



MINISTRY OF INTERNALLY DISPLACED
PERSONS FROM THE OCCUPIED
TERRITORIES, LABOUR, HEALTH AND
SOCIAL AFFAIRS OF GEORGIA

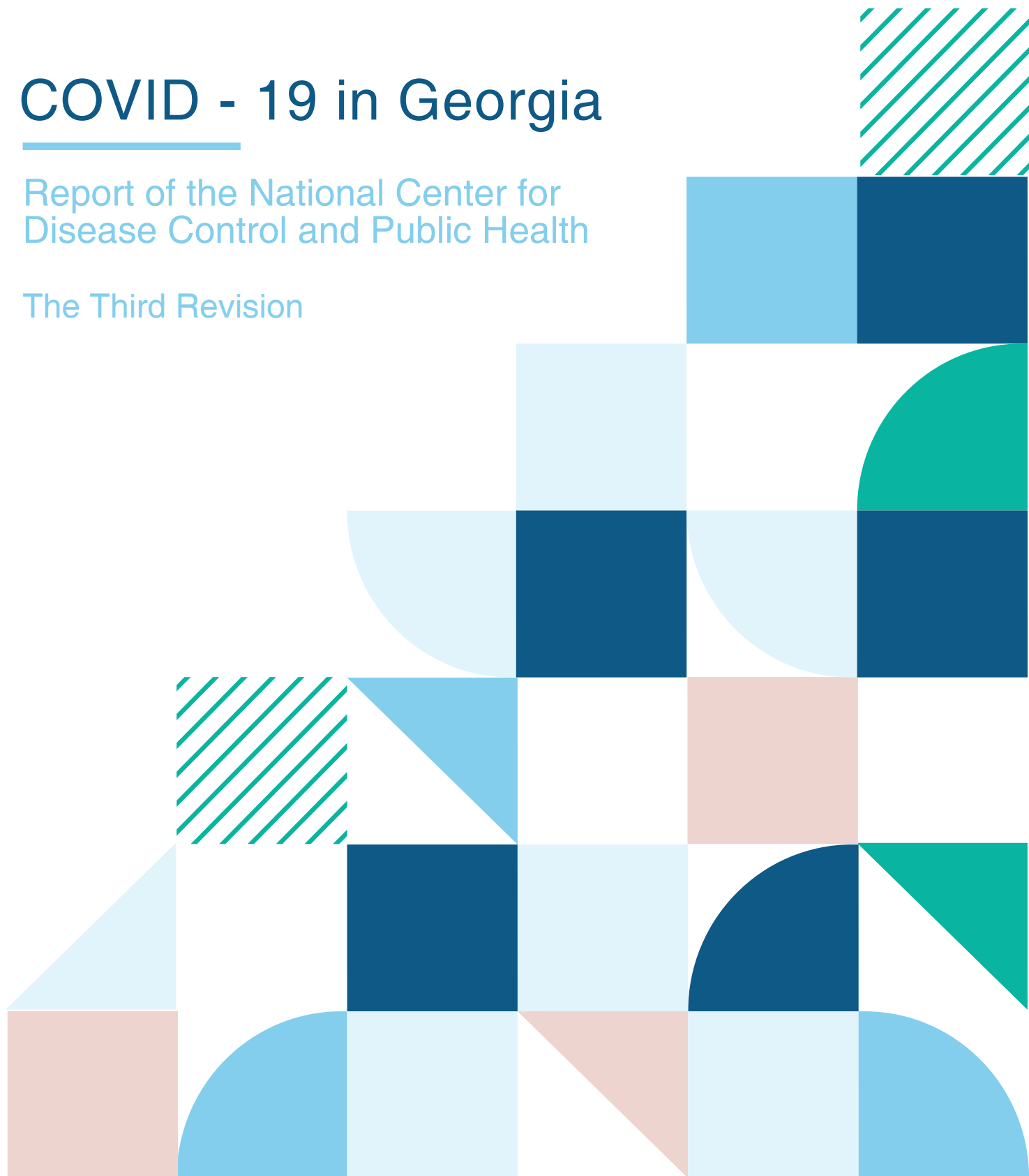


GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

COVID - 19 in Georgia

Report of the National Center for
Disease Control and Public Health

The Third Revision



ACKNOWLEDGMENTS

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The NCDC expresses its special gratitude to all international and local organizations that supported its operations during the difficult period. This assistance made it possible to maximize effectiveness of implemented activities. More than 40 organizations have provided technical and / or financial assistance to the National Center for Disease Control. The complete list of these organizations and the letter of appreciation are posted at the official Facebook page of the Center.

National Center for Disease Control and Public Health



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Introduction

Coronavirus 2, same as SARS-CoV-2, associated with the Severe Acute Respiratory Syndrome, initially referred to as 2019-nCoV and later officially named as COVID-19 by the World Health Organization (WHO), emerged in Wuhan (Hubei Province, China), in December 2019, and later spread quite rapidly beyond the borders of China. The WHO declared the Public Health Emergency of International Concern on January 30, 2020, and a pandemic on March 11. 15 785 641 persons were infected in 215 countries all over the world and 640 016 died.¹ This is the 3rd zoonotic coronavirus outbreak in the 21st century, when the human-to-human transmission of the infection occurred and caused a global health problem. Although COVID-19 is characterized by a high contagiousness, the identified cases differ with their severity from asymptomatic to fatal. Various factors, including age, gender, and concomitant chronic diseases, are considered to be associated with a negative outcome.

The National Center for Disease Control and Public Health (NCDC) has played an important role in Georgia's response against COVID-19. Responsibilities of the Center, involve preparedness and response measures, including real-time surveillance, management of novel coronavirus laboratory diagnostics, supervision of compliance with standards, epidemiological supervision over identified and suspected cases, contact tracing, recommendations on isolation and monitoring.

This document represents the 3rd summary analysis of the epidemiological situation and measures taken against spread of the novel coronavirus in Georgia. The data presented in this report is reflected as of July 11, 2020. Respectively, all indicators are presented for the reporting period, unless specified otherwise. This type of analysis will be regularly updated.

¹ Data as of July 26, 2020 https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200726-covid-19-sitrep-188.pdf?sfvrsn=f177c3fa_2



Testing and Contact Tracing

Testing with PCR² method to detect COVID-19 in Georgia began on January 30, 2020. The number of tests conducted in the country from January 30 to July 11 was 147 700, including 142 577 of primary ones.

For PCR testing, nasopharyngeal swab, or sputum, bronchoalveolar lavage (rinsing) or respiratory biopsy material may be taken, however, the other materials such as feces and / or blood and / or urine / or corpse tissue (from lung) with special indications can also be used for this type of testing.

The PCR method is considered as the gold standard in the COVID-19 diagnostics. Its advantages are high sensitivity and specificity, which minimize the risk of false-positive (as well as false-negative) results. However, a single negative PCR result does not rule out COVID-19, especially if the nasopharyngeal smear is taken at the early stages of the disease. It can be used in conditions where high-tech laboratory space and highly qualified staff.

Pursuant to the *Decree N 975 of the Government of Georgia (dated on June 15) on Approval of List of Persons Subject to Mandatory Testing for Coronavirus (SARS-CoV-2) Infection (COVID-19) and Testing Procedure*, subject to testing are cases according to the standard definition, contacts of confirmed cases, patients and medical personnel of respective medical facilities meeting specific criteria, any patient with the diagnosed pneumonia or fever (who has symptoms of respiratory disease or the treating physician makes the decision on testing), emergency medical personnel and disaster brigade staff, enrolled or prospective beneficiaries and staff of special nocturnal care facilities for the elderly and disabled, all persons who have been diagnosed with early-stage tuberculosis, persons placed in quarantine spaces and in self-isolation 24 hours prior to expiry of the period, personnel of quarantine spaces, customs officers and border police, personnel of inpatient hospital reception, intensive therapy and care, the Center's epidemiologists and staff of COVID-19 PCR Laboratory and etc.

All cases of COVID-19 infection in Georgia were confirmed by PCR test.

PCR testing during the period from January 30 to March 1, 2020, was carried out only by the Lugar Laboratory of the National Center for Disease Control and Public Health. Starting from March 1st, the other laboratories got gradually involved into the testing process. As of July 11, the share of tests performed by the laboratories subordinated to the NCDC equaled to 50 % (79% as of May 11).

² Real time reverse transcription polymerase chain reaction / RT – PCR

Figure 1. Dynamics of COVID - 19 testing in Georgia, PCR Test

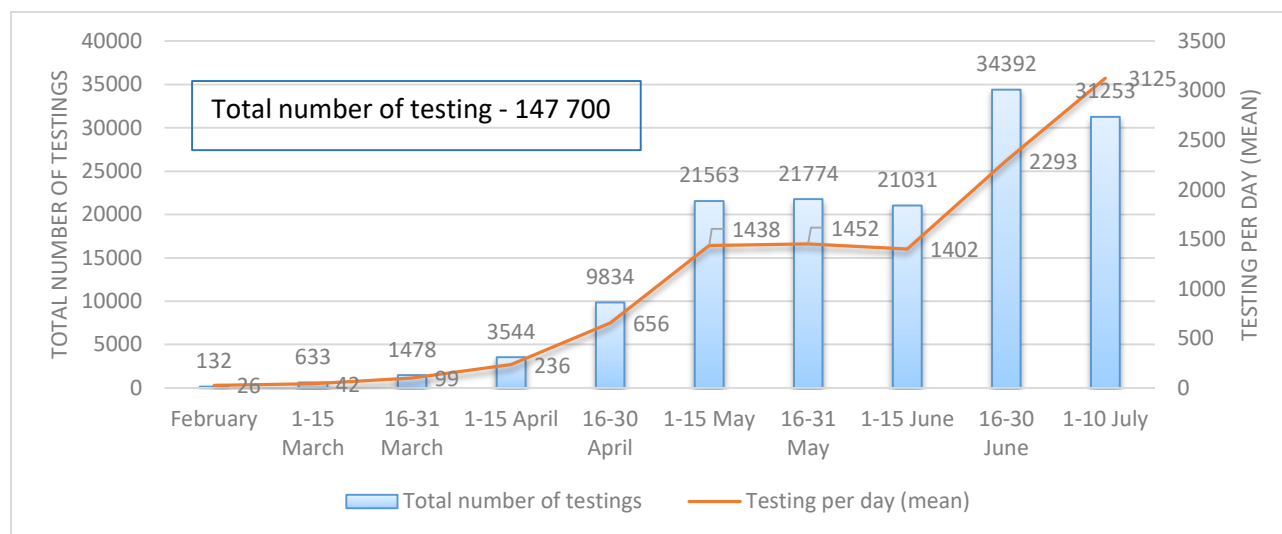
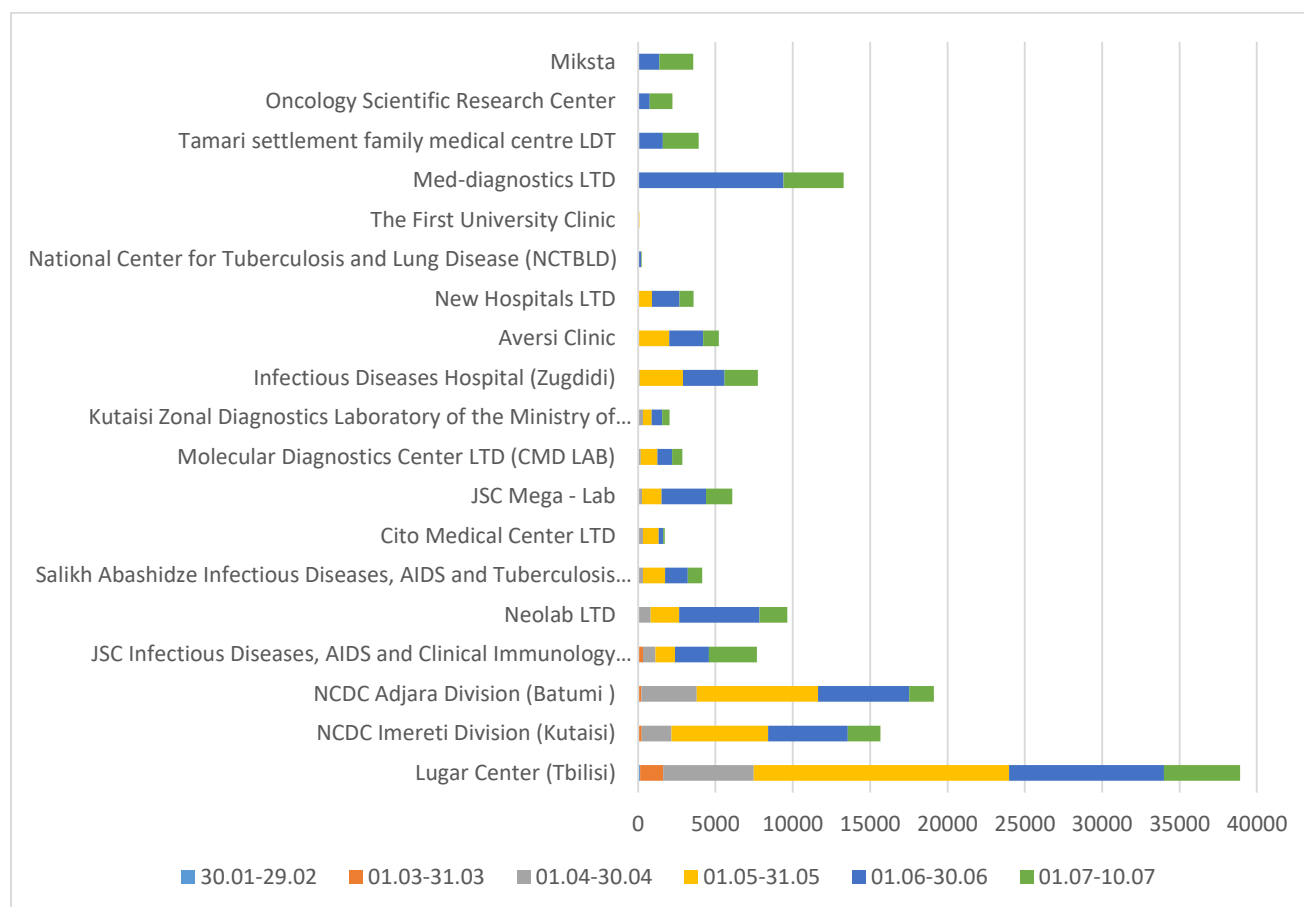


Figure 2. Number of PCR Testing by Laboratories



As of June 11, the share of tests conducted by laboratories subordinated to the National Center for Disease Control was 66%.

Table 1. Number of PCR Tests by Laboratories (As of June 11, 2020)

	Number of Tests	%
Lugar Laboratory (Tbilisi)	38 926	26.4
NCDC Imereti Division (Kutaisi)	15 665	10.6
NCDC Adjara Division (Batumi)	19 122	12.9
JSC Infectious Diseases, AIDS and Clinical Immunology Research Center (IDH)	7 679	5.2
Neolab LTD	9 643	6.5
Salikh Abashidze Infectious Diseases, AIDS and Tuberculosis Regional Center (Batumi IDH)	4 133	2.8
Cito Medical Center LTD	1 718	1.2
JSC Mega - Lab	6 084	4.1
Molecular Diagnostics Center LTD (CMD LAB)	2 871	1.9
Kutaisi Zonal Diagnostics Laboratory of the Ministry of Environment and Agriculture	2 034	1.4
Infectious Diseases Hospital (Zugdidi)	7 737	5.2
Aversi Clinic LTD	5 211	3.5
New Hospitals LTD	3 575	2.4
JSC National Center for Tuberculosis and Lung Disease	227	0.2
LEPL First University Clinic of the Tbilisi State Medical University	97	0.1
Med Diagnostics LTD	13 296	9.0
“Family Medical Center of Tamari Settlement” LTD	3 913	2.6
Oncology Research Center LTD - Rustavi	2 214	1.5
Mixta LTD - Kutaisi	3 555	2.4
Total Number of Conducted Tests	147 700	100

To ensure accessibility of comprehensive information on COVID-19 testing, the NCDC developed an electronic module for laboratory research, which collects and continuously improves data about COVID-19 testing. Information for the module is supplied by inpatient and outpatient service providers that either take test material, or conduct rapid testing or laboratory research; municipal / city public healthcare agencies; relevant bodies of the NCDC; Lugar Laboratory or labs of the other medical facilities.

In addition to PCR testing, the country is conducting serological studies - rapid simple tests in certain groups based on antigens and antibodies, however, the cases are confirmed only by PCR testing. As of July 11, 48 050 rapid tests based on antibodies were performed in the country.

Figure 3. Dynamics of Antibody - Based Rapid Testing

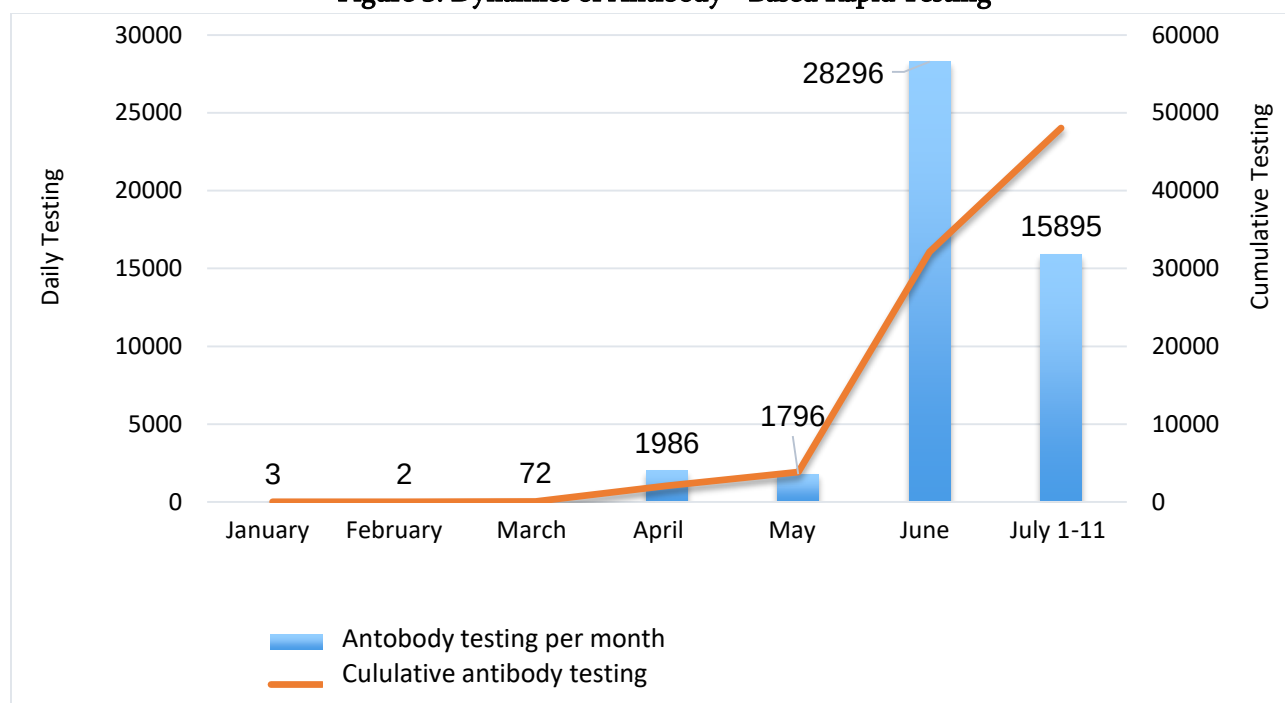


Figure 4. Number of Antibody – Based Rapid Testing

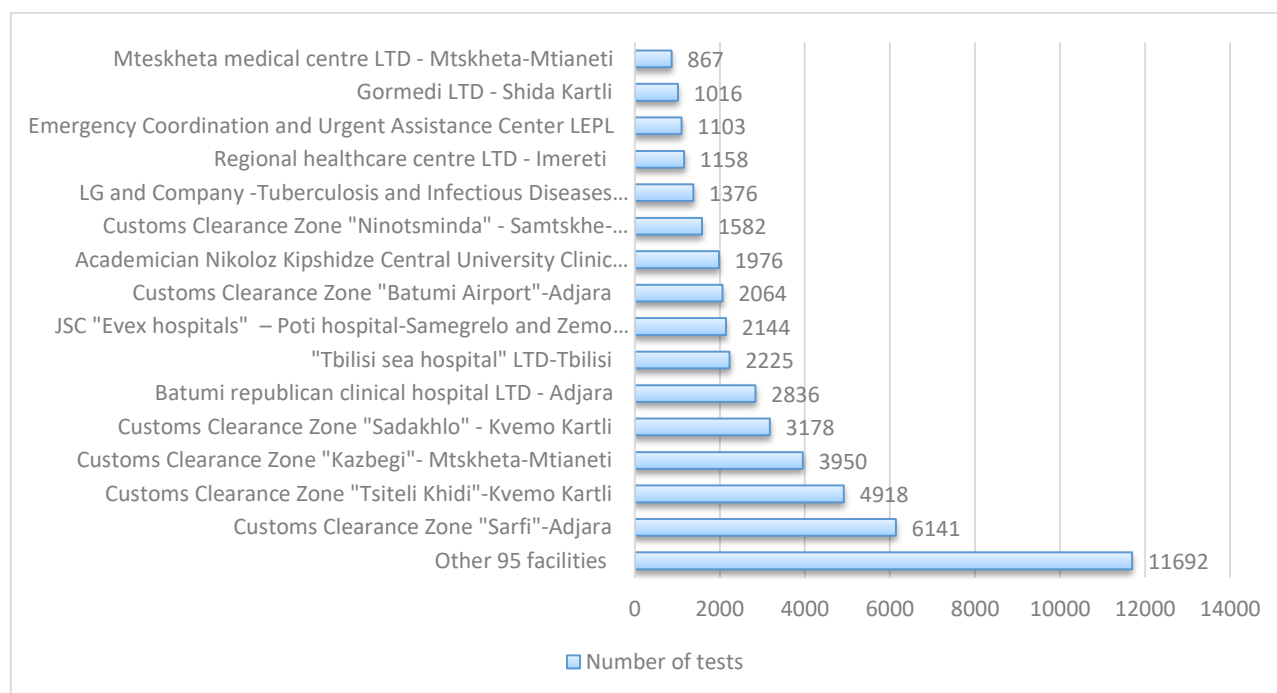


Figure 5. Dynamics of Antigen – Based Rapid Testing

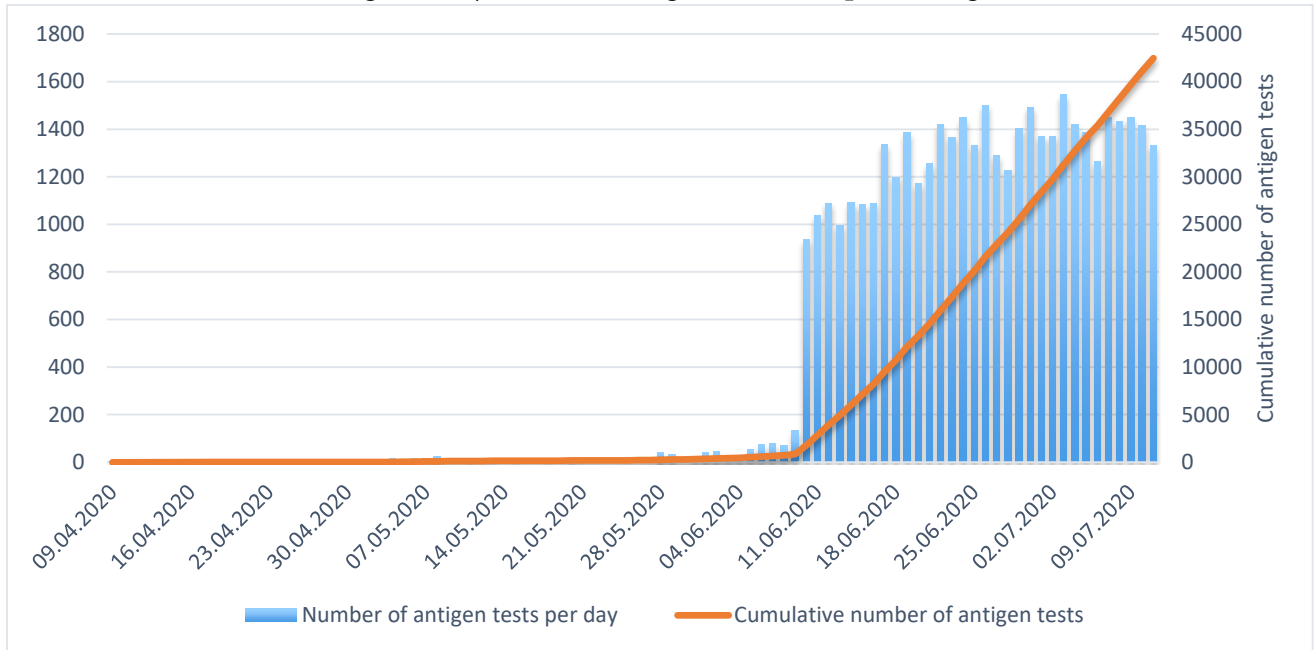
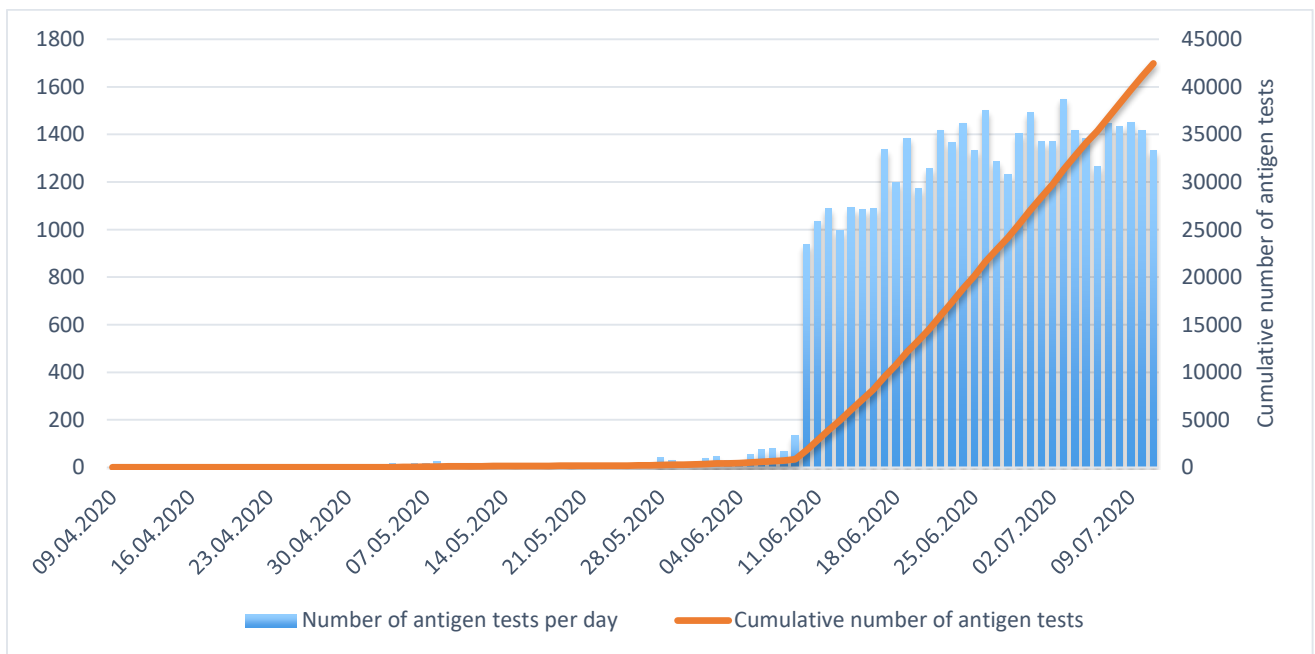


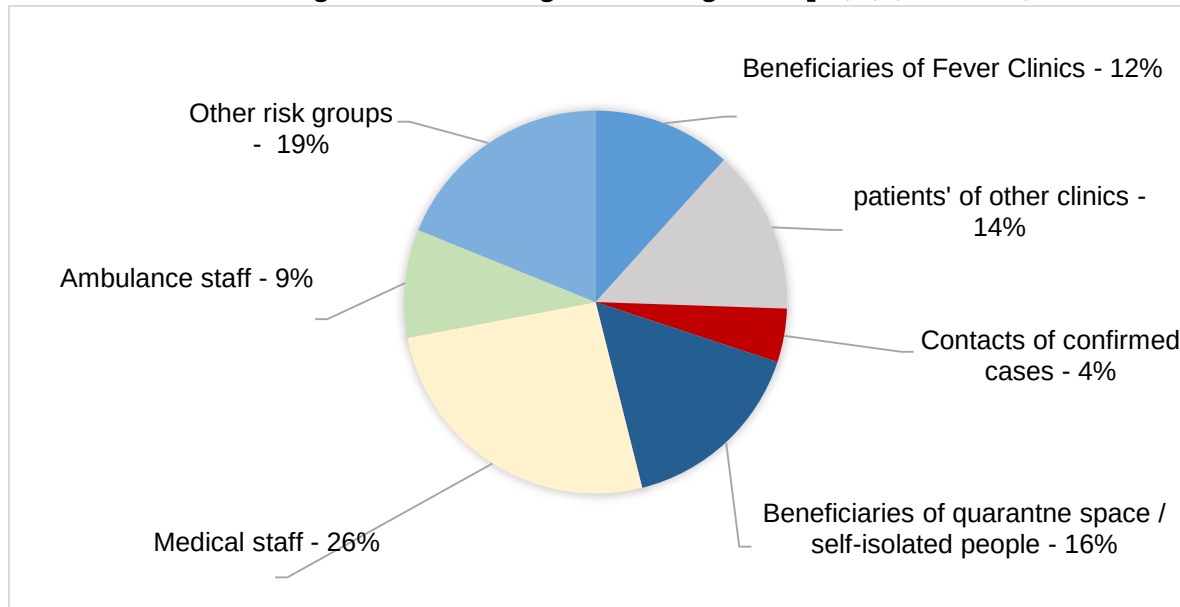
Figure 6. Number of Antigen – Based Rapid Testing by Laboratories



Testing of Target Groups

Majority of PCR tested cases by target groups – 28% was held for beneficiaries of fever or COVID clinics and quarantine spaces. The testing share of medical services providers (except for ambulance staff) was 26%.

Figure 7. PCR Testing of Basic Target Groups (%) (n=135 734)



Contact Tracing

In case of each patient epidemiological investigation was conducted, contacts were traced (~5 200), their laboratory testing was performed and telephone or face-to-face interviews were held about contacts, travel, existing symptoms of the infected persons and the other parameters. Outbreak clusters have been identified through epidemiological investigation. The most notable large clusters were the Bolnisi, Marneuli, Tetritskaro (Annex 1), Kobuleti, Saburtalo (Annex 2) and other clusters, where additional in-depth investigation were carried out. In order to follow-up on transmission of infection, the transfer of contacts to self-isolation or special quarantine spaces was implemented and further monitored.



Prevalence

The first confirmed case in Georgia was registered on February 26. As of July 11, COVID-19 was confirmed overall for 980 people. The so-called positivity rate of testing equaled to 0.7% (May 11 – 2%, June 11 – 1.2%).

Figure 8. Share of Confirmed COVID-19 Cases in the Total Number of Tested People

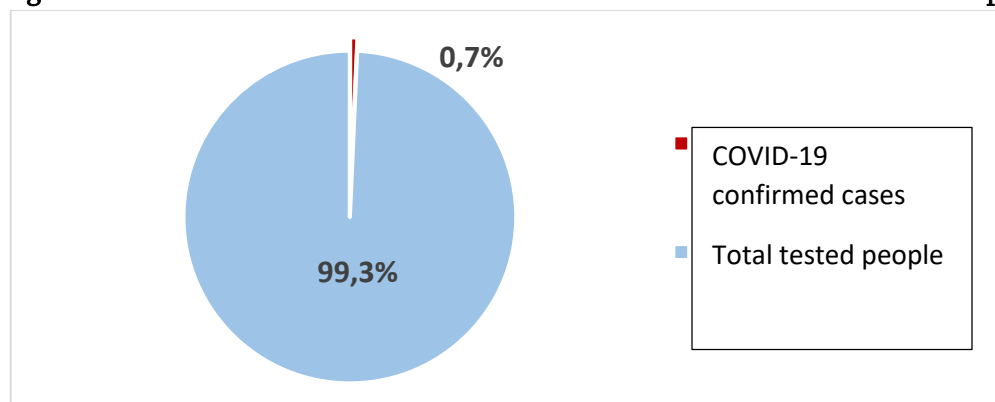
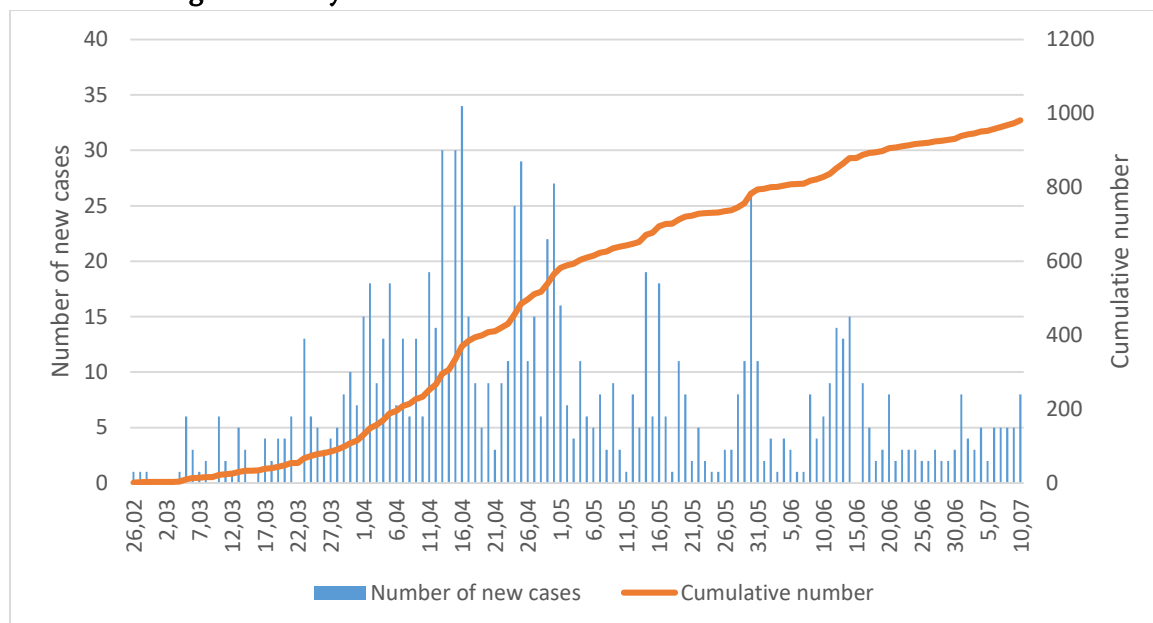


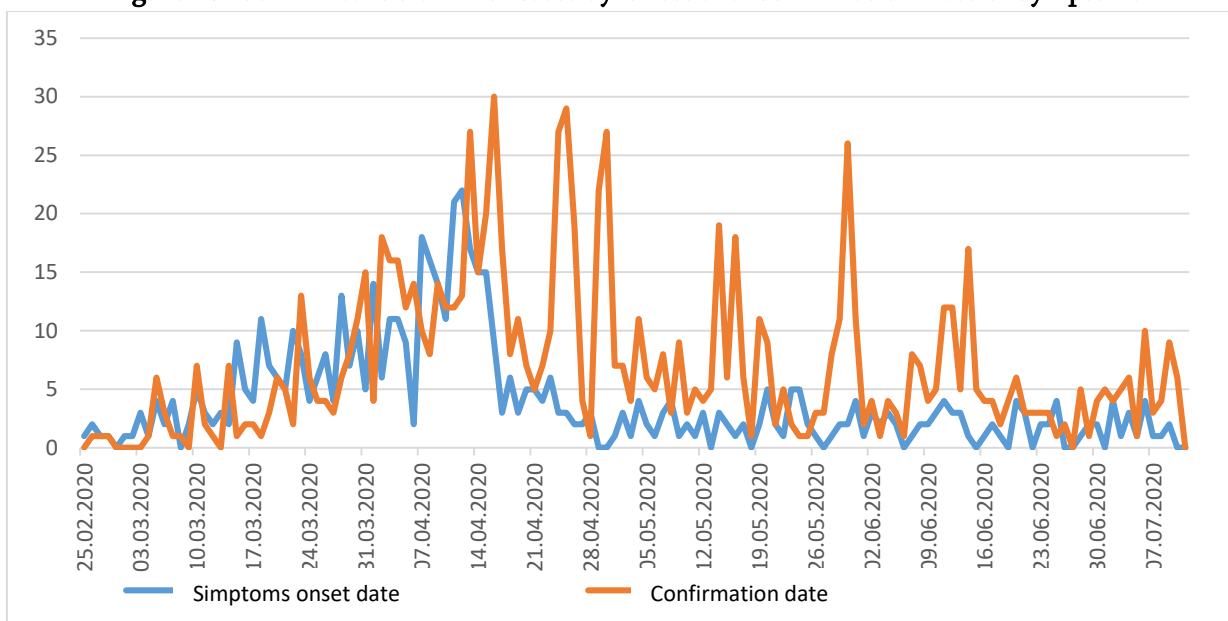
Figure 9. Daily Number of New PCR Confirmed and Cumulative Cases



The average number of days from onset of symptoms to laboratory confirmation was 5, minimum - 0 while maximum – 22.

As of July 11, the COVID-19 cumulative incidence rate was 19.0 per 100,000 of population (95 % CI 17.7 – 20.5).

Figure 10. Confirmed COVID-19 Cases by Onset and Confirmation Date of Symptoms



Epidemiological characteristics of the first 980 COVID-19 infection cases registered since February 26, 2020 in Georgia and confirmed with PCR method were analyzed retrospectively. The analysis included the following areas:

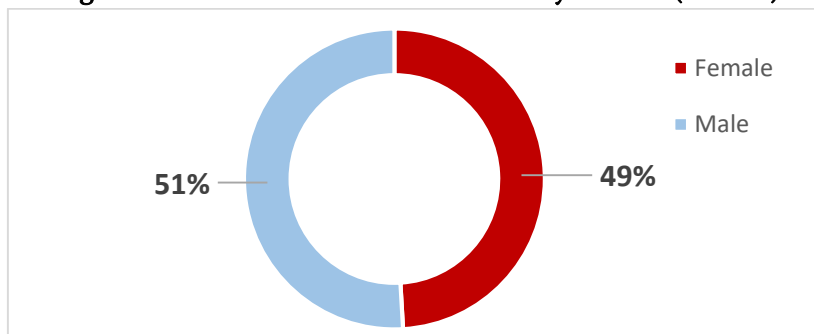
- Gender distribution;
- Age structure;
- Characteristics of territorial distribution;
- Incidence figures by regions and municipalities;
- Characteristics related to medical personnel.

The disease prevalence figure for the surveyed period is calculated as the ratio of the number of new confirmed cases (980) to the population at risk.

Gender and age distribution characteristics

The research analyzed data of 980 novel coronavirus infection cases confirmed with PCR method including 499 (50.9%) male and 481 (49%) female patients.

Figure 11. COVID -19 Confirmed Cases by Gender (n = 980)



The maximum age of patients was 90 year and the minimum 9 month. Average age was 42.6, moda - 52 and median 43 years. COVID -19 in patients under the age of 18, was reported in 105 (10.7%) cases.

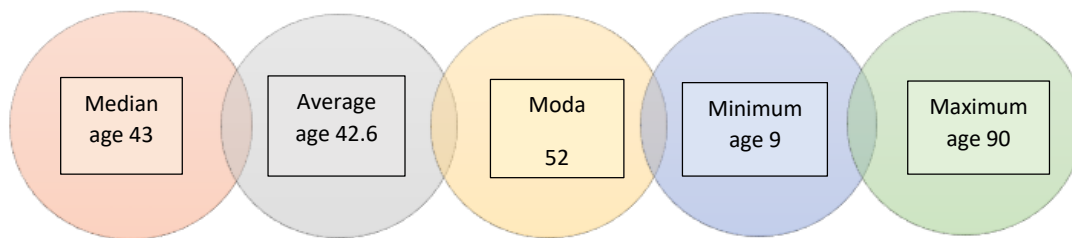
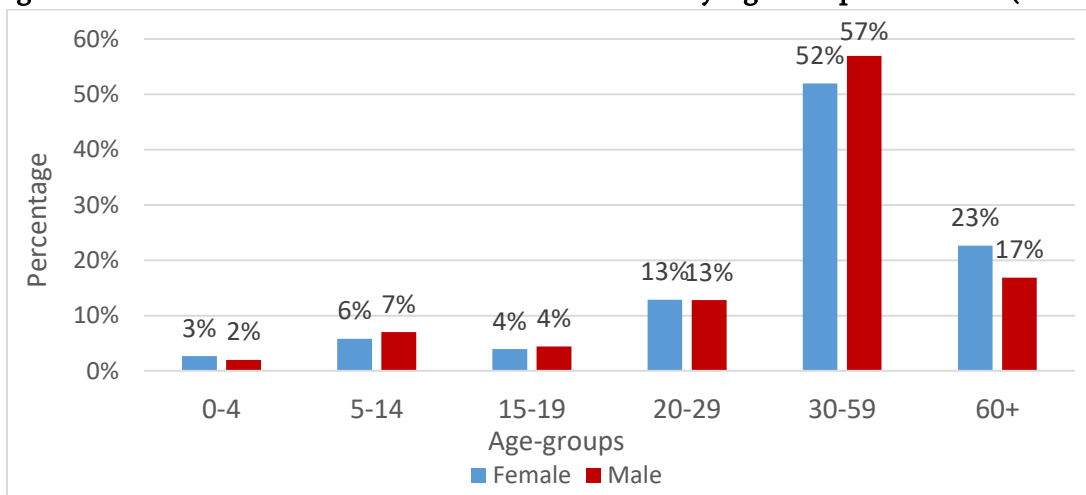


Table 2. Distribution of Confirmed COVID-19 Cases by Age (n = 980)

Age groups	Number	%
0-4	23	2.3%
5-14	63	6.4%
15-19	41	4.2%
20-29	126	12.9%
30-59	534	54.5%
60-69	108	11%
70-79	58	5.9%
80+	27	2.7%
Total	980	100%

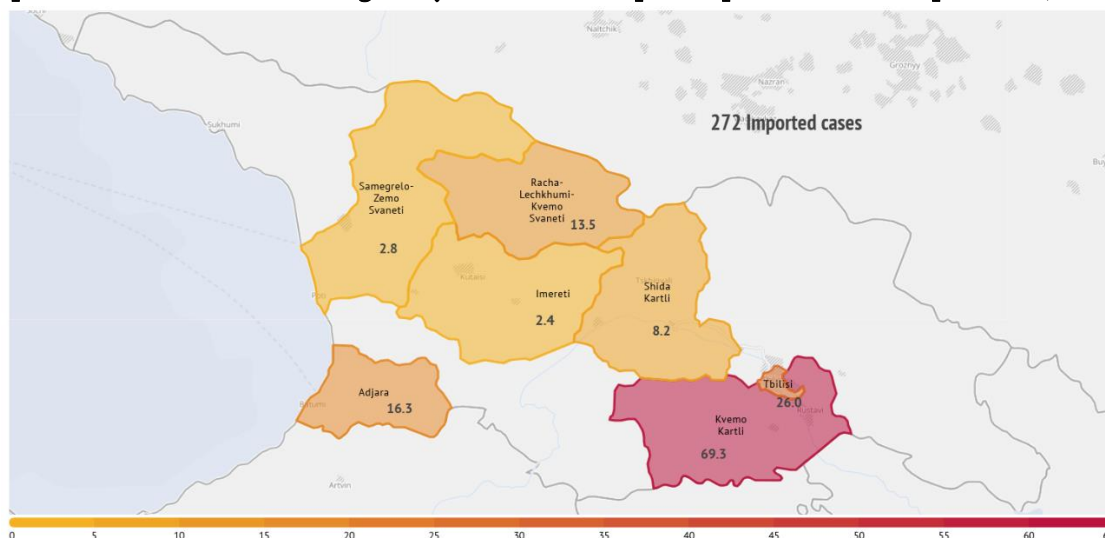
Figure 12. % Distribution of COVID-19 Confirmed Cases by Age Group and Gender (n = 980)



Characteristics of territorial distribution

The number of new COVID-19 cases per 100,000 of population by place of exposure was the highest in the Kvemo Kartli region and Tbilisi, while the lowest in Samegrelo, Zemo Svaneti and Imereti.

Map 1. COVID -19 Incidence Figure by the Place of Exposure per 100,000 of Population (n = 708)



The number of imported cases were 272 (27.7 %) out of 980 described ones. The largest share of cases 46.6% (127) were imported from Russia, 8.4% (22) from Turkey and 8% (22) and 7.7% (21) from Azerbaijan and Armenia, respectively.

Figure 13. COVID – 19 Incidence by Regions (per 100,000 of population) (N = 708)

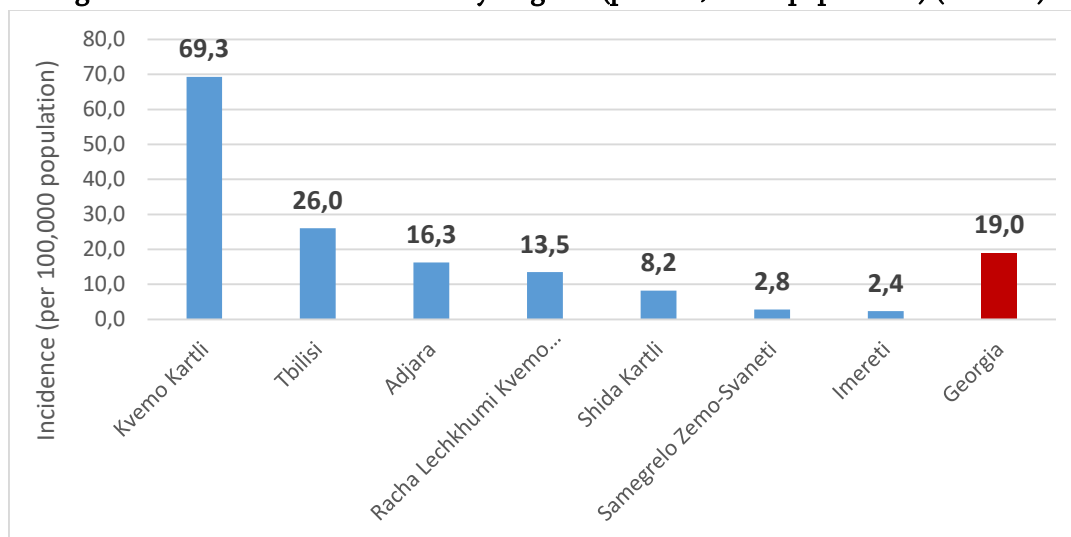
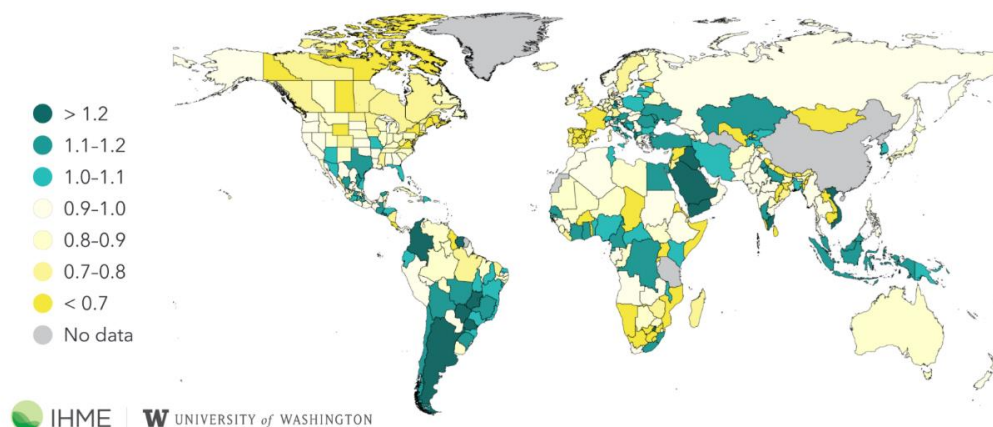


Table 3. Incidence of COVID-19 Confirmed Cases per 100,000 Population by Municipalities (n = 708)

Region	Number of Cases	Incidence
Bolnisi	191	344.5
Tetritskaro	53	240.3
Lentekhi	4	95.8
Kobuleti	38	52.2
Marneuli	45	42.1
Tbilisi	305	26.0
Gori	15	12.3

Terjola	4	12.3
Batumi	19	11.4
Kaspi	4	9.4
Zugdidi	9	8.8
Tskaltubo	4	8.0
Rustavi	9	7.0
Vani	1	4.5
Khashuri	2	3.9
Sachkhere	1	2.8
Gardabani	2	2.5
Kutaisi	2	1.4

Among the other epidemiological characteristics of the COVID-19 in Georgia, it is noteworthy that since the reporting date of the first case to the present report date (11. 07. 2020) the average doubling time of the cases was 16 days, while the effective reproduction index R_t equaled to 0.93 (95% CI 2.41 - 5.85). This figure was also reflected in the report of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington³, where this indicator was between the range of 0.8 – 0.9.



Note: this figure was updated 7/7.

Infection of COVID-19 in healthcare workers with

As of July 11, 2020 129 COVID-19 cases of employees of medical service providers were registered in Georgia, which represented 13.2% of the registered cases (980) in the country, including medical staff of 111 (86.1)% and technical staff of 18 (13.9%) people .

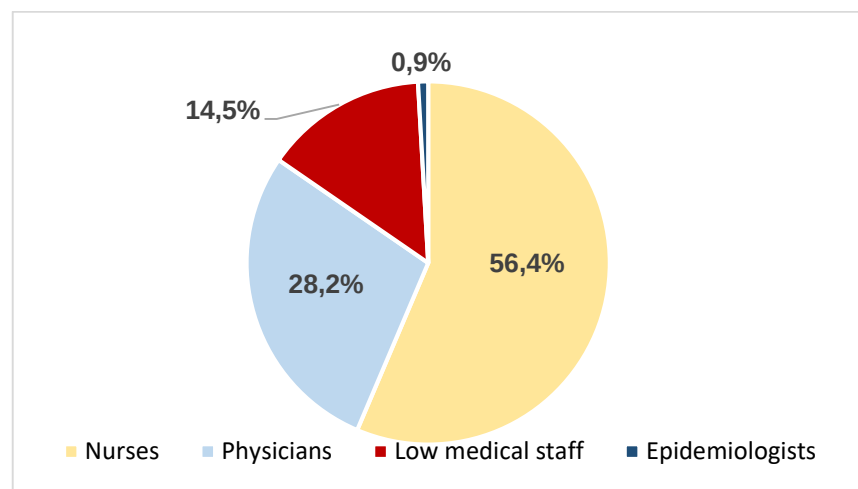
Out of the infected medical personnel with COVID-19 (111 persons), one case was classified as infected in the community. Accordingly, during this period, the number of infected service provider medical staff in Georgia equaled to 110 people, which represented 11.2% of the total infected cases in the country. Out of the mentioned number, 1 case had fatal outcome (female nurse, 70 years old, Kvemo Kartli). By professional groups, nurses account for more than half of the cases.

³ <http://www.healthdata.org/>

Table 4. Distribution of Infected Medical Personnel with COVID-19 by Professional Groups (n = 110)

Professional Group	Number	Share (%)
Nurse	62	56.4
Doctor	31	28.2
Junior Medical Personnel	16	14.5
Epidemiologist	1	0.9
Total	110	100

Figure 14. Distribution of COVID-19 Cases among Medical Personnel by Professional Groups (n = 110)



One case ended with fatal outcome (70 year old female nurse, Kvemo Kartli). The fatality among infected medical staff was 0.9% during the delivery of medical services.

Distribution of cases by age and gender

The average age of infected persons is 46 years and the age range is 19-72 years.

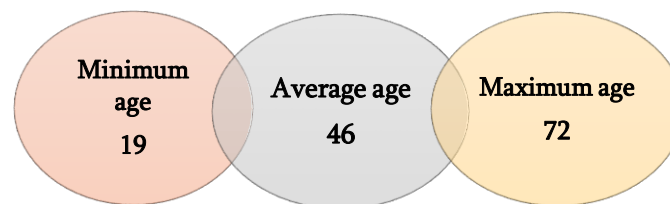


Table 5. Healthcare Personnel Infected during Service Provision by Age Groups (n = 110)

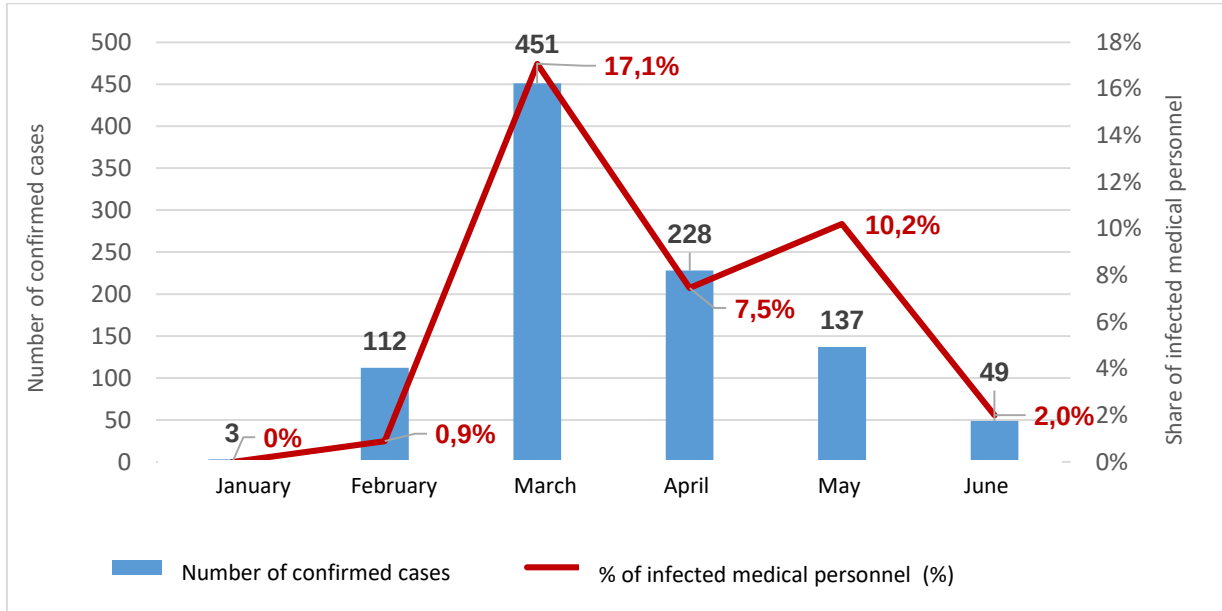
Age Group	Number	Share (%)
<20	1	0.9
20-29	17	15.5

30-59	75	68.2
≥60	17	15.5
Total	110	100

85.5% of infected medical workers were females and 14.5% males.

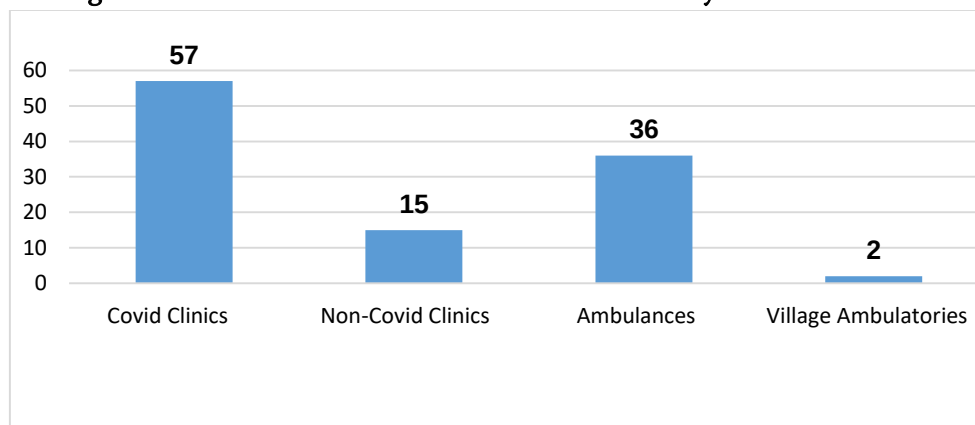
The analysis showed that the highest share of infected medical staff was recorded in April.

Figure 15. Distribution of Infected Medical Workers with COVID-19 by the Infection Date (n = 980)



Healthcare workers were mostly infected in hospitals, and 52% of them are from Covid Clinics.

Figure 16. Number of Infected Healthcare Workers by Medical Facilities





Hospitalization

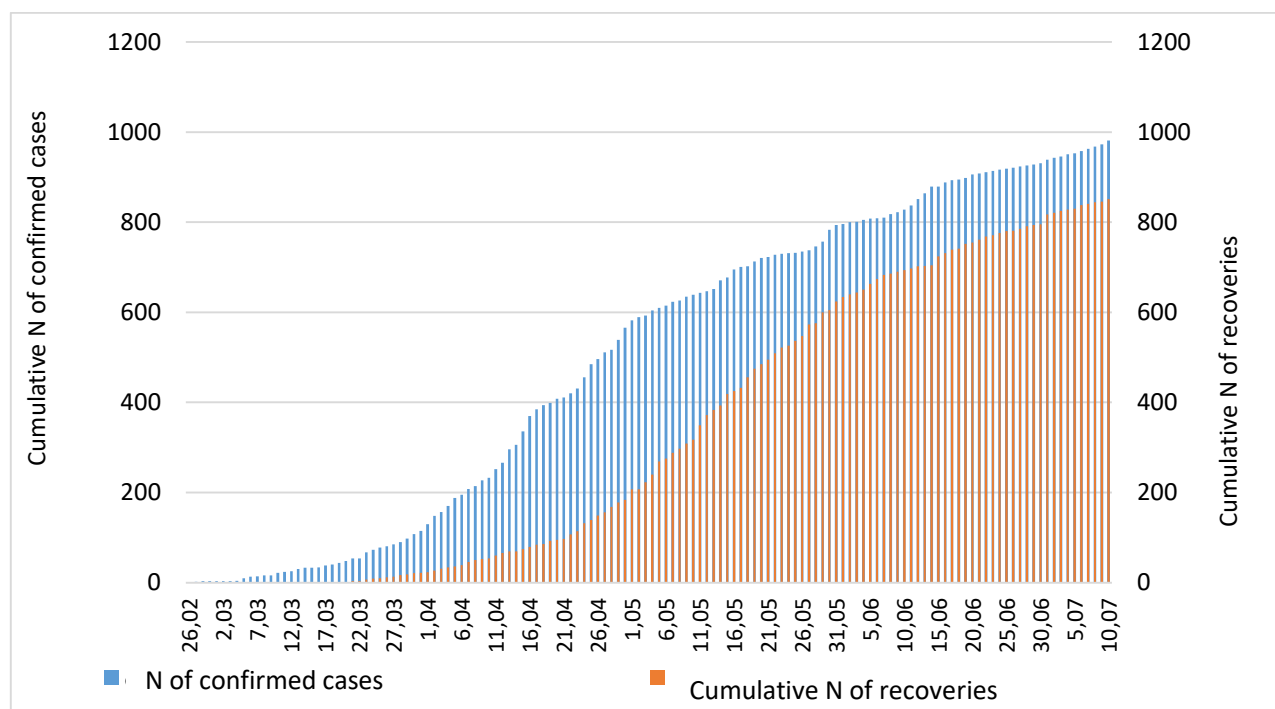
According to the Ministerial Order N 01-119 /O, dated March 24, all patients with confirmed coronavirus disease of any severity are subject to be hospitalized.

Pursuant to the *Order N01-136 / O (dated March 30, 2020) on Designation of so-called Fever Centers for Prevention of Spread of Potential COVID-19 Cases (epidemic, pandemic, epidemic outbreak) and Preparedness to Respond to Possible and/ or Confirmed Cases*, the services provided by Fever Clinics include triage of all fever cases, diagnostics of COVID-19 infection in accordance with the algorithm approved by the Ministry, determination of further treatment tactics and referral of confirmed cases to the respective facility.

The first patient with COVID-19 was hospitalized on February 26, 2020 and the first recovered patient got discharged from the clinic on March 16. As of July 11, the total number of recovered patients constituted 851 people (87%). 15 cases ended with the fatal outcome (fatality rate - 1.5%). The present document analyzed data on 800 patients discharged from inpatient facilities by the following characteristics:

- Clinical symptoms' onset and hospitalization dates
- Clinical symptoms upon hospitalization
- Type of referral to the inpatient facility;
- Gender/ age structure;
- Complications of major disease;
- Concomitant diseases
- Severity of disease
- Bed-days
- Treatment in intensive care unit
- Treatment outcome.

Figure 17. Daily Number of PCR Confirmed and Recovered Cases



Clinical symptoms' onset and hospitalization dates

The average period between clinical symptoms onset and inpatient treatment commencement was 4 days.

Clinical symptoms upon hospitalization

Among the prehospital symptoms the most frequent were fever (54%) and cough (23,4%). In 11% of cases symptoms were not noticed upon hospitalization.

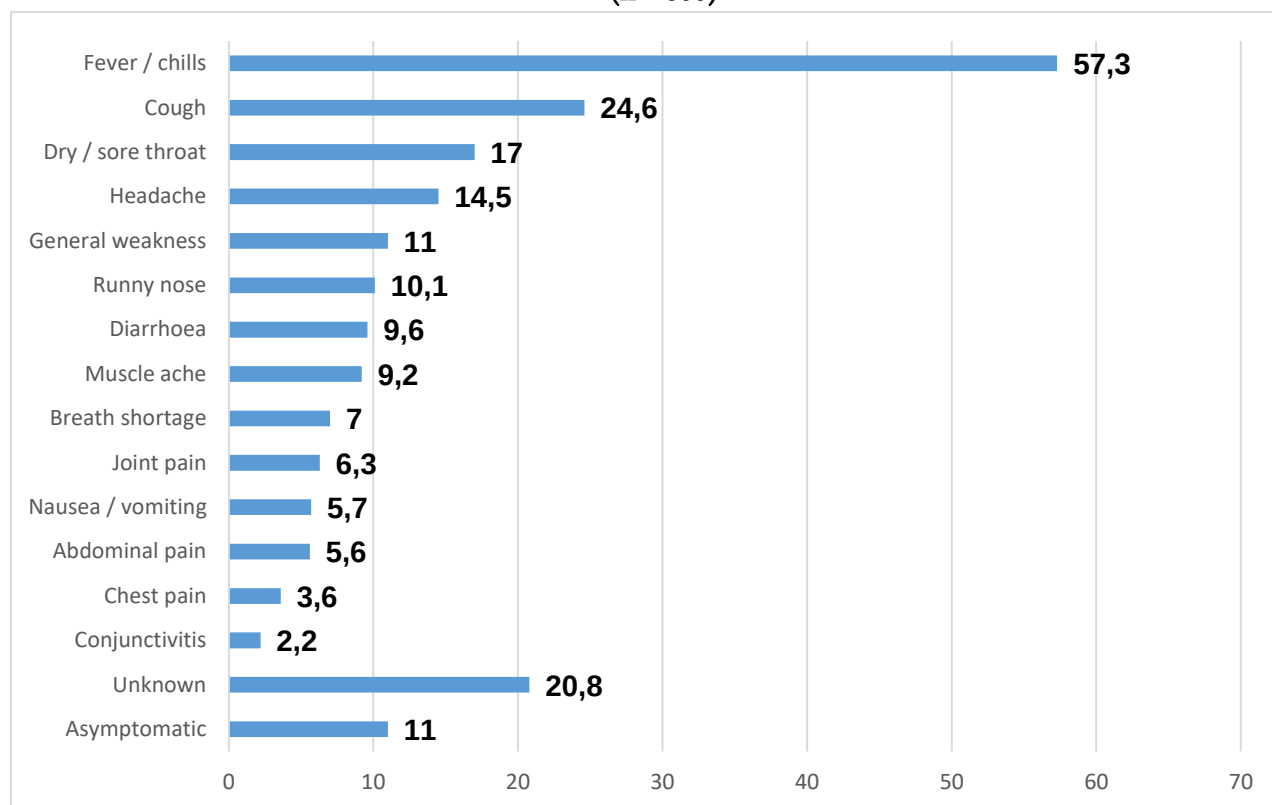
The most common symptoms are fever (57.3%, 95% CI 53.79% - 60.76%), fatigue (34.5%, 95% CI 31.21% - 37.91%), cough (24.6%, 95% CI 21.65% - 27.74%), sore throat (17%, 95% CI 14.46% - 19.79%) and headache (14.5%, 95% CI 12.13% - 17.13%). Change in taste and smell senses was calculated for 500 cases (14.8 %, 95% CI 11.80% - 18.22%). Of the 800 cases, 88 cases were asymptomatic during PCR testing⁴. Accordingly, the proportion of asymptomatic cases was 11% (95% CI 28.49% - 35.05%).

Table 6. Distribution of COVID – 19 Confirmed Cases - Symptoms prior to Hospitalization by Clinical Characteristics (%) (n = 800)

Symptoms	Male		Female		Both	
	Number	%	Number	%	Number	%
Fever /Shiver	229	58.72	230	56.1	459	57.3
Fatigue	131	33.5	145	35.3	276	34.5
Cough	89	22.8	108	26.3	197	24.6
Dry / sore throat	70	17.95	66	16.1	136	17.0
Headache	58	14.1	58	14.8	116	14.5
Runny nose	42	10.7	38	9.27	80	10.1
Myalgia	33	8.4	41	10.0	74	9.2
Dyspnea	27	6.92	29	7.7	56	7.8
Joint pain	25	6.4	26	6.3	51	6.3
Stomach ache	14	3.5	31	7.5	45	5.6
Nausea	20	5.1	26	6.3	46	5.7
Chest pain	17	4.3	12	2.9	29	3.6
Conjunctivitis	14	3.5	4	0.9	18	2.2
Diarrhea	39	10.0	38	9.2	77	9.6
Asymptomatic	39	10.0	49	11.9	88	11.0
Unknown	86	22.0	80	19.5	166	20.75

⁴ An asymptomatic laboratory-confirmed case is a person infected with COVID-19 who does not develop symptoms (WHO Coronavirus disease 2019 (COVID-19) Situation Report - 73). The cases were classified as asymptomatic only based on patients' subjective judgement.

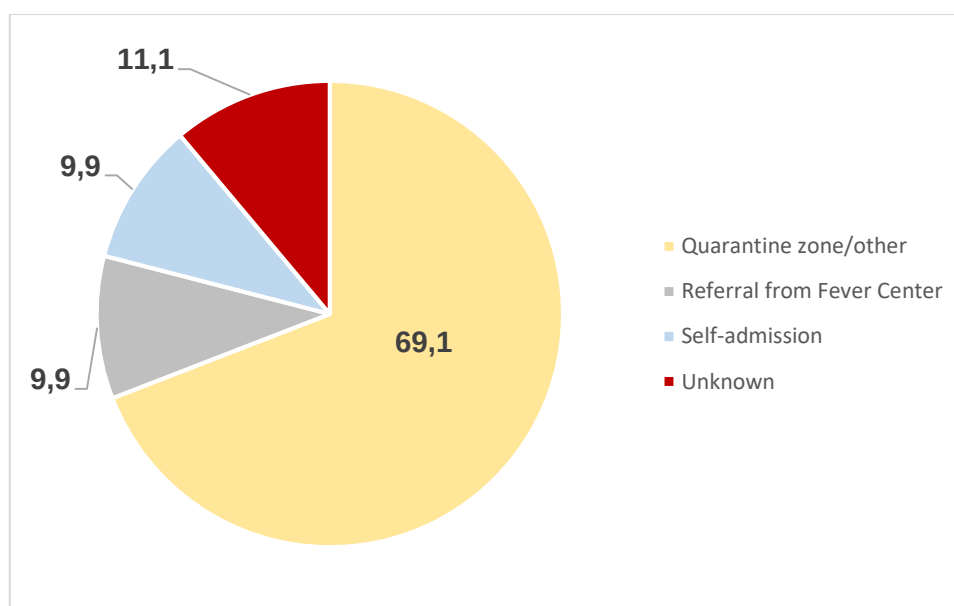
Figure 18. Clinical Characteristics of COVID – 19 Confirmed Cases - Symptoms prior to Hospitalization (%)
(n = 800)



Type of referral to the inpatient facility

Most of the 800 patients discharged from hospitals (69.1%) were transferred from the quarantine area, about 10% went to the clinics on their own.

Figure 19. Percentage Distribution of COVID – 19 Patients Discharged from the Inpatient Facility by the Referral Type (n = 500)



Gender/ age structure

The maximum age of patients was 90 year and the minimum 9 month. The average age of the patients was 42 years.

Patients included children aged from 0 to 15 year (6%), adolescents within the age range of 15–19 year (4.4%), and 60+ age (19.5%).

Figure 20. Distribution of COVID – 19 Diagnosed Patients Discharged from the Hospital by Age Groups (n = 800)

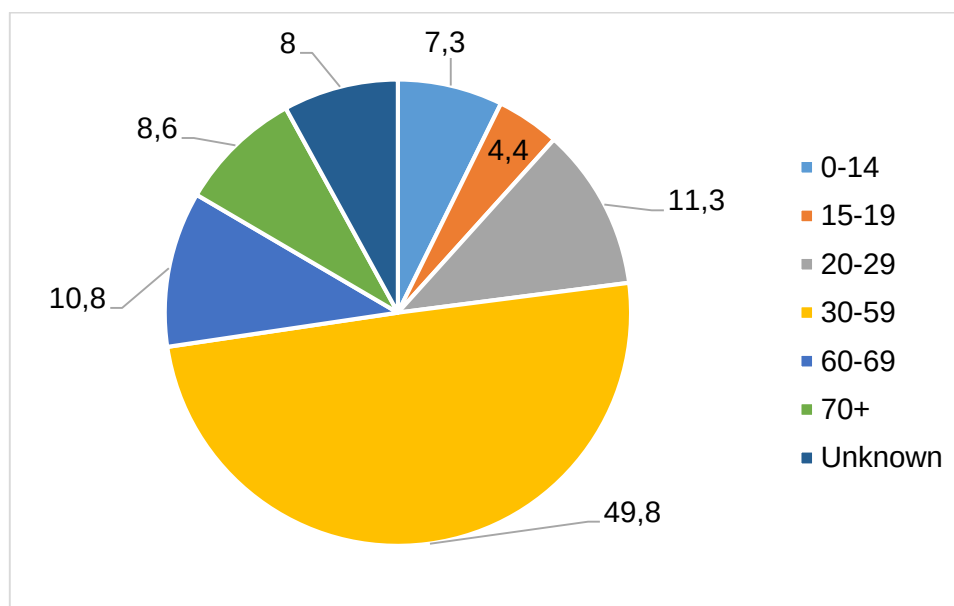


Table 7. Distribution by Age of COVID – 19 Diagnosed Patients Discharged from the Hospital (n = 800)

Age Group	Number	Share (%)
0-4	13	1.6
5-9	17	2.1
10-14	28	3.5
15-19	35	4.4
20-24	49	6.1
25-29	41	5.1
30-34	63	7.9
35-39	62	7.8
40-44	71	8.9
45-49	61	7.6
50-54	72	9.0
55-59	69	8.6
60-64	51	6.4
65-69	35	4.4
70+	69	8.6
Unknown	64	8.0
Total number	800	100

The number of discharged patients was almost equally distributed by gender: 49.4% males and 50.6% females. From the perspective of marital status, up to 70.8% of patients were married and 42.4% were employed. Over 50% of patients were overweight or obese.

Table 8. Distribution of COVID-19 Patients Discharged from the Hospital by Gender and Marital Status, Employment and Body Mass Index (n = 800)

		Number	Share (%)
Gender	Female	395	49,4
	Male	405	50,6
Marital Status	Married	566	70.8
	Other	217	27.1
	Unknown	17	2.1
Employment	Employed	339	42.4
	Unemployed	282	35.3
	Pupil	83	10.4
	Retired	71	8.9
	Unknown	25	3.1
		Number	Share (%)
Body Mass Index	<18.5	31	3.9
	18.5–24.9	271	33.9
	25–29.9	337	42.1
	30 and over	121	16.6
	Unknown	28	3.5
Total Number		800	100.0

69.1 % of patients underwent treatment by the place of hospitalization in inpatient facilities of Tbilisi.

Major disease complications

Among the 800 patients discharged from inpatient facilities, pneumonia was the major complication in 41.3% of cases.

Table 9. Distribution of Patients Discharged from the Hospital Diagnosed with COVID-19 by Complication of the Main Disease (n = 800)

Major complications	Number	Share (%)
Pneumonia	330	41.3
Respiratory failure	105	13.1
Acute cardiovascular failure	35	4.4
Respiratory distress syndrome of adults	30	3.6

Concomitant diseases: Information on concomitant diseases of all hospitalized patients was obtained from their inpatient cards. 209 (26.1%) patients had various, predominantly chronic illnesses in addition to coronavirus disease. The most common concomitant diseases among patients are hypertension (15.5%), other cardiovascular diseases (7.4%) and diabetes (6.8%).

Table 10. Distribution of Concomitant Diseases in Patients Discharged from the Hospital Diagnosed with COVID-19 (n = 800)

Concomitant Diseases	Number	Share (%)
Hypertension	124	15.5
Cardiovascular diseases except for hypertension	59	7.4
Diabetes	54	6.8
Chronic kidney disease	24	3.0
Chronic lung disease	20	2.5
Tumor	16	2.0
Viral hepatitis	12	1.5
Chronic liver disease	12	1.5

Severity of the disease

The following criteria were used to determine the severity of the disease:⁵

- Mild / asymptomatic course - acute respiratory infection without pneumonia;
- Moderate progression - acute respiratory infection with pneumonia, without respiratory failure;
- Severe progression - acute respiratory infection with pneumonia and with or without respiratory failure and sepsis / septicemia;
- Critical progression - the need for managed respiration (non-invasive or invasive ventilation) in the following conditions: severe pneumonia, acute respiratory distress syndrome (ARDS), sepsis / septicemia, septic shock, polyorganism insufficiency.

Depending on the severity of the disease, 58.8% of cases were mild, while 30.8% moderate. In 10.6% of cases, the disease progression was severe or critical.

Table 11. Distribution of COVID-19 Diagnosed Patients Discharged from the Hospital by the Severity of the Disease (n = 800)

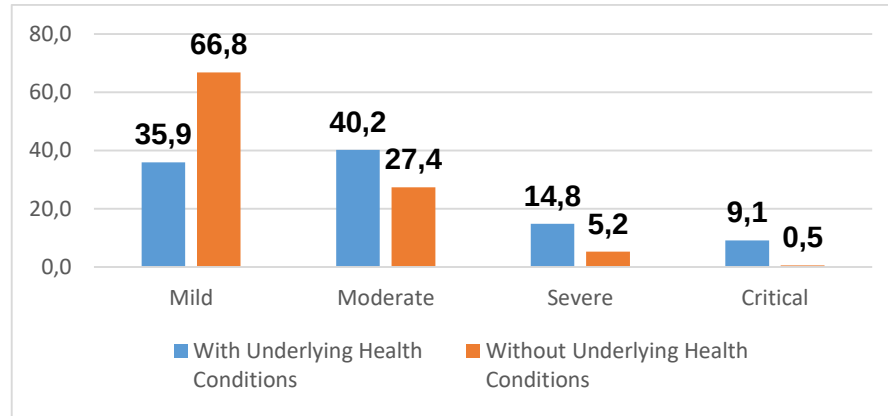
Severity of Disease Progression	Number	Share (%)
Mild	470	58.8
Moderate	246	30.8
Severe	62	7.8
Critical	22	2.8
Total Number	800	100

6.3% of patients (50 patients) were transferred to the Intensive Care Department.

The severity of the disease progression varied considerably depending on the presence of concomitant illness. In patients who did not have concomitant diseases (73.9%), infection was mild or moderate in 94.2%. In 24% of cases, with concomitant aspects, the disease was severe or critical.

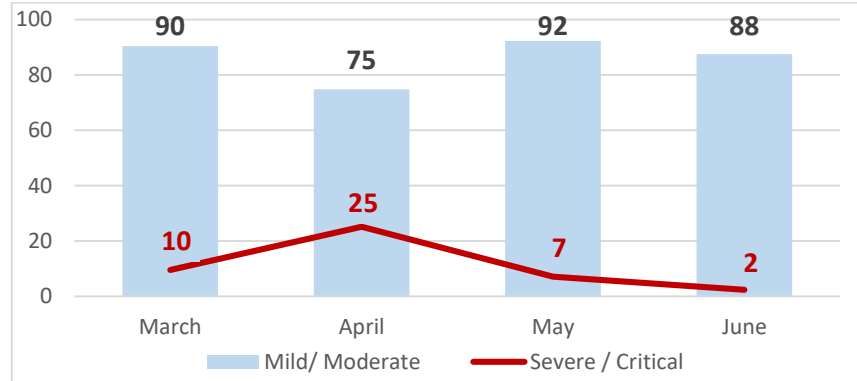
⁵ „Clinical management of infection (COVID-19) caused by novel coronavirus (SARS-CoV-2)”, State Standard for Clinical Situation Management (protocol), Decree 01-119/n

Figure 21. The Severity of the COVID-19 Progression in Patients with and without Concomitant Diseases (n = 800)



The severity of the disease also varied by months. In June 2020, the number of severe and critical cases decreased from 25% to 2% compared to April.

Figure 22. The severity of the COVID-19 disease by months (n = 800)



Bed-days

The average number of bed-days spent at hospital by surveyed patients was 21. The average number of bed-days spent by patients in hospital was higher in patients with concomitant diseases.

Table 12. Distribution of COVID-19 Patients Discharged from the Hospital by Bed - Days (n = 800)

	Average number of bed-days
Presence of concomitant disease	
yes	22
no	21
Severity of disease progression	
Mild	20
Moderate	23
Severe	22
Critical	24
Unknown	22
Average Number	21

Treatment outcome

785 (98%) discharged patients recovered and 15 cases ended with fatal outcome.



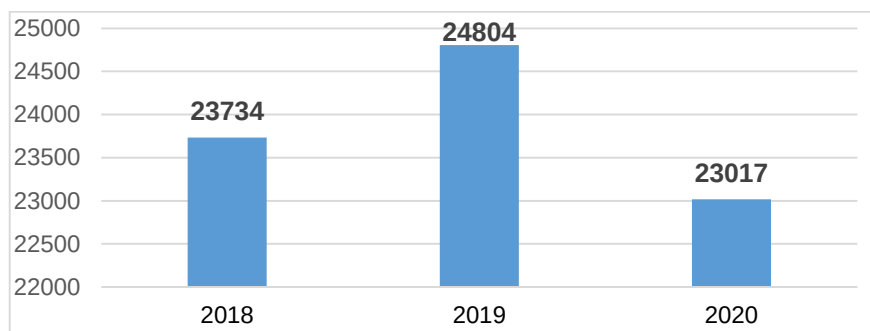
Mortality due to COVID-19

Apart from the number of COVID-19 infected cases, excess mortality is considered in many countries as one of the most significant indicators, to assess the impact (if any) the fast spread of the disease and associated deaths had on the mortality rate.

Excess mortality is defined as the mortality rate in the general population that exceeds the expected rate caused by a particular disease. Relatively high mortality rates for this stage are observed in Belgium, France, Sweden, Spain, Italy, England and the Netherlands.

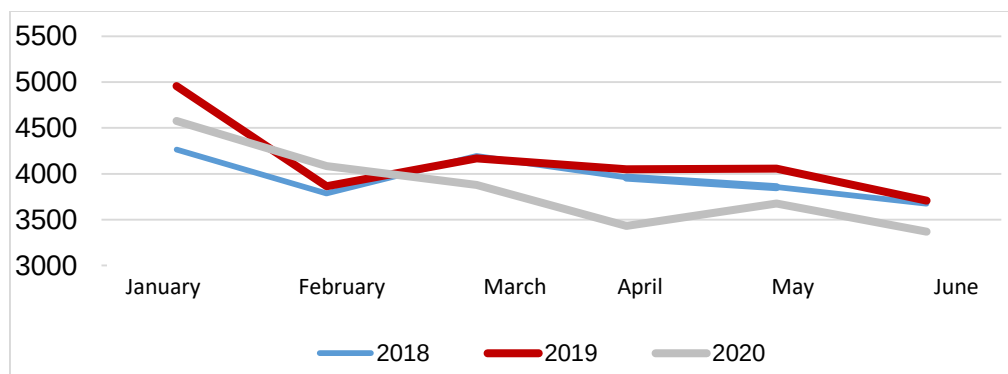
The total number of deaths in Georgia during the first 6 months of 2020 is lower compared to the previous years: less by 7% compared to 2019 and by 1% compared to 2018.

Figure 23. The Number of Deaths due to All causes, (From January 1 through June 30, 2018 – 2020)



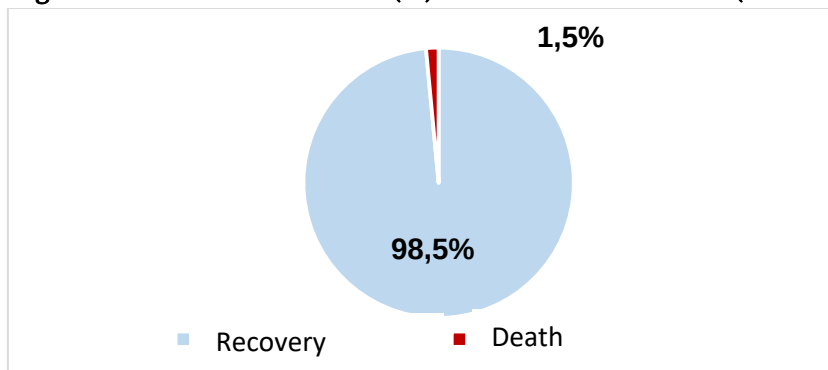
Decline in deaths from January 1 through June 30, 2020 from all causes was 26%, while from March 1 (after the first confirmed case) through June 30 - 13%.

Figure 24. Number of Deaths due to All Causes by Months (From January 1 through June 30, 2018 – 2020)



As of July 11, the total number of deaths due to COVID-19 in Georgia was 15 with the case fatality rate of 1.5%.

Figure 25. Treatment Outcome (%) of COVID – 19 Patients (n = 980)



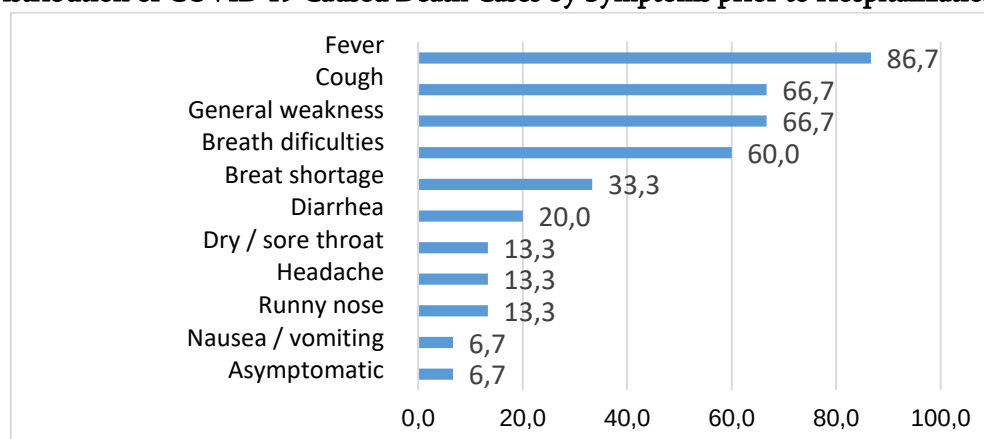
This document analyzes the data for 15 deceased patients according to the following characteristics:

- Clinical symptoms and concomitant diseases prior to hospitalization;
- Gender / age structure;
- Regional distribution of patients according to disease exposure;
- History of hospitalization of patients;
- Complications of the underlying health conditions and concomitant diseases;
- Severity of the disease;
- Bed-days;
- Treatment in the Intensive Care Unit;
- Use of artificial lung ventilation;
- Thanatogenesis of death causes.

Clinical symptoms and underlying health conditions prior to hospitalization

The most frequent among prehospital symptoms were fever (57%) and cough (25%). In 11% of cases the symptoms were not noticed at hospitalization.

Figure 26. Distribution of COVID 19 Caused Death Cases by Symptoms prior to Hospitalization_(%) (n=15)



Symptoms prior to hospitalization most commonly included fever (86.7%, 95% CI 59.5% -98.3%), cough and fatigue (66.7%, 95% CI 38.4% -88.2%), and dyspnea (60%, 95% CI 32.3% -83.7%), respiratory failure (33.3%, 95% CI 11.8% -61.6%), the proportion of asymptomatic cases was 6.7% (95% CI 1.0% -31.9%).

Gender/ age structure

Patients over 70 year of age predominate in the age structure of the deceased. By gender, the cases were almost evenly distributed.

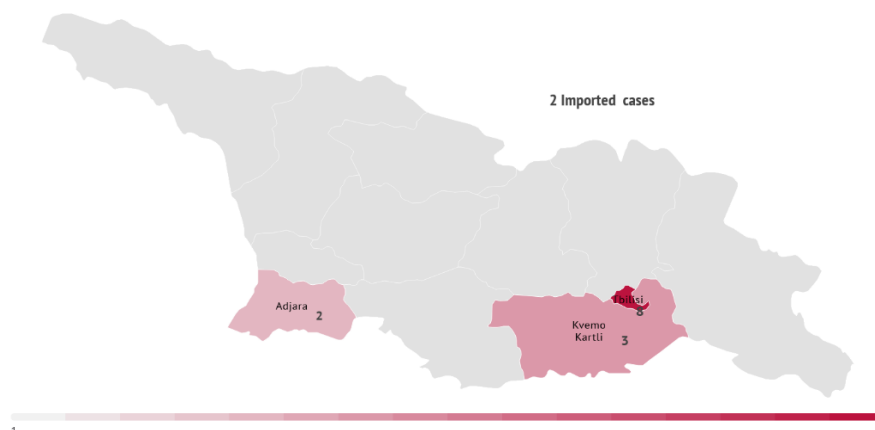
Figure 27. Distribution of Deaths due to COVID-19 by Gender and Age (n=15)



Regional distribution of patients

According to the place of exposure, among the deceased persons, 8 people were infected in Tbilisi, 3 in Kvemo Kartli and 2 in Adjara. There were 2 imported cases: one from Azerbaijan and another from Armenia.

Map 2. Regional Distribution of Deaths due to COVID-19 by the Place of Exposure (n = 15)



History of hospitalization in the anamnesis of patients

More than half of the deceased patients had a history of hospitalization due to comorbidity.

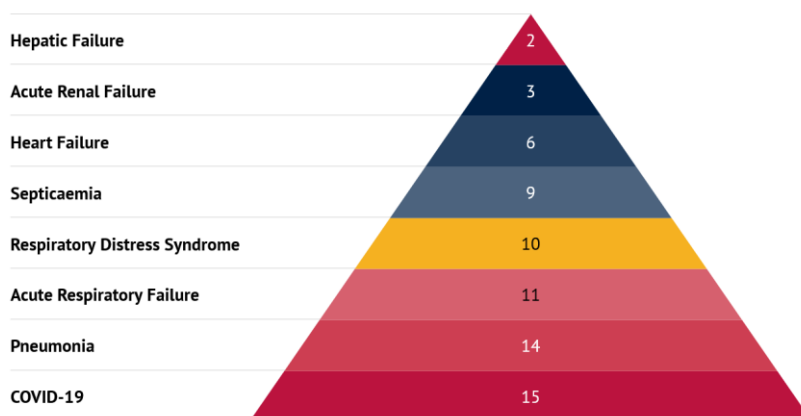
Figure 28. History of Hospitalization in the Anamnesis of Deceased Patients with COVID-19 due to comorbidities in the Last 6 Years (n = 15)



Complications of the underlying health conditions and comorbidities

In 93% of the fatal cases, the underlying disease was complicated by pneumonia, including 78% with the development of acute respiratory distress syndrome. Septicemia was observed in 64% of deceased patients.

Figure 29. Distribution of Deaths due to COVID-19 by Complication of Underlying Health Conditions (n = 15)



All patients who died due to COVID-19 had various concomitant chronic diseases, the absolute majority of which was represented by the cardiovascular diseases and chronic lung disease in 40% of cases.

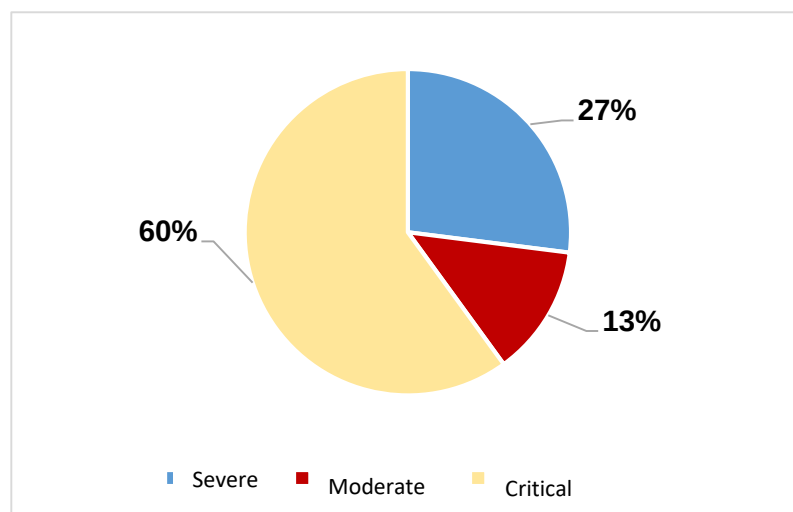
Table 13. Distribution of Deaths Caused by COVID-19 by the Presence of Comorbidities (n = 15)

	Number	%
Diseases of the cardiovascular system (except hypertension)	15	100.0
Hypertension	13	86.7
Chronic lung disease	6	40.0
Diabetes	5	33.3
Dementia	2	13.3
Thyrotoxicosis	1	6.7
Immunodeficiency	1	6.7
Congenital malformations	1	6.7
Total	800	100

Severity of the disease

Depending on the severity of the disease progression, 87% of fatal cases were severe or critical.

Figure 30. Distribution of COVID-19 Diagnosed Patients Discharged from Inpatient Facility by Disease Severity (n = 15)



Treatment in the intensive care unit and the use of artificial lung ventilation

93.3% of deceased patients were treated in the intensive care unit.

Bed-days

The average number of bed-days spent by patients at hospital were 24.



Sequencing and Phylogenetic Analysis of Novel Coronavirus SARS-COV-2 Circulating in Georgia

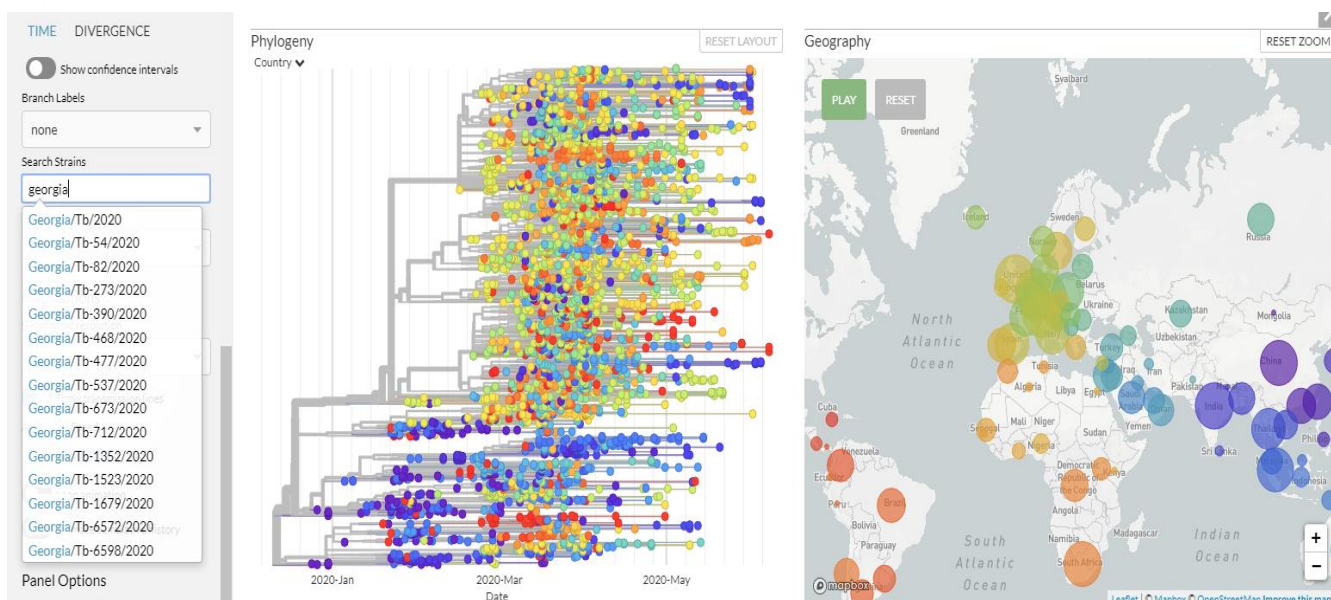
Within this study the whole genome sequencing of SARS-COV-2 circulating in Georgia was performed at the National Center for Disease Control and Public Health. The study utilized Next-Generation-Sequencing (NGS) based technology and bioinformatics. This is the first NGS related study of COVID-19 in the region. The overall objective of it is genetic characterization of the SARS-COV-2 virus, causative agent of severe, acute respiratory syndrome. The main goal is the whole genome sequencing and phylogenetic analysis of strains of SARS-COV-2 virus circulating in Georgia.

The study utilized clinical samples collected under surveillance of COVID-19 pandemic by the National Center for Disease Control and Public Health of Georgia. PCR positive clinical specimens with high viral load were sequenced using NGS Illumina technology. The work was carried out at the Lugar Center for Public Health Research.

Short Review of the Results

Under this study 21 SARS-COV-2 whole genomes were sequenced, assembled and uploaded into the international database – GISAID. The viral genome data of the database allowed us to find the niche of the Georgian strains on worldwide phylogeny and track the detected cases.

Figure 31. Georgian SARS-COV-2 Strains Uploaded to GISAID Database Along with Worldwide Data



Based on these data phylogenetic analysis of the local strains was performed (Figure 2). As a result, SARS-COV-2 strains spread in Georgia were distributed in several groups according to the source of introduction of the infection. E.g. two of them were allocated in two different clusters with Spanish strains in accordance with their travel history; the cases and their contacts introduced from Italy were placed with the strains from this country; the part of the cases from local outbreaks were grouped with Iranian strains and part with cluster of Russian/French strains.

The investigation in this direction continues at our center. Besides its scientific value the study provides great help to surveillance of COVID-19 in Georgia.

hCoV-19/Wuhan/IVDC-HB-01/2019|EPI_ISL_402119|2019-12-30

hCoV-19/Georgia/Tb-390/2020|EPI_ISL_416477|2020-03-08

hCoV-19/Spain/Valencia36/2020|EPI_ISL_420121|2020-03-09

hCoV-19/Spain/Madrid_H12_36/2020|EPI_ISL_428699|2020-03-09

hCoV-19/Spain/Madrid_H12_4011/2020|EPI_ISL_428710|2020-03-22

hCoV-19/Spain/COV00934/2020|EPI_ISL_452638|2020-03-27 1

hCoV-19/Spain/COV00934/2020|EPI_ISL_452638|2020-03-27 2

hCoV-19/Spain/Valencia34/2020|EPI_ISL_420119|2020-03-09

hCoV-19/Spain/Valencia29/2020|EPI_ISL_420114|2020-03-09

hCoV-19/Spain/Valencia58/2020|EPI_ISL_425182|2020-03-10

hCoV-19/Spain/Valencia59/2020|EPI_ISL_425183|2020-03-10

hCoV-19/Iran/KHGR-01-IP-8206/2020|EPI_ISL_424349|2020-03-09

hCoV-19/Iran/KHGR-1.1-IP-8206/2020|EPI_ISL_442523|2020-03-09...

hCoV-19/Georgia/Tb-1523/2020|EPI_ISL_420142|2020-03-30

hCoV-19/Georgia/Tb-82/2020|EPI_ISL_415644|2020-02-28

hCoV-19/Georgia/Tb-7851/2020|EPI_ISL_477169|2020-05-01

hCoV-19/Iran/KHGR-3-2178/2020|EPI_ISL_445088|2020-03-26

hCoV-19/Iran/KHGR-2-2162/2020|EPI_ISL_437512|2020-03-26

hCoV-19/Iran/KHGR-2-2162/2020|EPI_ISL_442044|2020-03-26

hCoV-19/Georgia/Tb-537/2020|EPI_ISL_416480|2020-03-11

hCoV-19/Georgia/Tb-54/2020|EPI_ISL_415641|2020-02-27

hCoV-19/Georgia/Tb-468/2020|EPI_ISL_415643|2020-03-10

hCoV-19/Italy/NMI2-8/2020|EPI_ISL_451301|2020-02-03

hCoV-19/Italy/NMI2-N/2020|EPI_ISL_451302|2020-01-30

hCoV-19/Italy/NMI1-isl/2020|EPI_ISL_410545|2020-01-29

hCoV-19/Italy/NMI1-N/2020|EPI_ISL_451306|2020-02-03

hCoV-19/Italy/NMI1-B1/2020|EPI_ISL_451298|2020-02-12

hCoV-19/Russia/Chechenya-83801/2020|EPI_ISL_428909|2020-03-26

hCoV-19/Russia/Chechenya-83803/2020|EPI_ISL_428916|2020-03-26

hCoV-19/Spain/Valencia522/2020|EPI_ISL_447473|2020-03-26

hCoV-19/Spain/COV001877/2020|EPI_ISL_452468|2020-03-10

hCoV-19/Spain/Valencia218/2020|EPI_ISL_436313|2020-03-25

hCoV-19/Georgia/Tb-1352/2020|EPI_ISL_420140|2020-03-28

hCoV-19/Georgia/Tb-6598/2020|EPI_ISL_447055|2020-04-29

hCoV-19/Georgia/Tb-5727/2020|EPI_ISL_481483|2020-04-25

hCoV-19/Georgia/Tb-7856/2020|EPI_ISL_481380|2020-05-01 (revers...)

hCoV-19/Georgia/Tb-3118/2020|EPI_ISL_470877|2020-04-15

hCoV-19/France/ARA12632/2020|EPI_ISL_420614|2020-03-23

hCoV-19/France/ARA12626/2020|EPI_ISL_420612|2020-03-23

hCoV-19/Georgia/Tb-27822/2020|EPI_ISL_471529|2020-06-11

hCoV-19/Georgia/Tb-22208/2020|EPI_ISL_470876|2020-05-29

hCoV-19/France/DF6073/2020|EPI_ISL_443314|2020-04-14

hCoV-19/France/B2351/2020|EPI_ISL_416513|2020-03-07

hCoV-19/France/B2344/2020|EPI_ISL_416509|2020-03-06

hCoV-19/France/B2335/2020|EPI_ISL_416504|2020-03-02

hCoV-19/Georgia/Tb-673/2020|EPI_ISL_416478|2020-03-14

Consensus

hCoV-19/Italy/TE5687/2020|EPI_ISL_436723|2020-03-20

hCoV-19/Italy/Siena-1/2020|EPI_ISL_454733|2020-03-01

hCoV-19/Georgia/Tb-273/2020|EPI_ISL_416479|2020-03-05

hCoV-19/Italy/VR_20COV11-181/2020|EPI_ISL_452182|2020-03-23

hCoV-19/Italy/TE5512/2020|EPI_ISL_420566|2020-03-19

hCoV-19/Russia/Perm-82707/2020|EPI_ISL_428895|2020-03-24 2

hCoV-19/Russia/Perm-82707/2020|EPI_ISL_428895|2020-03-24 1

hCoV-19/Russia/SIPetersburg-Ril60655/2020|EPI_ISL_430110|2020-...

hCoV-19/Russia/SIPetersburg-Ril60655/2020|EPI_ISL_430110|2020-...

hCoV-19/Georgia/Tb-1679/2020|EPI_ISL_420144|2020-04-01

hCoV-19/Italy/VR_20COV25-80/2020|EPI_ISL_452186|2020-03-28 1

hCoV-19/Italy/VR_20COV25-80/2020|EPI_ISL_452186|2020-03-28 2

hCoV-19/Italy/VR_20COV31-18/2020|EPI_ISL_452187|2020-03-31 1

hCoV-19/Italy/VR_20COV17-11/2020|EPI_ISL_452183|2020-03-24 2

hCoV-19/Italy/VR_20COV31-18/2020|EPI_ISL_452187|2020-03-31 2

hCoV-19/Italy/VR_20COV17-11/2020|EPI_ISL_452183|2020-03-24 1

hCoV-19/France/ARA12269/2020|EPI_ISL_419187|2020-03-22

hCoV-19/Italy/VR_20COV21-37/2020|EPI_ISL_422438|2020-03-25

hCoV-19/Italy/VR_20COV18-48/2020|EPI_ISL_452184|2020-03-24

hCoV-19/Italy/VR_20COV23-50/2020|EPI_ISL_452185|2020-03-26

hCoV-19/Italy/UniMI02/2020|EPI_ISL_417446|2020-02-24

hCoV-19/Italy/ILO-13075-N/2020|EPI_ISL_451309|2020-03-01

hCoV-19/Georgia/Tb/2020|EPI_ISL_416482|2020-03-13

hCoV-19/Italy/PV-5314-N/2020|EPI_ISL_451307|2020-02-21

hCoV-19/Italy/INMI6/2020|EPI_ISL_419254|2020-03-23

hCoV-19/Italy/VR_20COV46-23/2020|EPI_ISL_452191|2020-04-03

hCoV-19/Italy/VR_20COV46-8/2020|EPI_ISL_452190|2020-04-03

hCoV-19/Italy/FVG-ICGEB_S14/2020|EPI_ISL_428853|2020-03-30

hCoV-19/Georgia/Tb-477/2020|EPI_ISL_415642|2020-03-10

hCoV-19/Georgia/Tb-6572/2020|EPI_ISL_447056|2020-04-2

hCoV-19/Italy/FVG-ICGEB_S8/2020|EPI_ISL_417421|2020-03-01

hCoV-19/Spain/COV00954/2020|EPI_ISL_452621|2020-03-28

hCoV-19/Spain/Madrid201706/2020|EPI_ISL_419235|2020-03-07

hCoV-19/Georgia/Tb-712/2020|EPI_ISL_416481|2020-03-16

hCoV-19/Spain/COV001324/2020|EPI_ISL_452549|2020-03-23

hCoV-19/Spain/COV000876/2020|EPI_ISL_452681|2020-03-25

hCoV-19/Spain/Madrid_LP27_2548/2020|EPI_ISL_428681|2020-03-11

5.0E-4

Communication campaign related to COVID-19 and the Hotline

Communication campaign about COVID-19 started in January 2020, prior to the first case of the disease was detected in the country. The social media campaign has been intensified. The National Center for Disease Control and Public Health, in collaboration with donor organizations, has prepared informational electronic banners, which have been posted on various websites and video portals. Video lectures were prepared for medical staff. Information and educational materials were created, including for ethnic minorities living in Georgia. To date CDC, WHO and other international evidence-based educational materials have been translated and adapted, visual materials, educational posters, infographics and videos have been prepared and distributed on social networks. Ongoing information is being provided to the media and the public. The social campaign has been launched on Twitter and Instagram.

Briefings for the media and the public were held on a daily basis. The official Facebook page of the Center still holds live briefings. In collaboration with donor organizations, several video clips were prepared:

https://www.youtube.com/watch?time_continue=14&v=1z9E8XkBKxU&feature=emb_logo

<https://www.youtube.com/watch?v=ApmeYGjIp1U&feature=youtu.be>

https://www.youtube.com/watch?v=vTvs0ypQWxw&feature=emb_logo

https://www.youtube.com/watch?v=O8N8HSCLK2Y&feature=emb_logo

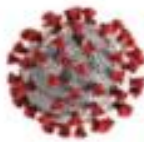
https://www.youtube.com/watch?v=ApmeYGjIp1U&feature=emb_logo

https://www.youtube.com/watch?v=Llbf4rR6LM&feature=emb_logo

https://www.youtube.com/watch?v=6iJUZg52Yyg&feature=emb_logo

At the beginning of the pandemic, informational advertisements were prepared and placed on street monitors.

რა უნდა იცოდეთ COVID-19-ისგან საკუთარი თავის და გარემომყოფთა დასაცავად



ზოგადი ინფორმაცია COVID-19-ის შესახებ

- COVID-19 SARS-CoV-2 ვირუსით გამოწვეული დაავადებაა, რომელიც ადამიანიდან ადამიანს გადაეცემა
- COVID-19-ის გამომწვევი ვირუსი კორონავირუსების ახალი შტამია, რომელიც მთელ მსოფლიოში გავრცელდა
- COVID-19 შესაძლოა მიმდინარეობს მსუბუქად ან უსიმპტომოდ, ან გამოიწვიოს მძიმე დაავადება



როგორ ვრცელდება COVID-19?

- ინფიცირება შესაძლებელია მოხდეს დაავადებულთან მჭიდრო კონტაქტით (1 მეტრზე ნაკლები მანძილი)
- რესპირაციული წვეთებით ინფიცირებული ადამიანის მიერ საუბრის, ხელების და ცემინების დროს
- ვირუსით დაბინძურებულ ზედაპირზე ან საგანზე შეხების შემდეგ დაუბანელი ხელების თვალებზე, პირსა და ცხვირზე შეხებით



დაიცავით საკუთარი თავი და გარემომყოფები COVID-19-ისგან

- ამჟამად არ არსებობს ვაქცინა, რომელიც COVID-19-ისგან დაგიცავთ. საკუთარი თავის დასაცავად ხაუკეთესო გზა ვირუსის თავიდან აირიდებაა
- დარჩით სახლში, აუცილებელი საქმიანობების გარდა, და თავიდან აირიდეთ სხვა ადამიანებთან მჭიდრო კონტაქტი
- დაასუფთავეთ და საგულდაგულოდ განწმინდეთ ზედაპირები, რომლებსაც ყველაზე ხშირად უხვით
- დაიბანეთ ხელები საპნითა და გამდინარე წყლით სულ მცირე 20 წამის განმავლობაში ან დაიმუშავეთ სპირტის შემცველი ხსნარით



დაიცავით დისტანცია

- ისარგებლეთ ონლაინ სერვისებით, რამდენადაც შესაძლებელია (მაგ. საბანკო პროცედურები, ექიმთან კონსულტაცია)
- საშოგადოებრივი თავშეყრის დახურულ ადგილებში ყოფნისას დაიცავით 2 მეტრიანი დისტანცია; ნივთები დაამუშავეთ სადენინდექციო ხსნარებით
- შინოღების სერვისით სარგებლობისას შეზღუდულად შეიძლება პირდაპირი კონტაქტი



ავადმყოფობის დროს COVID-19-ის გავრცელების შესაზომებლად

- დარჩით სახლში და სასწრაფოდ დაუკავშირდით ექიმს
- განცალკევდით ოჯახის წევრებისგან და დაელოდეთ ექიმის ინსტრუქციას
- ამჟამად არ არსებობს COVID-19-ის სპეციფიკური მკურნალობა, თუმცა ინფიცირებულებს უტარდებათ მკურნალობა სიმპტომების შემსუბუქების მიზნით



იცოდეთ მძიმე დაავადებების განვითარების რისკის შესახებ

- ნებისმიერი ადამიანი შეიძლება დაინფიცირდეს COVID-19-ით
- მძიმე დაავადების განვითარების განსაკუთრებული რისკი ქვეშ იმყოფებიან ხანდაზმულები და ქრონიკული დაავადებების მქონე პირები



საერთაშორისო ეპიდემიოლოგიური
კონსტიტუციური
კონფერენცია
საერთაშორისო ცენტრი
დამავადებისა და
საზოგადოებრივი ჯანდაცვისათვის

03.05.2020 06/15/2020

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☎ მკვლელ ხაზი: 116 001; 15 05
📅 25.05.2020

COVID-19

#COVID19 #ITHRIVE

COVID-19-ის გავრცელების დროს, ახალგაზრდებს არამხოლოდ შეუძლიათ ინფექციის გავრცელება, არამედ თავადაც იმყოფებიან COVID-19-ით ინფიცირების რისკის ქვეშ*

10 რჩევა თქვენი და გარშემომყოფების დასაცავად



ფიზიკური დისტანცია დაგეხმარებათ დაიცვათ თავი COVID-19-ისგან



ხშირად დაიბანეთ ხელები საპნითა და წყლით ან დაიმუშავეთ სპირტის შემცველი ხსნარით



საგულდაგულოდ დაასუფთავეთ ზედაპირები, რომლებსაც ყველაზე ხშირად ეხებით, მაგ: მობილური ტელეფონი, კომპიუტერი, კარის სახელები და სხვა



COVID-19-თან დაკავშირებული სიტუაცია შესაძლოა სტრესული აღმოჩნდეს ახალგაზრდებისთვისაც. შეინარჩუნეთ სოციალური კონტაქტი ახლობლებთან დისტანციურად



შეზღუდეთ სოციალური შედეის გამოყენება. თავიდან აიცილეთ მითებისა და დეზინფორმაციის ზეგავლენა სანდო წყაროების გამოყენებით



იყავით ფიზიკურად აქტიური სახლის პირობებში - ივარჯიშეთ, იცეკვეთ, დააკადით იოგით, შედიტაციით



შეინარჩუნეთ ჩვეული რუტინა სოციალური დისტანცირების გათვალისწინებით, რაც შეგინარჩუნებს სიმშვიდეს და დაგეხმარებათ სიტუაციის კონტროლში



თუ დახმარება დაგჭირდებათ, მიმართეთ თქვენთვის სანდო უფროს ადამიანს ან დარგის პროფესიონალს



თუ ავად ხართ, დარჩით სახლში და დაუყოვნებლივ დაუკავშირდით ექიმს



გაითვალისწინეთ ადგილობრივი უწყებების რეკომენდაციები და იყავით უსაფრთხო

* ახალგაზრდებსაც აქვთ COVID-19-ით გამოწვეული დაავადების გართულების, პოსტალიზაციისა და გარდაცვალების რისკი; მათ, ამავდროულად, შესაძლოა უნებურად გაავრცელონ ვირუსი უფრო მონაცვლად ადამიანებზე, რომლებსაც დაავადების ბოლო გართულებებისა და ფატალური შედეგის გამოვლარების მაღალი რისკი აქვთ



საქართველოს ეროვნული ცენტრი
კონტაქტური და ინფექციური
კვლევისა და პირდაპირი
საქართველოს ეროვნული ცენტრი
საქართველოს ეროვნული ცენტრი
საქართველოს ეროვნული ცენტრი



World Health
Organization

StopCoV.ge; NCDC.GE

☎ ცხელი ხაზი: 116 001; 15 05; 144

📅 17.07.2020

Hotline of the National Center for Disease Control and Public Health (NCDC) 116 001

Receiving calls to the hotline of the National Center for Disease Control and Public Health with respect to COVID-19 issues began on January 23, 2020. In order to respond appropriately, a total of 43 people were gradually trained to perform the function of an operator on the hotline, including:

- Employees hired under the labor contract for the Center hotline - 3;
- Employees of the Medical Statistics Department of the Center - 11;
- Employees of the Non-Communicable Diseases Department of the Center - 14;
- Employees hired under labor contract within the scope of *Hepatitis C* State Program - 6;
- Volunteer students (Tbilisi State Medical University) - 9.

Management of incoming calls accepted at the hotline has significantly contributed to stopping non-purposeful referrals of patients to medical facilities. At the initial stage of the pandemic, in conditions of informational deficiency and panic, the bulk of the population's calls was being directed exactly to 116 001. It should be noted that the public confidence in the Center hotline during this period was quite high, to which also contributed the launch of so-called feedback principle – implying reverse communication to callers and provision of further detailed responses to asked questions regarding numerous issues.

As of July 11, 2020, 14 people were performing operator functions at the hotline, including:

- Employee hired under the labor contract on the hotline of the center - 3;
- Employee hired under a labor contract within the scope of *Hepatitis C* State Program - 6;
- Volunteer student (Tbilisi State Medical University) - 5.

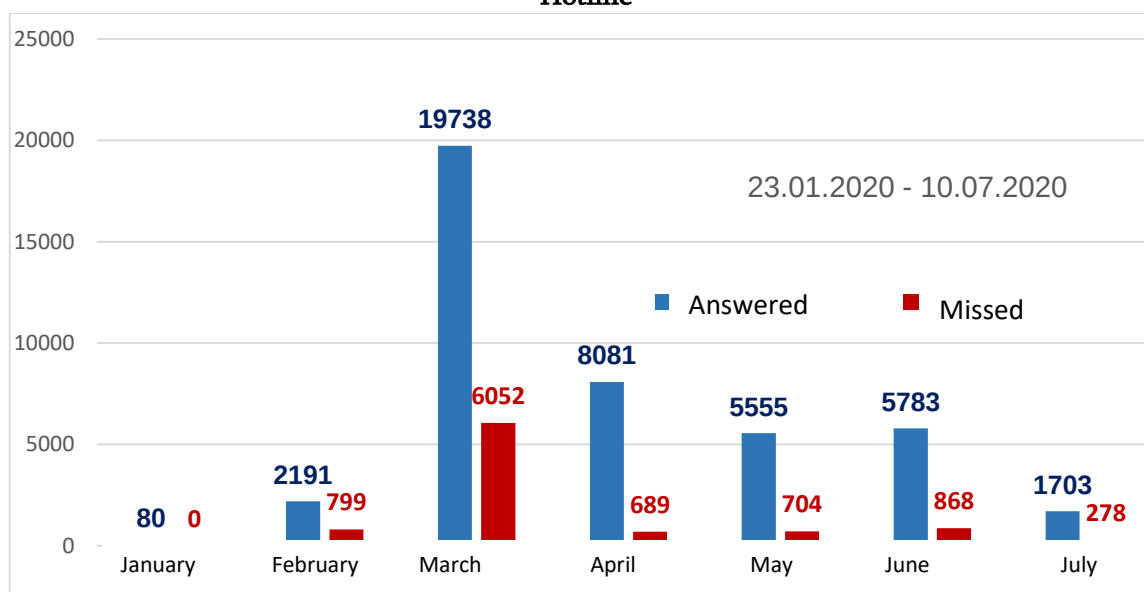
The total number of calls received by the hotline from January 23 through July 10, 2020, was 52 521, including:

- answered: 43 131 Call (82 %)
- missed: 9 390 calls (18 %).

Hotline work hours:

- Working days: 09:00 - 23:00
- Non-working days: 10:00 - 20:00

Figure 32. Total Number of Incoming Calls during the Period from (23. 01. 2020 to 11. 07. 2020) at the Hotline



Hotline of the National Center for Disease Control and Public Health, Georgian Psychosocial Assistance Association "Trust" and Club "Synergy" 2 911 000

Since apart from the legislative, logistical and epidemiological issues, the demand for psychological assistance was frequent, the Georgian Association of Psychosocial Assistance "Trust", the National Center for Disease Control and Public Health and the club "Synergy", with funding from the Open Society Georgia Foundation, provided emergency psychological assistance through hotline 2 911 000, ensuring counseling from both the psychologist and the psychiatrist and, if necessary, the appropriate referral.



International Partnership and Communication

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. Collaboration 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 have taken place over the past six months.

The meeting of the National Center for Disease Control with the Ambassador of the Republic of Korea was fruitful, presenting in detail the country's experience and success factors, such as the testing strategy for the new coronavirus containment phase and etc.

The cooperation of the National Center for Disease Control and Public Health with the Embassy of Israel in Georgia and the Mashavi Center is important. During the pandemic, experiences are being actively shared between Israel and Georgia.

In July 2020, Ms. Kelly Degnan, the Ambassador Extraordinary and Plenipotentiary of the United States of America, paid a visit to the National Center for Disease Control and Public Health. During the visit, the successful response of Georgia in the fight against the COVID-19 pandemic was discussed and the directions of future cooperation were outlined.

On April 30, 2020, a Memorandum of Understanding was signed between the National Center for Disease Control and Public Health and the United Nations Children's Fund in Georgia, according to which UNICEF will continue supporting the Centers for Disease Control in the fight against the COVID-19 pandemic. This document is a continuation of the long-term close and productive partnership established between these two organizations. With the support of the United States Agency for International Development (USAID) and the Estonian Development Agency, the UNICEF has donated rapid detection equipment to the Center to investigate lead sources.

On 23 July 2020, the Ministry of Foreign Affairs of Georgia and the EU Delegation organized a Virtual Meeting for the Twinning Project Beneficiaries to share experience on aspects of ongoing Twinning projects implementation in Georgia, as well as on problems and challenges during the COVID 19 pandemic, to discuss future plans and to make recommendations.

During the pandemic, the Center took part in online meetings, webinars, webex meetings and teleconferences, which facilitated the sharing of expert evaluation consultations and experiences with leading healthcare institutions in different countries.

The People's Republic of China was also one of the first countries to stand by Georgia in the fight against the pandemic, which was manifested in the active sharing of experience and information through online meetings and video conferencing on issues such as infection prevention and control, epidemiological surveillance, diagnostics and treatment related issues, contact management, and case monitoring. In addition, the Chinese government provided Georgia with English-translated protocols and guidelines for epidemic prevention, diagnosis and treatment, contact management and case monitoring. The Chinese side

also provided Georgia with COVID test kits, consumables, personal protective equipment, some of which was received as a donation by the country.

In May 2020, under the initiative of the UK Ambassador to Georgia, a video conference was held to provide information on the measures taken and planned by Georgia in the fight against COVID-19.

In April 2020, the Ambassador of the Federal Republic of Germany to Georgia organized a Webex meeting, which aimed to share information and experience of the National Center for Disease Control and Public Health on the fight against pandemics. Ambassadors and representatives of different countries received comprehensive answers to their questions at the meeting.

A virtual workshop with the Robert Koch Institute in Germany was important, where German colleagues shared their own experiences with the novel coronavirus, testing approaches, nuances of epidemiological surveillance, and reporting features.

Regular distance meetings and seminars were held by the National Center for Disease Control in collaboration with the Association of European Schools of Public Health (ASPHER). Important recommendations based on assertive medicine were shared by European colleagues. Within the framework of the existing cooperation, a textbook on the main epidemiological concepts of the COVID-19 pandemic "How to Count the Illness?" Was prepared and published in Georgian (the electronic version of the publication is available on the official website of the center <https://www.ncdc.ge/Handlers/GetFile.ashx?ID=2f64b73d-c22c-440c-91a6-762b2cc90052>).

Georgia's response to the pandemic has been considered as a successful example by the world's leading healthcare organizations. Eurasia Center – Atlantic Council organized the webinar: COVID-19 in the Caucasian States (<https://www.atlanticcouncil.org/>).

An international webinar on the Common Crisis and Prospects was initiated and organized by the European Policy Analytical Center (CEPA). The Georgian National Center for Disease Control and Public Health, the Department of Infectious Diseases and Infection Control of the University of Latvia, and the Sociology Department of the University of Cambridge shared their successful experience at the webinar. The discussions highlighted the role of the Lugar Center in Georgia during the COVID-19 pandemic, and noted the periodic attack of negative media propaganda against the Center. <https://www.youtube.com/watch?v=QGfwSghamk0>

In June and July, the Center's management and staff held online meetings with representatives of the Ministries of Health of Armenia, Kazakhstan, and Tajikistan on sharing experiences and future cooperation issues.

With the support of the US Defense Threat Reduction Agency (DTRA), 12 online masterclasses were held by foreign experts (including BMJ) for the NCDC, neighboring countries and Silk Road Biosurveillance Network, where COVID-19 related issues were discussed for raising awareness and knowledge among the field specialists.

Negotiations were conducted with the DTRA on the purchase of testing and personal protective equipment for the healthcare system, including the Center, which were successfully completed. In May, the US Embassy handed high quality testing equipment and tools for conducting 4 000 golden standard RT-PCR

tests, purchased from the International Atomic Energy Agency, as well as individual protection equipment worth up to \$ 20,000 over to the Ministry of Refugees, Labor, Health and Social Affairs as a gift.

Communication with DTRA is currently underway to strengthen the public health sector, reflected in technical and financial support to retrain human resources and strengthen the existing capacity of the Center and Public Healthcare Network to prepare for and respond to a possible second wave of COVID-19. At the first stage, a training process management plan developed with DTRA experts has been prepared and further steps are being taken.

The US Centers for Disease Control and Prevention (CDC) has been in constant contact with the NCDC since the pandemic outbreak: to share the latest CDC guidelines, technical support and technical equipment for laboratory diagnostics. Future plans were made for possible assistance in the fight against the pandemic and the establishment of a regional office in the Center building.

The National Center for Disease Control has been working closely with the Ministry of Education, Science, Culture and Sports and the National Center for Assessment and Examinations to prevent the transmission of the new coronavirus through public health measures planned for the 2020 Unified National and General Master Examinations, teachers' qualification exams and students' grant contest.

The National Center for Disease Control and Public Health, with the support of the United Nations Population Fund, has conducted a series of distance education sessions for young people across the country, including raising awareness of COVID-19, introducing scientific evidence, teaching recommended measures for infection prevention, supporting peers to make the country's response to the virus even more effective.

CONCLUSION

The document prepared by the National Center for Disease Control and Public Health, covering analysis of the measures taken by the Center and descriptive study (including 980 patients starting with the first confirmed case and the hospitalized and discharged 800 patients) represents interesting information both for local and international partners.

The effective (early and timely) measures taken by Georgia have to some extent reduced the growing number of infection cases. Despite the achieved results, the intensive implementation of preventive / restrictive measures, detection of infected persons through testing, contact tracing and following isolation remain as important directions for managing epidemic in the country.

The existing approach should be further strengthened. The group of experts is actively working on responding to the healthcare crisis and mitigating damages caused by the following waves.

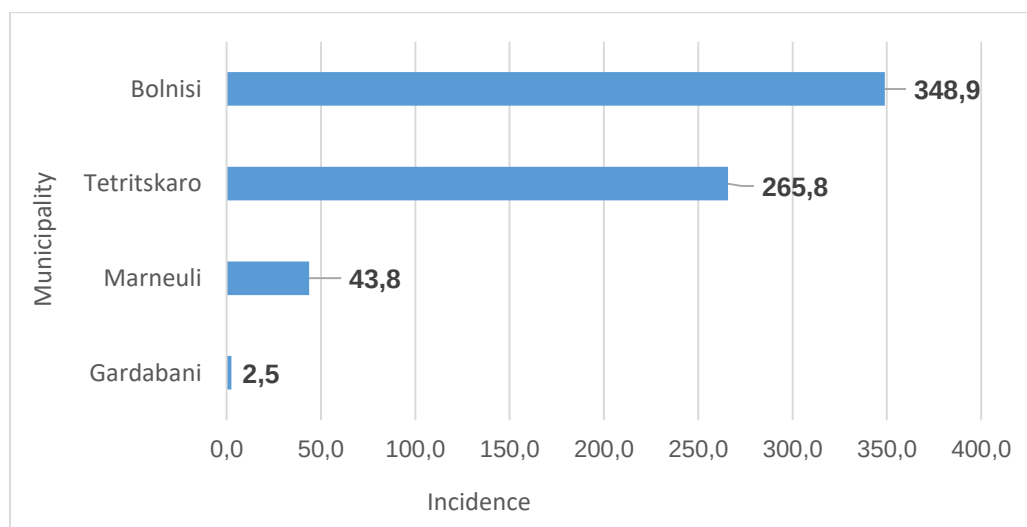
In addition, it would be advisable to create periodical health monitoring system for recovered patients at outpatient level, in order to investigate potential long-term outcomes of yet unknown infection.



Analysis of Epidemiological Situation in Kvemo Kartli

As of July 11, 302 cases of COVID-19 were registered in Kvemo Kartli municipality, which represented 31% of cases detected across the country. Specifically, 194 cases were identified in Bolnisi, 59 cases in Tetrtskaro, 47 in Marneuli and 2 cases in Gardabani.

Figure 33. COVID-19 Incidence per 100 000 of Population, Kvemo Kartli (as of July 11, 2020)



Bolnisi Municipality

Since March 23, Bolnisi Municipality had been under a strict quarantine regime, which was lifted on May 23. Two villages (Mushevani and Geta) were left in isolation until July 2.

Cases were registered in 7 settlements of the municipality: in town of Bolnisi and villages: Kvemo Bolnisi, Savaneti, Mushevani, Geta, Rachisubani, Khatisopheli.

As of July 11, 194 cases were reported in the municipality, representing 64% of cases identified in Kvemo Kartli region, of which 4 died and the rest got recovered.

Marneuli Municipality

Starting from March 23, Marneuli Municipality was under the strict quarantine regime, which was lifted on May 18.

The first local case was reported on March 23, and the last one was registered on June 7 in the village of Kirachmughanlo. Cases were registered in 7 territorial units: in Marneuli and the villages of Maret, Maradisi, Kirachmughanlo, Tazakendi, Saimerlo and Tsereteli.

The number of confirmed cases equaled to 47, 16 % of Kvemo Kartli cases. No death was reported. All patients got recovered.

Tetrtskaro Municipality

Tetrtskaro was under a strict quarantine regime since April 26, which was lifted on June 4.

The first case in Tetrtskaro municipality was registered on April 24, while the last on May 21. The cases were mostly registered in the villages of Tsintskaro, Khaishi, Jorjashvili, Marabda and Golteti.

As of July 11, 59 cases were confirmed for COVID, representing 19% of confirmed cases in Kvemo Kartli, of which 31 were employees of medical institutions, the rest of the family members and close contacts. All persons got recovered.

Gardabani Municipality

The first cases were registered on the territory of the municipality on July 7 and 9, in the city of Gardabani. The hot spot has been explored. The original source could not be identified/. The contacts have been transferred to the quarantine space.

Taking into account the epidemiological situation, strict epidemiological measures are being carried out on the whole territory of Kvemo Kartli.

COVID-19 Seroprevalence study in selected municipalities

Purpose of the survey - to study the presence of immune response (IgM / IgG) and antigen in the population selected on the territory of 2 municipalities of Georgia using rapid simple tests and identify the prevalence of COVID-19 in the country.

The survey was conducted on May 22-26, 2020.

Methods: The survey used: **STANDARD™ Q COVID-19 Ag Test** (manufacturer SD BIOSENSOR, (South Korea) and authorized representative **MT Promedt Consulting GmbH** (Germany); Corona virus rapid antibody test "**Right Sign®**" (manufacturer **Hangzhou Biotest Biotech Co.** (China) and Authorized Representative **Shanghai International Holding Corp. GmbH (Europe)** (Germany).

In case of obtaining positive result during the screening, standard PCR testing was additionally conducted for participants in the Lugar laboratory.

Two independent samples were identified for the survey: Bolnisi (Red Zone) and Telavi (Green Zone) municipalities. These municipalities are characterized with similar demographic parameters (number of population, sex and age composition and ratio of urban and rural population). The following criteria were used for the selection: official statistics on the prevalence of coronavirus in the Bolnisi region, 95% confidence interval, 5% error and population response levels (based on the results of previous serological studies). Considering these parameters and using the cluster method, the sample size was determined as 150 people in each municipality (15 clusters consisting of 10 people).

At the first stage, 15 starting points were selected in each region, the selection was made with a regular step = number of researched population / 15.

At the second stage, using the lists provided by the local government, the participants over the age of 18 were selected for the study on a random basis. The survey was conducted by the field squads of the National Center for Disease Control and Public Health, with 3 squads and one field coordinator operating simultaneously in each municipality.

Prior to commencement of field work, preparatory training was conducted to unify the testing techniques. In addition, the participants were repeatedly provided with the Biosafety Protection Methodology and the roles and responsibilities got distributed.

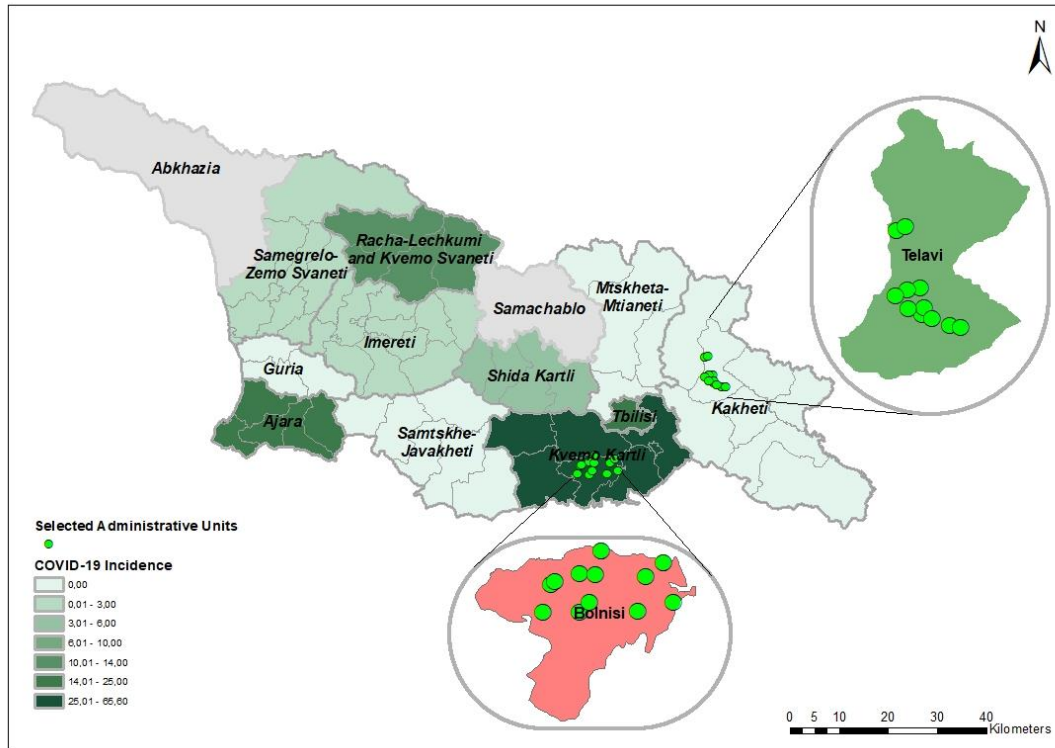
Survey Results:

Overall, 30 clusters were analyzed and 300 people tested.

26.7% (8/30) of the clusters included the urban population (3 and 5 clusters in the towns of Bolnisi and Telavi respectively) and 73.3% (22/30) covered the rural, community and small town population (12 clusters in Bolnisi municipality and 10 clusters in Telavi municipality).

The mean age of the participants was 48 years, the age range was 18 - 95 years, the median age was 48 years and moda 51 years (11 cases). 55.3% of participants (166 /300) were males and 44.7% (134 /300) females.

Map 3. Analysis of COVID-19 Distribution in two Municipalities (May 22 – 26, 2020)



In the course of the screening process, IgM positive results were observed in 2 cases and IgG positive outcome in 1 case, all of them in different clusters of Bolnisi district. Antigen test was positive in 15 cases (60% (9/16) in Telavi and 40% (6/15) in various clusters of Bolnisi municipality). PCR test showed a positive result only in one case in the village of Kvemo Bolnisi, where the IgM and antigen based rapid tests were simultaneously positive.

Conclusion: An instantaneous surveys of two municipalities showed positive results when testing antibodies across affected municipalities identified by the epidemiological surveillance system and the disease was detected by PCR test, while in the municipality where the epidemiological surveillance system was not registering the COVID-19 case, IgM and IgG antibody based testing did not reveal positive outcome and all PCR test results were negative.

Example of COVID-19 Prevalence (so-called Saburtalo Cluster)

In some cases, medical personnel became the cause of the spread of the disease in the community, which happened in case of so-called "Saburtalo Cluster".

The first two cases of the cluster were identified through PCR method on May 27, 2020. A serological study (ELISA method) was used to identify a medical worker as an index case.

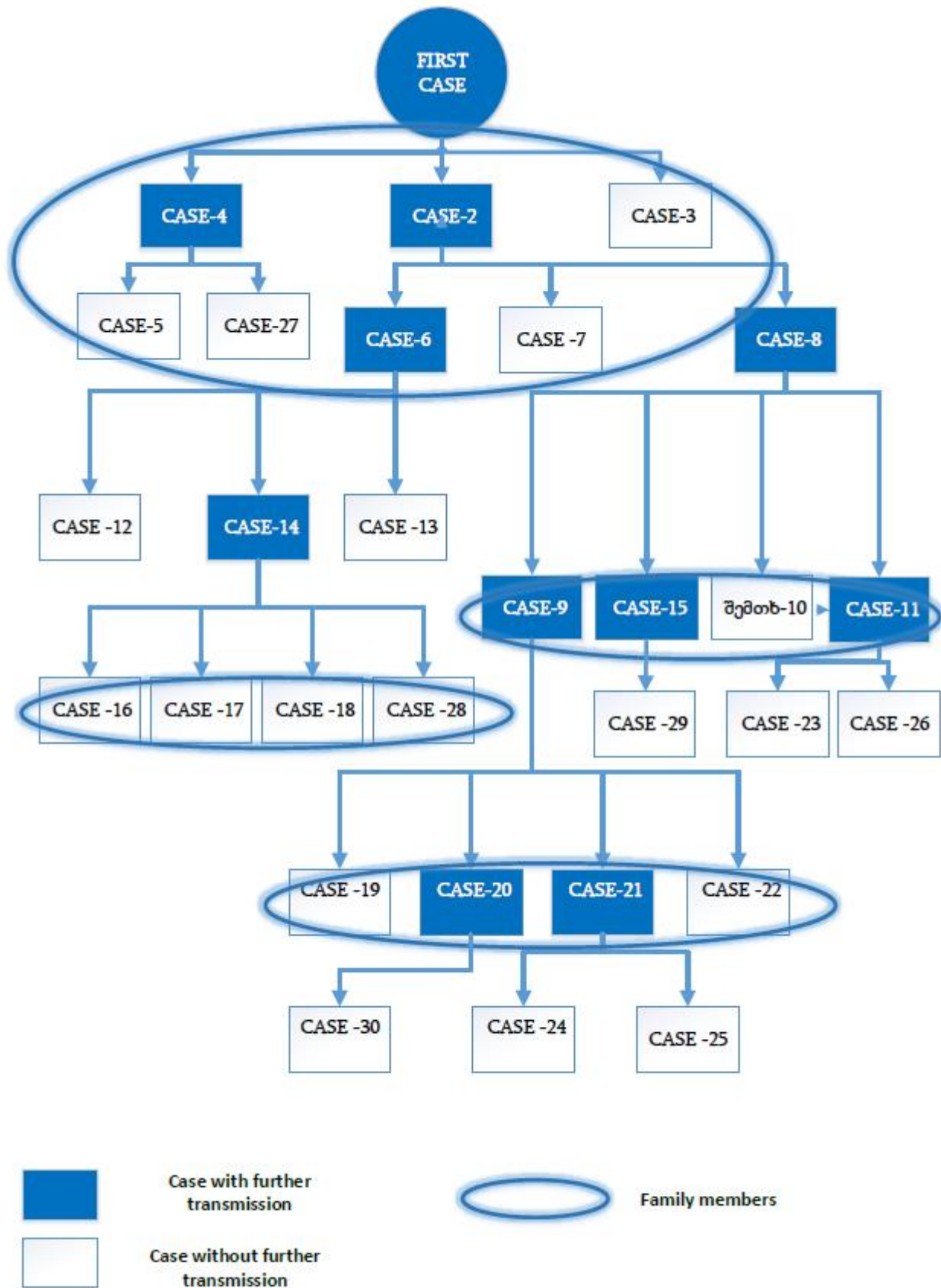
The epidemiological investigation revealed numerous close contacts who were densely settled. While contact tracing, 21 cases were identified on May 28 – 30. The epidemiological investigation and follow-up of the secondary, third, fourth transmission revealed 7 more cases that were in the quarantine area as part of the control activities.

The last case of the "Saburtalo Cluster" was confirmed on June 14. As of July 11, at the fifth stage of the generation, the expansion of cluster including 30 confirmed cases ended. 215 contacts were found and laboratory tested within the scope of control activities. 108 people were transferred to quarantine. 92 self-isolated persons were monitored by the relevant public health facilities.

Of the 30 confirmed cases, 4 were up to the age of 18 and 1 - over 80 year.

83.3% (25 cases) of the cases included in this cluster were characterized by light progression. During the reporting period only in one case (3.3%) was a critically severe clinical situation identified (48 year old male patient, moved to controlled respiration).

Figure 34. COVID – 19 Distribution Scheme (so-called Saburtalo Cluster)



Data sources

The main source of information on COVID-19 infected people is represented by the Electronic Integrated Disease Surveillance System (EIDSS), which aims to strengthen and support monitoring and prevention of human and animal diseases within the scope of the One Health Concept and ensure application of international health regulations (IHR) 2005. Disease-specific information, samples, case-related laboratory data and total figures are managed through EIDSS. Pursuant to the Order # 01-26N, dated March 2019, the EIDSS is an official reporting system for public health facilities and agencies under the Ministry of Health. It is possible to adapt its configuration to the needs of the country according to the changed requirements, such as the list of diseases, official reports, disease-specific research forms, and beyond.

Data were also validated through special protocols completed during the epidemiological investigations.

The main sources of information on hospitalized patients diagnosed with COVID - 19 were:

- Electronic module for registration of patients discharged from inpatient facility (Form IV - 066) (Order of the Minister of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia N01 - 43 / N of April 16, 2020);
- A special questionnaire filled out for each patient discharged from inpatient medical facility.
- Birth – death database.

Covid-19 in Georgia

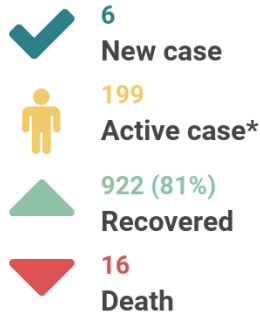
Total confirmed cases



1137



Among confirmed cases



209 130
Number of tests



204 356
Primarily tested (PCR test)



56 265
PCR tests per million population



41
Georgian citizens brought from abroad for medical treatment



6 503
In quarantine

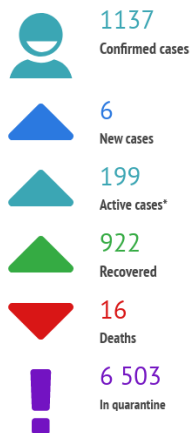
*confirmed cases, which are receiving treatment now

27.07.2020 09:00

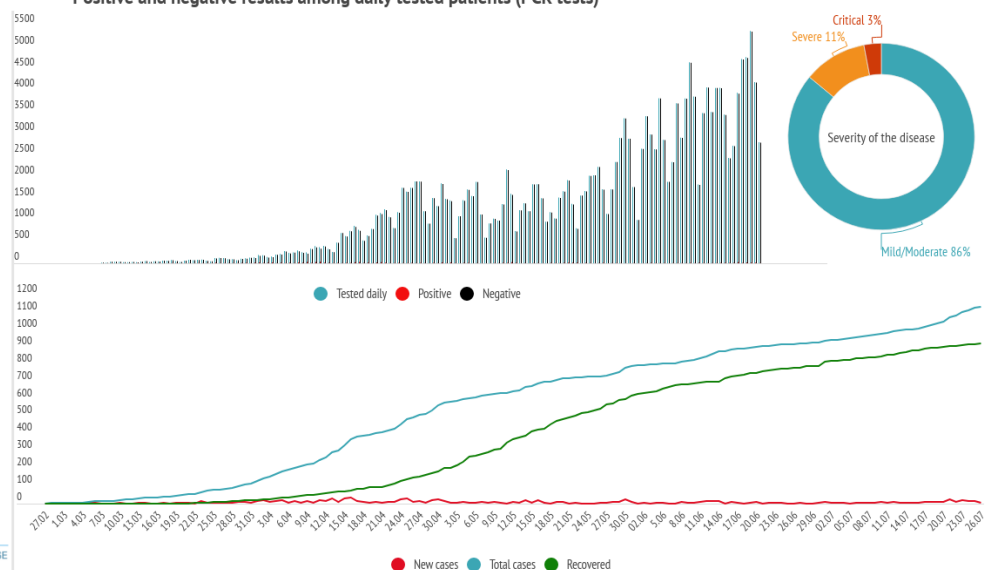
Made with **Infogram**

COVID-19 Update

27/07/2020 Georgia



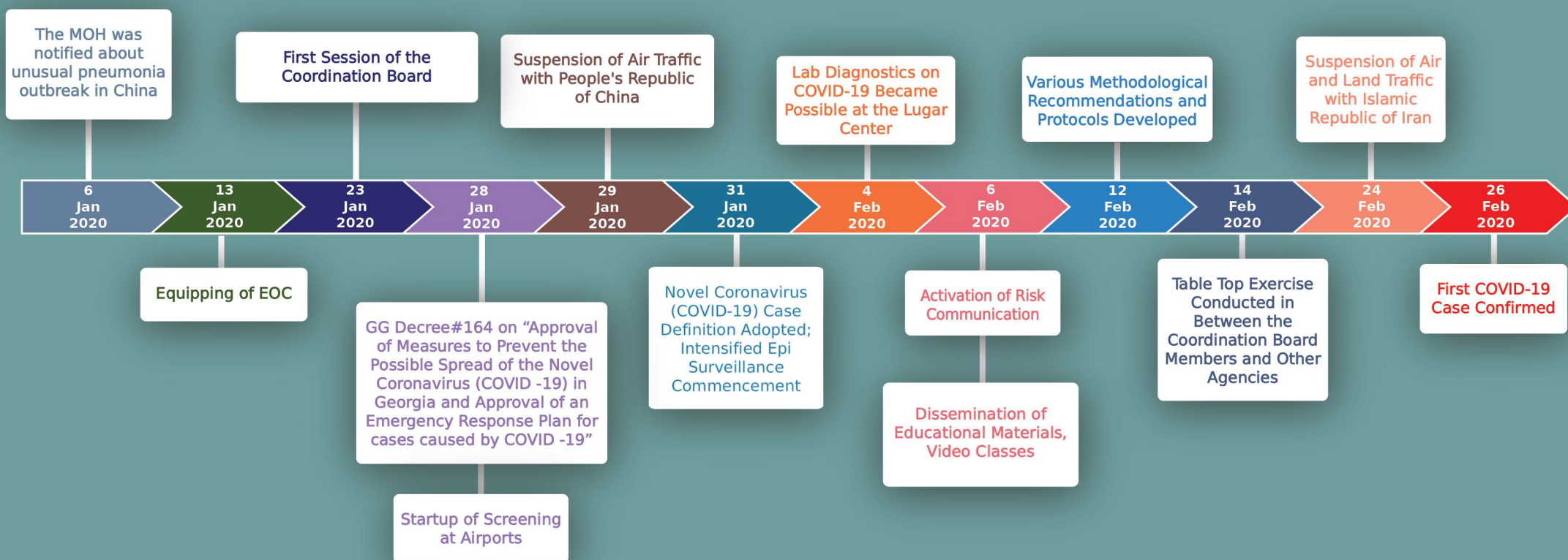
Positive and negative results among daily tested patients (PCR tests)



*confirmed cases, which are receiving treatment now

Made with **Infogram**

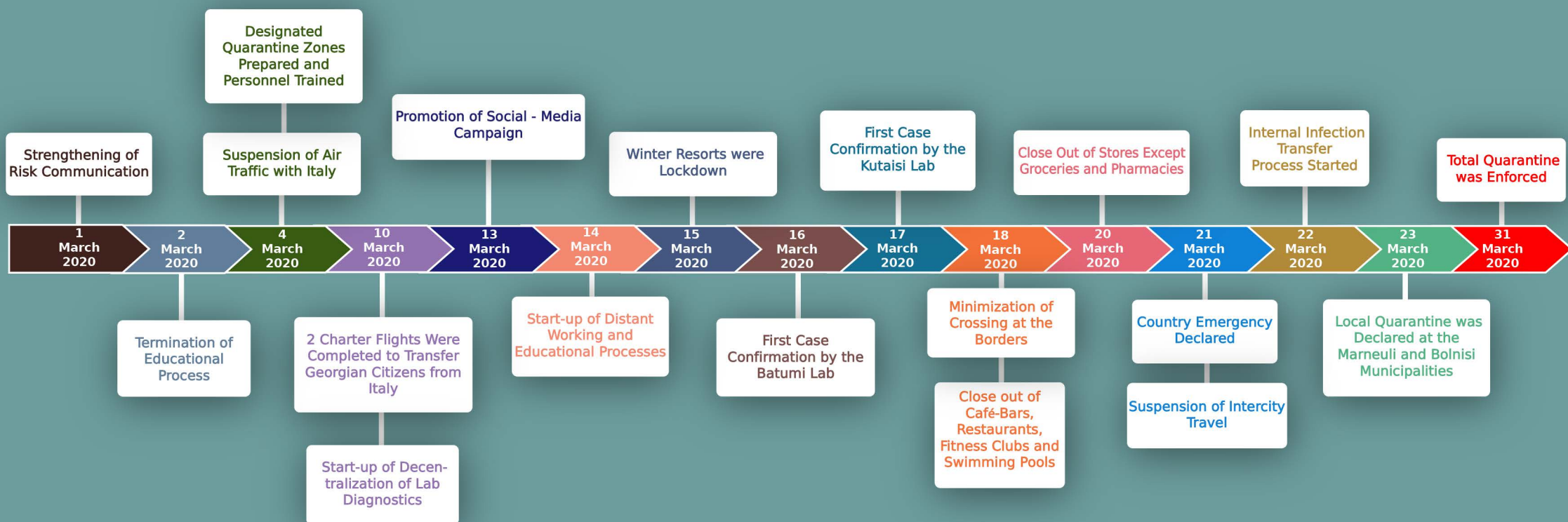
Actions Taken in Georgia in terms of Novel Coronavirus (COVID-19) Prior to the First Confirmed Case



დაავადებათა კონტროლისა და
საზოგადოებრივი ჯანმრთელობის
ეროვნული ცენტრი

GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH

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



#Stayhome

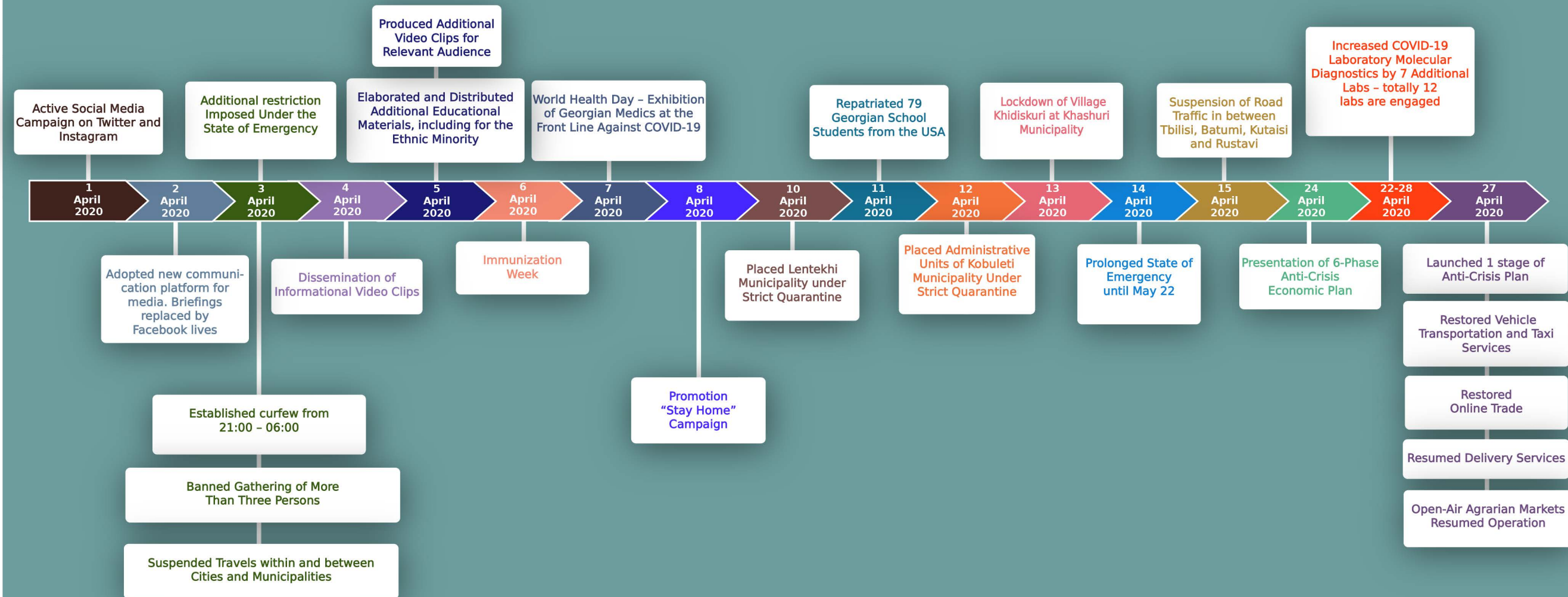


დაავადებათა კონტროლისა და
საზოგადოებრივი ჯანმრთელობის
ეროვნული ცენტრი

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 Confirmation of the First Case

April 2020



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.

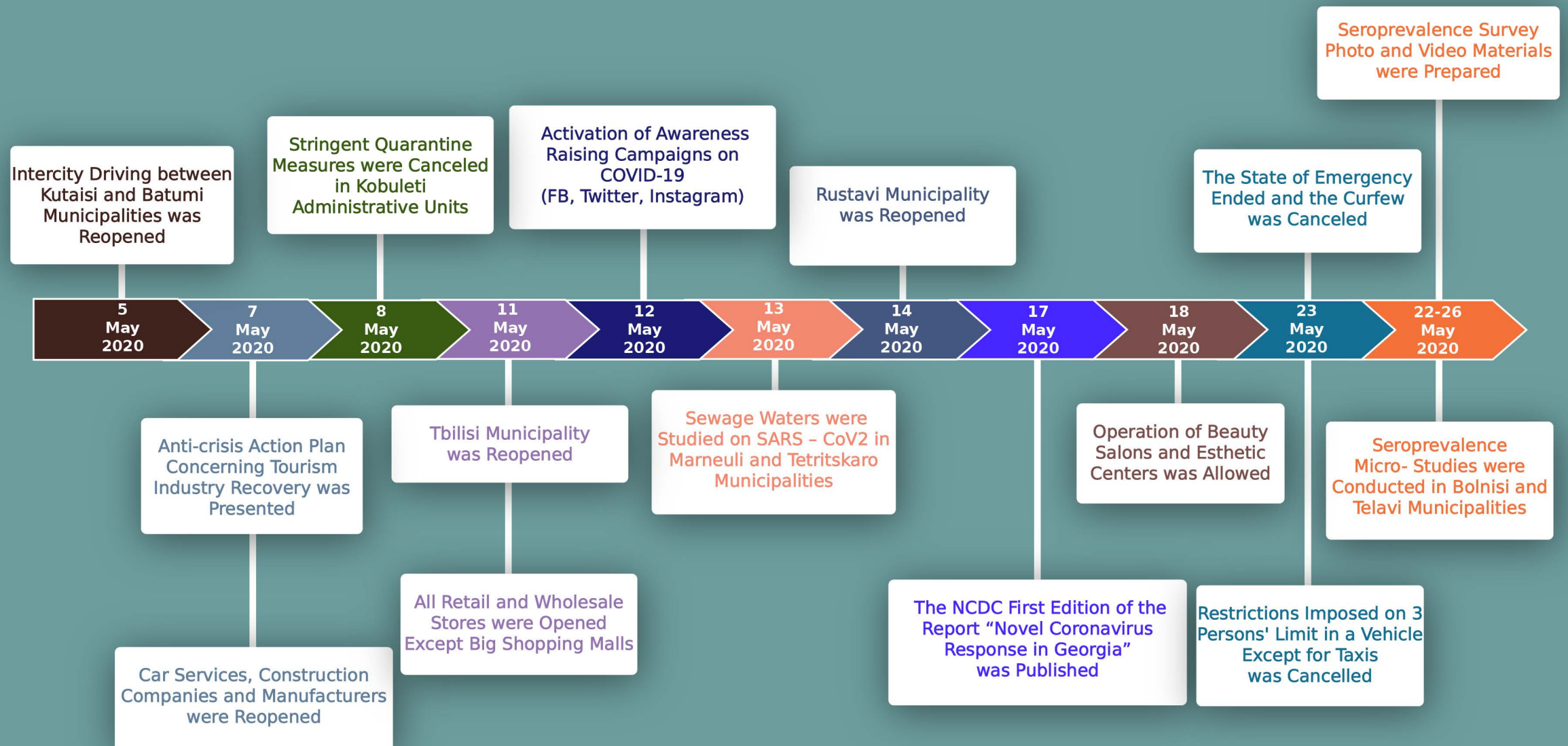


დაავადებათა კონტროლისა და საზოგადოებრივი ჯანმრთელობის ეროვნული ცენტრი
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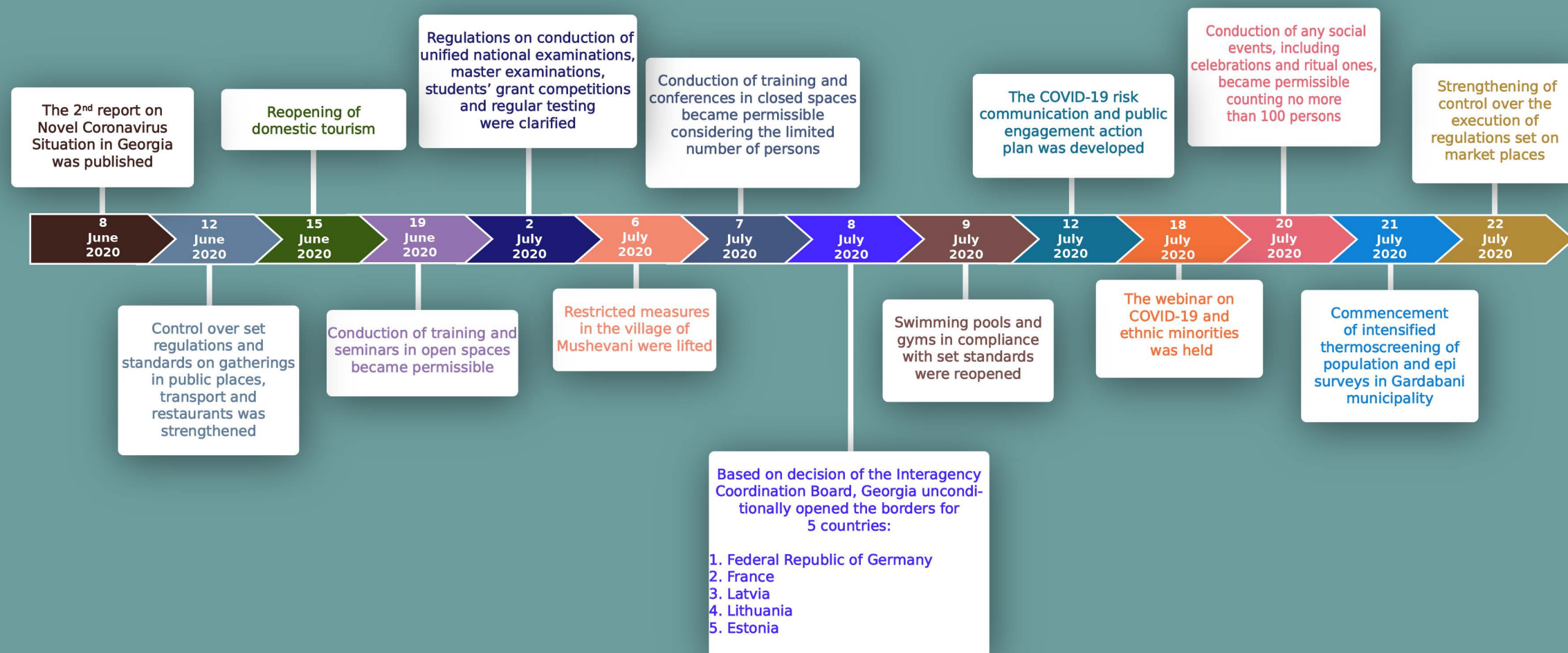
Relaxing Measures after the Lockdown in Georgia in terms of COVID-19

May, 2020



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

June-July 2020



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GEORGIAN NATIONAL CENTER FOR DISEASE
CONTROL AND PUBLIC HEALTH



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