One Year with COVID-19

Report of the National Center for Disease Control and Public Health

The Fifth Revision

საქართველოს ოკუპირებული ტერიტორიებიდან დევნილთა, შრომის, ჯანმრთელობისა და სოციალური დაცვის სამინისტრო

Georgia
2021

NCDC

დაავადებათა კონტროლისა და საზოგადოებრივი ჯანმრთელობის ეროვნული ცენტრი

GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

ACKNOWLEDGEMENTS

The National Center for Disease Control and Public Health extends its appreciation to the Interagency Coordination Board established by the Government of Georgia, the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia and all the other agencies within the Board for their support in implementing the measures taken in accordance with the recommendations.

The NCDC expresses its special gratitude to all the 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 95 organizations and individuals have provided technical and / or financial assistance to the National Center for Disease Control and Public Health. The complete list of these organizations and the letter of appreciation are posted at the official Facebook page of the NCDC.

National Center for Disease Control and Public Health

TABLE OF CONTENTS

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. The origin of the virus is linked to the city of Wuhan in the Chinese province of Hubei. This is the third zoonotic coronavirus outbreak in the 21st century, when the human - to - human transmission of the infection occurred. The WHO assessed the situation as a public health emergency of international concern on January 30, 2020, and as a pandemic on March 11. At the end of 2020, the virus spread to all continents and infected more than 83 million people; over 60 million recovered and 1,800,000 deaths were reported. Since the beginning of the pandemic, most countries have suffered the second and the third waves of new cases. There has been a different trend of using hospital resources in the regions.

Georgia started its preparation for the epidemic at an early stage. Since the first confirmed cases until today, the priority of the government and the country has been the organized management of the pandemic and its permanent control. The measures taken by the government enabled the country's healthcare system to come out with relatively less damage in the spring, when the world was struggling with the first wave, and to play a buffer role in controlled spread of the epidemic. During the pandemic, the country has been intensively implementing anti - epidemic measures (detection, tracing, isolation, surveillance), expanding the scope of testing, constantly monitoring the quality of conducted tests, consistently carrying out seroprevalence studies to analyze prevalence. The risk communication has been activated, observance of preventive measures has become mandatory and their fulfillment has been monitored (e.g. wearing a facemask, social distancing, observance of sanitary - hygiene rules, refraining from being in crowded places and limited number of attendees at any gathering). Restrictions were introduced, which help to reduce mobility and slow down the transmission, and all confirmed cases are treated (inpatient facility, special COVID Hotels, primary healthcare surveillance in conditions of home isolation, fever centers, proper online services are set up, Covid - app is functioning, and etc.). In response to COVID-19, the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia mobilized 1,620 hospital beds across 15 clinics in March. Also, additional 1,050 beds were allocated in 15 fever clinics in the regions. By the end of December, the number of mobilized clinics was 82 with more than 7,000 beds, enabling timely hospitalization and quality management of severe and critical COVID-19 cases. New state - owned hospitals with more than 400 beds in Batumi and Rukhi became operational at full capacity. Around 59,000 cases were handled in hospitals during the reporting period. The hotel infrastructure has been used effectively to avoid overcrowding in the hospital sector. Since October, up to 25,000 COVID-19 cases have been managed by on - site medical staff at clinical hotels. The role of the primary health care sector in the management of Covid is important. On April 2, 2020, under the initiative of the Ministry of Health an online clinic platform was developed, which initially included 25 online clinics on the basis of primary health care centers, and at the end of the year, up to 700 doctors from 65 online clinics remotely were managing patients. From April 2 to the end of December, the online clinic doctors responded to up to 250,000 calls and gave further progress. At home, 132,232 people completed COVID-19 treatment under

the supervision of family physicians. Due to the high need to strengthen primary health care resources, the Ministry of Health established a central online clinic in October, with 228 staff members operating in two areas - supervising patients at home by family physicians and monitoring the quality of online clinic services by monitor - operators. From October 22 to the end of the year, up to 28,000 symptomatic patients were administered by family physicians of the Central Online Clinic. A total of 112,000 calls were made. 303,000 patients got contacted by monitor - operators to control the quality of provided services.

The Interagency Coordination Board, established on January 28, 2020, developed and implemented a set of measures that enabled the country to get ready and respond to threat as effectively as possible. Overcrowding in the healthcare sector was prevented and, consequently, it became possible to start phased lift of restrictions at the end of the spring and open up certain areas important for the economy (including non - essential trade facilities, restaurant business, domestic tourism). The country was intensively preparing for possible subsequent waves, which included logistics, stockpiling, clinical training and accumulation of experience. The health sector has been constantly strengthening its response capacity, expanding its scope of testing, continuously training and retraining human resources, enhancing material and technical resources and infection control mechanisms, implementing risk communication, and constantly providing information to the population. The Institute for Health Metrics and Evaluation, IHME (Seattle, USA) during the Pandemic[1], as part of its cooperation with the NCDC, has been continuously providing projections about the development of epidemics in the country. As a result, based on possible scenarios, the Center works on recommendations, after the submission and review of which, by the decision of the Interagency Coordination Board, measures are taken to manage the epidemic in the country.

Given the epidemiological situation during the summer, it became possible to hold unified national, master's and teacher competency tests in the country. Despite the positive dynamics, with the lifting of restrictions and the arrival of the tourist season, as well as increased mobility, a gradual increase in cases was predictable. From the autumn period, under the influence of various factors, such as local epidemics in the region with high tourist activity (Adjara), political processes (large - scale gatherings in the pre - and post - election period), the trend in the neighborhood and Europe (start of the second wave), the number of new coronavirus cases increased intensely leading to a massive spread of the epidemic throughout the country. In November, the country reached an alarming red level by all parameters, after which the government reintroduced certain stringent mandatory measures for prevention and stabilization and extended targeted restrictions. Among the important decisions was the *Decree N 1777 of the Government of Georgia (September 14) on Approving the List of Priority Persons Subject to Mandatory Testing for Coronavirus (SARS-CoV-2) Infection (COVID - 19) and Testing Procedure,* according to which subject to testing are cases according to the standard definition, contacts of confirmed cases, patients and medical personnel of respective medical institutions meeting specific criteria, any patient with the diagnosed pneumonia or fever (who have symptoms of respiratory disease or the treating physician makes the decision on testing),

[1] http://www.healthdata.org/

emergency medical personnel and disaster brigade staff, enrolled or prospective beneficiaries and staff of noctidial special 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 upon expiry of the isolation period, staff of quarantine spaces, customs officers and border guards, personnel of inpatient hospital reception, intensive therapy and care, the NCDC epidemiologists and staff of COVID-19 PCR Laboratory and etc. Also, under the Resolution N566 of the Government of Georgia of September 9, the amendments to *the Rules of Isolation and Quarantine* were introduced, and under the Resolution N576 of the Government of Georgia of September 14, the state programs for 2020 were changed. On September 14, 2020, the Minister of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia issued Decree № 01 - 455 /n *On Infection Control in Medical Institutions - Approval of National Recommendations (Guidelines)*; Order N01 - 493 / O of September 30 approved the algorithm for medical surveillance in the isolation of patients with mild current COVID - 19; Order N01 - 494 / O changed the rule of removal from medical supervision and PCR testing. With October 21 amendments, in agreement with the Interagency Coordination Board, it became possible to test the employees on a 72 - hour basis in case of having confirmed cases at the strategic facilities. Significant changes were made in the treatment strategy and under the Resolution N647 of the Government of Georgia of October 27, the Central Online Clinic was launched hosted by the Ministry; in addition, insurance companies got involved in the process. In the light of a sharp increase in cases in the fall, the Interagency Coordination Board decided to amend the Governmental Resolution N322 (November 9) to restrict mobility in large cities during the night hours, and introduce a new phase of restrictive measures in the country from November 28. As a result, intercity and municipal public transport traffic got suspended, teaching and work moved to remote mode and extended, intensive testing of the population started. In accordance with the new evidence and international experience, under the order of the Minister of Health, the rule of conducting the antigen test was approved, which was an important decision in terms of expanding the testing program. The new generation of antigen tests used by the country, recognized by the WHO and the other authoritative foreign regulators, were directed at ensuring equal and rapid access for geographically remote regions of the country where PCR testing was not accessible and at the same time rapid detection of infection was important. In fact, new generation antigen tests are equivalent to PCR with their diagnostic value, are technically easier to use, and give results faster. In addition, the issue of placing citizens entering the territory of Georgia from a foreign country in the quarantine area got regulated and etc. All of the above is strictly controlled by the state and special attention is paid to the implementation of these measures.

This pandemic is much more than a global health challenge. It represents an unprecedented socio - economic crisis and has resulted in greatest human and economic loss. Every country affected by the pandemic is experiencing devastating social, economic and political effects caused by the spread of the virus, which will leave tragic consequences in the long run. Prior to development of etiotropic treatment for COVID-19, for stabilizing the current situation and alleviating the pressure on the health sector, thus saving more lives, the rational solution would be to introduce and administer safe and effective vaccines against the virus, which eventually will be a significant precondition for ending epidemic. Currently the world's

attention is focused on development, testing, authorization of new vaccines and their phased use to cover priority groups of population.

The National Center for Disease Control and Public Health plays an important role in Georgia's response to COVID-19. The Center's responsibility includes preparedness and response measures, including real - time epidemiological surveillance, management of laboratory diagnostics of new coronavirus and compliance with standards, surveillance of existing and suspected cases, tracing, monitoring, and etc.

This document is the fifth summary review of the 2020 epidemiological situation related to the spread of the novel coronavirus in Georgia and the measures taken. The information contained in this paper is based on an analysis of information obtained within the competence of the National Center for Disease Control and Public Health. The data in this edition are reflected as of December 31, 2020 inclusive. Accordingly, all figures in the document are presented for the reporting period, unless otherwise specified.

TESTING

Testing with PCR[2] method to detect COVID-19 in Georgia began on January 30, 2020. The PCR method is regarded 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 naso-pharyngeal swab or 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 are available.

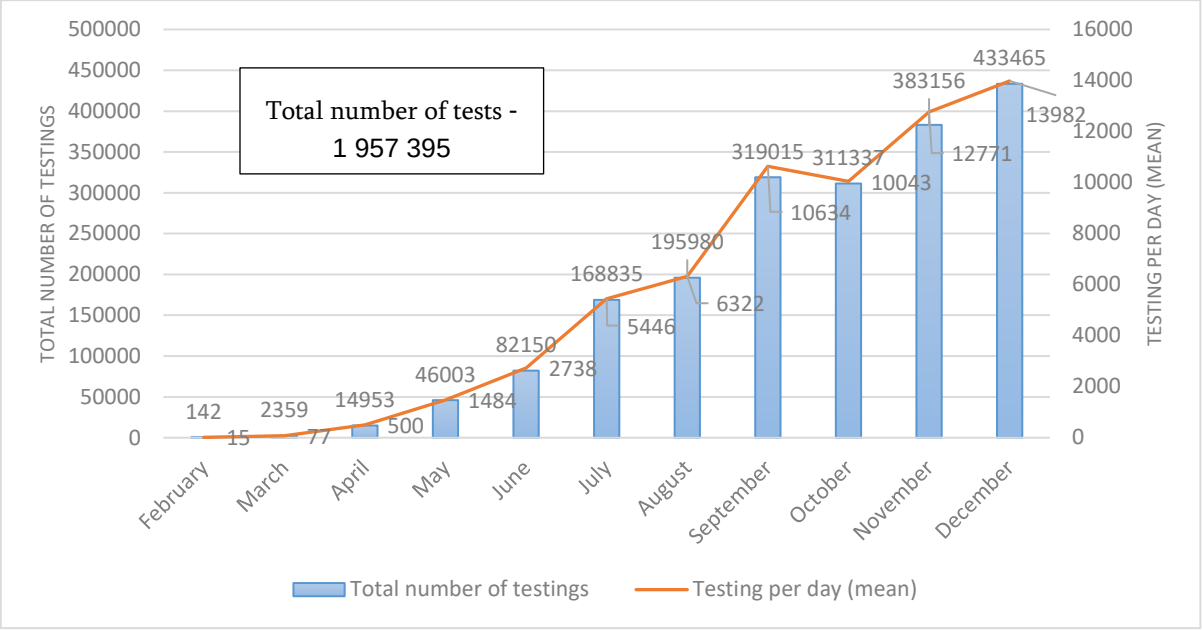
For PCR testing, naso-pharyngeal swab, or sputum, bronchoalveolar lavage (rinsing) or respiratory biopsy material may be taken, however, the other materials such as feces and / or blood and / or urine / or corpse tissue (from lung) with special indications can also be used for this type of testing.

With the introduction of PCR testing in May 2020, the country began antibody and antigen - based testing in certain groups, although cases were confirmed only through PCR testing.

Starting from November 12, the country began antigen - based testing with Ag-RDTs test systems to confirm COVID-19 cases, which were qualified by the World Health Organization as having high sensitivity and specificity, with minimum risk of false positive or negative results.

The total number of tests conducted in the country in 2020 equaled 1,957,395 (52,662 tests per 100,000 of population), including PCR testing - 1,414,578 (38,058 tests per 100,000 of population) and antigen - based testing - 542,817 (14,604 tests per 100,000 of population).

Figure 1. Total and daily number of COVID - 19 tests (PCR and antigen - based), Georgia (December 31 inclusive)



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

Figure 2. Total PCR tests performed on COVID - 19 and Daily Quantity, Georgia (December 31 inclusive)

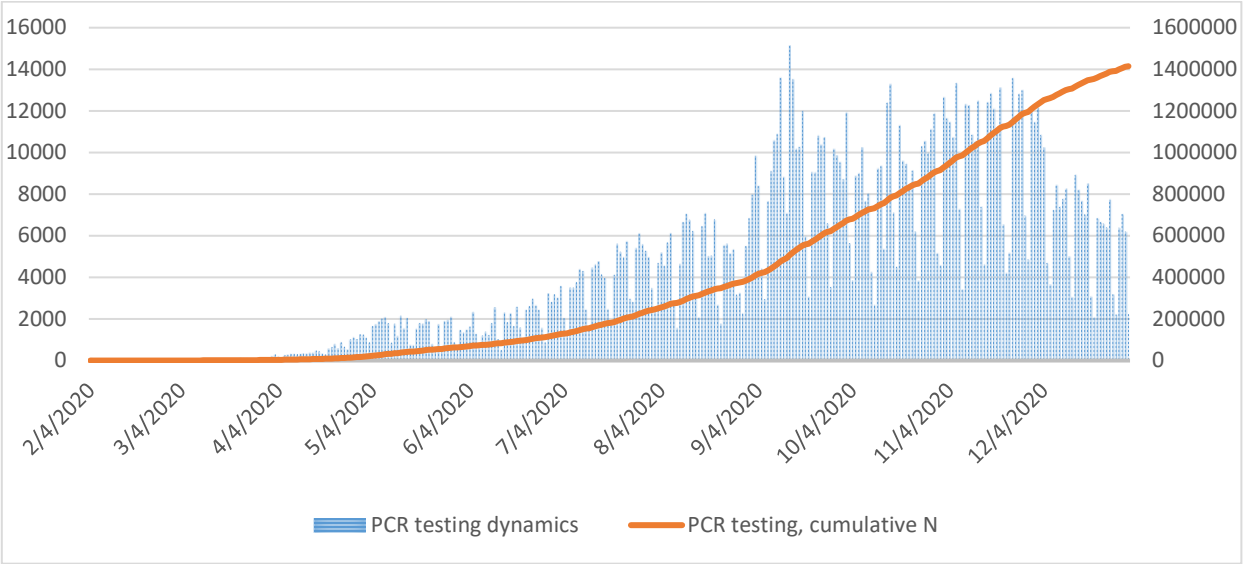


Figure 3. Dynamics of Antigen - Based Tests, Georgia (December 31 inclusive)

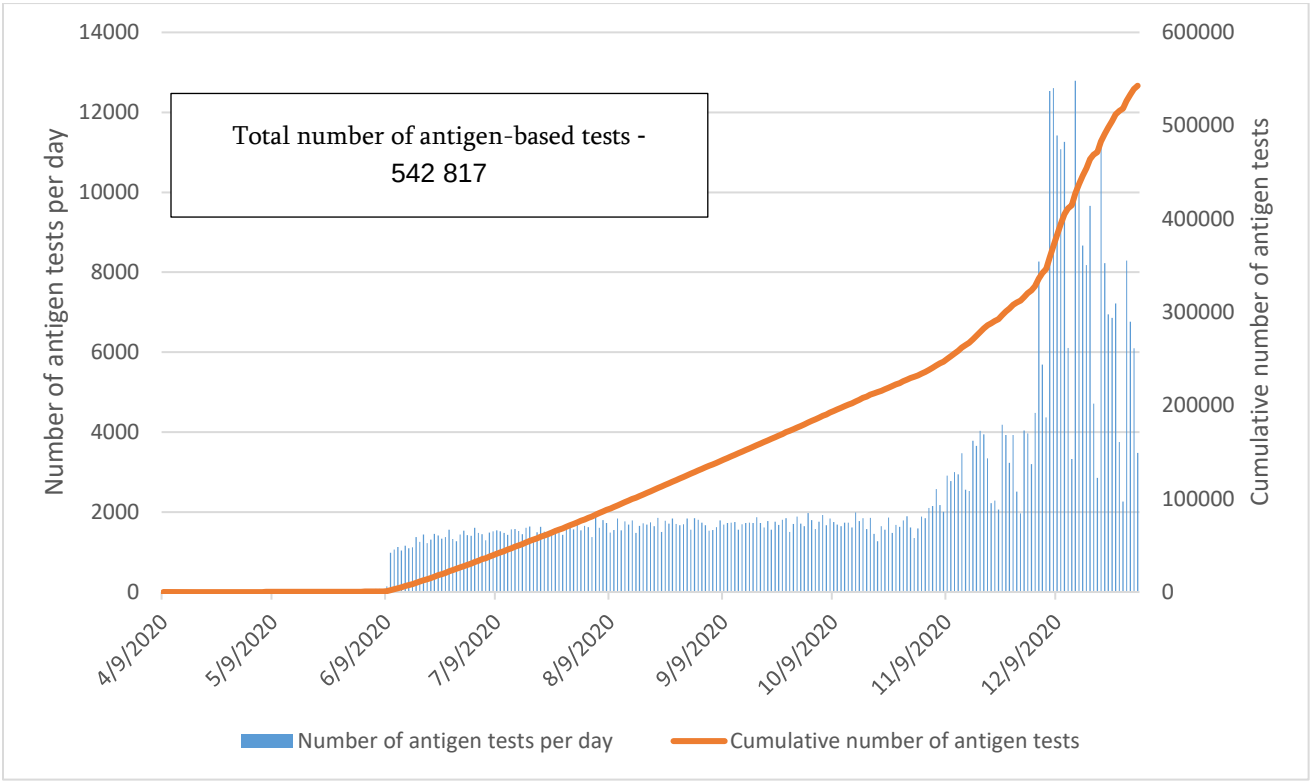
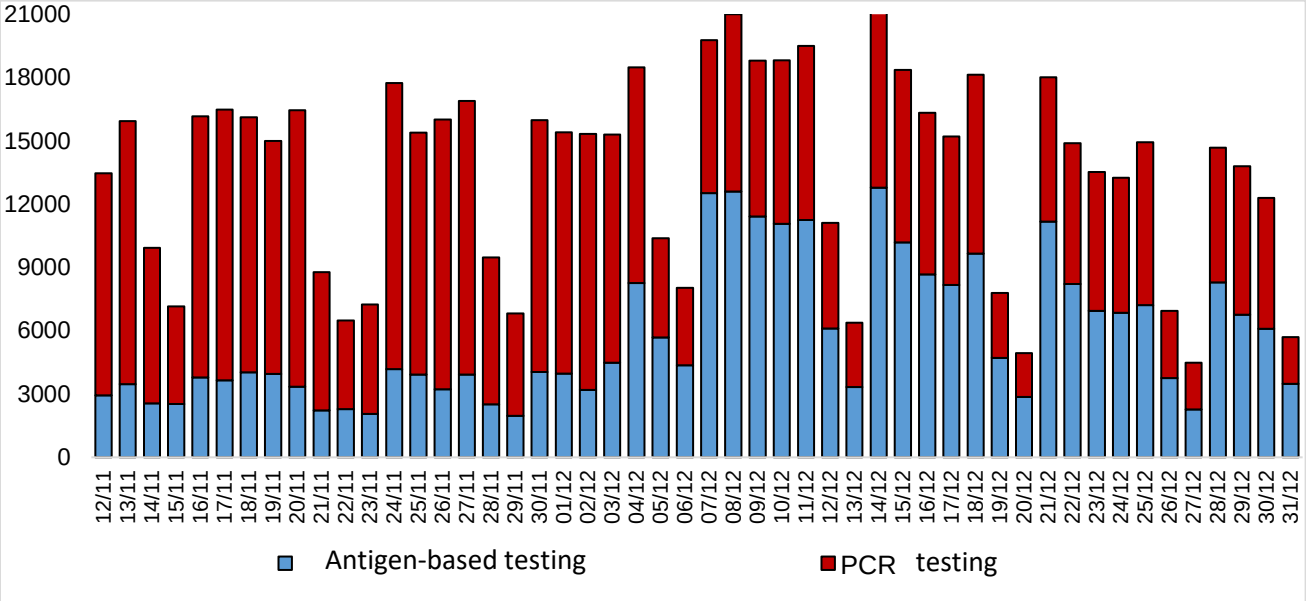
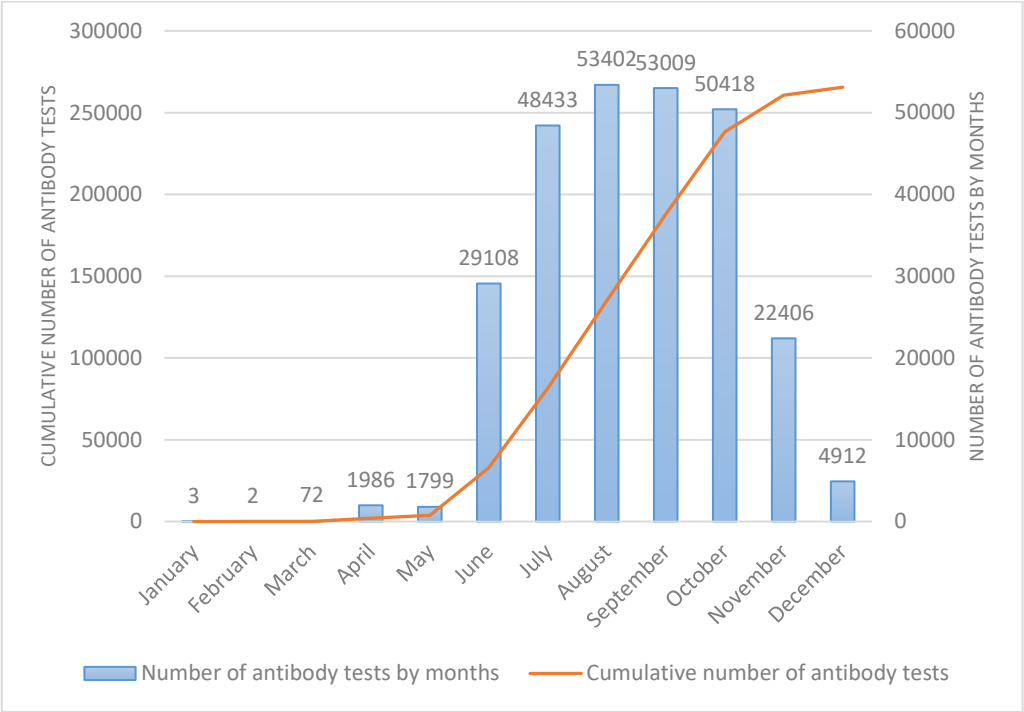


Figure 4. Number of PCR and antigen - based COVID - 19 tests performed daily, Georgia (12.11.2020 - 31.12.2020)



Throughout 2020, a total of 265,550 antibody - based rapid tests were conducted in the country.

Figure 5. Monthly Dynamics of Rapid Simple Antibody - Based Tests, Georgia (December 31 inclusive)



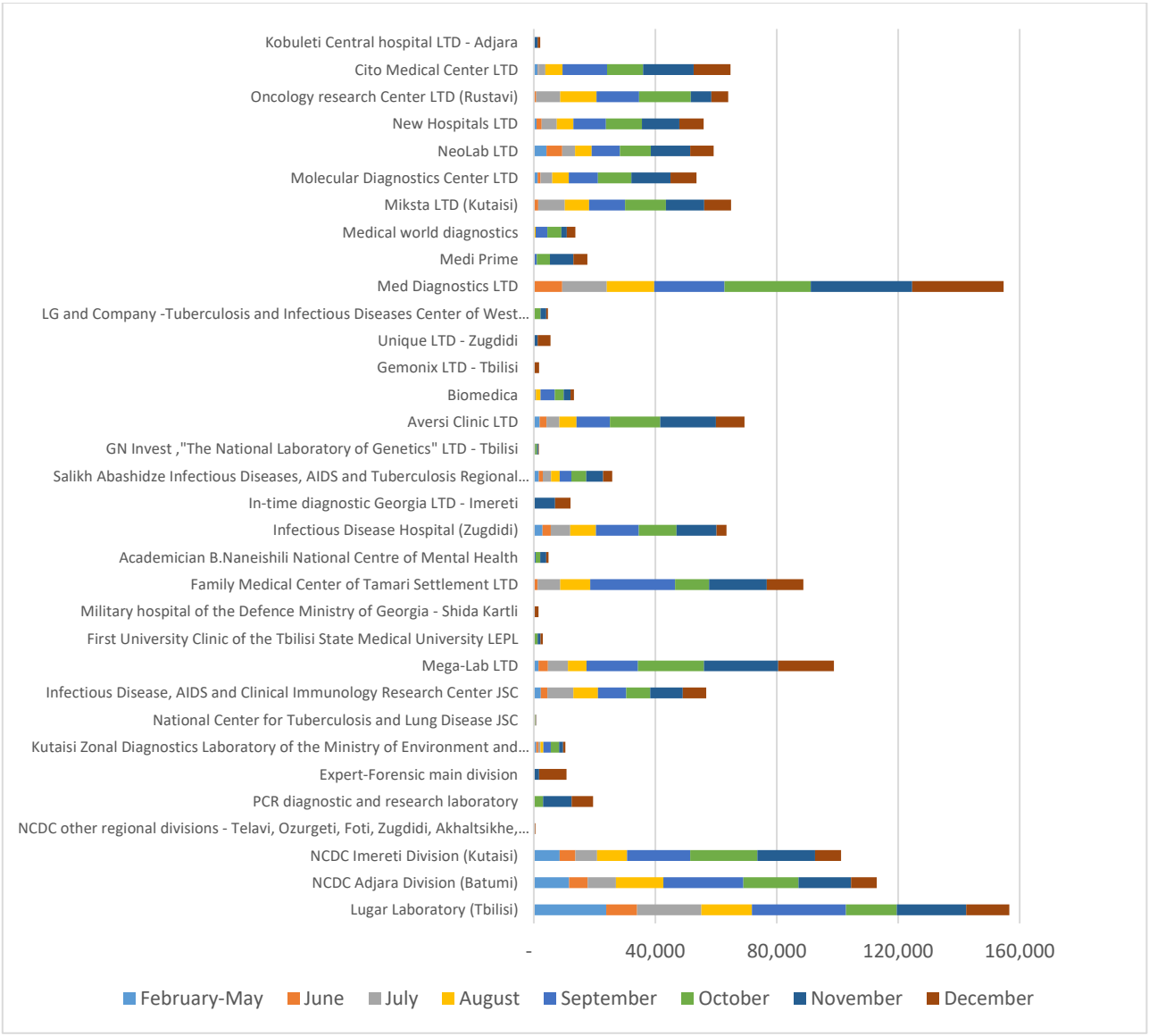
The Richard Lugar Public Health Research Center of the NCDC is actively involved in the epidemiological surveillance of various infectious agents. The Lugar Center represents a reference laboratory, plays a leading

role in the fight against SARS-CoV-2 infection and is responsible for monitoring the laboratory part of these processes across the country.

The Lugar Center ensured preparation and distribution of SARS CoV-2 panels for external control of quality within the framework of state programs and monitored the work quality of the laboratories involved in the program.

As of December 31, 2020, 33 laboratories were conducting PCR testing for COVID-19 across the country.

Figure 6. Monthly Number of PCR tests performed for COVID - 19 by laboratories, Georgia (December 31 inclusive)



As of December 2020, the share of PCR tests conducted by laboratories under the National Center for Disease Control in the total number of PCR tests was 26.3% (May - 79%, July - 50%, September - 34%).

Table 1. Number of PCR Tests (December 31 inclusive)

Laboratory	Number of Performed Tests	Share in Total Number of Tests (%)
Lugar Laboratory - Tbilisi	156 564	11,1
Adjara Laboratory of the Center - Batumi	112 934	8,0
Imereti Laboratory of the Center - Kutaisi	101 212	7,2
Other Regional Laboratories of the Center - Telavi, Ozurgeti, Poti, Zugdidi, Akhaltsikhe, Gori	500	0,04
PCR Diagnostics and Research Laboratory	19 540	1,4
Forensic Department of the Ministry of Internal Affairs	10 753	0,8
Laboratory of the Ministry of Agriculture - Imereti	10 372	0,7
National Center of Tuberculosis and Lung Diseases	767	0,1
Infectious Diseases, AIDS and Clinical Immunology Research Center - Tbilisi	56 823	4,0
Mega Lab - Tbilisi	98 840	7,0
LEPL First University Clinic of the Tbilisi State Medical University	2 936	0,2
LEPL G. Abramishvili Medical Hospital of the Ministry of Defense of Georgia - Shida Kartli	1 565	0,1
Family Medicine Center of Tamar Settlement LLC – Adjara	88 761	6,3
Academician B. Naneishvili National Center of Mental Health LLC - Imereti	4 801	0,3
Zugdidi Hospital of Infectious Diseases LLC	63 449	4,5
In Time Diagnostics Georgia LLC - Imereti	12 122	0,9
S. Abashidze Regional Center of Infectious Pathologies, AIDS and Tuberculosis LLC - Batumi	25 830	1,8
GN Invest, National Laboratory of Genetics	1 610	0,1
Aversi Clinic LLC - Tbilisi	69 407	4,9
Biomedica Georgia LLC - Guria	13 231	0,9
Genomix LLC - Tbilisi	1 780	0,1
Unic LLC - Zugdidi	5 493	0,4
LG and Company LLC Western Georgia Center of Tuberculosis and Infectious Pathologies	4 622	0,3
Med Diagnostics LLC - Tbilisi	154 729	10,9
Medi Prime LLC	17 686	1,3
Medical World Diagnostics LLC - Tbilisi	13 680	1,0
Mixta LLC - Kutaisi	64 921	4,6
Molecular Diagnostics Center LLC - Tbilisi	53 571	3,8
Neolab LLC - Tbilisi	59 190	4,2
New Hospitals LLC - Tbilisi	55 913	4,0
Oncology Center LLC – Rustavi	64 060	4,5
Cito Medical Center LLC - Tbilisi	64 816	4,6
Kobuleti Central Hospital Bomond – Adjara	2 100	0,1
Total	**1 414 578**	**100**

Figure 7. Number of antigen - based tests by laboratories, Georgia (December 31 inclusive)

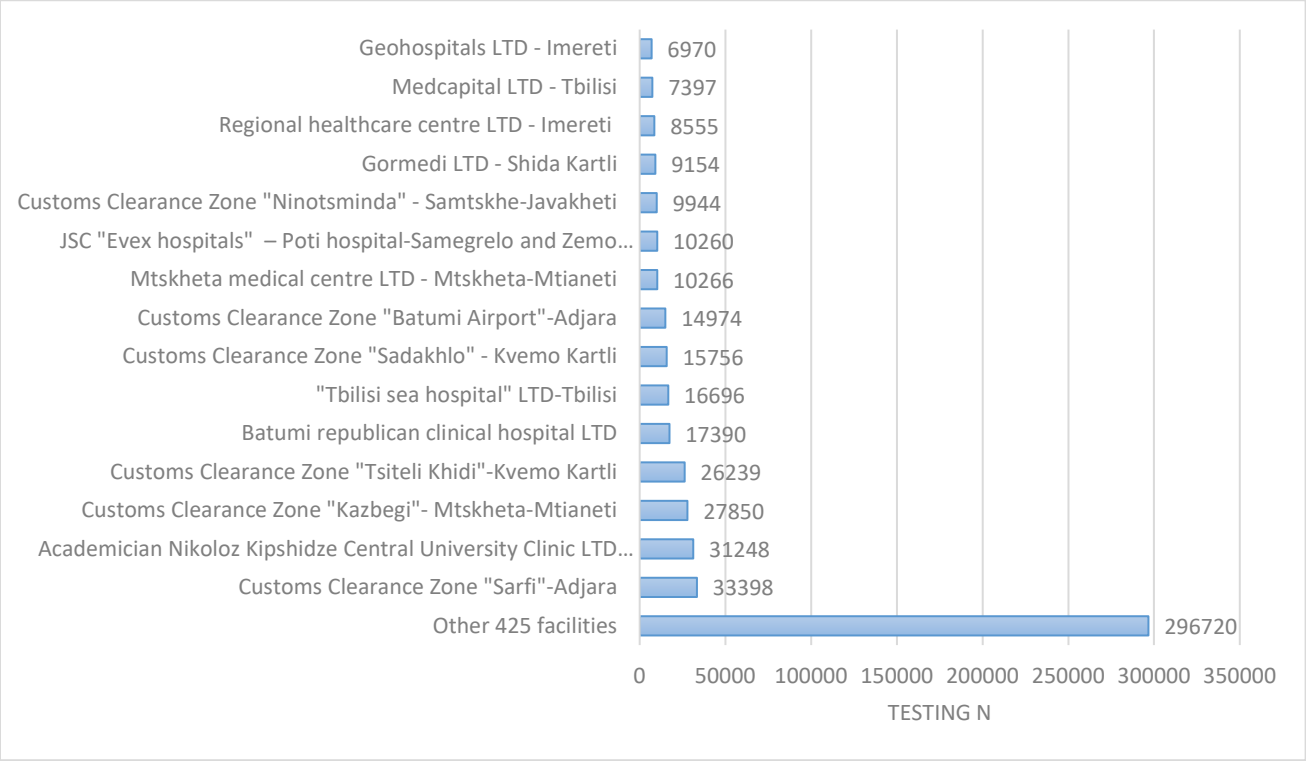


Figure 8. Number of antibody - based simple rapid tests according by laboratories, Georgia (December 31 inclusive)

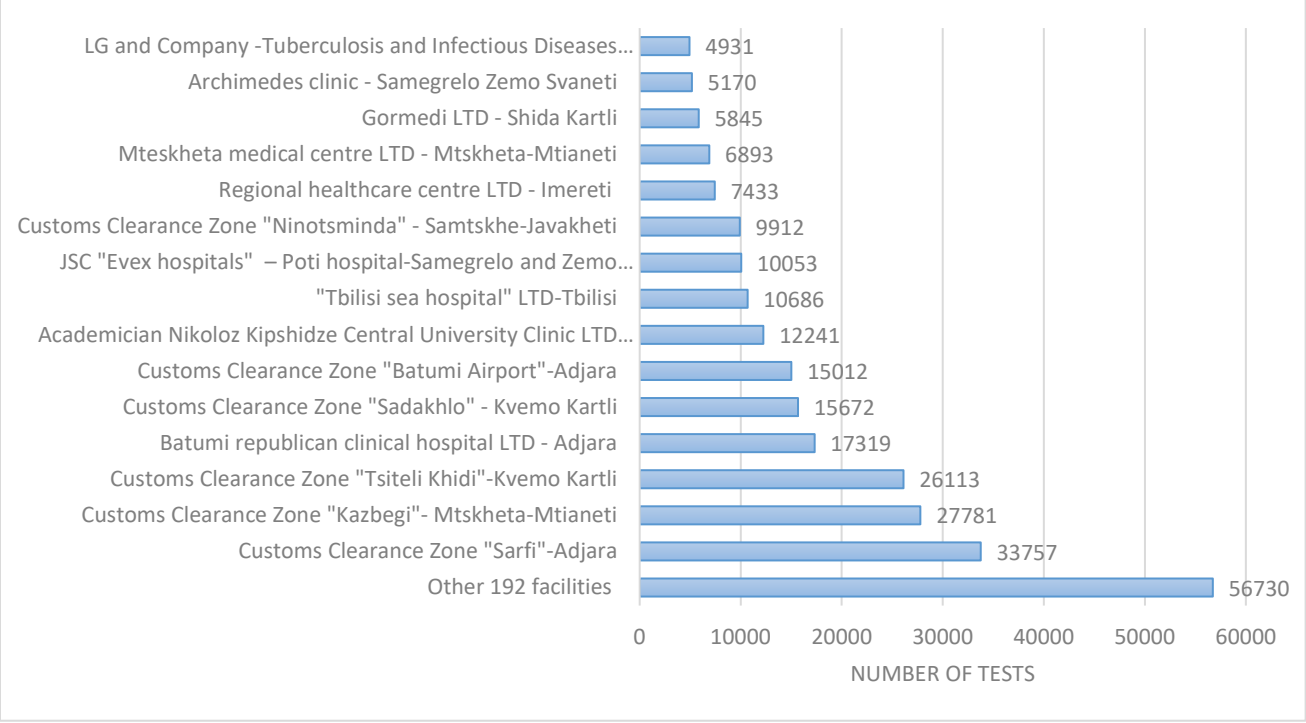
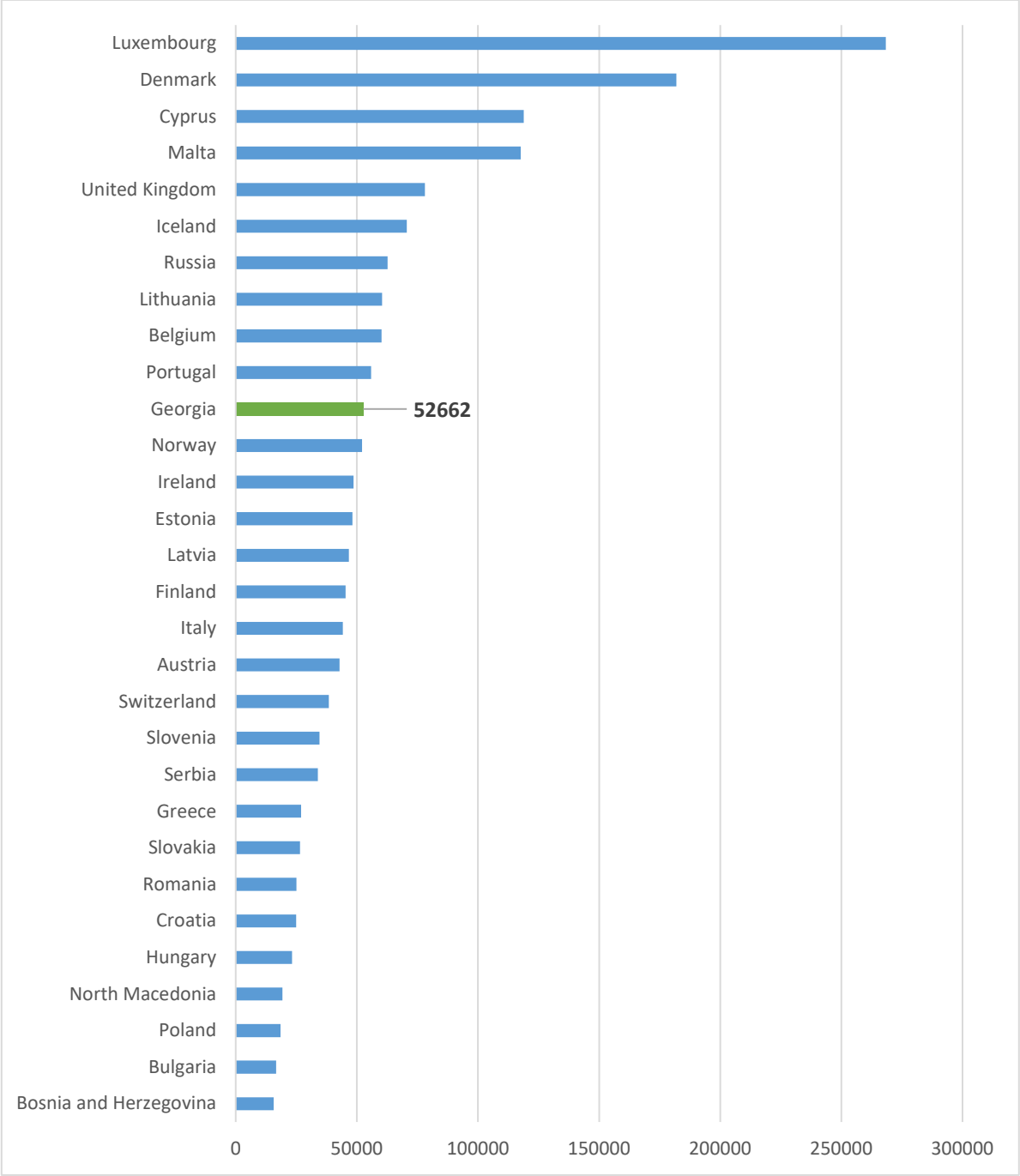


Figure 9. COVID - 19 testing rate per 100,000 of population, Europe and Georgia (December 31 inclusive)



Source: https://www.ecdc.europa.eu/en/publications - data/covid - 19 - testing

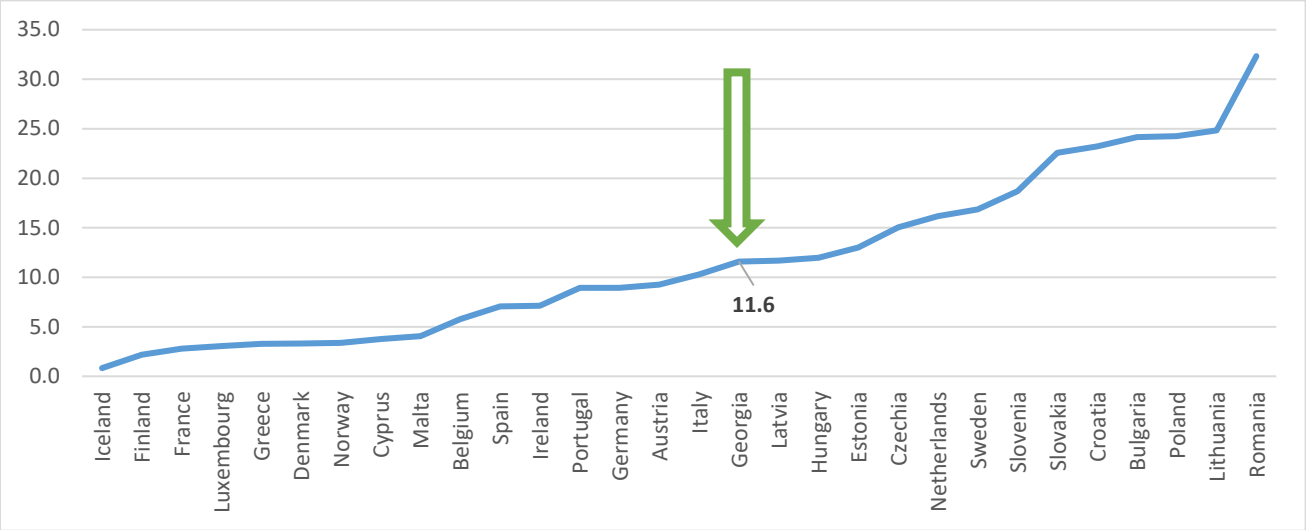
In order to provide comprehensive information on COVID - 19 testing, the NCDC has developed an electronic module for COVID - 19 laboratory research recording, which collects test data and constantly performs qualitative control. Information providers in the module are inpatient and outpatient service

providers, which take test material, do rapid testing, or carry out laboratory research; municipal public health agencies; relevant services of the National Center for Disease Control; existing or other laboratories in Lugar and the other medical facilities.

The frequency rate of positive outcome has been assessed during pandemic. This is a significant percentage which shows how widespread the infection is in the area where tests are performed and whether the number of tests corresponds to the transmission level of the disease.

As of December 31, 2020, the positivity rate was 11.6%.

Figure 10. COVID - 19 Test Positivity Rate, Europe and Georgia (As of December 31, 2020)

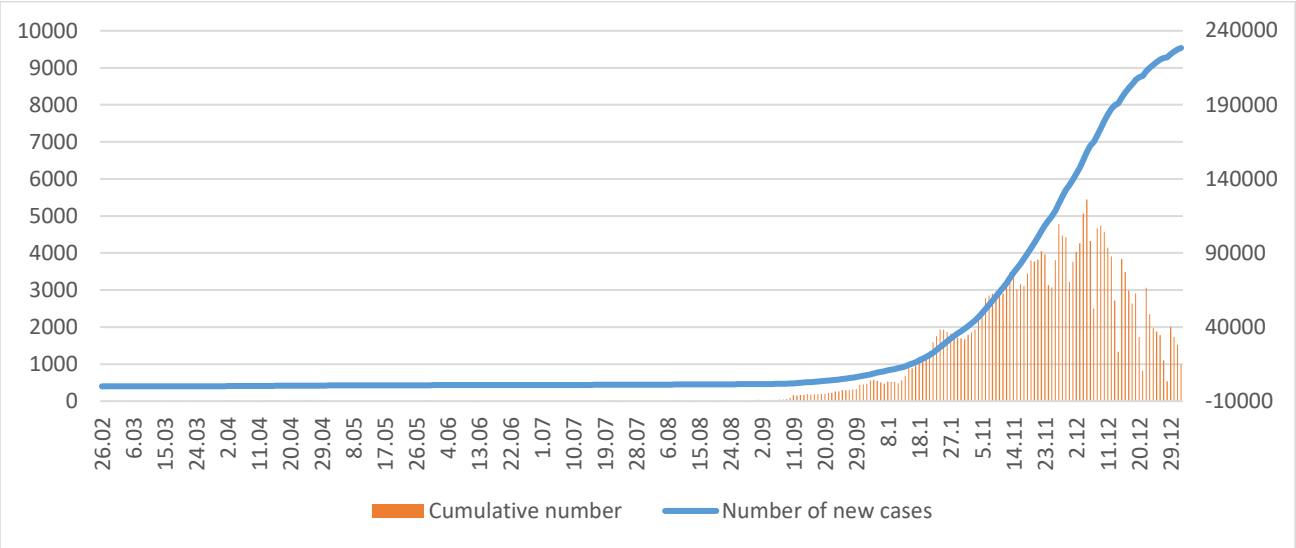


Source: https://www.ecdc.europa.eu/en/publications - data/covid - 19 - testing

COVID - 19 - INDUCED MORBIDITY

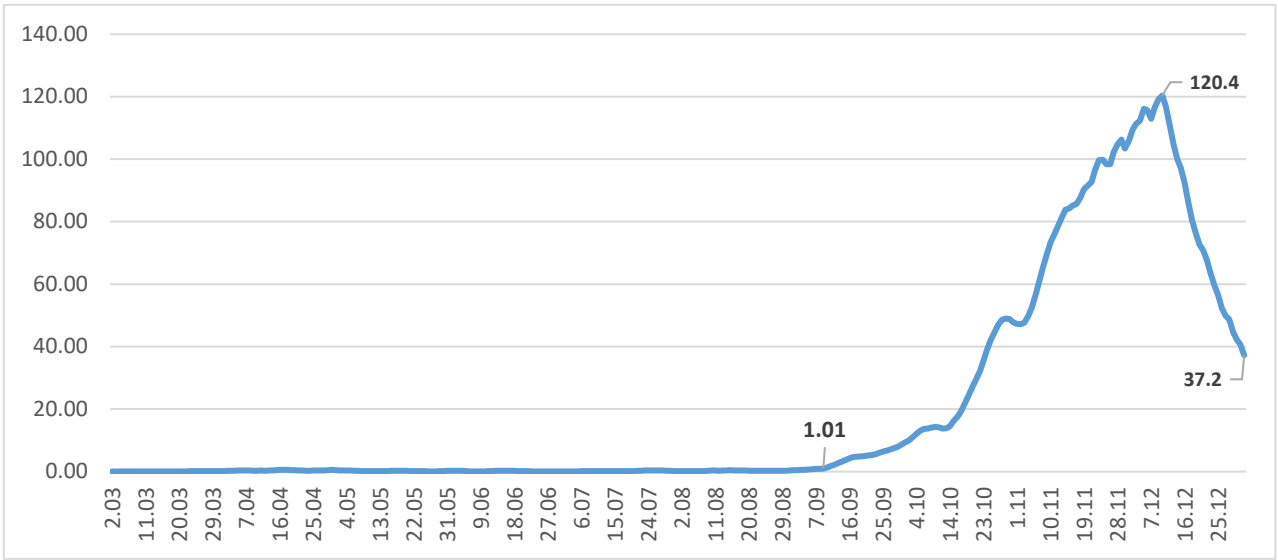
The first case of COVID-19 in Georgia was confirmed on February 26, 2020. Overall, 228,410 people tested positive for COVID-19 throughout 2020. Cumulative incidence rate was 6,145 per 100,000 of population (95% CI 6121 - 6 170).

Figure 11. Cumulative and Daily Number of COVID - 19 Confirmed Cases, Georgia (As of December 31, 2020)



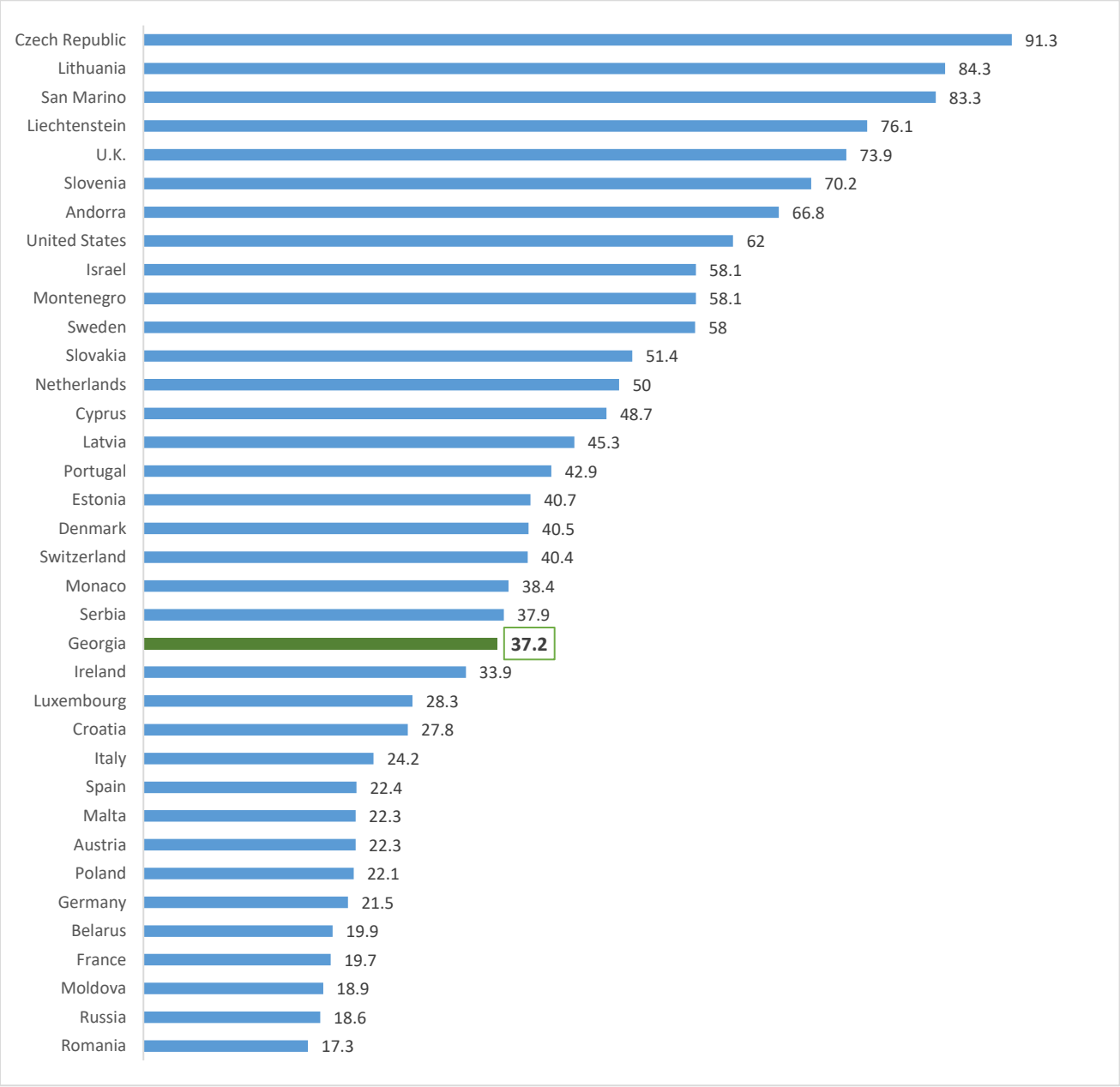
Since September 10, with the increase in confirmed cases, the incidence rate has increased sharply and reached a maximum on December 10. In the subsequent period, due to the expansion of preventive measures and reduction of cases, the rate decreased and 7 - day average COVID-19 incidence rate equaled 37.2 on December 31, 2020.

Figure 12. 7 - day Rolling Average Incidence Rate for COVID - 19, Georgia (As of December 31, 2020)



As of December 15, 2020, Georgia had the highest number of COVID-19 incidents among European countries, and as of December 31, 2020, in the light of decrease in cases, the 7 - day average incidence rate in Georgia was lower than the average.

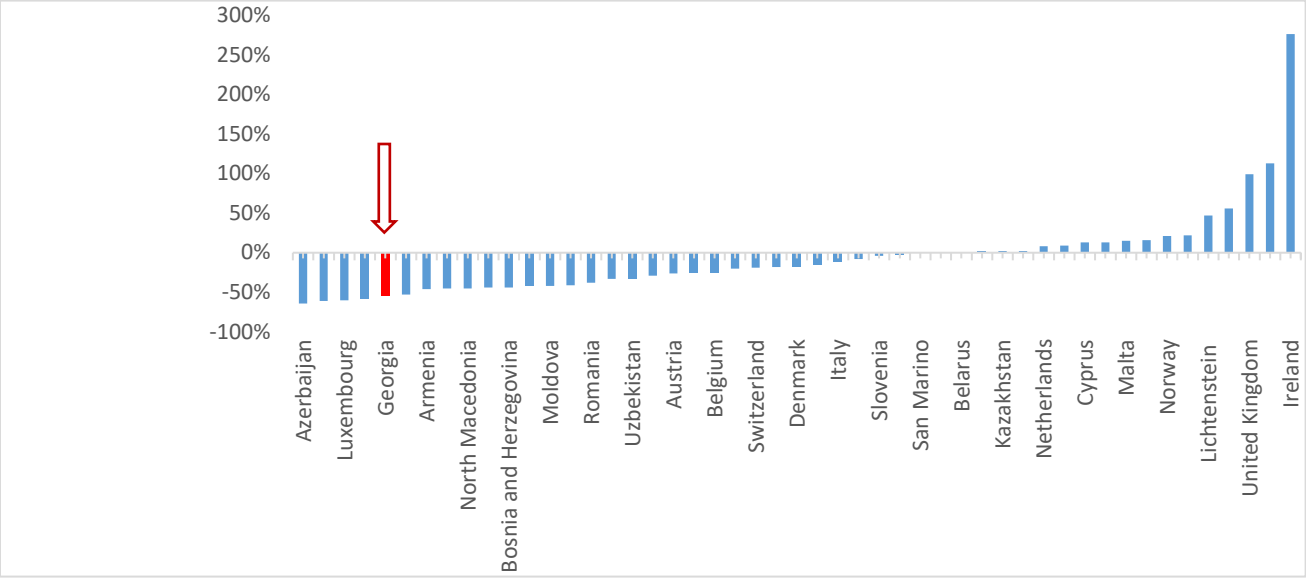
Figure 13. 7 - Day Rolling Average of COVID - 19 Cumulative Incidence Rate, Europe and Georgia (As of December 31, 2020)



Source: https://ourworldindata.org/coronavirus - data - explorer

Georgia is among the top five European countries that have reduced their COVID-19 incidence rate in the last 2 weeks.

Figure 14. COVID - 19 Incidence Reduction Percentage, Europe and Georgia, from 15.12.2020 through 31.12.2020



Source: https://ourworldindata.org/covid - cases# weekly - and - biweekly - cases

As of December 31, 2020, the COVID-19 cumulative incidence rate per 100,000 of population is the highest in the Adjara region, as well as in the Tbilisi and Imereti regions.

Map 1. COVID - 19 Cumulative Incidence Rate in the Regions of Georgia (As of December 31, 2020)

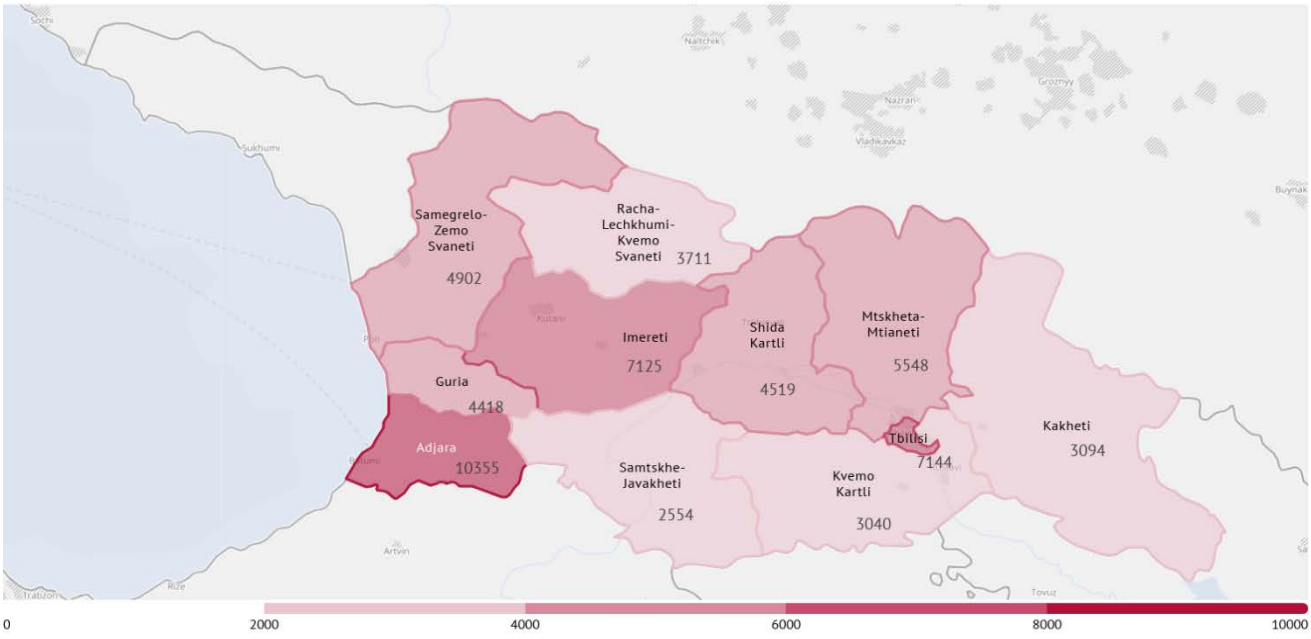
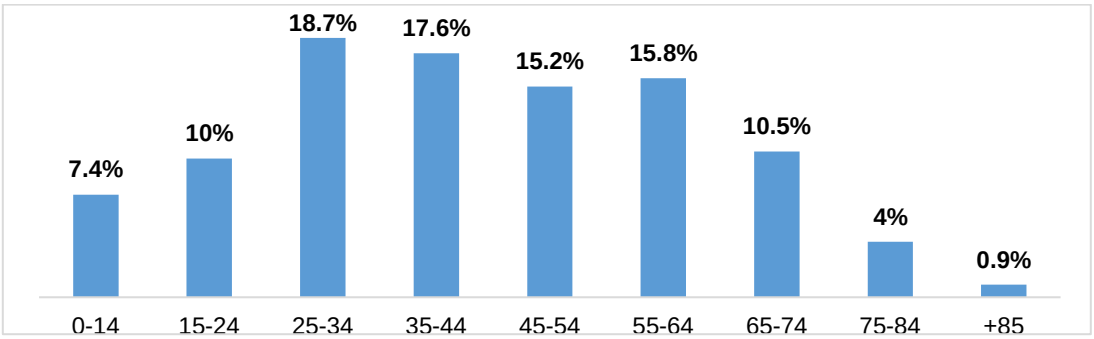


Table 2. COVID - 19 Cumulative Incidence Rate in the Regions of Georgia (As of December 31, 2020)

Region	Number of Confirmed Cases	Cumulative Incidence per 100 000 of population
Adjara	36 439	10 355
Guria	4 776	4 418
Tbilisi	84 643	7 144
Imereti	34 701	7 125
Kakheti	9 593	3 094
Mtskheta - Mtianeti	5 176	5 548
Racha – Lechkhumi and Zemo Svaneti	1 080	3 711
Samegrelo and Zemo Svaneti	15 251	4 902
Samtskhe - Javakheti	3 885	2 554
Kvemo Kartli	13 198	3 040
Shida Kartli	11 529	4 519
Apkhazeti	7 296	- -
Overseas	843	- -
Georgia	**228 410**	**6 145**

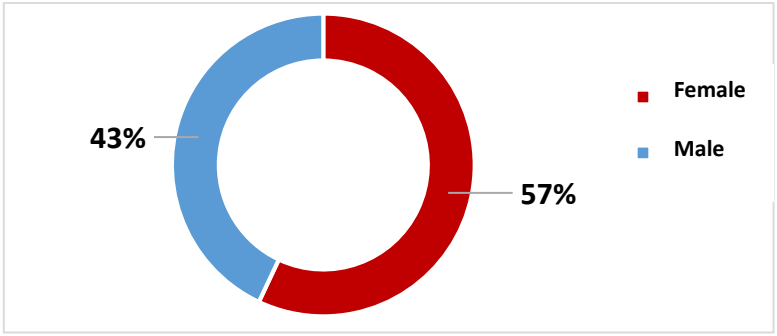
The age group from 0 to 18 years, among the infected, was 9.5%, while patients aged 65 and over constituted 15.4%.

Figure 15. Percentage of COVID - 19 Confirmed Cases by Age Groups, Georgia (As of December 31, 2020)



Of confirmed COVID-19 cases 57% were females and 43% males.

Figure 16. Confirmed COVID - 19 Cases by Gender (As of December 31, 2020)



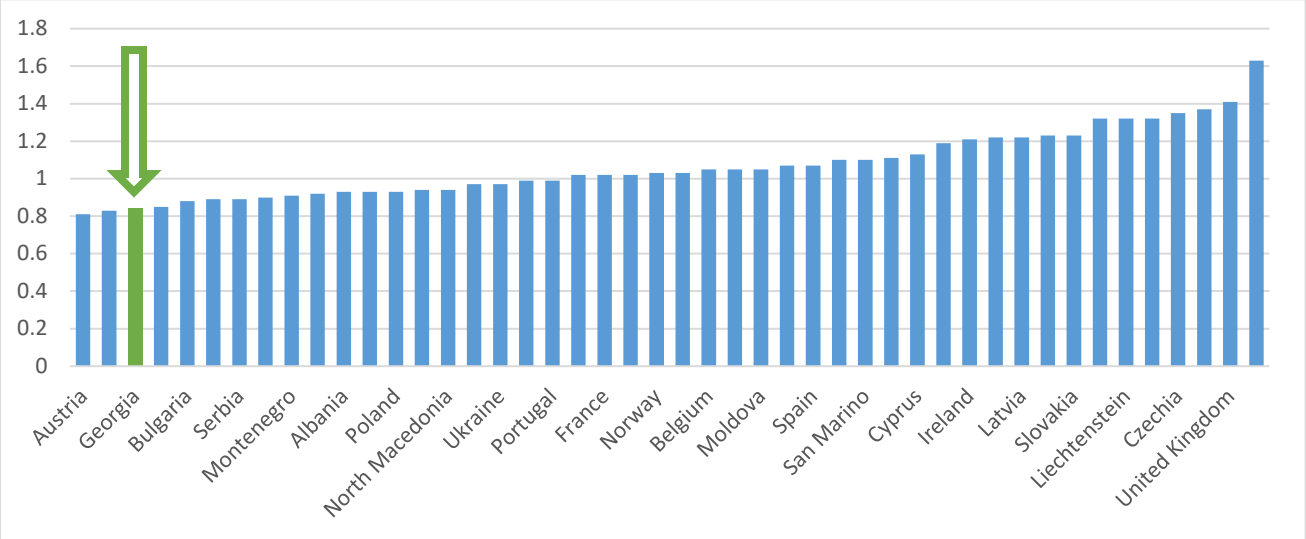
A key parameter, along with the other epidemiological characteristics of COVID-19, is the effective reproduction index Rt of COVID-19 cases, which is an indicator of the infection transmission potential in real time and is used to assess whether an epidemic is increasing, decreasing or stable. This indicator is important for detecting changes in disease transmission over a period of time.

During the COVID-19 pandemic, the Reproduction Index is used to assess and inform the effectiveness of interventions. Rt is the expected number of new infection cases caused by an infected individual in a population where some people may no longer be susceptible to the infection. The indicator is important to assess how policy changes in the direction of preventive and restrictive measures, population immunity and other factors have affected the transmission of infection over a specific period of time.

The Rt in early October 2020 was 1.45 (95% CI 1.39 - 1.51), in early December the reproduction index decreased to 1.15 (95% CI 1.14 - 1.16), however, it was ranked 8th among European countries. As of December 15, the rate had almost halved to 0.74 (95% CI 0.73 - 0.75). At the end of 2020, as of December 31, the Rt equaled 0.62 (95% CI 0.61 - 0.63).

As of December 18, the Rt of COVID-19 cases in Georgia entered the top three countries in Europe.

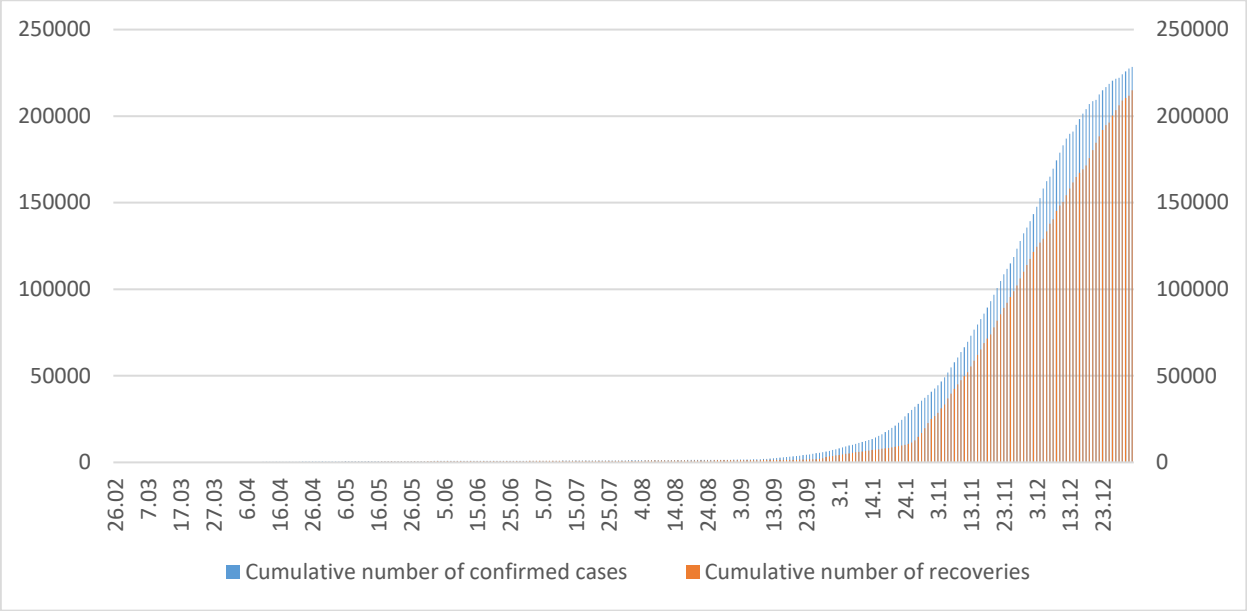
Figure 17. COVID - 19 Effective Reproduction Index in European Countries and Georgia (18.12.2020)



Source: https://ourworldindata.org/coronavirus

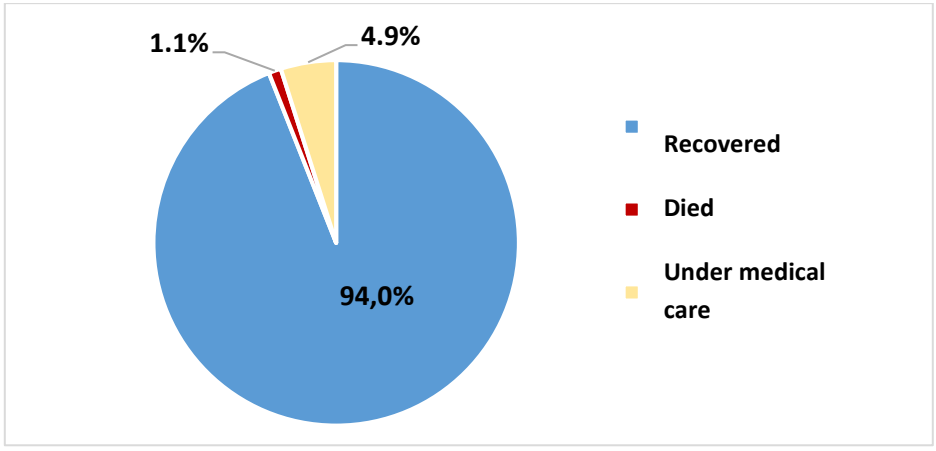
The first COVID-19 patient was hospitalized on February 26, 2020 and the first recovered one was discharged from the clinic on March 16. As of December 31, the total number of recovered people was 214,992.

Figure 18. Daily Number of COVID - 19 PCR Confirmed and Recovered Cases, Georgia (As of December 31, 2020)



As of December 31, 2020, the share of recovered people equaled 94%, 1.1% of the infected died.

Figure 19. Treatment Outcome (%) of COVID – 19 Patients (As of December 31, 2020)



COVID - 19 – INDUCED MORTALITY

COVID-19 - induced mortality represents one of the most important and significant issues and is the subject of in-depth study worldwide. In Georgia, due to the importance of the issue, the study of COVID-19 mortality, in coordination with the Ministry of Health, will be carried out with the involvement of groups of clinicians.

Key indicators for the identification, monitoring and evaluation of COVID - 19 mortality are:

- Excess mortality due to all causes;
- COVID-19 mortality rate per 100,000 of population;
- Case fatality rate (CFR) in COVID-19 confirmed cases (%).

Excess mortality is one of the most significant indicators of the COVID-19 morbidity burden, assessing whether the rapid spread of the disease and related deaths have affected the overall mortality rate. Increased mortality rate in the studied population is defined as mortality that exceeds the expected rate. Increased mortality has been observed in many European countries throughout 2020.

The total number of deaths due to all causes in Georgia, during the first 10 months of 2020, was lower by 0.6% compared to 2019. Since September 2020, in parallel with the increase in COVID-19 cases, there had been an increase in lethal cases, and as of December 31, 2020, the total number of deaths due to all causes exceeded the same indicator of the previous years.

Figure 20. Average Number of Deaths due to All Causes for 2020 and the period of 2015 - 2019, Georgia (As of December 31, 2020)

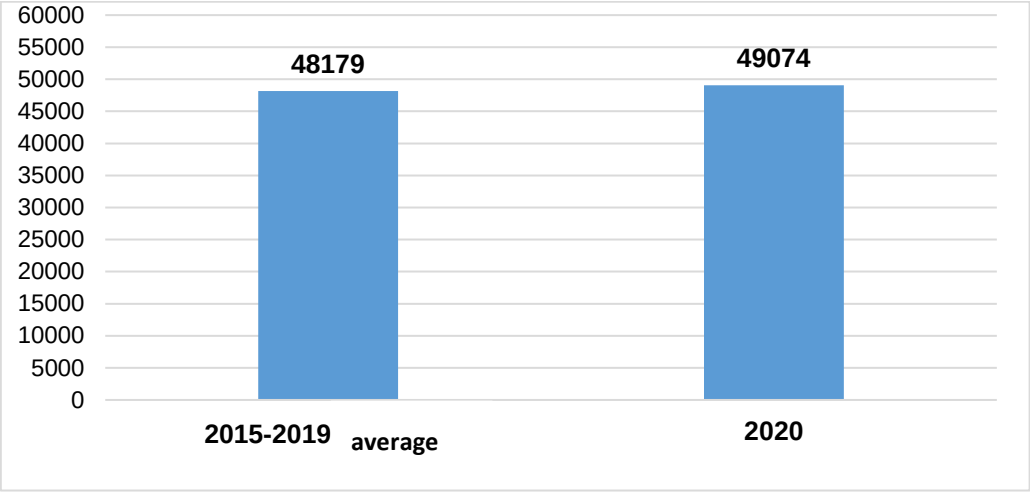
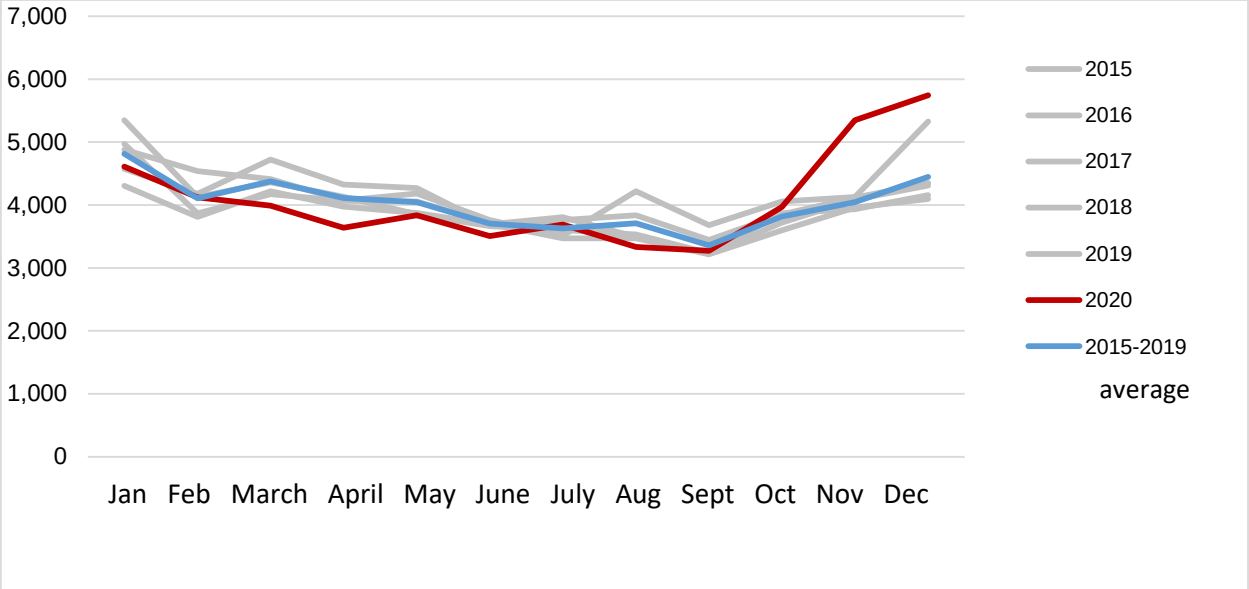
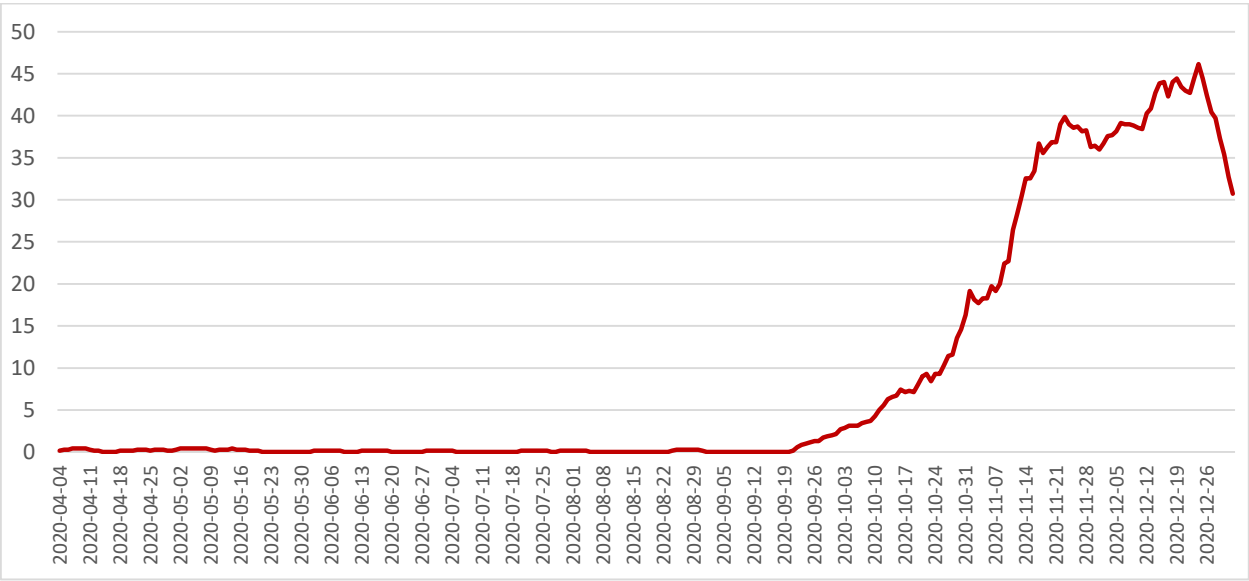


Figure 21. Monthly Number of Deaths due to All Causes, Georgia, 2015 - 2020 (as of December 31, 2020)



The number of lethal cases has decreased since December 24, 2020. Daily deaths per 1 million population decreased from 11.6 to 8.2 (December 31).

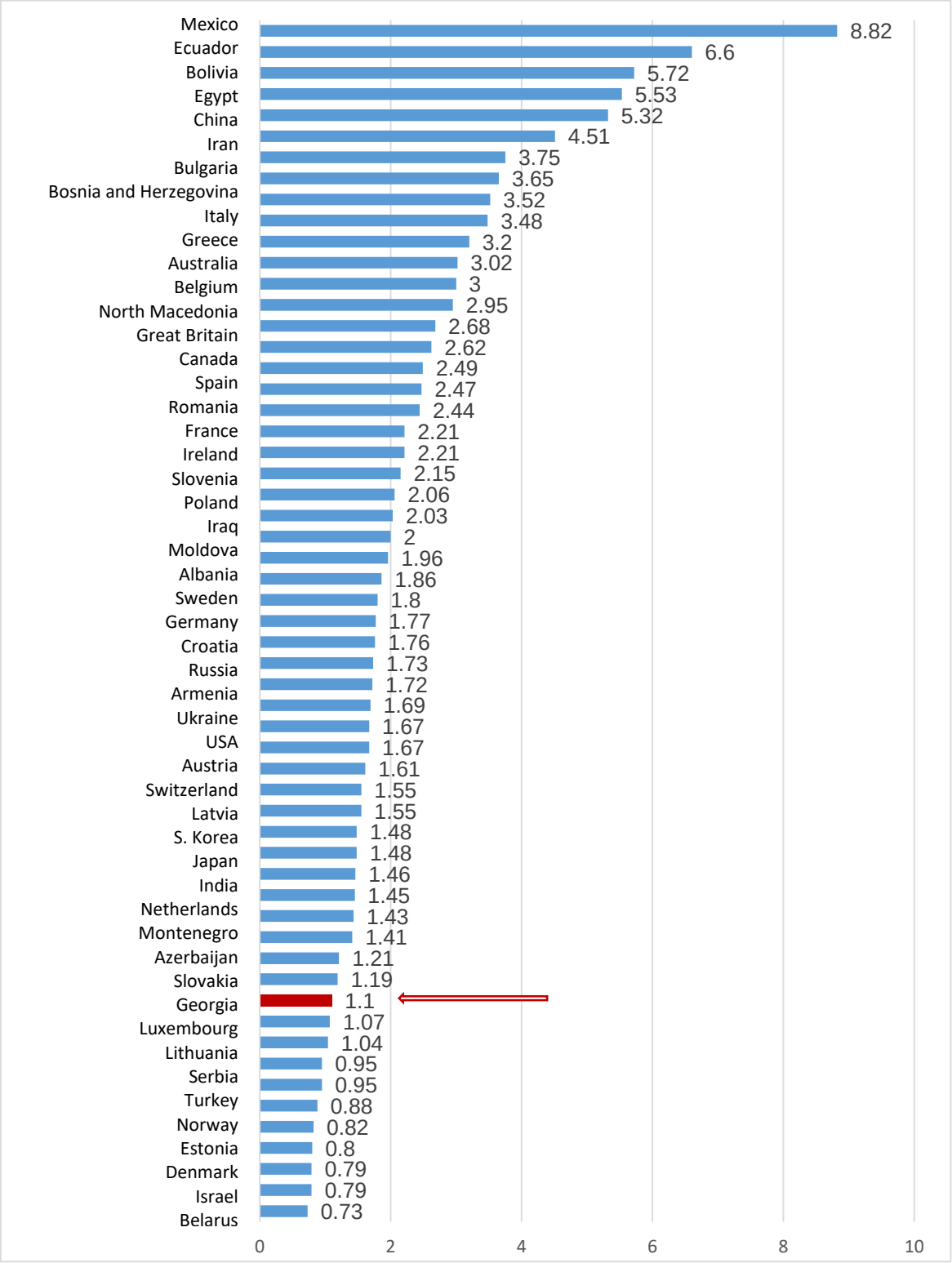
Figure 22. COVID - 19 Mortality Rate per 1 million of population from the first confirmed case through December 31, Georgia



Source: https://ourworldindata.org/covid - deaths

As of December 31, 2020, 2,528 cases had lethal outcome among patients with COVID-19 (CFR 1.1%).

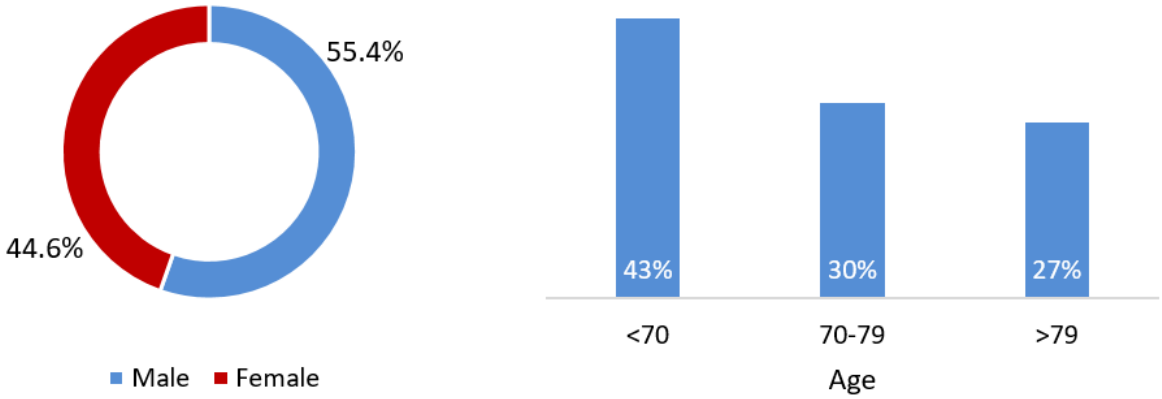
Figure 23. COVID - 19 Lethality Rates in Georgia's Neighboring Countries, Europe and Asia (as of December 31, 2020)



Source: https://www.worldometers.info/coronavirus/

Among the COVID–19 deceased patients 43% were below the age of 70, 30% within the range of 70 – 90 and 27% over 79. From the gender perspective, 55.4% were males and 44.6% females.

Figure 24. Gender – Age Distribution of COVID - 19 Deaths (As of December 31, 2020)



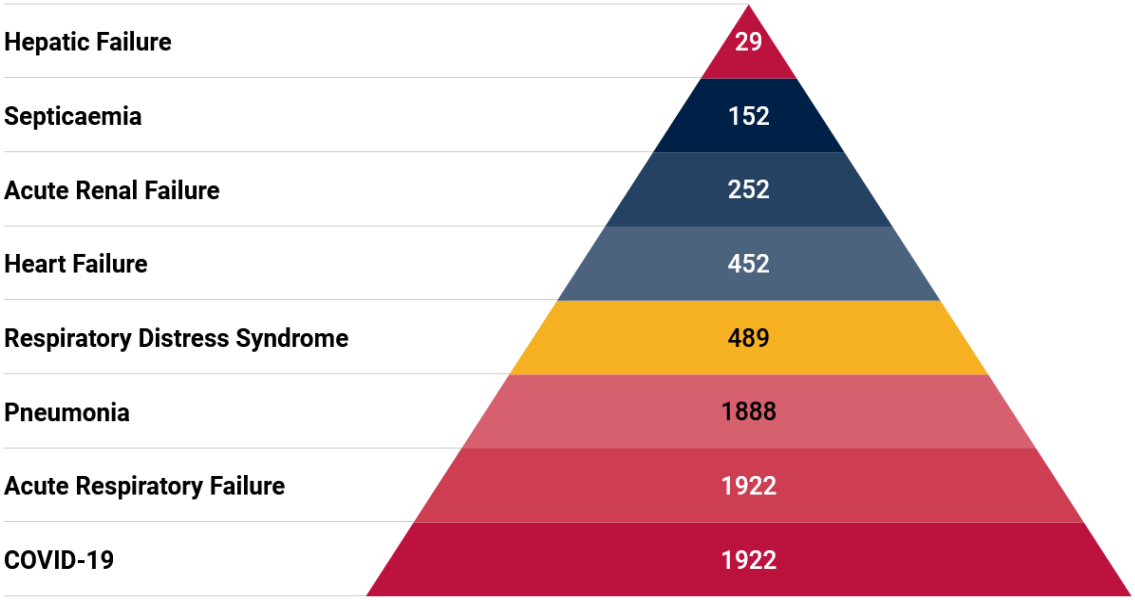
In death certificates of 62.2% deceased COVID-19 various underlying health conditions were noted, including cardiovascular disease and hypertension in 52% of cases (95% CI 49.6 - 54.1), diabetes in 17.3% of cases (95%) CI 18.7 - 22.5), and oncological disease in 4.3% of cases (95% CI 3.4 - 5.2).

Table 3. Distribution of COVID – 19 Deaths by Co-morbidity (as of December 31, 2020)

	N	%	95% CI
Cardiovascular diseases (except hypertension)	603	31.4	29.3 - 33.5
Hypertension	395	20.6	18.7 - 22.4
Diabetes	332	17.3	15.6 - 19
Oncology diseases	82	4.3	3.4 - 5.2
Chronic lung diseases	44	2.3	1.6 - 3

In all deceased patients, the severity of the disease was severe or critical. In all cases the disease was complicated by respiratory failure. 98.2% of the deceases had pneumonia (95% CI 97.5 - 98.7), 25.4% suffered from respiratory distress syndrome (95% CI 23.5 - 27.4), and 23.5% developed heart failure (95% CI 21.6 - 25.4). .9).

Figure 25. Distribution of COVID - 19 Deaths by Complication of the Underlying Disease - (as of December 31, 2020)

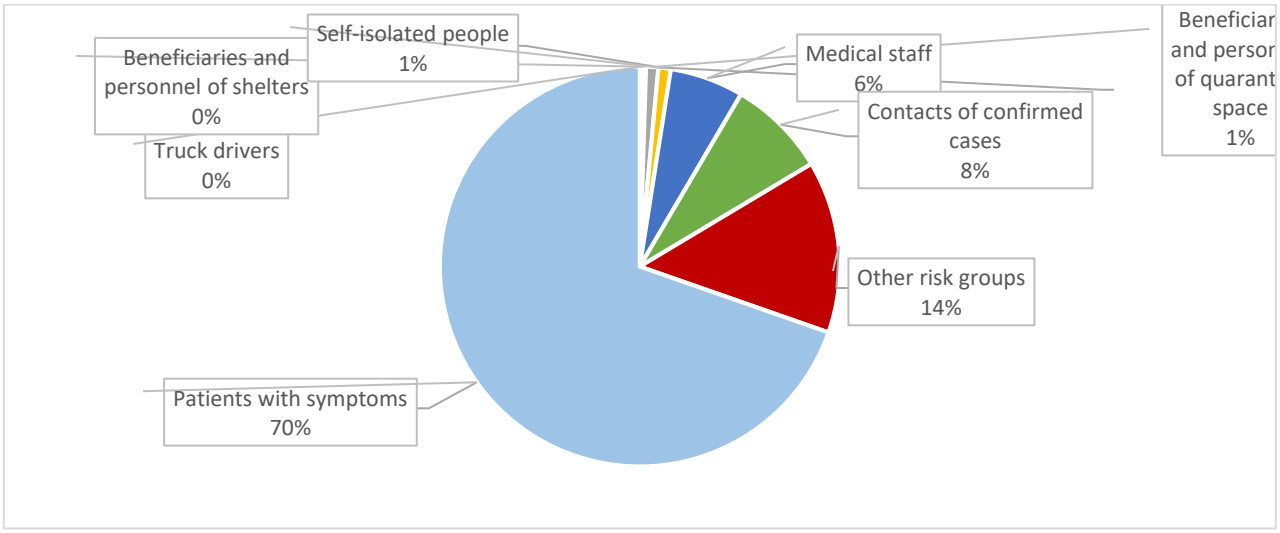


BURDEN OF COVID - 19 MORBIDITY AMONG HEALTHCARE WORKERS

Pursuant to the *Decree N 1777 of the Government of Georgia (September 14) on Approving the List of Priority Persons Subject to Mandatory Testing for Coronavirus (SARS-CoV-2) Infection (COVID-19) and Testing Procedure,* the country was testing the risk groups identified by the Decree, including the routine testing of medical personnel as a priority.

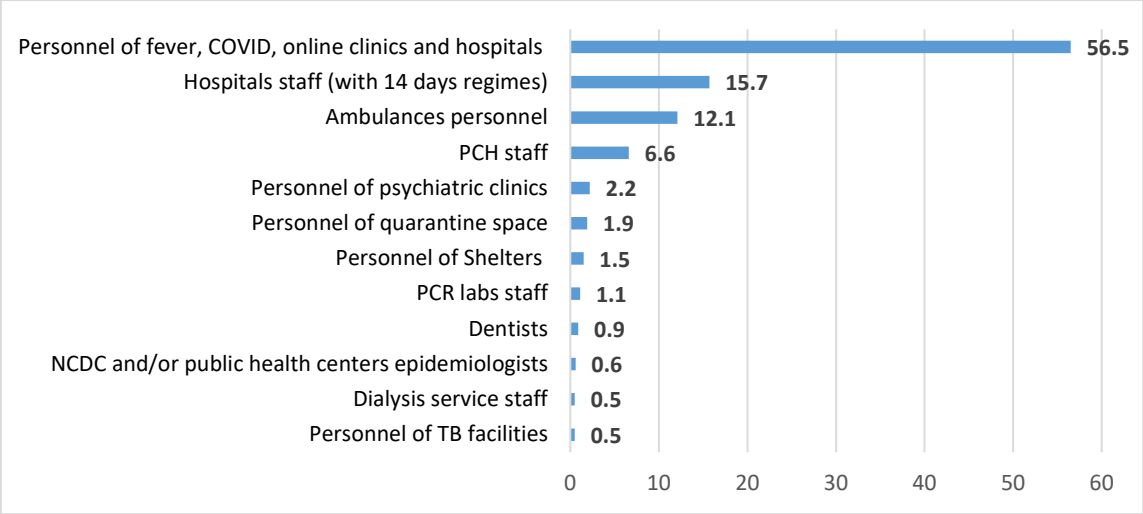
Medical personnel accounted for 6% of COVID–19 patients.

Figure 26. Distribution of PCR and Antigen - based Confirmed Cases by Risk Groups, Georgia (as of December 31, 2020)



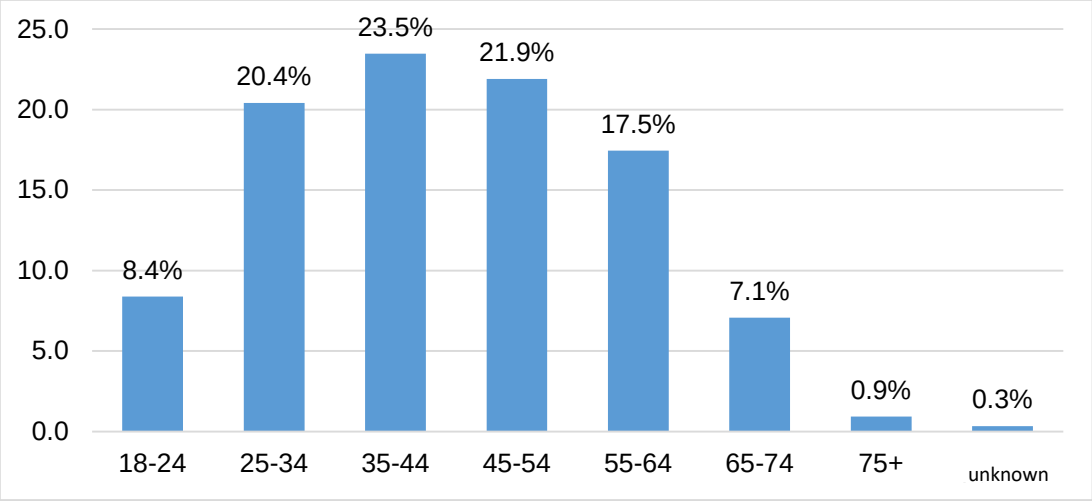
72% of the infected healthcare workers were represented by staff of inpatient, fever, COVID-facilities or Online Clinics, as well as of intensive care units.

Figure 27. Percentage Distribution of COVID - 19 Positive Cases in Healthcare Workers by Subgroups of Activities (as of December 31, 2020)



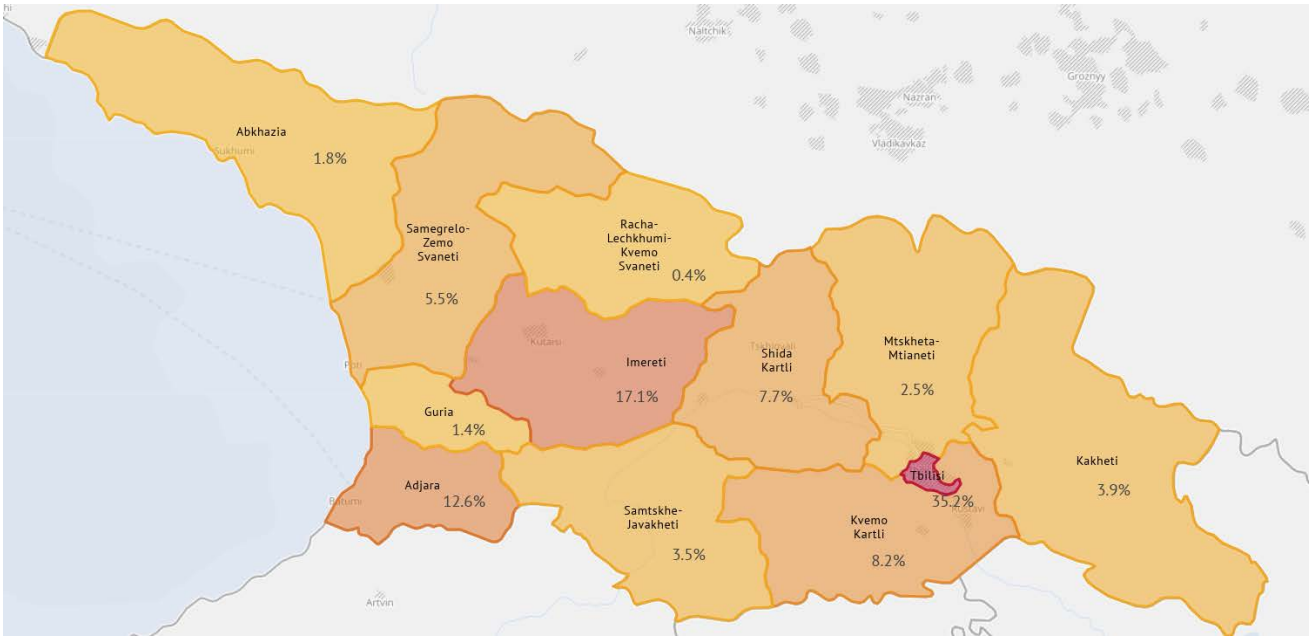
80% of the infected were females and 20% - males. Share of the staff of the most active working age among infected healthcare workers was 80%.

Figure 28. Distribution of COVID - 19 Positive Cases among Healthcare Workers by Age Groups (as of December 31, 2020)



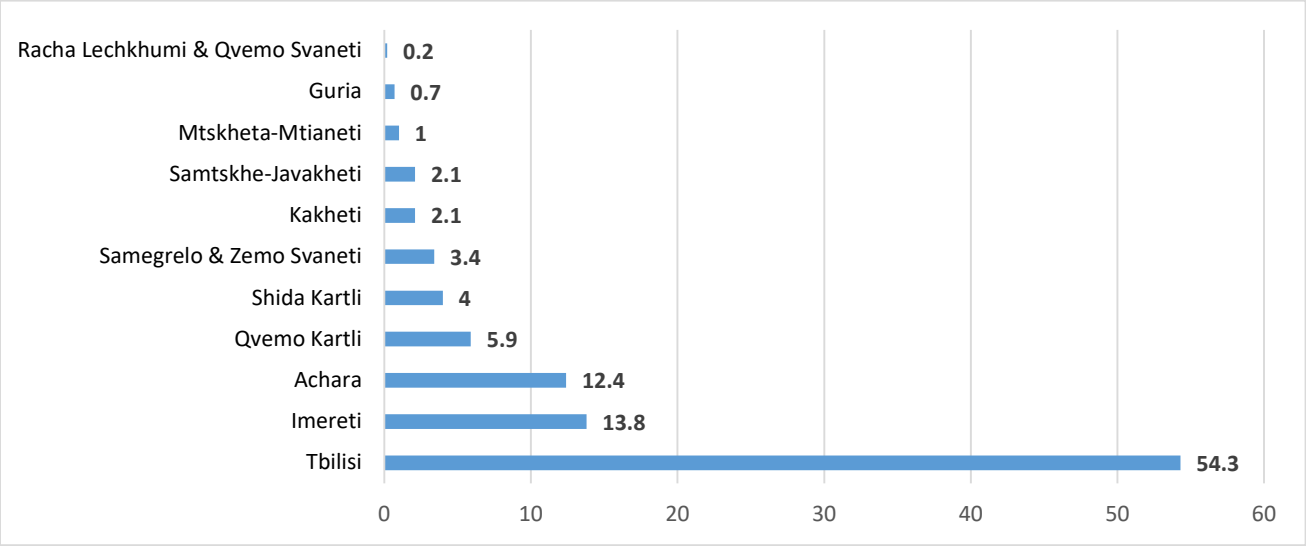
65% of COVID-19 infected medical personnel by regions were residents of Tbilisi, Imereti and Adjara.

Map 2. Regional Distribution of COVID - 19 Positive Cases among Healthcare Workers by Place of Residence



Majority (54%) of cases were confirmed in laboratories operated in Tbilisi.

Figure 29. Regional Distribution of COVID - 19 Positive Cases among Healthcare Workers by Place of Case Confirmation (%) (as of December 31, 2020)



The total number of COVID-19 deaths among medical personnel throughout 2020 was 62, representing 0.4% of the total number of confirmed cases for healthcare workers.

COVID-19 - induced mortality among Healthcare personnel is a part of the overall COVID–19 induced mortality and therefore, like all other fatal cases, requires in-depth analysis with the involvement of clinician groups and relevant structures of the Ministry of Health.

Share of 30 – 70-year age group represented 71% of the lethal cases.

Table 4. Distribution of COVID - 19 Lethal Cases among Healthcare Personnel by Age and Sex (n=62)

	Number	%
Female	31	50
Male	31	50
Age groups:		
30 - 39	2	3.2
40 - 49	3	4.8
50 - 59	9	14.5
60 - 69	30	48.4
70+	18	29
Total	**62**	**100**

Table 5. Regional Distribution of COVID - 19 Deaths among Healthcare Personnel[3] (n=62)

	Number	%
Adjara	14	22.6
Tbilisi	15	24.2
Imereti	14	22.6
Samtskhe - Javakheti	8	12.9
Kvemo Kartli	5	8.1
Kakheti	3	4.8
Mtskheta - Mtianeti	2	3.2
Samegrelo and Zemo Svaneti	1	1.6
Total	**62**	**100**

The majority of death cases (90%) of healthcare staff are recorded in a medical facility. According to risk groups, 64.5% of the deceased healthcare workers were inpatient medical staff or employees of the Fever, COVID or Online Clinics, intensive therapy and intensive care units.

Table 6. Distribution of COVID - 19 Lethal Cases among Medical Personnel by Risk Groups (n=62)

	Number	%
Inpatient medical staff (14 – day mode of testing)	24	38.7
Employee of Fever / COVID Clinic / Online Clinic and all inpatient, intensive therapy and intensive care units	16	25.8
Primary healthcare workers	10	16.1
Emergency worker	5	8.1
Quarantine staff	2	3.2
Dialysis service staff	1	1.6
PCR Laboratory Employee	1	1.6
Psychiatric staff	1	1.6
Epidemiologist	1	1.6
Total	**62**	**100**

Respiratory diseases are often diagnosed as a complication of coronavirus disease among the deceased.

[3] Places of residence and death are identical

Table 7. Distribution of COVID – 19 Lethal Cases among Healthcare Workers by Complications

Complications	Number	%
Pneumonia	42	67.7
Acute respiratory failure	40	64.5
Respiratory distress syndrome	17	27.4
Polyorgan failure	7	11.3
Septicemia	5	8.1

Various concomitant chronic diseases were reported in 24 deaths (38.7%), of which the majority were cardio-vascular diseases.

Table 8. Distribution of COVID - 19 Lethal Cases due to Co-morbidity among Healthcare Staff

Co-morbidity	Number	%
Cardiovascular diseases (except hypertension)	11	45.8
Hypertension	9	37.5
Diabetes	7	29.2
Cancer	5	20.8
Disease of the hematopoietic organs	4	16.7

VACCINES AGAINST COVID - 19 AND NATIONAL DEPLOYMENT AND VACCINATION PLAN IN GEORGIA[4]

Initiation of vaccination is of particular importance to reduce the potential harm caused by the COVID-19 pandemic. The world is focused on developing and introducing new vaccines. Work is underway to introduce several dozen vaccines. Vaccination started in 45 countries at the time of drafting this report and a total of 24,746,000 doses of SARS-CoV-2 vaccine were given (as of 14.01.2021). Importantly, some vaccines against COVID 19 are made with different, new technologies, however they belong to inactivated vaccines:

1. RNA matrix, mRNA (messenger RNA) (2 vaccines) Moderna / NIAID; BioNTech / Fosun Pharma / Pfizer. mRNA vaccines represent a new type of vaccines. A copy of a natural chemical called an RNA matrix is used to create an immune response. Once inside the cell, the RNA vaccine functions as an RNA matrix and teaches the cell to make a foreign protein or just a part of a protein that triggers an immune response. Based on the immune response, antibodies are produced that protect the human body in the event of infection. The RNA vaccine cannot cause COVID – 19, as it does not contain a live virus. One of the disadvantages of the RNA vaccine is that it can only be stored at low temperatures. The Pfizer vaccine is stored at - 70 °C and the Moderna vaccine at - 20 ° C.
2. Viral vector-based vaccines (4 vaccines): University of Oxford / AstraZeneca; CanSino Biological Inc./Beijing Institute of Biotechnology; Gamaleya Research Institute; Janssen Pharmaceutical Companies. They differ from conventional vaccines in in a way that they do not contain antigens but use the body's own cells to produce them. This is done by using a modified virus (vector) to deliver the genetic code of the antigen, in case of discovery of so-called COVID-19 "Spike" proteins on the virus surface in the human cell. The vaccine triggers a strong cellular immune response and the production of antibodies. The viral vector vaccine is the anti -Ebola rVSV - ZEBOV vaccine. The main problem in the production of these vaccines is the scale. Creation of a vector vaccine is a complex process and involves many steps and components, each of which increases the risk of vaccine contamination. Therefore, extensive testing is required after each stage, which leads to an increase in costs.
3. Protein subunit vaccines (2 vaccines): Anhui Zhifei Longcom Biopharmaceutical / Institute of Microbiology, Chinese Academy of Sciences; Novavax.
4. Virus - like particle (VLP) (1 vaccine): Medicago Inc. Virus - like particles replicate the natural structure of the virus, allowing the immune system to recognize them and triggering an immune response that is similar to a natural infection, without the side effects associated with it.
5. Inactivated vaccines (3 vaccines): Sinovac China; Wuhan Institute of Biological Products / Sinopharm; Beijing Institute of Biological Products / Sinopharm.
6. Complete virion, inactivated (1 vaccine): Bharat Biotech.

[4] The final version of the plan will be reviewed and approved by the Ministry of Internally Displaced Persons from the Occupied Territories of Georgia, Labor, Health and Social Affairs in the second half of January 2021.

Figure 30. Number of COVID - 19 Vaccinations Worldwide, 14 January, 2021

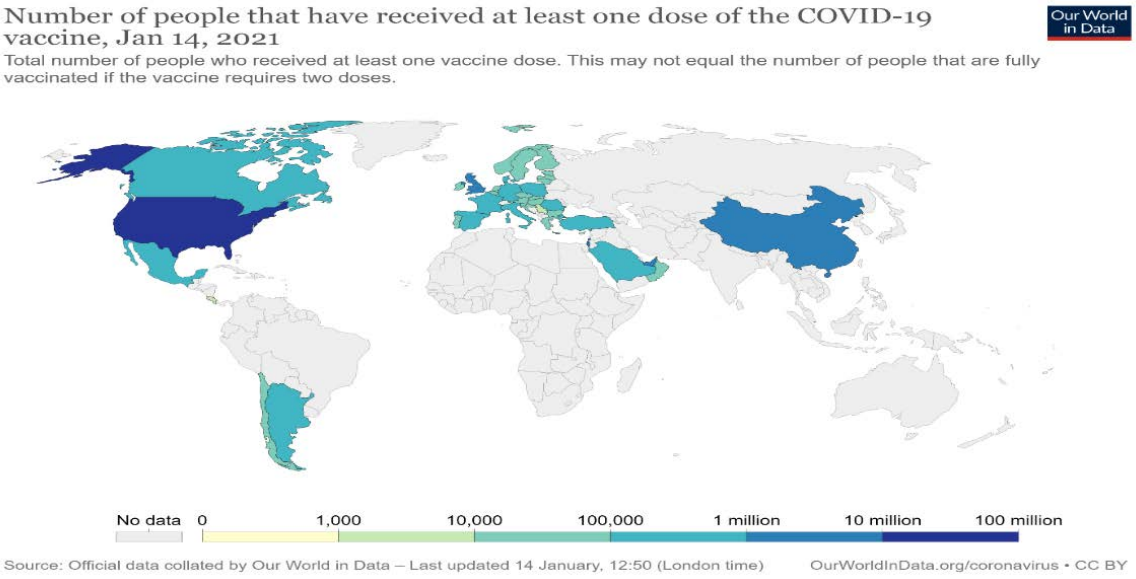


Figure 31. Number of COVID - 19 vaccinations worldwide, 14 January, 2021

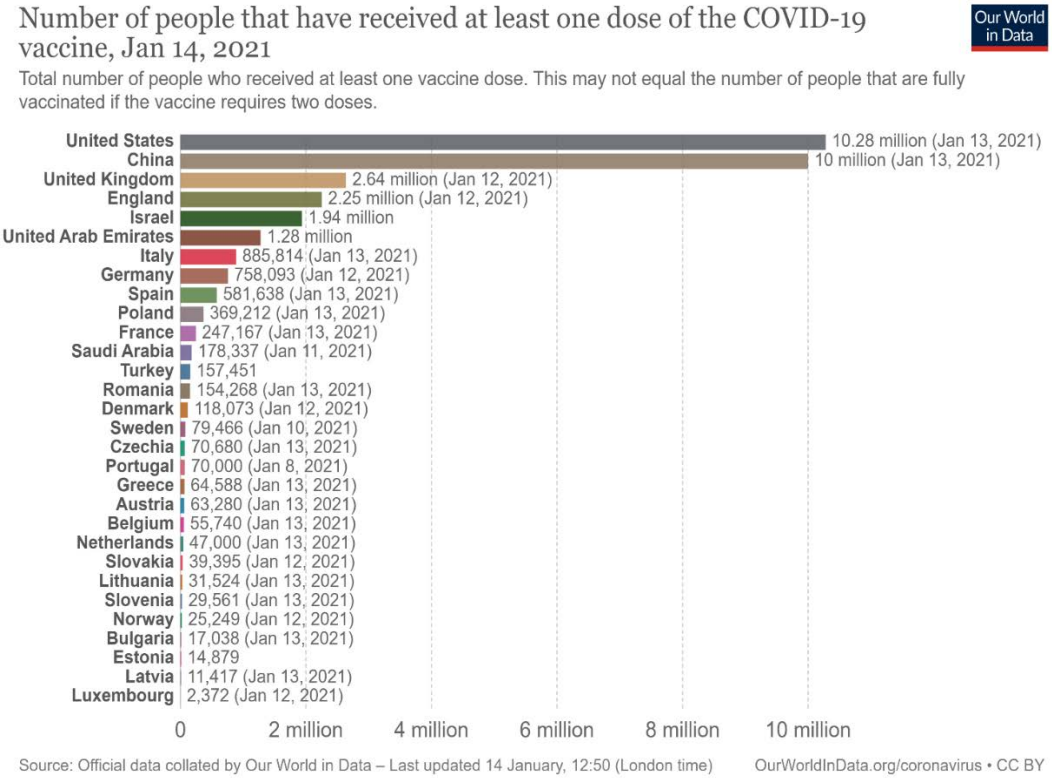


Table 9. COVID - 19 Vaccines

	Manufacturer	Platform	Dose	Interval (days)	Phase	Approved for emergency use	Full authorization
1	Sinovac China	Inactivated	2	14	3	China	
2	Wuhan Institute of Biological Products /Sinopharm	Inactivated	2	21	3	Egypt	China, Bahrain, United Arab Emirates
3	Beijing Institute of Biological Products/ Sinopharm	Inactivated	2	21	3		
4	University of Oxford/AstraZeneca	Viral vector	2	28	3	UK, Argentina, India, El Salvador, Dominican Republic, Mexico	
5	CanSino Biological Inc./Beijing Institute of Biotechnology	Viral vector	1	-	3	China	
6	Gamaleya Research Institute	Non-replicating Viral vector	2	21	3	Russia, Belarus, Argentina, Bolivia, Venezuela, Serbia	
7	Janssen Pharmaceutical Companies	Viral vector	1 2	- 56	3		
8	Novavax	Protein subunit	2	21	3		
9	Moderna /NIAID	RNA	2	28	3	USA, Canada	
10	BioNTech /Fosun Pharma /Pfizer	RNA	2	28	3	UK, USA, Mexico, Canada, Bahrain, Kuwait, Singapore Jordan, Oman, Costa Rica, Ecuador, Israel, Panama, Chile, Qatar, Iraq, United Arab Emirates, Argentina	Saudi Arabia, European Union (European Medicines Agency), Switzerland, Norway, Iceland, Greenland, Faroe Islands, Serbia
11	Anhui Zhifei Longcom Biopharmaceutical/ Institute of Microbiology, Chinese Academy of Sciences	Protein subunit	2 or 3	28 ১৳ 28 - 56	3		
12	Medicago Inc	Virus - like Particle (VLP)	2	21	3		
13	Bharat Biotech	Inactivated	2	28	3	India	

(*as of December 31, 2020*)

Georgia started preparation for vaccination against COVID - 19 virus since the summer of 2020, the first phase of which ended with the signing an agreement on September 18 this year. Under this agreement the country will receive 1,484,400 doses of vaccine from the COVAX Facility, which covers 20% of the population. For the first phase, vaccination aims to protect high - risk groups of population from severe disease caused by COVID-19 and reduce mortality, while at the same time gradually restore normal economic activity. The country has already paid $4,601,640 to the COVAX Facility. The Georgian Government is simultaneously actively negotiating with partner countries and directly with vaccine manufacturers to obtain additional doses of the vaccine in the shortest possible.

Part of the preparation process in this direction is development of a plan for the introduction of the COVID - 19 vaccine. Draft plan is ready and it will be finalized in January 2021. The process is led by the Interagency Coordination Commission working on the Implementation of COVID-19 Vaccination headed by the Minister of Health. The technical work is organized by the National Center for Disease Control and Public Health, with expertise provided by consultants mobilized with the financial support of the Asian Development Bank. Technical Committee of immunization experts is involved in the development of the plan. Representatives of donor organizations and universities and the Public Defender were asked to participate in the work of the Interagency Coordination Commission.

The COVID-19 vaccine deployment plan builds on the capacity and resources of the National Immunization Program that will be optimally used to deploy the vaccination campaign nationwide. The plan envisages the possibility of phased-in delivery of vaccines and includes scenarios for the possible delivery and administration of vaccines with different temperature regimes.

The plan is developed in accordance with the framework document recommended by WHO and consists of the following components:

1. Priority groups and vaccination strategies;
2. Legal and regulatory framework;
3. COVID - 19 vaccine delivery service provision;
4. Cold chain and medical waste management;
5. Human resource management and training;
6. Demand creation and communication;
7. Supervision and monitoring;
8. Vaccine safety.

According to the international recommendations and the epidemiological specifics of the country, the target groups have been selected for 2021, which will be vaccinated in stages. The selection of groups is based on ETAGE[5] recommendations and is aimed at maintaining vital health services and reducing morbidity and mortality in high - risk groups. The selected groups were reviewed and recommended by the Georgian National Technical Experts Committee on Immunization on December 12, 2020.

[5] European Technical Advisory Group of Experts on Immunization

The plan addresses vaccines, the information on which is available in the public domain. As of the drafting the plan, vaccines of two manufacturers Pfizer / BioNTech and Moderna were authorized by the FDA and the other regulators for temporary emergency use. It should be noted that the storage conditions of most vaccines at different stages of clinical trials is 2 – 8°C, except for Pfizer / BioNTech and Moderna, which are stored at - 70°C and - 20°C, respectively. Therefore, the plan envisages the use of a vaccine with potentially all three temperature regimes at different stages. The budget required for the plan implementation and the service delivery models were determined for vaccines requiring different temperature regimes (given various doses and supply frequency) according to four possible scenarios. Pursuant to the scenarios, vaccination related consumables were calculated - syringes, safe boxes, personal protective equipment (surgical mask, protective shield, gloves, disposable robe), etc., as well as required financial resources.

The Georgian legislation defines the exceptional cases[6] for allowing pharmaceutical product to the Georgian market by bypassing the access regimes, when the so - called pharmaceutical product is granted one - time registration under special conditions (natural disaster, mass damage of population, epidemic, rare disease), for humanitarian purposes, as well as in the presence of the other special state interests, with the consent of the Ministry. At the initial stage, it is recommended to allow as an exception the COVID - 19 vaccine for use on the Georgian market through bypassing the access regimes set for the pharmaceutical product.

For vaccinating 20% of the population, it will be necessary to triple the potential of the country's immunization service providing network. Therefore, in order to increase the existing capacities and at the same time use them effectively, it is planned to mobilize all possible resources.

Evaluation of the cold chain capacity was performed in accordance with 4 vaccine delivery scenarios using UNICEF and WHO provided sizing tool, as follows:

Scenario I

The existing cold chain capacity is sufficient to receive AstraZeneca vaccine and does not require additional investment. The available cold chain system does not require additional investment to ensure storage and distribution of the Pfizer vaccine according to the set rules (with observance of - 70°C temperature regime). Vaccines will be stored only in regional warehouses, and vaccination will be carried out with a tightened schedule (within 4 - 5 days after taking the vaccine from the warehouse).

Scenario II

The existing cold chain capacity is suitable for receiving the AstraZeneca vaccine and does not require additional investment. The size of the existing cold chain system is adequate and does not require additional investment to ensure storage - distribution of Moderna vaccine according to the set rule (with observance of - 20°C temperature regime).

[6] Law of Georgia on Drugs and Pharmaceutical Activities, August 10, 2009 (Article 11[13])

Scenarios III and IV

The existing cold chain system does not require additional investment to ensure the storage - distribution of the vaccine according to the set rule (with observance of temperature regime of 2 – 8°C).

Transportation at the regional level will be carried out by special vehicles, "vaccine carriers" and with a temperature regime of 2 - 8°C and - 20°C. According to current practice, "vaccine carriers" are used throughout the country to replenish a three - month supply of routine vaccines at the municipal level. Details of vaccine distribution will be defined with consideration of the available vaccine's characteristics.

Waste generated during COVID-19 vaccination will be managed in accordance with the regulations and mechanisms available in the country, which are used by the institutions during other scheduled or unscheduled vaccinations. Additional waste disposal requirements at each level of the cold chain system are taken into account in budget calculations and service pricing.

For introduction of COVID - 19 vaccine, it is essential to designate the human resources and their quantity and then equip them with the knowledge about relevant standards and required skills. A training plan has been developed for retraining human resources. Trainings will be held online. The training topics include (but are not limited to) the following:

- Practical immunization
- Cold chain and logistics
- Post immunization adverse events and their supervision
- Reporting, including in electronic module of immunization
- Communication

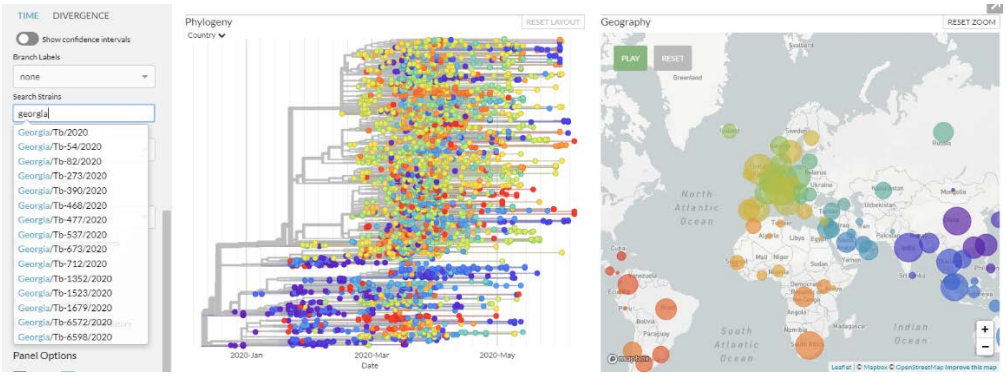
Supervision, monitoring, and evaluation of the process from the start of COVID - 19 vaccination is critical for process administration and the strategy adaptation. Standardized tools will enable the country to conduct processes in a transparent, accessible manner, to ensure that the set goal is achieved through interim reporting and problem identification. The reporting model takes into account the practice in the country and includes report on vaccination status, in particular, immunization / vaccination, vaccine administration, and unusual post - vaccination reactions and complications. Vaccination registration and reporting will be carried out through an existing electronic immunization management module. Dashboards with coverage rates will be shared through the NCDC's website. Surveillance of post - vaccination adverse events will be based on an existing mechanism, most recently updated in 2019 in line with WHO recommendations.
Multi-year experience in introduction of new vaccines and evidence prove that clear and effective communication is essential for the successful implementation of the COVID-19 vaccination program, which shall be initiated before vaccines become available. Increasing confidence in the vaccine among the general population and especially in the first target groups, as well as dispelling the misinformation surrounding the vaccine, is important to ensure high acceptance. A successful COVID-19 vaccination program, in turn, will have a significant impact on the country's immunization program and routine vaccination coverage in the coming years.

SEQUENCING AND PHYLOGENETIC ANALYSIS OF CORONAVIRUS (SARS-COV–2) CIRCULATING IN GEORGIA

The whole genome of SARS-CoV-2 circulating in Georgia was deciphered at the National Center for Disease Control and Public Health, within the framework of the research, using a new generation of sequencing technology. This study was the first in the region. It focuses on the genetic characterization of SARS-CoV-2 virus, which causes severe, acute respiratory syndrome, and aims to decipher and phylogenetically analyze the entire genome of virus strains prevalent in Georgia.

Complete genome sequencing for 25 strains of SARS-CoV-2 virus was performed at the Lugar Research Center (Laboratory). The study used positive clinical specimens taken by NCDC as part of COVID-19 epidemiological surveillance and confirmed for SARS-CoV-2 via PCR test. Samples of patients with high viral load were selected for complete decoding of the SARS-CoV-2 genome using a new generation sequencing on the Illumina MiSeq platform. The sequence of all sequenced strains was uploaded to the international database - GISAID. Comparison with the genetic data of the world strains in the database allowed us to do epidemiological tracking, which, in addition to scientific value, significantly contributed to the COVID-19 epidemiological surveillance in Georgia.

Figure 32. Georgian Strains uploaded to GISAID Database along with global SARS - COV - 2 strains



Based on these data, a phylogenetic analysis of SARS-CoV-2 strains was performed, as a result of which the SARS-CoV-2 strains spread during the first wave of the disease in Georgia were divided into several groups according to the source of their introduction. For example, two of them fell under two different clusters of Spanish strains, confirming by their travel history; also, a number of cases imported from Italy and their contacts were grouped with the strains from the same country; some of Georgia's internal outbreak cases were related to Iranian strains, while the others were linked to Russian / French incidents.

Figure 33. Phylogenetic tree of SARS - COV - 2 strains circulating during the first wave in Georgia and their comparison with the global strains

Part of the second wave samples have already been sequenced and their detailed analysis is underway, while another part has been selected and its sequencing will be completed in the near future. In addition, in one of the samples taken in December, a major mutation characteristic to S gene of a new so - called "British" strain (spike protein deletion 69 - 70). It does not have the other mutations of S gene characteristic to a currently spread strain in the UK (del144, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H). The patient infected with this strain is a man over 50 years of age, whose condition is satisfactory and who is isolated. His contacts are defined and traced. A positive sample of one of the contacts (source of alleged infection) was found, who entered Georgia from a neighboring country (Azerbaijan) and has already returned to the same country. Preliminary examination of this patient's sample revealed the possible existence of a mutation and its sequencing is already underway.

The mutation detected in the UK has already been confirmed in more than 18 countries around the world and, to date, may be linked to easier transmission of the virus but does not affect the severity of the disease.

CORONAVIRUS SARS-COV-2 PREVALENCE STUDIES IN GEORGIA

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. During the period of May 22 - 26, a survey of point seroprevalence was conducted in two selected municipalities (Telavi and Bolnisi) having similar demographic characteristics as two regions of Georgia, Kvemo Kartli and Kakheti. 15 clusters identified by random sampling were studies within each municipality. Overall, the seroprevalence survey covered 30 clusters, with 300 individuals. A rapid coronavirus antibody test was used in the study. Type of sample used in the survey was capillary blood.

   Positive results for antibodies (IgM, IgG) against SARS-CoV-2 were observed in 2 cases, both representing Bolnisi residents. The point seroprevalence study showed that in the municipality where the surveillance system did not register a COVID - 19 case at the time of the survey, no positive antibody (IgM and / or IgG) results were detected. The share of positive cases in Bolnisi Municipality within the survey was 1.3% (2/150) and in Telavi Municipality 0%. The overall proportion of positive cases across the survey was 0.67%.
2. During the period of August 17 - 25, under the auspices of WHO, a seroprevalence study was conducted in 4 municipalities of Georgia (Khelvachauri, Martvili, Borjomi and Kobuleti). Elecsys AntiSARS-CoV-2 Electrochemiluminescent Immunoassay (ECLIA) was used in it. Sample type was blood / plasma.

   1,222 persons were interviewed, and 1,222 samples were collected (Khelvachauri - 305, Martvili - 302, Borjomi - 311, Kobuleti - 304) and only in one of them the presence of human summary SARS-CoV-2 antibodies (in Martvili resident) was confirmed. The positivity rate within the study equaled 0.08%.
3. A seroprevalence survey was conducted in August, which provided for a 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 a predetermined sample size. The survey looked at 744 blood samples from blood banks and hospitals across the country, in five of which IgG antibodies to SARS-CoV–2 were identified. The positivity rate within the study was 0.67% (5/744).
4. In the first half of November, a point seroprevalence survey was conducted among healthcare workers at COVID clinics, fever and emergency centers in Adjara and Imereti regions. 725 healthcare workers were involved in the study across both regions. Laboratory Assay Method: Elecsys AntiSARS-CoV-2 Electrochemiluminescent Immunoassay (ECLIA) Method. Sample type Venous blood / plasma. The proportion of positive outcome for summary antibodies was 40% (290/725) in the examined cases.
5. During the period of November 27 - December 12 - Seroprevalence study was conducted in Tbilisi and Rustavi outpatient facilities. 10 institutions in Tbilisi and 5 in Rustavi were involved in the study. The seroprevalence study covered 6,200 individuals and provided for interviewing each person involved in the study with a standard questionnaire and sampling for laboratory research. Sample type: blood / plasma). As of January 10, 2021, laboratory tests on 3,002 samples were completed and approximately in 30% of them presence of human SARS-CoV-2 antibodies were confirmed.
6. The second phase of the Seroprevalence study was conducted from December 14 to 25, under the auspices of WHO in 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 research. Sample type: Venous blood / plasma. A total of 1,217 people was involved in the survey.

7. Starting from December 15, in order to reduce the impact of COVID-19 in Georgia, testing (with the interval of 3 - 4 weeks) of medical personnel for SARS-CoV-2 antibodies in pairs of serum has been conducted in selected clinics (5 in Tbilisi and 2 in Gori). In addition, evaluation of risk-factors for getting infected with COVID-19 was performed. As of January 10, 2021, 144 healthcare workers were involved in the study. Repeated laboratory testing of blood serum for medical personnel and inclusion of new healthcare workers in the survey is currently underway.

The conducted seroprevalence studies reflect epidemic dynamic in the country and show the tendency for increase from its beginning onwards. A final analysis of the surveys conducted in the autumn and winter will allow to assess the general state of the COVID-19 prevalence in the country.

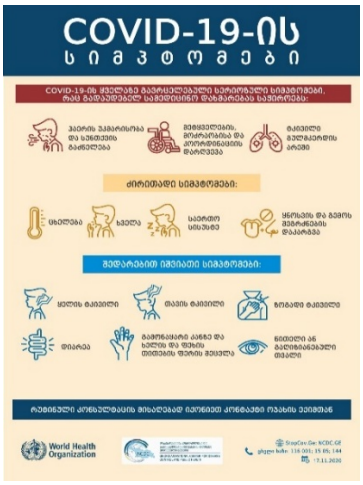
In addition to the above - mentioned seroprevalence studies, in September 2020, for the purpose of determining the SARS-CoV-2 circulation intensity in Tbilisi, a point prevalence survey was conducted on the territory of the Public Hall within the scope of the Novel Coronavirus State Management Program. Voluntary PCR testing of citizens was performed as a part of the study. 974 samples of nasopharyngeal smear were taken, of which, 0.62% (6/974) tested positive through PCR for SARS-CoV-2.

COVID - 19 RELATED COMMUNICATION CAMPAIGN

Communication campaign about COVID-19 started in January 2020, before the first case of the disease was detected in the country. Risk communication began. Video lectures for medical staff were prepared by the Center. Information and educational materials were created, including for ethnic minorities living in Georgia. The social media campaign got intensified on Twitter and Instagram. Campaign *#StayAtHome* was being popularized. With the involvement of the community, activities were carried out on the social network with the support of celebrities to promote preventive measures. Informational electronic banners were prepared, which have been posted on various websites and video portals. At the beginning of the pandemic, informational advertisements were prepared and placed on street monitors.

In June 2020, a joint project of the United Nations Children's Fund and the National Center for Disease Control and Public Health was launched, in scope of which more than 5,000 pregnant registered women were provided with online consultations about coronavirus risks and all other pregnancy - related issues.

So far 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.

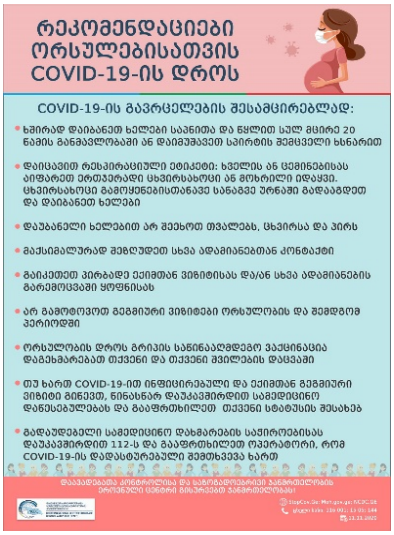


Briefings for the media and the public were held on a daily basis. Briefings with live streaming are held from time to time on the official Facebook page of the Center.

A card of recommendations was prepared to inform population on self-isolation rules and cases when COVID-19 antigen test result is positive. With UNDP - support brochures were printed and distributed to service providers throughout the country.

Information is provided to the media and the public on an ongoing basis. Communication with the public regarding COVID - 19 continues through the hotline 116 001.

With the joint efforts of the United Nations Children's Fund, the World Health Organization and the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia, a 2020-2020 Strategy Paper and Action Plan on Risk Communication and Community Involvement related to COVID-19 was prepared. Within the framework of the strategy, a number of educational activities are carried out with the support of donor organizations.



A COVID-19-related communication plan was developed for ethnic minority regions, which, among other important measures, provides for the effective delivery of communication messages through media advocacy, online meetings and webinars to various target groups. The activities envisaged by the Action Plan were implemented in the regions populated with ethnic minorities (placement of outdoor advertisements, webinars).

With the support of the United Nations Development Program, the Government of the United Kingdom and the United Nations Association of Georgia, the Center has developed a "Risk Communication Strategy in a Public Health Crisis in Georgia".

TV commercials were produced with the support of the United Nations Children's Fund:

- Video on wearing a mask correctly
  https://www.youtube.com/watch?v=rqQZmNd6NE4&feature=youtu.be
- What does COVID - 19 test response mean and how to act before getting it
  https://www.youtube.com/watch?v=h6Fw6ZYPH-0
- In cooperation with WHO, a TV video was prepared in Azeri language in support of preventive measures with the participation of local celebrities
  https://www.youtube.com/watch?v=x4MUVVK11PU

Preparatory work has started for the development of a communication action plan for the introduction of the COVID - 19 vaccine in Georgia.

HOTLINE OF THE NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH 116 001

Acceptance of 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 institutions. At the initial stage of the pandemic, in conditions of information shortage 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 December 31, 2020, 53 people were performing operator functions at the hotline (with three group on-duty schedule), 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 - 5;
- Volunteer student (Tbilisi State Medical University) – 9
- Employees of the Medical Statistics Department of the Center – 11
- Employees of the Non-Communicable Diseases Department of the Center – 12
- Representatives of Evex -11
- Interns of the center - 2

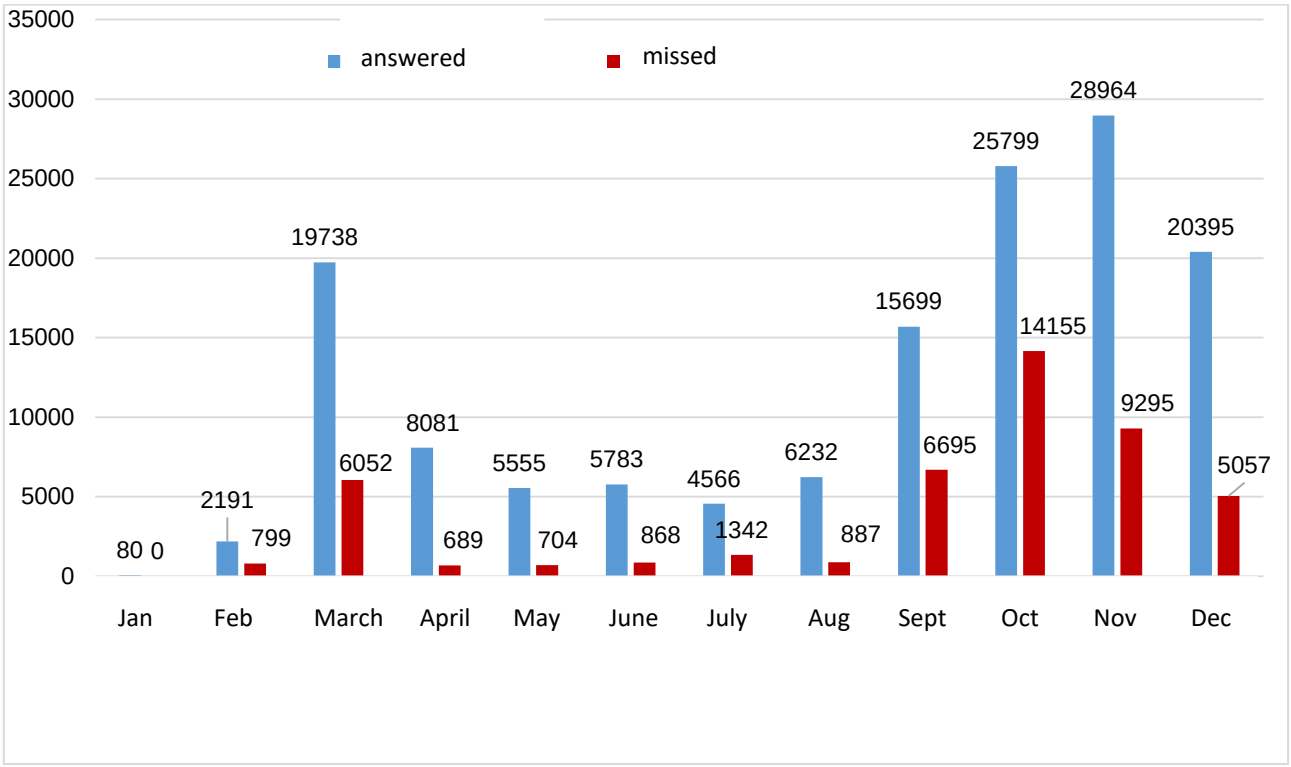
The total number of incoming hotline calls from January 23 through December 31, 2020 was 189,626 including:

- Answered: 143,083 calls (75%);
- Missed: 46,543 calls (25%).

The hotline operating hours are:

- Working days: 09:00 - 23:00;
- Non - working days: 09:00 - 23:00.

Figure 34. Total number of incoming calls to the hotline of the Center for Disease Control and Public Health (from 23.01.2020 to 31.12.2020)



INNOVATIVE PROJECTS IMPLEMENTED BY THE NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

Innovative approaches have been developed by the Ministry of Internally Displaced Persons from the Occupied Territories of Georgia to ensure an effective response to COVID-19, including case management through clinical (COVID) hotels, fever centers and network of online clinics. During the same period, the Center for Disease Control and Public Health launched an innovative project that included provision of remote counseling sessions for pregnant women and raising awareness of COVID issues.

PROVIDING REMOTE COUNSELING SESSIONS FOR PREGNANT WOMEN DURING THE COVID - 19 PANDEMIC

The COVID-19 pandemic, which began in 2020, has had a negative impact on people's lives and their health. Pregnant women represent a specific vulnerable group, and since the current stressful environment affects both pregnancy planning and process itself, special attention is paid to the well - being of pregnant women around the world, raising significant concerns about possible increased preterm delivery and fetal safety. In addition, the usual course of pregnancy during a coronavirus pandemic was accompanied by fear, anxiety, and uncertainty. Of particular importance in this regard is the availability of reliable information on what constitutes COVID - 19 infection, what to focus on during pregnancy, what complications are observed in case of infection, what preventive measures are necessary to reduce the risk of infection and ensure fetal safety, and etc.

In the early stages of the pandemic in Georgia, with the spread of the infection, the number of antenatal services was significantly reduced - the lowest number of visits was recorded in March and April.

In the light of pandemic - induced restrictions and regulations, the United Nations Children's Fund (UNICEF) launched an innovative project in May, 2020 with the National Center for Disease Control and Public Health to provide detailed information on COVID-19 infection as part of a free online consultation for pregnant women. The purpose of the virtual sessions was to mitigate the risks associated with the coronavirus.

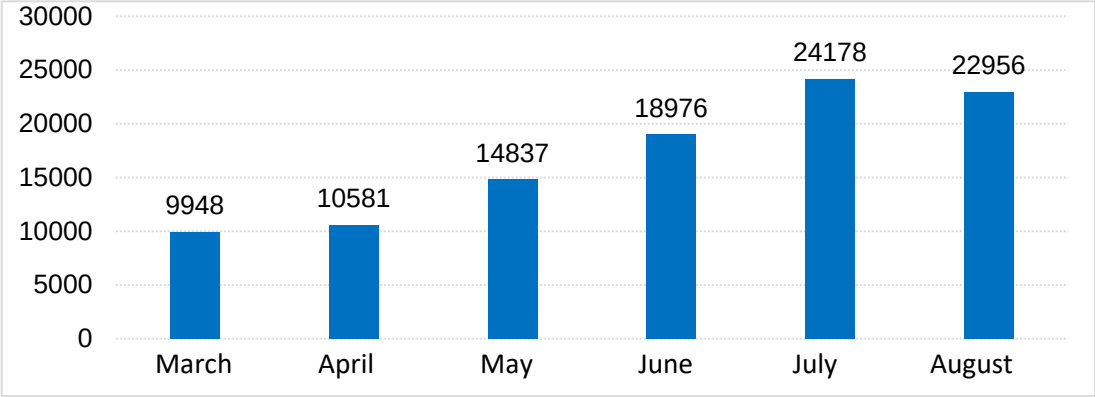
An electronic module (birth register) for monitoring pregnant women and newborns at the Center was used to identify pregnant women. They were contacted by phone and SMS. The mobilization of pregnant women for remote online consultations was carried out by the staff of the National Center for Disease Control with full protection of confidential data. Approximately 26,000 pregnant women registered in Georgia have received offers for virtual counseling. Pregnant women from all regions were gradually involved in the project. In total, their 30% participated in the sessions.

Online sessions were held through the virtual Zoom platform. By means of remote virtual platforms, up to 25 pregnant women were involved in each session. The sessions ran from May 21 through October 16 and the total number reached 340. The best gynecologists in the country provided pregnant women with detailed information based on modern guidelines and scientific evidence regarding COVID infection and pregnancy, delivery and post-partum for two hours during the sessions. Importantly, virtual counseling was available in Georgian, Azeri, Armenian, Russian and English languages, and the pregnant woman herself was choosing her language. The groups were staffed according to the appropriate spoken language.

The format of the session included a question & answer mode that allowed the pregnant woman to ask any question of interest to her. Each participant could ask a question anonymously, the doctor would answer each woman's question in an online consultation, and all participants would hear the doctor's answers. There was an opportunity for discussion and sharing of experiences.

One of the results of the project implementation is the increase in referrals for antenatal visits from May.

Figure 35. Number of Antenatal Visits, Georgia 03.2020 - 08.2020



After receiving competent advice and recommendations regarding the safety of themselves and their babies, some of the pregnant women attending the sessions expressed their desire to talk to the media about the importance of the project, where they shared their experiences. Participants encouraged all pregnant women to take part in online sessions.

The implementation of the innovative project resulted in raising the awareness of pregnant women about the infection and the most important issues and increasing the number of antenatal visits. Further continuation and expansion of the project is planned.

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. 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 have taken place within this period.

Georgia was among the top 11 countries out of the 181 beneficiaries that received Global Fund assistance in the amount of $ 484,500 to respond to COVID-19. This funding made it possible to support primary health care, specifically, to launch a 112 - based online clinic and provide training for primary healthcare facilities, as well as to order COVID-19 diagnostic tests and personal protective equipment. Based on the agreement reached in March 2020, Georgia received an automated molecular test SARS-CoV-2 for qualitative detection using Xpert® Xpress SARS-CoV-2 cartridges. The first batch of cartridges was donated to the National Center for Tuberculosis and Lung Diseases, and then delivered to various institutions in Tbilisi and the regions.

In collaboration with the Georgian Family Medicine Professionals Union, the state standard (protocol) for the management of clinical conditions "Management of Suspicious Novel Coronavirus (SARS-CoV-2) Infection Cases (COVID-19) in Primary Care" was developed. Based on the developed protocol, an electronic training module was created and the medical staff employed in the primary health care facilities, defined by the Ministry of Internally Displaced Persons from the Occupied Territories of Georgia, was provided with remote training during April - May 2020. In addition, the quality of medical care provided by online clinics has been monitored and periodically evaluated, the results of which are taken into account when planning further trainings.

In cooperation with the Association of Phthisiologists and Pulmonologists of Georgia and with the involvement of Infectious Diseases, Aids and Clinical Immunology Research Center, a protocol for clinical management of tuberculosis and novel coronavirus infection (COVID-19) was developed and approved. To facilitate its introduction, staff involved in the National Tuberculosis Program were trained remotely by an international expert.

In addition, Global Fund's COVID-19 response support includes the possibility to "redistribute" equipment already purchased under the Global Fund grant programs for these purposes. Using this mechanism, the Republic Hospital was provided with 50 ultraviolet light devices purchased under the Global Fund TB program to improve infection control.

The country also benefited from the Global Fund COVID-19 Response Mechanism (C19RM). The AIDS program attracted an additional $1.27 million from the fund, which was spent on personal protection, disinfectants, improving laboratory testing capacity, and purchasing a test system for COVID-19 diagnostics,

as well as on improving access to healthcare for people at high risk of HIV / AIDS, HIV / AIDS, and tuberculosis, expanding HIV self - testing program, and for service providers.

Over the past year, we have deepened our collaboration with the Institute for Health Metrics and Evaluation (IHME), an independent, population health research center based in Seattle, USA, at the University of Washington. IHME is an impartial, evidence - based assessor of global health trends and provides important information to politicians and researchers in the work process. The Supervisory Board consists of the world's leading experts in the field of public health, who contribute globally to improving the health of the population. Georgia has a long - standing partnership with IHME and its leadership through the National Center for Disease Control and Public Health. As part of this fruitful collaboration, 14 joint studies were prepared and published in The Lancet in the frame of the Global Burden of Disease (GBD) project. Since March 2020, IHME has been modeling COVID-19 pandemic. The IHME COVID-19 forecast was originally launched to assist the US hospital system and state governments. During the pandemic, IHME is conducting modeling for Georgia as part of a fruitful partnership with the Center. For various scenarios of epidemic development in the country, IHME receives important information on a weekly basis from NCDC (e.g. testing coverage, daily and cumulative testing rate, influenza vaccination coverage, seroprevalence studies, etc.). The results obtained from the processing are reflected in the modeling scenarios. After their discussion, recommendations are developed, which are finally reviewed at the Interagency Coordination Council.

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, etc.

The cooperation of the National Center for Disease Control and Public Health with the Embassy of Israel in Georgia and the Mashav Center is important. During the pandemic, experiences are being actively shared between Israel and Georgia. With direct assistance of the Embassy, the NCDC received the stock of individual protection means as a gift to perform epidemiological activities.

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, discuss future plans and make recommendations.

During the pandemic, the NCDC 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 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.

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.

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 remote 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 Biosafety Network states, where COVID-19 related issues were discussed for raising awareness and knowledge among the field specialists. Negotiations were held 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 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.

The US Centers for Disease Control and Prevention (CDC) have 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 novel 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.

In July - August, the Center's epidemiologists, with the financial support of the CDC, conducted micro - surveys (including mass testing at "bazaars") in the most affected areas (municipalities) by COVID - 19 infection throughout Georgia.

On July 17, 2020, a bilateral video meeting was held with representatives of the Ministry of Foreign Affairs of the Islamic Republic of Iran, the Pasteur Institute of Iran, and the NCDC representatives to review the epidemiological situation of COVID-19 and to conduct border health measures.

On July 30, 2020, a bilateral online meeting between representatives of the Ministry of Health of the Kyrgyz Republic, the First Deputy Minister of Refugees from the Occupied Territories, Labor, Health and Social Affairs and the management of the Center was organized at the National Center for Disease Control and Public Health hosted. The meeting was dedicated to the issues of combating the COVID-19 pandemic and sharing experiences between the countries.

On August 26, 2020, Mr. ULRIK Tideström, the Ambassador Extraordinary and Plenipotentiary of the Kingdom of Sweden to Georgia, paid a visit to the NCDC. During the visit, the Director General of the Center presented information on the main strategic directions and activities of the NCDC, discussed the results achieved with the support of the international partners and future plans. For his part, Mr. Tideström underscored Georgia's successful response to the COVID-19 pandemic and expressed his readiness to facilitate the expansion and deepening of cooperation with Swedish public health institutions.

BMJ Leader published an interview with the Director General of the Center about his role as a leader in the fight against the COVID-19 pandemic in Georgia. The National Geographic magazine also published an article entitled "What the pandemic has taught us."[7]

European Journal of Public Health *(5-year average impact factor 3.134)* published an abstract on the characteristics of patients recovering from COVID-19 in Georgia "Characteristics of discharged patients from hospitals - Georgian descriptive study"[8].

For effective epidemiological surveillance and management of COVID-19, a series of short-term trainings on "COVID-19 Epidemiological Surveillance, Prevention and Management" were conducted on September 20-29 with the involvement of the NCDC and support of the CDC. The target audience of the trainings was represented by epidemiologists of the municipal healthcare centers of Eastern Georgia and Imereti region; Epidemiologists of Tbilisi Healthcare and Social Services Division.

On October 20, 2020, an agreement was signed with the World Health Organization under the program "Support to COVID-19 Impact Mitigation in Georgia with Special Focus on the Most Vulnerable Population", which aims to alleviate negative impact of COVID-19 and support social and economic sustainability. Under the agreement, retraining of epidemiologists and laboratory specialists were carried out in November - December 2020 for rapid COVID-19 response and expansion of the national seroprevalence survey in priority regions. On December 4, a contract was signed for the activities of the 2nd phase, which will last until the end of March 2021. Under this agreement, activities will be implemented in

[7] https://nationalgeographic.ge/story/ra-gvaswavla-pandemiam-amiran-gamyrelidze/

[8] https://academic.oup.com/eurpub/article/30/Supplement_5/ckaa165.352/5915874?searchresult=1

the following areas: updating the National Plan for Pandemic Preparedness; building capacity of the Public Health Emergency Response Center (PHEOC); creating and supporting an interindustry platform to strengthen the public health sector in Georgia; conducting pilot research for strengthening public healthcare sector to diagnose tuberculosis in the country and implementing WGS technologies of surveillance; and developing policies and services to deal with non - communicable diseases and their risk factors, etc. The activities are funded by the European Commission's Eastern Partnership Program - Solidarity for Health Initiative.

On 27 November 2020, the Ambassadors of the EU countries held an online conference with the Director General of the National Center for Disease Control and Public Health. The meeting was chaired by His Excellency Ambassador Carl Hartzel, the Head of the EU Delegation to Georgia. During the meeting, the diplomatic corps got acquainted with the epidemiological situation related to COVID-19 in Georgia, the preventive measures taken and planned. The ambassadors received comprehensive information on the issues of interest to them in relation to the management of the pandemic through the Q&A session.

A syllabus and training materials for retraining courses have been developed to effectively and efficiently manage the COVID-19 pandemic. Within the framework of the agreement with WHO "Mitigation of COVID-19 Impact in Georgia for increasing Social and Economic Sustainability", the trainers of the Center trained 54 new employees selected through contest for regional healthcare services. They were trained in the basic principles of COVID-19 epidemiological surveillance and laboratory diagnostics. Under the same agreement, the trainers of the Center trained the staff of Tbilisi City Hall and private laboratories (up to 200 people in total).

On December 21, 2020, Mr. Hans Henri P. Kluge, Regional Director for Europe at the World Health Organization, visited the National Center for Disease Control and Public Health. The delegation included Ms. Nino Berdzuli, Director of the Division of Country Health Programs (CHP), WHO/Europe and Natalia Demova - Chertoyanova, WHO Emergency Response, and Assistance Unit Project Management Officer. The Regional Director visited the Lugar Research Center, met with Director General of the National Center and other individuals, received information on epidemiological surveillance, non - communicable diseases, integrated health, e - health, environmental health, risk response and more, addressed COVID-19 related issues and plans for future cooperation. Mr. Hans Henri P. Kluge praised the work of the National Center for Disease Control and Public Health and the Lugar Research Center and called it a "Center of Excellence" not only in Georgia but also in the region and throughout Europe. It was noted that the Center was one of the first in the region to launch a rapid response against COVID - 19 and introduce population testing. In addition, the successful work of the Center in the field of tobacco control and screening for hepatitis C was highlighted. From the perspective of future cooperation, WHO Regional Director for Europe noted importance of e–health, innovation and enhanced cooperation on environmental health. Mr. Kluge stressed that during his tenure as Regional Director, collaboration with NCDC will be a priority for the World Health Organization.

Data Source

Main Source of COVID-19 Testing Information is the electronic module for COVID-19 test registration, which collects data from outpatient and inpatient service providers, public / municipal /city healthcare agencies; from the relevant services of NCDC; from Lugar Research Center and laboratories operating independently or located in medical institutions. The module records information about the patient's brief history, smear taking, rapid testing or laboratory tests and their results (positive, negative and suspicious cases). Data is uploaded within 24 hours following the test.

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 by means of EIDSS. Pursuant to the Order # 01-26N of 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 more. Data were also validated through special protocols completed during the epidemiological study.

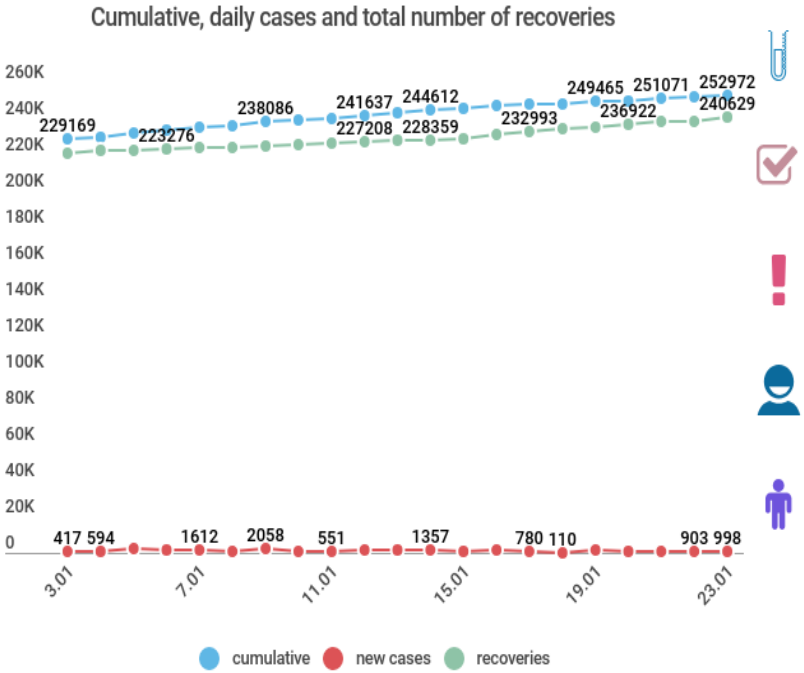
The main sources of information about hospitalized and deceased patients were:

- Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia
- Vital Registry
- 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);
- Database of the National Health Agency

Annex 1

COVID-19 23.01.2021

Total confirmed	New cases	Active cases*	Recovered	Death	Total number of tests
252 972	998	9 279	240 629 (95%)	3 038 (1.2%)	2 232 364



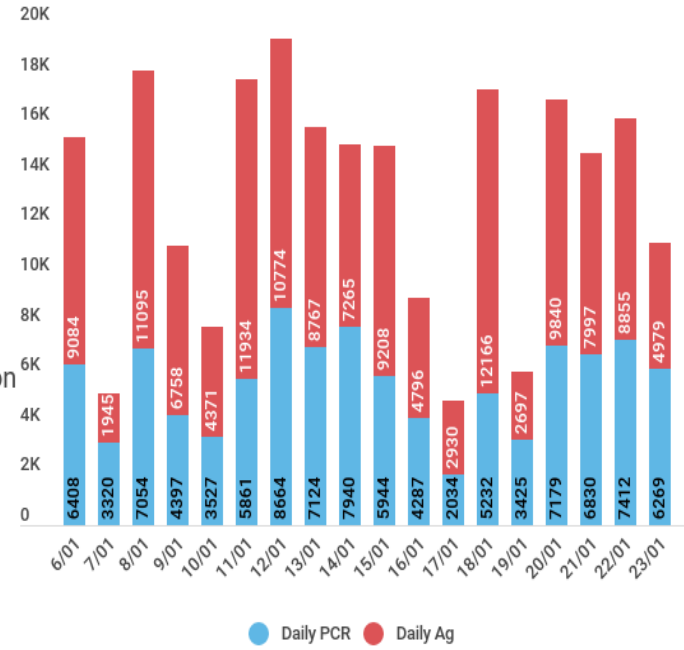
11.3 %
Positivity rate

1 892
Recovered

16
Death

41 294
PCR tests per 100 000 population

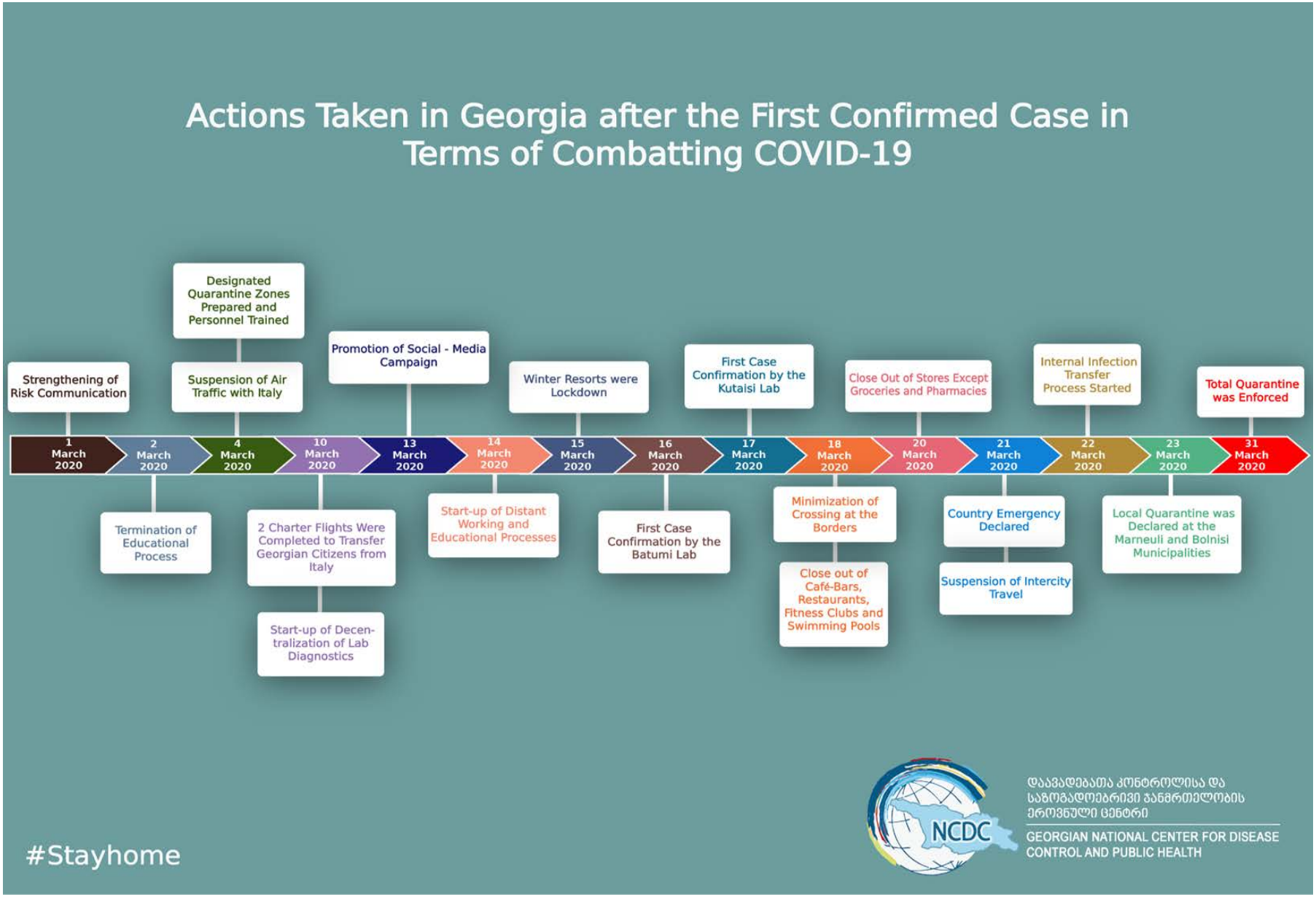
18 766
Ag tests per 100 000 population



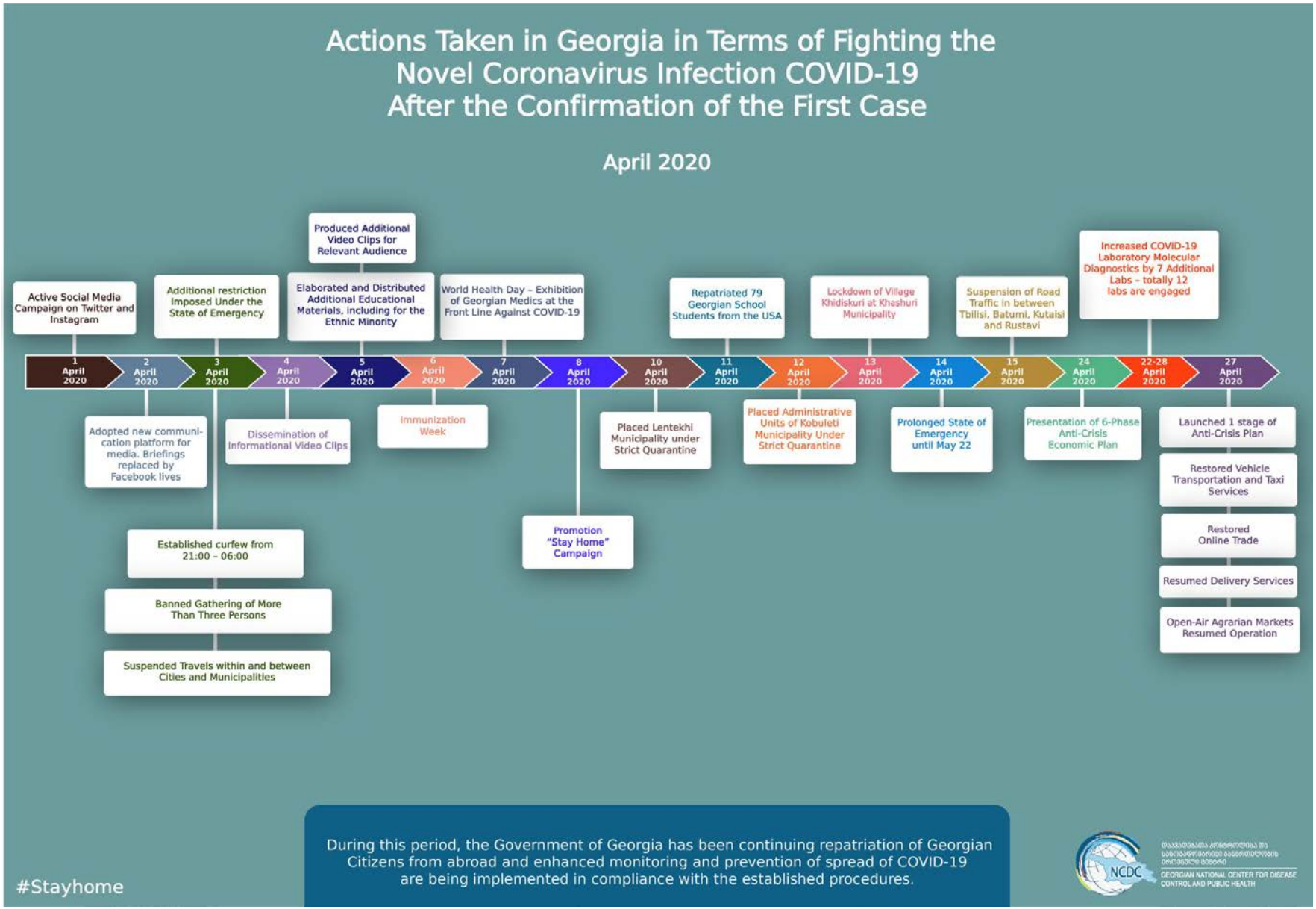
Annex 2


Actions Taken in Georgia in terms of Novel Coronavirus (COVID-19) Prior to the First Confirmed Case
The MOH was notified about unusual pneumonia outbreak in China
First Session of the Coordination Board
Suspension of Air Traffic with People's Republic of China
Lab Diagnostics on COVID-19 Became Possible at the Lugar Center
Various Methodological Recommendations and Protocols Developed
Suspension of Air and Land Traffic with Islamic Republic of Iran
6 Jan 2020
13 Jan 2020
23 Jan 2020
28 Jan 2020
29 Jan 2020
31 Jan 2020
4 Feb 2020
6 Feb 2020
12 Feb 2020
14 Feb 2020
24 Feb 2020
26 Feb 2020
Equipping of EOC
GG Decree#164 on "Approval of Measures to Prevent the Possible Spread of the Novel Coronavirus (COVID -19) in Georgia and Approval of an Emergency Response Plan for cases caused by COVID -19"
Startup of Screening at Airports
Novel Coronavirus (COVID-19) Case Definition Adopted; Intensified Epi Surveillance Commencement
Activation of Risk Communication
Dissemination of Educational Materials, Video Classes
Table Top Exercise Conducted in Between the Coordination Board Members and Other Agencies
First COVID-19 Case Confirmed
NCDC
დაავადებათა კონტროლისა და საზოგადოებრივი ჯანმრთელობის ეროვნული ცენტრი
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

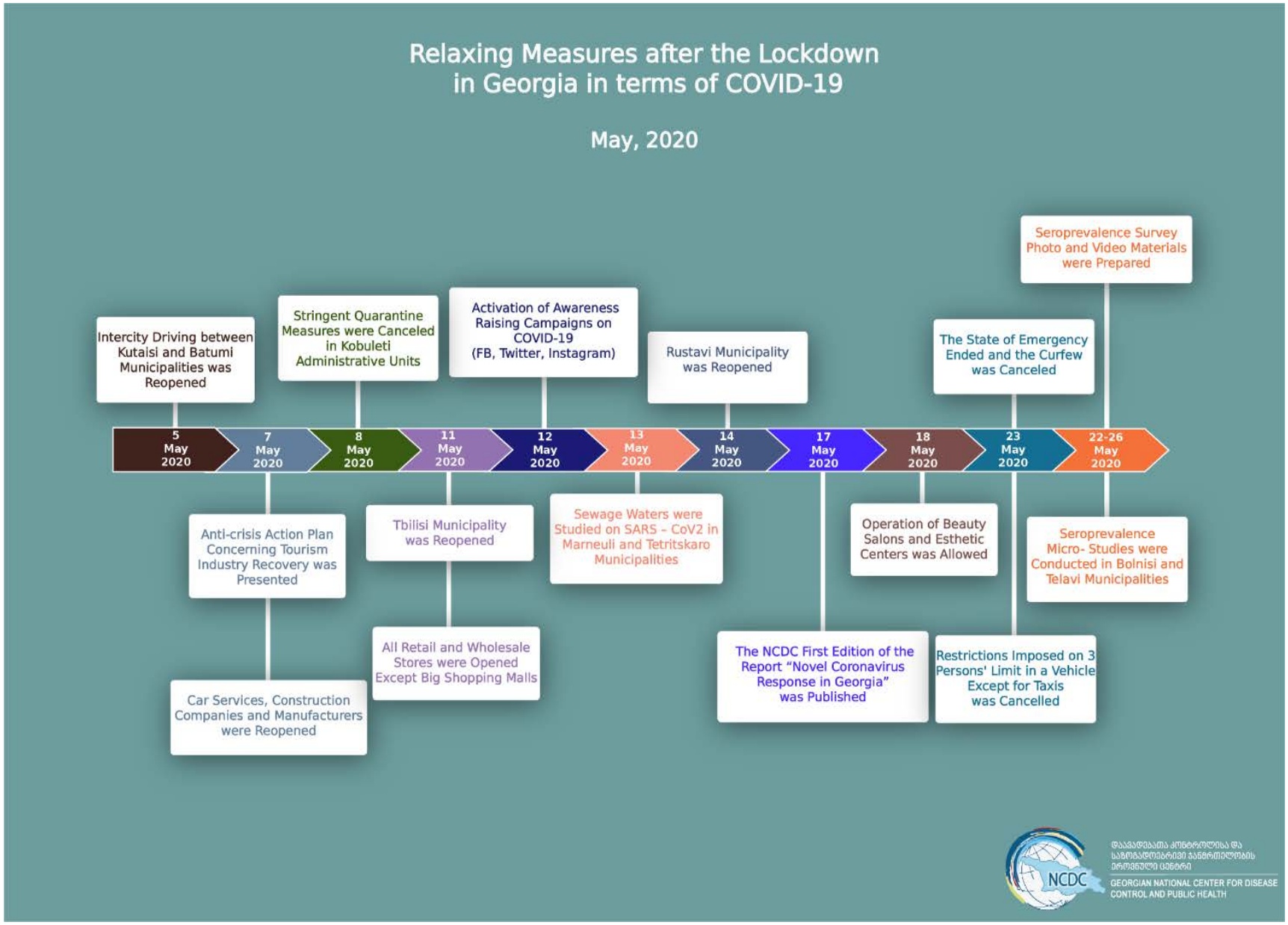
Annex 2


Actions Taken in Georgia after the First Confirmed Case in Terms of Combatting COVID-19
Strengthening of Risk Communication
Designated Quarantine Zones Prepared and Personnel Trained
Suspension of Air Traffic with Italy
Promotion of Social - Media Campaign
Winter Resorts were Lockdown
First Case Confirmation by the Kutaisi Lab
Close Out of Stores Except Groceries and Pharmacies
Internal Infection Transfer Process Started
Total Quarantine was Enforced
1 March 2020
2 March 2020
4 March 2020
10 March 2020
13 March 2020
14 March 2020
15 March 2020
16 March 2020
17 March 2020
18 March 2020
20 March 2020
21 March 2020
22 March 2020
23 March 2020
31 March 2020
Termination of Educational Process
2 Charter Flights Were Completed to Transfer Georgian Citizens from Italy
Start-up of Decen-tralization of Lab Diagnostics
Start-up of Distant Working and Educational Processes
First Case Confirmation by the Batumi Lab
Minimization of Crossing at the Borders
Close out of Café-Bars, Restaurants, Fitness Clubs and Swimming Pools
Country Emergency Declared
Suspension of Intercity Travel
Local Quarantine was Declared at the Marneuli and Bolnisi Municipalities
#Stayhome
NCDC
დაავადებათა კონტროლისა და საზოგადოებრივი ჯანმრთელობის ეროვნული ცენტრი
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

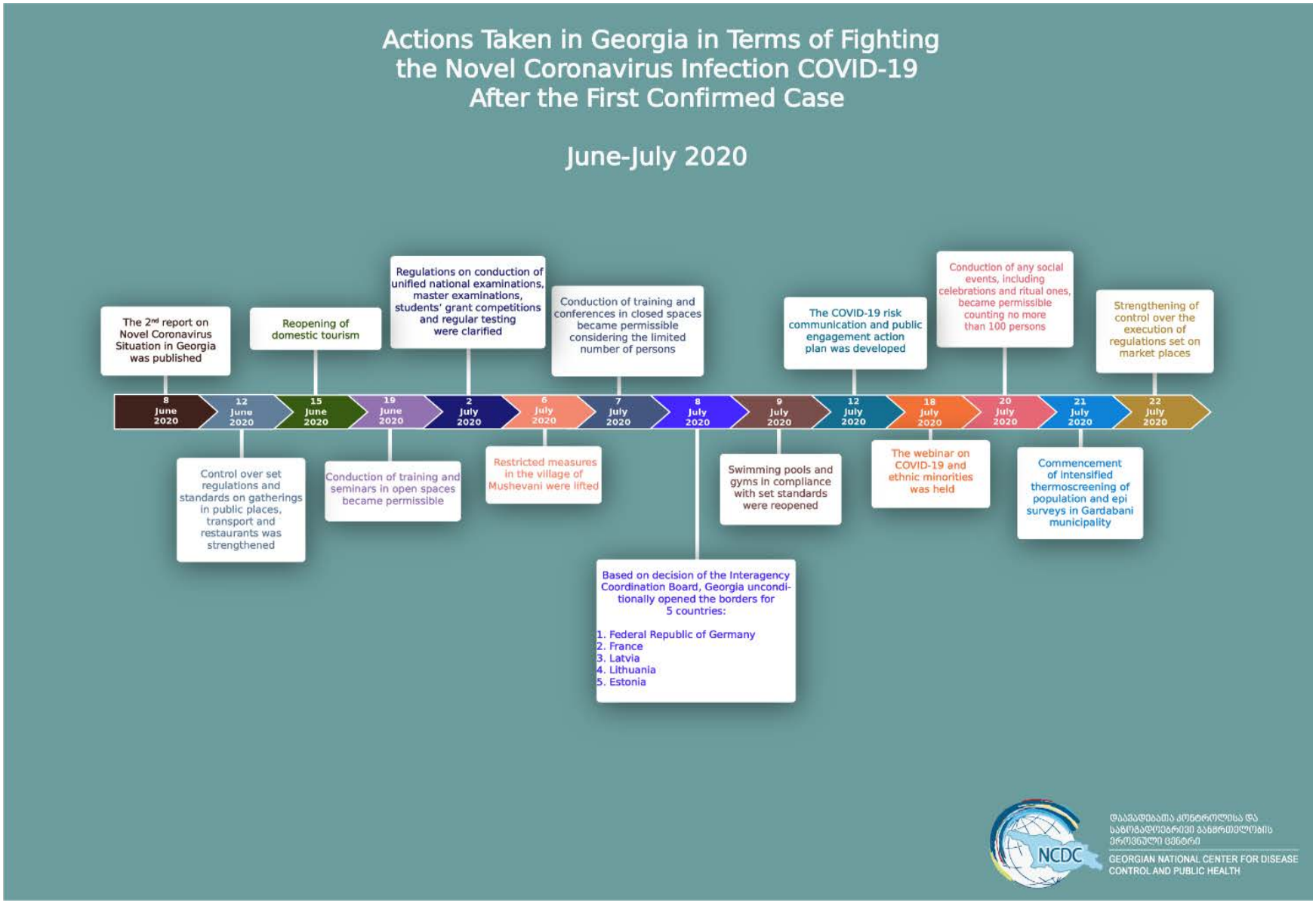
Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the Confirmation of the First Case
April 2020
1 April 2020
2 April 2020
3 April 2020
4 April 2020
5 April 2020
6 April 2020
7 April 2020
8 April 2020
10 April 2020
11 April 2020
12 April 2020
13 April 2020
14 April 2020
15 April 2020
24 April 2020
22-28 April 2020
27 April 2020
Active Social Media Campaign on Twitter and Instagram
Additional restriction Imposed Under the State of Emergency
Elaborated and Distributed Additional Educational Materials, including for the Ethnic Minority
Produced Additional Video Clips for Relevant Audience
World Health Day – Exhibition of Georgian Medics at the Front Line Against COVID-19
Repatriated 79 Georgian School Students from the USA
Lockdown of Village Khidiskuri at Khashuri Municipality
Suspension of Road Traffic in between Tbilisi, Batumi, Kutaisi and Rustavi
Increased COVID-19 Laboratory Molecular Diagnostics by 7 Additional Labs – totally 12 labs are engaged
Adopted new communi-cation platform for media. Briefings replaced by Facebook lives
Dissemination of Informational Video Clips
Immunization Week
Placed Lentekhi Municipality under Strict Quarantine
Placed Administrative Units of Kobuleti Municipality Under Strict Quarantine
Prolonged State of Emergency until May 22
Presentation of 6-Phase Anti-Crisis Economic Plan
Launched 1 stage of Anti-Crisis Plan
Restored Vehicle Transportation and Taxi Services
Restored Online Trade
Resumed Delivery Services
Open-Air Agrarian Markets Resumed Operation
Established curfew from 21:00 – 06:00
Banned Gathering of More Than Three Persons
Suspended Travels within and between Cities and Municipalities
Promotion "Stay Home" Campaign
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.
#Stayhome
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

Annex 2


Relaxing Measures after the Lockdown
in Georgia in terms of COVID-19
May, 2020
Intercity Driving between Kutaisi and Batumi Municipalities was Reopened
Stringent Quarantine Measures were Canceled in Kobuleti Administrative Units
Activation of Awareness Raising Campaigns on COVID-19 (FB, Twitter, Instagram)
Rustavi Municipality was Reopened
The State of Emergency Ended and the Curfew was Canceled
Seroprevalence Survey Photo and Video Materials were Prepared
5 May 2020
7 May 2020
8 May 2020
11 May 2020
12 May 2020
13 May 2020
14 May 2020
17 May 2020
18 May 2020
23 May 2020
22-26 May 2020
Anti-crisis Action Plan Concerning Tourism Industry Recovery was Presented
Tbilisi Municipality was Reopened
Sewage Waters were Studied on SARS – CoV2 in Marneuli and Tetritskaro Municipalities
Operation of Beauty Salons and Esthetic Centers was Allowed
Seroprevalence Micro- Studies were Conducted in Bolnisi and Telavi Municipalities
Car Services, Construction Companies and Manufacturers were Reopened
All Retail and Wholesale Stores were Opened Except Big Shopping Malls
The NCDC First Edition of the Report "Novel Coronavirus Response in Georgia" was Published
Restrictions Imposed on 3 Persons' Limit in a Vehicle Except for Taxis was Cancelled
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

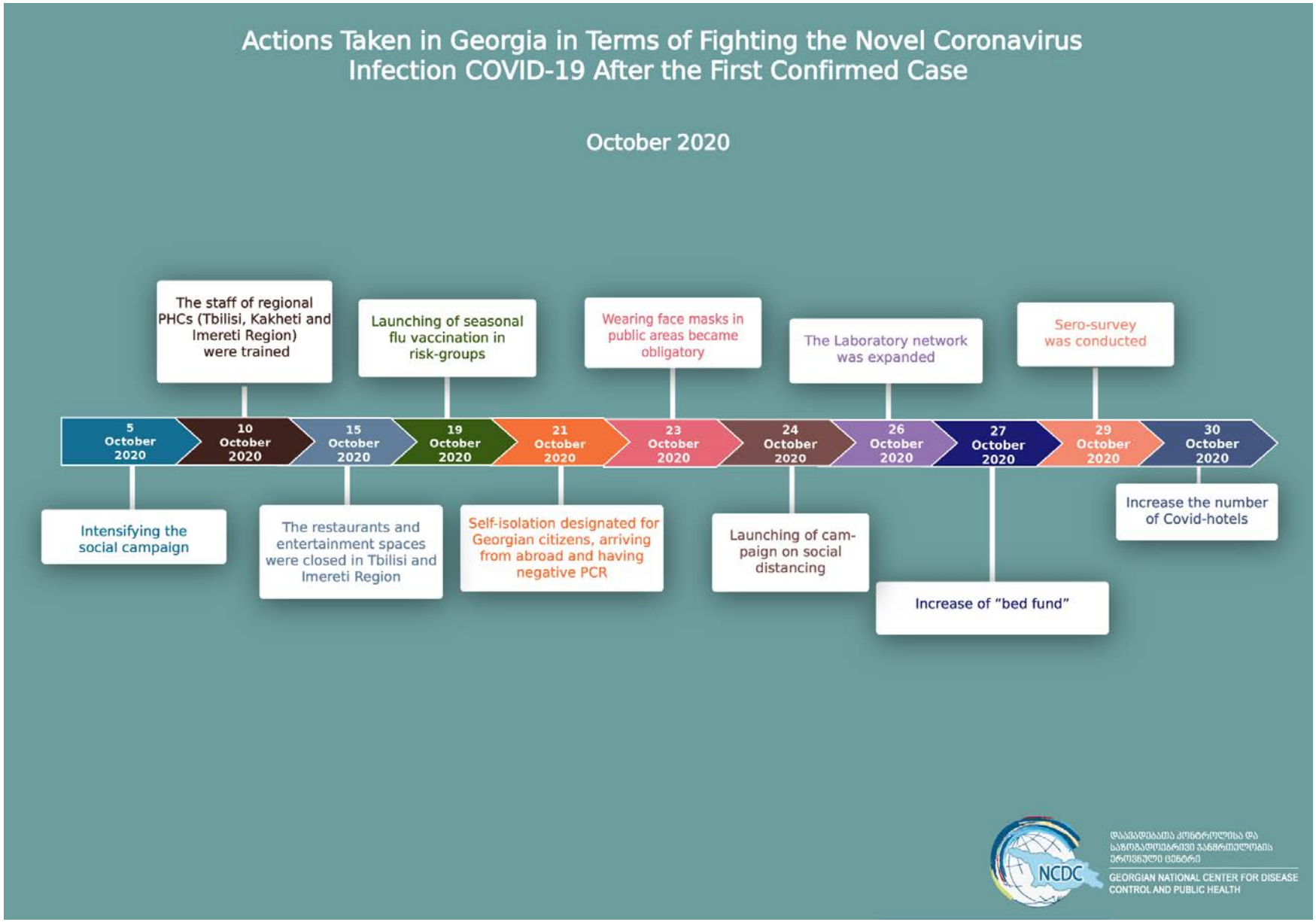
Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the First Confirmed Case
June-July 2020
The 2nd report on Novel Coronavirus Situation in Georgia was published
Reopening of domestic tourism
Regulations on conduction of unified national examinations, master examinations, students' grant competitions and regular testing were clarified
Conduction of training and conferences in closed spaces became permissible considering the limited number of persons
The COVID-19 risk communication and public engagement action plan was developed
Conduction of any social events, including celebrations and ritual ones, became permissible counting no more than 100 persons
Strengthening of control over the execution of regulations set on market places
8 June 2020
12 June 2020
15 June 2020
19 June 2020
2 July 2020
6 July 2020
7 July 2020
8 July 2020
9 July 2020
12 July 2020
18 July 2020
20 July 2020
21 July 2020
22 July 2020
Control over set regulations and standards on gatherings in public places, transport and restaurants was strengthened
Conduction of training and seminars in open spaces became permissible
Restricted measures in the village of Mushevani were lifted
Based on decision of the Interagency Coordination Board, Georgia unconditionally opened the borders for 5 countries:
1. Federal Republic of Germany
2. France
3. Latvia
4. Lithuania
5. Estonia
Swimming pools and gyms in compliance with set standards were reopened
The webinar on COVID-19 and ethnic minorities was held
Commencement of intensified thermoscreening of population and epi surveys in Gardabani municipality
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

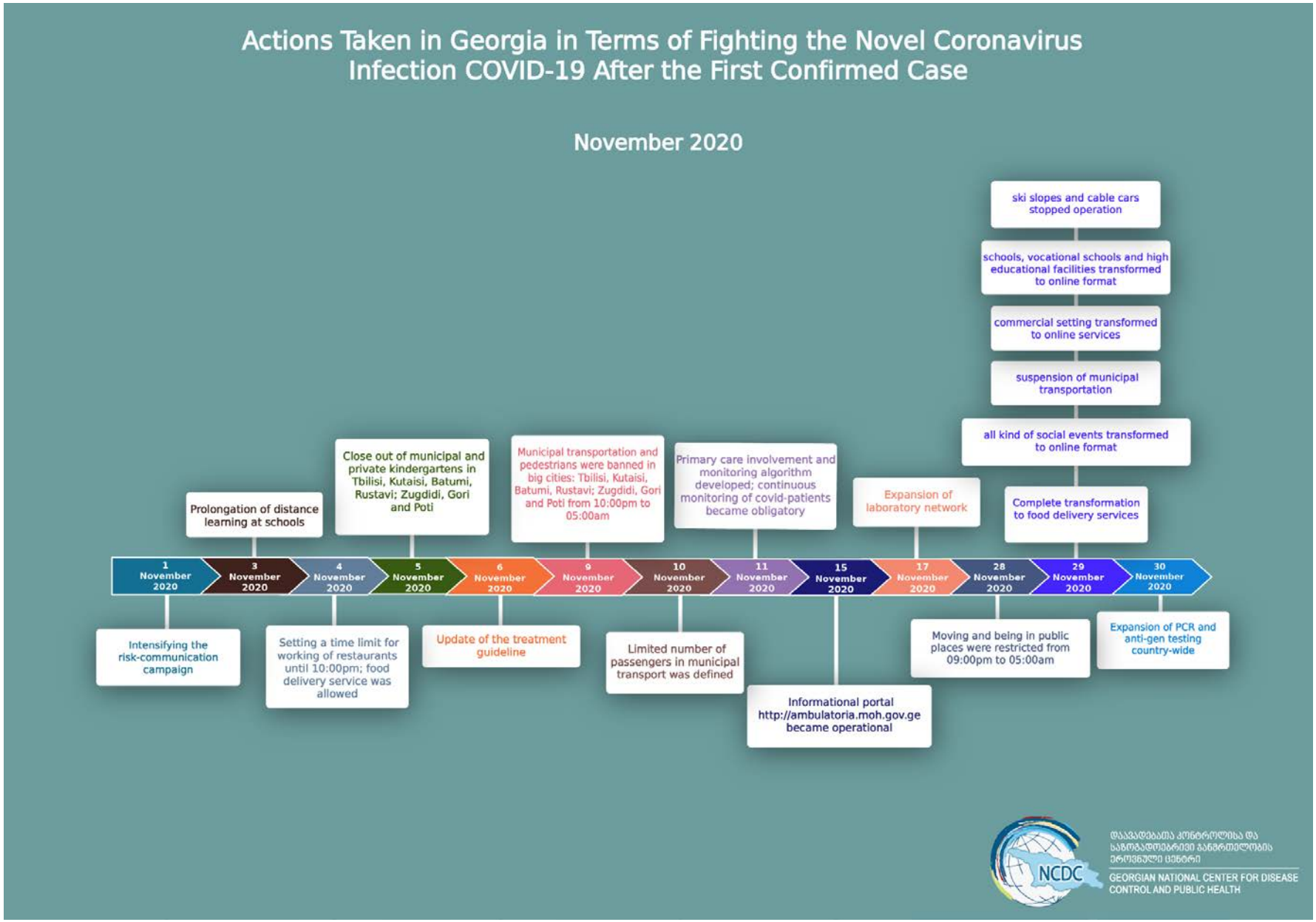
Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the First Confirmed Case
August-September 2020
Testing of international truck drivers at the entry points
Internal spread of infection started in Adjara by the end of month
Social events, like, anniversary celebrations, wedding parties and funeral ceremonies were forbidden
Sero-prevalence survey was conducted
Exams for practicing teachers were conducted
Quarantine period for persons arriving from abroad was reduced to 8 days
The Healthcare Sector Capacity Enhancement and Emergency Preparedness Plan for COVID-19 response was developed
The lab network was expanded
Media trainings for Western and Eastern Georgian journalists were conducted
Social campaign (Twitter, Facebook, and Instagram) was intensified
Trainings on COVID-19 management were conducted for public health workers in Eastern Georgia and Imereti regions
Trend of universal prevalence of COVID-19 in the country was perceived on a basis of sharp increase of incidence in Adjara
Supervision algorithm of mild cases in patients was elaborated (home care)
August 2020
September 2020
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

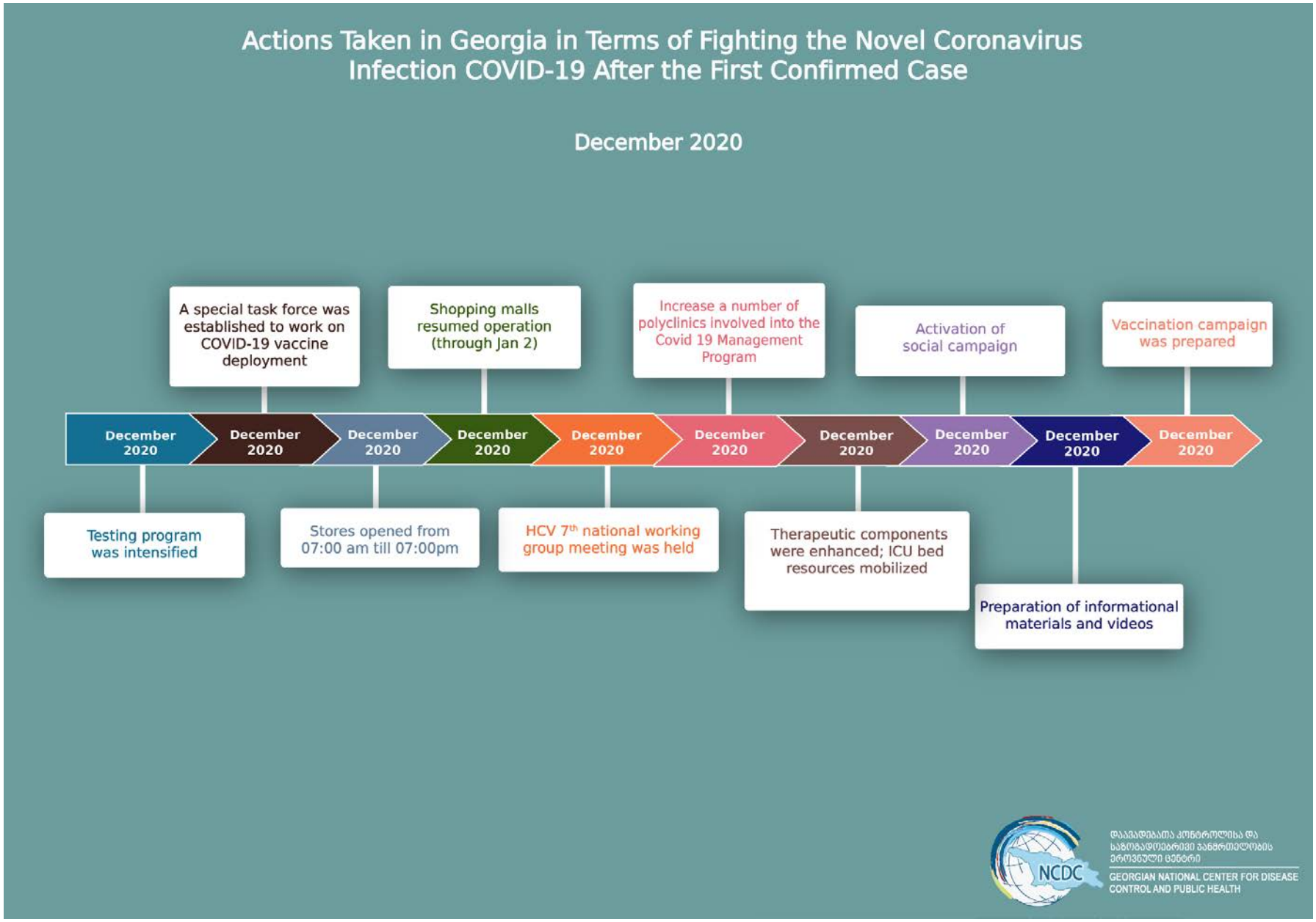
Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the First Confirmed Case
October 2020
5 October 2020
10 October 2020
15 October 2020
19 October 2020
21 October 2020
23 October 2020
24 October 2020
26 October 2020
27 October 2020
29 October 2020
30 October 2020
The staff of regional PHCs (Tbilisi, Kakheti and Imereti Region) were trained
Launching of seasonal flu vaccination in risk-groups
Wearing face masks in public areas became obligatory
The Laboratory network was expanded
Sero-survey was conducted
Intensifying the social campaign
The restaurants and entertainment spaces were closed in Tbilisi and Imereti Region
Self-isolation designated for Georgian citizens, arriving from abroad and having negative PCR
Launching of campaign on social distancing
Increase of "bed fund"
Increase the number of Covid-hotels
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the First Confirmed Case
November 2020
1 November 2020
Intensifying the risk-communication campaign
3 November 2020
Prolongation of distance learning at schools
4 November 2020
Setting a time limit for working of restaurants until 10:00pm; food delivery service was allowed
5 November 2020
Close out of municipal and private kindergartens in Tbilisi, Kutaisi, Batumi, Rustavi; Zugdidi, Gori and Poti
6 November 2020
Update of the treatment guideline
9 November 2020
Municipal transportation and pedestrians were banned in big cities: Tbilisi, Kutaisi, Batumi, Rustavi; Zugdidi, Gori and Poti from 10:00pm to 05:00am
10 November 2020
Limited number of passengers in municipal transport was defined
11 November 2020
Primary care involvement and monitoring algorithm developed; continuous monitoring of covid-patients became obligatory
15 November 2020
Informational portal http://ambulatoria.moh.gov.ge became operational
17 November 2020
Expansion of laboratory network
28 November 2020
Moving and being in public places were restricted from 09:00pm to 05:00am
29 November 2020
ski slopes and cable cars stopped operation
schools, vocational schools and high educational facilities transformed to online format
commercial setting transformed to online services
suspension of municipal transportation
all kind of social events transformed to online format
Complete transformation to food delivery services
30 November 2020
Expansion of PCR and anti-gen testing country-wide
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

Annex 2


Actions Taken in Georgia in Terms of Fighting the Novel Coronavirus Infection COVID-19 After the First Confirmed Case
December 2020
A special task force was established to work on COVID-19 vaccine deployment
Shopping malls resumed operation (through Jan 2)
Increase a number of polyclinics involved into the Covid 19 Management Program
Activation of social campaign
Vaccination campaign was prepared
December 2020
December 2020
December 2020
December 2020
December 2020
December 2020
December 2020
December 2020
December 2020
December 2020
Testing program was intensified
Stores opened from 07:00 am till 07:00pm
HCV 7th national working group meeting was held
Therapeutic components were enhanced; ICU bed resources mobilized
Preparation of informational materials and videos
NCDC
GEORGIAN NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH

National Center for Disease Control and Public Health
Kahketi highway, N99, Tbilisi, 0198, Georgia
116 001
www.ncdc.ge
pr.ncdc@ncdc.ge
www.facebook.com/ncdcgeorgia/
@NCDCGeorgia
ncdc_georgia