مركز أبوظبي
للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

16 JULY 2020

For accessing the full series of published scientific reports please visit the following link:
https://www.doh.gov.ae/ar/covid-19/Healthcare-Professionals/Scientific-Publication

SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 165)

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.

Click on icon to view content

Research
Update

WHO
Report

Statistics

Articles
Summary

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).

Transmission

SARS-CoV-2 in Fruit Bats, Ferrets, Pigs, and Chickens: An Experimental Transmission Study

Public Health Response

SARS-CoV-2 Seroprevalence in COVID-19 Hotspots

Public Health Response

School Superintendents Confront COVID-19 “There Are No Good Options for Next Year”

WHO SITUATION REPORT

15 JULY 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

- **WHO is supporting ongoing vaccination efforts during the COVID-19 pandemic** by providing knowledge and assistance to immunization programmes worldwide and helping countries as they balance the threat of COVID-19 with the threat of vaccine-preventable disease outbreaks and related-deaths.

- The Director of the WHO Regional Office for the Americas, Dr Carissa F. Etienne, discusses how **countries in the Americas are pooling their efforts to ensure access to treatments and vaccines for COVID-19. Under WHO's Access to COVID-19 Tools Accelerator,** the COVAX facility will negotiate access with the producers of all COVID-19 candidate vaccines that show promising results.

- With the resumption of commercial flights and air travel, WHO, through the COVID-19 Supply Chain System, has reported increased deliveries of critical medical supplies for the COVID-19 response to countries facing the greatest need. These supplies include personal protective equipment (PPE), diagnostics and biomedical equipment.

EPIDEMIOLOGY

FROM 21 JAN TO 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

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

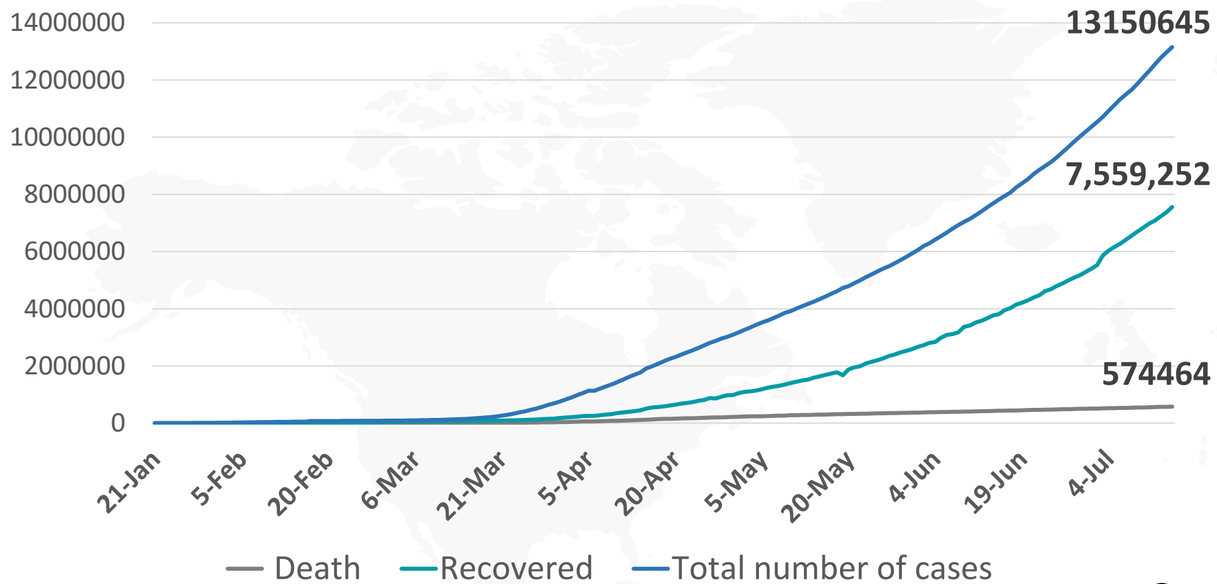


Figure 3: Total number of death due to COVID-19 (china and the result of the world)

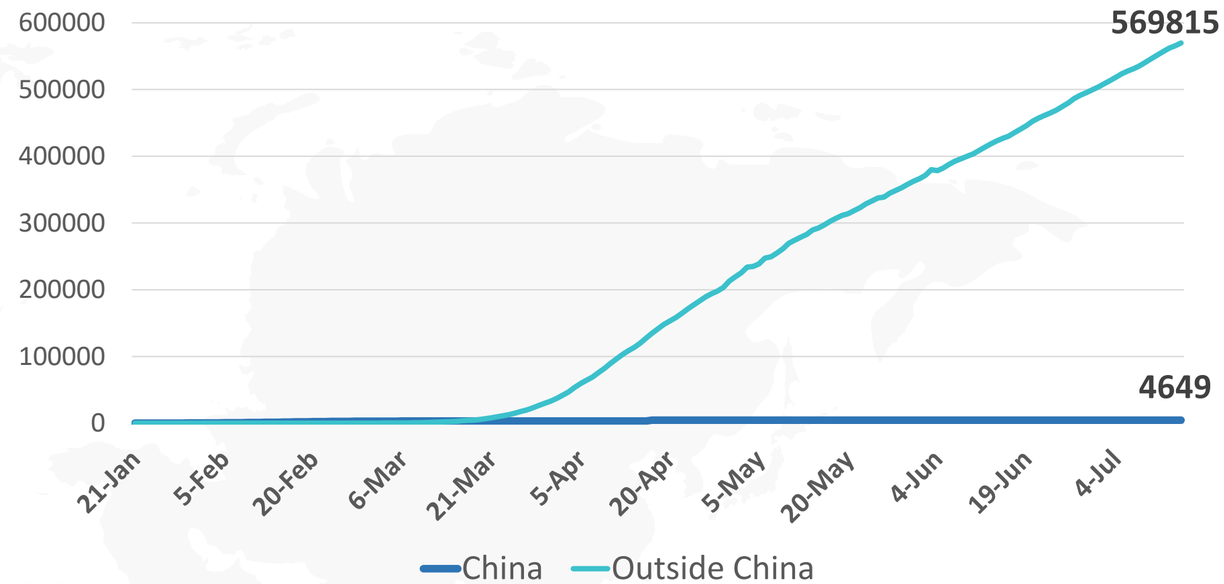


Figure 2: Daily new infected COVID-19 cases (china and the rest of the world)

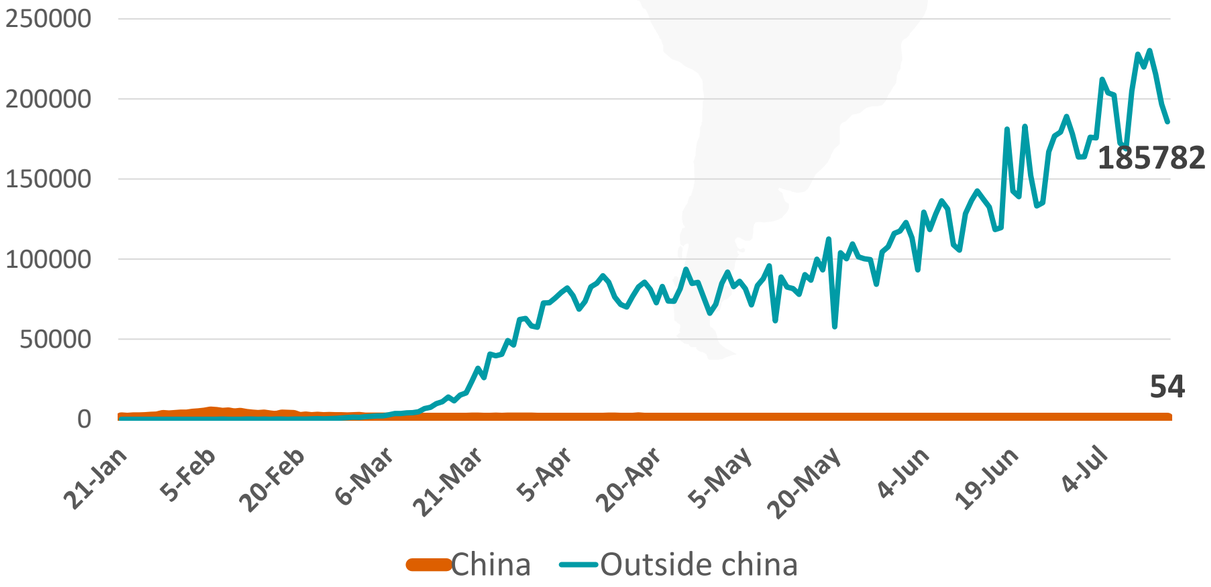
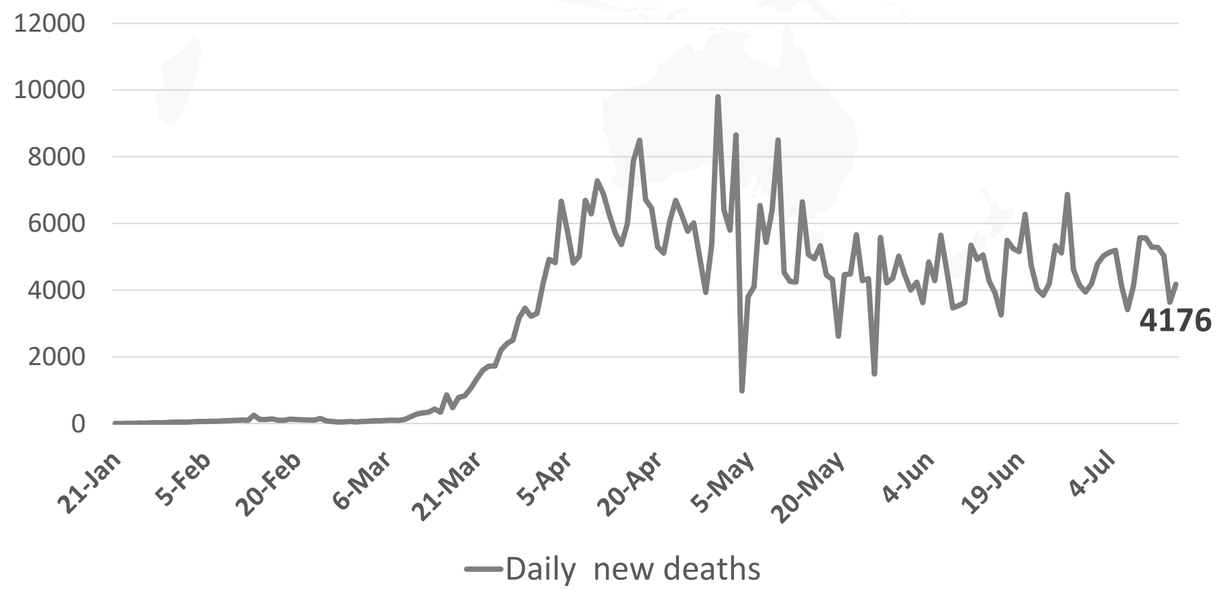


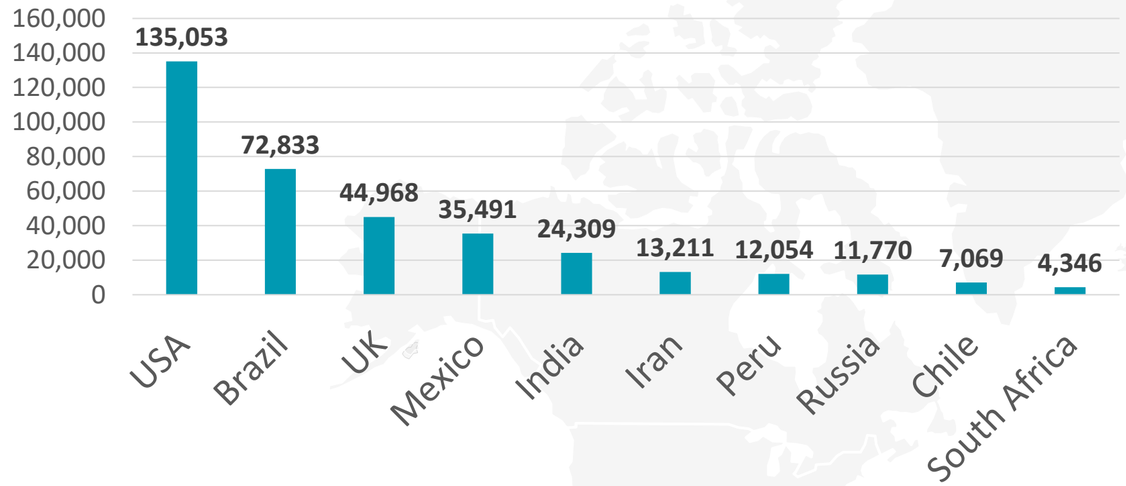
Figure 4: Global daily new deaths due to COVID-19 (china and rest world)



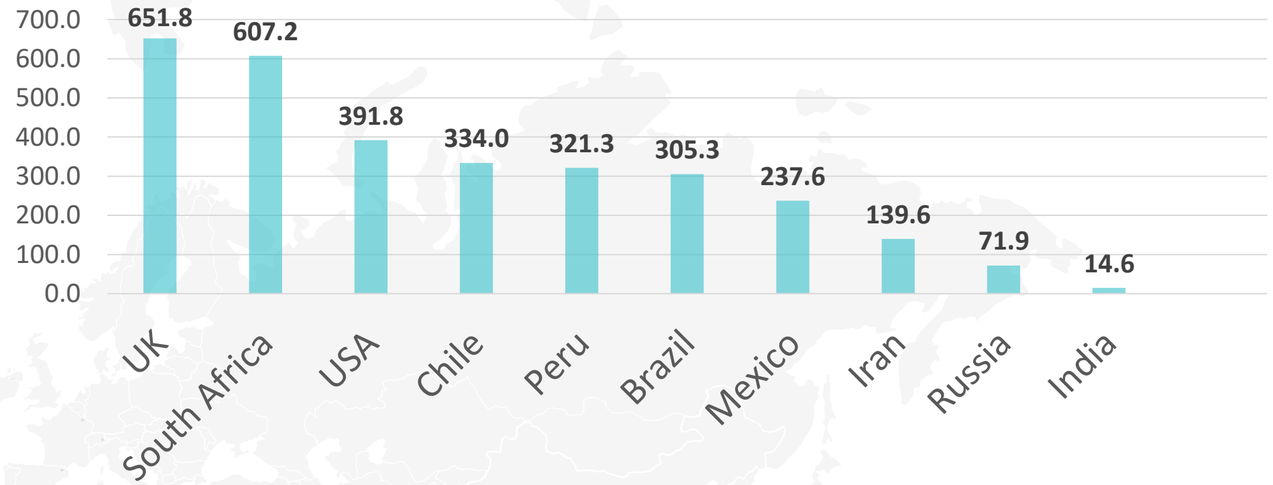
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

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

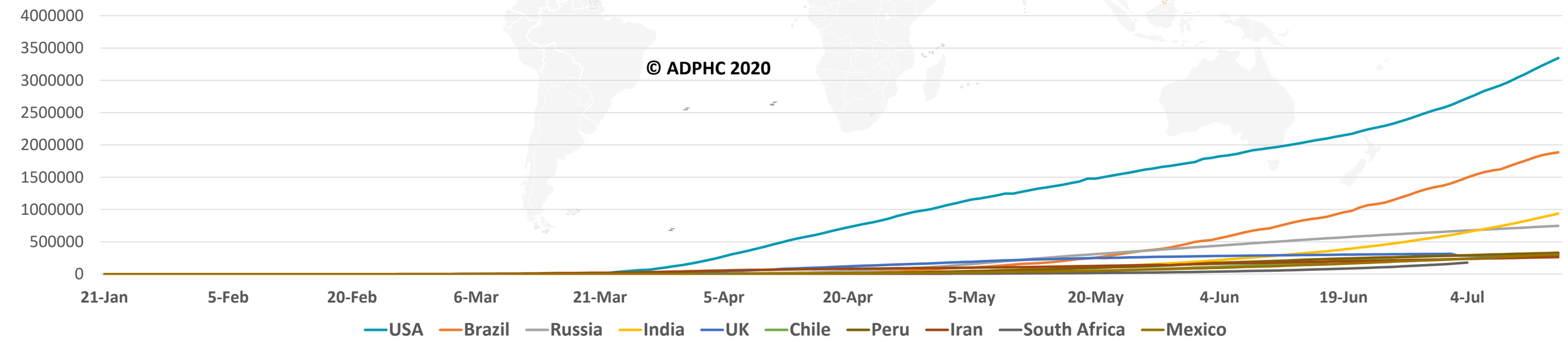
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



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

EPIDEMIOLOGY

FROM 21 JAN TO 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

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

Daily Tests

47,034.0 Average Tests

475.6 per 100k population

0.9% Positive Rate

Daily Cases

400.4 Average Cases

4.0 per 100k population

Daily Recovered

590.9 Average Recovered

6.0 per 100k population

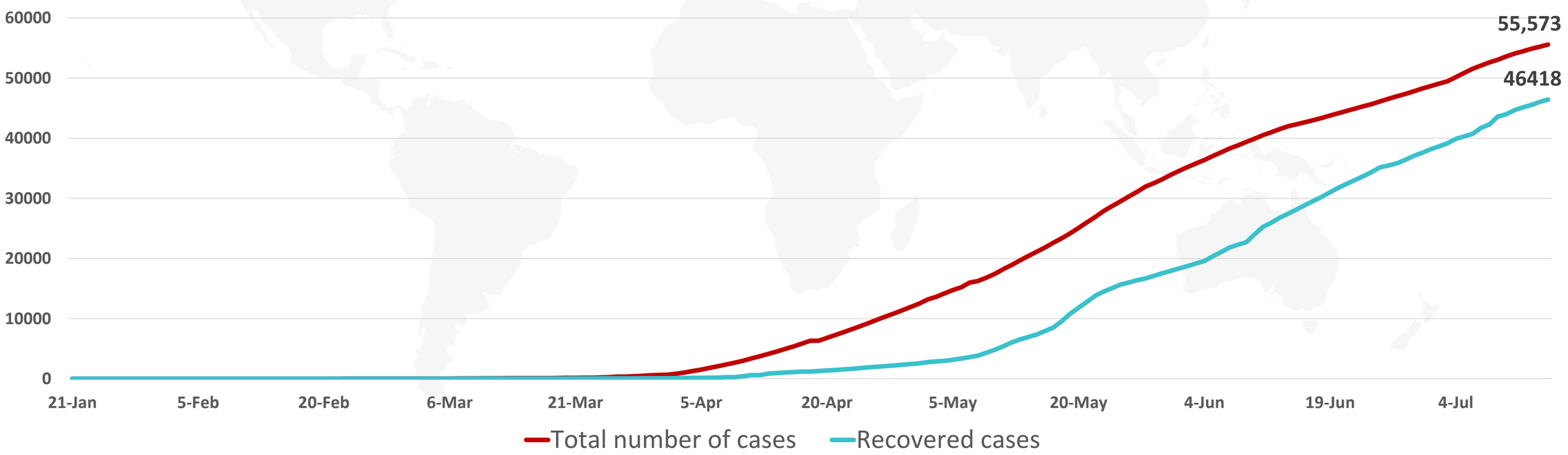
Daily Deaths

1.1 Average Deaths

0.0 per 100k population

0.3% Case Fatality Rate

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



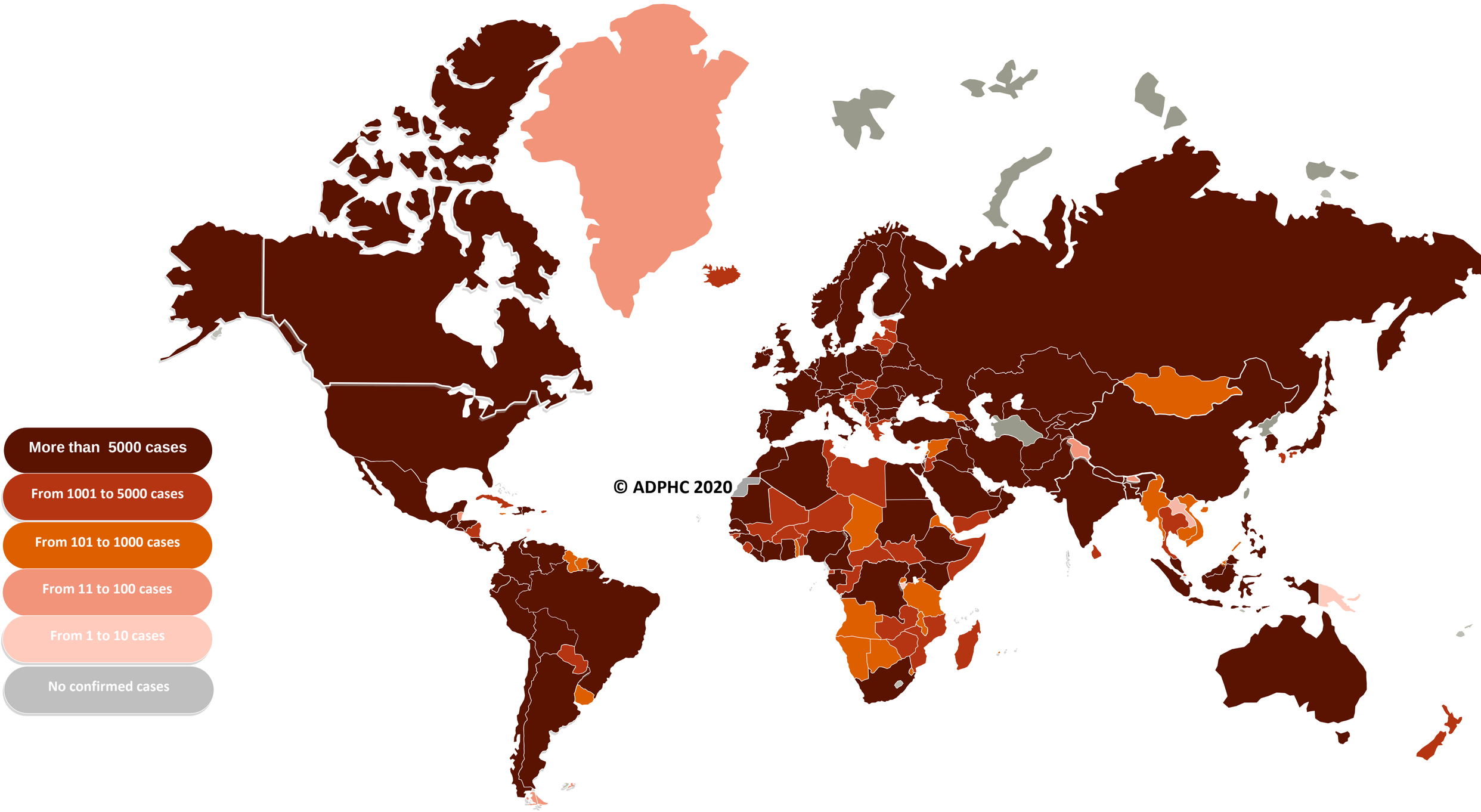
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: FCSA, WHO,

EPIDEMIOLOGY

Date: 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Figure 7A : Global distribution of COVID-19 cases



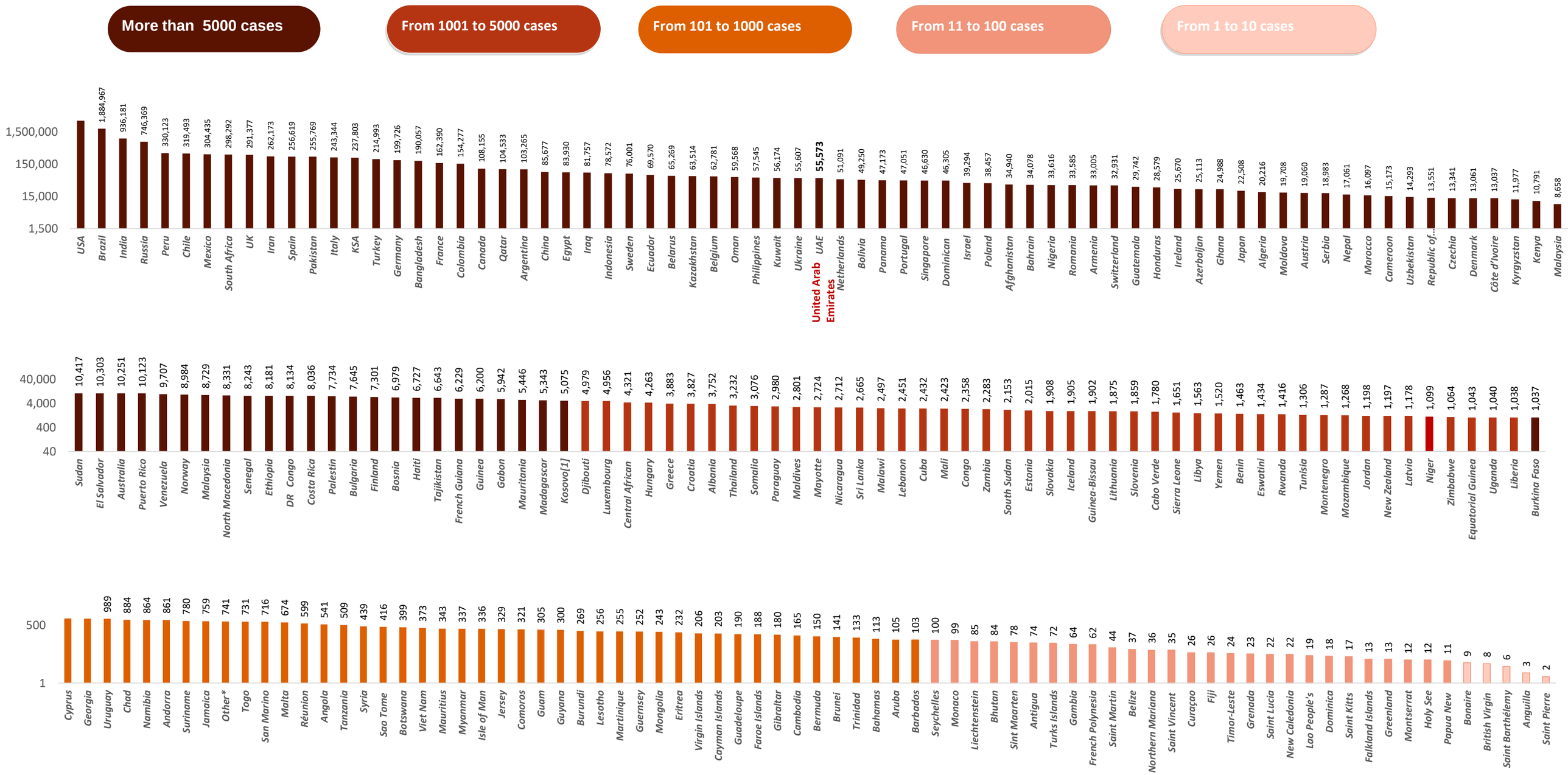
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

Date: 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

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



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

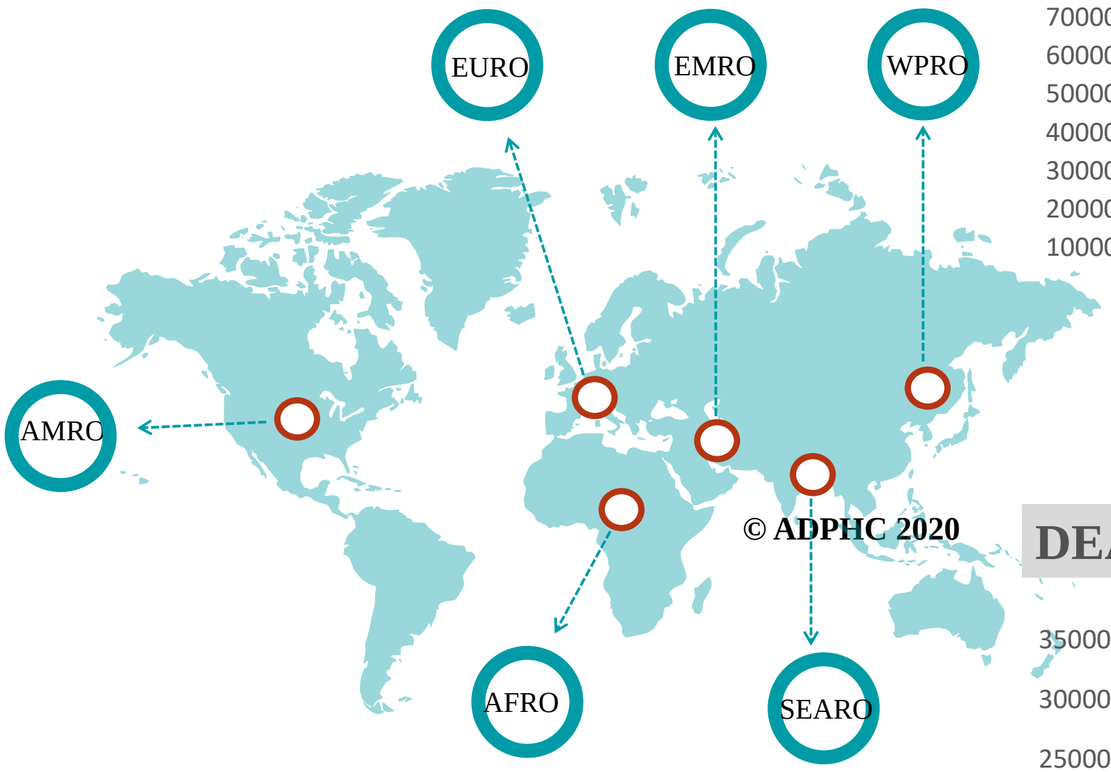
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

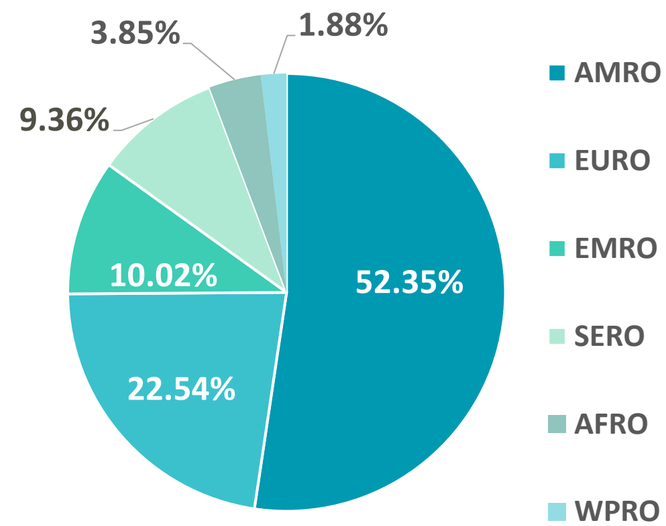
Date: 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

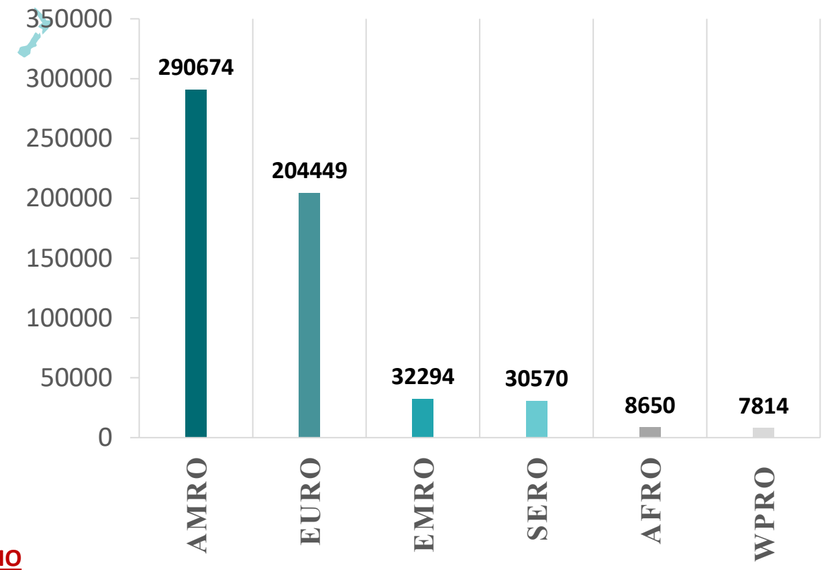
Figure 8: illustrate the Global distribution of COVID19 cases per region

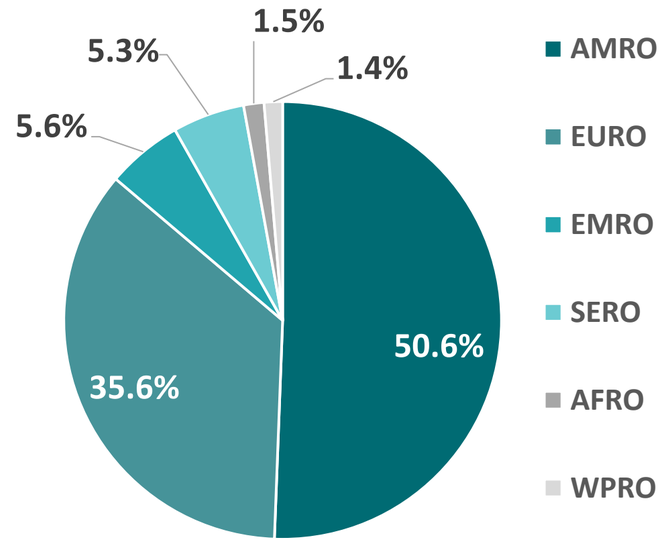


INFECTED



DEATH





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

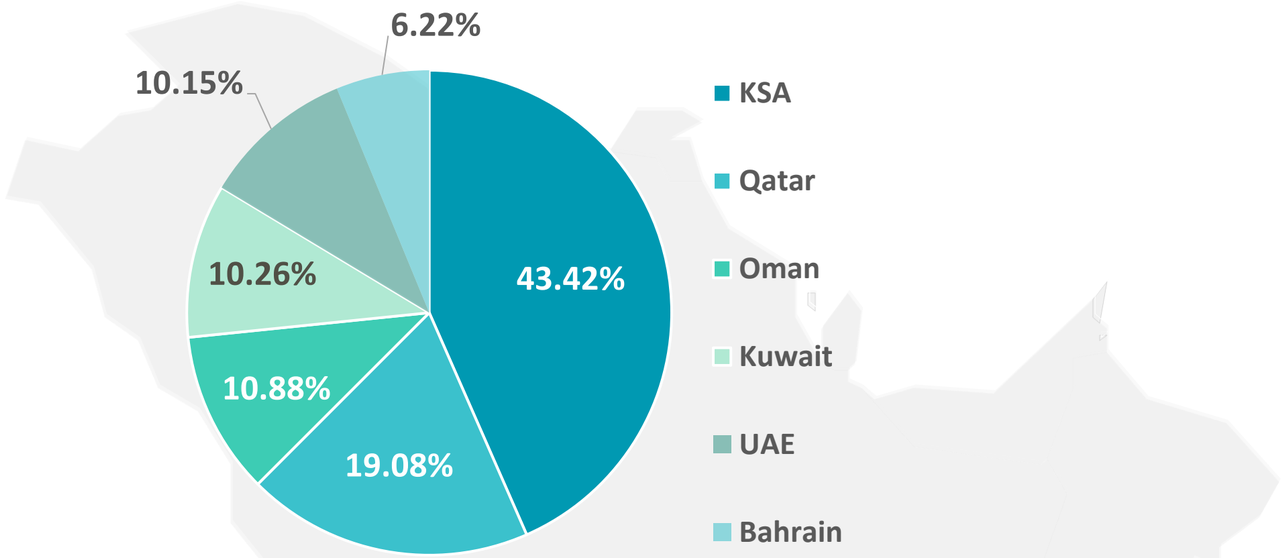
EPIDEMIOLOGY

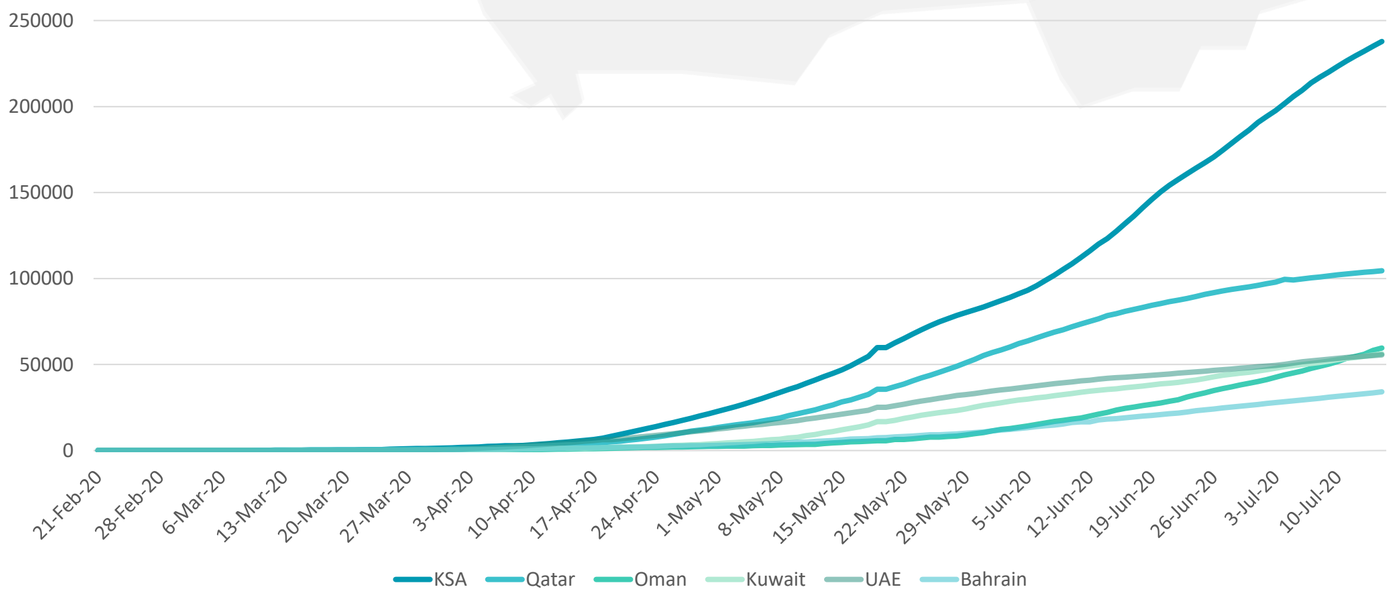
Date: 15 JUL 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

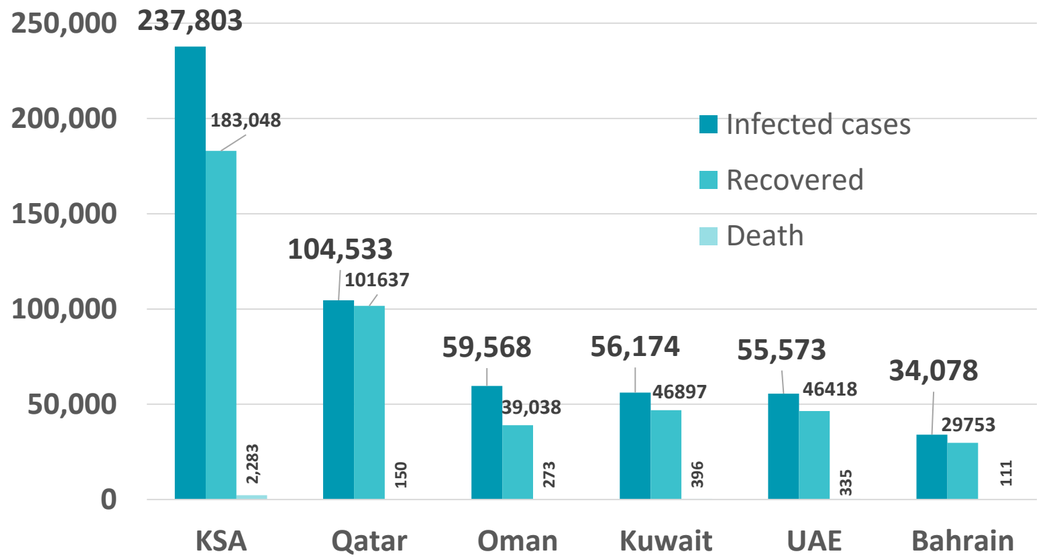
Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries

TOTAL NUMBER OF INFECTED CASES

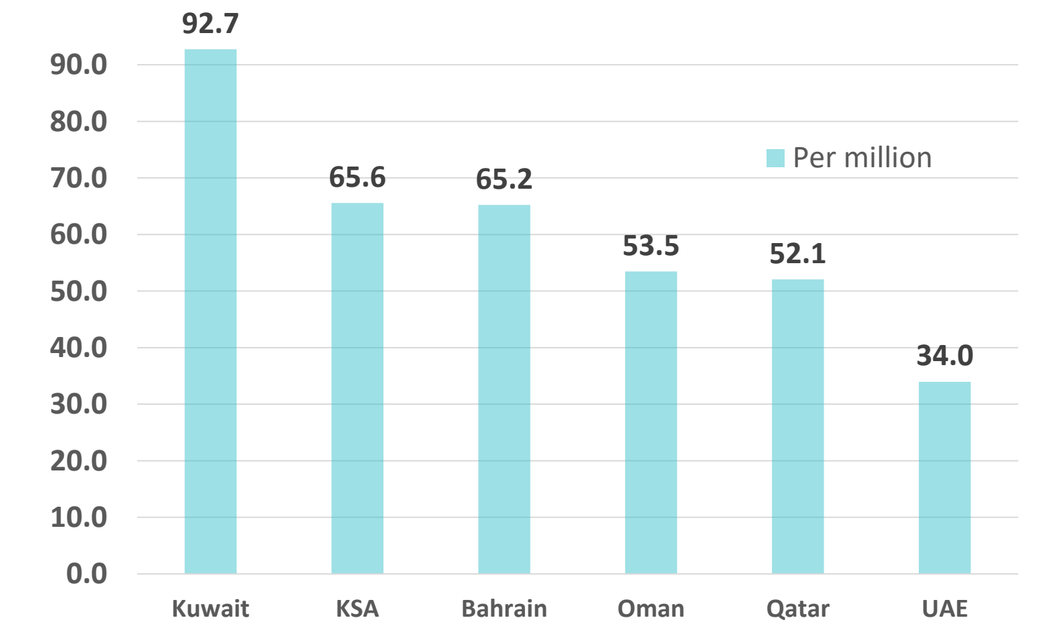




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS

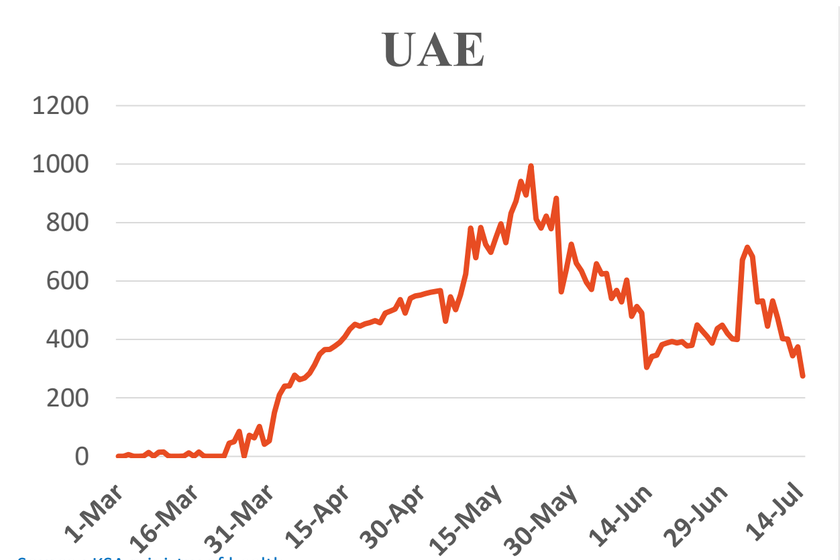


DEATH PER MILLION



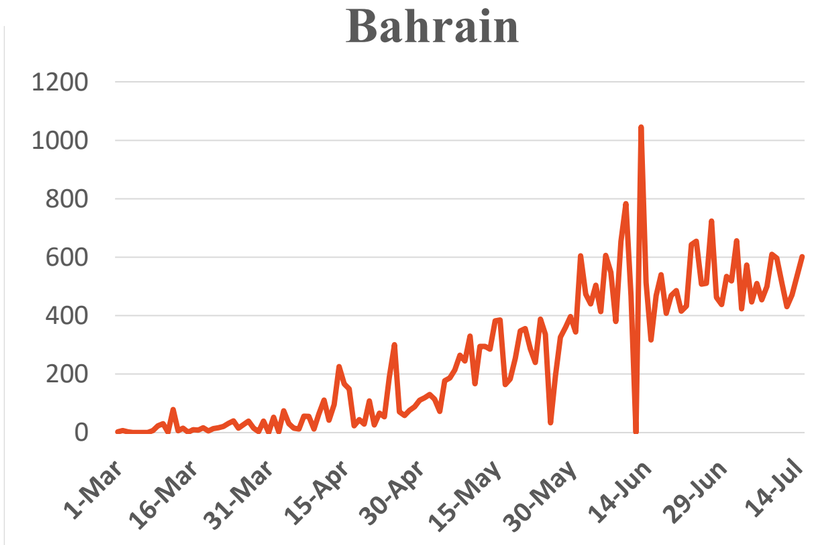
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

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

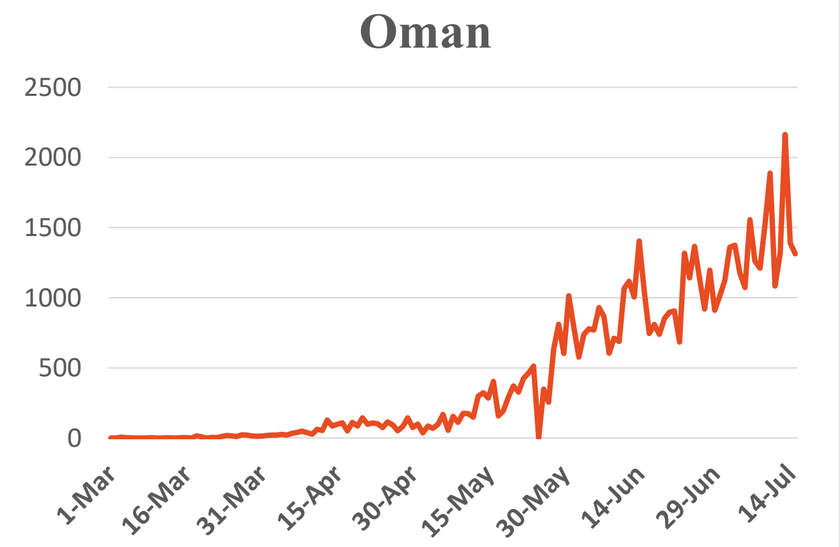


Source : KSA ministry of health

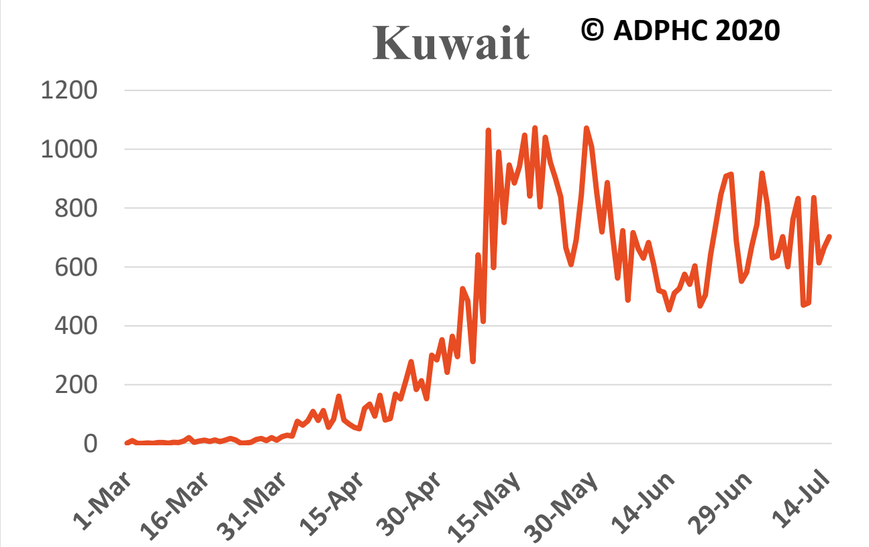
Source : Qatar ministry of health



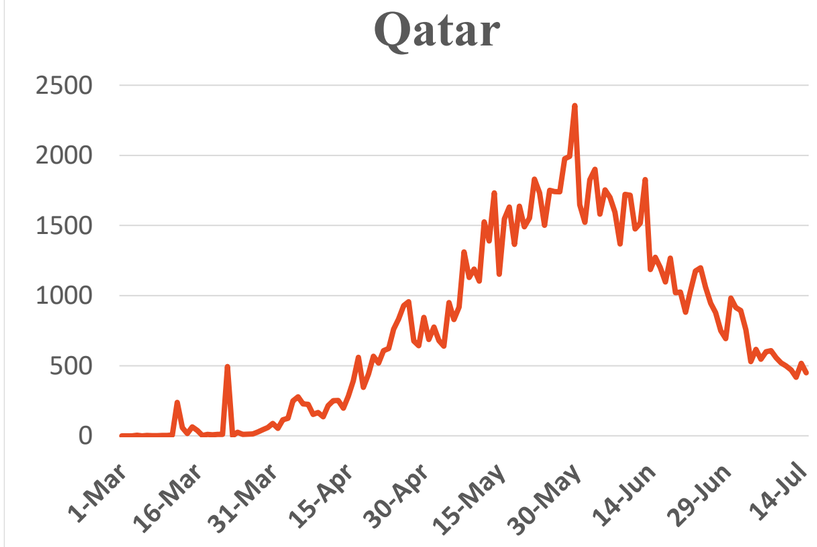
Source :Oman ministry of health



Source : Kuwait ministry of health



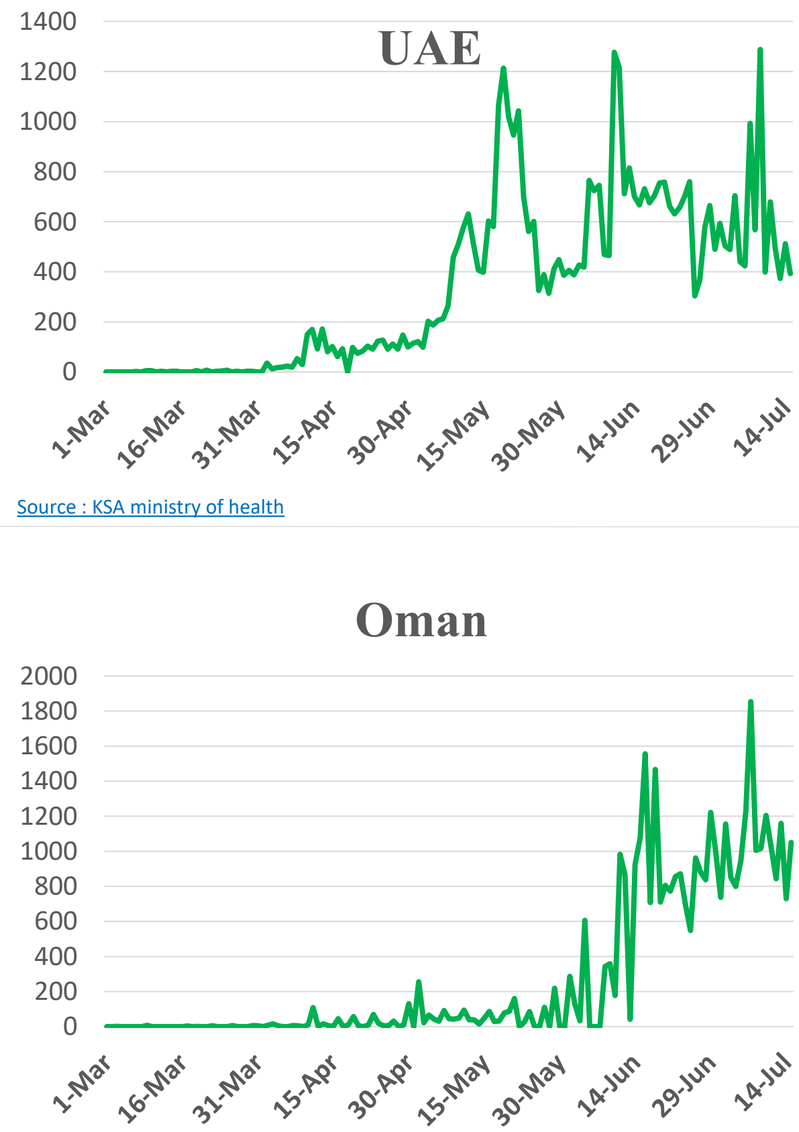
Source : National Emergency Crisis and Disaster Management Authority



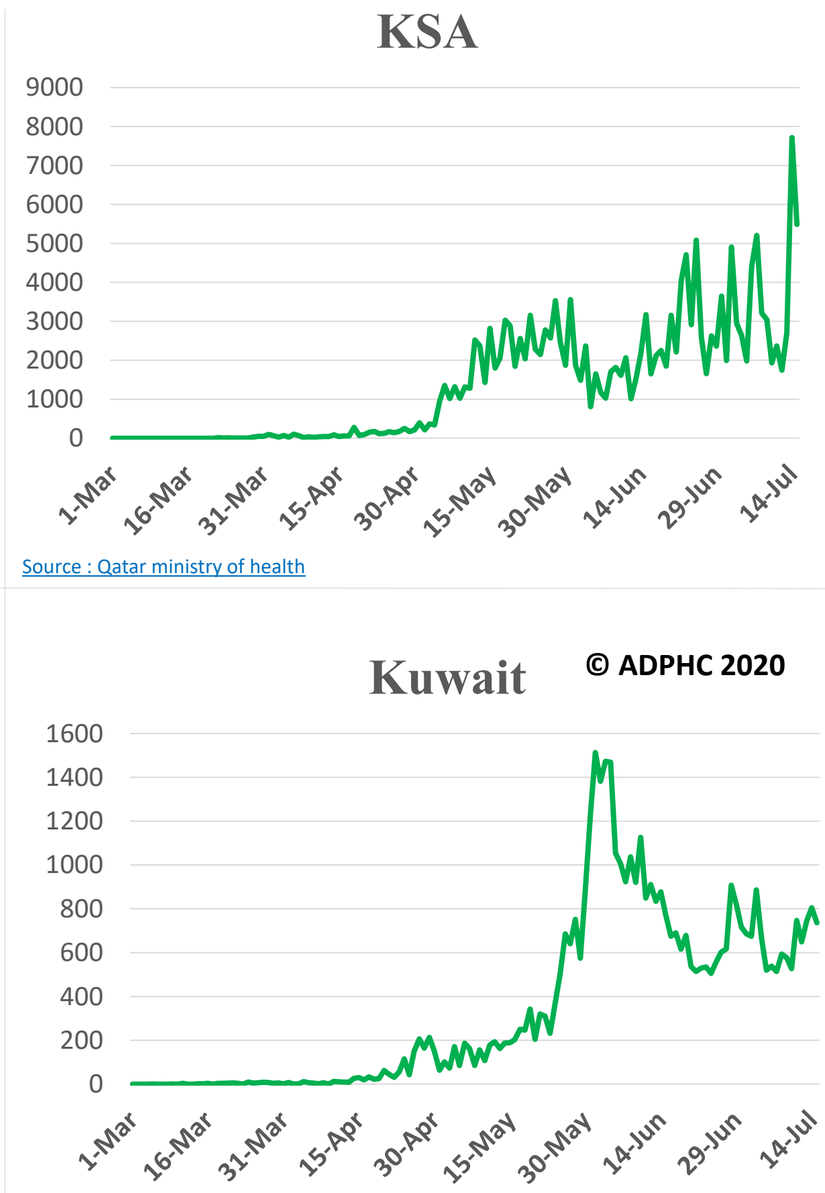
Source :WHO

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

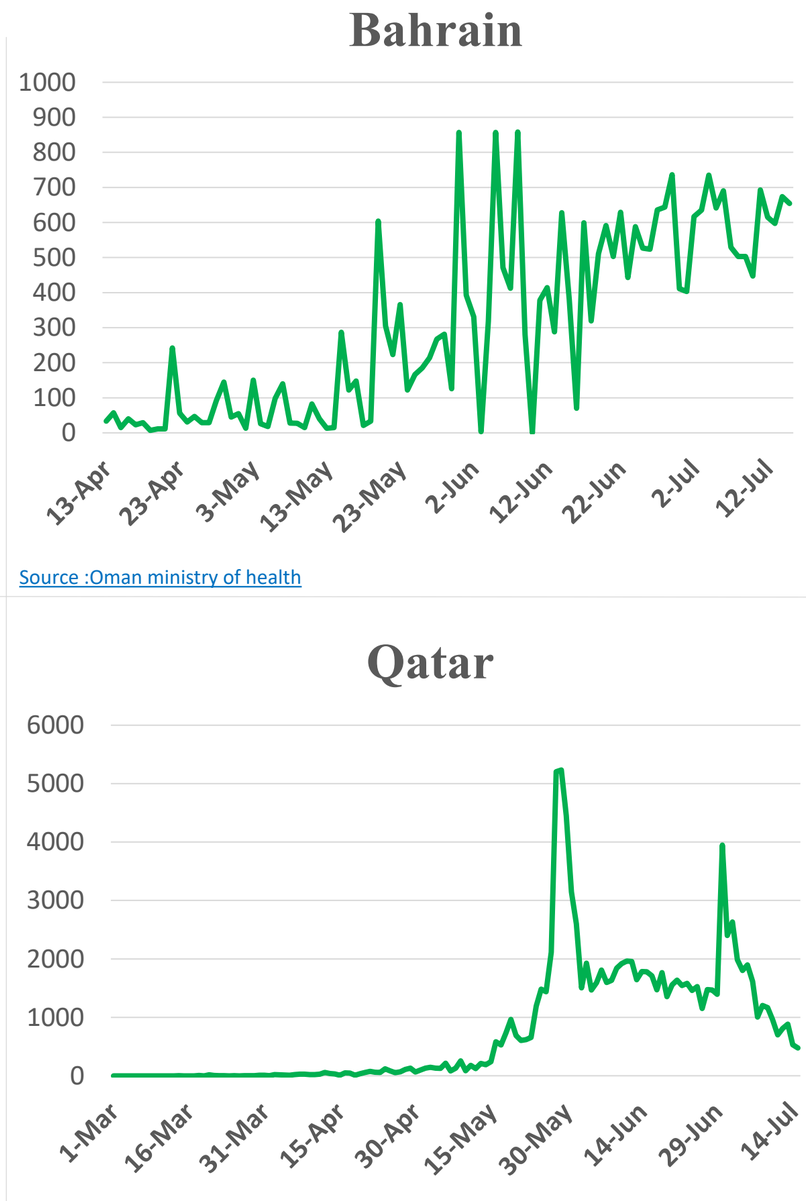
Figure 11: Comparative analysis of the distribution of COVID19 newly recovered cases in GCC Countries



Source : KSA ministry of health



Source : Qatar ministry of health



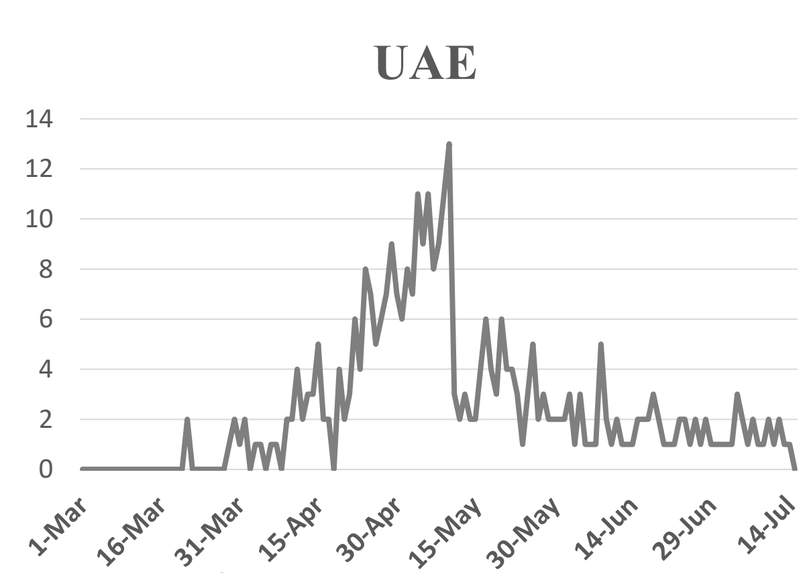
Source :Oman ministry of health

Source : Kuwait ministry of health

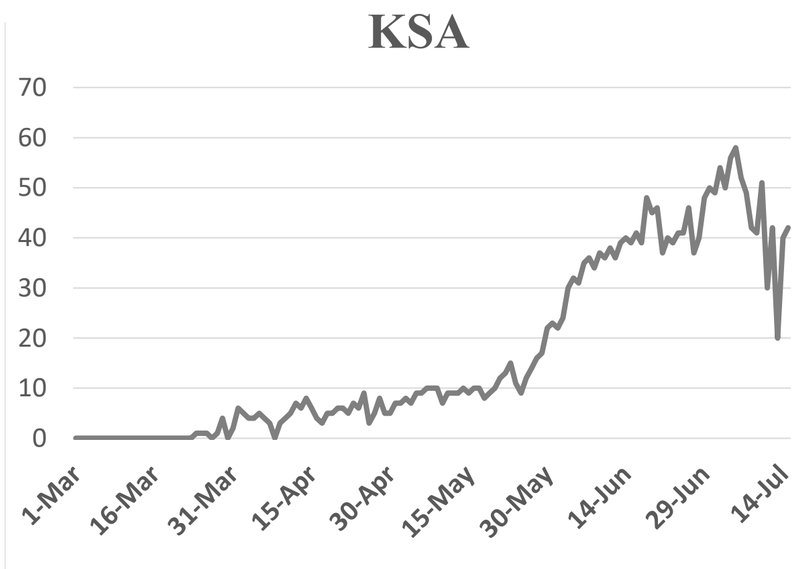
Source : National Emergency Crisis and Disaster Management Authority

Source : GCCStat

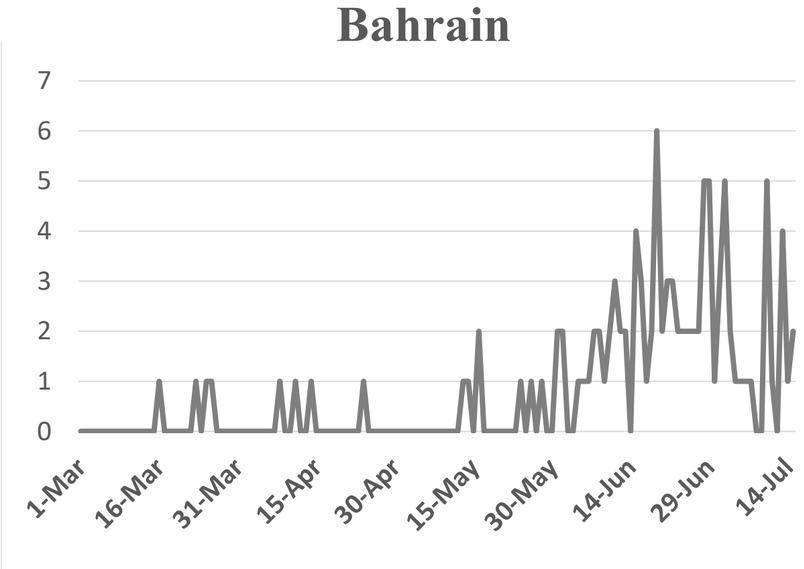
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries



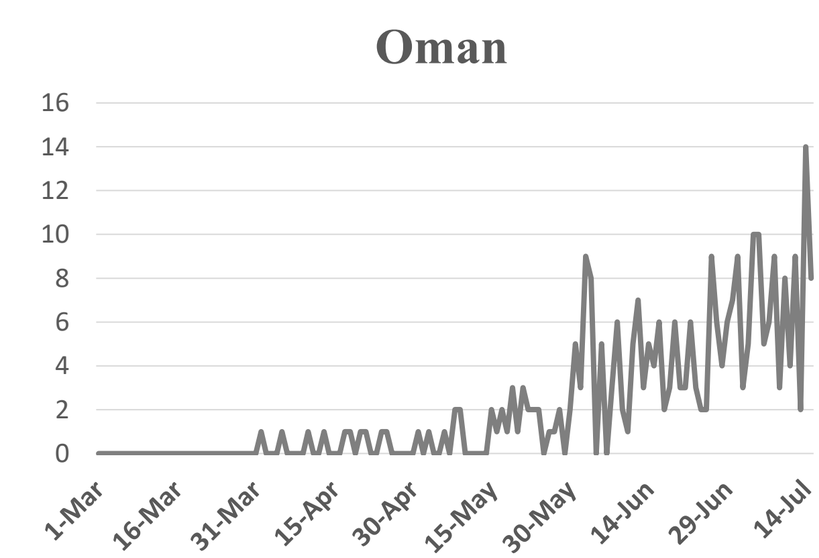
Source : KSA ministry of health



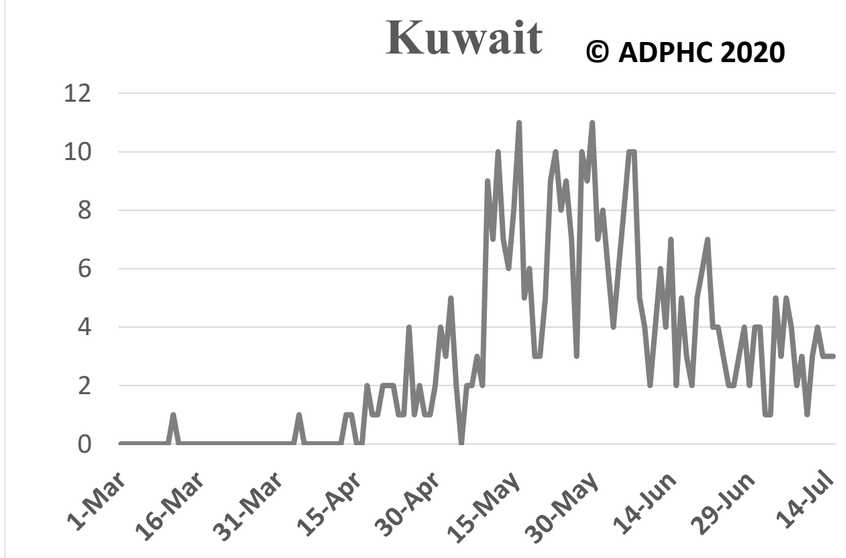
Source : Qatar ministry of health



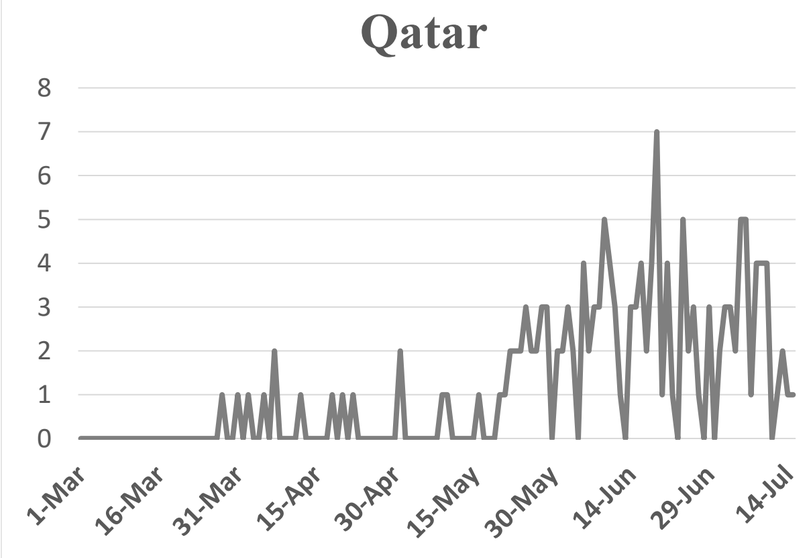
Source :Oman ministry of health



Source : Kuwait ministry of health



Source : National Emergency Crisis and Disaster Management Authority



Source :WHO

TRANSMISSION

Article 1: SARS-CoV-2 in fruit Bats, Ferrets, Pigs, and Chickens: An Experimental Transmission Study

Published 10 July 2020 The Lancet

Summarized by subject matter expert

This study investigated the possibility of different animals being potential hosts and source of transmission of novel corona virus.

Methodology

12 fruits bats

12 ferrets

12 pigs

20 chickens

- At the start of the study, all animals were negative for SARS-CoV2.
- 9 bats, 9 ferrets, 9 pigs and 17 chickens were infected with the virus – these are the primary source of infection.
- Direct contact animals (n=3) were mixed with infected animals after 24 hours.
- All animals were tested on days 2, 4, 8, 12, 16, 21 after infection.
- On days 4, 8, and 12, two inoculated animals (or three in the case of chickens) of each species were sacrificed. All remaining animals, including the contacts, were sacrificed at day 21, and autopsy was performed.

Results

Bats:

- No clinical signs such as fever, weight loss or mortality.
- Oral viral shedding was observed in **all 9 infected bats from days 2 to 12.**
- 2 out of 3 contact bats also showed signs of infection through viral load and presence of SARS-CoV2 genome.
- The virus genome was present in trachea, lung, heart, skin, duodenum, and adrenal gland tissues.
- SARS-CoV2 antibodies were present in all 9 bats who were infected with virus, and in only 1 contact bat.
- The autopsy results did not show any specific pathological lesions.

Pigs and Chicken:

- Were not susceptible to SARS-Cov2.

Ferrets:

- More efficient virus replication but no clinical signs were observed, with transmission to all three direct contact animals.

PUBLIC HEALTH RESPONSE

Article 2: SARS-CoV-2 Seroprevalence in COVID-19 Hotspots

Published 6 July 2020 The Lancet

This commentary discusses the implications of Covid-19 antibodies tests in relation to herd immunity.

Background

- Approximately 80% of SARS-CoV2 positive are either without symptoms or have mild infection.
- Laboratory-confirmed cases of COVID-19 do not capture the true extent of the spread or burden of the virus, or its infection-fatality ratio.
- Serological detection of specific antibodies against SARS-CoV-2 can better estimate the true number of infections.

SARS-CoV-2 Antibodies Studies

- Spanish Study: 5% seroprevalence in more than 60,000 participants.
- Swiss Study: 10.8% seroprevalence in 2766 participants.
- China Study: 3.8% seroprevalence in 17,368 participants.
- Sweden Study: 7.3% seroprevalence in 1200 participants.
- US Study: 4.1% seroprevalence in 863 participants.

Public Health Message

- The key finding of these studies is that a large majority of the population is still without infection, even in areas with widespread virus circulation
- Seroprevalence studies provide information only about previous exposure, rather than immunity, as no neutralising antibodies are measured
- Once control measures are lifted, virus circulation can quickly return to early pandemic dimensions in a second wave.
- In light of these findings, any proposed approach to achieve herd immunity through natural infection is not only highly unethical, but also unachievable
- Seroprevalence data will continue to be necessary for public health authorities to estimate exposure rates, especially in areas with little testing capacity
- When a vaccine is widely available, future studies will be able to provide information about the extent and duration of vaccine-induced herd immunity

PUBLIC HEALTH RESPONSE

Article 3: School Superintendents Confront COVID-19 - “There Are No Good Options for Next Year”

Published 9 July 2020 JAMA

- This article discuses the impact on students, teachers and education, and the prospect of returning to school after schools had shut their doors to approximately 1.6 billion students worldwide, 91.3% of all those enrolled from early childhood education through the doctoral level, According to the United Nations Educational, Scientific and Cultural Organization.

- The CDC recommends that schools “space seating/desks at least 6 feet apart when feasible,” but the AAP guidelines note that in many schools, that much distancing is feasible only by limiting the number of students in the classroom. According to the AAP. Besides, evidence suggests that spacing students as close as 3 feet apart might be nearly as beneficial as 6 feet, particularly if they’re wearing face masks and have no symptoms..

- CDC has developed 4 strategies schools can use to mitigate the spread of COVID-19:
  - Promoting behaviors to reduce spread, such as staying home when sick and proper handwashing.
  - Maintain healthy environments, such as staggering arrival and drop-off times to minimize contact between students who aren’t in the same classroom.
  - Protect staff and students at higher risk of severe COVID-19.
  - Steps to take when staff or students get sick.

THANK YOU

ADPHCAE ADPHC_AE ADPHC_AE ADPHC.AE ADPHC-AE 056 2312171