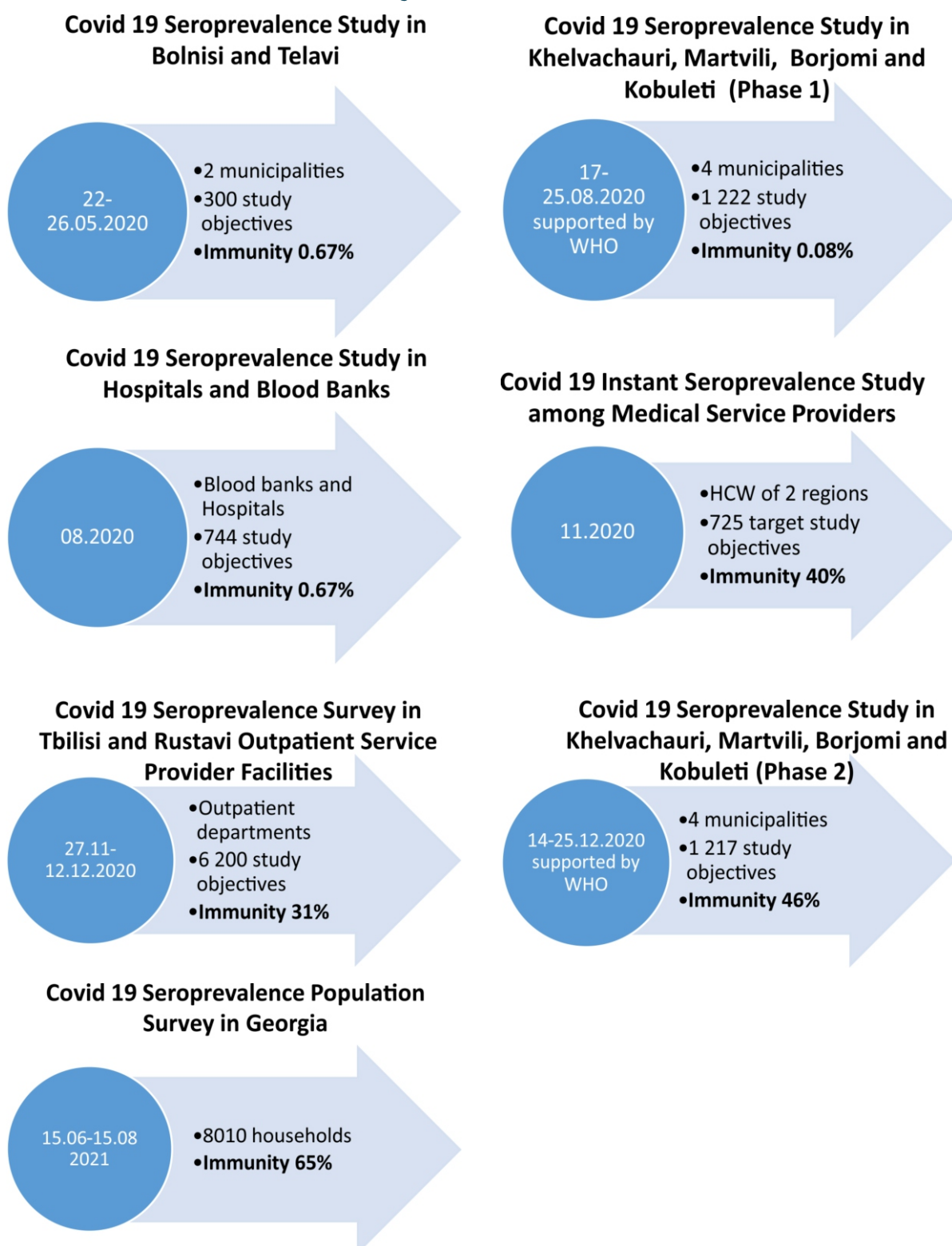
საქართველოს ექსპერტული
სერვისების ცენტრი
საქართველოს ექსპერტული
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საქართველოს ჯანდაცვის
მინისტრო
საქართველოს ჯანდაცვის
მინისტრო

6. On December 14-25, 2020, under the auspices of WHO, the second phase of the Seroprevalence study was conducted in the 4 municipalities of Georgia (Khelvachauri, Martvili, Borjomi and Kobuleti), where the first phase was conducted in August 2020. Elecsys AntiSARS-CoV-2 Electrochemiluminescent Immunoassay (ECLIA) was used in the laboratory study. Sample type was venous blood / plasma. A total of 1,217 people were involved in the study. Laboratory research of samples collected during the research (in Khelvachauri municipality, in 43.6% of those surveyed, in Martvili municipality - 46.3%, in Borjomi municipality - 46.5% and in Kobuleti municipality) confirmed presence of total antibodies SARS-CoV-2.

Figure 55. Several COVID-19 Prevalence Studies, Georgia



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Seroprevalence studies conducted in the dynamics reflect the epidemiological picture in the country and show the trend of increasing prevalence since the beginning of the epidemic.

In addition to the above-mentioned seroprevalence studies, an instantaneous prevalence study was conducted in September 2020 in Tbilisi within the framework of the State Program for the Management of New Coronavirus COVID-19 to determine the circulation intensity of the SARS-CoV-2 virus. Voluntary PCR testing of citizens was performed as part of the study. 974 persons were involved in it, from whom a nasopharyngeal swab was taken. 0.62% (6/974) of the samples tested positive for SARS-CoV-2 via laboratory PCR testing.





საქართველოს ექსპერტული
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საჯანდაცო სამსახურის
განყოფილება



საერთაშორისო
საჯანდაცო სამსახური
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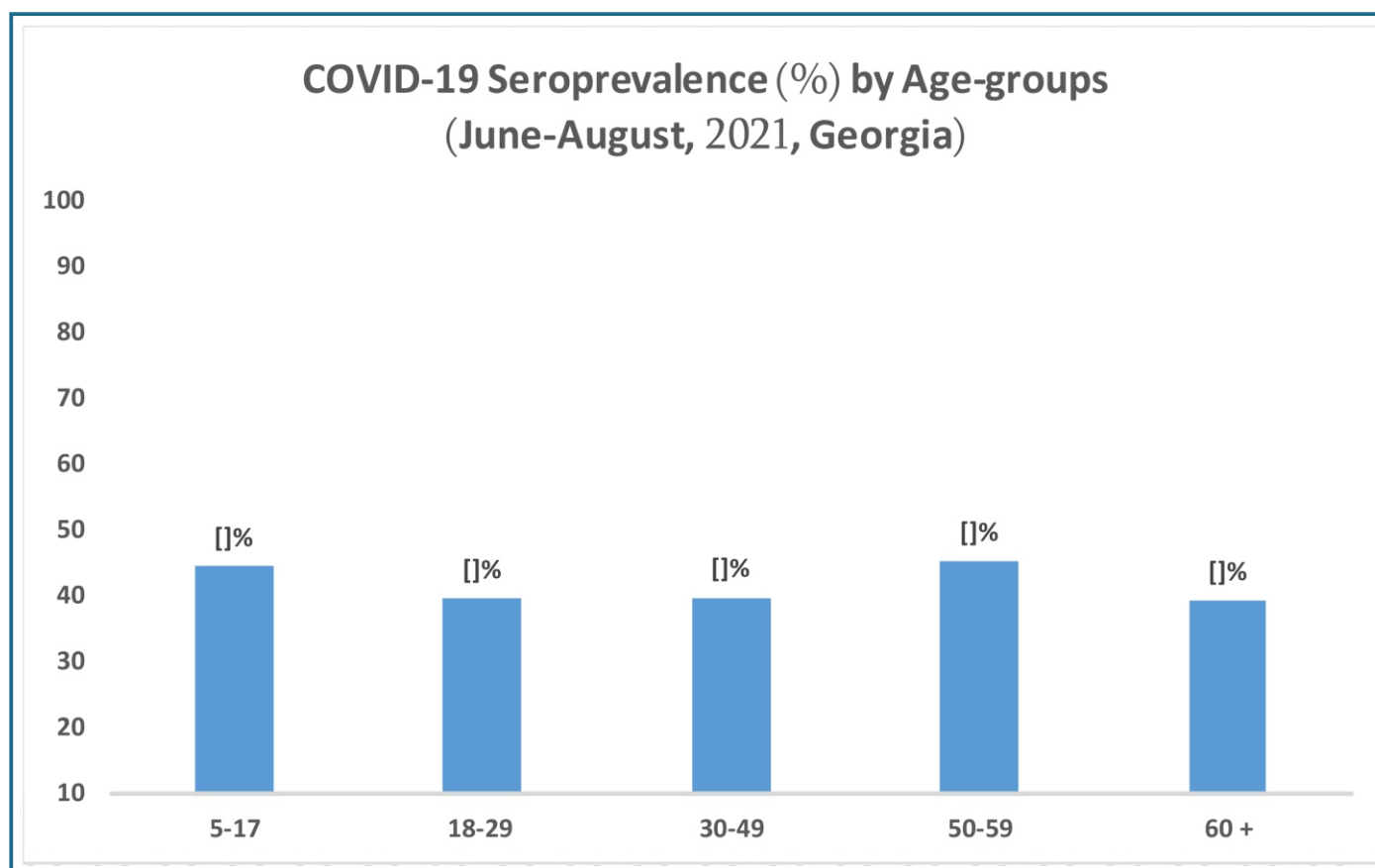
POPULATION SURVEY OF COVID-19 SEROPREVALENCE IN GEORGIA

During June-August 2021, the National Center for Disease Control and Public Health, with funding and technical assistance from the United States Centers for Disease Control and Expert Assistance, conducted a nationwide study of stratified, multistage cluster systematic sampling of COVID-19, C and B hepatitis in population to determine the prevalence. By means of a standardized questionnaire demographic, clinical, epidemiological, and infection prevention and control information was collected. 8,010 households participated in the survey (8,711 persons: 3,109 males and 5,602 females). Data analysis was performed into two main age groups: children within the 5-17-year age range (total 1,473) and adults aged ≥ 18 (total 7,238).

The study found that antibodies to COVID-19 were detected during this period: 41.1% in the general population (95% CI: 39.4-42.8), 44.3% in children (95% CI: 40.6-48), and 40.3% (95% CI: 38.4-42.3) - in adults.

In addition, seroprevalence was found in the following age groups: 18-29 years - 39.4% (95% CI: 35.1-43.9); 30-49 years - 39.6% (95% CI: 36.8-42.5); 50-59 age group - 45.1% (95% CI: 41.6-48.7) and 60+ age group - 39.1% (95% CI: 36.3-42.1). Based on these numbers, it can be seen that the highest prevalence 45.1% was identified in the 50-59 -year group.

Figure 56. COVID-19 Seroprevalence (%) by Age Groups in Georgia (June – August 2021)

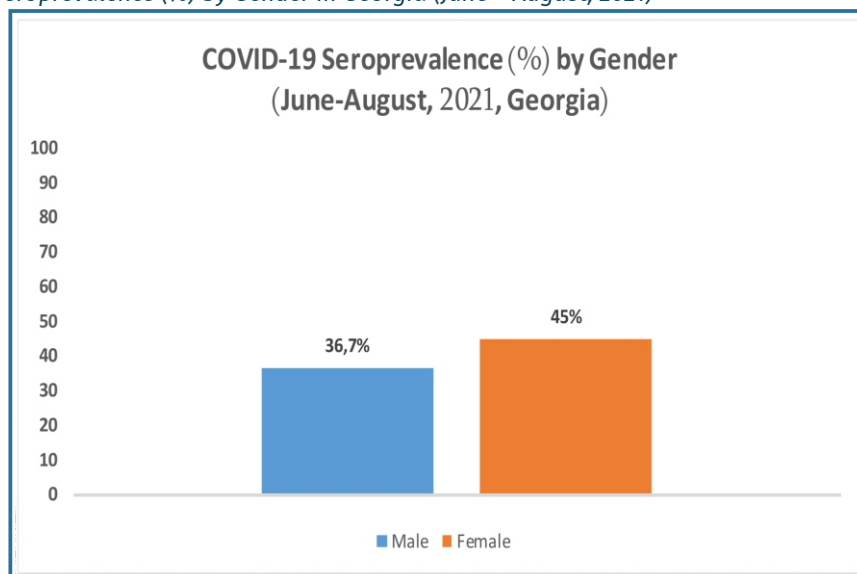


Seroprevalence by gender was 36.7% in males (95% CI: 34.3-39.3) and 45% in females (95% CI: 43-47.1).



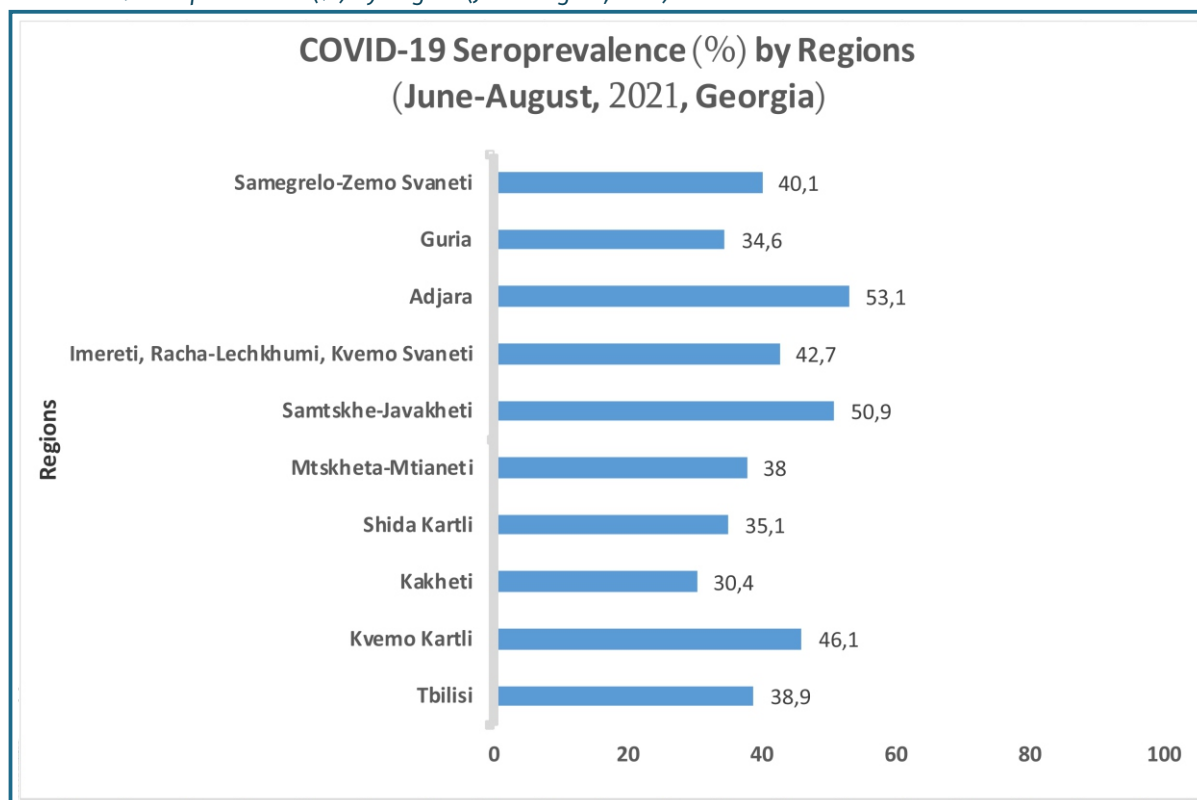
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საქართველოს ექსპერტული საბჭო
საერთაშორისო სტანდარტების
პროექტის ფარგლებში

Figure 57. COVID-19 Seroprevalence (%) by Gender in Georgia (June – August, 2021)



The following results were obtained by regions: Tbilisi - 38.9% (95% CI: 35.5-42.4); Shida Kartli - 35.1% (95% CI: 30.6-39.9); Mtskheta-Mtianeti - 38% (95% CI: 32.7-43.6); Kvemo Kartli - 46.1% (95% CI: 40.5-51.8); Samtskhe-Javakheti - 50.9% (95% CI: 45.3-56.6); Kakheti - 30.4% (95% CI: 25.6-35.6); Guria - 34.6% (95% CI: 30.1-39.3); Samegrelo-Zemo Svaneti - 40.1% (95% CI: 34.5-46.1); Imereti, Racha Lechkhumi and Kvemo Svaneti - 42.7% (95% CI: 38.6-46.9) and Adjara - 53.1% (95% CI: 47.3-58.7).

Figure 58. COVID-19 Seroprevalence (%) by Region (June-August, 2021)



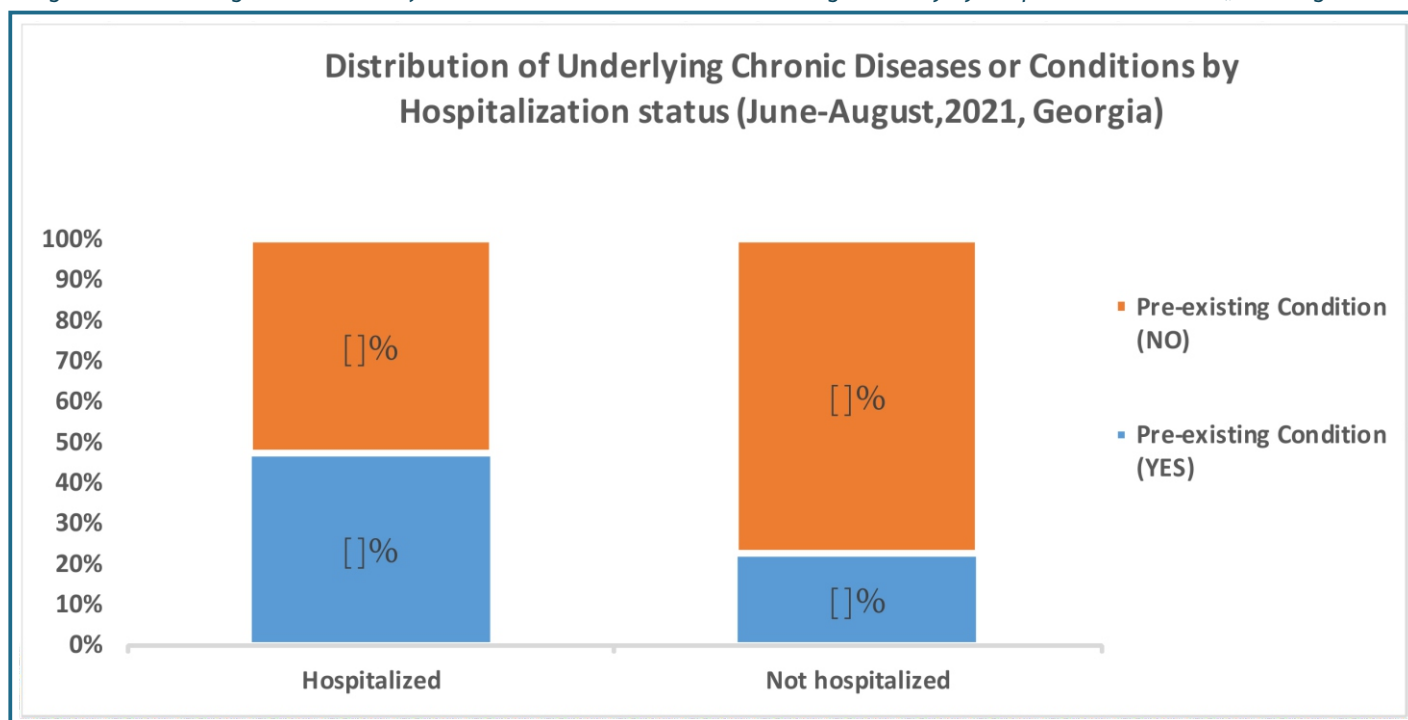
6.4% of participants (95% CI: 5.5-7.4) said they had been vaccinated with the COVID-19 vaccine at least once at the time of the study. Serological examination revealed that 74.9% of those vaccinated (95% CI: 69.6-79.6) had COVID-19-specific antibodies (including those vaccinated only once at that time).

35% of the study participants (2,799 individuals) (95% CI: 33.2-36.8) reported having symptoms characteristic of COVID-19 at various points in time since the onset of the pandemic. 274 persons - 34% (95% CI: 28.5-40.2) required hospitalization for these symptoms and 142 of them - 47.3% (95% CI: 39.7-55.1) had one or more chronic diseases or conditions.

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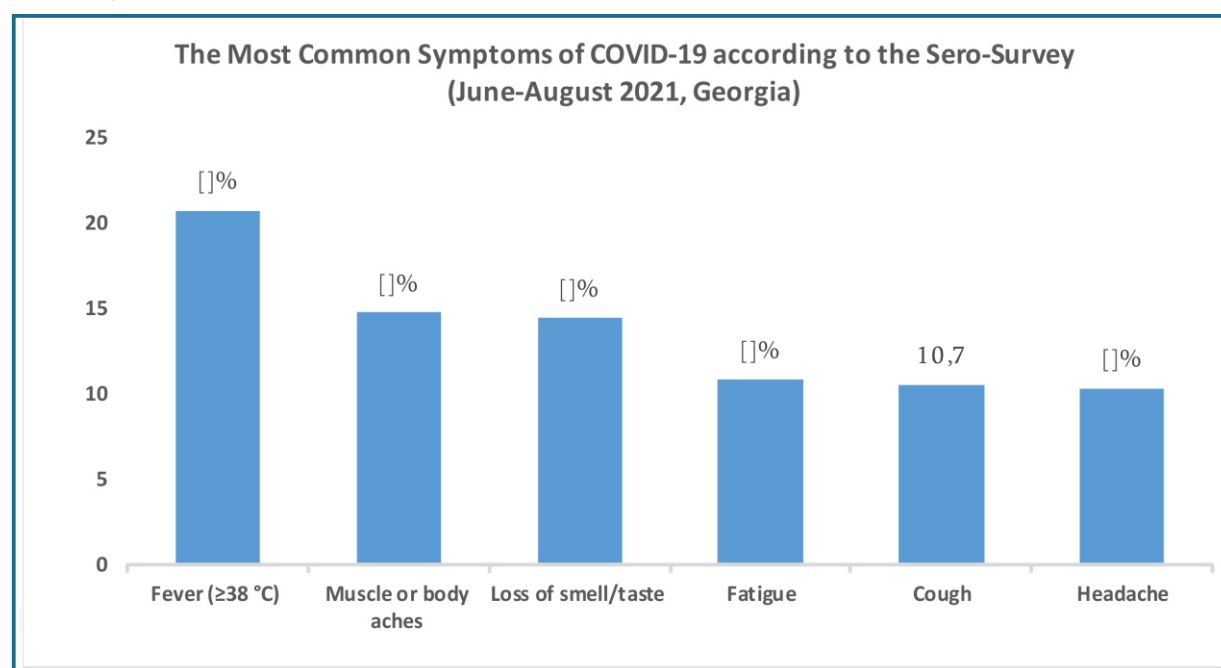
Figure 59. Percentage Distribution of chronic disease or condition according to survey by hospitalization status (June-August 2021)



The most common were the following 6 symptoms:

1. Fever ($\geq 38^{\circ}\text{C}$) - 20.9% (95% CI: 19.5-22.2);
2. Muscle or body pain -14.9% (95% CI: 13.7-16.2);
3. Anosmia and ageusia - 14.6% (95% CI: 13.4-15.9);
4. Fatigue -11% (95% CI: 9.9-12.1);
5. Cough - 10.7% (95% CI: 9.8-11.7);
6. Headache - 10.5% (95% CI: 9.3-11.9).

Figure 60. The 6 most common symptoms of COVID-19 according to the survey (June-August 2021)



The seroprevalence study made it possible to study the COVID-19-related situation in the country in more detail and to plan for future prospects and activities in this area.



საქართველოს ეპიდემიოლოგიური და პუბლიკური ჯანდაცვის ცენტრი
საქართველოს ეპიდემიოლოგიური და პუბლიკური ჯანდაცვის ცენტრი



საქართველოს ეპიდემიოლოგიური და პუბლიკური ჯანდაცვის ცენტრი
საქართველოს ეპიდემიოლოგიური და პუბლიკური ჯანდაცვის ცენტრი

Special Research Cohort (Random Selection n = 1307), November-December 2020, Georgia

The highest number of cases in the country in 2020 since the start of the pandemic was recorded during the second wave when 98,616 new cases were detected in November and 89,067 in December. Due to the sharp increase in the number of people infected with SARS-COV-2, case-based oversight was suspended. Therefore, to assess the epidemiological status of COVID-19, 1,307 laboratory-confirmed COVID-19 cases were selected across the country in November and December 2020 through random sampling, and a retrospective study of these cases was performed. A telephone interview was conducted with each of them using standard questionnaires.

Of the infected patients, 551 (42.2%) were male and 756 (57.8%) were female. The average age was 41 years. The minimum age was 1 month and the maximum is 98 years.

In the study cohort, laboratory testing on COVID-19 was self-administered in 48.1% of cases, 44.9% of the infected had contact with a confirmed case, 2.9% were detected through routine testing, and planned testing of risk groups revealed 2.1% of COVID-19 cases. The asymptomatic course was reported in only 4.7% of cases and 5 deaths were registered.

Table 19. Characteristics of the study participants, special study cohort (random sample n = 1,307), November-December 2020, Georgia

Patient characteristics	n=1,307
Age, median (range), age	41 (1 month - 98 years)
Male	551 (42.2%)
Reason for laboratory testing	
Revealed at the border checkpoint	1 (0.1%)
Revealed by routine testing	38 (2.9%)
Revealed during scheduled testing	28 (2.1%)
Spontaneous appeal	628 (48.1%)
Contact with the case	587 (44.9%)
Other	25 (1.9%)
Asymptomatic course	62 (4.7%)
Death	5 cases

Most detected cases were above the age of 20, especially in the 30 – 49-year age range group. The number of infected women in all age categories exceeded the number of men.

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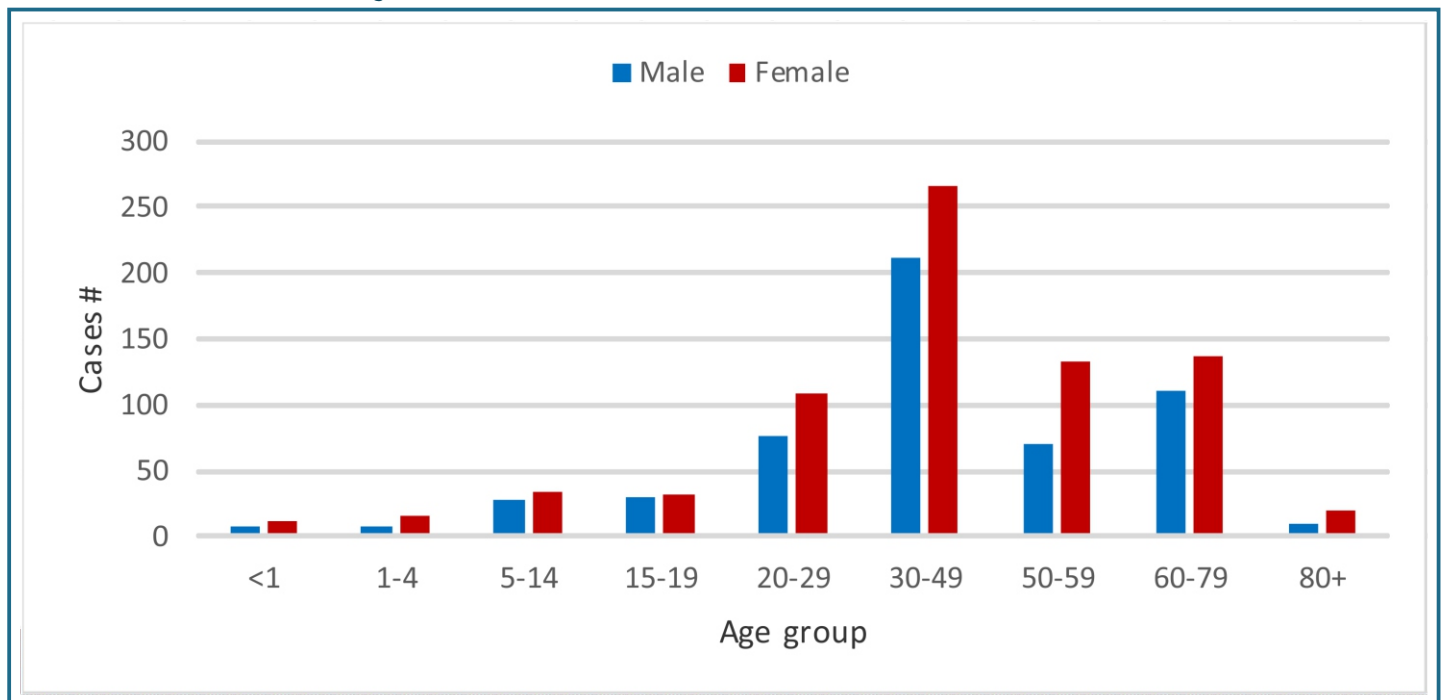


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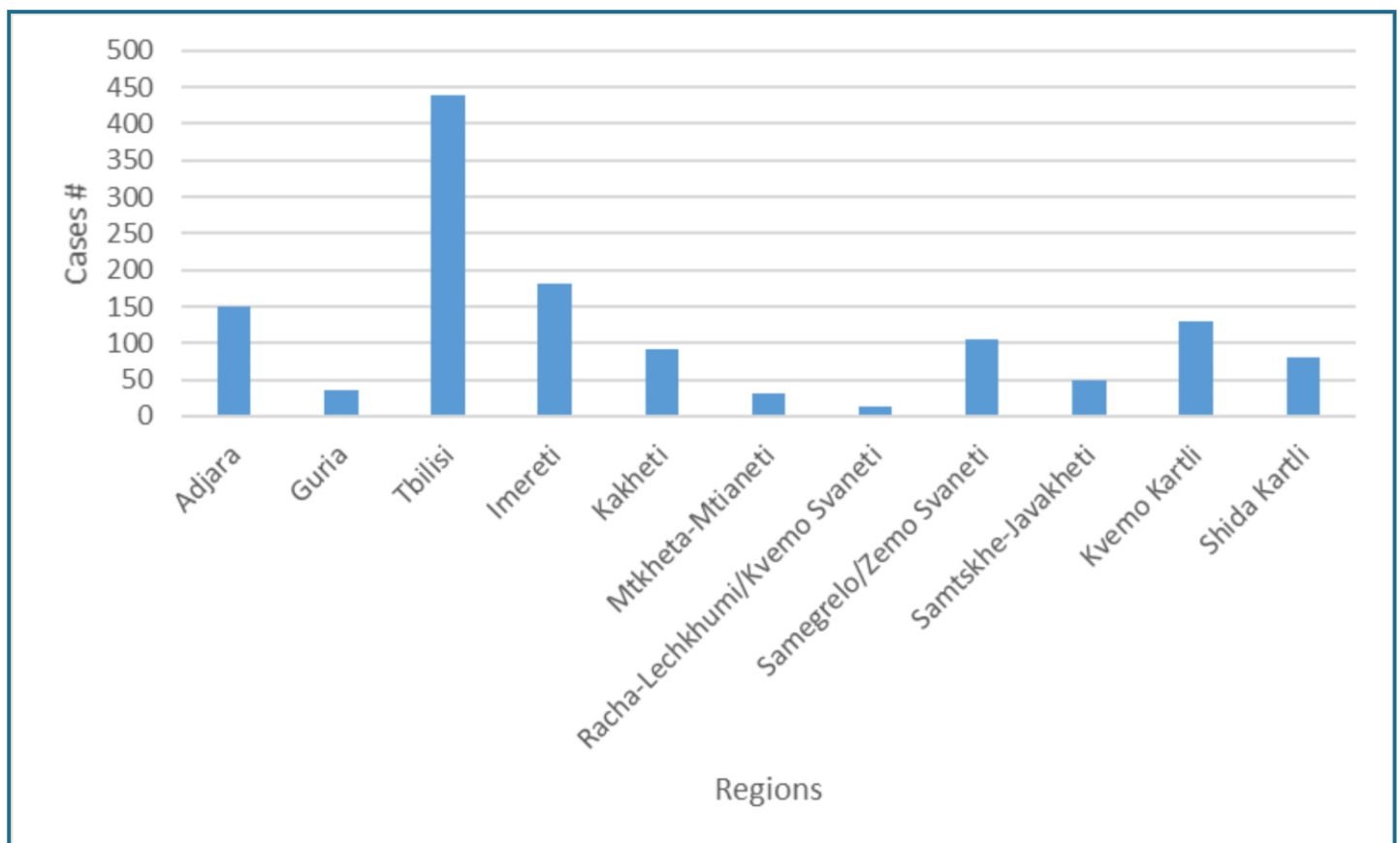
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საერთაშორისო
სტანდარტების შესაბამისად

Figure 61. Distribution of COVID-19 cases by gender and age groups, special study cohort (random sample $n = 1,307$), November-December 2020, Georgia



Cases of COVID-19 were randomly selected from all regions of Georgia. Out of 1,307 cases, 440 cases were selected from Tbilisi, 181 cases from Imereti, 149 cases from Adjara, and the rest from other regions.

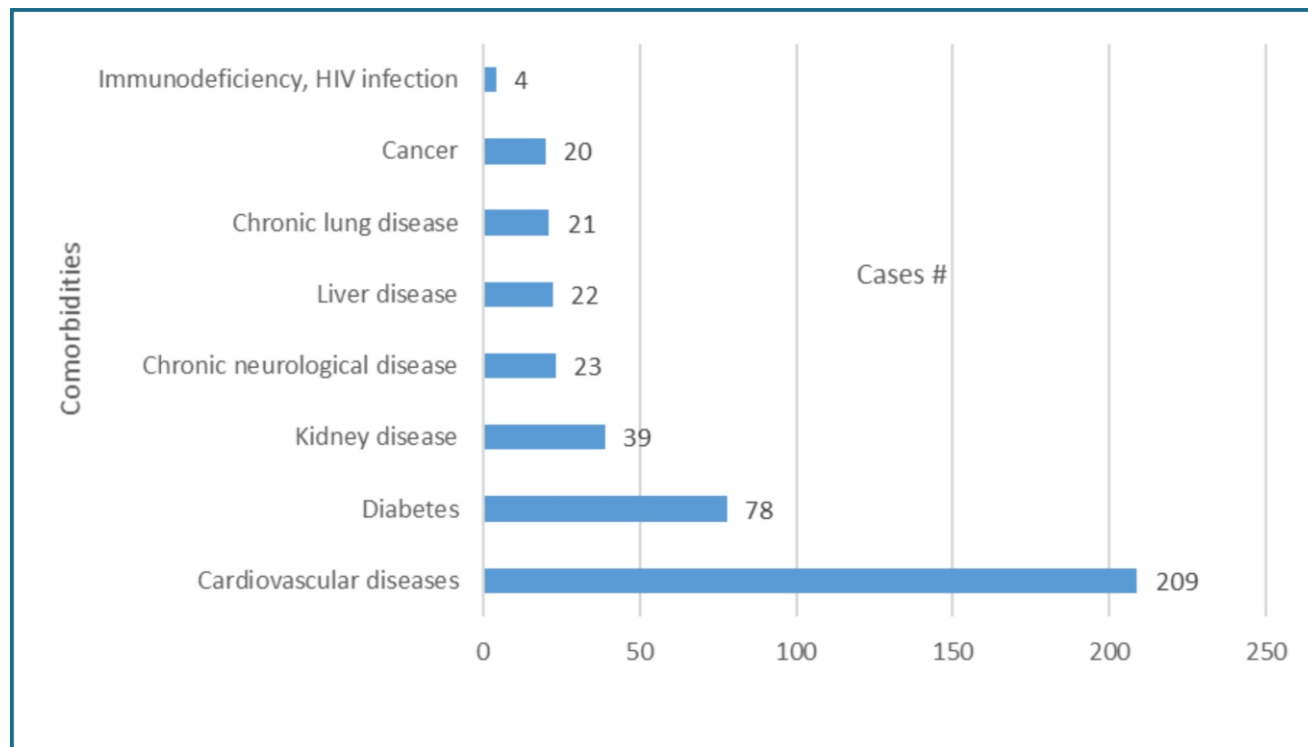
Figure 62. Number of COVID-19 cases by region, Special Study Cohort (random sampling $n = 1,307$), November-December 2020, Georgia





Of the studied COVID-19 cases, 209 (16%) had cardiovascular disease, 78 (6%) diabetes, 39 (3%) kidney disease, and 4 (0.3%) immunodeficiency.

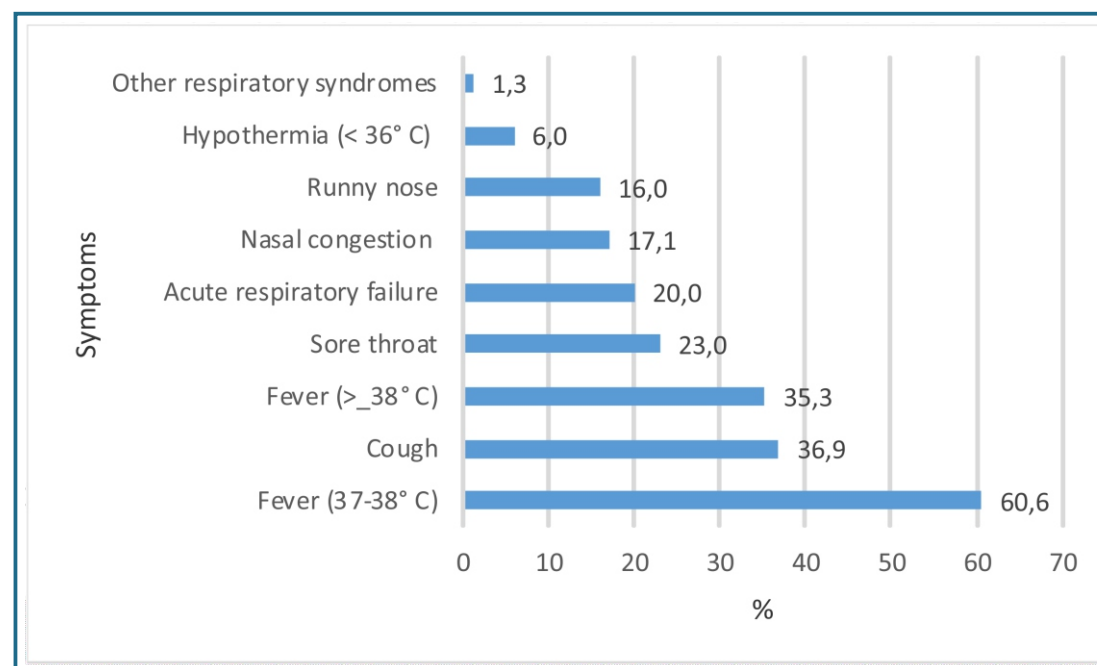
Figure 63. Co-morbidities of COVID-19 cases, special study cohort (random sample $n = 1,307$), November-December 2020, Georgia



Clinical signs showed in 60.6% of cases was the fever of 37-38 °C, the temperature of $\geq 38^\circ\text{C}$ was observed in 35.3% of cases and 37% showed cough. Nearly a quarter of those infected had a sore throat and a fifth developed respiratory failure.

Pneumonia developed in 183 patients, oxygen supply became necessary in 102 patients, and artificial ventilation of lungs in 16 cases. The average score for lung damage was 7.97.

Figure 64. Symptoms Observed in SARS-COV-2 infected patients, Special Study Cohort (Random Sampling $n=1,307$), November – December 2020, Georgia

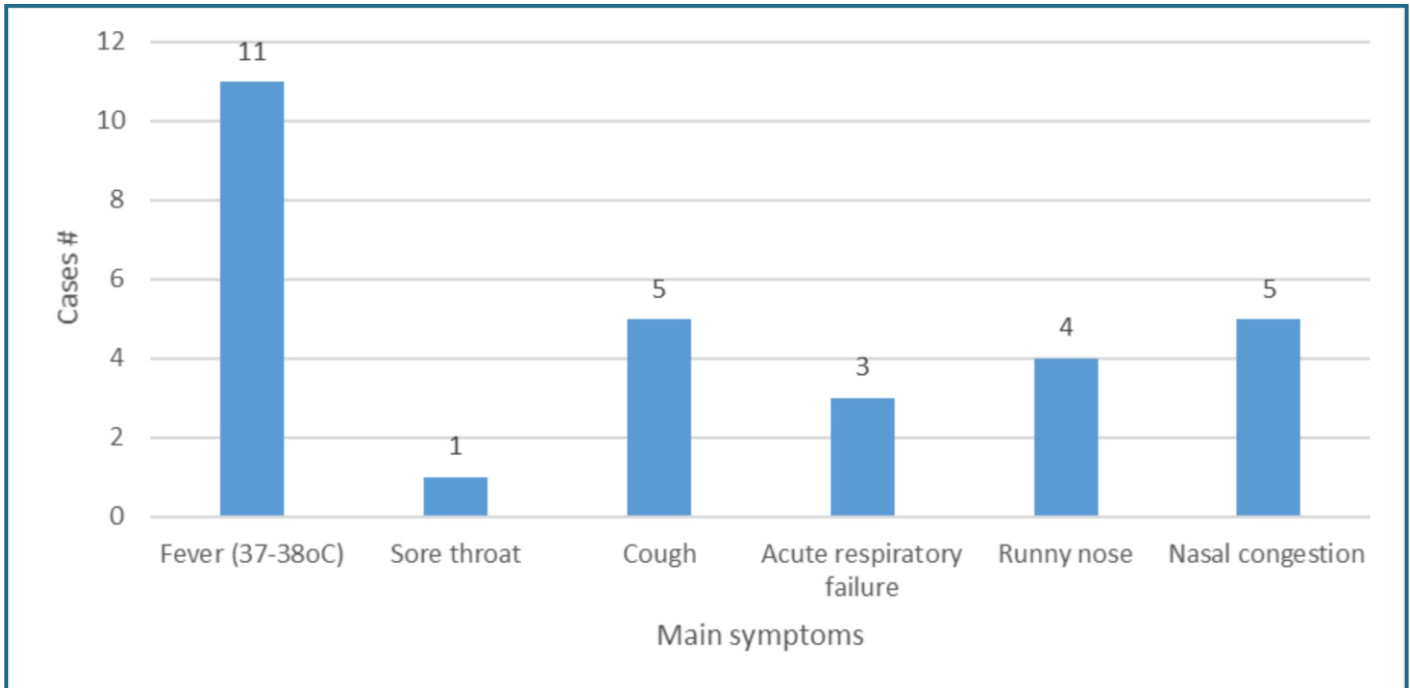


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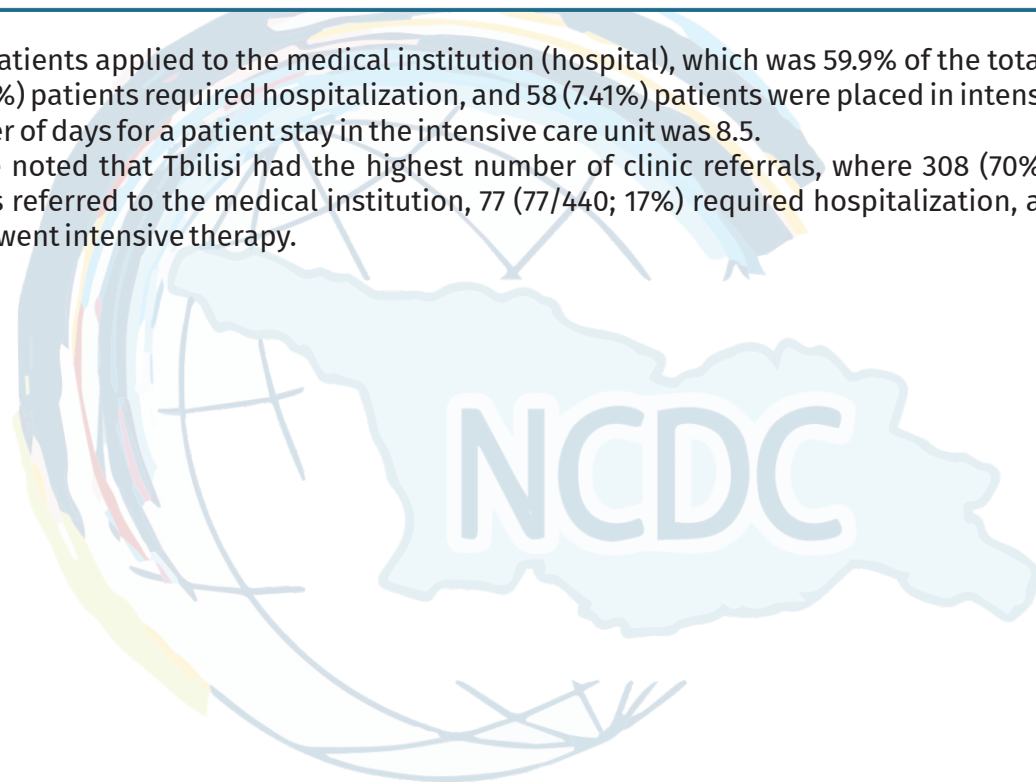
From the above cases, 15 infected pregnant women were identified. 6 of them were infected in the first trimester of pregnancy, 2 - in the second, and 7 - in the third. The disease was mainly symptomatic in pregnant women, only 1 case was asymptomatic. 4 pregnant women required hospitalization, but none of them developed pneumonia and did not need intensive therapy.

Figure 65. Main COVID-19 symptoms detected in pregnant women infected with SARS-COV-2, special study cohort (random sampling $n = 15$), November-December 2020, Georgia



Overall 783 patients applied to the medical institution (hospital), which was 59.9% of the total number. Of these, 216 (27.6%) patients required hospitalization, and 58 (7.41%) patients were placed in intensive care. The average number of days for a patient stay in the intensive care unit was 8.5.

It should be noted that Tbilisi had the highest number of clinic referrals, where 308 (70%) out of 440 surveyed cases referred to the medical institution, 77 (77/440; 17%) required hospitalization, and 24 (5.5%) patients underwent intensive therapy.





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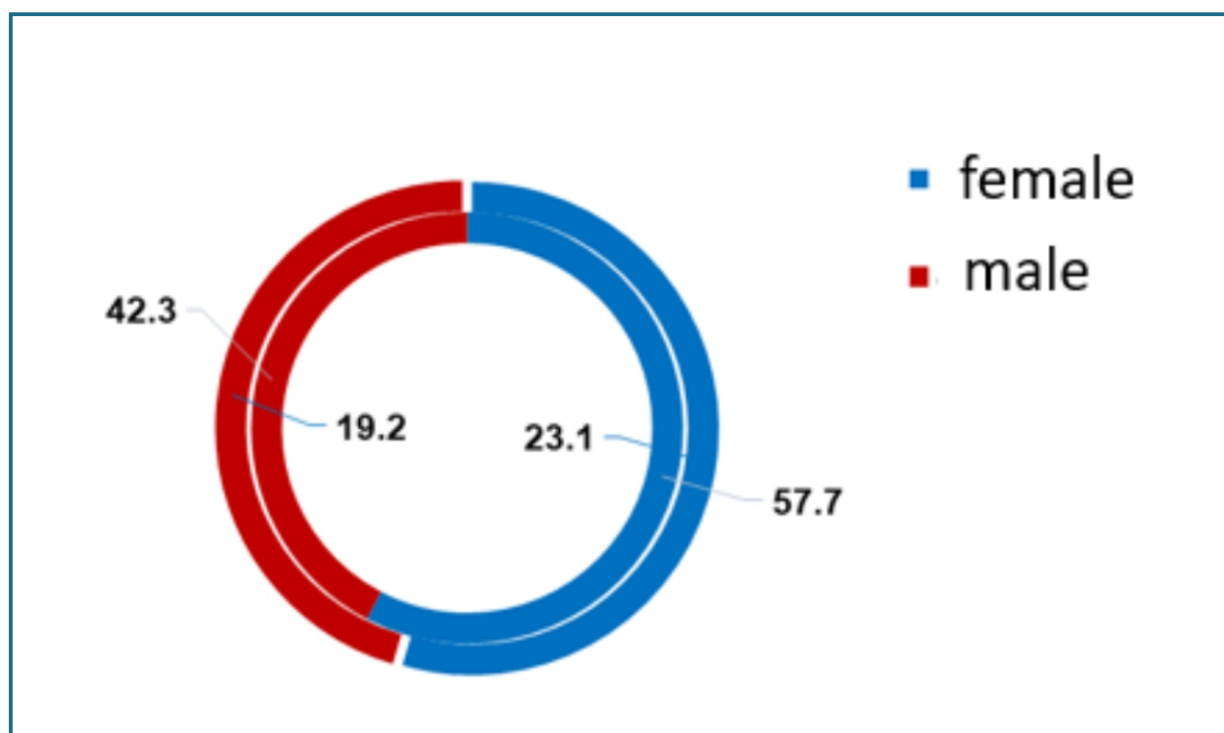
Study of the first few X cases and contacts of Covid-19 using Go.data software

One of the first clusters was selected for the study of the first few X cases of COVID-19 in Georgia (The First Few X Study - FFX) and its contacts. Case #X was defined as an index case and oversight was exercised over its close contacts. The Index case was studied and its 26 close contacts were examined, with whom, during the first and subsequent 14-21 days provided for in the Protocol, a telephone interview was conducted through standard questionnaires developed by the World Health Organization. At the same time, a nasopharyngeal smear PCR study was performed, while data entry and processing were performed in Go.Data, a software tool used to investigate cases and find contacts.

The index case was a 44-year-old male patient who was diagnosed with COVID-19 infection after returning to Georgia from a trip abroad. He had a high fever, diarrhea, and joint pain, and later developed pneumonia.

Of the 26 contacts in the index case, 11 (42.3%) were males and 15 (57.7%) were females. 5 (19.2%) of the positive contacts were males and 6 (23.1%) were females.

Figure 66. Distribution of all close and positive contacts in the index case by gender (%), FFX Survey, Georgia



The minimum age for positive contacts was 2 years, and the maximum - 65, for median and moda 36 years. Most of the positive cases were detected in the age group of 20-59 years, where the number of male cases exceeded the number of female patients.

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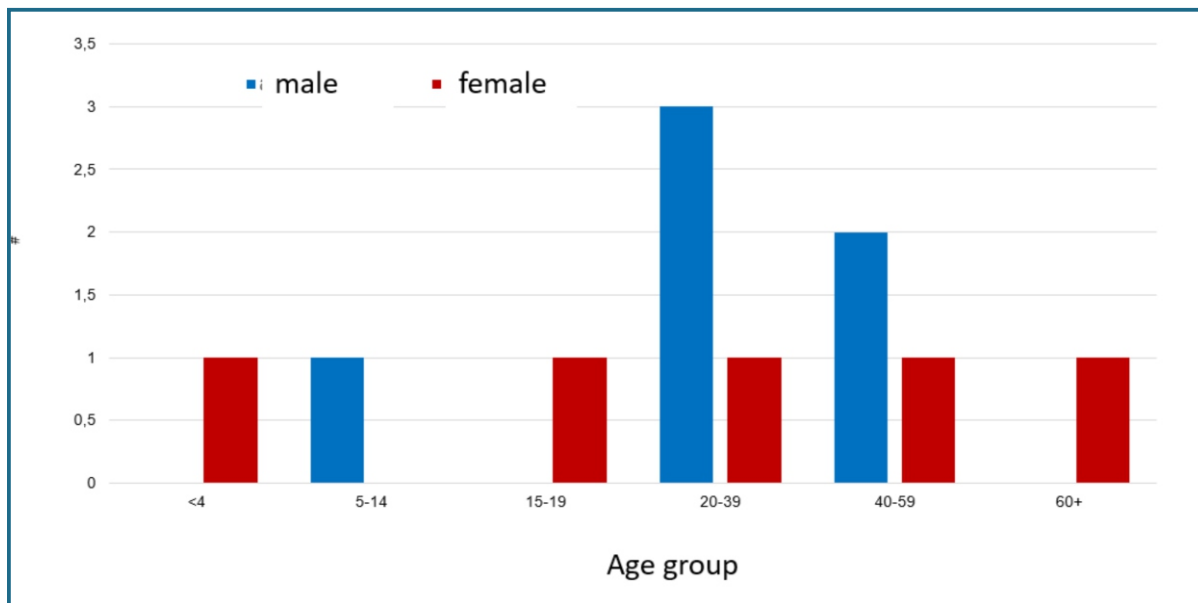


საქართველოს ექსპერტული
საბჭო COVID-19-ის ეპიდემიის
გავრცელების შესახებ



საქართველოს ექსპერტული
საბჭო COVID-19-ის ეპიდემიის
გავრცელების შესახებ

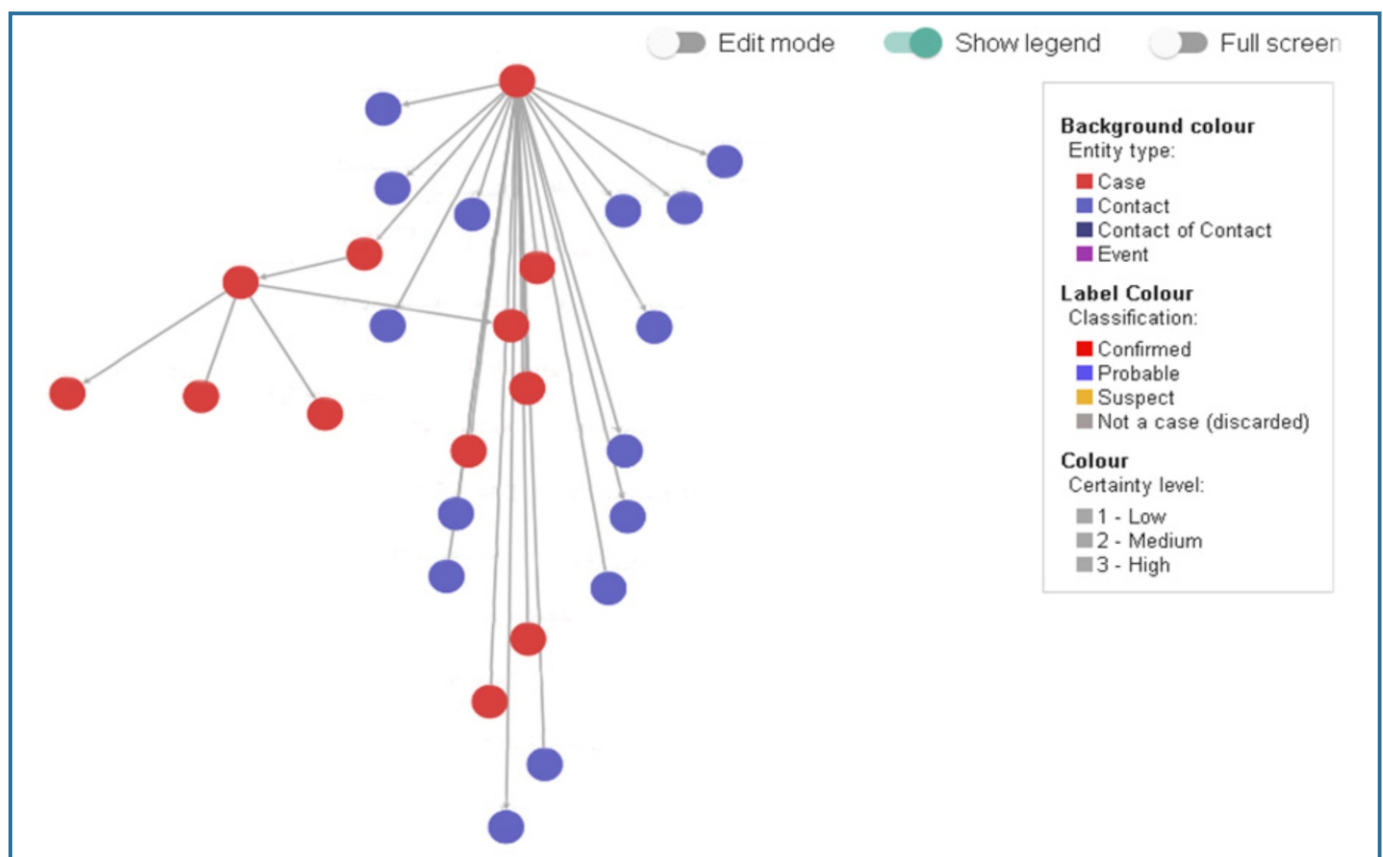
Figure 67. Distribution of COVID-19 Cases by Gender and Age Groups, FFX Study, Georgia



The positive contact index ranged from 3 to 5 days and averaged 3.7 days, with an average case ranging from 15 minutes to 300 minutes.

Cases and related contacts in Go.data were grouped and classified according to common characteristics and variables.

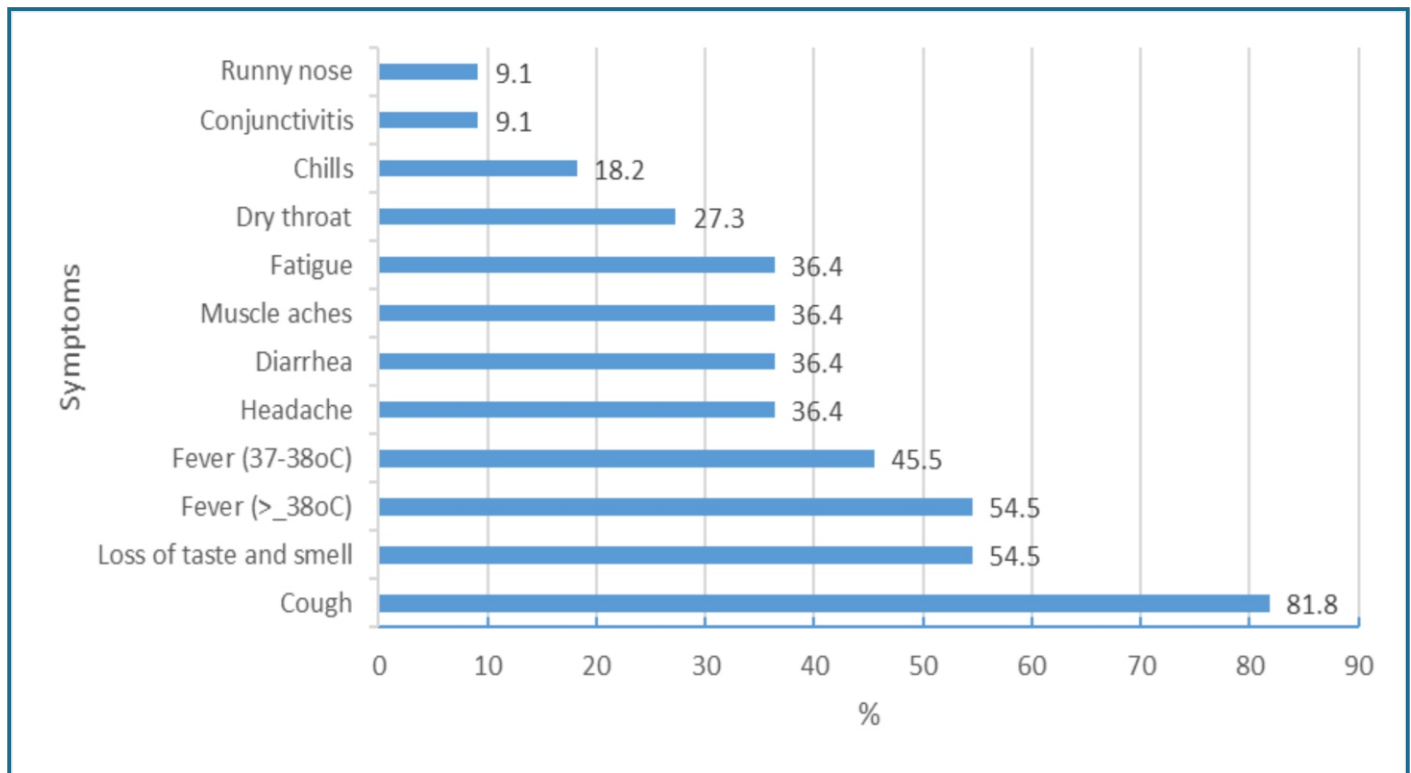
Figure 68. COVID-19 Distribution Chain in a Cluster, FFX Survey, Georgia





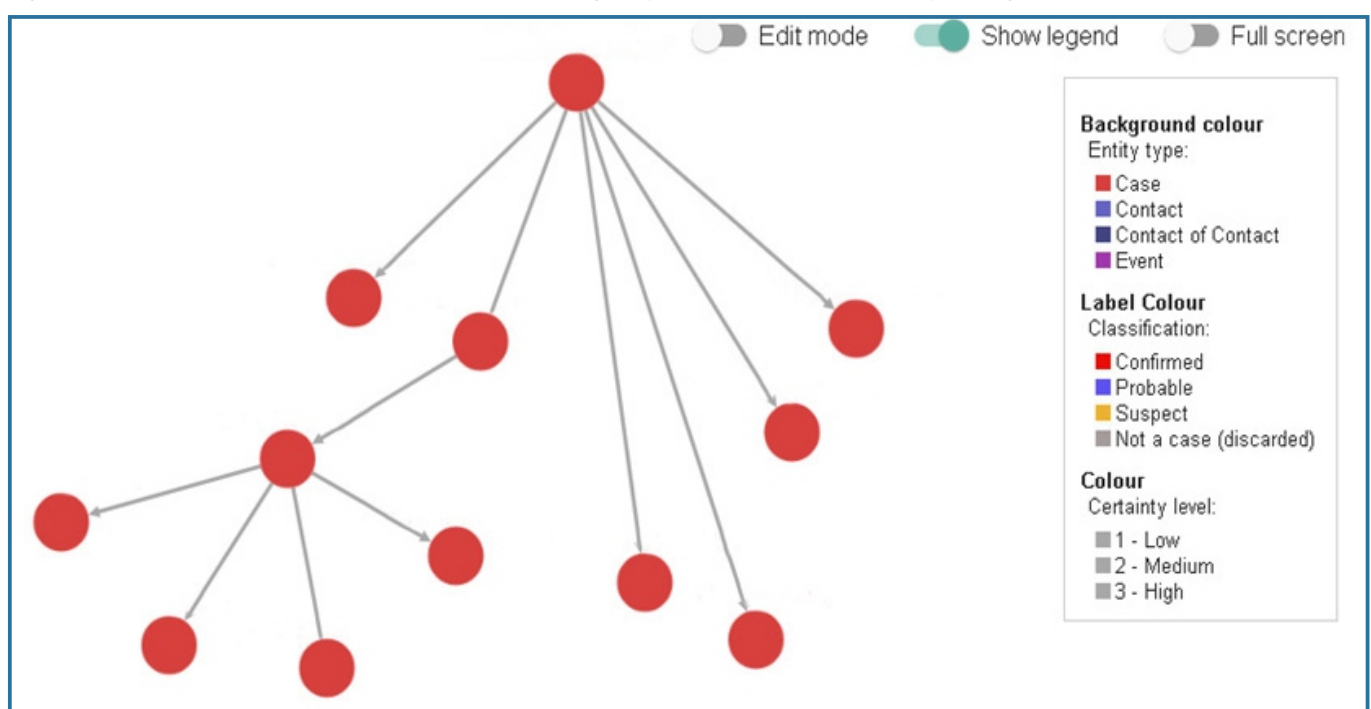
Approximately 82% of the positive contacts experienced a cough, while 54.5% had a temperature above 38°C and loss of taste and smell. Only 5 patients (45.5%) had a temperature rise in the 37-38°C range and 26% had headaches and muscle aches, diarrhea, and fatigue.

Figure 69. Index of Symptoms in Positive Contact Cases, FFX Study, Georgia



Most of the confirmed contacts were ones from the workplace (36.4%) and family contacts (45.5%) of the index case. The same cluster recorded the first domestic transmission in the country when an infection from one of the contacts of the index case spread to his family members

Figure 70. Index case and COVID-19 transmission among his positive contacts, FFX study, Georgia





საქართველოს ექსპერტული
საბჭო ეპიდემიოლოგიის, ინფექციური
დაავადებებისა და პარაზიტოზების
სფეროში



საქართველოს ექსპერტული
საბჭო ეპიდემიოლოგიის, ინფექციური
დაავადებებისა და პარაზიტოზების
სფეროში

Some characteristics of 10,997 cases of possible reinfection with SARS-CoV-2 registered in Georgia from February 26, 2020, to December 31, 2021

Reinfection caused by SARS-CoV-2 is considered to be a recurrent COVID-19 disease after a defined time interval from recovery. To date, several episodes of SARS-CoV-2 reinfection and COVID-19 disease have been reported worldwide.

The NCDC is actively working to inform the public health sector about reinfection; standard case definitions and recommendations for public health professionals were developed; detection of possible COVID-19 reinfection cases and further detailed study is being conducted.

The study of possible reinfection cases in Georgia started in September 2020. The definition of SARS-CoV-2-induced reinfection (COVID-19) is temporary and is subject to renewal in the presence of appropriate evidence or in accordance with the recommendations of the World Health Organization.

Overall 10,997 cases of possible reinfection with COVID-19 were recorded in the total system of laboratory-confirmed cases from February 26, 2020, to December 31, 2021, with a positive PCR test or rapid antigen testing at least 60 days apart. Among them, there were 4,103 males (37%) and 6,894 (63%) females. The median age of possible re-infections was 36 years, minimum age 4 months, maximum 94 (SD = 16, IQR = 22). The average period between the first and second confirmations is 291 days with a minimum of 69 and a maximum of 589 (SD = 93 IQR = 130).

Sequencing was performed by the Lugar Research Center on 41 possible reinfections, of which 16 were re-infected and 1 was persistent.

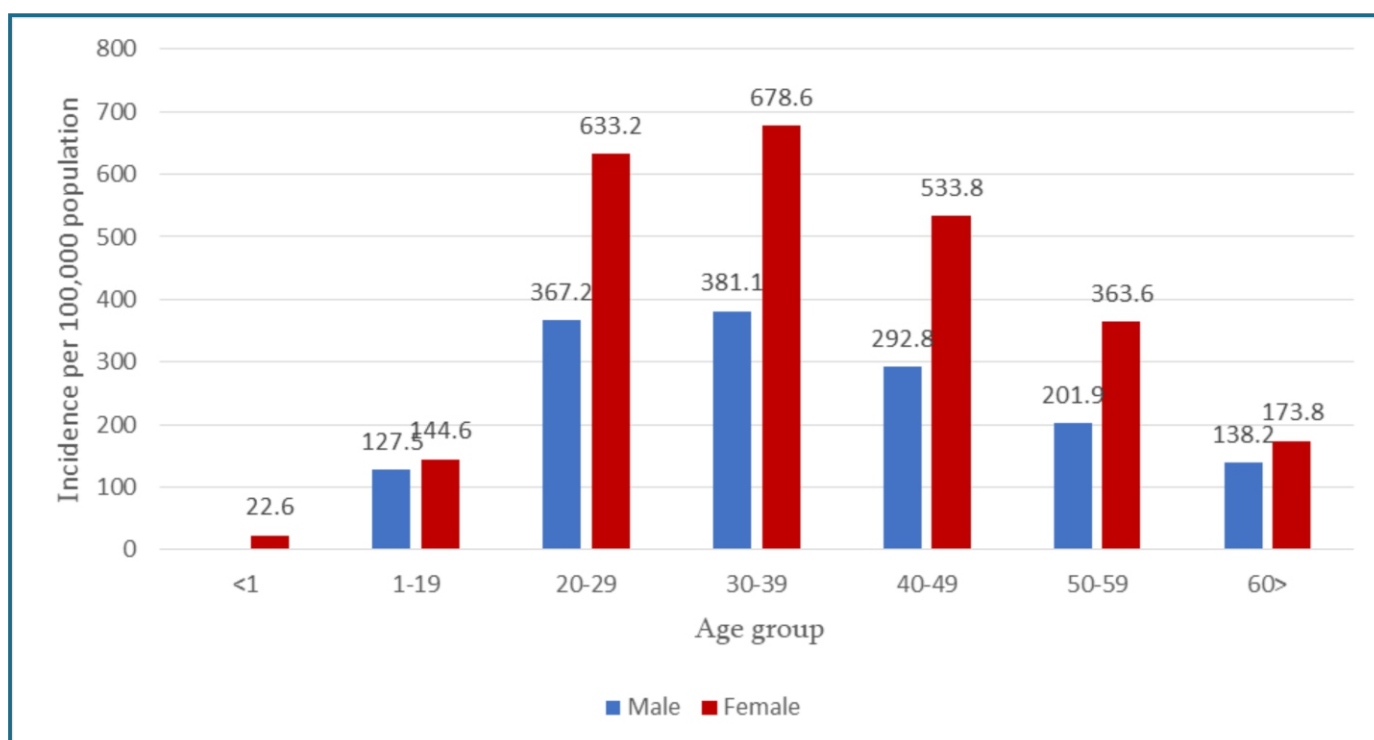
Table 20. Distribution of COVID-19 confirmed reinfection case strains, 2020-2021, Georgia

Number of cases	The first sample	The second sample
One	B.1.1.141	Alpha B.1.1.7
Five	B.1.1 *	B.1.1 *
Two	B.1.1	Delta AY.125
Two	Alpha B.1.1.7	Delta AY.125
One	B.1.1	Delta AY.121
One	Alpha B.1.1.7	Delta AY.121
One	B.1.1	---
Two	---	Delta AY.128
One	---	Delta AY.121

* In five cases 10 <nucleotide polymorphism (SNP).

** Only one biological sample was sequenced in four cases. Based on the epidemiological situation in the country, in one case during the second episode and in three cases during the first episode Alpha and Wuhan strains were circulating respectively

Figure 71. Distribution of Possible COVID-19 Reinfection Incidence by Age and Gender Groups per 100,000 of Population, 2020-2021, Georgia N=10997



The incidence of possible COVID-19 reinfection per 100,000 population is highest among women aged 30-39 years.

Of the 10,997 possible described reinfection cases, a total of 52 deaths were reported with COVID-19 all in 40+ age groups.

Of the 10,997 possible reinfection cases, 1,833 were fully immunized between primary infection and re-infection.

Out of fully vaccinated (more than 14 days after receiving the last dose of vaccine) 1,833 (16%) people, 6 (0.3%) were vaccinated with one booster dose and 3 (0.2%) persons with 4 doses of vaccine. Males were 754 (41%) and females 1,072 (59%) (N = 1,826). The mean age of vaccinated individuals was 41 years, minimum 17, maximum 93 (SD = 14 IQR = 21) (N = 1826).

Of 1,833 fully vaccinated cases, possible reinfection occurred in 57% (1,058/1833) of cases within 14-90 days after vaccination and in 43% (775/1,833) of cases after 90 days.

4 deaths due to COVID-19 were reported among 1,833 described cases, two were vaccinated with 2 doses of AstraZeneca and Sinopharm, and 2 were fully vaccinated with Sinovac, all in 50+ age groups.

The Eighth Revision



საქართველოს ექსპერტული
საბჭო COVID-19-ის გამავლობის
დაცვის, აღმოჩენის და
მკურნალობის საკითხებში



საქართველოს ექსპერტული
საბჭო COVID-19-ის გამავლობის
დაცვის, აღმოჩენის და
მკურნალობის საკითხებში

Table 21. Distribution of possible COVID-19 vaccinated reinfection cases by gender and age:
Georgia 2020-2021, N = 1,825

Age	Male	Female	Total
<18	3	1	4
18-19	13	14	27
20-29	131	159	290
30-39	218	274	492
40-49	168	260	428
50-59	118	205	323
60-69	70	109	179
70>	32	50	82
Total	753	1072	1825

Table 22. Distribution of vaccines in possible COVID-19 vaccinated reinfection cases, Georgia 2020-2021, N= 1,833*

Vaccine	Quantity
Johnson	6
AstraZeneca	93
<u>Sinovac</u>	284
Pfizer	482
<u>Sinopharm</u>	968
Total	1833



* Complete immunization between primary infection and re-infection.

Study of COVID-19 risk factors in medical staff, Tbilisi, Gori, September 2020 - June 2021

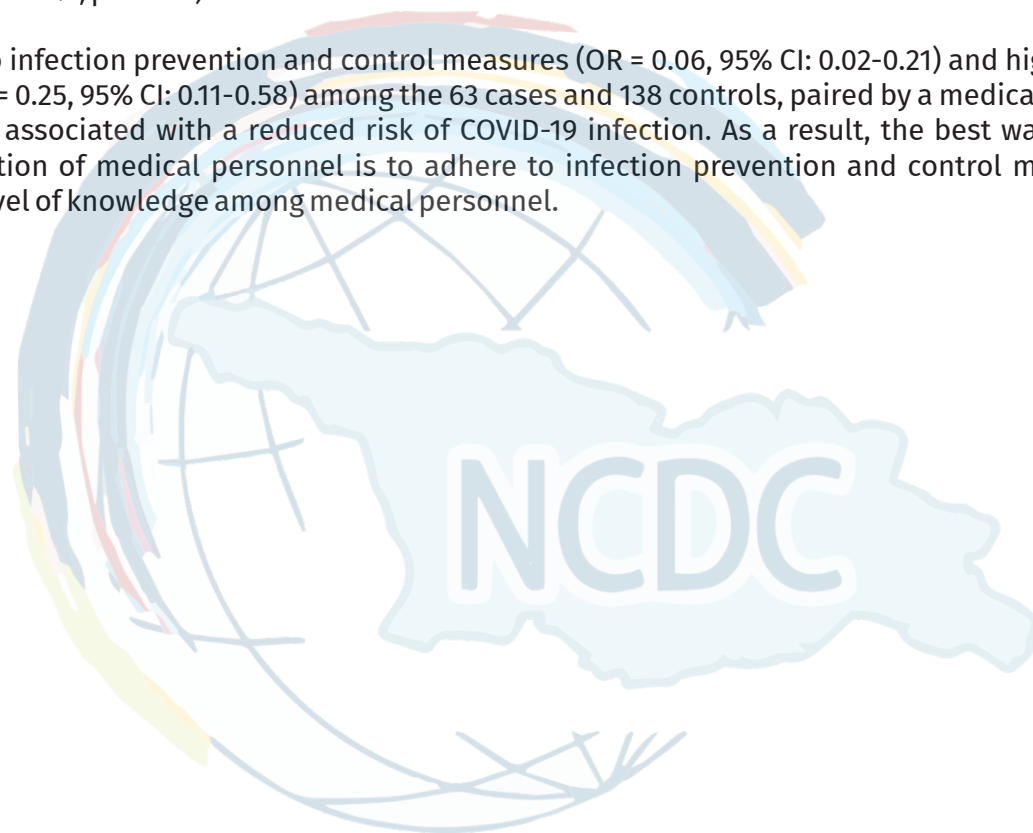
In order to study the risk factors related to COVID-19 infection of medical staff, from September 2020 through June 2021, a case-control study was conducted in nine so-called Covid Clinics. Medical personnel who tested positive for COVID-19 through PCR testing was selected as the case, while the workers being tested regularly (once a week) via PCR, who never tested positive were selected as a control group. The ratio between cases and controls was approximately 1:2.

One week after COVID-19 laboratory confirmation of controls and cases, information on demographic, clinical, epidemiological, and infection prevention and control was collected through a standardized World Health Organization questionnaire (telephone interview) on 21-28th day. Data analysis was performed using univariate and multivariate conditional logistic regression methods.

The study involved 203 medical staff, including 65 cases and 138 controls. The age-gender distribution of cases and controls was almost similar (median age (IQR) = 41 (25) and 44 (22) years, $p = 0.901$. 80% and 82% of females; $p = 0.748$).

The majority of cases (95%) and controls (98%) were trained in the care of patients infected with COVID-19. Among the cases, 29% were doctors, 56% were nurses, and 15% were the junior medical staff, while in controls 46%, 36%, and 18%, respectively. 42% of the cases and 63% of the controls ($p = 0.004$) had higher education. A significant proportion of controls during patient care, compared to cases, adhered to hand hygiene recommendations (86% and 55%; $p < 0.001$) and standard safety measures for infection prevention and control (94% and 62%; $p < 0.001$).

Adherence to infection prevention and control measures (OR = 0.06, 95% CI: 0.02-0.21) and higher medical education (OR = 0.25, 95% CI: 0.11-0.58) among the 63 cases and 138 controls, paired by a medical facility, was independently associated with a reduced risk of COVID-19 infection. As a result, the best way to prevent COVID-19 infection of medical personnel is to adhere to infection prevention and control measures and increase the level of knowledge among medical personnel.



COVID-19 Communication Campaign of the National Center for Disease Control and Public Health

Prior to reporting the first case of COVID-19 in the country, starting from January 2020, the Center strengthened communication with the population, began risk communication, and implementation of various necessary measures.

The Center mobilized its own resources and involved industry experts, and with the help of partners and donors, it has been actively conducting communication campaigns through almost all communication channels for the last two years.

Communication strategy and action plan documents were developed with the assistance of relevant experts and donors, such as:

- **COVID-19 Related 2020-2022 Risk Communication and Community Engagement Strategy Paper and Action Plan (2020) was prepared**, inter alia, for the population of the regions inhabited by ethnic minorities, through the joint efforts of the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs, the United Nations Children's Fund and the World Health Organization.
- **Risk Communication Strategy in times of Public Health Crisis in Georgia (2020)** was developed by the Center with the support of the United Nations Development Program, the Government of the United Kingdom, and the United Nations Association of Georgia
- **Communication Action Plan for the Introduction of the COVID-19 Vaccine (2021)** (within the framework of the National Plan for the introduction of the COVID-19 vaccine in Georgia)

The goal of strategic documents and plans is to raise public awareness, promote their involvement, and effectively manage risks through educational, media, or various marketing activities.

Based on these strategies, active communication with the general population and priority groups is underway.

Communication activities and main directions implemented in 2020-2022 to support the prevention of COVID-19 and vaccination against COVID-19 in order to increase public awareness:

Education

- Informational and video lectures were prepared for medical staff;
- Information and educational materials were developed, including for ethnic minorities living in Georgia;
- Translation-adaptation of evidence-based educational material developed and disseminated by the CDC, WHO and other international organizations on an ongoing basis; Visual material, educational posters, infographics, video materials are prepared on a regular basis and distributed through the digital platforms of the Center.

Social Networks - Digital Communications and Media

- The social media campaign has been active on all digital platforms of the Center (Facebook, Twitter, Instagram, YouTube) since the beginning of 2020;
- In order to popularize preventive measures, events were carried out with the support of celebrities, including the production of motivational videos on the observance of regulations;
- Digital news banners were prepared and placed on various websites and video portals;
- Information material on measures against COVID-19 from successful experiences in different countries of the world is translated and posted on a daily basis;
- Motivational content is created on a daily basis to intensify the fight against pandemics, to increase community involvement, and to improve compliance with COVID-19 regulations;
- During the first and second quarters of 2021, briefings with live broadcasting were systematically held on the official Facebook page of the Center;
- Dozens of illustrations and videos were prepared in collaboration with local and international organizations and placed on the digital platforms of the Center and partner organizations;
- With the support of WHO, an information and popularization website for COVID-19 vaccination was



created: <https://vaccines.ncdc.ge/>, which was translated into 4 languages: Abkhazian, Ossetian, Azerbaijani and Armenian.

- According to the 7th revision of the COVID-19 situation in Georgia, statistical information posters were prepared and placed on the Center's digital platforms. These posters have received the most responses in recent months and have been used in almost every recent study, presentation, or TV show covering a pandemic topic.
- Daily COVID-19 statistical data posters were updated on the Center's Facebook page to inform the population.
- Work has begun on digitizing the existing COVID-19 statistics page and making it interactive on the Center's website, which will be operational in February 2022.
- Continues operation of the Center hotline 116001 in active mode 7 days a week, from 9:00 to 23:00.
- In 2020-2021, the weekly briefings of the Center's representatives to the media and the public were actively held.

COVID-19 სტატისტიკა

ცხელი ხაზი: 116 001 | 15 22

02.02.2022

COVID-19
ახალი შემთხვევები

შემთხვევა

26 320

24 სთ-ში

1 226 444

სულ

181 293

აქტიური

სიკვდილი

44

24 სთ-ში

15 060

სულ

1.23%

ლათალა

გამოჯანბრება

9 555

24 სთ-ში

1 030 065

სულ

83%

ტესტირება

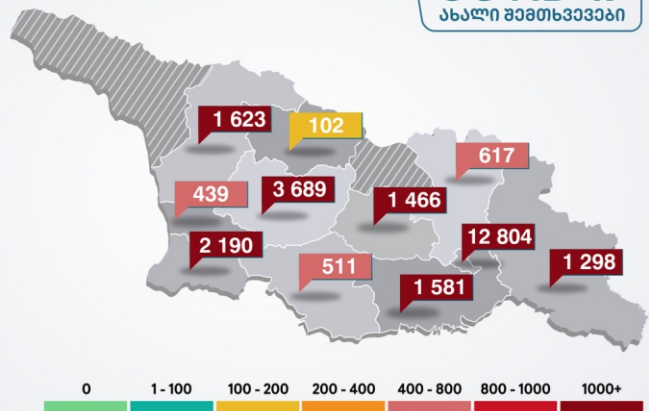
84 658

24 სთ-ში

დადასტოვების
მარცხეული

26.38%

7-დღიანი



#ვიცრებიტარებამეთისთვის | NCDC.GE | VACCINES.NCDC.GE

COVID-19-ის საწინააღმდეგო ვაქცინაციის სტატისტიკა

46.5% ერთი დოზით
აქტიური

42.6% სრულად
აქტიური



0 1 - 100 100 - 200 200 - 400 400 - 800 800 - 1000 1000+

სულ
აქტიური

მინიმუმ
არტი დოზა

1 337 036

ორი დოზა

1 222 843

გამთავარი

167 864

24
სთ-ში

6 714

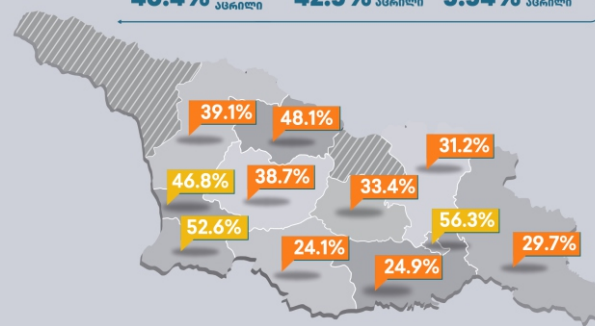
02.02.2022 | booking.moh.gov.ge | ცხელი ხაზი: 15 22

COVID-19-ის საწინააღმდეგო ვაქცინაციით მოცვა

46.4% ერთი დოზით
აქტიური

42.5% სრულად
აქტიური

5.54% გამთავარი
აქტიური



1-10% 10-20% 20-40% 40-60% 60-80% 80-100%

#ვიცრებიტარებამეთისთვის | NCDC.GE | VACCINES.NCDC.GE

იანვარი | booking.moh.gov.ge | ცხელი ხაზი: 15 22

The Eighth Revision



საქართველოს ეროვნული ცენტრი
დამავადი და ინფექციური
ავადებების კონტროლისა და
პროფილაქტიკის მიზნით



საერთაშორისო განვითარების
პროგრამა
საერთაშორისო განვითარების
პროგრამის ქვეყნის დარგის
საერთაშორისო განვითარების
პროგრამის ქვეყნის დარგის

Printed Materials

- A recommendation card was prepared to provide information to the population in case of a positive response to the COVID-19 antigen rapid test.
- Brochures, posters, and vaccination cards were printed with the support of the Center and the United Nations Development Program and distributed throughout the country to service providers.
- In cooperation with various agencies and donor organizations, posters were developed in Georgian, Azerbaijani, and Armenian for different target groups (pregnant women, the elderly, people with chronic diseases, etc.), materials on preventive measures against COVID-19, for electronic distribution. It was also translated into Ossetian and Abkhazian languages.
- Various information posters were prepared and printed for distribution in public places.



Materials prepared by the Center are fully available on the Center's website: <https://www.ncdc.ge/#/pages/content/d3e9f9d2-c980-4937-a880-34cb1313ac95>

Outdoor advertising

- From the beginning of the pandemic, informational advertisements were prepared and placed on street monitors and billboards in ethnic minority areas. Vaccination support billboards were also prepared and placed in Tbilisi and the regions.

Marketing

- In the spring of 2020, the campaign #StayAtHome was promoted;
- In October 2021, for further strengthening the communication, a marketing group was set up at the Center, which started working to improve its marketing communications;
- Unified messaging and communication language was updated; It was formed as a new message and motto of the current campaign: "At Georgia's service - we get vaccinated for the benefit of each other!"
- The marketing team was actively involved in the production of a unified national campaign led by a communication team set up with the government administration. In collaboration with the government group, up to 20 videos were created with the participation of representatives of the medical field, as well as the people who recovered from Covid. Up to 10 graphic videos about current regulations were made and posted on media and social networks. Numerous news posters have been created on social networks.



Marketing

- Ways and Symptoms of COVID-19 Spread:
https://www.youtube.com/watch?v=O8N8HSCLK2Y&feature=emb_logo
- Public Responsibility / Preventive Measures:
https://www.youtube.com/watch?v=vTvs0ypQWxw&feature=emb_logo
- Public transport / preventive measures during COVID-19:
https://www.youtube.com/watch?v=LLbfp4rR6LM&feature=emb_logo
- 7 steps to prevent infection:
https://www.youtube.com/watch?v=ApmeYGjlp1U&feature=emb_logo
- Recommendations for media organizations and journalists:
https://www.youtube.com/watch?time_continue=14&v=1z9E8XkBKxU&feature=emb_logo
- Medical and non-medical (social) mask use rules:
https://www.youtube.com/watch?v=6iJUZg52Yyg&feature=emb_logo
- Video on wearing a mask correctly:
<https://www.youtube.com/watch?v=rqQZmNd6NE4&feature=youtu.be>
- What does a COVID-19 test response mean and how should you act before receiving it?:
<https://www.youtube.com/watch?v=h6Fw6ZYPH-0>
- Video in support of preventive measures with the participation of local popular people
<https://www.youtube.com/watch?v=x4MUVVK11PU>

During the pandemic, the need for psychological support for the quarantined population became apparent; The National Center for Disease Control and Public Health organized a crisis psychological help hotline (911 000) in April 2020, with the support of the Open Society Georgia Foundation. Due to the importance of this service, from May 2021, the provision of hotline services was continued within the framework of the state program "Health Promotion". As of December 31, 2021, 4,268 people used the hotline services since its launch.

Communication Activities of the COVID-19 National Vaccination Implementation Plan

The Communication Action Plan for the implementation of COVID-19 vaccination was prepared with the involvement of local and international experts. Various information and educational interventions were carried out with the support of the Center and donor organizations.



The Eighth Revision



საქართველოს ექსპერტული
საბჭო ექსპერტული საბჭო
საქართველოს ექსპერტული
საბჭო ექსპერტული საბჭო



საქართველოს ექსპერტული
საბჭო ექსპერტული საბჭო
საქართველოს ექსპერტული
საბჭო ექსპერტული საბჭო

In line with the Action Plan and the Unified Strategy to Promote Vaccination Against COVID-19, a number of measures have been taken and are ongoing.

The main directions of the information campaign on vaccination promotion and the implemented activities

Face to face meetings

- In order to support the vaccination process, informational meetings were held with the participation of the Director General and staff of the Center to meet with the government officials in the regions, heads of local municipalities, and municipal representatives of public health. Meetings were held in all regions of Georgia. The purpose of the meetings was to discuss issues related to COVID-19 epidemic and support ongoing vaccination.
- To support the vaccination process and facilitate maximum involvement in the vaccination campaign, the National Center for Disease Control and Public Health initiated up to 100 online information meetings for staff of various organizations. The meetings were attended by representatives of the governmental and private sector organizations, pharmaceutical, trade, industrial, banking, hospitality, education and other institutions.
- Red Cross staff and volunteers actively participated in the meetings in support of the Vaccination Communication Campaign. They carried out a population mobilization campaign, assisted in the electronic registration of vaccinations for ethnic minorities and older citizens, and printed and disseminated information materials. In addition, information materials were distributed by volunteers during European Immunization Week, inter alia, for ethnic minorities; Within the framework of the existing campaign, the Georgian Red Cross Society, based on the practice of the International Red Cross Federation, recorded and prepared videos of the "Vaccination Voice", which were shared through the social network: (<https://fb.watch/5jFAixJ2RO/>; <https://fb.watch/5jFD3QIk31/>)
- Meetings with religious leaders were held with the support of donor organizations (WHO; UNICEF);
- Vaccine introduction communication campaign was supported by UNICEF, media webinars were held, as well as information meetings with representatives of different sectors. Meetings were also held to raise awareness among teachers and junior medical staff, including in ethnic minority community.
- World Vision, for supporting the COVID-19 Vaccination Information Campaign, in cooperation with the Center, conducted informational meetings with representatives of educational, school and preschool institutions, parents (Kakheti, Imereti, Samtskhe-Javakheti regions).
- Informational meetings were held with the staff of the schools and preschool institutions in Shida Kartli and Imereti regions with the support of the CDC.

Printed materials

The following materials were prepared about vaccination importance against COVID-19:

- Information leaflets and posters about the importance of vaccination;
- Recommendations on vaccination procedures in Georgian, Armenian and Azerbaijani;
- Myths and facts about vaccination in Georgian, Armenian, and Azerbaijani languages; Why is immunization important and what steps should we take for immunization?
- Guide and brochure for teachers;
- Within the framework of Immunization Week organized by WHO Regional Office for Europe, various information and educational posters were translated into Georgian and adapted about the importance of routine, as well as Anti-COVID-19 vaccination posted in the network;
- Information brochure: "COVID-19, pregnancy, and vaccination"; posters about the importance of vaccination during breastfeeding;
- Information poster "How does it work and what side effects may accompany AstraZeneca vector vaccine against COVID-19"?

- [illegible]

The Eighth Revision



საქართველოს ექსპერტული ცენტრი
საერთაშორისო და
საერთო სახელმწიფო
საზოგადოებრივი ჯანდაცვის
სამსახური



საქართველოს ჯანდაცვის
მინისტროს
საერთაშორისო და
საერთო სახელმწიფო
საზოგადოებრივი ჯანდაცვის
სამსახური

Social Networks and Digital Communication



- Up to 20 lives were made on the Center's Facebook page, where the Center's experts discussed topical issues related to vaccination.
- With the WHO support up to 20 photo casts were created, aimed to share the vaccination experience of people of different professions;
- With the financial support of WHO and the European Union, an information campaign on the introduction of the COVID-19 vaccine is underway, which includes: social media activities, video development, and adaptation, program cycles in regional media, online media webinars, etc.
- With the involvement of the Center representatives and the support of Zink Network, the concept of an information campaign for the introduction of the COVID-19 vaccine was created; Website www.covax.ge was launched; an information campaign is underway through social media.
- Information on updated regulations and rules is created on a daily basis and posted on the digital platforms of the Center, and motivational posters are made systematically.
- Infographics are created regarding the current situation in the world in terms of vaccination.

Social Networks and Digital Communication

- So far, the Center has conducted more than 20 online webinars for media representatives, including with the participation of regional media.
- Training of medical staff was held, inter alia, for ethnic minorities with the support of the WHO; in addition, workshops and information meetings were held with non-governmental sector and civil society working with the ethnic minorities;
- A short-term retraining course on the introduction of vaccination was conducted, which included 3 modules, including interpersonal and crisis communication modules. The training was conducted for the staff of the vaccination service providers, with the participation of epidemiologists of municipal public health centers and representatives of local self-government across the country.
- Within the framework of the state program "Health Promotion" there was a "Health Promotion Education Campaign in the Context of COVID-19" on the Facebook page of the Center "Health Promotion": (<https://www.facebook.com/HealthPromotionGeorgia/> .)



საქართველოს ექსპერტული სააგენტო
საერთაშორისო და ეროვნული
საჯანდაცოლო ცენტრი
საქართველოს ექსპერტული სააგენტო



საერთაშორისო ექსპერტული სააგენტო
საერთაშორისო ექსპერტული სააგენტო
საერთაშორისო ექსპერტული სააგენტო
საერთაშორისო ექსპერტული სააგენტო

Video footage

Informational-educational videos were prepared with the support of WHO:

- Registration Instruction for COVID-19 Vaccination
<https://www.youtube.com/watch?v=VLI2WvBDZQU>
- What is the way taken for the COVID-19 vaccination?
<https://www.youtube.com/watch?v=WQcX3l2Uwe>
- Vaccination brings us closer
<https://www.youtube.com/watch?v=S8EXwKSx0Qc>
- Is it necessary to follow preventative measures after vaccination?
https://www.youtube.com/watch?v=7n5mEn2ijgo&feature=emb_imp_woyt
- Bidzina Kulumbegov talks about the side effects of COVID-19 vaccines
<https://www.youtube.com/watch?v=pYuQ5uxl0gk>
- What is the path of COVID-19 vaccines from creation to authorization
<https://www.youtube.com/watch?v=BhoMLBnZYNk>
- Healthcare workers call on the population to be vaccinated
<https://www.youtube.com/watch?v=Q515X0Dhh98&t=1s>
- What does emergency authorization mean
<https://www.youtube.com/watch?v=4PTOL8zR0sU>
- Jan Warisek - Public Health Expert on Vaccination Day
https://www.youtube.com/watch?time_continue=2&v=r6Lxm6GOAJA&feature=emb_logo
- Father Giorgi Chachava on the day of vaccination
https://www.youtube.com/watch?v=gxidpDB1sc0&feature=emb_imp_woyt
- 92-year old Nunu Dumbadze on the day of vaccination
https://www.youtube.com/watch?v=Hnxkb76LhPY&feature=emb_imp_woyt
- Irma Khetsuriani on the day of vaccination
<https://www.youtube.com/watch?v=4Wu62uO4yCg>

Informational and Educational Videos were translated into Armenian and Azerbaijani.

- How the vaccine works (WHO) - in Azerbaijani:
<https://www.ncdc.ge/#/pages/video/71a21b42-5001-48e8-b3fe-026c6546f792>
- Road to COVID-19 vaccine - WHO. In Armenian:
<https://www.ncdc.ge/#/pages/video/4470d97c-f8f9-47a7-bc3b-8bf6a91cd359>
- Information about registration for vaccination:
<https://vaccines.ncdc.ge/video/#registration> - in Armenian
<https://vaccines.ncdc.ge/video/#registration> - Azerbaijani
- Information materials in Armenian:
<https://ncdc.ge/#/pages/content/ccaa3aff-8d10-4b7b-90d2-e0378b99f857>
- Information materials in Azerbaijani languages:
<https://ncdc.ge/#/pages/content/117316d6-ce72-41a9-a32e-c45696356e47>

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საქართველოს
საზოგადოებრივი
სა卫生ის ცენტრი
საქართველოს
საზოგადოებრივი
სა卫生ის ცენტრისაერთაშორისო
საზოგადოებრივი
სა卫生ის ცენტრი
საერთაშორისო
საზოგადოებრივი
სა卫生ის ცენტრი

Campaigns to promote vaccination and increase pandemic involvement



- Let us get vaccinated for saving lives
- "At Georgia's Service - We Get Vaccinated for the Benefit of Each Other"

Campaign: Let Us Get Vaccinated for Saving Lives



The United Nations Development Program (UNDP), in cooperation with the Center, has launched a 4-month information campaign entitled "Let Us Get Vaccinated for Saving Lives" with the aim to inform the Georgian population about coronavirus vaccines and dispel false information that hinders the vaccination process. The information was disseminated to the most vulnerable groups of the population.

- As part of the campaign, about 70 information meetings were held throughout Georgia and covered more than 80,000 people. 8 videos were made with the participation of representatives of the medical field; special brochures were distributed to the population during the campaign; numerous media activities were carried out.
- Lots of supporters joined the "Let Us Get Vaccinated for Saving Lives" campaign, including the European Union (EU), the governments of Denmark, the United Kingdom, Sweden, and Switzerland, and the United Nations Sustainable Development Goals Fund. Georgian public agencies, private companies, non-governmental organizations, young activists and local municipalities participated in the campaign.
- With the active support of the Georgian Railway, information leaflets were distributed on the trains, which serve up to 3,000 passengers daily.
- The young volunteers, mobilized with the support of the Georgian Red Cross Society and Liberty Bank, provided information about the vaccines to more than 30,000 people. More than 4,500 students, athletes, farmers, and public servants participated in the online meetings. Well-known doctors answered questions about vaccination both face-to-face and online. Ambassadors accredited to Georgia, heads of international organizations, and representatives of the medical field addressed the public through social networks. Hundreds of thousands of users were covered by their posts on Facebook, Instagram, and Twitter.



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დაცვის ცენტრი



Video clips made within the campaign:

- Madona Jugheli – Gynecologist
<https://www.youtube.com/watch?v=AIC5AvNC5Yk>
- Nino Dolidze – Endocrinologist
<https://www.youtube.com/watch?v=-WpM6fUETc>
- Nia Sharikadze – Oncologist
<https://www.youtube.com/watch?v=eO7ivf4SDP4>
- Bidzina Kulumbegov – Allergist
<https://www.youtube.com/watch?v=SCGydxPRSE>
- Eka Uber – Pediatrician
https://www.youtube.com/watch?v=5jlRoYyPo_4
- Nika Kacharava – Doctor
https://www.youtube.com/watch?v=hB4COB_QqDo
- Mamuka Nemsadze – Obstetrician-Gynecologist
<https://www.youtube.com/watch?v=HZDLWqWeT5U>



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VACCINATION MARATHON "AT GEORGIA'S SERVICE - WE GET VACCINATED FOR THE BENEFIT OF EACH OTHER"

In order to encourage the vaccination process, the Center carried out the vaccination marathon with the message "At Georgia's Service - We Get Vaccinated for the Benefit of Each Other!" The marathon was carried out in two stages, at the first stage in 49 villages selected throughout Georgia, and at the second stage in Ozurgeti and Gurjaani municipalities.

As part of the marathon, rural doctors were trained on the ground and access to vaccinations was increased. Various information-educational meetings were held with the target groups, the population in the villages was informed on a door-to-door basis, and information materials specially prepared for the marathon were distributed to the population.

The project was initiated by the National Center for Disease Control and Public Health and the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health, and Social Affairs.

Village doctors, representatives of the Center and Municipal Centers for Public Health, local government, non-governmental organizations, and others took part in the marathon.

Within the framework of the marathon, in accordance with the updated message and concept, new attributes of the campaign were created with the support of partner international donors: booklets, banners, posters.



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Three videos were created as part of the marathon, with the support of WHO, - (1) Address of the Center's Director calling the population to be vaccinated; Motivational videos in support of the ongoing marathon in (2) Gurjaani and (3) Ozurgeti municipalities, which were posted on social media and in the local media network of the respective municipalities.

- <https://rb.gy/dkgzjk>
- Address by the Director General
- <https://rb.gy/lcs1xn>
- About Ozurgeti Marathon
- <https://rb.gy/wkos0d>
- About Gurjaani Marathon

To promote the marathon and vaccination process, the marketing team prepared dozens of informative photo posters and illustrations for digital platforms.

Detailed information on communication interventions implemented by the Center with respect to COVID-19 is published in the form of the NCDC Reports. Documents are available at the website of the Center: <https://www.ncdc.ge/#/pages/content/f4e6fd59-186f-4ac2-801a-dfe3243bbc69>

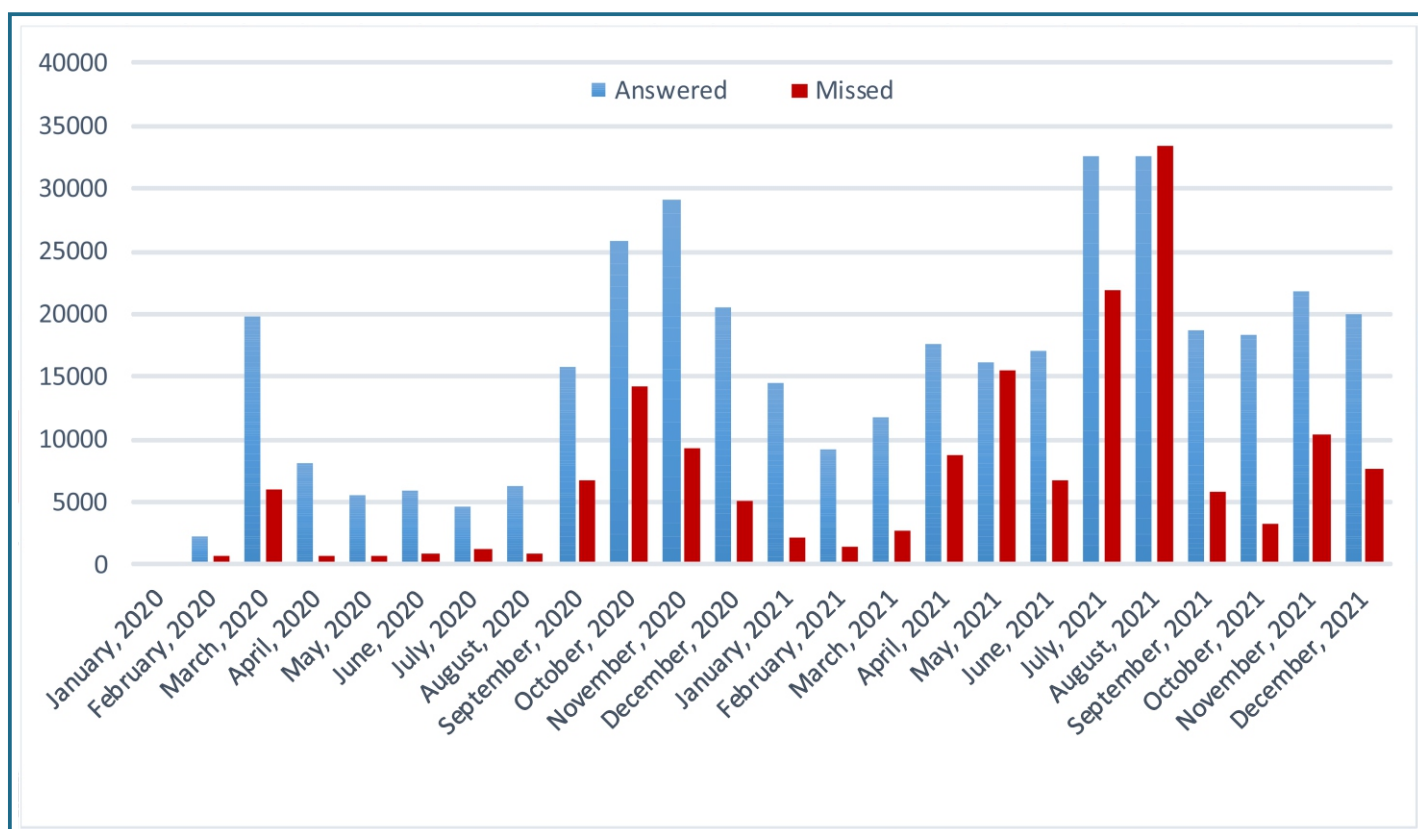


Center Hotline 116 001

Acceptance of calls related to COVID - 19 issues on the Center hotline started on January 23, 2020. As of October 1, 2021, the hotline operator function was being performed by 80 people at different times (with a three-group shift schedule).

Hotline operation hours:	<ul style="list-style-type: none"> Working days: 09:00 – 23:00; Holidays: 09:00 – 23:00
The total number of incoming hotline calls - 539 422:	<ul style="list-style-type: none"> Answered: 372 977 calls (69%) Missed: 166 445 calls (31%)

Figure 72. Total number of incoming calls to the hotline of the Center for Disease Control and Public Health (23.01.2020 – 31.12.2021)





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International Partnership

During the COVID-19 pandemic period, the National Center for Disease Control and Public Health actively communicated with the public and various target groups, as well as with international partners. Collaborating with international partners has played an important role in strengthening the Centre's capacity to fight COVID-19 infection, both technically and financially. This cooperation aims to obtain the most transparent, timely information from the Center's key strategic partners, as well as to share recommendations based on the best practices to the target audience. Intensive meetings with diplomatic corps and foreign officials took place during this period.



Technical and financial support for important measures to mitigate the negative impact of COVID-19 (capacity building for the pandemic response, immunization support, human resource training, communication activities, etc.) were provided by the WHO, UN, UNFPA, UNDP, US CDC, DTRA, Georgian Red Cross Society and other partners.

Under an agreement with the World Health Organization, the European Commission's Eastern Partnership Initiative on Solidarity for Health activities have been undertaken in the following areas: updating the National Pandemic Preparedness Plan, strengthening the capacity of the Public Health Emergency Operations Center (PHEOC), epidemiology, development of services to deal with non-communicable diseases and their risk factors, establishment and support of a cross-sectoral platform to strengthen the public health sector in Georgia, piloting preparatory work for the introduction of WGS diagnostic and surveillance technologies in Georgia, etc.

The World Health Organization is implementing a large-scale initiative with the financial support of the European Union, aiming to facilitate the process of vaccination against COVID-19 in Georgia, which is a significant investment in strengthening the routine immunization system. Technical support includes various areas, including improving the country's preparedness for COVID-19 vaccination at central, regional, district, and municipal levels, supporting the vaccine information campaign; and implementing a short-term vaccination training course, consisting of 3 modules: Practical Immunization, Cold Chain and Logistics.

The website dedicated to vaccination has been developed with the support of the European Union and WHO, (<https://vaccines.ncdc.ge>), where citizens have access to evidence-based information on vaccination.

Georgia was among the top 11 countries out of 181 Global Fund beneficiaries to receive \$ 484,500 for COVID-19 response. By means of this amount it became possible to:

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- Support primary health care - launching 112-based "online clinic"; Development and approval of "Suspicious Case Management for New Coronavirus (SARS-CoV-2) Infection (COVID-19) in Primary Health Care" in collaboration with the Union of Family Medicine Professionals; training personnel of primary healthcare; monitoring and periodical evaluation of quality of medical services, the results of which were taken into account when planning further trainings.
- Receive the Xpert® Xpress SARS-CoV-2 Automated Molecular Test, which has been in use since April 2022 by Georgia, which became the first country in the region to have it;
- Develop and approve a clinical management protocol (COVID-19) for tuberculosis and new coronavirus (SARS-CoV-2) infection with the support of the GF program. In order to facilitate its implementation, the staff involved in the National Tuberculosis Program received distance training from an international expert.
- Provide the Republic Hospital with 50 UV light devices purchased under the Global Fund TB program to improve infection control.

In 2020 the country has received an additional \$ 1.27 million in funding under the C19RM. By means of this assistance:

- Healthcare system infrastructure was improved and additional measures were taken to maintain basic services for TB and HIV / AIDS programs in conditions of the pandemic. Laboratory and computer equipment for Lugar Center and influenza sentinel surveillance sites, COVID-19 diagnostic tests, and personal protective equipment for TB and HIV / AIDS medical facilities, laboratories, and community organizations were purchased. The oxygen delivery system at the National Center for Tuberculosis and Lung Disease has been improved.
- More than 1,500 beneficiaries, members of the main vulnerable groups, HIV-infected and tuberculosis patients, were provided with food parcels as one-time assistance.

In 2021, additional funding of \$ 5.2 million was received under the GF C19RM, through which medical equipment was purchased to expand the Lugar Center's sequencing capabilities, to build PCR testing capabilities at the Telavi Laboratory, to buy COVID-19 antigen-based and PCR tests. Additional training was provided to primary healthcare personnel in the management of COVID-19 across the country, as well as to physicians employed in the hospital sector - in accordance with updated COVID-19 clinical management protocols.

An anti-crisis action plan for the health sector for 2022 has been prepared under the technical assistance supported by the World Bank. Also, with the joint support of the World Bank and the Asian Development Bank, a National Vaccination Plan for 2022 was developed (National Plan for the introduction of the COVID-19 vaccine in Georgia).

Procurement of Covid-19 antigen-based rapid tests and PCR-diagnostic systems (tests and equipment) is in progress funded by the World Bank within the framework of the Rapid Response Project against COVID-19, to strengthen Georgia's healthcare system. In order to support the vaccination program, the project procured appropriate vaccine equipment for the cold chain and syringes needed to administer the Pfizer vaccine, as well as personal protective equipment. The World Bank has also made significant contributions to the purchase of Pfizer vaccines.

In order to facilitate COVID-19 vaccination and improved virus testing, Georgia also received medical and technical equipment from the following partners:

- The World Health Organization, with the financial assistance of the European Union, has provided Georgia with cold boxes for vaccines, medical ice refrigerators and their accessories, thermometers, a specialized vaccination vehicle, and high-quality laptops for the preparation of COVID-19 mass vaccination. In addition, the World Health Organization provided Georgia with personal protective equipment, test systems, video conferencing equipment, medical equipment, etc.
- In support of the vaccination process, within the scope of EUCOM Humanitarian Assistance Program Georgia was provided with three -80°C freezers, vaccine carriers, cold boxes for vaccine transportation, vaccine injection syringes, temperature monitoring devices, safe containers for sharp waste, etc.
- The Embassy of the People's Republic of China, with the support of the Government of China, has provided significant support to Georgia since the beginning of the pandemic. In March 2020, the country received a donation from the Sichuan Government - 1000 PCR tests with 2 analyzers. In addition to this assistance, the Chinese government has provided Georgia with personal protective equipment, diagnostic test systems, thermal screening devices, etc. Also, the Embassy of the People's Republic of China donated 74,960 GEL worth computer equipment to the NCDC.

In support of COVID-19 vaccination, representatives of the United Nations Development Program (UNDP) and the National Center for Disease Control and Public Health, in cooperation with the Government of Georgia and the Civil Service Bureau, held briefings with various target groups in the regions (including ethnic minorities, densely settled displaced persons, beneficiaries of the Violence Asylum and the Deaf Union of Georgia, etc.), where citizens received comprehensive information on vaccines and their effectiveness. Significant information was provided within the scope of the joint campaign of the United Nations Development Program, the Red Cross and the Liberty Bank in Shida Kartli, Kvemo Kartli and Samtskhe-Javakheti. Information posters and brochures were placed on passenger trains within the framework of cooperation between the Georgian Railway and UNDP; up to 15 regional televisions and public broadcaster are airing doctor addresses and various news clips on vaccines and the importance of vaccinations in Georgian, Armenian and Azerbaijani languages.

Georgian Red Cross Society volunteers carried out a population mobilization campaign, supporting electronic registration of vaccinations for ethnic minorities and older citizens, printing and disseminating information materials.

Caritas of the Czech Republic, with the support of the Czech Development Agency, the European Union and the World Health Organization, has developed a COVID-19 vaccination registration portal www.booking.moh.gov.ge.

A Memorandum of Understanding was signed between the National Center for Disease Control and Public Health and the LEPL “WORLD VISION INTERNATIONAL” (Georgia Branch). The purpose of the memorandum is to support awareness-raising and information-educational activities related to immunization and vaccination against COVID 19 in Georgia.

A grant agreement has been signed with the US CDC Global Health Vaccine Task Force to facilitate and strengthen the COVID-19 vaccination process in the country. The contract provides for financial and technical support for the performance of specific components. These are ongoing retraining of medical human resources; additional supervision of the vaccination process, recording, and reporting of adverse and post-vaccination side effects; creation of vaccine demand and advocacy campaigns; development of electronic systems.

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In 2021, Georgia received a certain supply of vaccines from partner countries as a donation:

- 100,000 Doses of Sinovac-CoronaVac (Donated by the Government of China)
- 5,000 Doses of AstraZeneca / Oxford (Austrian donation)
- 15,000 Doses of AstraZeneca / Oxford (Donated to Lithuania)
- 500,000 Doses of Pfizer / BioNTech (US Government Donation)
- 100,000 Doses of Sinopharm BBIBP (Red Cross Society Donation)
- 83,070 Doses of Pfizer / BioNTech (Donated by the Government of Latvia)
- 468,000 Doses of Pfizer / BioNTech (Donated by the Government of Poland)

The Government of the Federal Republic of Germany has donated more than 3,000 doses of monoclonal antibodies (from Kasirivimab and Imdevimab) to hospitalized patients infected with Covid-19 in Georgia.

At the Special Session - "Experience of National Public Health Institutions in Responding to COVID-19: Perspectives on Equality in Health" of the 2021 Annual Meeting of International Association of National Institutes of Public Health (IANPHI) the NCDC was selected together with the other participants to share experience and future perspectives. A report was presented by the representatives of the Center, which is available at the link:

http://www.ianphi.org/_includes/documents/sections/tools-resources/annual-meetings/2021annualmeeting/session-3-natia-skhvitarizde.pdf

Meetings were held with Extraordinary and Plenipotentiary Ambassadors of different countries to Georgia, most of which were dedicated to sharing experiences between the countries regarding the COVID-19 pandemic and discussing future plans.

On January 29, 2021, an online discussion on "e-Health and Telemedicine during the COVID-19 Pandemic - Challenges and Opportunities" was organized by the analytical organization GeoCase. Readiness of the country to start the COVID-19 vaccination process was noted during the discussion.

On April 19, 2021, a meeting was held with Ms. Afshan Khan, UNICEF Regional Director. Georgia received AstraZeneca / Oxford and Pfizer / BioNTech vaccines through the COVAX platform with the UNICEF assistance. UNICEF also implemented communication activities and training of physicians in ethnic minority regions and held meetings with religious leaders.

On May 27, 2021, a meeting was held with the Deputy Minister of Health of the Czech Republic, focusing on pandemic management and possible technical assistance.

On June 14, 2021, the Director-General of the National Center for Disease Control and Public Health met with Paige Armstrong, Associate Director for Global Health, Division of Viral Hepatitis (DVH), US Centers for Disease Control, and Prevention (CDC). During the meeting, the parties discussed the challenges related to hepatitis screening and follow-up, spoke about the activities and future plans implemented as a result of the recommendations of the Hepatitis C Program Technical Advisory Group (TAG), the main directions of the new elimination strategy and action plan for hepatitis B and C, as well as COVID-19 related epidemiological situation and vaccination issues. Ms. Armstrong noted the results achieved by Georgia and addressed the activities planned in the near future, including the World Health Organization validation tool, as well as the importance of a large-scale randomized population study on the prevalence of hepatitis B and C in Georgia and COVID-19 that was held in 2021 in Georgia with the participation of the US Centers for Disease Control and Prevention.

COVID-19 Vaccination of Chinese citizens being on a working visit to Georgia was launched in Sy platform of the European Center for Disease Control and Prevention (ECDC) on a weekly basis.



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cooperation with the Embassy of the People's Republic of China in Georgia, on June 25, 2021. As part of the bilateral cooperation, important online meetings, webinars, masterclasses, and video conferences organized by respective agencies of the United States, the European Union, Germany, the Republic of Korea, China, the United Kingdom, Turkmenistan, etc. and international institutions (KOICA, DTRA, CEPA, ASPHER, IANPHI, BMJ, etc.) were held to share experiences and best practices in fighting the pandemic. Articles, interviews and medical abstracts have been published in various international publications (BMJ Leader, Annals of Global Health, European Journal of Public Health, The Lancet, National Geographic, etc.).

Data on daily confirmed cases are sent to the World Health Organization on a daily basis.

Total data on cases (by age groups and gender) and the number of vaccinated people by vaccines are being uploaded to TES

Information Systems

The National Center for Disease Control and Public Health operates a large number of information systems that store medical information about citizens' health. During the COVID-19 pandemic, special importance was given to the development of existing systems and the creation of new modules, as it became necessary to collect, sort, rapidly retrieve, process, monitor, manage, report etc. the real-time data.

SARS-CoV-2 Coronavirus Diagnostic Electronic Registration System (LabCov)

LabCov a system for recording the COVID testing results was introduced with the financial and technical support of the Czech Government Development Agency and the Czech Caritas in cooperation with the National Center for Disease Control to tackle the COVID-19 pandemic challenge. The system electronically records all laboratory tests for SARS-CoV-2 coronavirus and their results namely:

- Recording for rapid test results (nCov result / rapid test COVID-19 Ag / antigen, nCov result / rapid test for antibodies);
- Recording data related to blood sampling and transportation required for PCR confirmatory research;
- Electronic registration of data related to PCR research.

Information about both state and commercial tests is registered in the system. An integrated intermediate system "Data Collector" has been developed, which provides data exchange between the "LabCov" system and electronic systems for internal management of laboratories. This feature simplifies the work of the portal for laboratory users, as well as facilitates the timely display of research results in the "LabCov" system.

The reporting function in the system simplifies the submission of work performed by organizations under the state program, the processing of data by the Center for Disease Control and Public Health, and the payment from the State treasury. Covid Lab analytics section by means of pre-designed graphs, tables and diagrams performs statistical data processing and analysis, including, most importantly, reporting and monitoring of positive cases registered in the system, which is a prerequisite for follow-up of Covid patients.

The uniqueness of the LabCov system database ensures its integration with the electronic systems of different government agencies, which facilitates the unified management of the Covid pandemic control.































The Eighth Revision



საქართველოს
საერთაშორისო
საჯანდაცო
სამსახური



საქართველოს
საერთაშორისო
საჯანდაცო
სამსახური

მოდული	კონტაქტი
 ელექტრონული ფოსტა	 დოკუმენტბრუნვა
 სოციალური ქსელები	 აპლიკაციები
 C ჰეპატიტის სკრინინგ მოდული	 ტუბერკულოზის მოდული
 იმუნიზაციის მოდული	 სისხლის ბანკები
 EIDSS	 C ჰეპატიტის ანალიტიკა
 დაბადების რეგისტრი	 სამედიცინო სტატისტიკა
 კლასიფიკატორების მოდული	 დაბადებისა და გარდაცვალების სისტემა
 ლოგისტიკური მოდული	 ლიმსი
 NHIV სისტემა	 ციფრული ტელეფონი
 კიბოს რეგისტრი	 ქიმიური რეგისტრი
 ინფექციური დაავადებების ელიმინაცია	 ფინანსური მოდული
 BR ანალიტიკა	 კორონა ლაბ.
 სისტემის მომხმარებლები	 NCDC ინტრანეტი
 სასწავლო პლატფორმა	 ანგარიშგების მოდული
 სისტემის მონიტორინგი	 რიგების მართვა

Electronic Module for User Management

At the end of 2020, the Center for Disease Control, in order to enforce the Law of Georgia on Personal Data Protection, created an electronic system "System Users", which provides for the introduction of certain mechanisms for organizations registered in the electronic modules of health care under the Center's administration, to ensure the prohibition of unauthorized access to electronic modules by using a two-tier authentication mechanism for data protection. By means of this mechanism, the persons employed in the electronic modules of health care in medical institutions were identified and individual users were opened for them. In order to manage a large number of users, one main user is opened in the medical institution, through which the persons working with the electronic systems and their rights are managed by the medical institutions themselves. Users are sent an authorization code by SMS every time they enter the system.



Electronic Module for Immunization Process Management

The immunization electronic management module (IMEM), which has been operating in the center since 2019, was developed within the framework of financial and technical assistance of the UN Children's Fund. Its purpose is to register vaccinations performed in the country in one space, record vaccine balances in institutions, manage stocks, produce reports. The facility has the ability to search for a specific beneficiary or group of beneficiaries in the electronic immunization module, view their current history, and conduct vaccinations.

The module allows registering scheduled vaccinations based on the vaccination calendar and unplanned vaccinations, which are not provided for in the prophylactic vaccination calendar and are done with different indications. Vaccination can be state or commercial. It is also possible to register the vaccination of a foreign citizen in the module.

The vaccination registered in the IMEM is automatically entered in the application, as a result of which the beneficiary (including the parents of the minor) can download the information about the vaccination at any time. From 2021, the module was added the function to record information about vaccination against Covid19.



◀ [Previous](#) [Next](#) ▶

■ ჩაუტარებელი აცრა ■ ეკუთვნის აცრა ■ ჩატარებული აცრა

The System for Electronic Queues, Referral and TV Medicine

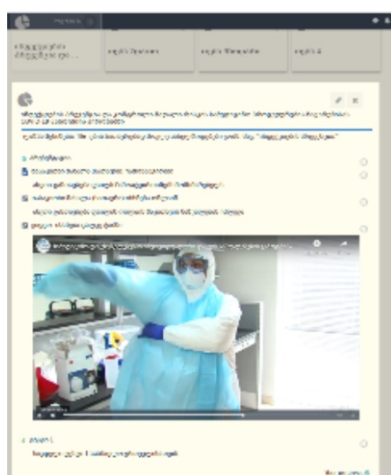
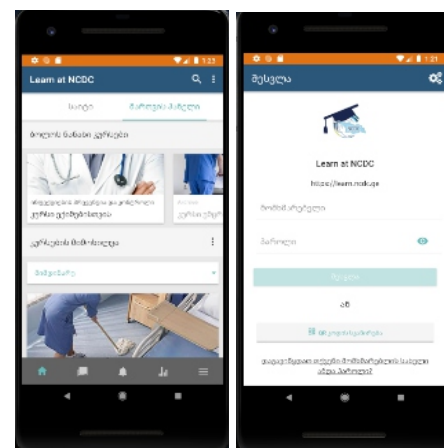
The system of electronic queues, referrals, and telemedicine was established in close cooperation with the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs and the National Center for Disease Control and Public Health with the financial and technical support of the Czech Development Agency and the Czech Caritas. In 2021, the system was introduced by the National Center in close cooperation with the World Health Organization. The queue management component is a simplified and convenient tool for receiving the Covid Vaccination Service to manage the entire vaccination process in the country. The system, helps medical institutions to manage the flow of citizens, as well as allows citizens to make online bookings for vaccination services, at a pre-determined time in the desired medical facility.

[illegible]

E-learning and Communication Platform

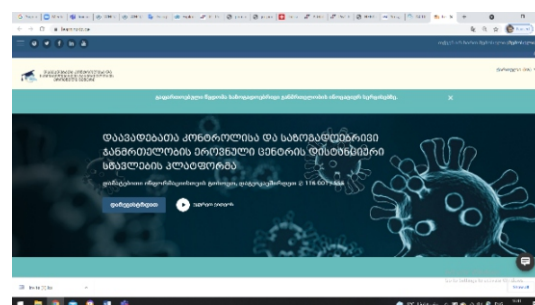


E-learning and communication platform for the National Center for Disease Control and Public Health has been set up with the support of the United Nations Development Program (UNDP) and the Government of Sweden, to



support the continuing education of medical staff. Georgian healthcare staff through use of this mechanism, will have the opportunity to improve their professional qualifications in important areas of public health, such as prevention and control of infectious diseases in medical institutions, environment and health, prevention and control of non-communicable diseases. Training materials, testing and certification developed in accordance with the recommendations of

international organizations are available 24/7, both through the web and mobile applications; consultation with industry experts is available through using a hotline, by module topics. The implementation of the system during the COVID-19 pandemic acquired a special role in terms of staff training-retraining.



Georgia e-Health Application

The Georgia e-Health mobile app was created in the first half of 2021, in close collaboration between the World Health Organization and the National Center for Disease Control and Public Health, providing a tool for citizens to manage their own health information. The system consists of various modules, which uses COVID-19 status-determining component for a citizen, in particular, the mobile application reflects the confirmed information on vaccination, recovery and COVID - testing on the territory of Georgia.

In the second half of 2021, the mobile app was merged with the EU Gateway by the Information Technology Agency. The QR code generated by the application has legal force and can be used both in Georgia and in all other countries whose system is integrated with a similar system in the EU. The app is compatible with Google Android and Apple iOS mobile operating systems and is available on Google Play and the App Store.

The application ensures secure exchange of information through EU compatible Gateway architecture, which makes it possible to confirm the information issued by the authorized organization by means of readers used in partner countries. The system allows printing the form on vaccination administered to the beneficiary.

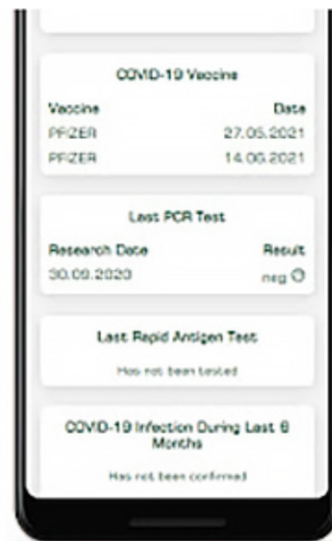
The Eighth Revision



საქართველოს ჯანდაცვის
მინისტრო
MINISTRY OF HEALTH OF GEORGIA



საქართველოს ეროვნული
ცენტრი დაავადებების
კონტროლსა და
ჯანდაცვის დაცვის
სახელმწიფო ცენტრი
NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH



სამხრეთ-დასავლეთი ტერიტორიების
 მინისტრო, შრომის, ჯანდაცვისა და
 სოციალური დაცვის სამსახური
 MINISTRY OF INTERNALLY DISPLACED PERSONS
 FROM THE OCCUPIED TERRITORIES, LABOUR,
 HEALTH AND SOCIAL AFFAIRS OF GEORGIA TEL: 1505

ქვეყანაში პანდემიისა და
 საზოგადოების ჯანდაცვის
 პრობლემის
 GEORGIA NATIONAL CENTER FOR DISEASE
 CONTROL AND PUBLIC HEALTH TEL: 116001

COVID 19 ბარათი/ COVID 19 FORM

მონაცემები განახლებულია / Data Updated 15.07.2021 20:50

პირადი ნომერი Personal Number	გვარი, სახელი Name, Surname	დაბადების თარიღი Date of Birth
01010...		

COVID 19 ვაქცინაცია COVID 19 Vaccination	ვაქცინის მწარმოებელი Vaccine Manufacturer	სერიული ნომერი Serial Number	თარიღი Date	სამედიცინო დაწესებულება Medical institution
კოვიდი 19 დოზა 1/COVID 19 Dose 1	„Pfizer Manufacturing Pfizer“	EE7449	06.04.2021	შპს კეკელიძის მედიცინის ცენტრი
კოვიდი 19 დოზა 2/COVID 19 Dose 2	„Pfizer Manufacturing Pfizer“	EE7449	27.04.2021	შპს კეკელიძის მედიცინის ცენტრი

PCR ტესტის შედეგი PCR Test Result	თარიღი Date	ლაბორატორია Laboratory
neg	21.06.2021	შპს სამედიცინო ცენტრი ციტი

ხელმოწერილია ელექტრონულად
 Signed Digitally

Active
Go to S

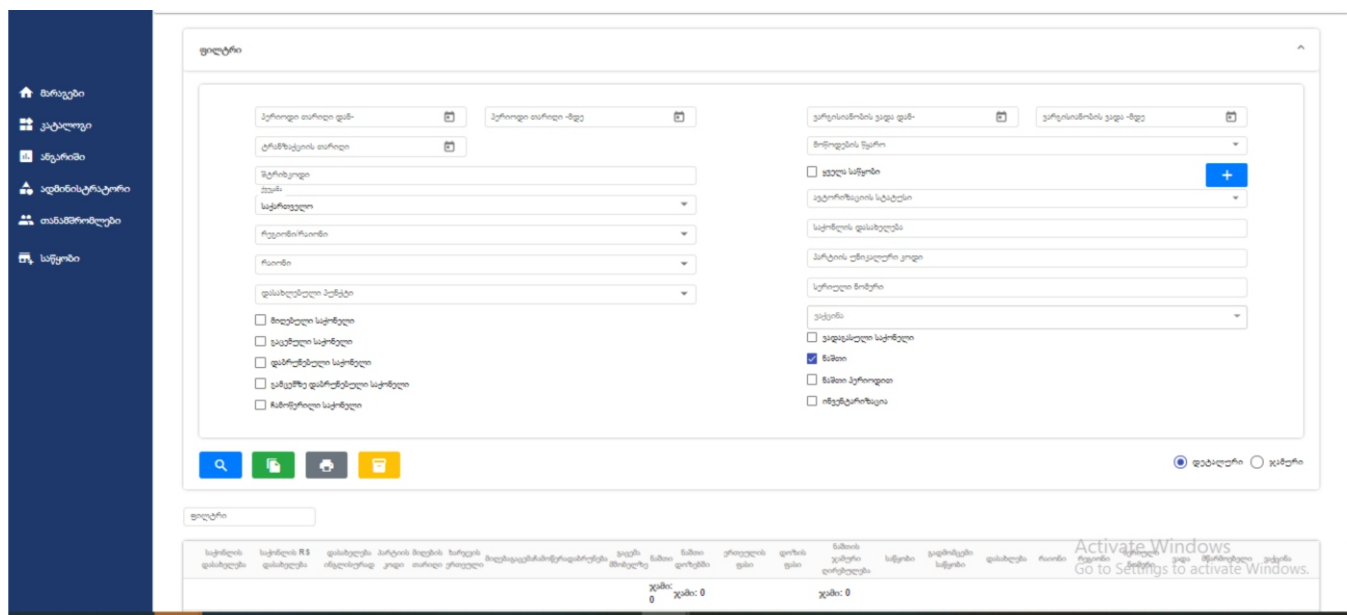
Inventory Management System

The purpose of the "Logistics Module" created under the auspices of the National Center for Disease Control and Public Health is to provide electronic recording of state health programs and logistics processes across the country, in particular: immunization, blood banks, screening, COVID-19 laboratory diagnostics and other processes.

The modern platform of the system and the programming language and easy-to-use interface, which is focused on different types of users, enable the detailed registration of information about all transactions within the logistics and the optimization of processes.

The following is done through "Logistics Module" functionalities:

- Creating a catalog of goods and registering product characteristics;
- Warehouse registration;
- Recording the goods' receipt transaction within the warehouses (including from "RS");
- Recording goods transfer transactions within warehouses;
- Recording goods write-off transaction within warehouses;
- Recording the return transaction to the supplier of goods and to the warehouse;
- Reporting on all and individual types of transactions;
- Report on balances of goods taking into account different time intervals.



The screenshot displays the 'Logistics Module' interface. On the left is a dark blue sidebar with navigation icons and labels: 'მარცხენი' (Left), 'კატეგორია' (Category), 'ანგარიში' (Account), 'აღმნიშვნელობები' (Assignments), 'თანამშრომლები' (Employees), and 'საწყობი' (Warehouse). The main area is a light gray form titled 'ფორმის' (Form). It contains several input fields and dropdown menus for recording transactions, including 'პერიოდი თარიღი' (Period date), 'პერიოდი თარიღი' (Period date), 'ვარსკლავის ვარიანტი' (Variant), 'ვარსკლავის ვარიანტი', 'ტრანზაქციის თარიღი' (Transaction date), 'გამომცემის სახელი' (Sender name), 'საწყობი' (Warehouse), 'რეგისტრაციის თარიღი' (Registration date), 'რეგისტრაციის თარიღი', 'დამატებული პერიოდი' (Added period), 'დამატებული პერიოდი', and a list of checkboxes for transaction types: 'მიღებული საქონელი' (Received goods), 'დატვირთული საქონელი' (Loaded goods), 'დამატებული საქონელი' (Added goods), 'დაკარგული საქონელი' (Lost goods), 'დაბრუნებული საქონელი' (Returned goods), and 'ჩამოწმებული საქონელი' (Withdrawn goods). At the bottom, there is a 'დამატებული' (Added) button and a 'გამოწმებული' (Withdrawn) button. The footer shows a status bar with 'ჯამი: 0' (Total: 0) and 'ჯამი: 0' (Total: 0).

The main sources of information about hospitalized and deceased patients were:

- Ministry of Internally Displaced Persons from the Occupied Territories of Georgia, Labor, Health and Social Affairs;
- Birth/death registries;
- Electronic module for registration of patients discharged from inpatient facility - Form IV - 066 (Order N01-43 / N of the Minister of IDPs from the Occupied Territories, Labor, Health and Social Affairs of April 16, 2020);
- Database of the National Health Agency.

Various Internet resources are also used in the preparation of the document.



საქართველოს ექსპერტული
საბჭო COVID-19-ის გამავრცელებად
დაცვის, აღმოფხვრისა და
გამოკლებაში



საქართველოს ჯანდაცვის
დაცვის მინისტრის
საქართველოს ჯანდაცვის
დაცვის მინისტრის
საქართველოს ჯანდაცვის
დაცვის მინისტრის

DEFINITIONS

Novel Coronavirus (SARS - CoV - 2) - the third zoonotic coronavirus outbreak of the 21st century, when the infection was transmitted from person to person.

Pandemic - An epidemic characterized by the spread of an infectious disease in a wider region or around the world.

National COVID - 19 Vaccination Plan - a plan developed in Georgia by the Interagency Coordination Commission on the basis of a methodological document proposed by the WHO for the Implementation of COVID - 19 Vaccination. It is a guide for conducting vaccination and covers all necessary actions, responsible parties and financial needs.

PCR method - Real-time reverse transcription-polymerase chain reaction / RT – PCR.

Antigen - Based Testing Ag - RDTs - Rapid chromatographic immunoassay that qualitatively determines the presence of new coronavirus antigen in a nasal swab sample.

Rapid antibody - based testing - detects the presence of IgG; IgM and IgA antibodies in the blood, which are produced as an immune response in case of infection with the virus and are detected in the active phase of the disease and / or after, indicating the presence of immunity to the virus.

Cumulative incidence - an indicator that determines the number of new cases of infection in a given period of time.

COVID - 19 Effective Reproduction Index (R_t) - An indicator of the infection transmission potential in real time, used to assess whether an epidemic is increasing, decreasing or remains stable.

Mortality rate from COVID - 19 (per 100,000 or 1 million of population) - The number of deaths from COVID - 19 for 100,000 or 1 million of population.

Mortality rate in confirmed cases of COVID - 19 (%) - share of COVID - 19 induced deaths in all confirmed cases.

Excess mortality due to all causes - an indicator of whether the rapid spread of a particular disease and related deaths have affected the overall mortality rate. It is defined as a mortality rate that exceeds the expected rate.

AEFI - adverse event following immunization.

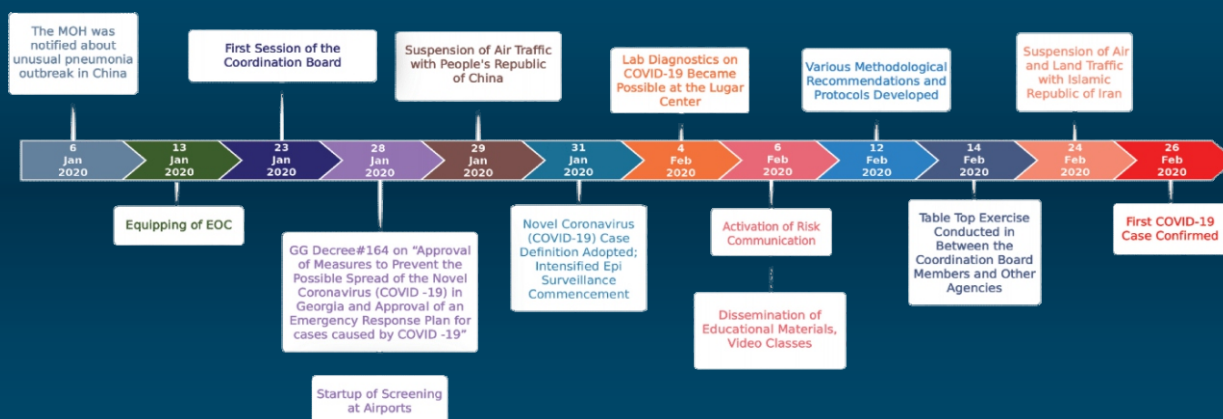


საქართველოს ექსპერტული ცენტრი
ავიაციური და სისტემური ინფექციების
პროფილაქტიკისა და კონტროლის
სამსახური

საქართველოს ექსპერტული ცენტრი
ავიაციური და სისტემური ინფექციების
პროფილაქტიკისა და კონტროლის
სამსახური

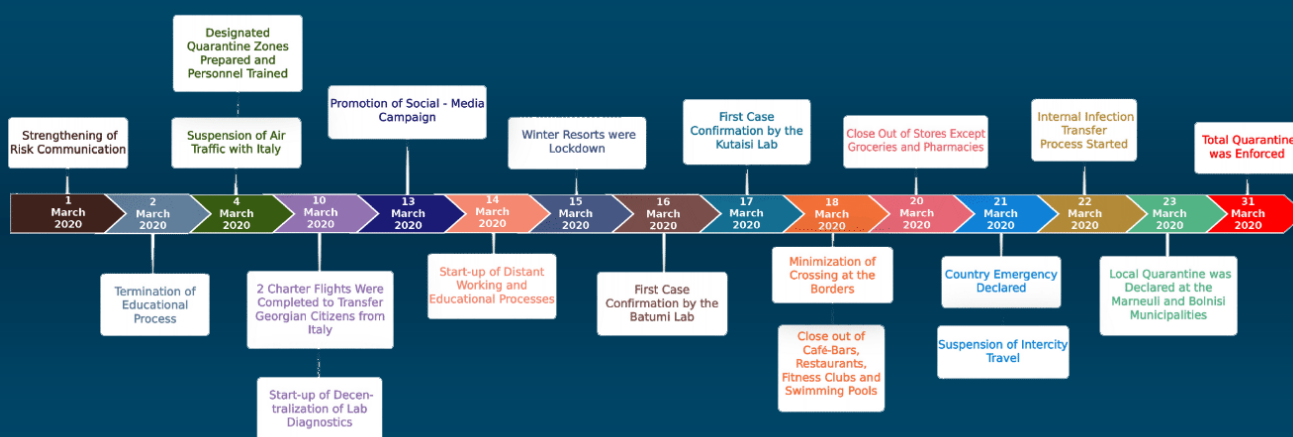
ANNEXES

Actions Taken in Georgia in terms of Novel Coronavirus (COVID-19) Prior the First Confirmed Case



საქართველოს ექსპერტული ცენტრი
ავიაციური და სისტემური ინფექციების
პროფილაქტიკისა და კონტროლის
სამსახური
GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

Actions Taken in Georgia after the First Confirmed Case in Terms of Combatting COVID-19

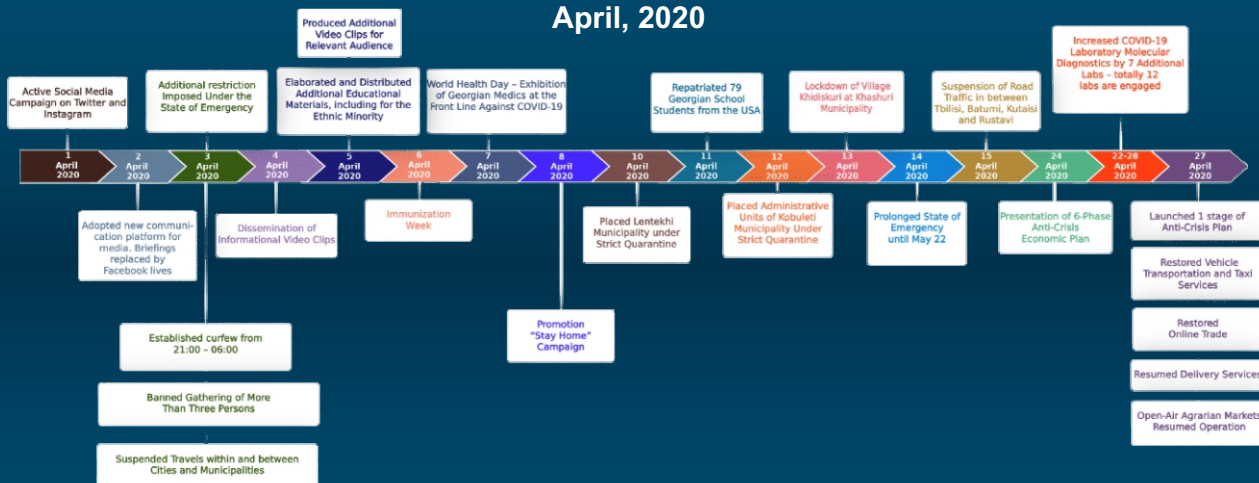


საქართველოს ექსპერტული ცენტრი
ავიაციური და სისტემური ინფექციების
პროფილაქტიკისა და კონტროლის
სამსახური
GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

#Stayhome



April, 2020



#Stayhome

During this period, the Government of Georgia has been continuing repatriation of Georgian Citizens from abroad and enhanced monitoring and prevention of spread of COVID-19 are being implemented in compliance with the established procedures.

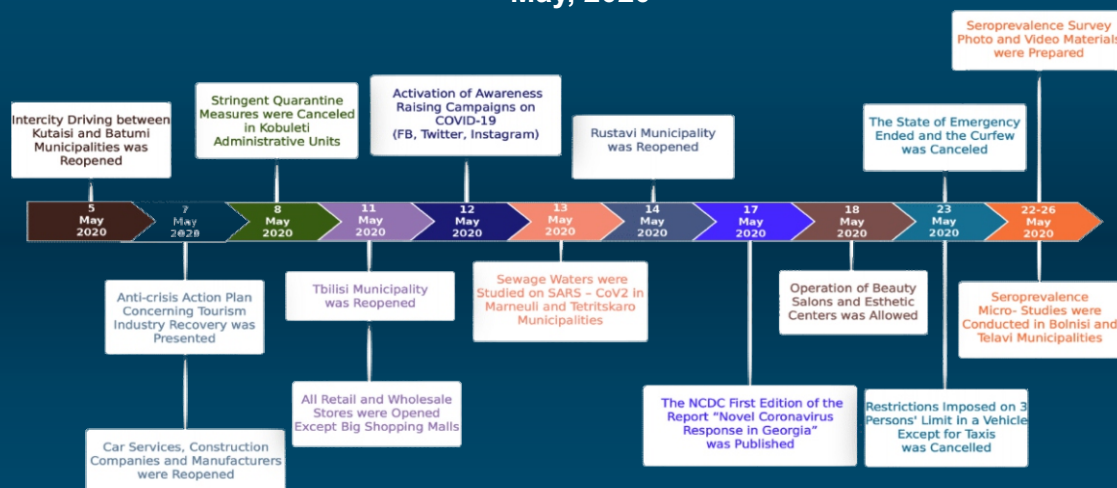


საერთაშორისო კონტროლისა და
საზოგადოებრივი ჯანმრთელობის
მეცნიერული ცენტრი

GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

Relaxing Measures after the Lockdown in Georgia in terms of COVID-19

May, 2020

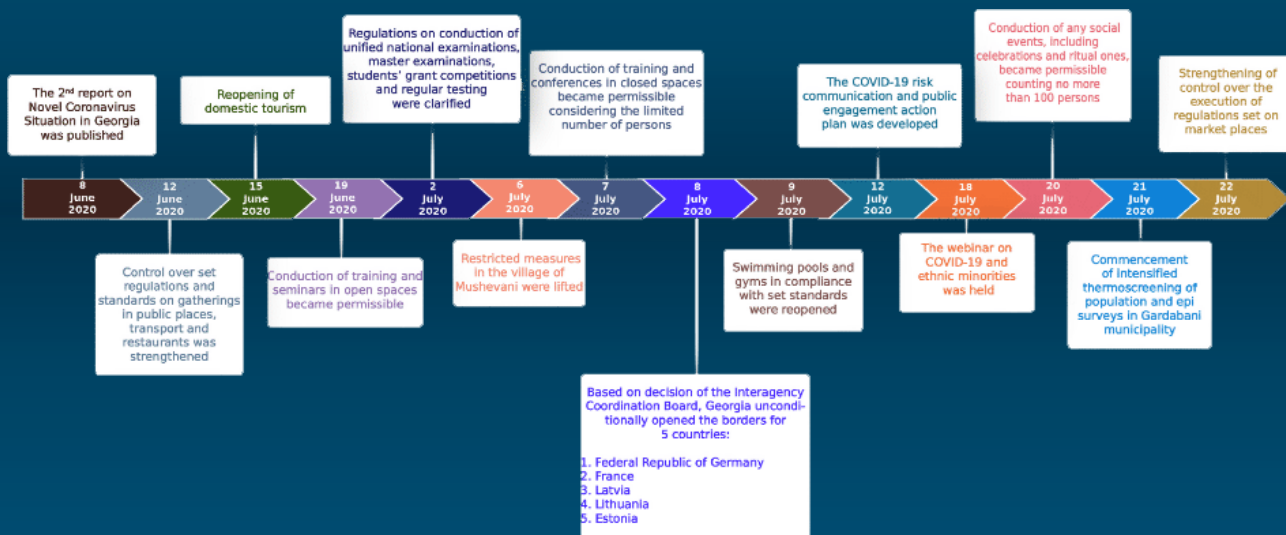


GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH



Actions Taken in Georgia in terms of Fighting the Novel Coronavirus Infection (COVID-19) After the First Confirmed Case

June-July, 2020

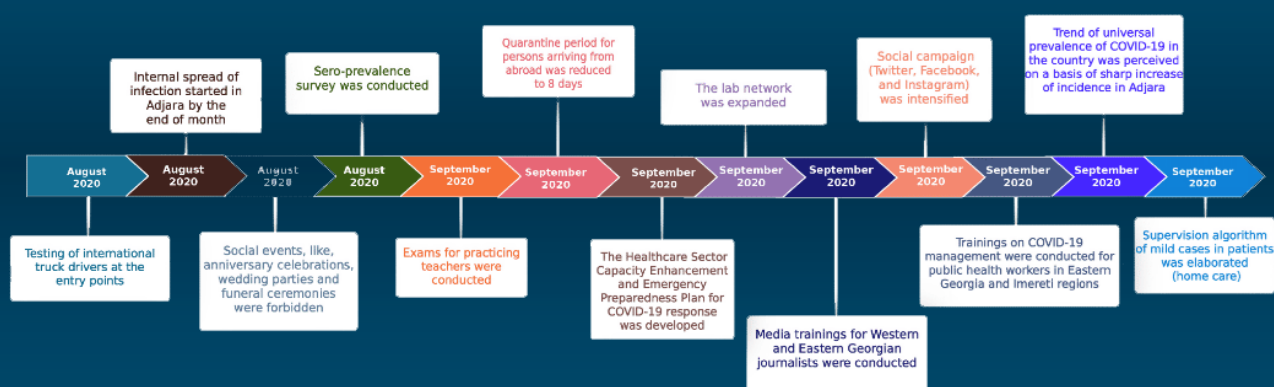


საქართველოს ეროვნული ცენტრი
ნაყოფიერების, ინფექციური და
პარაზიტული დაავადებების
პროფილაქტიკისა და მკურნალობის
სახელმწიფო ცენტრი

GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

Actions Taken in Georgia in terms of Fighting the Novel Coronavirus Infection (COVID-19) After the First Confirmed Case

August-September, 2020



საქართველოს ეროვნული ცენტრი
ნაყოფიერების, ინფექციური და
პარაზიტული დაავადებების
პროფილაქტიკისა და მკურნალობის
სახელმწიფო ცენტრი

GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

The Eighth Revision



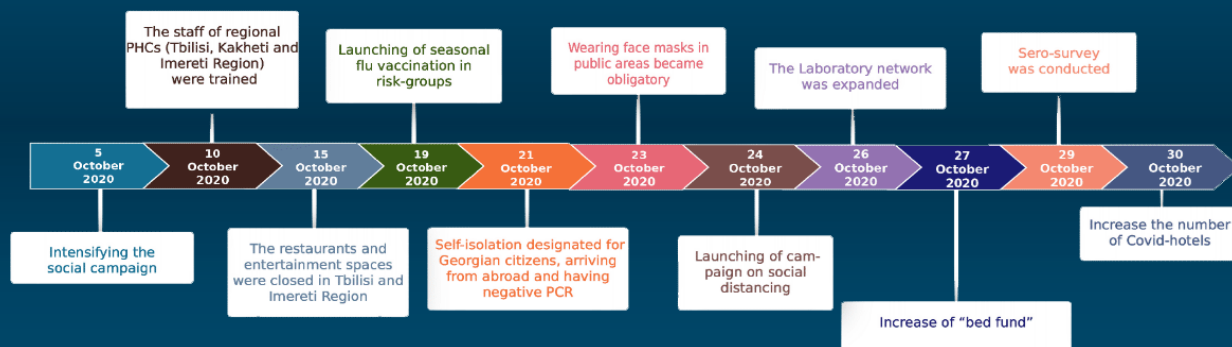
საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაზიანების გამომწვევის
პროფილაქტიკის, დიაგნოსტიკის
და მკურნალობის
კომპლექსური
დახმარების
სამსახური



საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაზიანების გამომწვევის
პროფილაქტიკის, დიაგნოსტიკის
და მკურნალობის
კომპლექსური
დახმარების
სამსახური

Actions Taken in Georgia in terms of Fighting the Novel Coronavirus Infection (COVID-19) After the First Confirmed Case

October, 2020



საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაზიანების გამომწვევის
პროფილაქტიკის, დიაგნოსტიკის
და მკურნალობის
კომპლექსური
დახმარების
სამსახური

Actions Taken in Georgia in terms of Fighting the Novel Coronavirus Infection (COVID-19) After the First Confirmed Case

November, 2020



საქართველოს ექსპერტული
საბჭო COVID-19-ის
დაზიანების გამომწვევის
პროფილაქტიკის, დიაგნოსტიკის
და მკურნალობის
კომპლექსური
დახმარების
სამსახური

December, 2020



საქართველოს ეროვნული ცენტრი
დაავადებათა კონტროლისა და
საზოგადოებრივი ჯანმრთელობის
პრობლემების შესახებ

GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

The Eighth Revision

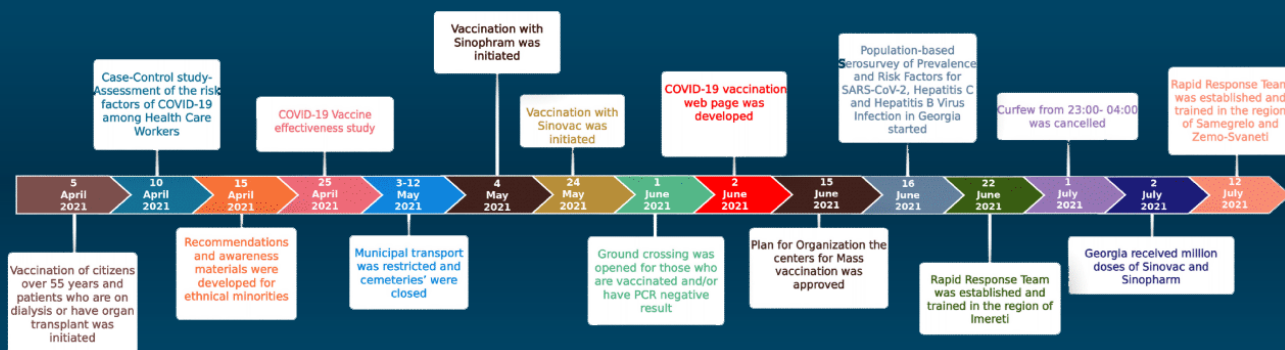


საქართველოს ექსპერტული
საბჭო COVID-19-ის
გავრცელების პრევენციის
და მართვის მიზნით



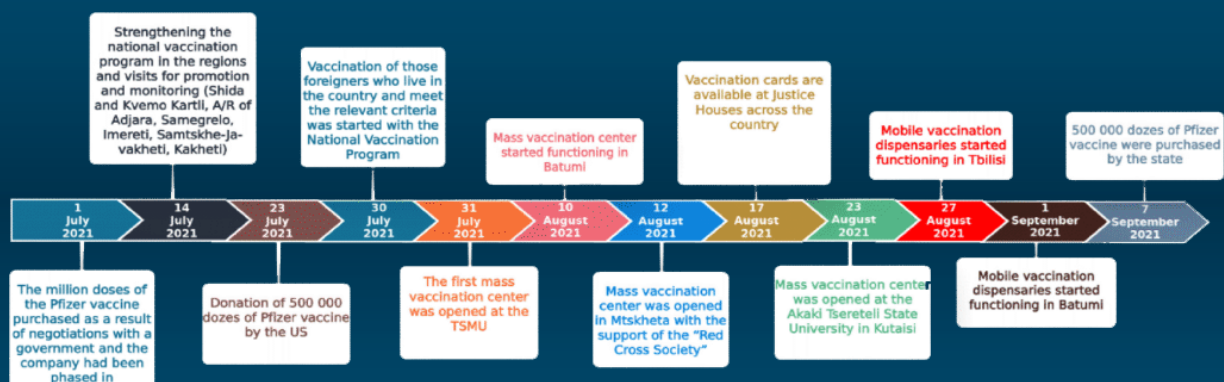
საქართველოს ექსპერტული
საბჭო COVID-19-ის
გავრცელების პრევენციის
და მართვის მიზნით

Actions Taken in Georgia in terms of Combatting COVID-19



საქართველოს ექსპერტული
საბჭო COVID-19-ის
გავრცელების პრევენციის
და მართვის მიზნით

Actions Taken in Georgia in terms of Combatting COVID-19



საქართველოს ექსპერტული
საბჭო COVID-19-ის
გავრცელების პრევენციის
და მართვის მიზნით

REPORT 2020-2021

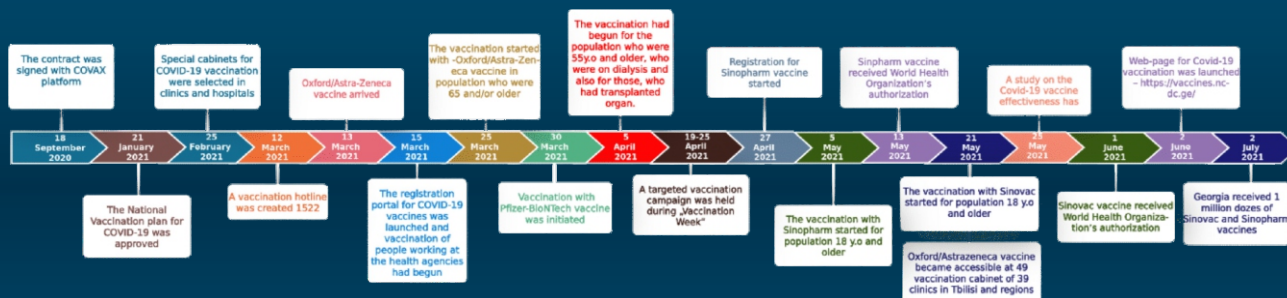
Actions taken in Georgia in terms of combatting COVID-19

October-December 2021



საქართველოს ეროვნული ცენტრი
დაავადებების კონტროლი და
საზოგადოებრივი ჯანდაცვა

COVID-19 Vaccination process in Georgia



Pfizer-BioTech
Oxford/AstraZeneca
Sinopharm SARS-CoV-2 Vaccine (Vero Cell)
Sinovac, CoronaVac-Vero Cell, Inactivated



საქართველოს ეროვნული და
საზოგადოებრივი ჯანმრთელობის
მართვის ცენტრი

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Get vaccinated for each other

The Eighth Revision



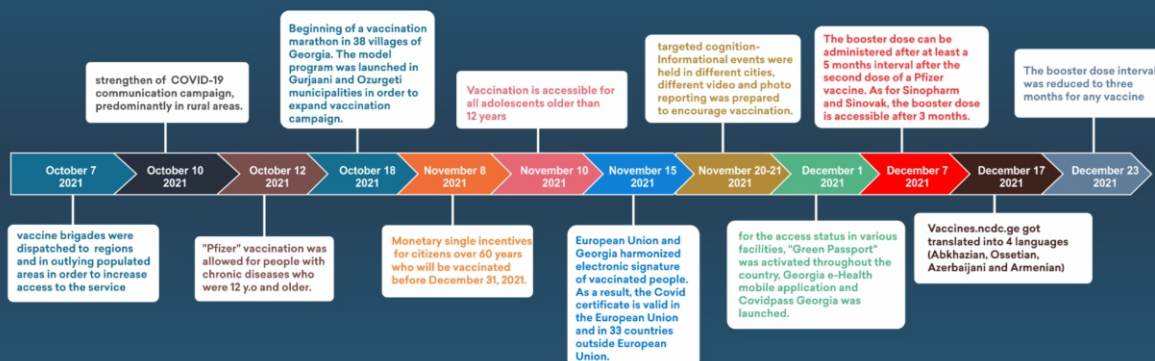
საქართველოს ჯანდაცვის
მინისტროს ეროვნული
ცენტრი დაავადებების
კონტროლისა და
საჯანდაცოო
დაცვისთვის



საქართველოს ეროვნული
ცენტრი დაავადებების
კონტროლისა და
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დაცვისთვის

COVID-19 vaccination process in Georgia

October-December 2021



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