



## **Coronavirus Disease 2019 (COVID-19)**

### **National Surveillance Report as of 14/04/2020**

Date of publication: 16/04/2020

Produced by the Epidemiological Surveillance Unit of the Ministry of Health

Contributors: Annalisa Quattrocchi, Ioannis Mamais, Valentinos Silvestros, Anna Demetriou, Maria Athanasiadou, Theopisti Kyprianou, Androulla Stylianou, Sotiroula Sotiriou, Fani Theofhanous, Christos Charalambous, Ioanna Gregoriou, Maria Koliou, Georgios Nikolopoulos and Elisavet Constantinou

Scientific Committee: Elisavet Constantinou, Constantinos Constantinou, Niki Paphitou, Georgios Nikolopoulos, Maria Koliou, George Panos, Eirini Christaki, Zoi - Dorothea Pana, Constantinos Tsioutis, Peter Karayiannis, George Petrikkos, Petros Agathangelou, George Mixides

Suggested citation: Epidemiological Surveillance Unit of the Ministry of Health, Cyprus. National Situation Report. Coronavirus Disease 2019 (COVID-19), 16 April 2020.



## Summary

- As of April 14<sup>th</sup>, a total of 697 COVID-19 cases and 17 deaths (case fatality rate: 2.4%) have been reported in the Republic of Cyprus.
- Among these cases, 22.9% are health-care workers (n = 160) - 5.3% physicians (n = 37), 11.9% nurses (n = 83), 1.3% other health occupations (n = 9), and 4.4% auxiliary staff (n = 31).
- The median age of cases is 47 years (interquartile range - IQR: 33-60 years); 51% are male.
- Overall, of 574 cases for which the place of exposure was known, locally acquired infections (index cases and close-contacts of confirmed cases) were 479 (83.5%) - of these 10% (n = 49) were related to a health-care facility (General Hospital in Pafos) and 16.1% (n = 77) were reported in Aradippou municipality.
- In total, 21.5% (n = 150) of cases received hospital care, of which 87 (58.0%) have been discharged alive from the hospital. Median age of all hospitalized patients is: 63 years (interquartile range: 51-74 years), and 68% are males.
- Fourteen (9.3% of all hospitalized patients) patients were still in intensive care units (for part of the day if he/she died, discharged or transferred on that day or for the whole day, by April 14<sup>th</sup>).
- A total of 20,517 tests have been performed as of April 14<sup>th</sup> (2,342.3 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 April 14<sup>th</sup>, 697 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 (IQR: 2-7 days). It should be noted that for 11 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 April 14<sup>th</sup>, 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)<sup>1</sup>, is 44.9 per 100,000 population (Figure 3).

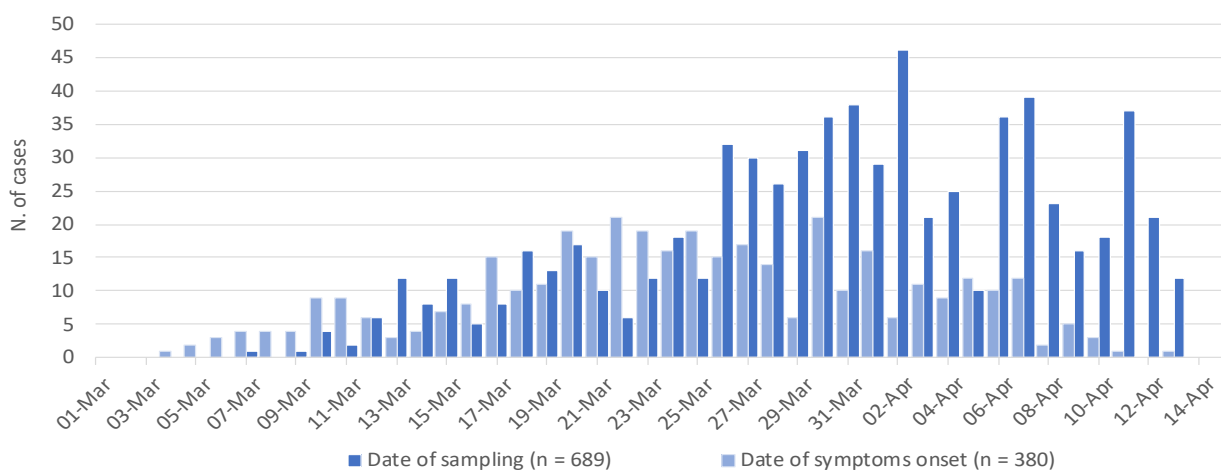


Figure 1: Number of laboratory-confirmed COVID-19-cases in Cyprus since 01/03/2020 by date of sample collection and date of symptoms onset (n = 689 and n = 380 with data available, respectively).

*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.*

<sup>1</sup>Coronavirus 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>

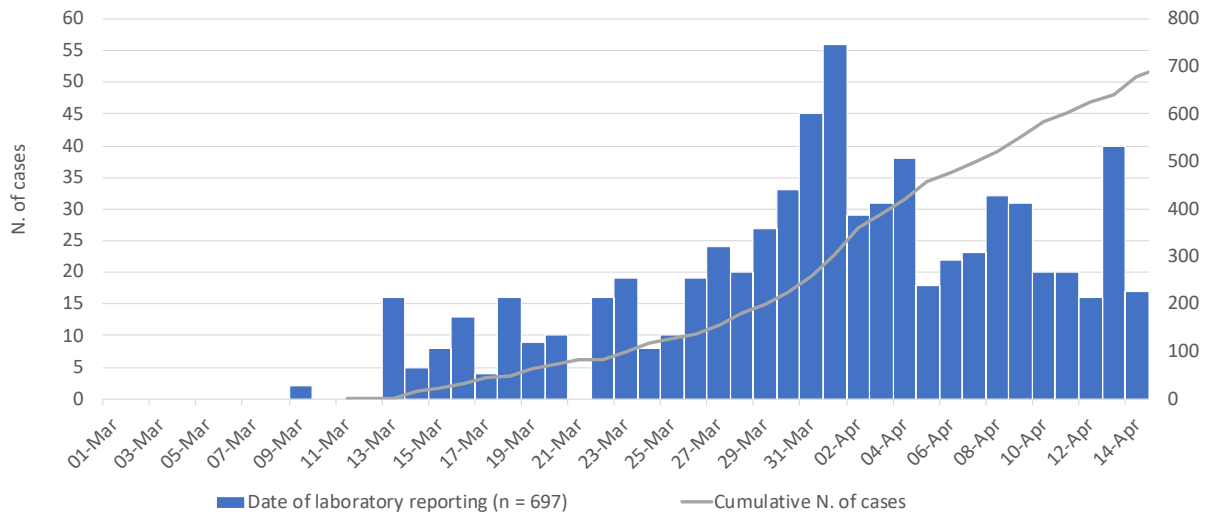


Figure 2: Number and cumulative number of laboratory-confirmed COVID-19-cases in Cyprus since 01/03/2020, by date of laboratory reporting (n = 697). Recent data should be interpreted with caution due to the possibility that cases with date of onset within the reporting period have not yet been diagnosed.

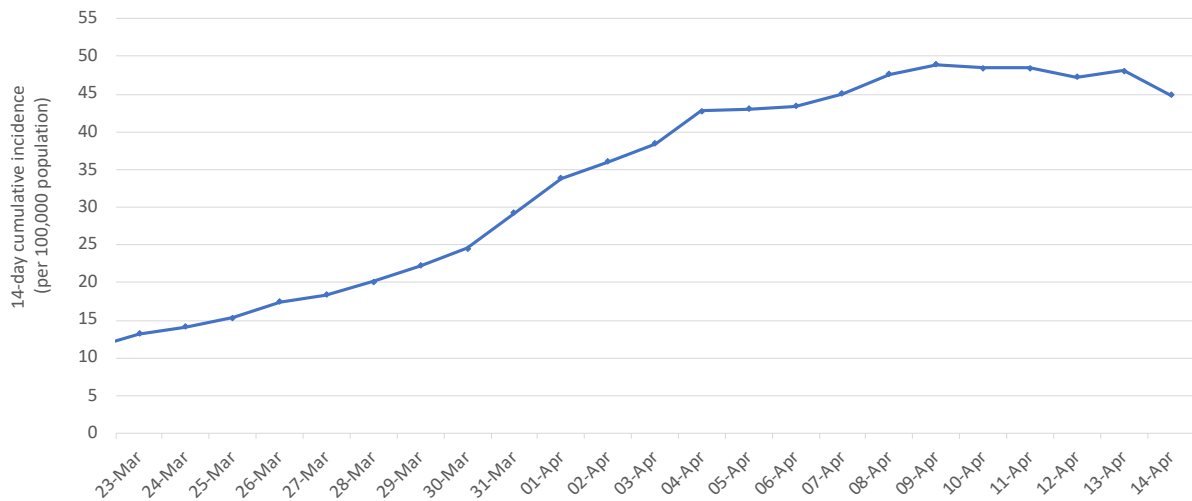


Figure 3. COVID-19 14-day cumulative incidence rate per 100,000 population (proxy of COVID-19 prevalence). March 23<sup>rd</sup> represents the first 14<sup>th</sup> day since cases have been reported.



## Characteristics of the cases

Among these cases, 51% are male (n = 354) and 49% female (n = 343).

The median age of cases is 47 years (interquartile range: 33-60 years). By age groups, cases included 37 infants, children and adolescents aged 0-17 years-old (5.4%), 474 adults aged 18-59 years (68.6%), and 180 persons aged 60 years and older (26%). The age of six notified cases has not been recorded at the moment (Figure 4).

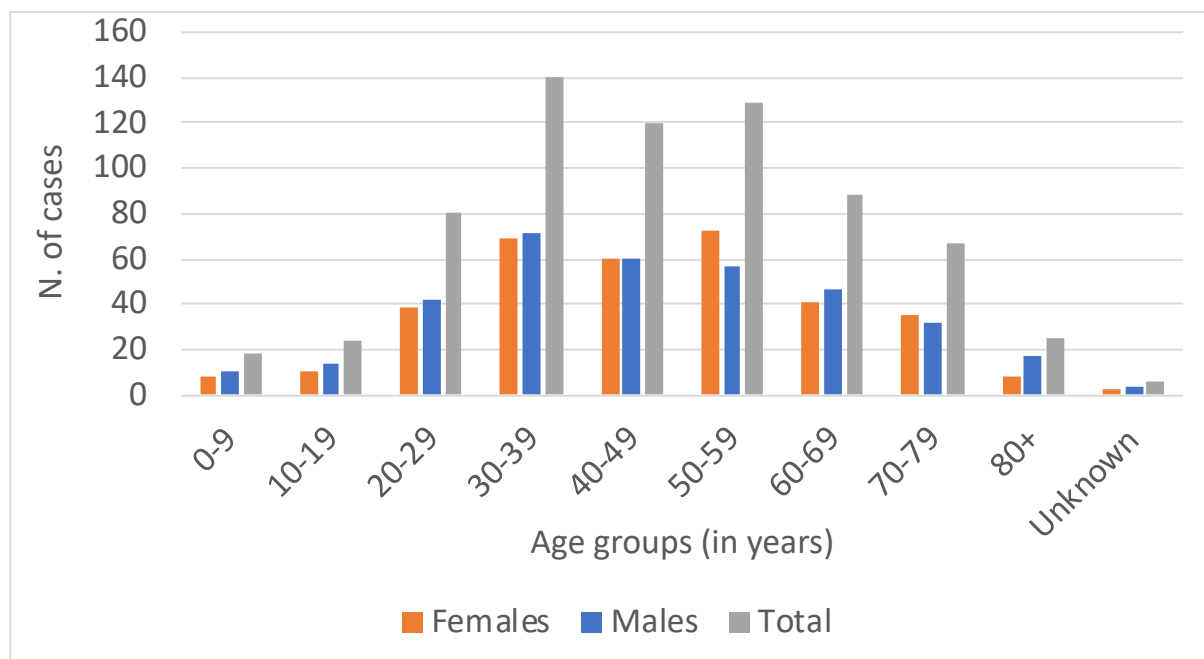


Figure 4: Laboratory-confirmed COVID-19-cases in Cyprus by sex and age groups.

Among all cases, 245 (35.2%) were reported in Nicosia district, 198 (28.4%) in Larnaka, 124 (17.8%) in Pafos, 75 (10.8%) in Limassol, and 38 (5.5%) in Ammochostos. Seventeen cases (2.4%) 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, 113 cases (16.2%) 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 (58.4%; n = 66) and the median age is 49 years (interquartile range: 34-65 years). If the cluster is excluded, cases are mainly female (55.3%; n = 47) and the median age is 56 years (interquartile range: 45-71 years).



Among the 697 cases, 22.9% are health-care workers<sup>2</sup> (n = 160), of which 5.3% physicians (n = 37), 11.9% nurses (n = 83), 1.3% other health occupations (n = 9), and 4.4% auxiliary staff (n = 31).

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

District	Health-care worker	Physicians	Nurses	Other health occupations	Auxiliary staff
Ammochostos	16	4	7	0	5
Larnaka	39	7	21	3	8
Limassol	11	2	6	1	2
Nicosia	45	11	19	4	11
Pafos	49	13	30	1	5
Total	160	37	83	9	31

Table 1: Health-care workers by district of residence (n=160).

### Epidemiological link

As of April 14<sup>th</sup>, place of exposure is available for 574 cases (82.4%), and 123 cases (17.6%) are under investigation.

In total, 16.5% (n = 95) 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 83.5% (n = 479 of 574 with known place of exposure) of the cases, of which 10% (n = 49) were related to a health-care facility (General Hospital in Pafos).

Of all cases in Aradippou (Larnaka district) (n = 113), 77 (68.1%) were locally-acquired, seven (6.2%) imported and for 29 cases (25.7%) 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.

<sup>2</sup> 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 697 laboratory-confirmed COVID-19-cases, clinical information is available for 95.4% (n = 665), of which 26.2% (n = 174) reported no symptoms at diagnosis and 73.8% (n = 491) reported at least one symptom. The most commonly reported symptoms were:

- cough (261/625; 41.8%),
- fever (232/639; 36.3%),
- myalgia (171/636; 26.9%),
- sore throat (129/634; 20.3%),
- anosmia (92/470; 19.6%), and
- shortness of breath (97/607; 16.0%).

Other reported symptoms were runny nose, diarrhoea, 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 564 (80.9%) cases. Of these, 248 (44%) reported at least one comorbidity.

The most commonly reported comorbidities were:

- hypertension (101/551; 18.3%),
- diabetes (61/552; 11.1%),
- heart disease (54/548; 9.9%), and
- cancer (13/330; 3.9%).

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



## Deaths

As of April 14<sup>th</sup>, 17 deaths were reported in Cyprus (Case Fatality Rate - CFR: 2.4%). The mortality rate for COVID-19 is 1.9 per 100,000 population.

Thirteen deaths (76.5%) occurred in men and four (23.5%) in women; the median age of all deaths was 76 years (IQR: 66-79 years). Six deaths were reported among residents in Larnaka, five in Pafos, 2 in Nicosia, Limassol and Ammochostos, each (Appendix Table A3).

The median time from date of sampling to death was 6.5 days (IQR: 3.5-12.5 days) (information on date of sampling was available for 16 cases). Of the 17 people who died, 10 were admitted to an Intensive Care Unit (ICU) with a median length of stay there of 7 days (IQR: 0-9 days). Figures A3 and A4 in the Appendix show the Kaplan-Meier curves of the time from date of sampling to death and of the length of stay in ICU for the people who died.

For 12 deaths, COVID-19 was the underlying cause of death (COVID-19 CFR: 1.7%). Figure 5 reports the number of deaths by date.

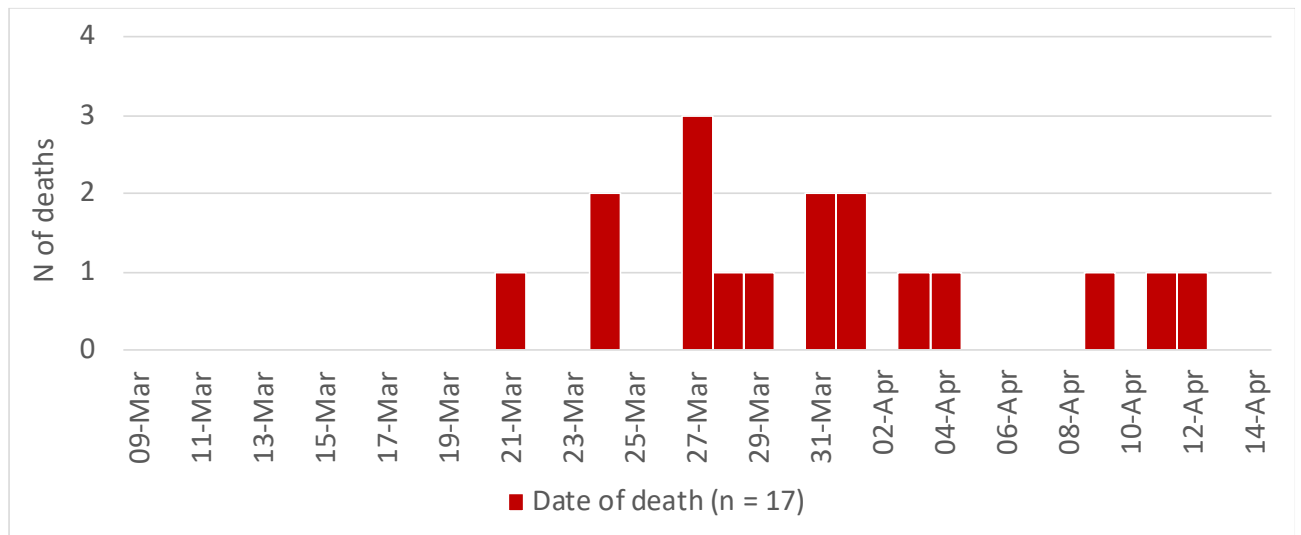


Figure 5: Number of deaths among COVID-19 cases in Cyprus by date of death (n = 17).





## Hospitalization and intensive care unit (ICU) admissions<sup>3</sup>

In total, 21.5% (n = 150) patients received hospital care, and 87 patients (58.0%) have been discharged alive from the hospital. When age was available (n = 147), the median age of hospitalized patients was 63 years (interquartile range: 51-74 years). Hospitalized cases were mainly males (n = 100; 66.7%).

Overall, 27 cases (18% of all hospitalized patients) have been admitted to ICU<sup>4</sup>, of which 14 (9.3% of all hospitalized patients) were still in ICU (as of April 14<sup>th</sup>).

The median age of patients admitted to ICU was 69 years (interquartile range: 61-76 years); for one patient age is not recorded at the moment. The number of cases in ICU is 1.6 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 3<sup>rd</sup>. The ICU rates in Italy and Lombardia on April 14<sup>th</sup> are 5.3 per 100,000 population (n = 3,186) and 11.2 per 100,000 population (n = 1,122) (<https://github.com/pcm-dpc/COVID-19/blob/master/dati-andamento-nazionale/dpc-covid19-ita-andamento-nazionale-20200414.csv>; <https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200414.csv>).

Figure 6 shows the number of patients in ICU by day. Table A4 in the appendix shows the total number of ICU admissions by date.

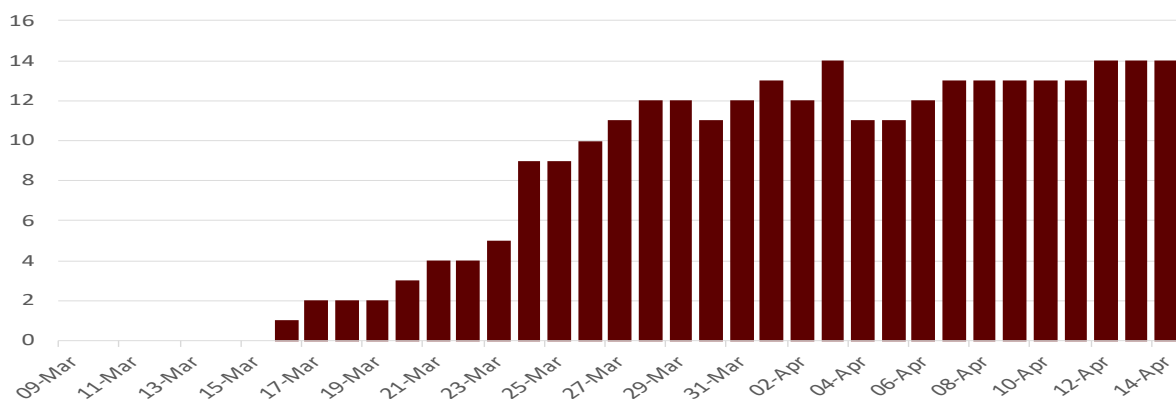


Figure 6: Number of laboratory-confirmed COVID-19 cases in ICU by day.  
*Date of discharge/transfer/death included*

<sup>3</sup> 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.

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



## Recovered

As of April 14<sup>th</sup>, 9.3% (n = 65) of COVID-19 cases have recovered<sup>5</sup>.

The median time between the second negative result and the first date of sampling was 16 days (IQR: 12-19 days).

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

Characteristics	Total	Recovered	
	N	n	%
Total	697	65	9.3
Sex			
Male	354	33	9.3
Female	343	32	9.3
Age groups (years)			
0-9	18	0	0.0
10-19	24	0	0.0
20-29	80	5	6.3
30-39	140	13	9.3
40-49	120	17	14.2
50-59	129	9	7.0
60-69	88	11	12.5
70-79	67	7	10.4
80+	25	1	4.0
Unknown	6	2	33.3

Table 2: Characteristics of recovered cases (n=65).

<sup>5</sup> 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 April 14<sup>th</sup>, in Cyprus the reporting rate was 79.6 cases per 100,000 population, the mortality rate was 1.9 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 2,342.3 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 14/04/2020

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 <sup>°</sup> (%)	Mortality rate (per 100,000 pop)	Pop. (in thousands) †
Cyprus	697	79.6	20,517	2,342.3	17	2.4	1.9	875.9*
Italy	159,516	264.0	1,073,689	1,776.7	20,465	12.8	33.9	60431.3
USA	582,594	178.1	2,973,208	908.8	23,649	4.1	7.2	327167.4
UK	88,621	133.3	382,650	575.5	11,329	12.8	17.0	66488.9
Greece	2,145	20.0	52,215	486.7	99	4.6	0.9	10727.7
Malta	384	79.4	19,121	3,954.5	3	0.8	0.6	483.5
Sweden	10,948	107.5	54,700	537.2	919	8.4	9.0	10183.2
Netherlands	26,551	154.1	128,652	746.6	2,823	10.6	16.4	17231.0
Republic of Korea	10,564	20.5	527,438	1021.5	222	2.1	0.4	51635.3

†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.finddx.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](#))



## **Acknowledgments**

We thank Antry Constantinou, Christiana Soteriou, Despina Ioannou, Irene Georgiou, Maria Clerides, Tatiana Sofocleous 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 = 697).

District/ <i>municipality</i>	Total		Travel-related		Unknown origin		Locally-acquired			Pop.
	N	%	N	%	N	%	N	%	N (per 100,000 pop)	
Ammochostos	38	5.5	7	7.4	8	6.5	23	4.8	47.7	48,200
Larnaka	198	28.4	13	13.7	41	33.3	144	30.1	98.0	147,000
<i>Aradippou</i>	113	16.2	7	7.4	29	23.6	77	16.1	400.5	19,228
Limassol	75	10.8	21	22.1	10	8.1	44	9.2	18.0	244,900
Nicosia	245	35.2	36	37.9	40	32.5	169	35.3	49.5	341,700
Pafos	124	17.8	7	7.4	21	17.1	96	20.0	102.0	94,100
Other	17	2.4	11	11.6	3	2.4	3	0.6	NA	
<b>Total</b>	<b>697</b>	<b>100</b>	<b>95</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>479</b>	<b>100</b>	<b>54.7</b>	<b>875,900</b>

Other includes British Bases, abroad and unknown



Table A2: Sex and age distribution of asymptomatic cases at diagnosis (n = 174).

Characteristics	All cases (n = 697)	Asymptomatic cases (n = 174)	
	N	n	%
Sex			
Male	354	98	27.7
Female	343	76	22.2
Age groups (years)			
0-9	18	8	44.4
10-19	24	9	37.5
20-29	80	24	30.0
30-39	140	43	30.7
40-49	120	30	25.0
50-59	129	24	18.6
60-69	88	14	15.9
70-79	67	17	25.4
80+	25	5	20.0
Unknown	6	0	0.0
Median age in years (IQR*)	47 (33-60)	40 (30-56)	

\*IQR: Interquartile Range



Table A3: Characteristics of all deaths (n = 17)

Characteristics	N	%
Sex		
Male	13	76.5
Female	4	23.5
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	5.9
50-59	1	5.9
60-69	5	29.4
70-79	6	35.3
80+	4	23.5
Median age in years (IQR*)	76 (66-79)	
District		
Ammochostos	2	11.8
Larnaka	0	0.0
Limassol	6	35.3
Nicosia	2	11.8
Pafos	2	11.8

\*IQR: Interquartile Range



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

Date	Sampling (n = 689)	Laboratory reporting (n = 697)	Death (n = 17)	ICU admission (n = 27)
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	12	19	0	1
24-Mar	18	8	2	3
25-Mar	12	10	0	2
26-Mar	32	19	0	1
27-Mar	30	24	3	2
28-Mar	26	20	1	3
29-Mar	31	27	1	1
30-Mar	36	33	0	0
31-Mar	38	45	2	0
01-Apr	29	56	2	1
02-Apr	46	29	0	0





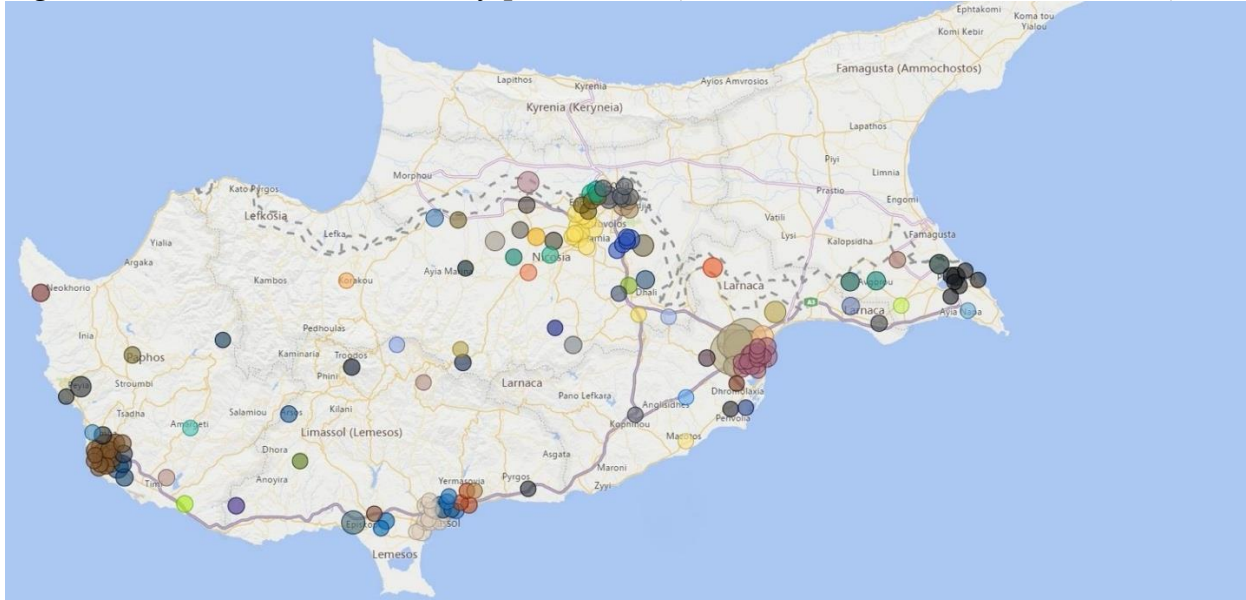
**ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ**

03-Apr	21	31	1	2
04-Apr	25	38	1	0
05-Apr	10	18	0	0
06-Apr	36	22	0	1
07-Apr	39	23	0	1
08-Apr	23	32	0	1
09-Apr	16	31	1	1
10-Apr	18	20	0	1
11-Apr	37	20	1	0
12-Apr	21	16	1	1
13-Apr	12	40	0	0
14-Apr	0	17	0	0

---



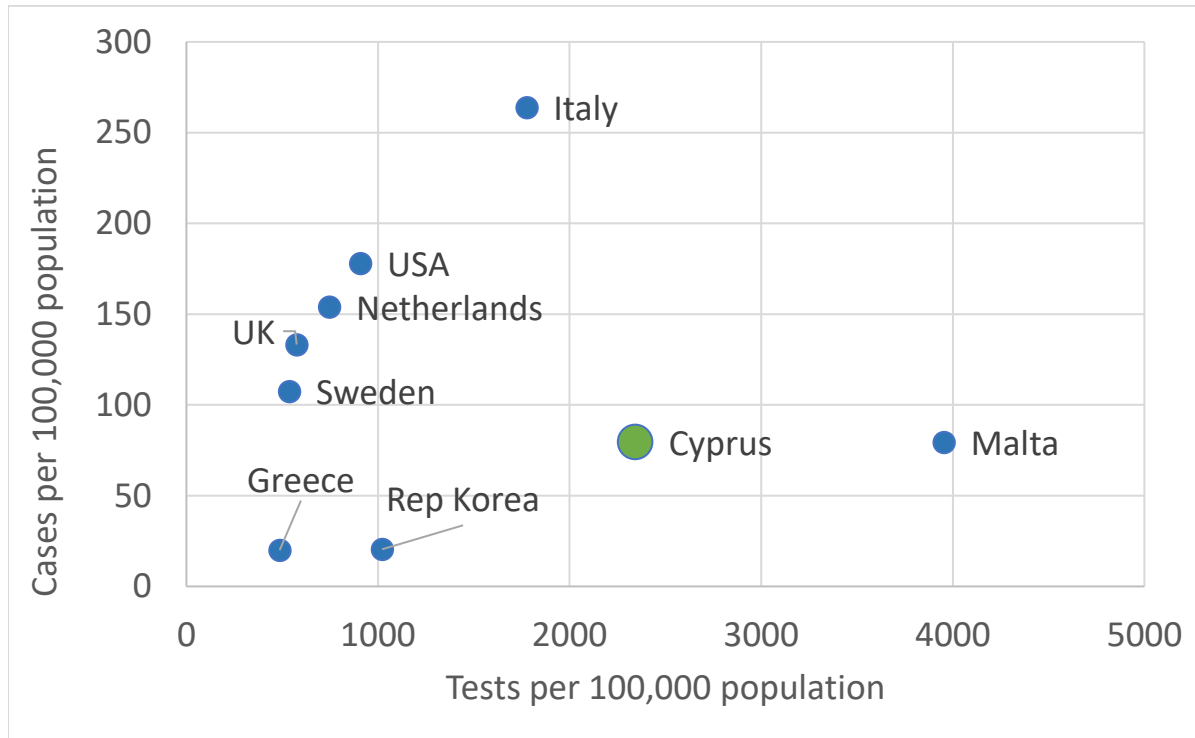
Figure A1: Distribution of cases by postal code (n = 659 with information available)



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: 14/04/2020).



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

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

*That 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.*



Figure A3: Time from date of sampling to death of COVID-19 cases who died (n = 14, as two cases died the same day of the date of sampling and for one case the date of sampling was not recorded at the moment, thus excluded).

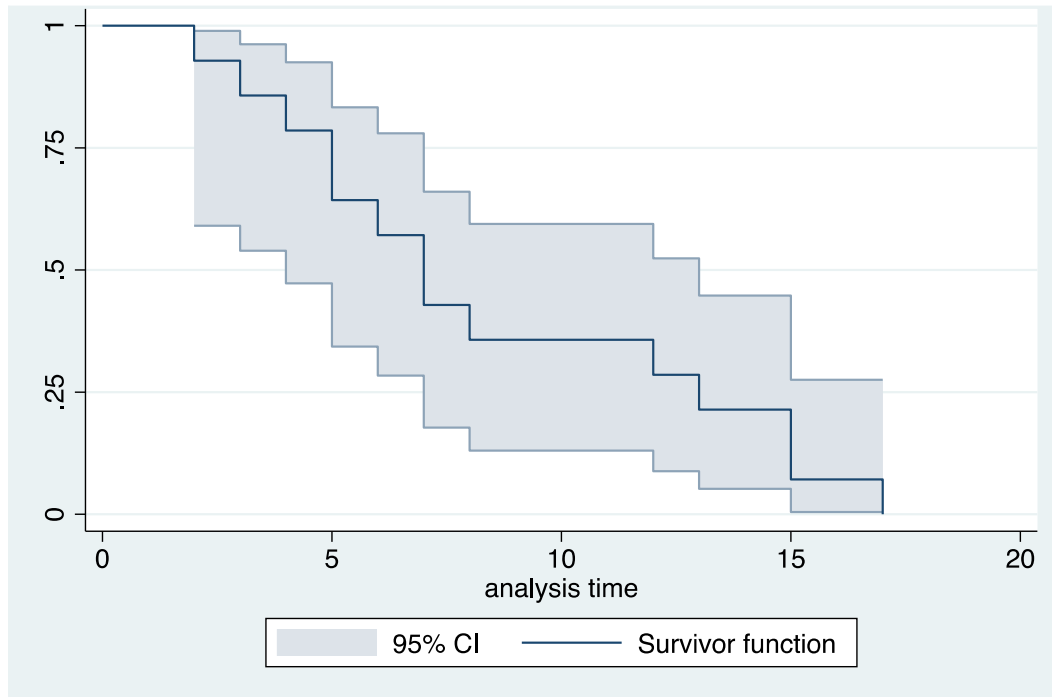


Figure A4: Length of stay in ICU of 10 patients who died and had been admitted to an ICU (n = 7, as three cases died the same day of ICU admission, thus excluded).

