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للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

18 JULY 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 167)

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Abu Dhabi Public Health Center (ADPHC) is gathering the latest scientific research updates and trends on coronavirus disease (COVID-19) in a daily report. The report provides summaries on breakthrough or updated research on COVID-19 to allow health care professionals and public health professionals get easy and fast access to information.

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Note : All articles presented in this report represent the authors' views and not necessarily represents Abu Dhabi Public Health Center views or directions. Due the nature of daily posting , some minor language errors are expected.
For further inquiries you may communicate with us as PHP@adphc.gov.ae

RESEARCH UPDATES

The views and opinions expressed in this report are those of the authors and do not reflect the official policy or position of the Abu Dhabi Public Health Center (ADPHC).

Vaccine

An mRNA Vaccine Against SARS-CoV-2 — Preliminary Report

Clinical Features

Characteristics and Outcomes in Patients With COVID-19 and Acute Ischemic Stroke

- WHO Director-General Dr Tedros joined the leaders of Spain to pay tribute to those who lost their lives to COVID-19, and stated that "**Spain has shown that with political leadership and action, backed by community support, COVID-19 can be controlled, no matter at what stage virus transmission is at in a country**".

- The WHO Regional Director for the Western Pacific, Dr Takeshi Kasai, praised New Zealand's success in controlling COVID-19, adding that it has been a concerted effort to limit and stop COVID-19 on their shores and support other countries in the Region. The Pan American Health Organization/WHO Regional Office for the Americas and the Coordinator of Indigenous Organizations of the Amazon River Basin (COICA) have agreed to work together to step up the fight against COVID-19 in indigenous areas of the Amazon.

- PAHO and COICA called for the urgent implementation of responses to the COVID-19 pandemic that are "appropriate to the various geographical and cultural contexts and that include the participation of the communities themselves".

EPIDEMIOLOGY

FROM 21 JAN TO 17 JUL 2020

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Figure 1: Total number of infected, recovered , and death cases

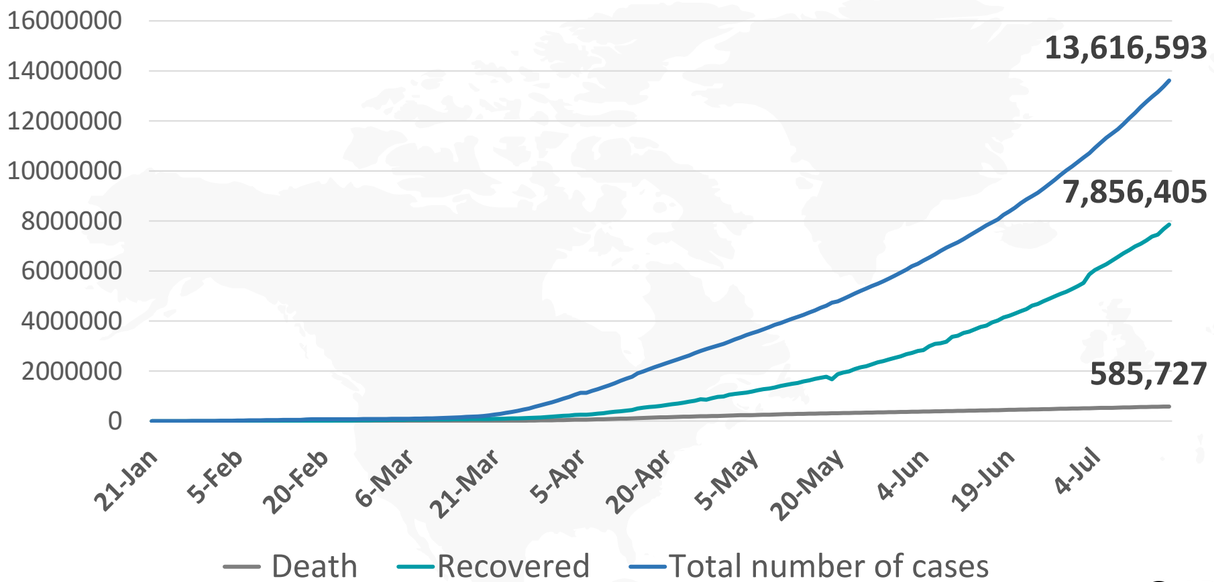


Figure 3: Total number of death due to COVID-19 (china and the result of the world)

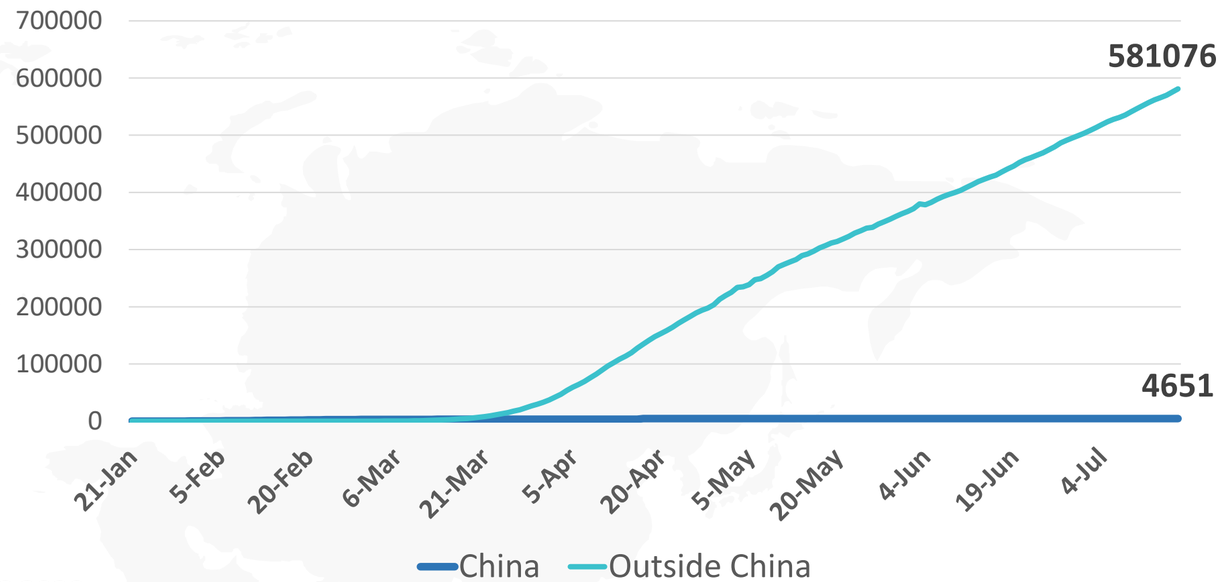


Figure 2: Daily new infected COVID-19 cases (china and the rest of the world)

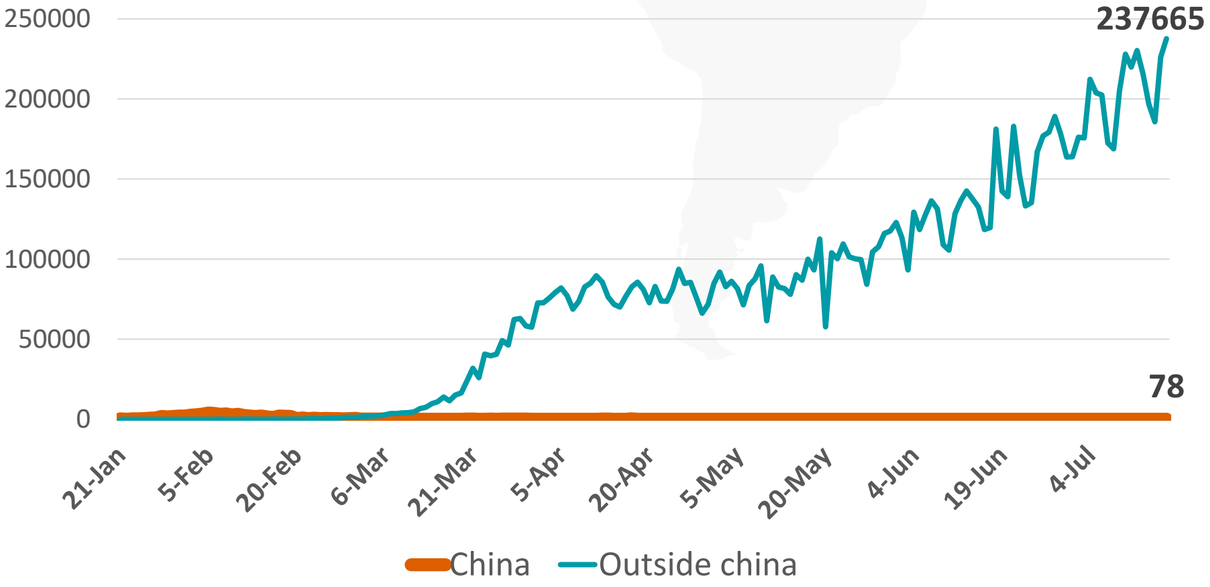
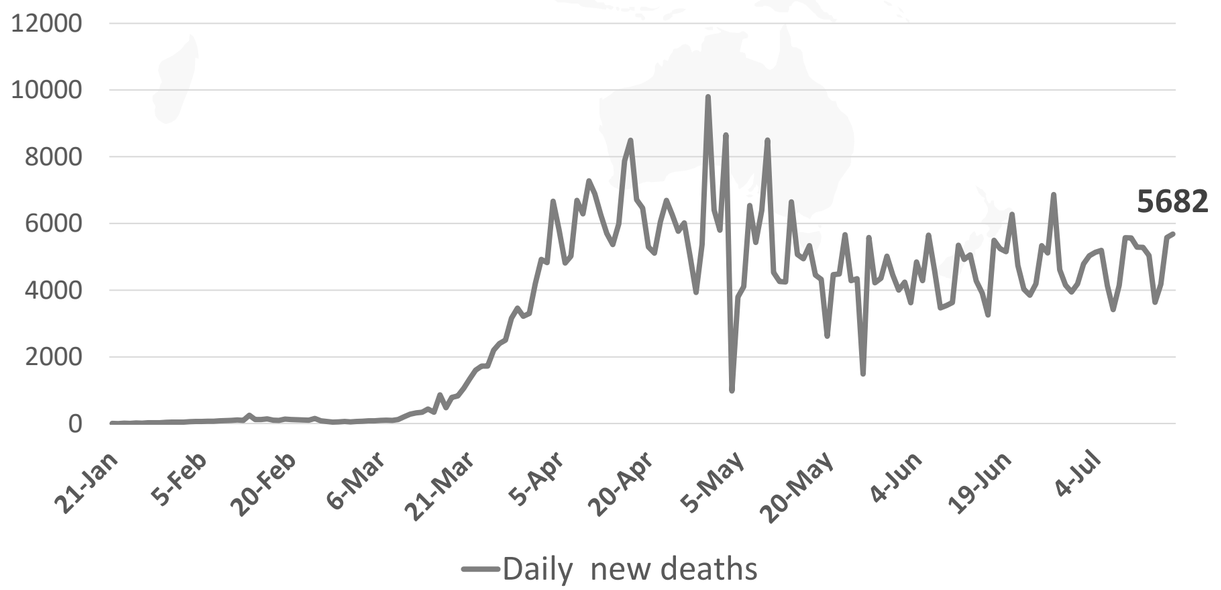


Figure 4: Global daily new deaths due to COVID-19 (china and rest world)



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

FROM 21 JAN TO 17 JUL 2020

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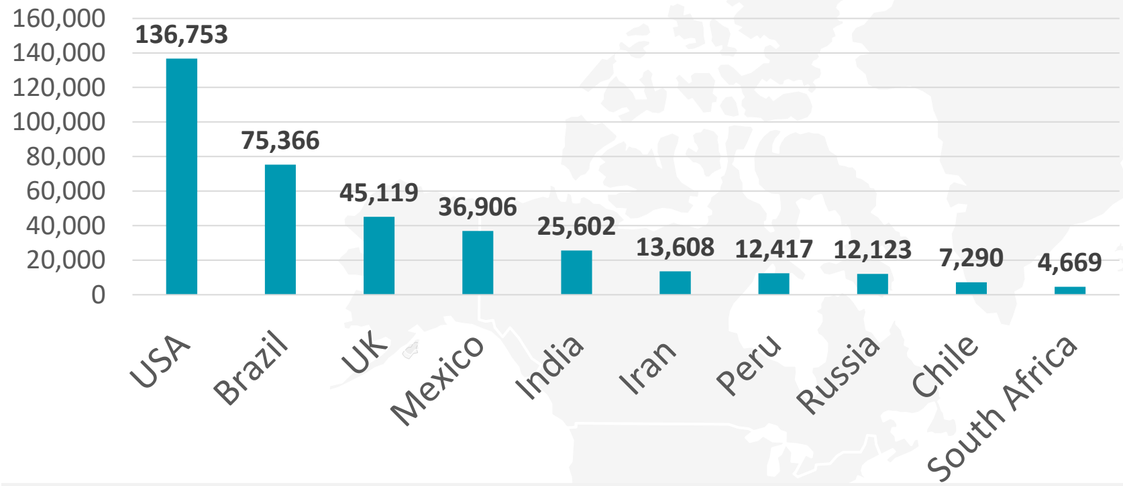
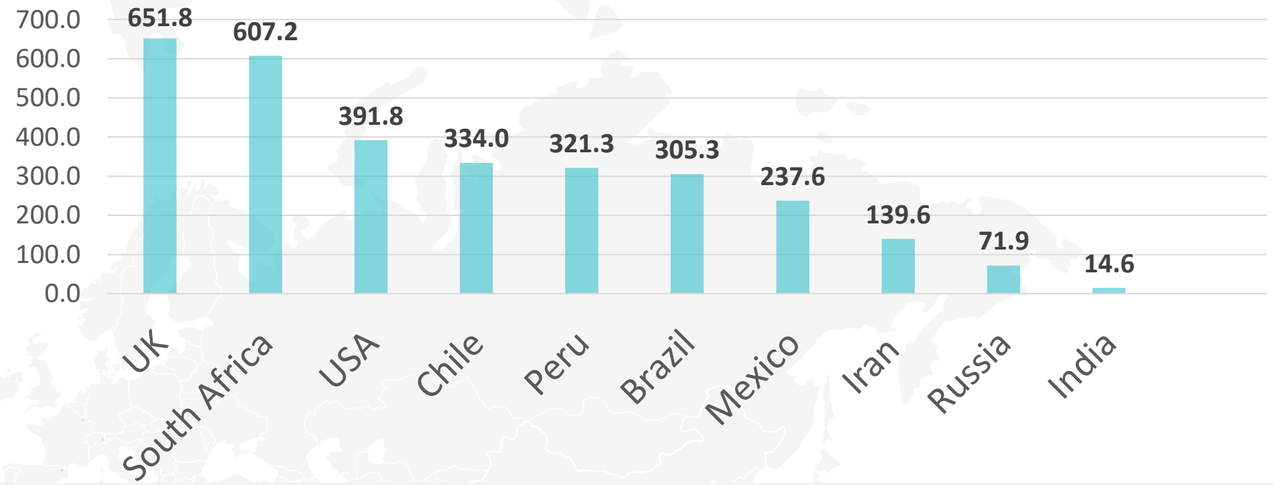
Figure 3: Top 10 countries in the total number of cases due to COVID-19

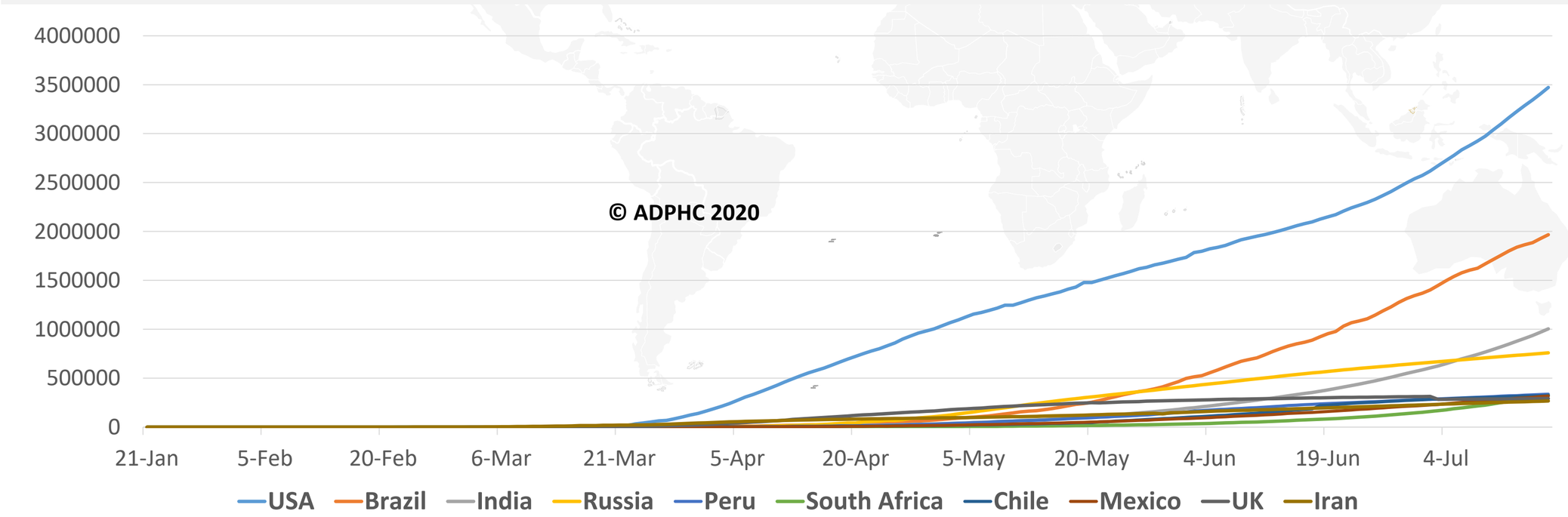
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	3,472,659
Brazil	1,966,748
India	1,003,832
Russia	759,203
Peru	337,724
South Africa	324,221
Chile	323,698
Mexico	317,635
UK	292,556
Iran	267,061

Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

FROM 21 JAN TO 17 JUL 2020

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Figure 5: COVID19 STATUS IN THE UAE (Federal Competitiveness and Statistics Authority dashboard)

Daily Tests

45,441.3 Average Tests

459.4 per 100k population

0.7% Positive Rate

Daily Cases

338.9 Average Cases

3.4 per 100k population

Daily Recovered

639.9 Average Recovered

6.5 per 100k population

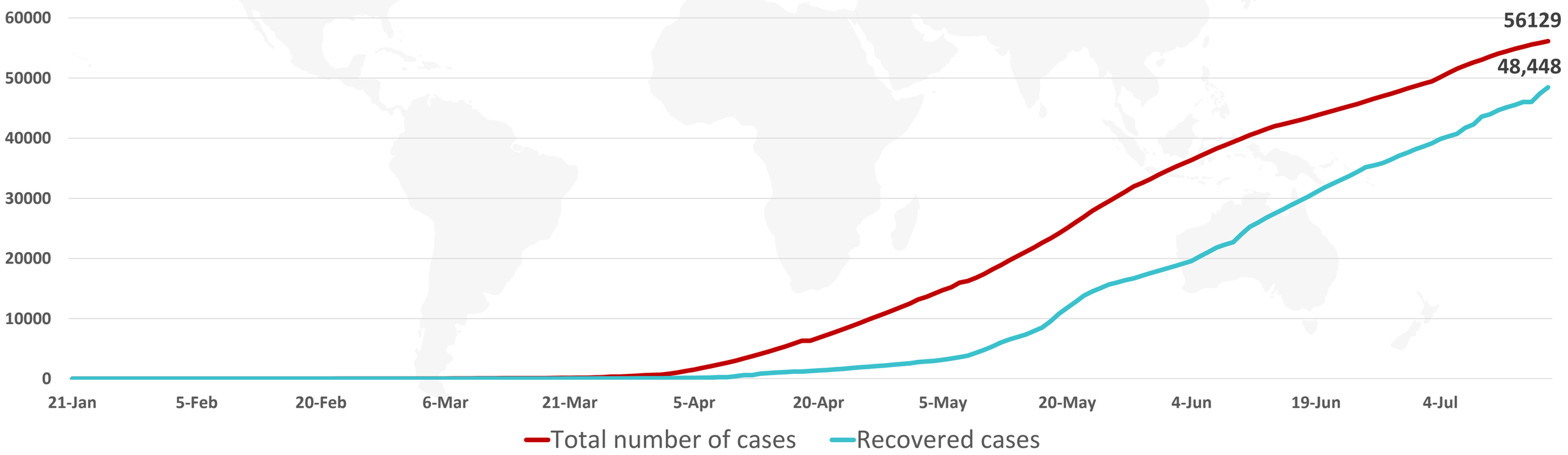
Daily Deaths

1.0 Average Deaths

0.0 per 100k population

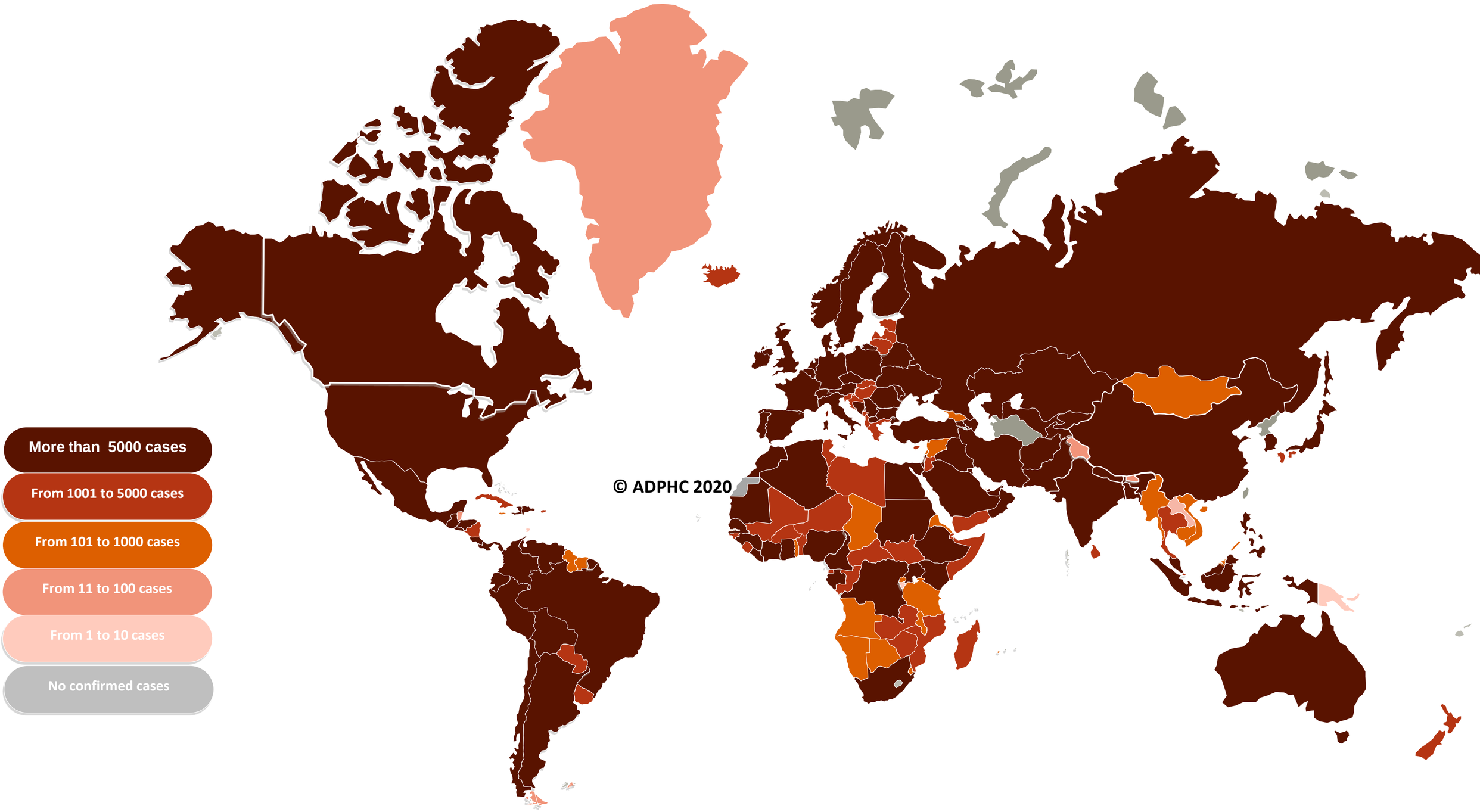
0.3% Case Fatality Rate

TOTAL NUMBER OF INFECTED AND RECOVERED CASES DUE TO COVID-19 REPORTED BY THE UAE



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: FCSA, WHO,

Figure 7A : Global distribution of COVID-19 cases



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

Date: 17 JUL 2020

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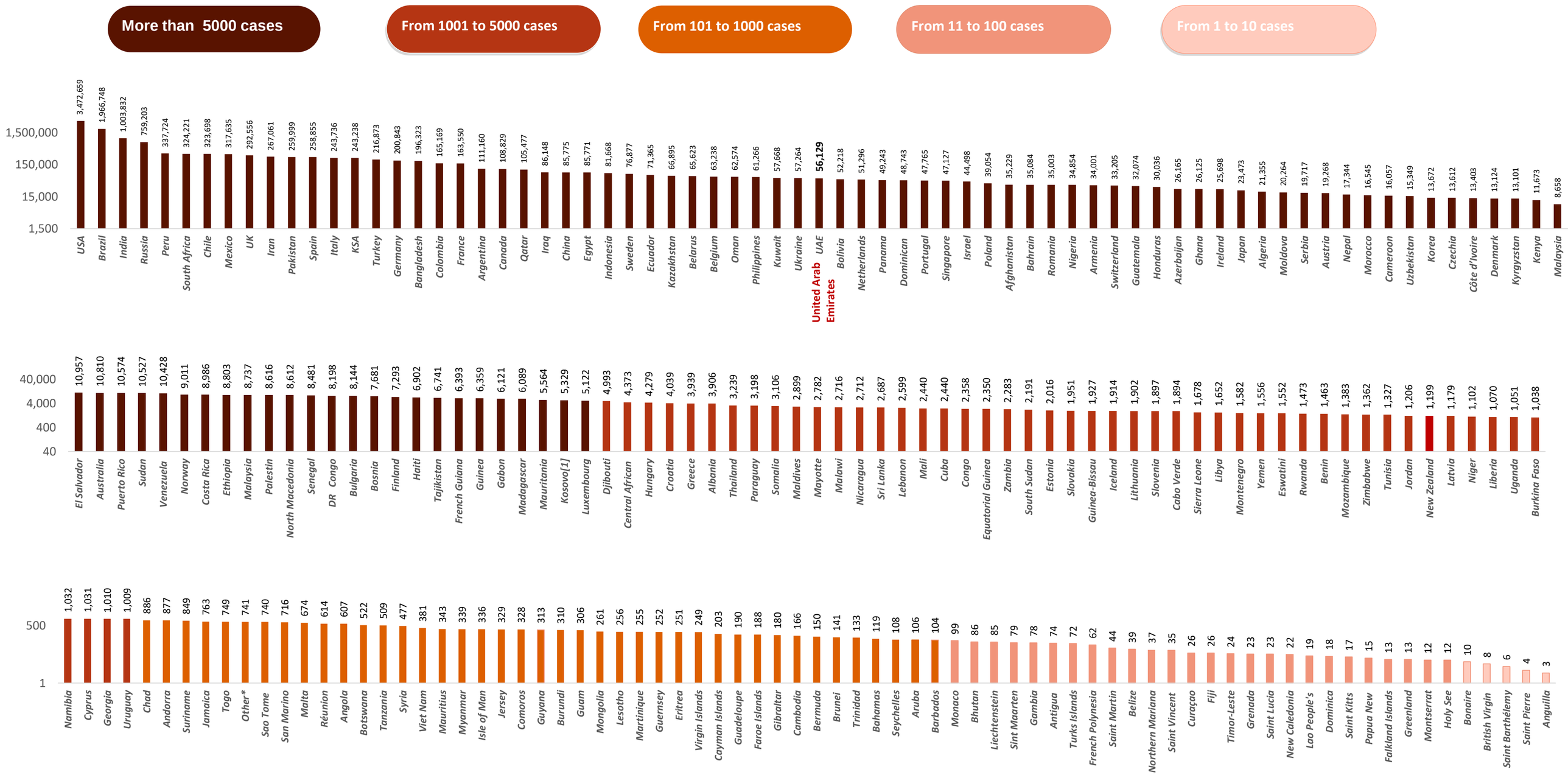
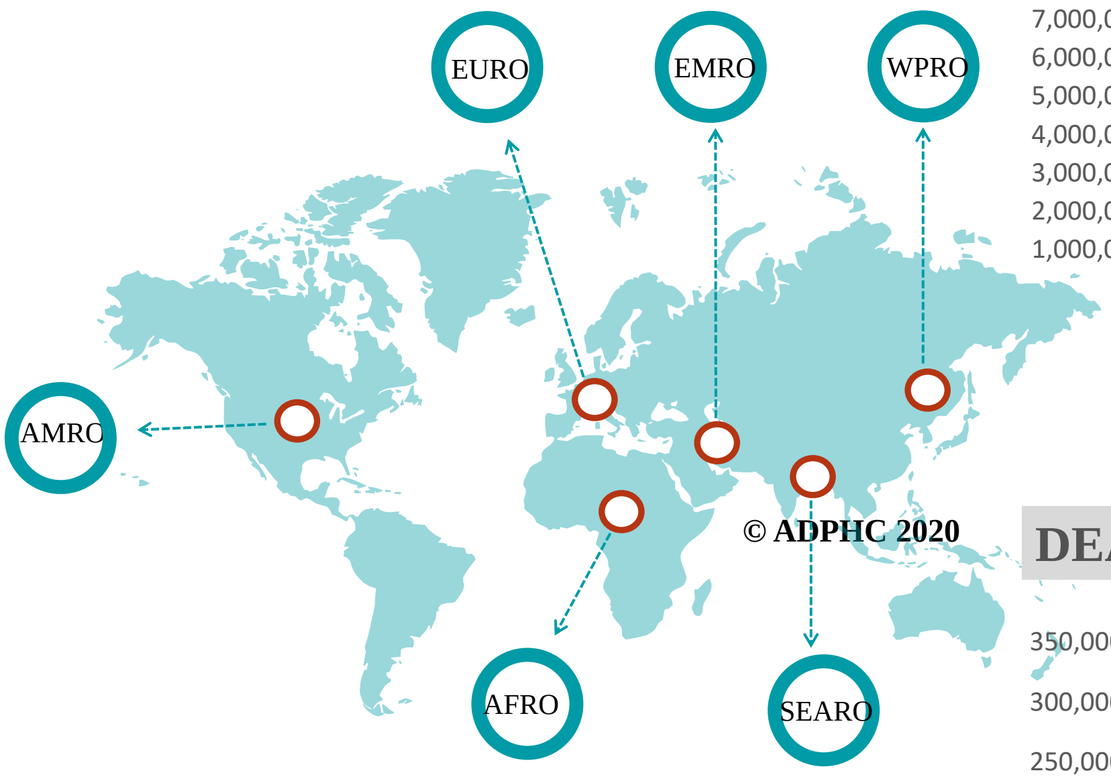
Figure 7B: Bar chart illustrate the global distribution of COVID19 cases



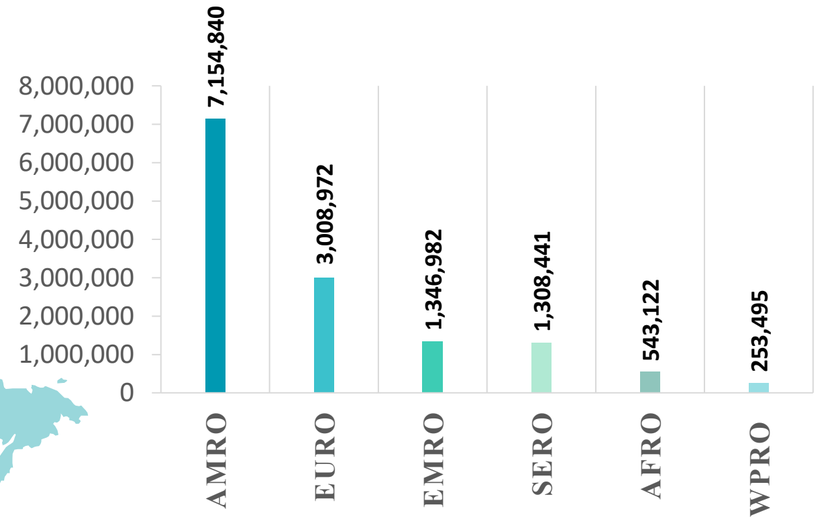
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

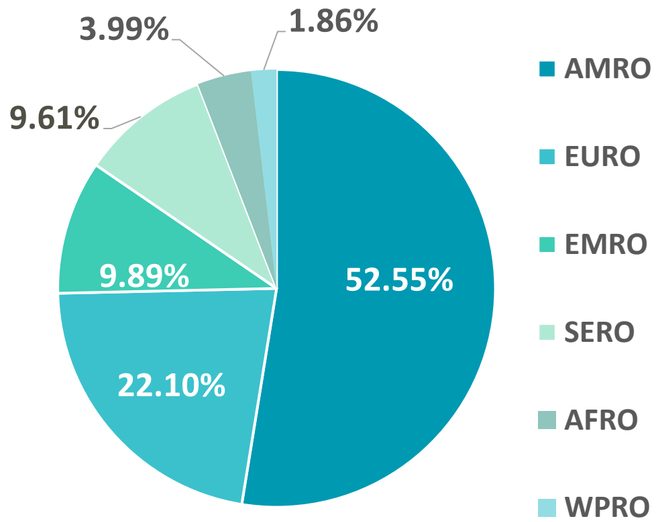
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

Figure 8: illustrate the Global distribution of COVID19 cases per region

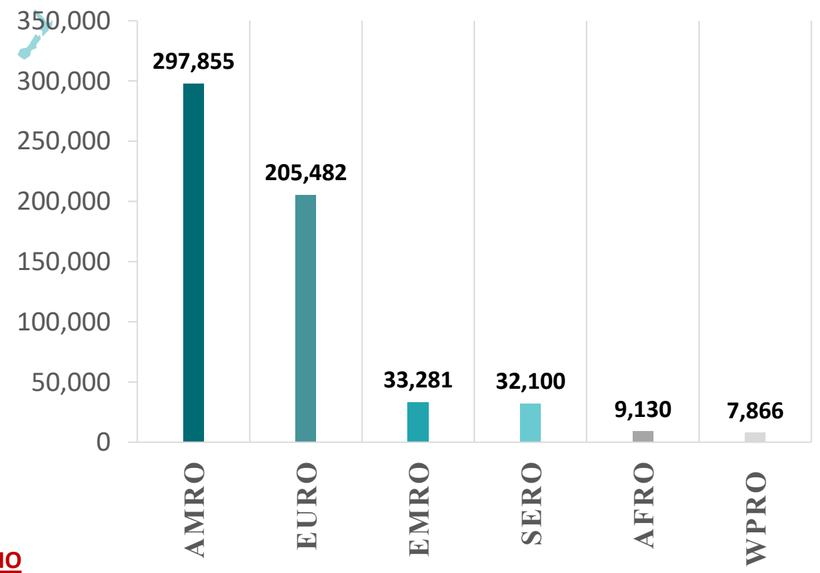


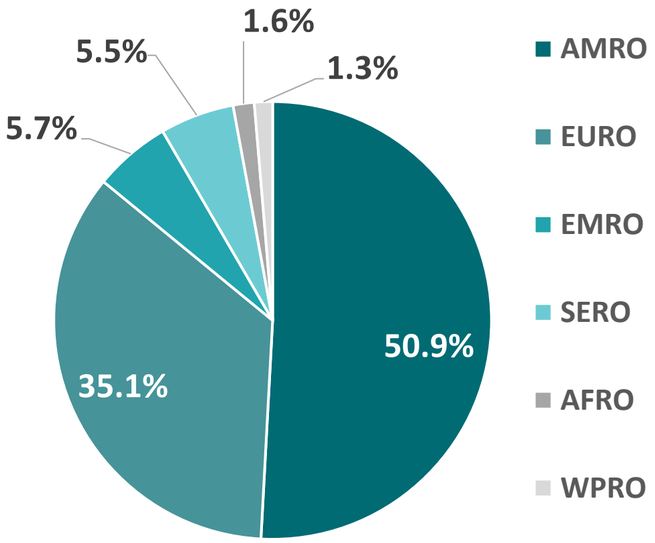
INFECTED





DEATH





Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

Date: 17 JUL 2020

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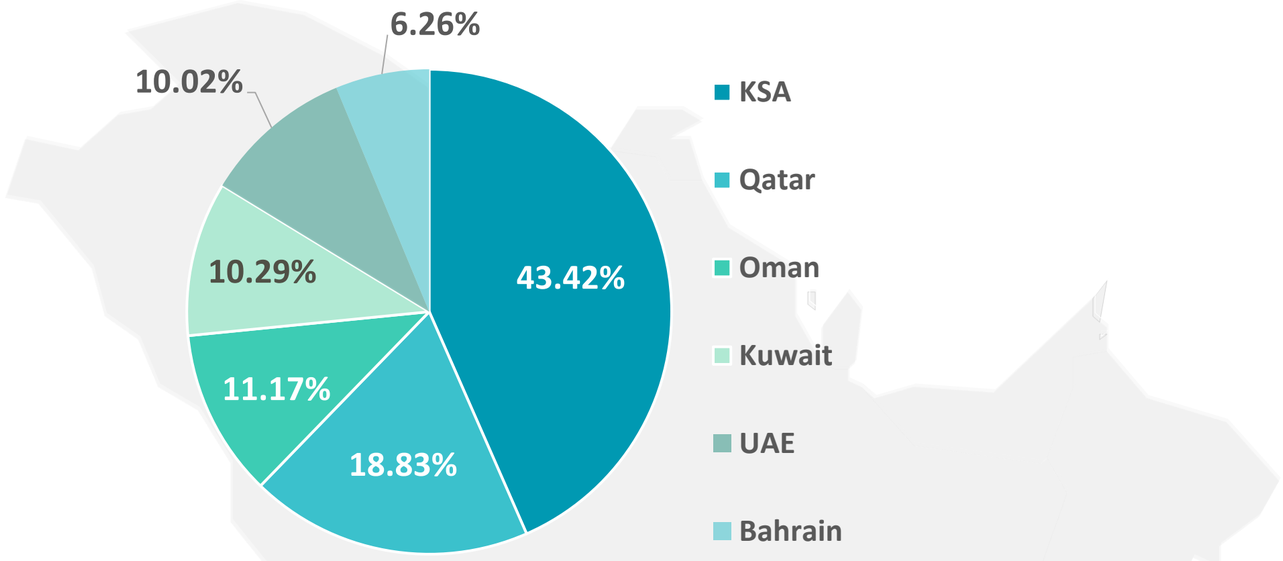
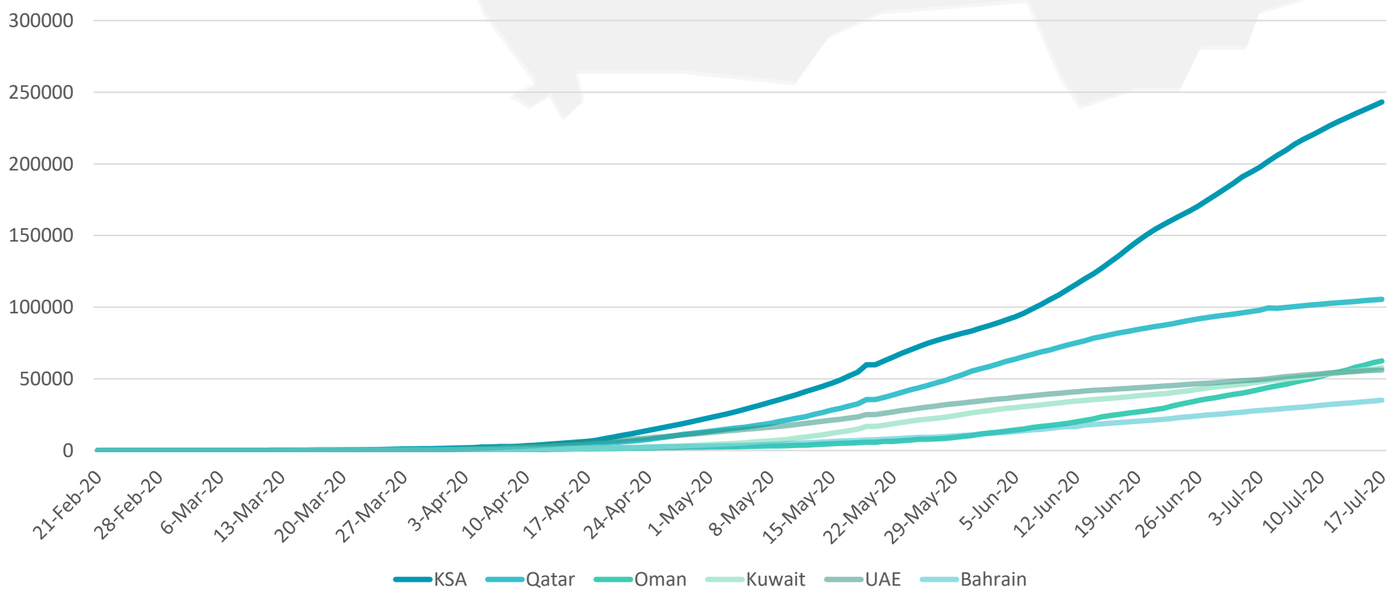
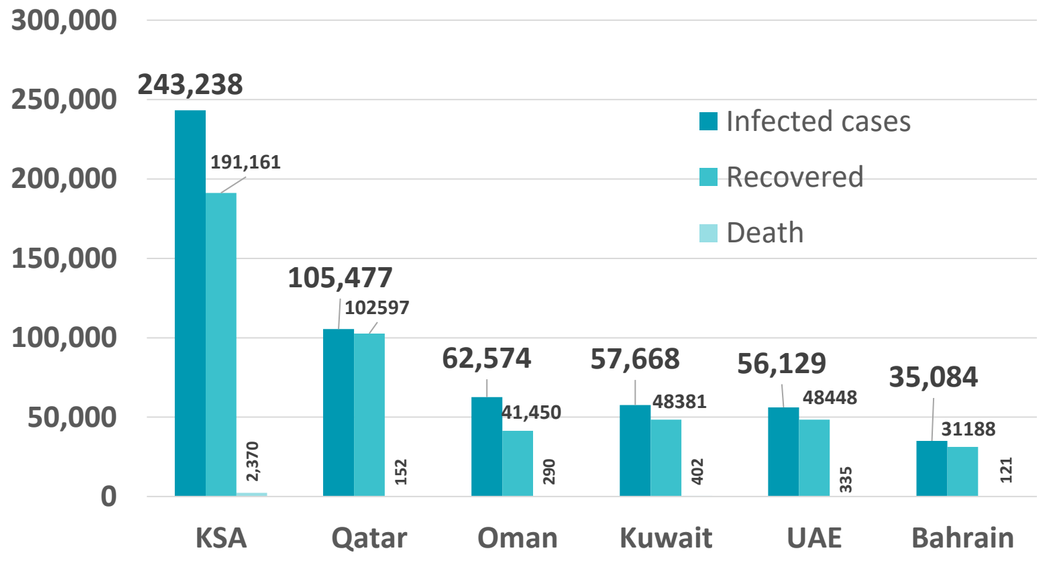
Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries

TOTAL NUMBER OF INFECTED CASES

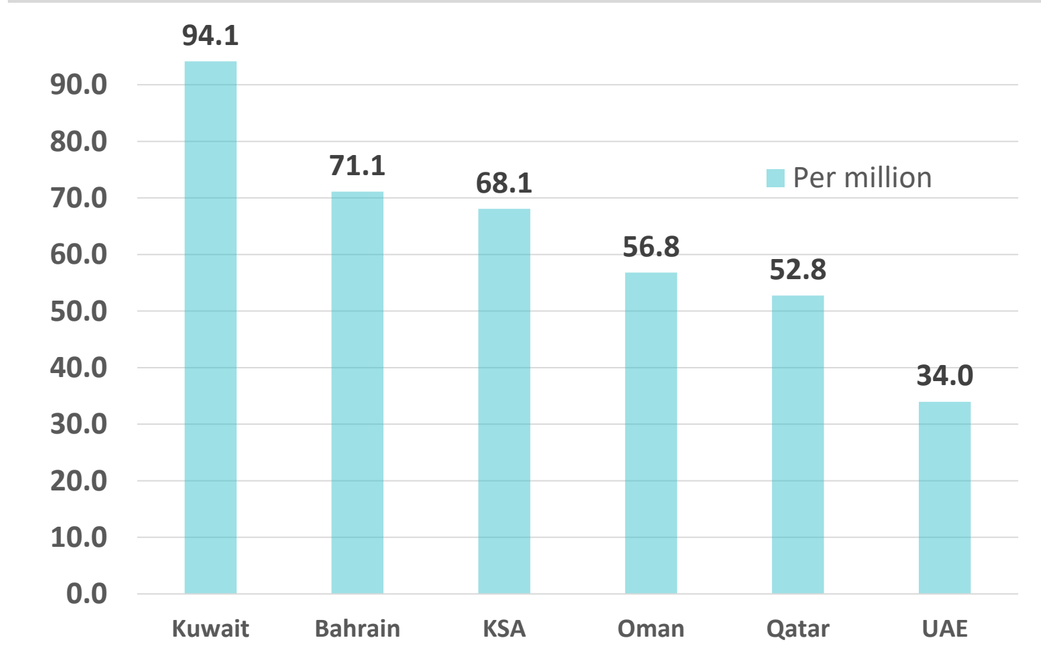




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATH PER MILLION



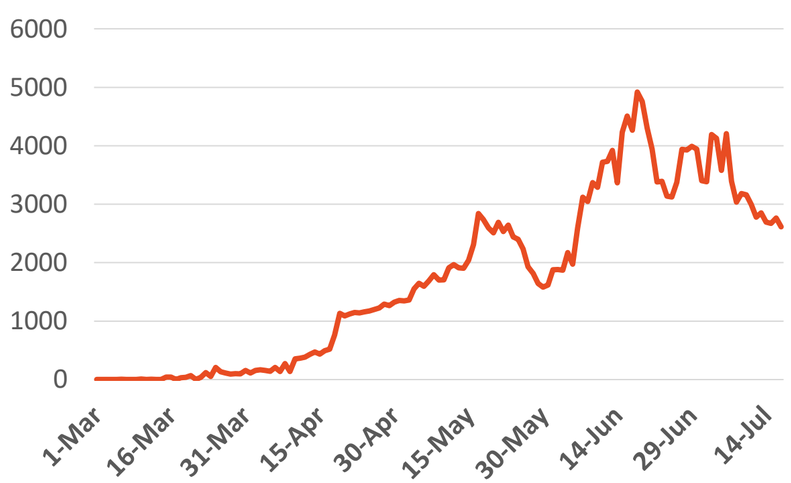
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries

UAE

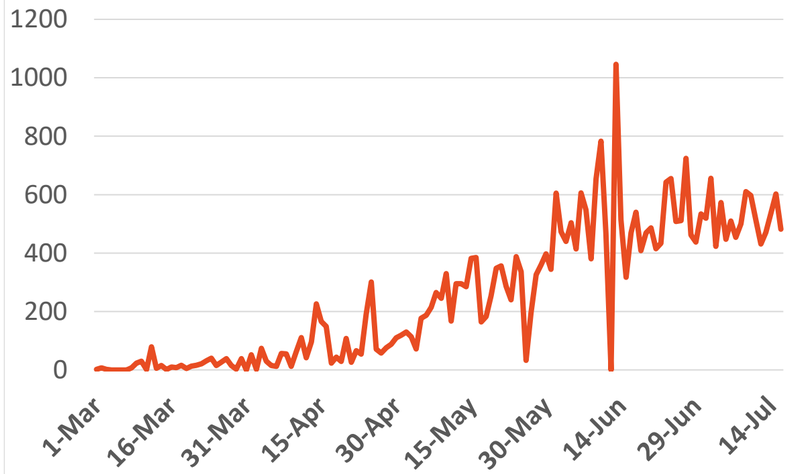
Source : National Emergency Crisis and Disaster Management Authority

KSA



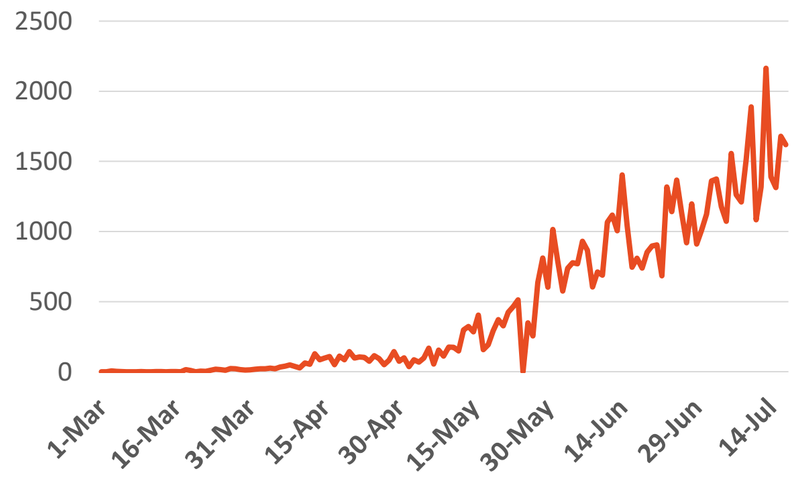
Source : KSA ministry of health

Bahrain



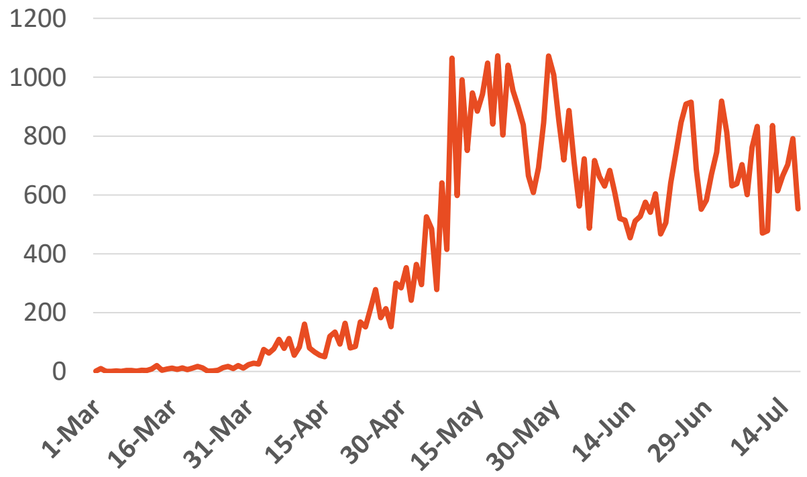
Source :WHO

Oman



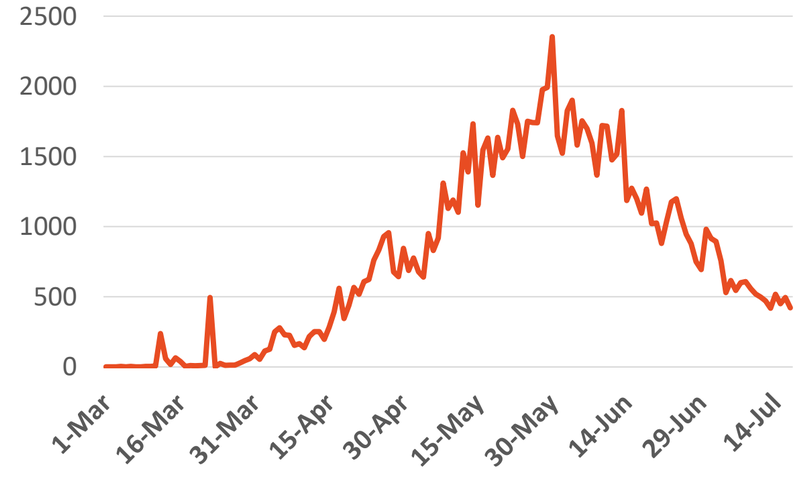
Source :Oman ministry of health

Kuwait



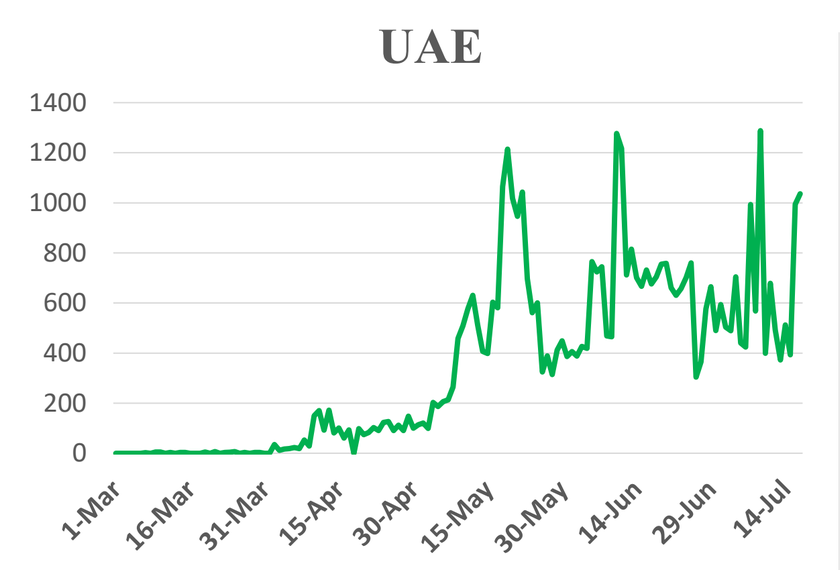
Source : Kuwait ministry of health

Qatar

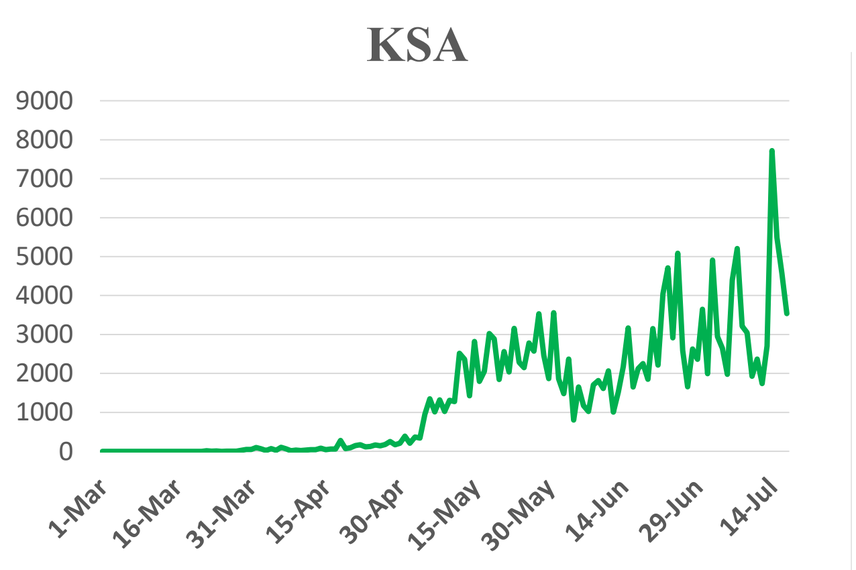


Source : Qatar ministry of health

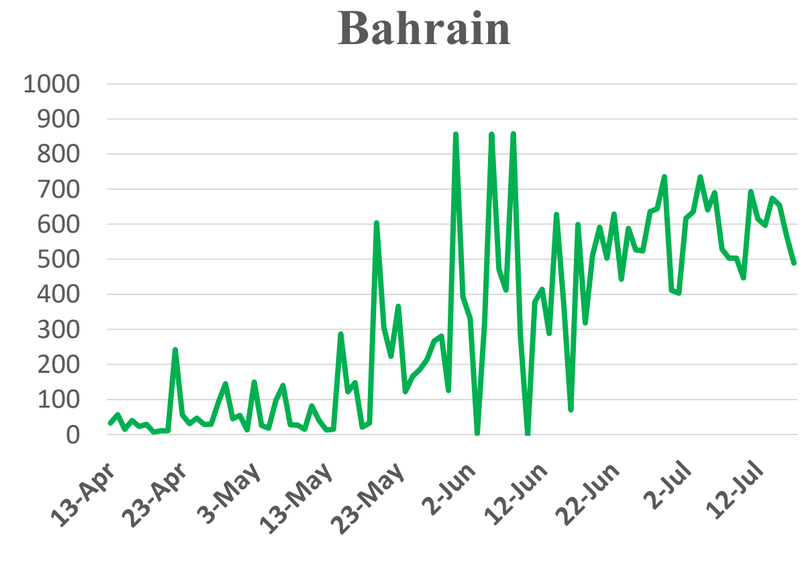
Figure 11: Comparative analysis of the distribution of COVID19 newly recovered cases in GCC Countries



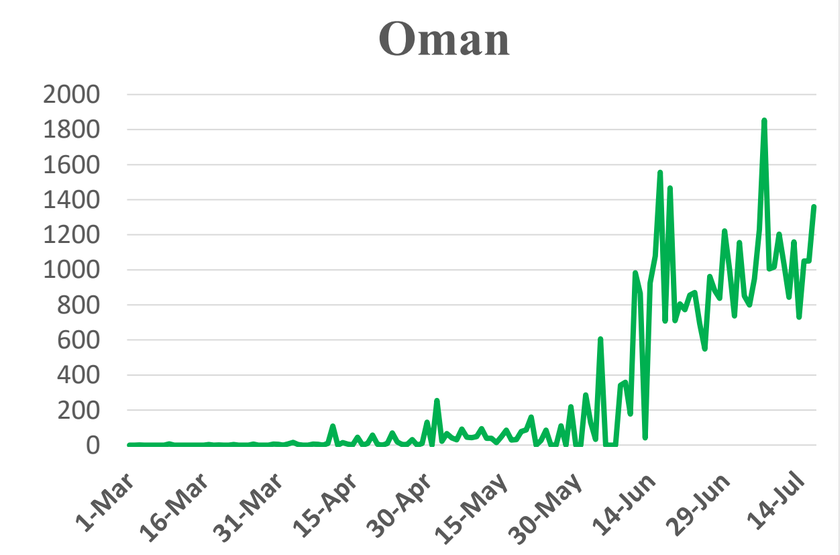
Source : National Emergency Crisis and Disaster Management Authority



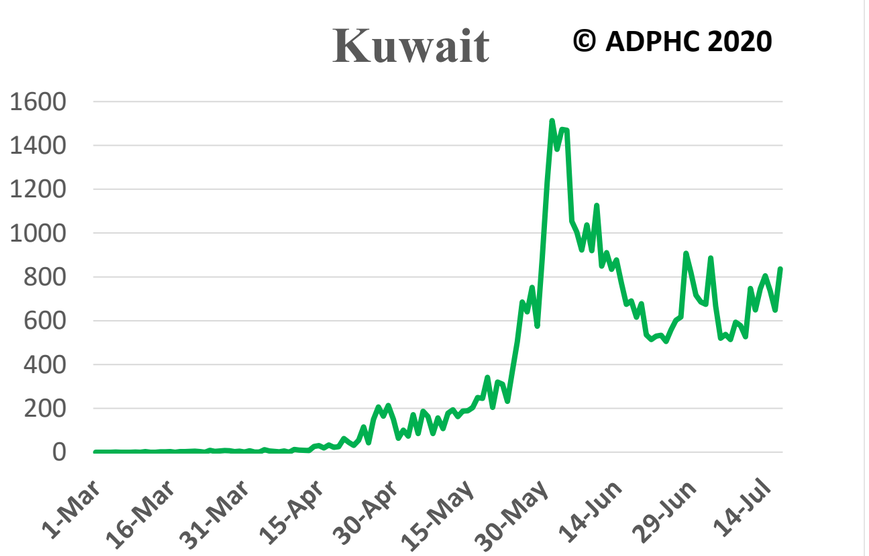
Source : KSA ministry of health



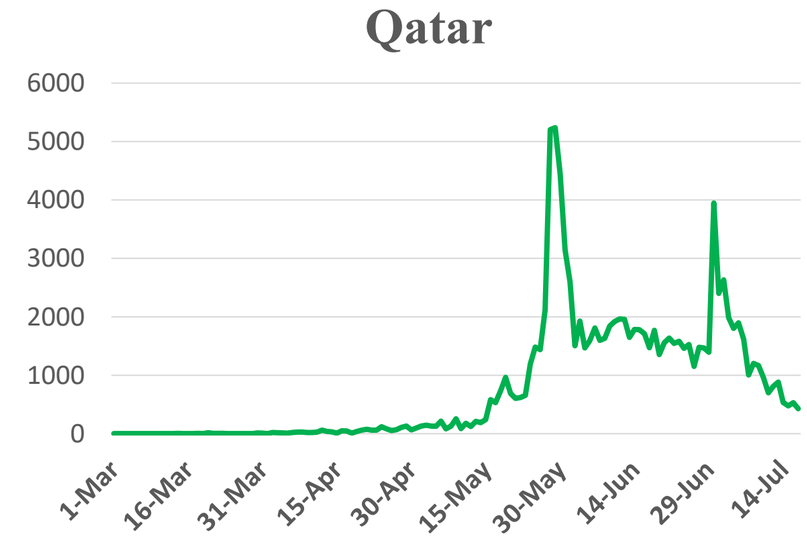
Source : GCCStat



Source :Oman ministry of health



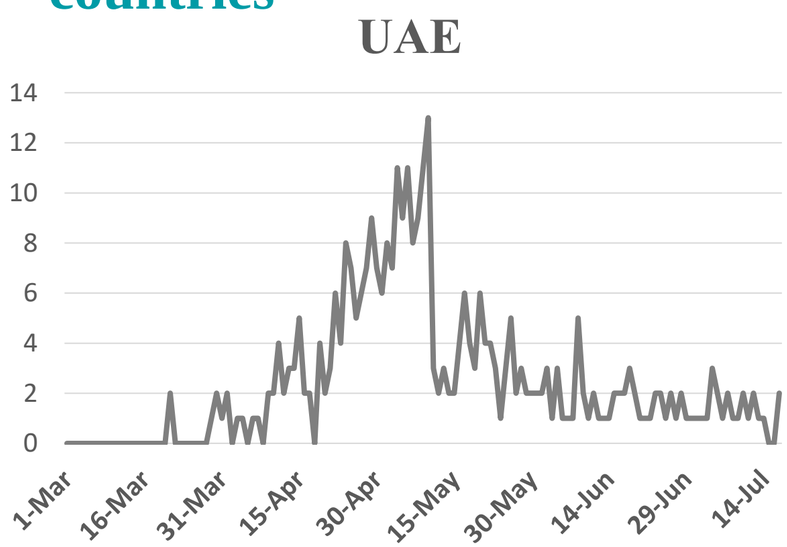
Source : Kuwait ministry of health



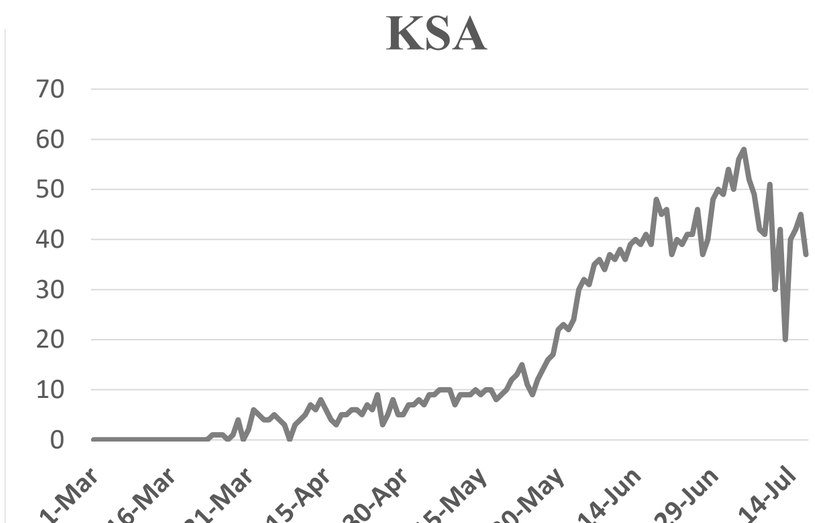
Source : Qatar ministry of health

Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

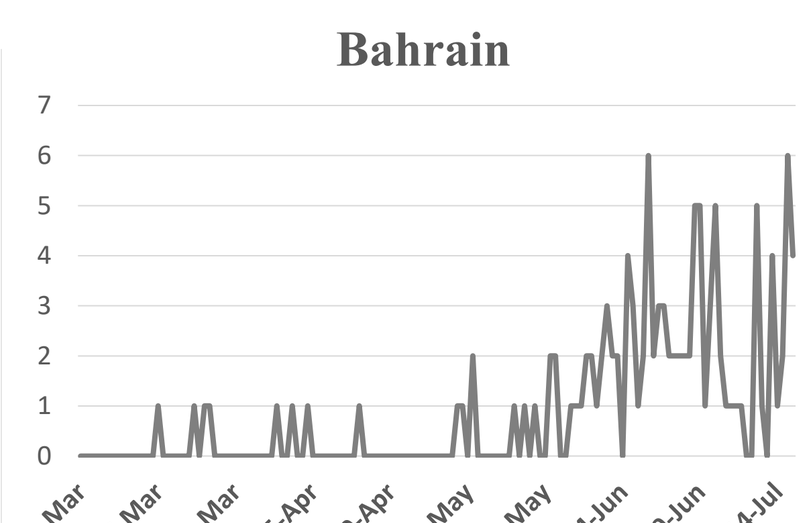
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries



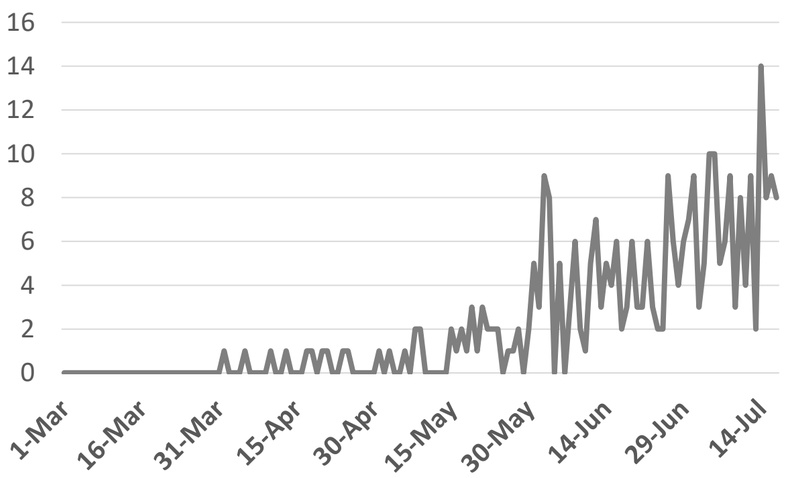
Source : National Emergency Crisis and Disaster Management Authority



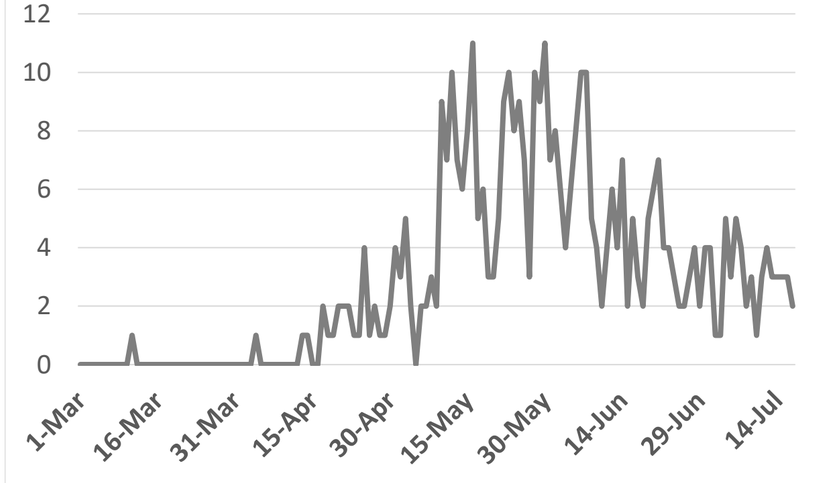
Source : KSA ministry of health



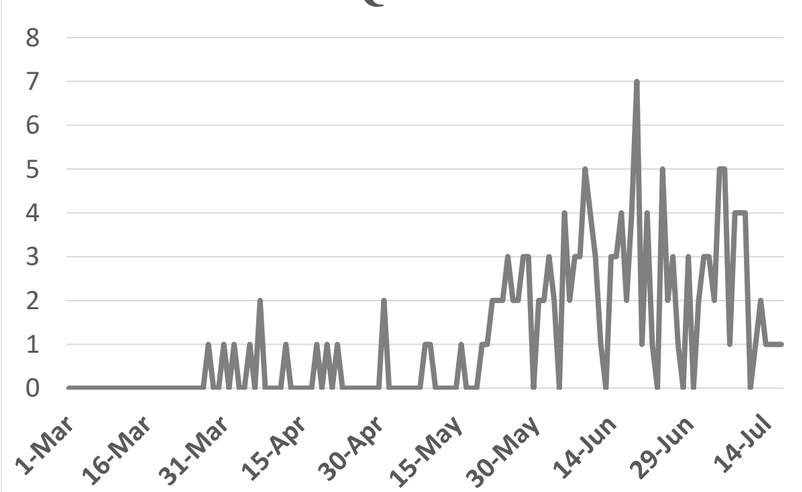
Source :WHO



Source :Oman ministry of health



Source : Kuwait ministry of health



Source : Qatar ministry of health

VACCINE

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Article 1: An mRNA Vaccine against SARS-CoV-2 — Preliminary Report

Published 14 July 2020 NEJM

Phase 1 open-label trial was conducted on 45 healthy adults (18-55yrs), who received the MODERNA company vaccine (mRNA-1273). Patients were divided into 3 groups and received two escalated dose of vaccinations, 28 days apart (25 µg, 100 µg, or 250 µg).

Results

- After first vaccination, antibody responses increased with the higher dose (**day 29** enzyme-linked immunosorbent assay anti–S-2P antibody geometric mean titer [GMT], 40,227 in the 25-µg group, 109,209 in the 100-µg group, and 213,526 in the 250-µg group).
- After the second vaccination, titers increased (**day 57** GMT, 299,751, 782,719, and 1,192,154, respectively).
- After the second vaccination, serum-neutralizing activity was detected in all participants evaluated, with distribution of a panel of control convalescent serum specimens.
- Adverse events that occurred in more than half the participants included fatigue, chills, headache, myalgia, and pain at the injection site.

Table 1. Characteristics of the Participants in the mRNA-1273 Trial at Enrollment.*

Characteristic	25-µg Group (N=15)	100-µg Group (N=15)	250-µg Group (N=15)	Overall (N=45)
Sex — no. (%)				
Male	9 (60)	7 (47)	6 (40)	22 (49)
Female	6 (40)	8 (53)	9 (60)	23 (51)
Age — yr	36.7±7.9	31.3±8.7	31.0±8.0	33.0±8.5
Race or ethnic group — no. (%)†				
American Indian or Alaska Native	0	1 (7)	0	1 (2)
Asian	0	0	1 (7)	1 (2)
Black	0	2 (13)	0	2 (4)
White	15 (100)	11 (73)	14 (93)	40 (89)
Unknown	0	1 (7)	0	1 (2)
Hispanic or Latino — no. (%)	1 (7)	3 (20)	2 (13)‡	6 (13)
Body-mass index§	24.6±3.4	26.7±2.6	24.7±3.1	25.3±3.2

- Systemic adverse events were more common after the second vaccination, particularly with the highest dose, and three participants (21%) in the 250-µg dose group reported one or more severe adverse events.
- The study found high neutralizing antibody responses were also elicited in a dose-dependent fashion. Seroconversion was rapid for binding antibodies, occurring within 2 weeks after the first vaccination, pseudovirus neutralizing activity was low before the second vaccination, which supports the need for a two-dose vaccination schedule.

VACCINE

Article 1:

Continued

Conclusion

- The mRNA-1273 vaccine induced anti–SARS-CoV-2 immune responses in all participants, and no trial-limiting safety concerns were identified. These findings support further development of this vaccine.
- Participants will be followed for 1 year after the second vaccination with scheduled blood collections throughout that period to characterize the humoral and cellular immunologic responses.
- Note: A phase 2 trial of mRNA-1273 **in 600 healthy adults**, evaluating doses of 50 µg and 100 µg, is ongoing, while a large phase 3 efficacy trial, expected to evaluate a 100-µg dose, is anticipated to begin **during the summer of 2020.**

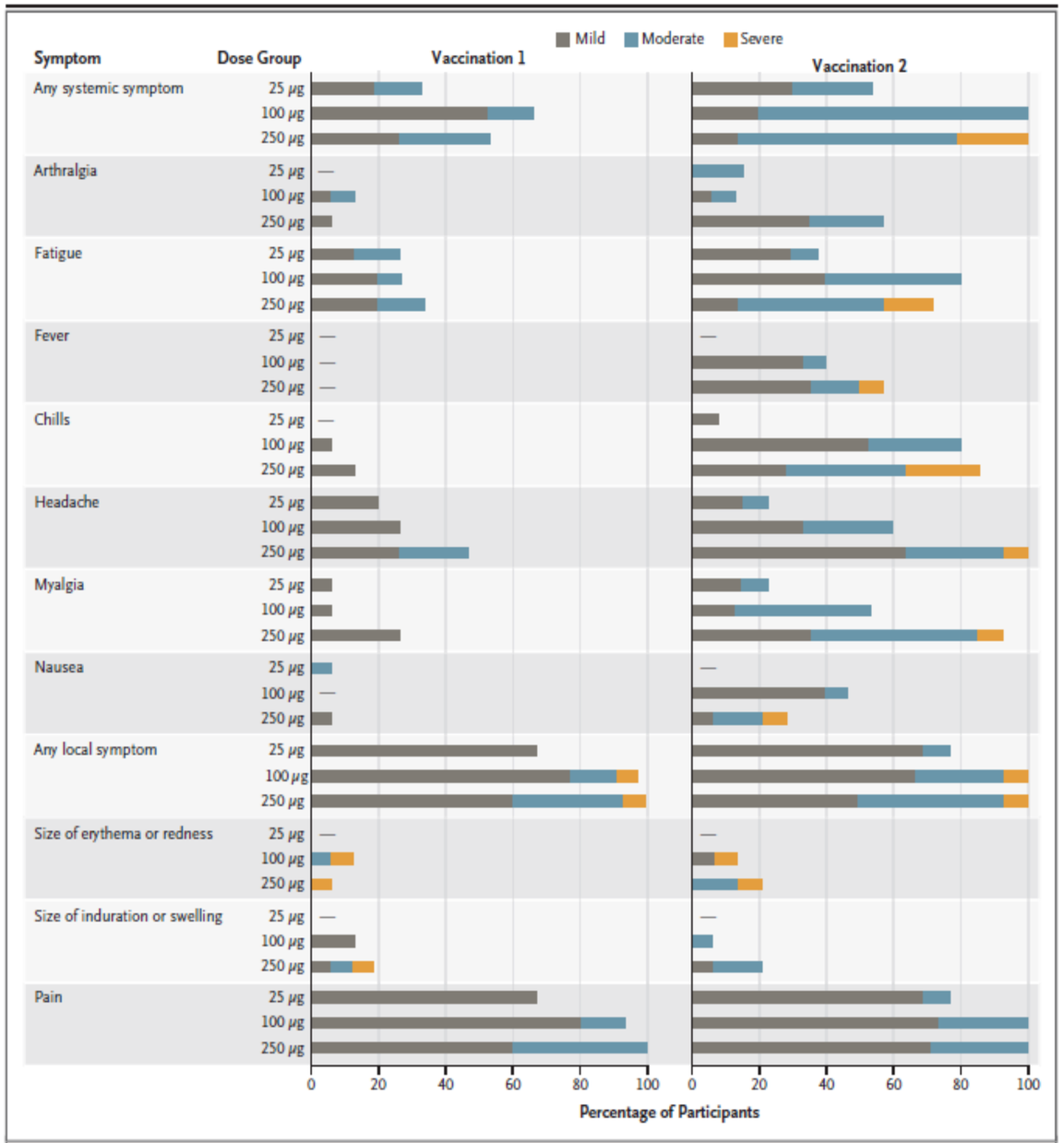

Figure 1. Systemic and Local Adverse Events.
The severity of solicited adverse events was graded as mild, moderate, or severe (see Table S1).

CLINICAL FEATURES

Article 2: Characteristics and Outcomes in Patients With COVID-19 and Acute Ischemic Stroke

Published 12 July 2020 American Heart Association

This study aimed to assess whether stroke severity and outcomes in patients with acute ischemic stroke was different between patients with COVID-19 and non-COVID-19. Analysis was done on Acute Stroke Registry between 2003 and 2019 and information was retrieved from January 27, 2020, and May 19, 2020, of 174 patients (median age 71.2 years; 37.9% females) with COVID-19 and acute ischemic stroke. Severity score called The median National Institute of Health Stroke Scale was 10 (interquartile range [IQR], 4–18).

Results

- In the 1:1 matched sample of 336 patients with COVID-19 and non-COVID-19, the median National Institute of Health Stroke Scale was higher in patients with COVID-19 (10 [IQR, 4–18] versus 6 [IQR, 3–14]), P=0.03; (odds ratio, 1.69 [95% CI, 1.08–2.65].
- There were 48 (27.6%) deaths, of which 22 were attributed to COVID-19 and 26 to stroke.
- Among 96 survivors with available information on disability status, 49 (51%) had severe disability at discharge.
- Patients with COVID-19 had higher risk for severe disability and death (odds ratio, 4.3) compared with patients without COVID-19.

Conclusion

Findings suggest that COVID-19 associated ischemic strokes are more severe with worse functional outcome and higher mortality than non-COVID-19 ischemic strokes.

THANK YOU

ADPHCAE ADPHC_AE ADPHC_AE ADPHC.AE ADPHC-AE 056 2312171