



Coronavirus Disease 2019 (COVID-19)

National Surveillance Report as of 05/05/2020

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Summary

- As of May 5th, a total of 878 COVID-19 cases and 21 deaths (case fatality rate: 2.4%) have been reported in the Republic of Cyprus.
- Among these cases, 21.4% are health-care workers (n = 188) - 4.4% physicians (n = 39), 10.8% nurses (n = 95), 1.5% other health occupations (n = 13), and 4.7% auxiliary staff (n = 41).
- The median age of cases is 46 years (interquartile range - IQR: 32-59 years); 50% are female and 50% are male.
- Overall, of 733 cases for which the place of exposure was known, locally acquired infections (index cases and close-contacts of confirmed cases) were 608 (83%) - of these 10.2% (n = 62) were related to a health-care facility (General Hospital in Pafos) and 12.9% (n = 78) were reported in Aradippou municipality.
- In total, 19.3% (n = 169) of cases received hospital care, of which 124 (73.4%) have been discharged alive from the hospital. Median age of all hospitalized patients is: 62 years (interquartile range: 49-73 years), and 65.1% are males.
- Six patients were still in intensive care units (for part of the day if they died, were discharged or transferred on that day or for the whole day, by May 5th); of these 5 (83.3%) were intubated.
- Overall, 400 (45.6%) cases have recovered.
- A total of 66,876 tests have been performed as of May 5th (7,635.1 per 100,000 population).



Epidemiological surveillance in the Republic of Cyprus

Analyses are based on laboratory-confirmed cases notified to the Epidemiological Surveillance Unit of the Ministry of Health.

As of May 5th, 878 laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been reported (Figure 1 and 2).

The median time between symptoms onset and date of sampling was 4 days (Interquartile range - IQR: 2-7 days). It should be noted that for 14 cases the date of sample collection was before the onset of symptoms because of immediate testing of contacts of possible and laboratory-confirmed cases.

As of May 5th, the 14-day cumulative incidence rate of COVID-19 (per 100,000 population), a measure which reflects the number of active COVID-19 cases in the population (prevalence)¹, is 10.3 per 100,000 population (Figure 3).

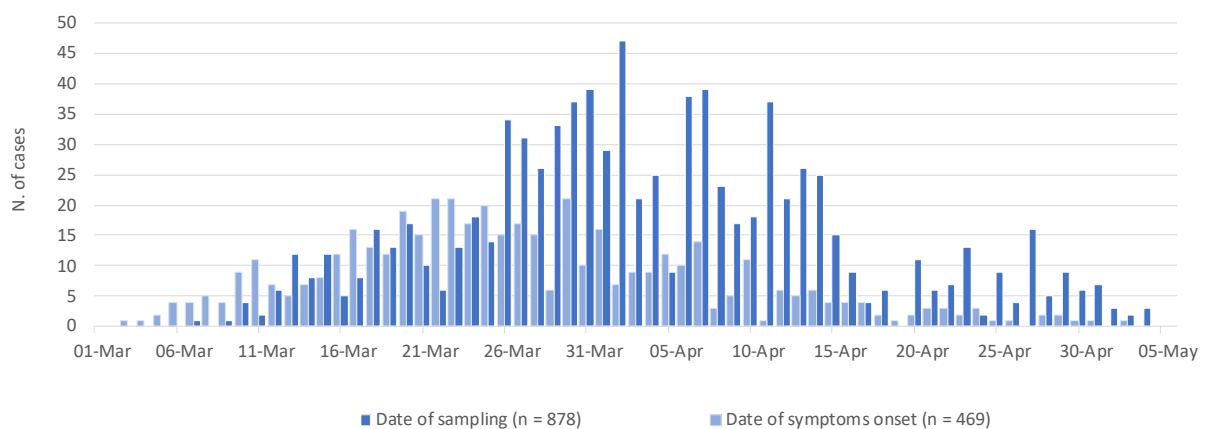


Figure 1: Number of laboratory-confirmed COVID-19-cases in Cyprus since 01/03/2020 by date of sample collection and date of symptoms onset (n = 878 and n = 469 with data available, respectively).

Recent data should be interpreted with caution due to the possibility that cases with date of onset within the reporting period have not yet been diagnosed.

¹Coronavirus disease 2019 (COVID-19) pandemic: increased transmission in the EU/EEA and the UK – seventh update, 25 March 2020. Stockholm: ECDC; 2020.

<https://www.ecdc.europa.eu/sites/default/files/documents/RRA-seventh-update-Outbreak-of-coronavirus-disease-COVID-19.pdf>

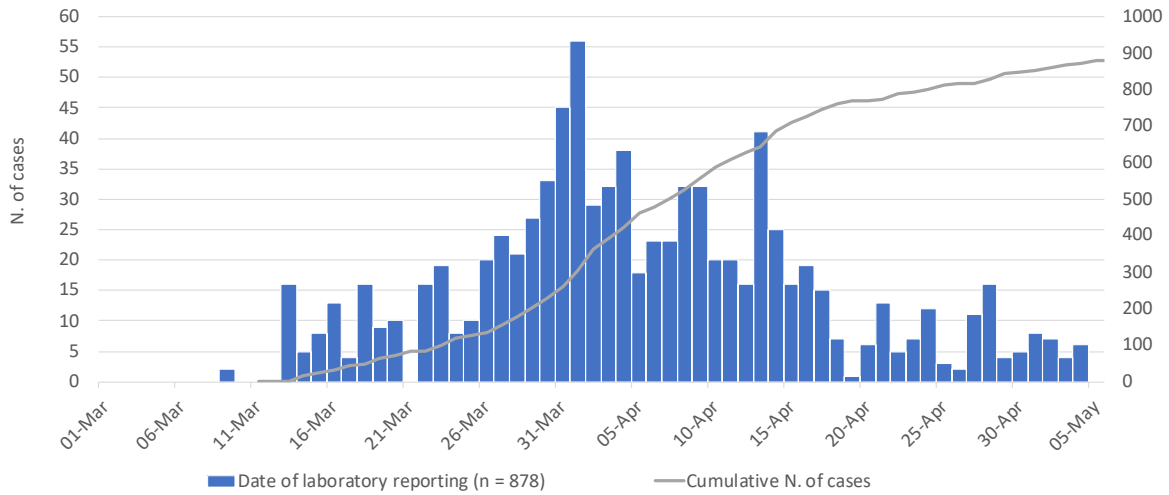


Figure 2: Number and cumulative number of laboratory-confirmed COVID-19-cases in Cyprus since 01/03/2020, by date of laboratory reporting (n = 878). Recent data should be interpreted with caution due to the possibility that cases with date of onset within the reporting period have not yet been diagnosed.

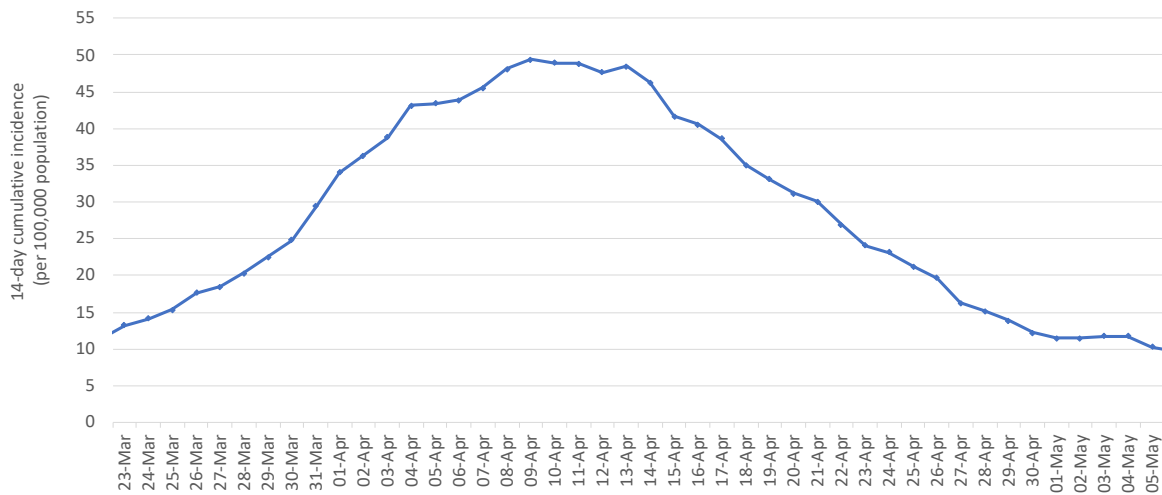


Figure 3. COVID-19 14-day cumulative incidence rate per 100,000 population (proxy of COVID-19 prevalence).

March 23rd represents the first 14th day since cases have been reported.



Characteristics of the cases

Among these cases, 50% are male (n = 439) and 50% female (n = 439).

The median age of cases is 46 years (IQR: 32-59 years). By age groups, cases included 51 infants, children and adolescents aged 0-17 years-old (5.8%), 610 adults aged 18-59 years (69.5%), and 217 persons aged 60 years and older (24.7%) (Figure 4).

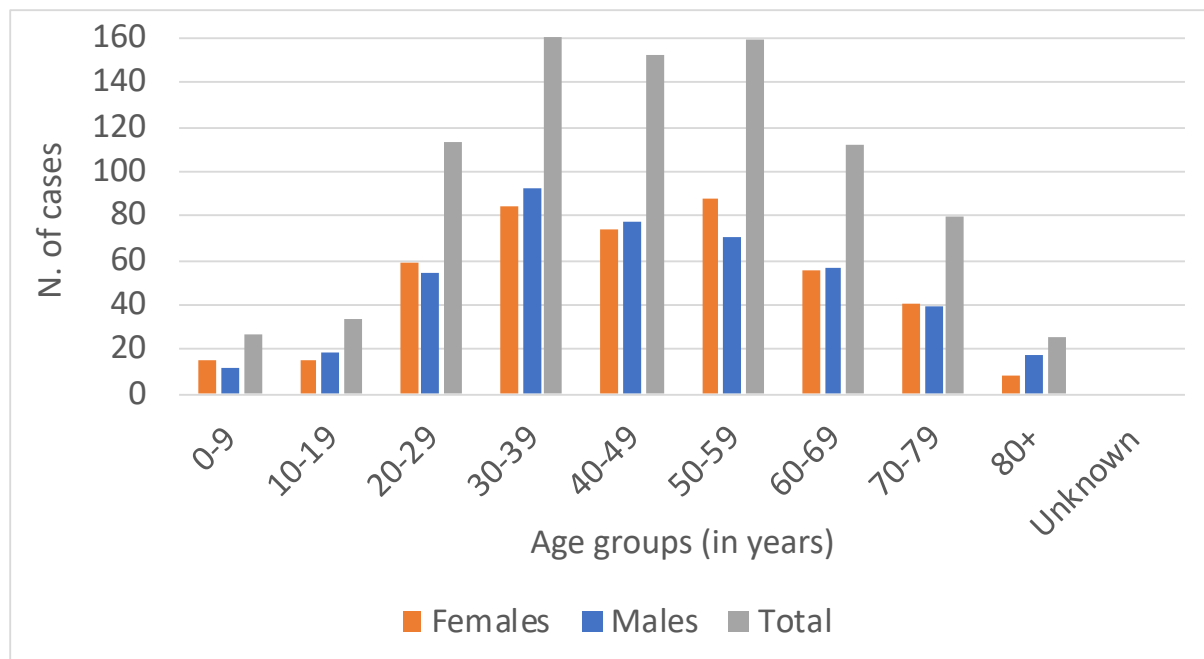


Figure 4: Laboratory-confirmed COVID-19-cases in Cyprus by sex and age groups.

Among all cases, 337 (38.4%) were reported in Nicosia district, 229 (26.1%) in Larnaka, 155 (17.7%) in Pafos, 97 (11.0%) in Limassol, 41 (4.7%) in Ammochostos, and 19 (2.2%) were reported either in British bases or had a residence abroad, or information was not available (Table A1 in appendix).

Figure A1 in appendix shows the distribution of cases by postal code.

Notably, 121 cases (13.8%) were reported in Aradippou, a municipality in Larnaka district (Table A1 in appendix). Cases in Aradippou, including a cluster in a local bakery production line, are mainly males (58.7%; n = 71) and the median age is 49 years (IQR: 33-62 years). If the cluster is excluded, cases are mainly female (53.8%; n = 50) and the median age is 55 years (IQR: 42-69years).



Among the 878 cases, 21.4% are health-care workers² (n = 188) - 4.4% physicians (n = 39), 10.8% nurses (n = 95), 1.5% other health occupations (n = 13), and 4.7% auxiliary staff (n = 41).

Table 1 shows the distribution of health-care workers by district of residence.

Table 1: Health-care workers by district of residence (n=188).

District	Health-care worker	Physicians	Nurses	Other health occupations	Auxiliary staff
Ammochostos	16	3	7	1	5
Larnaka	43	7	24	3	9
Limassol	16	3	9	2	2
Nicosia	54	12	23	5	14
Pafos	59	14	32	2	11
Total	188	39	95	13	41

Table B1 in Appendix shows the number of cases by occupation categories, according to the Statistical Service of Cyprus (CYSTAT) categories. Notably, occupations with less than 10 cases have been grouped as “other”.

Epidemiological link

As of May 5th, place of exposure is available for 733 cases (83.5%).

In total, 14.2% (n = 125) of laboratory-confirmed COVID-19-cases had history of travel or residence abroad during the 14 days prior to symptom onset (imported). These cases have a direct link to the UK and Greece, mainly.

Locally acquired infections (index cases and close-contacts of confirmed cases) occurred in 83% (n = 608 of 733 with known place of exposure) of the cases, of which 10.2% (n = 62) were related to a health-care facility (General Hospital in Pafos).

Of all cases in Aradippou (Larnaka district) (n = 121), 78 (64.5%) were locally-acquired, 10 (8.3%) imported and for 33 cases (27.3%) the epidemiological link was not recorded at the moment.

Table A1 in the appendix shows the number and the rate (per 100,000 population) of locally-acquired cases by district of residence.

² The term “health-care worker” is based on the occupation and not on the place of exposure. Health-care workers are defined as all health care professionals, allied health workers, and auxiliary health workers.



Clinical features

Of the 878 laboratory-confirmed COVID-19-cases, clinical information is available for 98.4% (n = 864), of which 31.1% (n = 269) reported no symptoms at diagnosis and 68.9% (n = 595) reported at least one symptom. The most commonly reported symptoms were:

- cough (304/854; 35.6%),
- fever (276/852; 32.4%),
- myalgia (194/851; 22.8%),
- sore throat (154/849; 18.1%),
- anosmia (107/759; 14.1%), and
- shortness of breath (104/836; 12.4%).

Other reported symptoms were diarrhoea, runny nose, and headache.

Table A2 in appendix reports the sex and age distribution of asymptomatic cases at diagnosis.

Pre-existing conditions

Information on comorbidities was available for 766 (87.2%) cases. Of these, 317 (41.4%) reported at least one comorbidity.

The most commonly reported comorbidities were:

- hypertension (123/761; 16.2%),
- diabetes (69/769; 9.0%),
- heart disease (62/764; 8.1%), and
- cancer (18/467; 3.9%).

Other reported comorbidities were chronic kidney disease, autoimmune disease, and chronic respiratory disease.



Deaths

As of May 5th, 21 deaths were reported in Cyprus (Case Fatality Rate - CFR: 2.4%).

The mortality rate for COVID-19 is 2.4 per 100,000 population.

Seventeen deaths (81%) occurred in men and four (19%) in women; the median age of all deaths was 76 years (IQR: 67-79 years). Seven deaths were reported among residents in Larnaka, six in Pafos, three in Nicosia and Ammochostos, each, and two in Limassol (Appendix Table A3).

The median time from date of sampling to death was 7 days (IQR: 4-15 days). Figure A3 shows the Kaplan-Meier curve of the time from date of sampling to death.

For 15 deaths, COVID-19 was the underlying cause of death (COVID-19 CFR: 1.7%). Figure 5 reports the number of deaths by date.

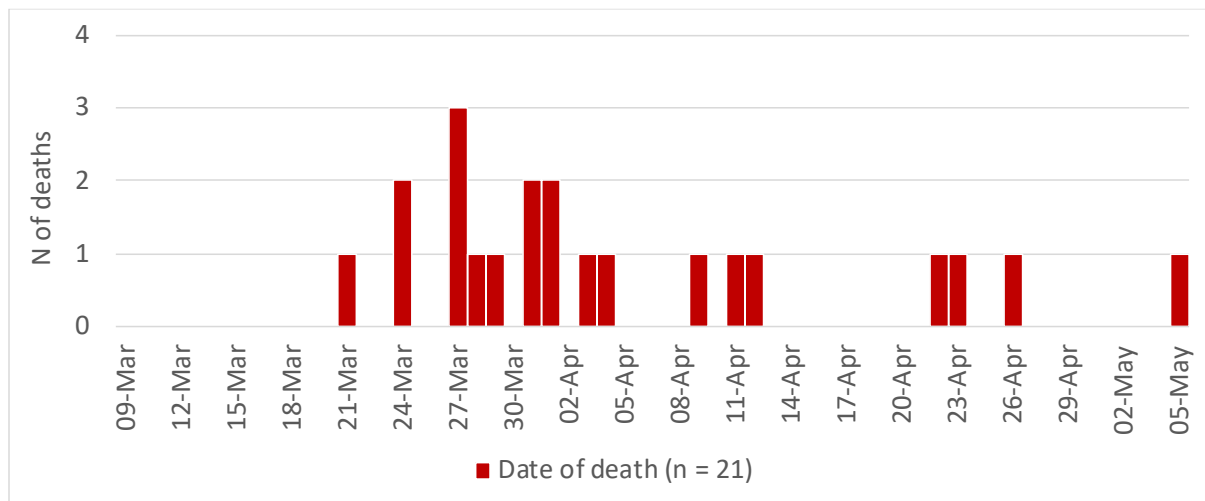


Figure 5: Number of deaths among COVID-19 cases in Cyprus by date of death (n = 21).

Hospitalization and intensive care unit (ICU) admissions³

In total, 19.3% (n = 169) of people with COVID-19 received hospital care, and 124 patients (73.4%) have been discharged alive from the hospital. The median age of hospitalized patients was 62 years (IQR: 49-73 years). Hospitalized cases were mainly males (n = 110; 65.1%).

Figure 6 shows the total number of hospital admissions by date.

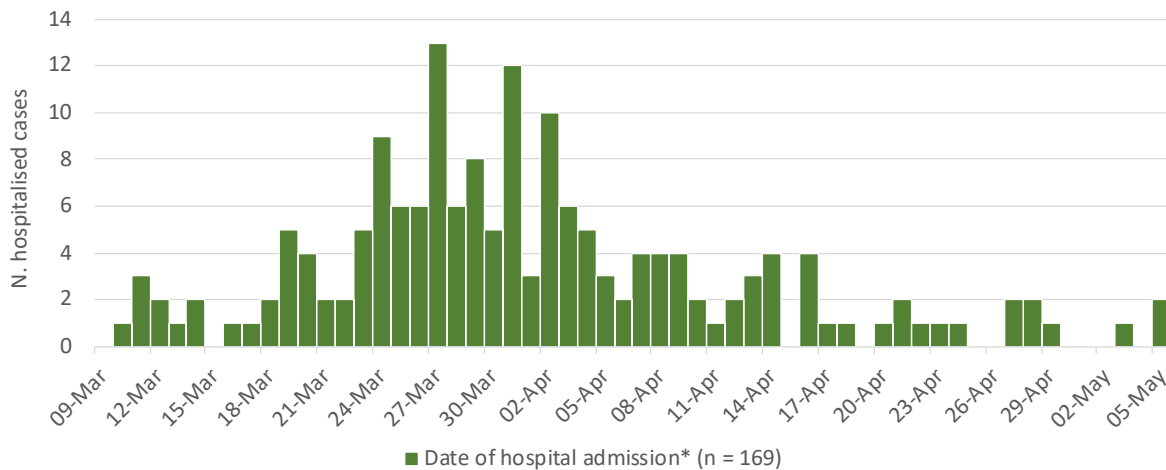


Figure 6: Number of laboratory-confirmed COVID-19 cases by date of hospital admission (n = 169).

* Date of hospital admission; for inpatients hospitalised prior to the beginning of the epidemic, it was replaced with date of sampling.

Overall, 32 cases (18.9% of all hospitalized patients) have been admitted to ICU⁴, of which 6 were still in ICU (as of May 5th).

A total of 27 ICU patients (83.4% of all ICU patients) have been intubated, of which 5 (83.3% of all patients currently in ICU) are still intubated.

The overall median length of stay in ICU (for all 32 ICU cases, considering those still in ICU until May 5th) was 10.5 days (IQR: 8-27 days). Figure A4 shows the Kaplan-Meier curve of the length of stay in ICU.

³ Data on hospitalisation and ICU are provisional and should be interpreted with caution because delay in data reporting is likely; for the construction of the curve, people are no longer in an ICU the day next to the date of their discharge, death or transfer.

⁴ Intensive care unit (ICU) refers only to the ICU in Limassol General Hospital and to the ICU in Nicosia General Hospital.



For patients who died while in ICU (n = 14), the median length of stay in ICU was 9.5 days (IQR: 3-17). Figure A5 shows the Kaplan-Meier curve of the length of stay in ICU for the people who died.

For patients transferred/discharged alive from ICU (n = 13), the median length of stay in ICU was 10 days (IQR: 8-27 days).

The median age of patients ever admitted to ICU was 65.5 years (IQR: 56-75 years). ICU patients are mainly male (n = 23; 71.9%).

The number of cases currently in ICU is 0.7 per 100,000 population. For comparison, Italy and Lombardia reported the highest rates of 6.7 per 100,000 population (n = 4,068) and 13.8 per 100,000 population (n = 1,381) on April 3rd. The ICU rates in Italy and Lombardia on May 5th are 2.4 per 100,000 population (n = 1,479) and 5.1 per 100,000 population (n = 509)

(<https://github.com/pcm-dpc/COVID-19/blob/master/dati-andamento-nazionale/dpc-covid19-ita-andamento-nazionale-20200504.csv>;

<https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200505.csv>).

Figure 7 shows the number of patients in ICU, by day and intubation. Table A4 in the appendix shows the total number of ICU admissions by date.

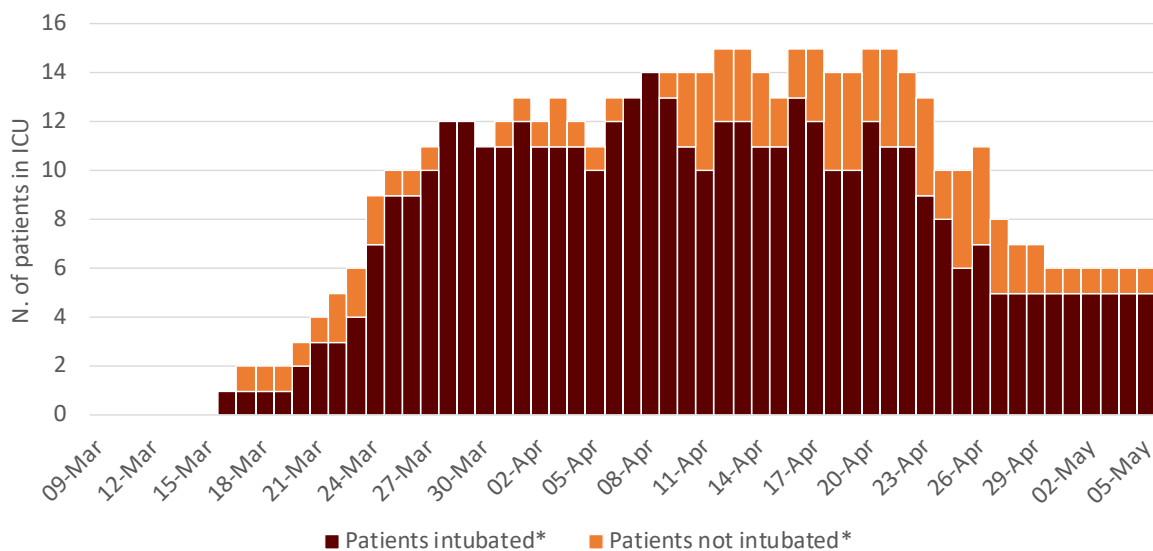


Figure 7: Number of laboratory-confirmed COVID-19 cases in ICU by date and intubation.

**Date of discharge/transfer/death included*



Recovered

As of May 5th, 45.6% (n = 400) of COVID-19 cases have recovered⁵.

The median time between the second negative result and the first date of sampling was 20 days (IQR: 17-26 days).

Table 2 shows the number and percentage of recovered cases and their characteristics.

Table 2: Characteristics of recovered cases (n = 400).

Characteristics	Total	Recovered	
	N	n	%
Total	878	400	45.6
Sex			
Male	439	187	42.6
Female	439	213	48.5
Age groups (years)			
0-9	27	9	33.3
10-19	34	12	35.3
20-29	113	51	45.1
30-39	176	87	49.4
40-49	152	70	46.1
50-59	159	77	48.4
60-69	112	50	44.6
70-79	80	35	43.8
80+	25	9	36.0

⁵ For symptomatic cases, or for cases hospitalised, a COVID-19 case can be considered cured after the resolution of symptoms and two negative tests for SARS-CoV-2 at 24-hour interval at least.

For asymptomatic cases, or for persons isolated at home, the negative tests to document virus clearance should be obtained at a minimum of 14 days after the initial positive test (end of the quarantine period). Novel coronavirus (SARS-CoV-2). Discharge criteria for confirmed COVID-19 cases- When is it safe to discharge COVID-19 cases from the hospital or end home isolation? - Technical Report, 10 March 2020. Stockholm: ECDC; 2020.



Comparison with selected countries

As of May 5th, in Cyprus the reporting rate was 100.2 cases per 100,000 population, the mortality rate was 2.4 deaths per 100,000 population and the CFR was 2.4%.

Table 3 shows COVID-19 indicators for Cyprus and other selected countries.

Figure A2 in appendix reports the rates of cumulative tests and cases (per 100,000 population) in Cyprus and other selected countries. In Cyprus the testing rate is 7,635.1 per 100,000 population.

It should be noted that the number of cases, tests and deaths for Cyprus are aggregated and include people from abroad and the British bases, while the total population does not include inhabitants from abroad or from the British bases.

Table 3: COVID-19 indicators by selected countries, as of 05/05/2020.

Country	N. of cases †	N. of cases (per 100,000 pop)	N. of tests §	N. of tests (per 100,000 pop)	N. of deaths†	CFR° (%)	Mortality rate (per 100,000 pop)	Pop. (in thousands)†
Cyprus	878	100.2	66,876	7,635.1	21	2.4	2.4	875.9*
Italy	211,938	350.7	2,246,666	3,717.7	29,079	13.7	48.1	60,431.3
USA	1,180,634	360.9	7,285,178	2,226.7	68,934	5.8	21.1	327,167.4
UK	190,584	286.6	1,383,842	2,081.3	28,734	15.1	43.2	66,488.9
Greece	2,632	24.5	80,951	754.6	146	5.5	1.4	10,727.7
Malta	480	99.3	36,945	7,640.7	4	0.8	0.8	483.5
Sweden	22,721	223.1	119,200	1,170.6	2,769	12.2	27.2	10,183.2
Netherlands	40,770	236.6	209,718	1,217.1	5,082	12.5	29.5	17,231
Republic of Korea	10,804	20.9	640,237	1,239.9	254	2.4	0.5	51,635.3

†Number of cases, number of deaths and population (in thousands) for all countries, but Cyprus, as reported by ECDC at

<https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide>

§ Data for Cyprus: internal communication; data for other countries: <https://www.finndx.org/covid-19/test-tracker/>

° CFR: Case fatality ratio.

* Data from Statistical Service of the Republic of Cyprus, 2018 ([Statistical Service of the Republic of Cyprus](#))



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We thank Antry Constantinou, Christiana Soteriou, Despina Ioannou, Irene Georgiou, Maria Clerides, Tatiana Sofocleous, and Despoina Stylianou from the Ministry of Health, and the companies CELLOCK (<https://cellock.com>) and GEOMATIC (<https://geomatic.com>) for their volunteering support.



Appendix

Table A1: Laboratory-confirmed COVID-19-cases in Cyprus by district of residence and origin (n = 878).

District/ <i>municipality</i>	Total		Travel-related		Unknown origin		Locally-acquired			Pop.
	N	%	N	%	N	%	N	%	N (per 100,000 pop)	
Ammochostos	41	4.7	9	7.2	9	6.2	23	3.8	47.7	48,200
Larnaka	229	26.1	17	13.6	47	32.4	165	27.1	112.2	147,000
<i>Aradippou</i>	121	13.8	10	8.0	33	22.8	78	12.8	405.7	19,228
Limassol	97	11.0	27	21.6	14	9.7	56	9.2	22.9	244,900
Nicosia	337	38.4	47	37.6	48	33.1	242	39.8	70.8	341,700
Pafos	155	17.7	11	8.8	26	17.9	118	19.4	125.4	94,100
Other	19	2.2	14	11.2	1	0.7	4	0.7		
Total	878	100	125	100	145	100	608	100	69.4	875,900

Other includes British Bases, abroad and unknown



Table A2: Sex and age distribution of asymptomatic cases at diagnosis (n = 269).

Characteristics	All cases (n = 878)	Asymptomatic cases (n = 269)	
	N	n	%
Sex			
Male	439	151	34.4
Female	439	118	26.9
Age groups (years)			
0-9	27	11	40.7
10-19	34	15	44.1
20-29	113	40	35.4
30-39	176	66	37.5
40-49	152	45	29.6
50-59	159	40	25.2
60-69	112	21	18.8
70-79	80	26	32.5
80+	25	5	20.0
Median age in years (IQR*)	46 (32-59)	40 (30-56)	

*IQR: Interquartile Range



Table A3: Characteristics of all deaths (n = 21).

Characteristics	N	%
Sex		
Male	17	81.0
Female	4	19.0
Age groups (years)		
0-9	0	0.0
10-19	0	0.0
20-29	0	0.0
30-39	0	0.0
40-49	1	4.8
50-59	2	9.5
60-69	6	28.6
70-79	8	38.1
80+	4	19.0
Median age in years (IQR*)	76 (66-79)	
District		
Ammochostos	3	14.3
Larnaka	7	33.3
Limassol	2	9.5
Nicosia	3	14.3
Pafos	6	28.6

*IQR: Interquartile Range



Table A4: Number of cases by date of sampling, laboratory reporting, death, and ICU admission.

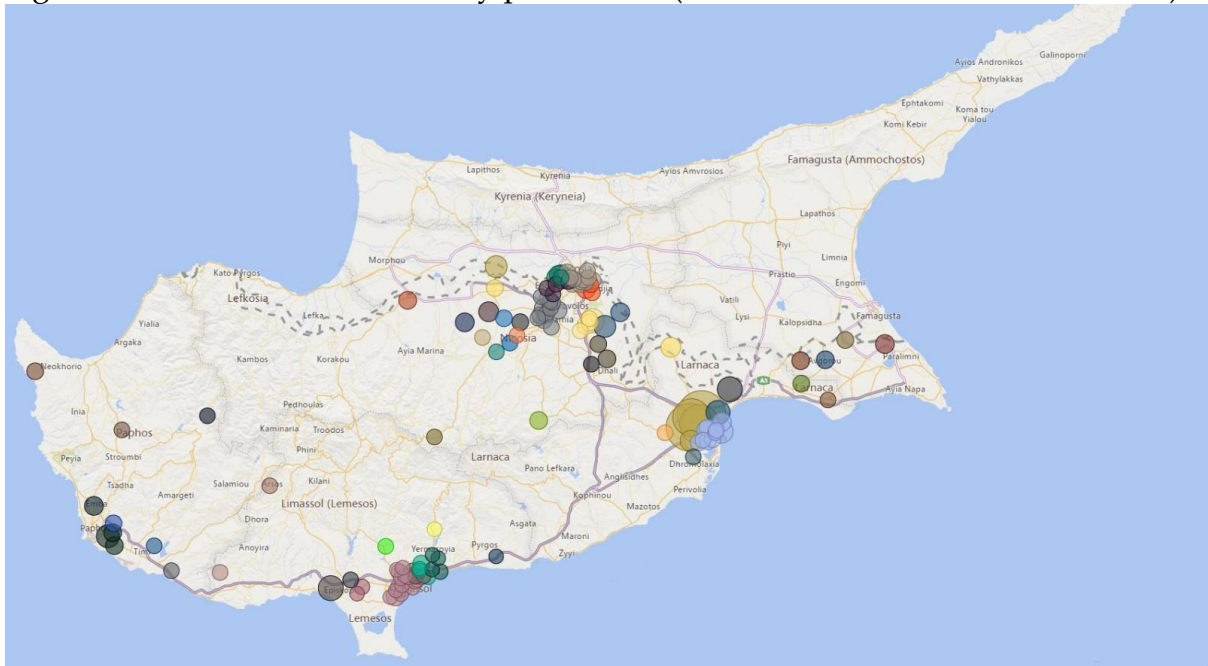
Date	Sampling (n = 878)	Laboratory reporting (n = 878)	Death (n = 21)	ICU admission (n = 32)
01-Mar	0	0	0	0
02-Mar	0	0	0	0
03-Mar	0	0	0	0
04-Mar	0	0	0	0
05-Mar	0	0	0	0
06-Mar	0	0	0	0
07-Mar	1	0	0	0
08-Mar	0	0	0	0
09-Mar	1	2	0	0
10-Mar	4	0	0	0
11-Mar	2	0	0	0
12-Mar	6	0	0	0
13-Mar	12	16	0	0
14-Mar	8	5	0	0
15-Mar	12	8	0	0
16-Mar	5	13	0	1
17-Mar	8	4	0	1
18-Mar	16	16	0	0
19-Mar	13	9	0	0
20-Mar	17	10	0	1
21-Mar	10	0	1	1
22-Mar	6	16	0	1
23-Mar	13	19	0	1
24-Mar	18	8	2	3
25-Mar	14	10	0	3
26-Mar	34	20	0	1
27-Mar	31	24	3	2
28-Mar	26	21	1	3
29-Mar	33	27	1	1
30-Mar	37	33	0	0
31-Mar	39	45	2	0
01-Apr	29	56	2	1
02-Apr	47	29	0	0



ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ

03-Apr	21	32	1	2
04-Apr	25	38	1	0
05-Apr	9	18	0	0
06-Apr	38	23	0	1
07-Apr	39	23	0	1
08-Apr	23	32	0	1
09-Apr	17	32	1	1
10-Apr	18	20	0	1
11-Apr	37	20	1	0
12-Apr	21	16	1	1
13-Apr	26	41	0	0
14-Apr	25	25	0	0
15-Apr	15	16	0	0
16-Apr	9	19	0	2
17-Apr	4	15	0	0
18-Apr	6	7	0	0
19-Apr	0	1	0	0
20-Apr	11	6	0	1
21-Apr	6	13	0	0
22-Apr	7	5	1	0
23-Apr	13	7	1	0
24-Apr	2	12	0	0
25-Apr	9	3	0	0
26-Apr	4	2	1	1
27-Apr	16	11	0	0
28-Apr	5	16	0	0
29-Apr	9	4	0	0
30-Apr	6	5	0	0
01-May	7	8	0	0
02-May	3	7	0	0
03-May	2	4	0	0
04-May	3	6	0	0
05-May	0	0	1	0

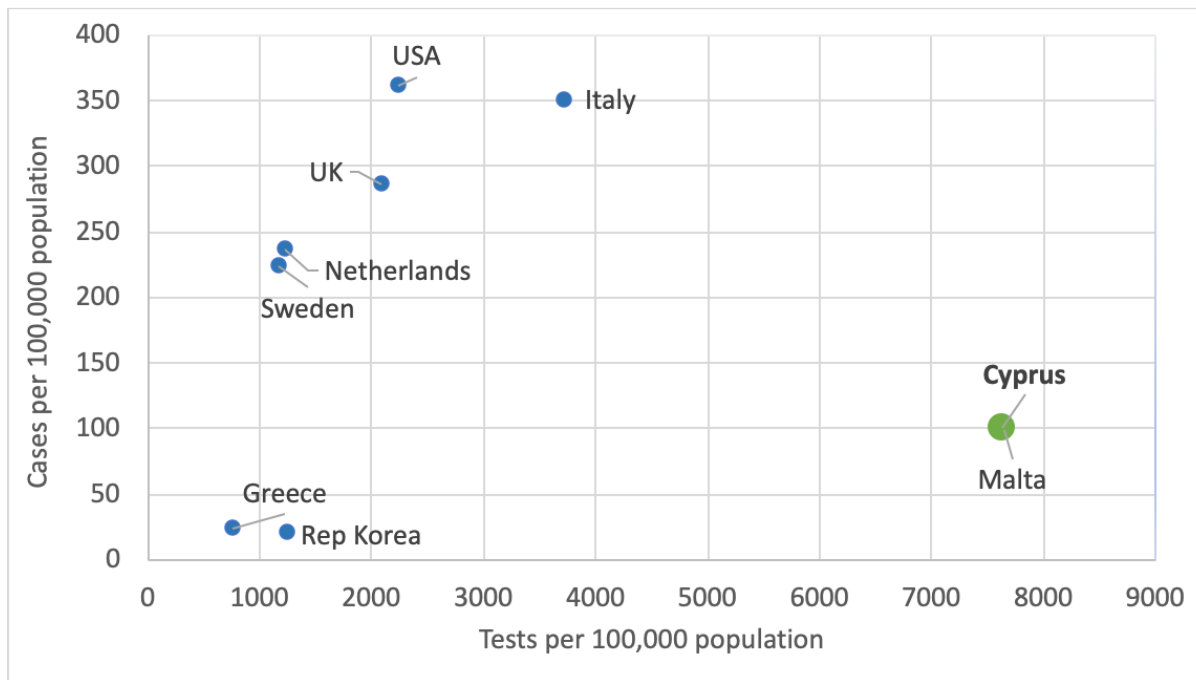
Figure A1: Distribution of cases by postal code (n = 857 with information available).



Each colour represents a different postal code and the size changes according to the number of cases.



Figure A2: Cumulative tests and cases per 100,000 population in Cyprus and other selected countries (Updated: 05/05/2020).



Data source for Cyprus: internal communication; data source for other countries:

<https://www.finddx.org/covid-19/test-tracker/>

Numbers of cases, tests and deaths for Cyprus are aggregated and include people from abroad and the British bases, while the total population does not include inhabitants from abroad or from the British bases.



Figure A3: Time from date of sampling to death of COVID-19 cases who died (n = 21; for three cases who died on the day of sampling/reporting, the time alive has been considered 0.5 days).

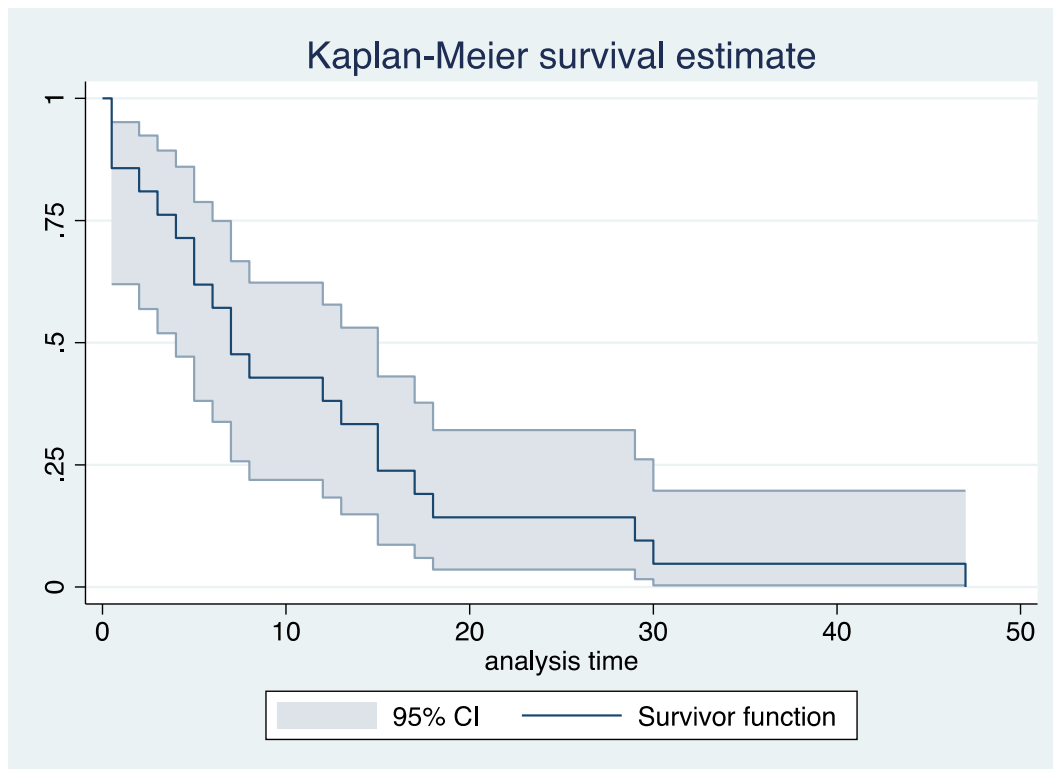




Figure A4: Length of stay in ICU (n = 32; for two cases who died on the same day of ICU admission the length of stay in ICU has been considered 0.5 days).

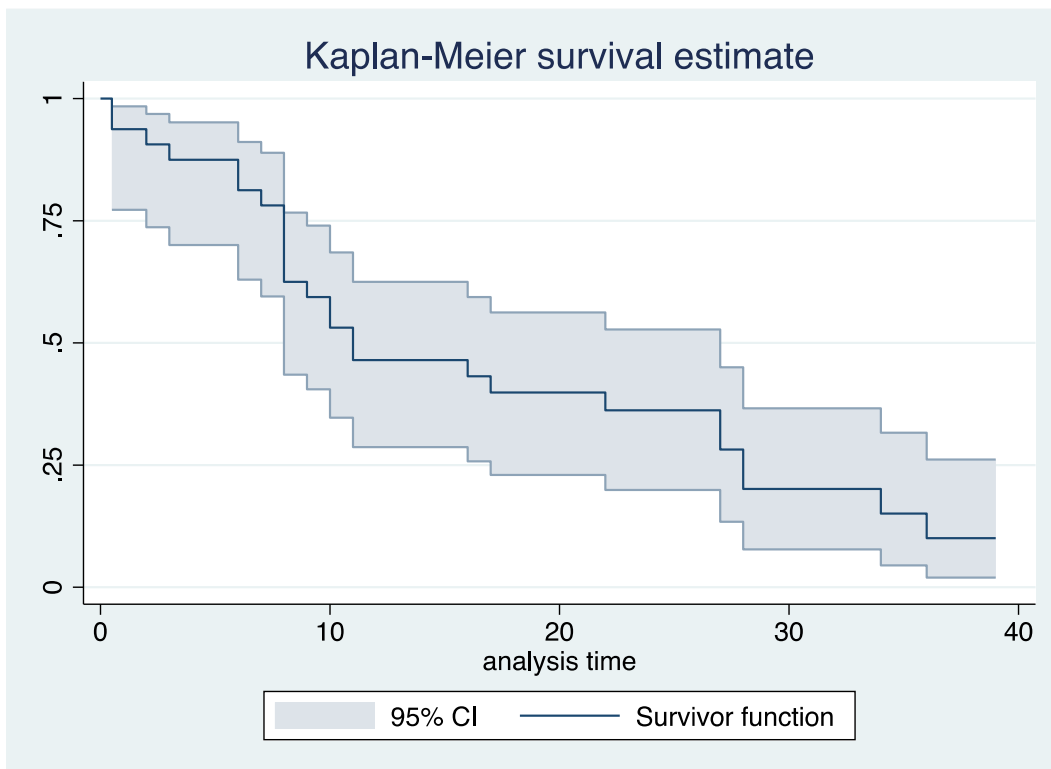


Figure A5: Length of stay in ICU of patients who died and had been admitted to an ICU (n = 14; for two cases who died the same day of ICU admission the length of stay in ICU has been considered 0.5 days).

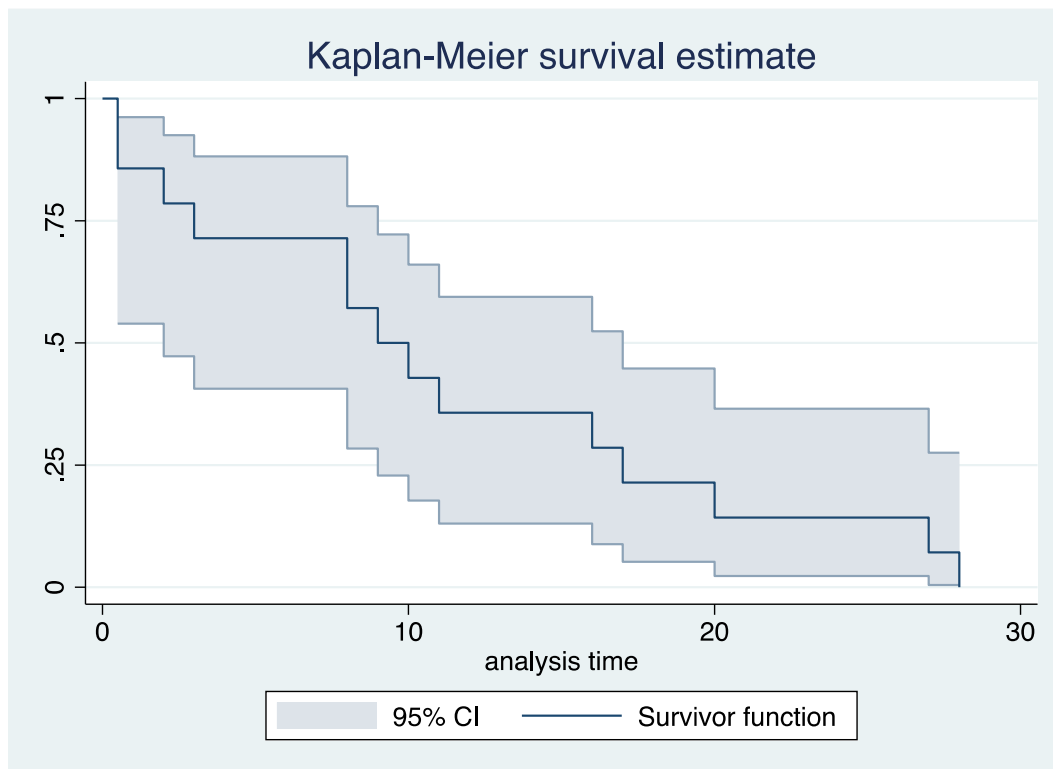




Table B1. Distribution of cases by category of occupation according to the Statistical Service of Cyprus (CYSTAT) categories (n = 793)

Occupation	N	%
Health Professionals	146	18.4
Retired	124	15.6
Student	58	7.3
Customer Services Clerks	50	6.3
Food Processing, Wood Working, Garment and Other Craft and Related Trades Workers	47	5.9
Cleaners and Helpers	39	4.9
Commissioned Armed Forces Officers	34	4.3
General and Keyboard Clerks	32	4.0
Housewife	24	3.0
Sales Workers	22	2.8
Unemployed	22	2.8
Teaching Professionals	17	2.1
Business and Administration Professionals	16	2.0
Legal, Social and Cultural Professionals	16	2.0
Personal Service Workers	16	2.0
Protective Services Workers	14	1.8
Administrative and Commercial Managers	11	1.4
Business and Administration Associate Professionals	11	1.4
Drivers and Mobile Plant Operators	11	1.4
Legal, Social, Cultural and Related Associate Professionals	10	1.3
Other (17 categories)	73	9.2
Total	793	100.0
Not Applicable	22	
Unknown	63	