

SCIENTIFIC RESEARCH MONITORING ON COVID-19

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 172)

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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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).

Diagnosis

Histopathology and Ultrastructural Findings of Fatal COVID-19 Infections in Washington State: A Case Series

Clinical Features

Risk Factors Associated With Mortality Among Patients With COVID-19 in Intensive Care Units in Lombardy, Italy

Clinical Features

Factors Associated With Death in Critically Ill Patients With Coronavirus Disease 2019 in the US

Public Health Response

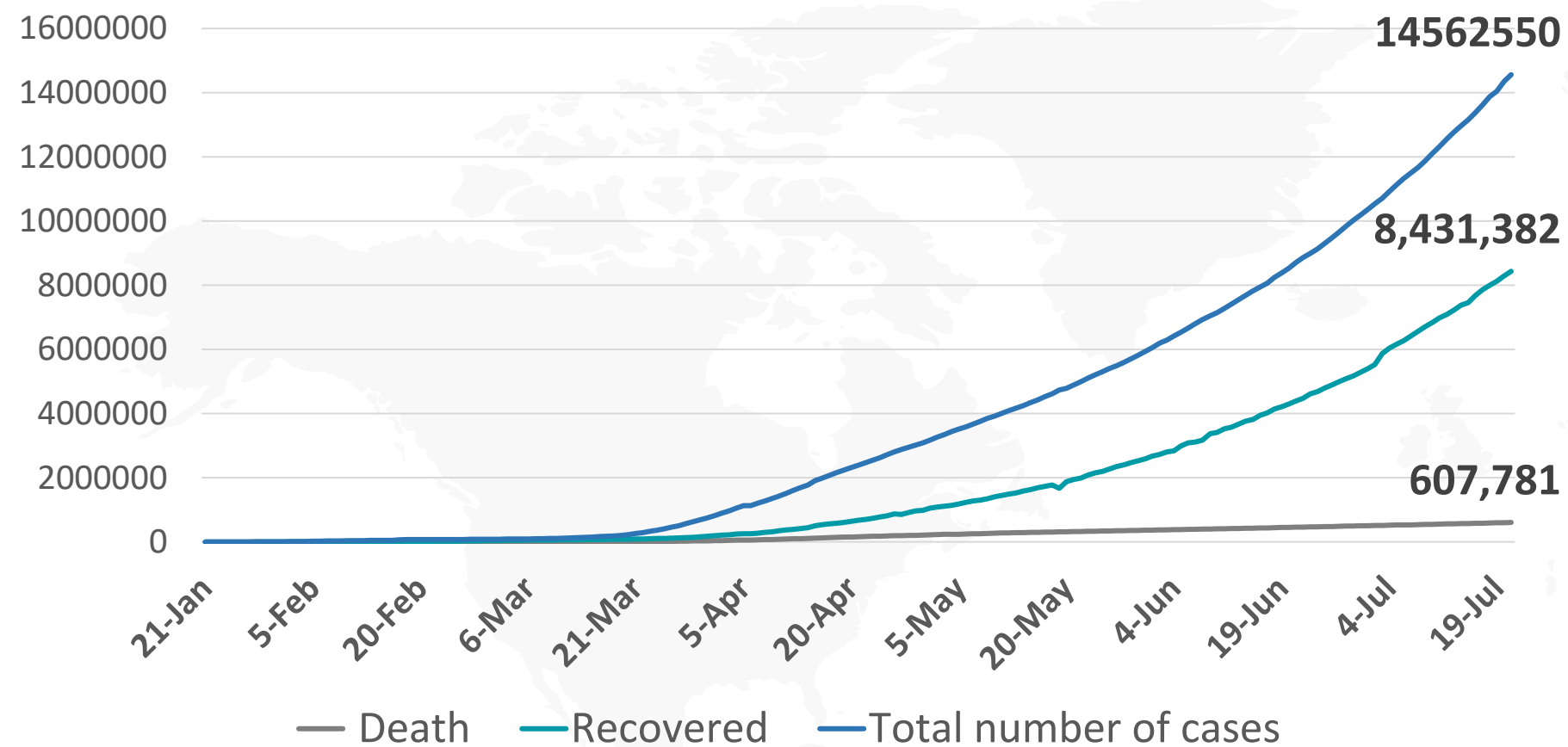
Impact of Delays on Effectiveness of Contact Tracing Strategies for COVID-19: A Modelling Study



- In his regular media briefing, WHO Director-General Dr Tedros reiterated the importance of contact tracing in all communities affected by COVID-19, stating that “No country can get control of its epidemic if it doesn’t know where the virus is”.
 - Mobile applications can support contact tracing, but nothing replaces boots on the ground—trained workers going door-to-door to find cases and contacts and break the chains of transmission.
- A South African hospital has developed an innovative solution to boost COVID-19 testing. Staff at the Westfleur Hospital, a public facility in the Western Cape, are refashioning security booths into makeshift COVID-19 testing centers.
- The Istanbul Center, run by the WHO Country Office in Turkey together with the Turkish Ministry of Health, improved access to health services for Syrian refugees using online services to provide psychosocial health support, as part of reinforced preventive measures against COVID-19.
- Countries in the WHO Eastern Mediterranean Region are restarting essential polio immunization campaigns under strict COVID-19 infection prevention and control measures, with Pakistan being the first country to resume campaigns. Other countries in the Region are in the early stages of planning to resume vaccination campaigns when the local epidemiological situation permits.

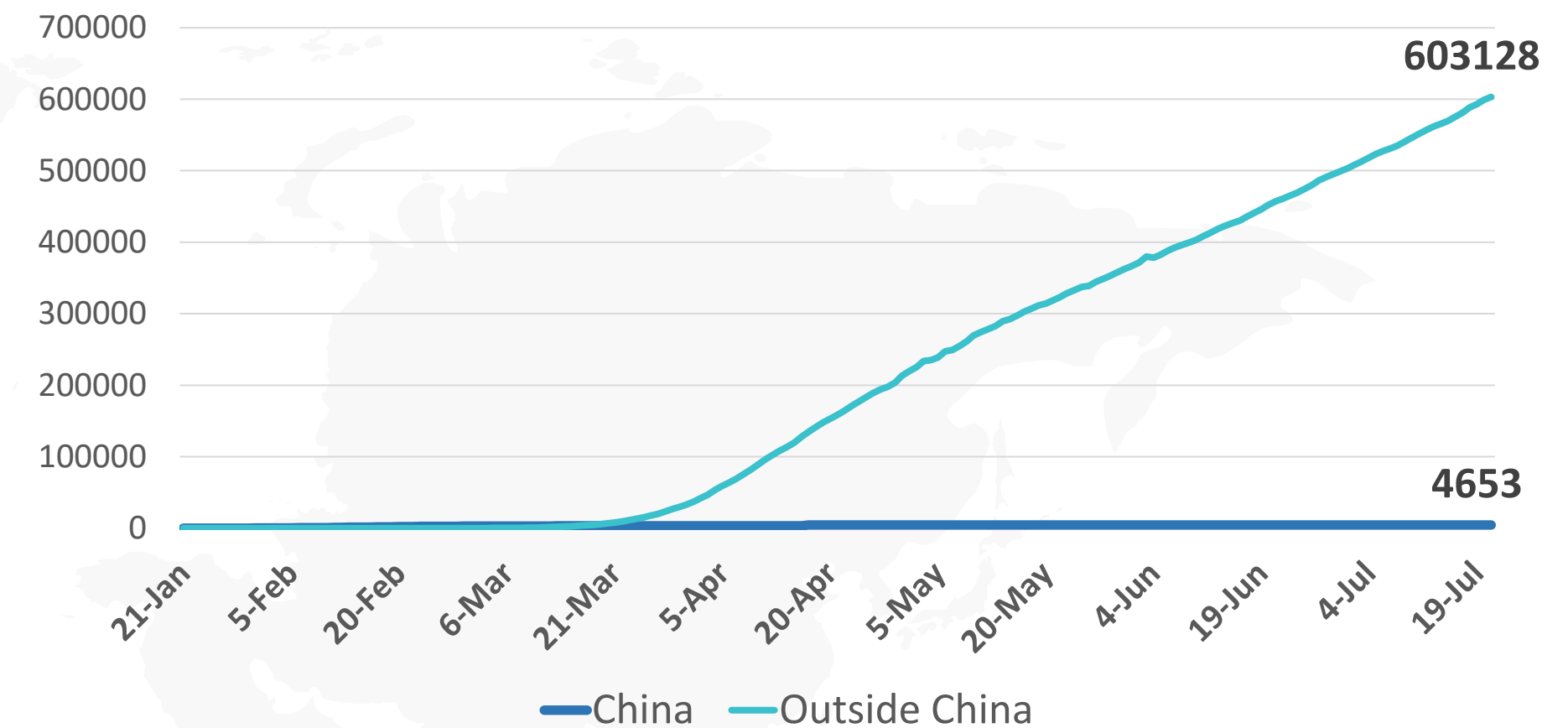


Figure 1: Total number of infected, recovered, and death cases



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



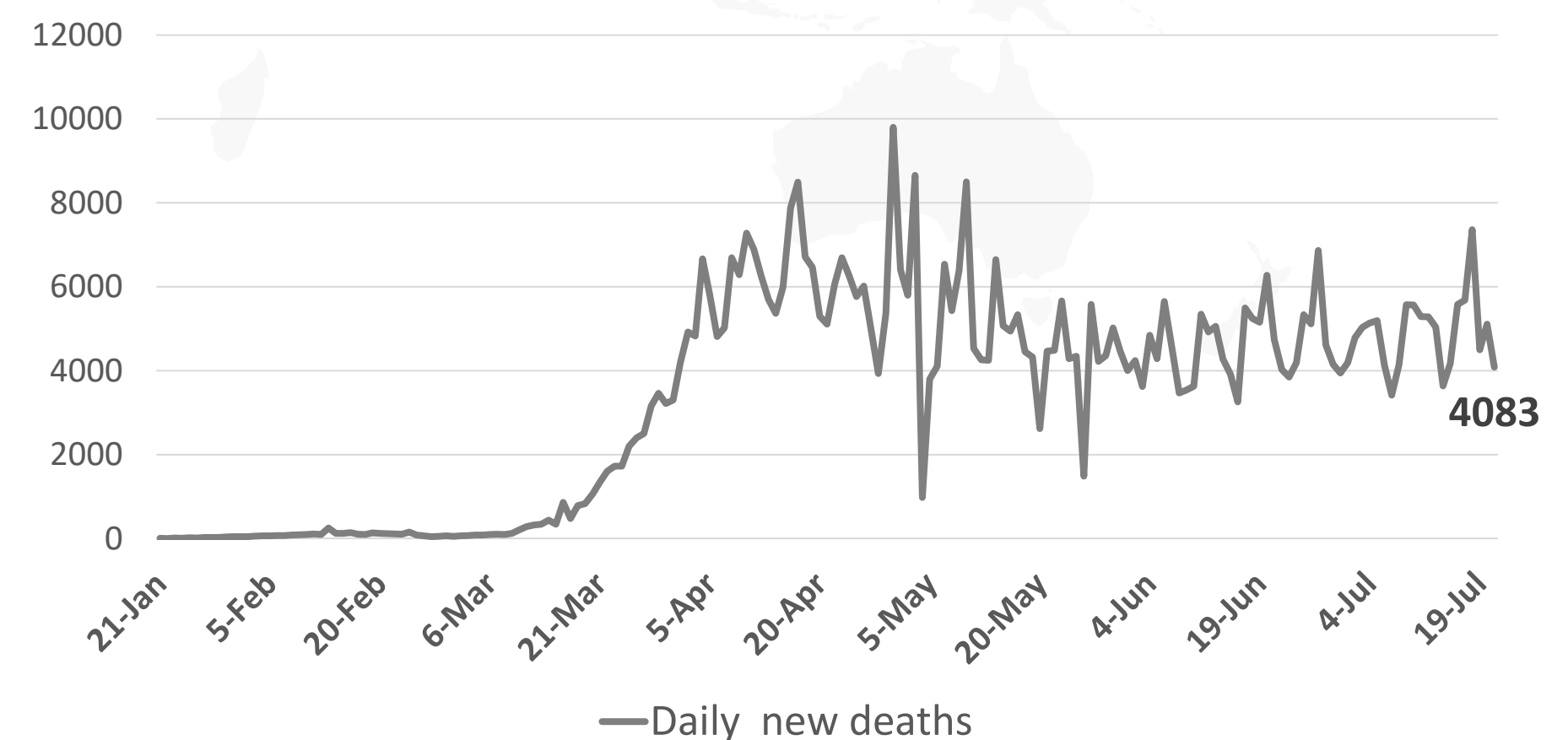
China Outside China

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



China Outside china

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



Daily new deaths

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

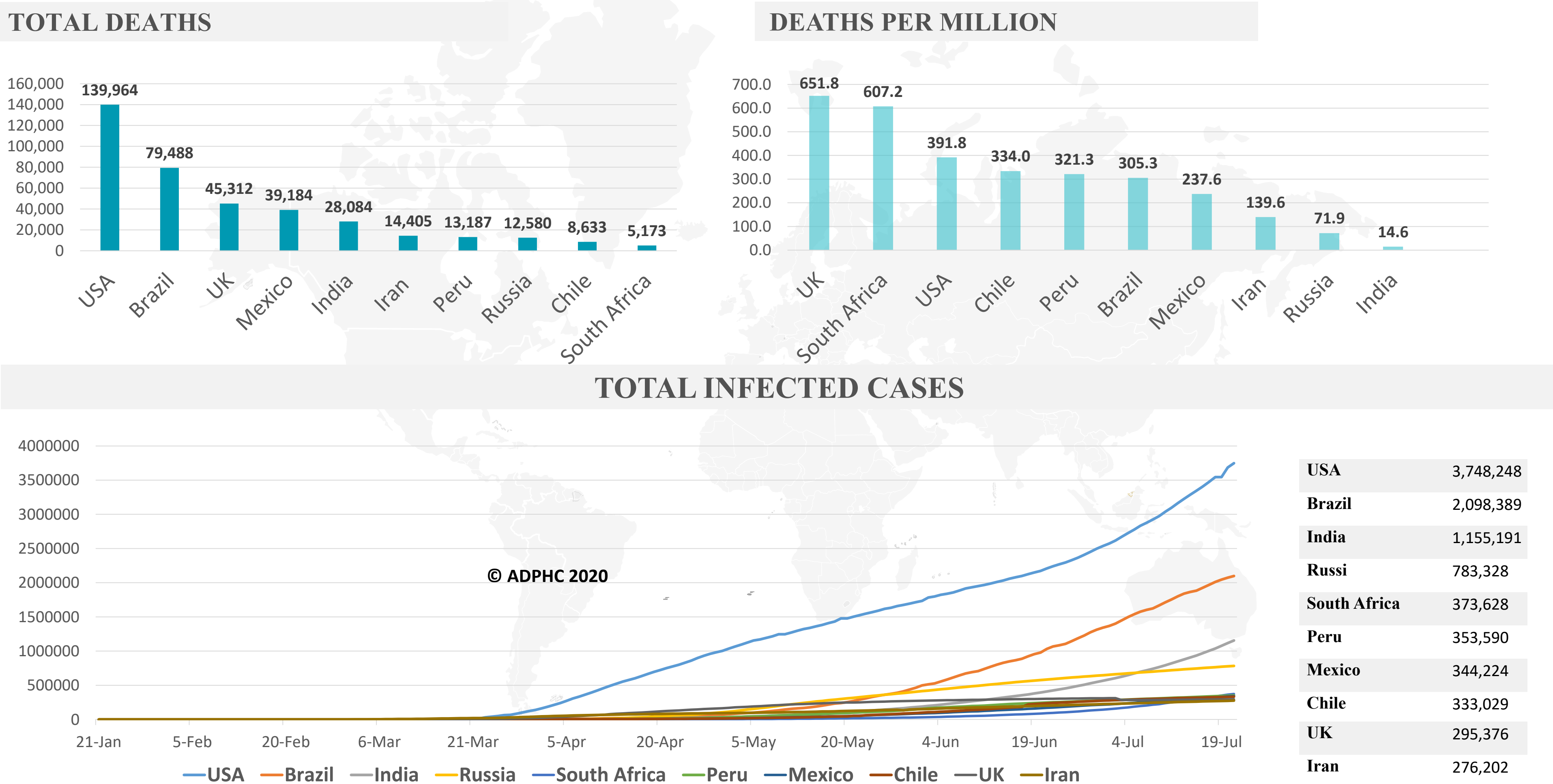
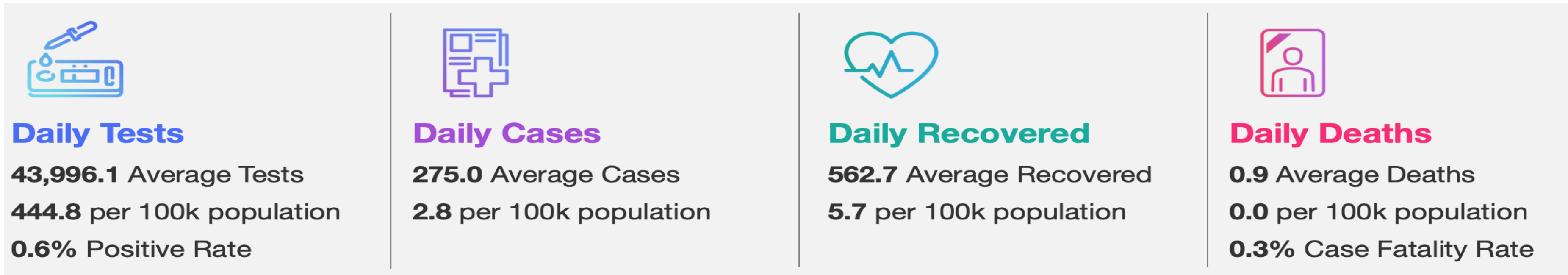


Figure 5: COVID19 STATUS IN THE UAE (Federal Competitiveness and Statistics Authority dashboard)



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

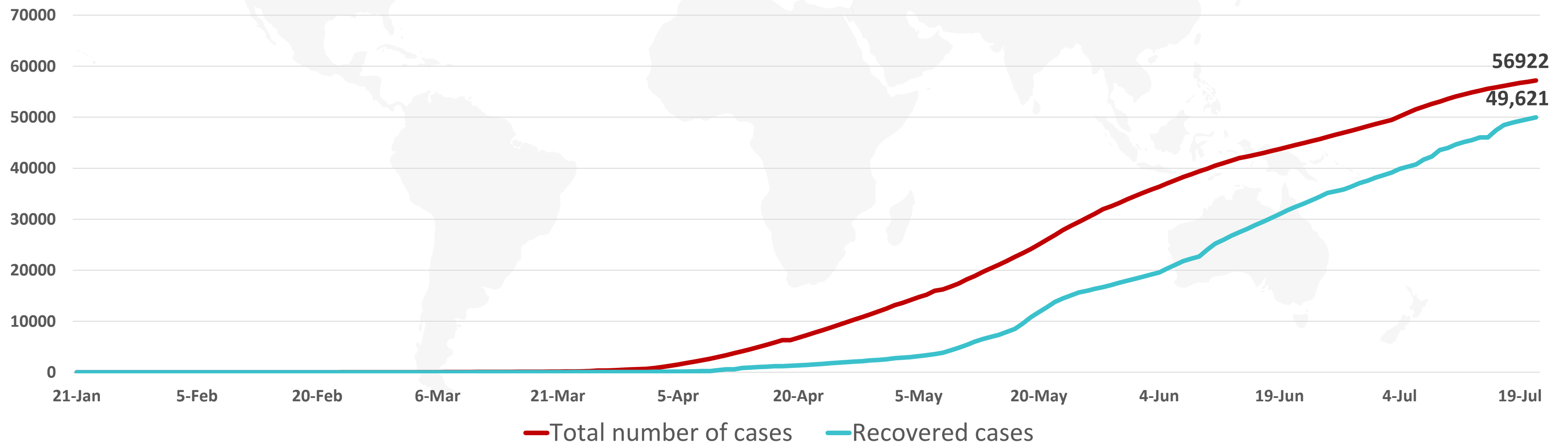
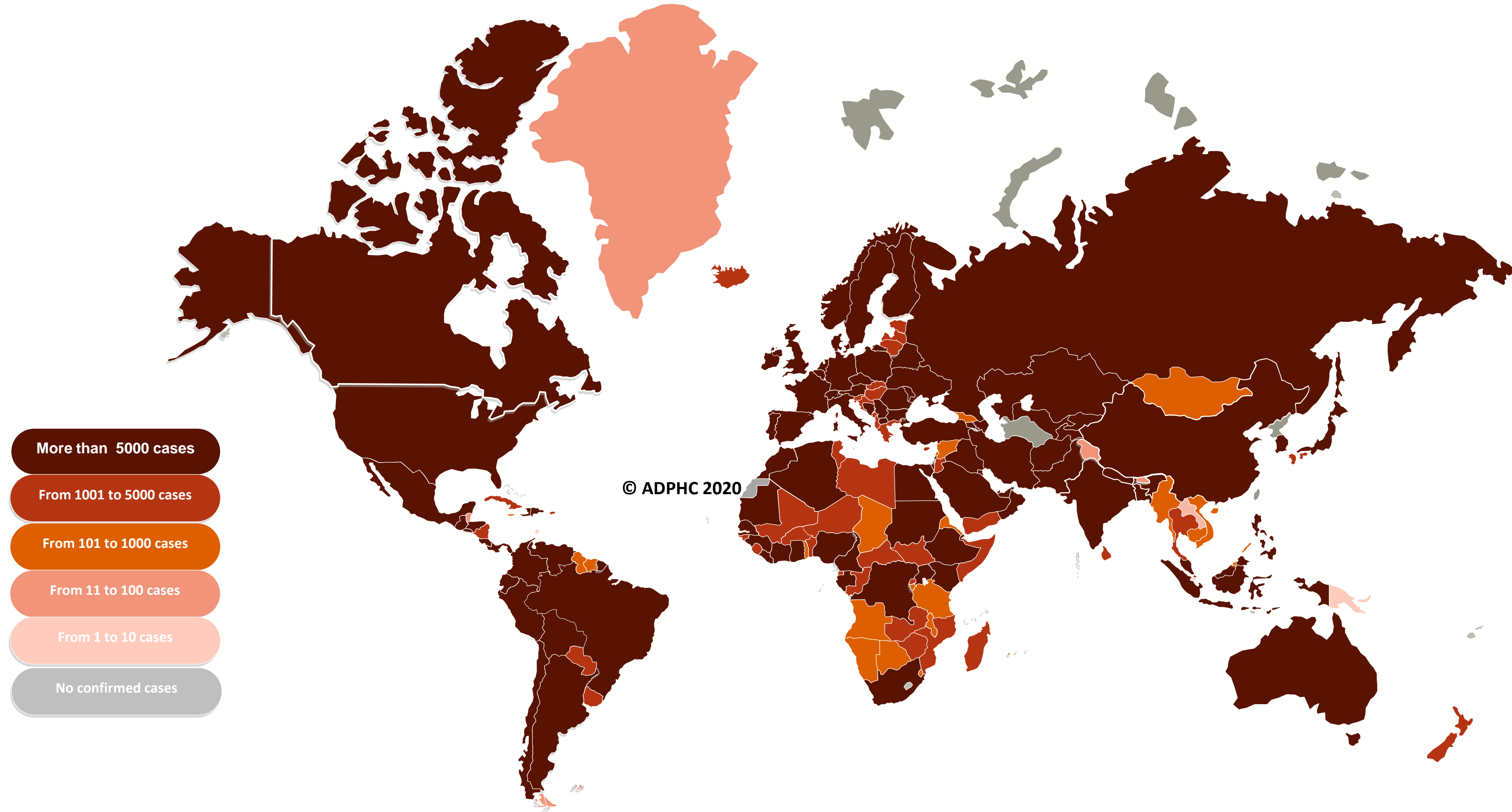


Figure 7A : Global distribution of COVID-19 cases



More than 5000 cases

From 1001 to 5000 cases

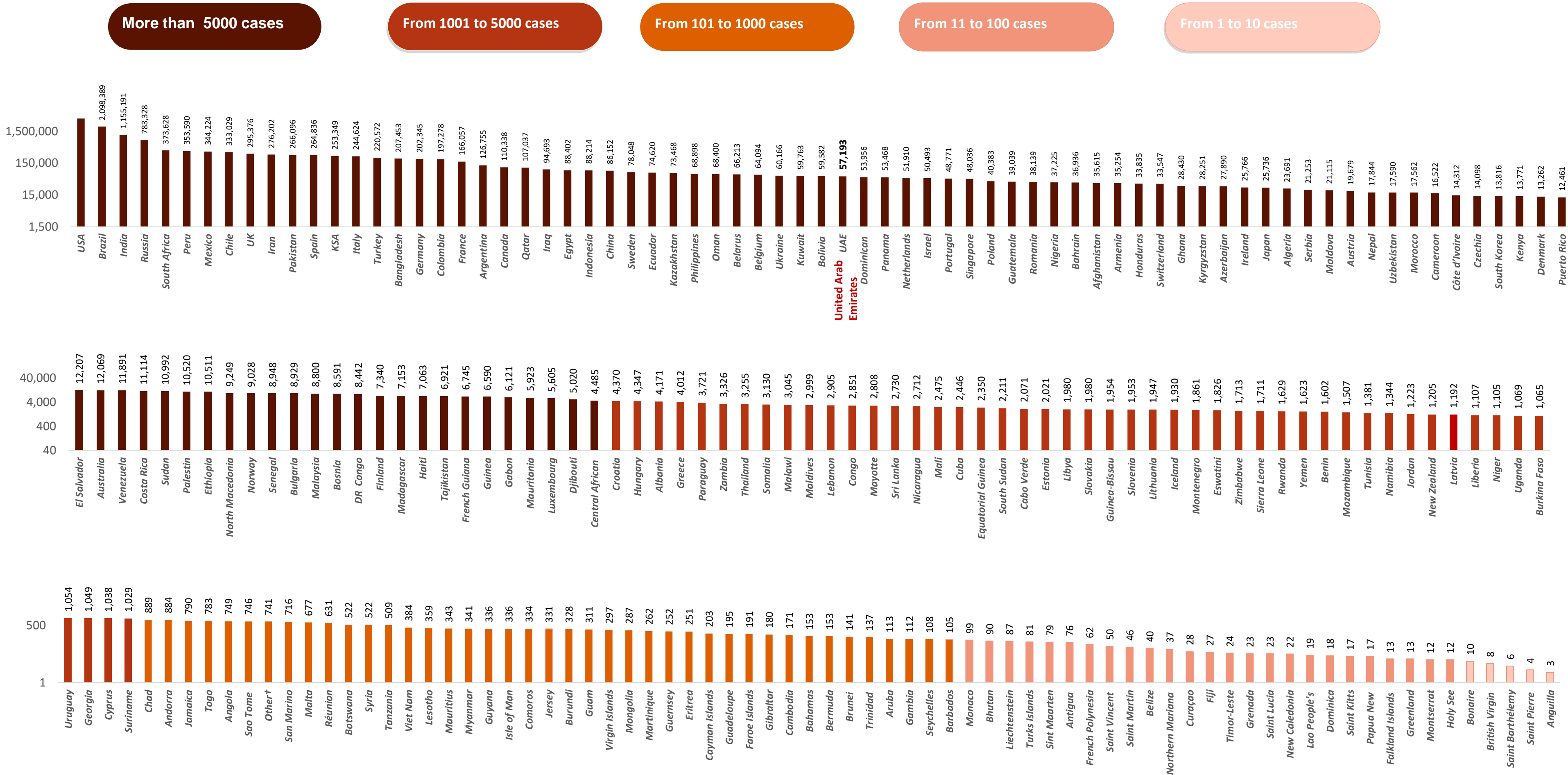
From 101 to 1000 cases

From 11 to 100 cases

From 1 to 10 cases

No confirmed cases

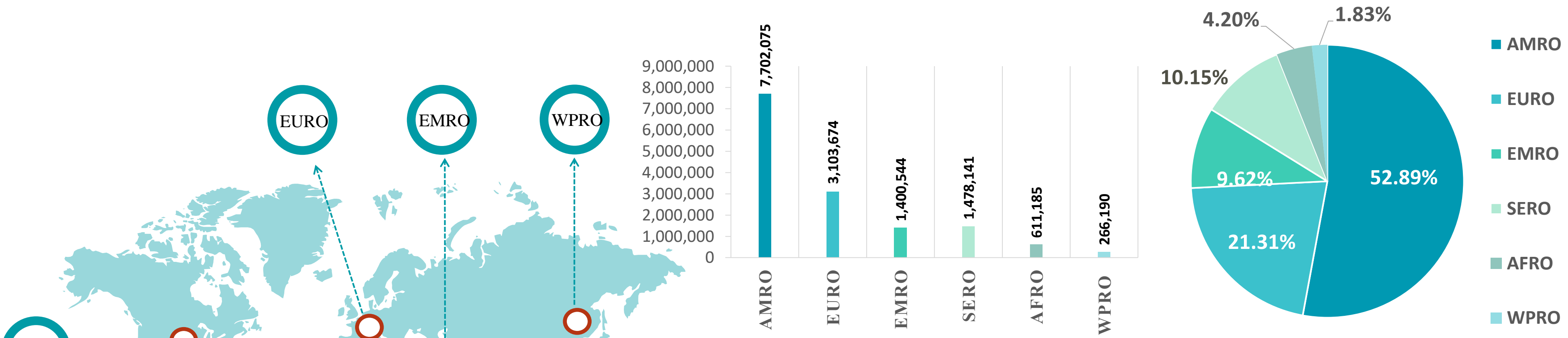
Figure 7B: Bar chart illustrate the global distribution of COVID19 cases



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

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

INFECTED



DEATH

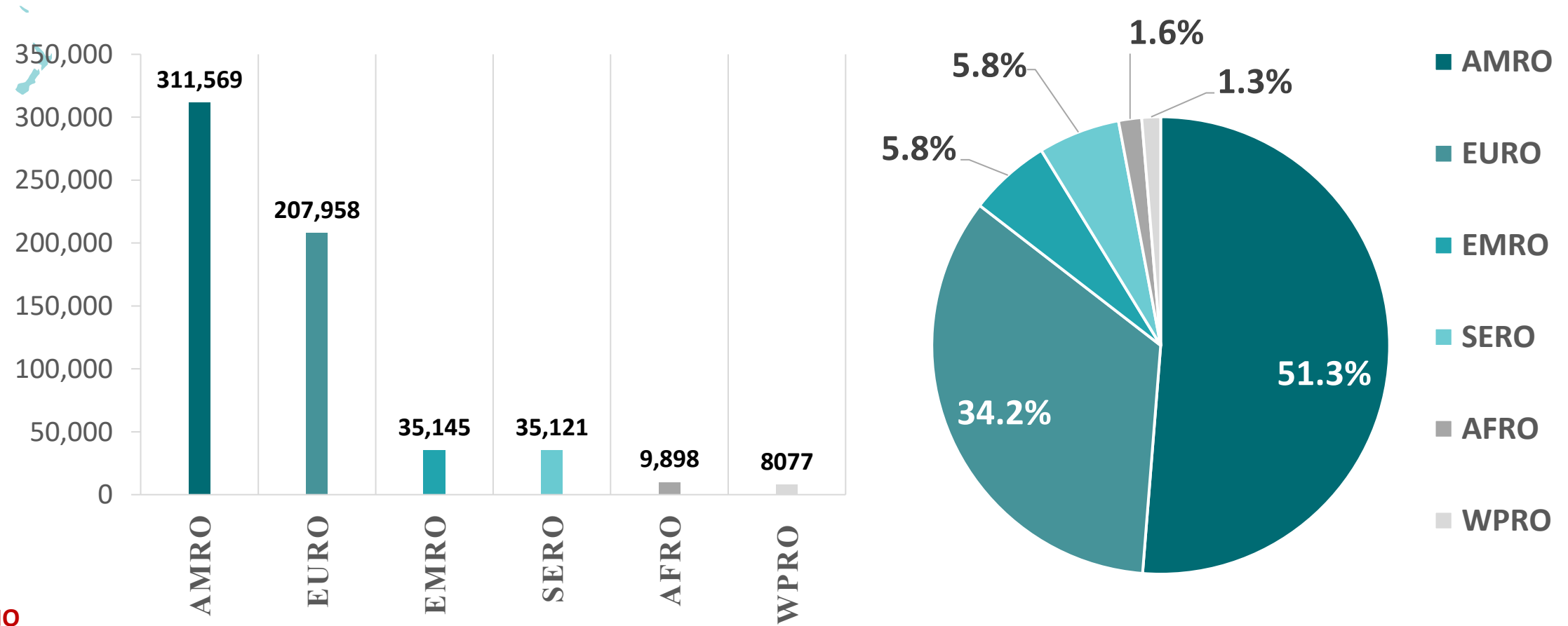
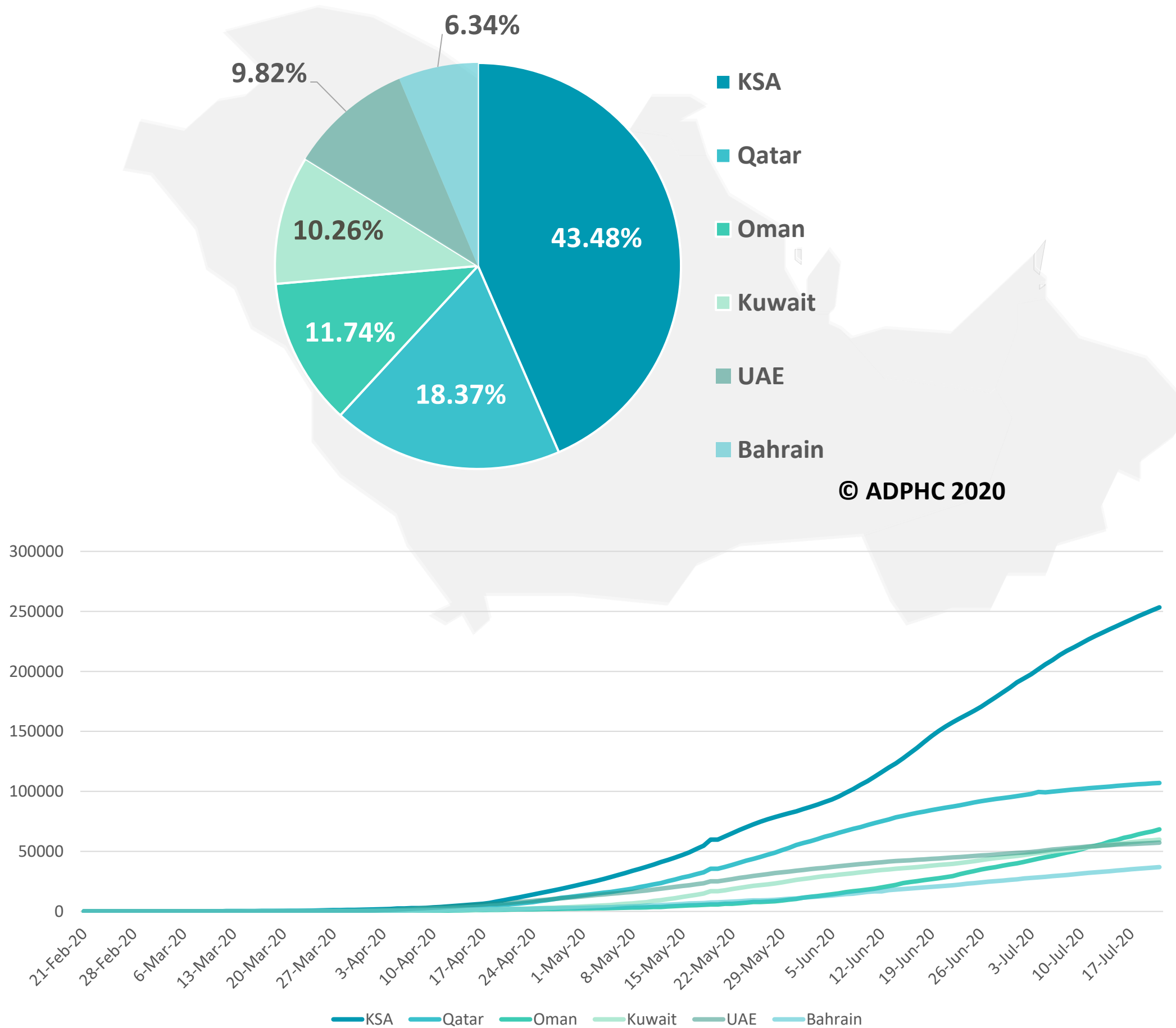
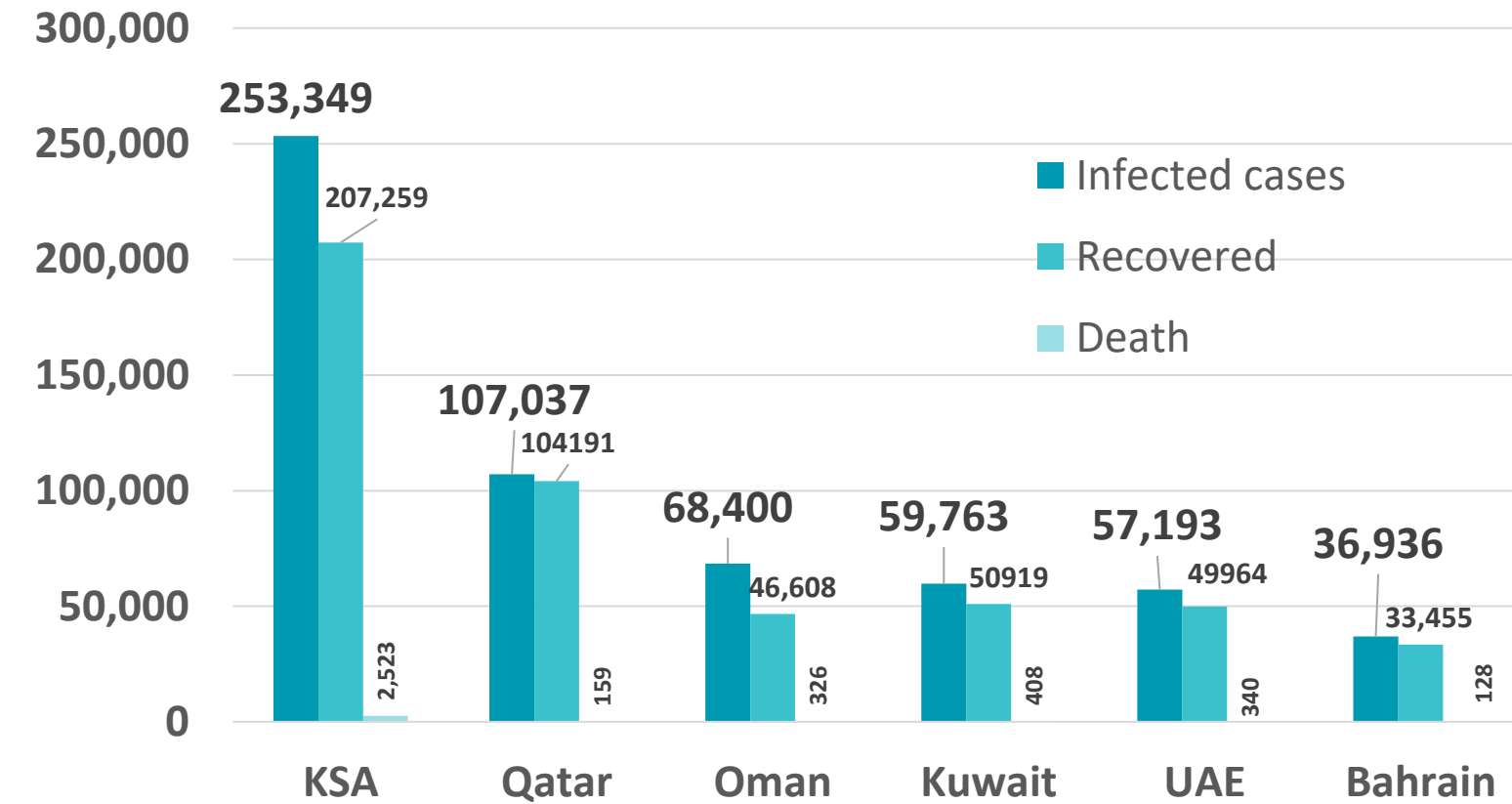


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries

TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATH PER MILLION

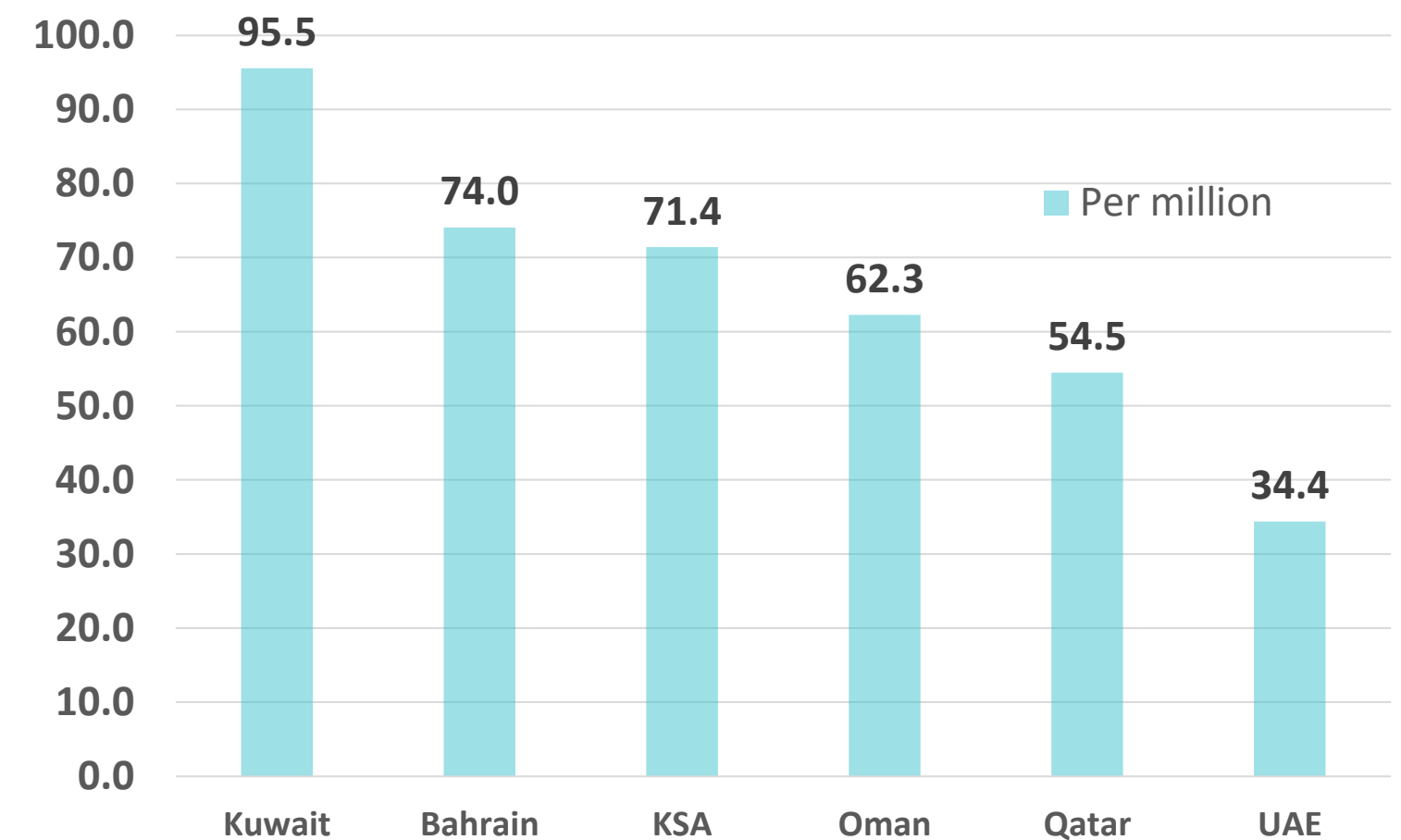


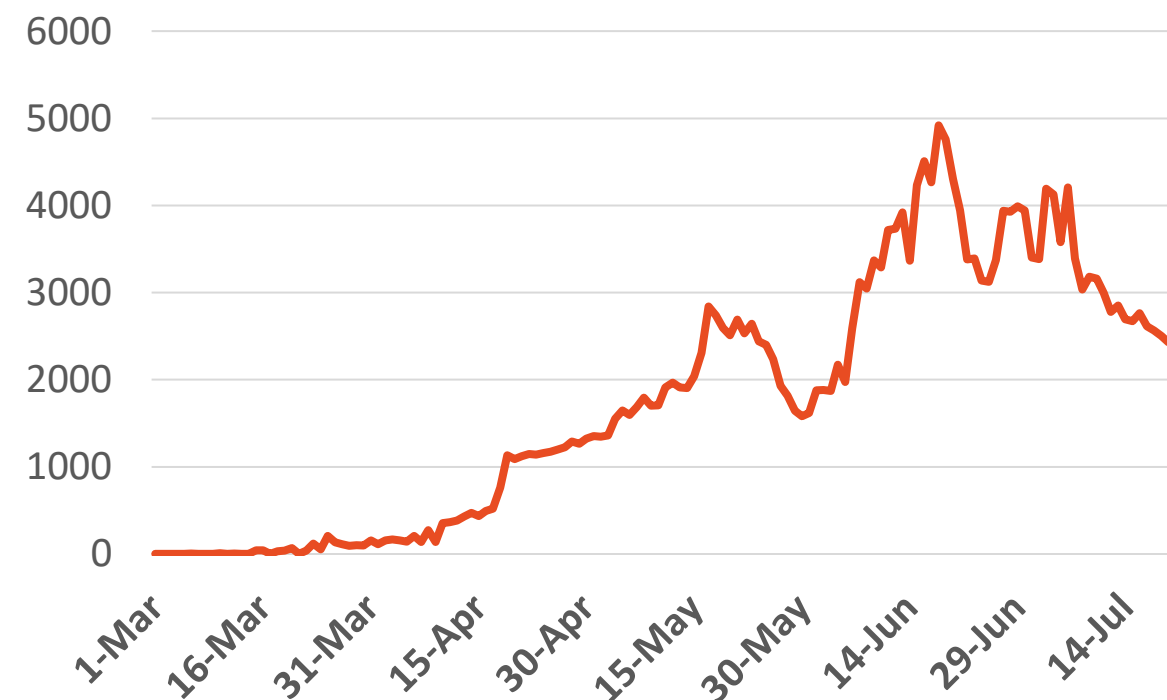
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries

UAE



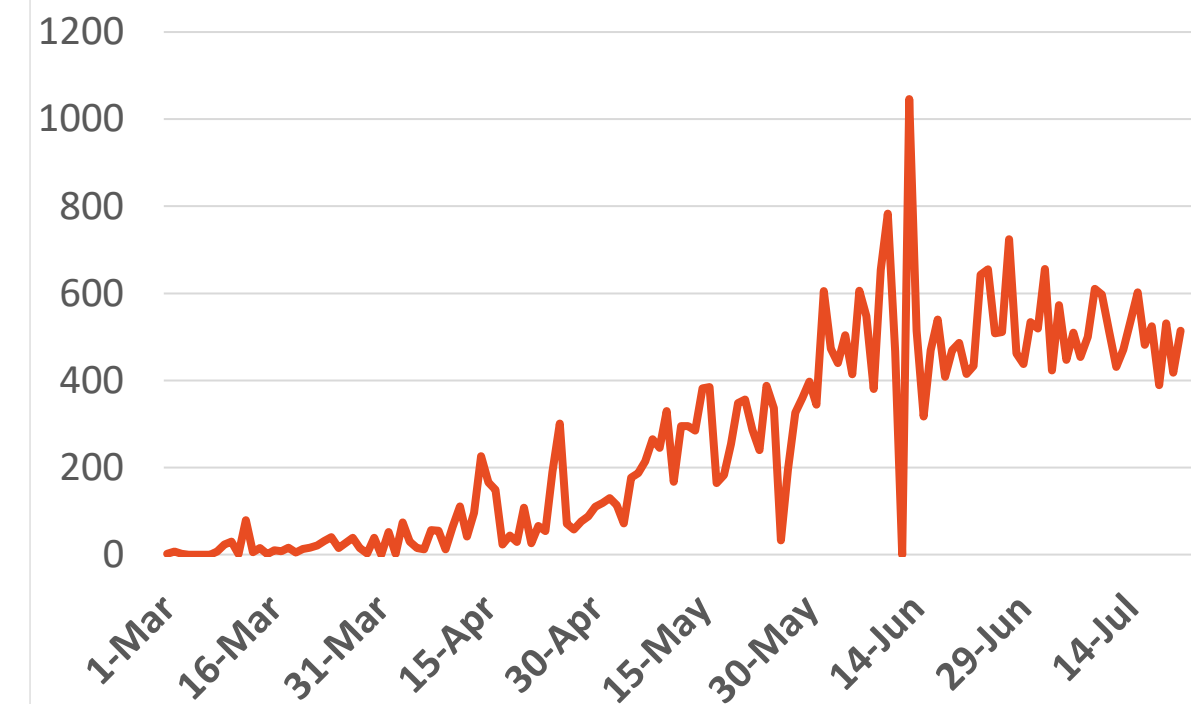
Source : National Emergency Crisis and Disaster Management Authority

KSA



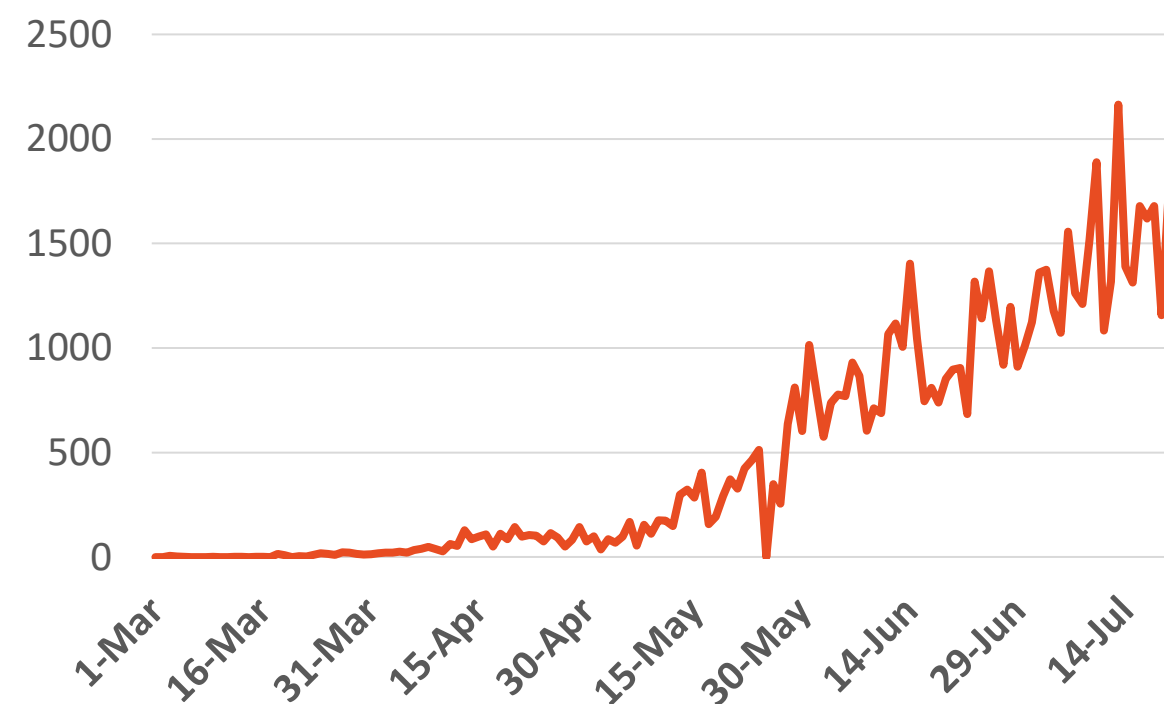
Source : KSA ministry of health

Bahrain



Source :WHO

Oman



Source :Oman ministry of health

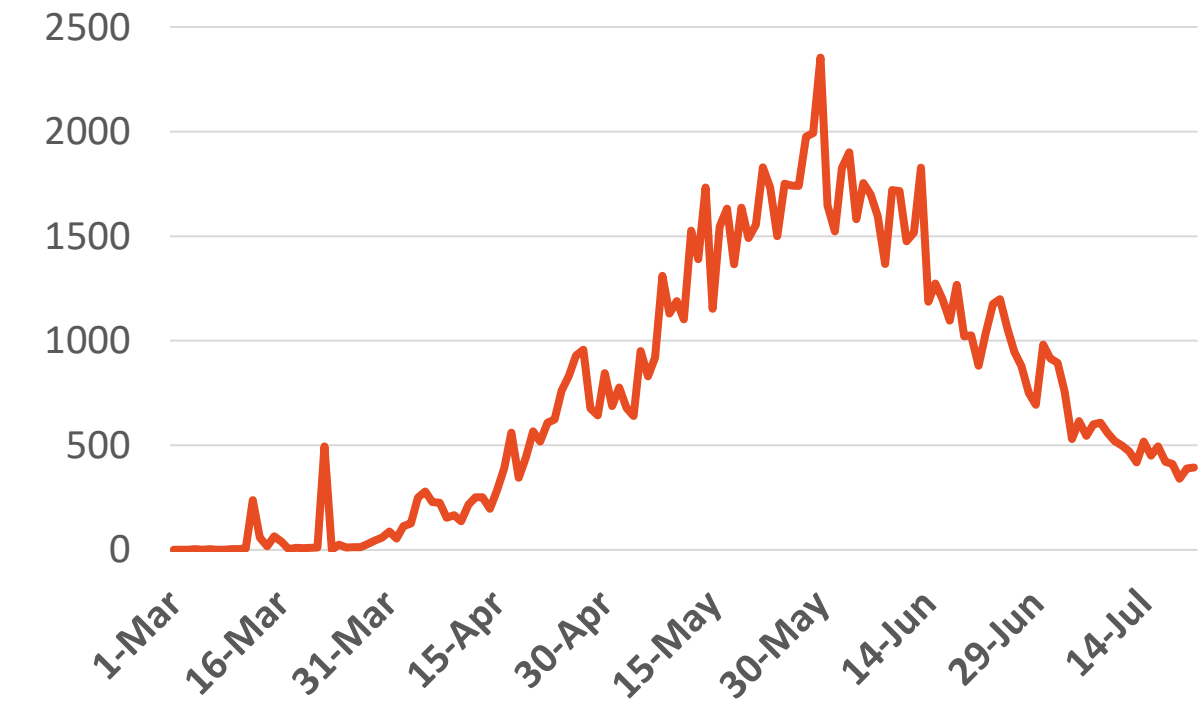
Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

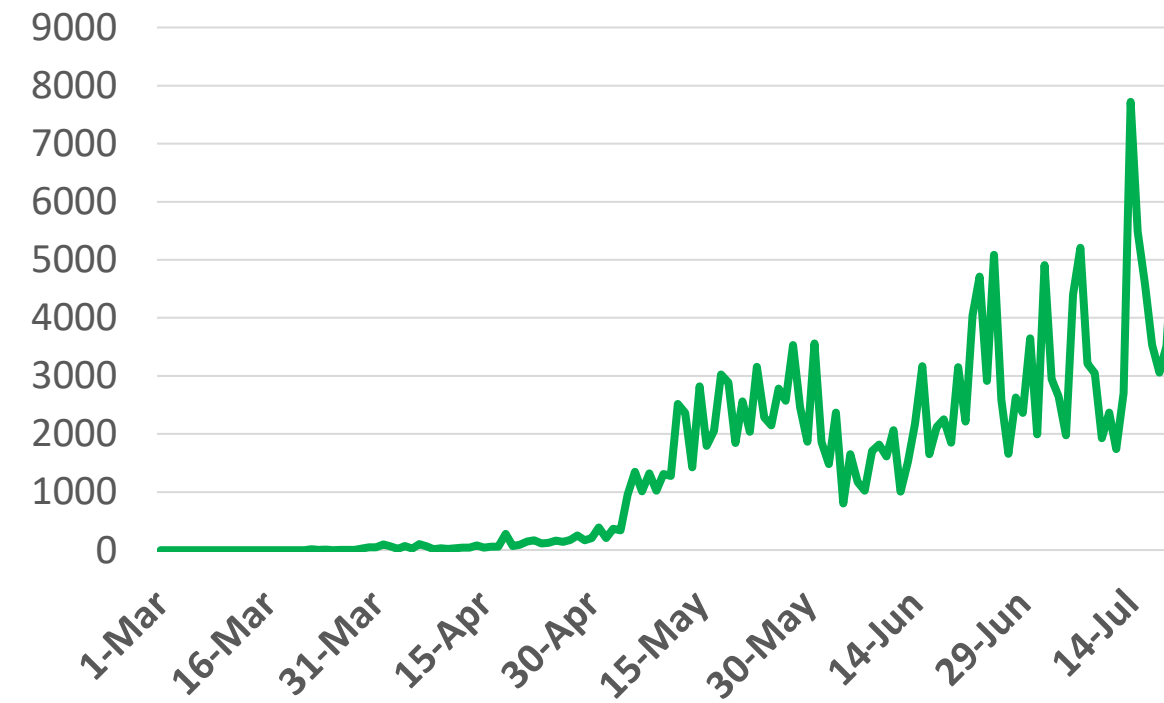
Figure 11: Comparative analysis of the distribution of COVID19 newly recovered cases in GCC Countries

UAE



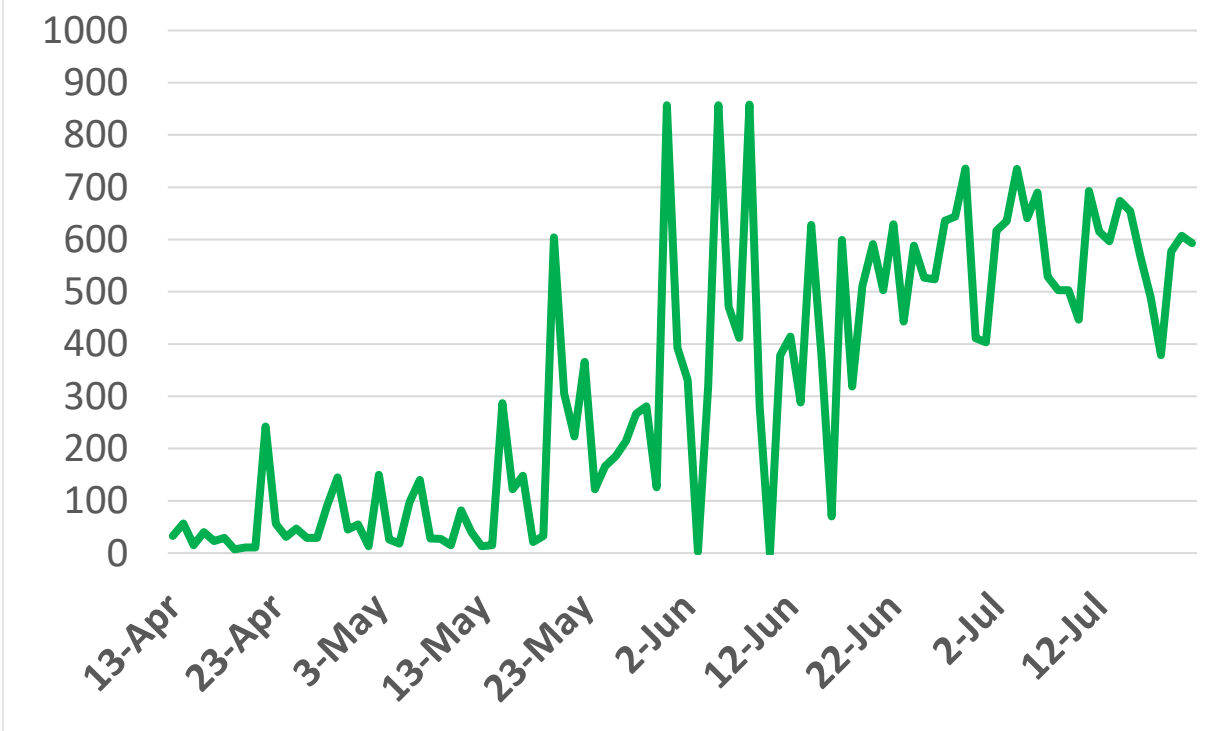
Source : National Emergency Crisis and Disaster Management Authority

KSA



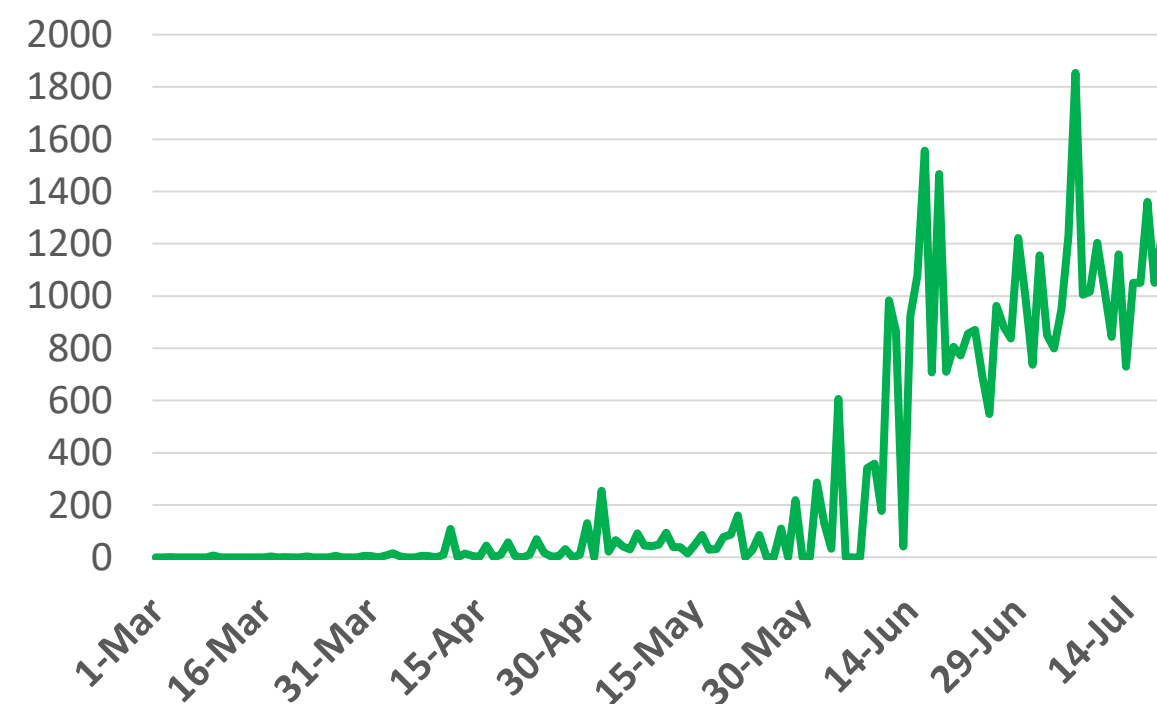
Source : KSA ministry of health

Bahrain



Source : GCCStat

Oman



Source : Oman ministry of health

Kuwait

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Source : Kuwait ministry of health

Qatar

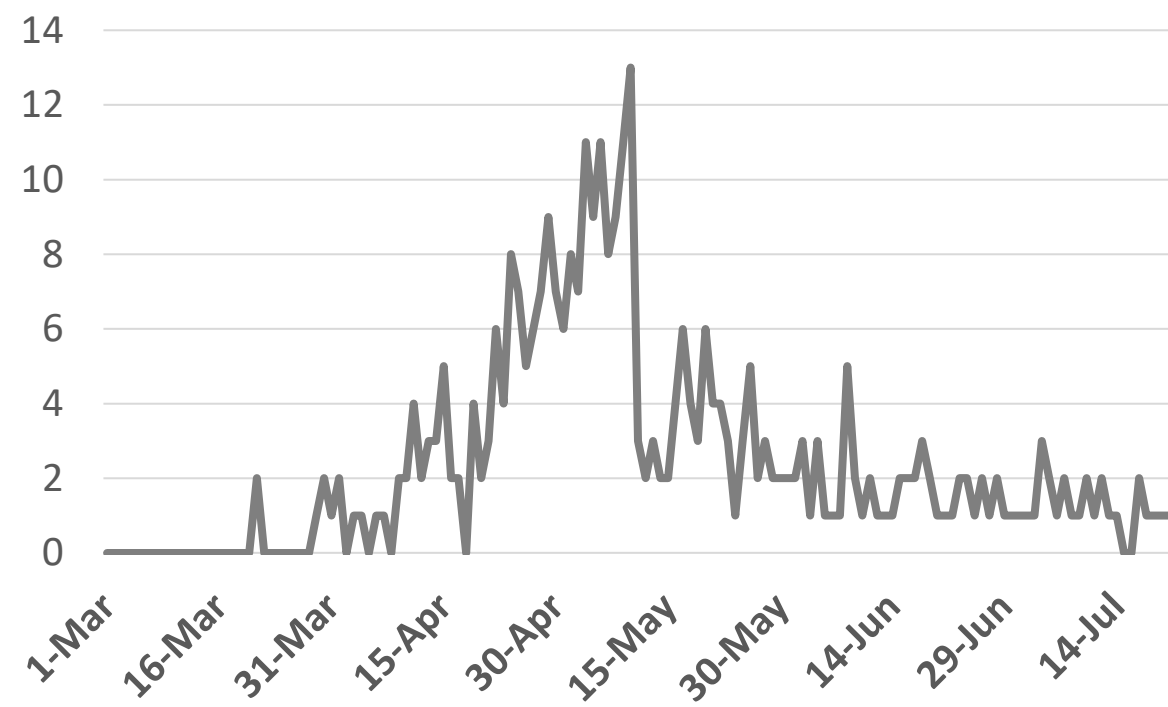


Source : Qatar ministry of health



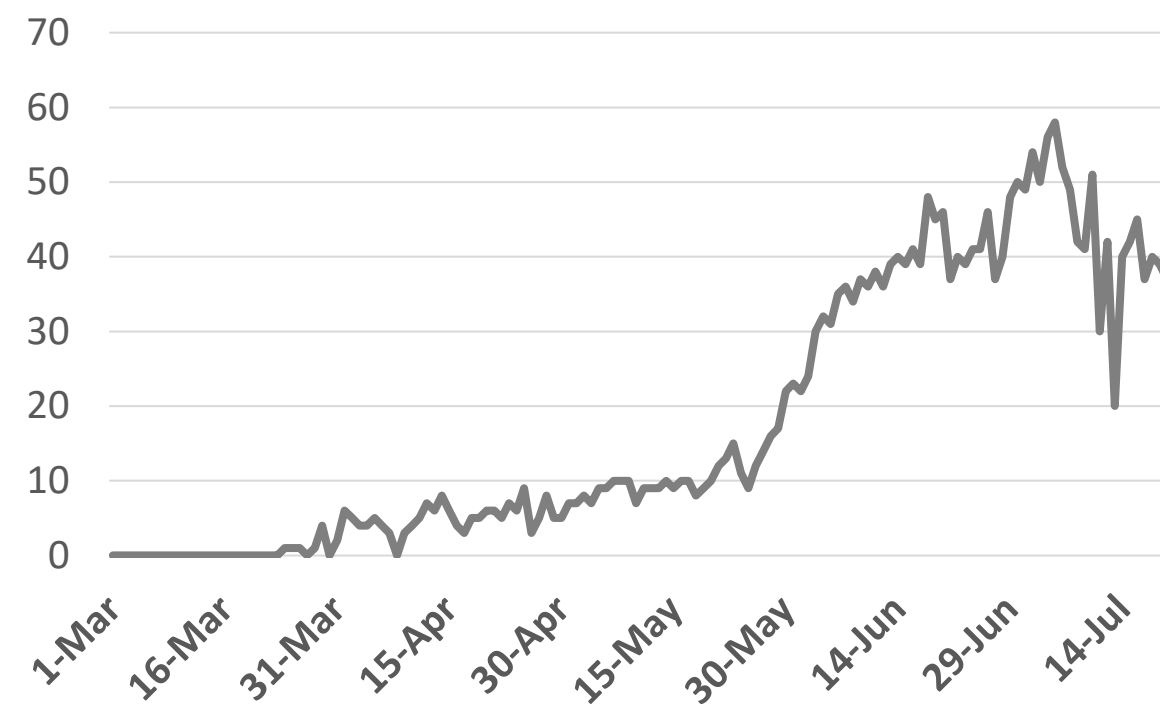
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries

UAE



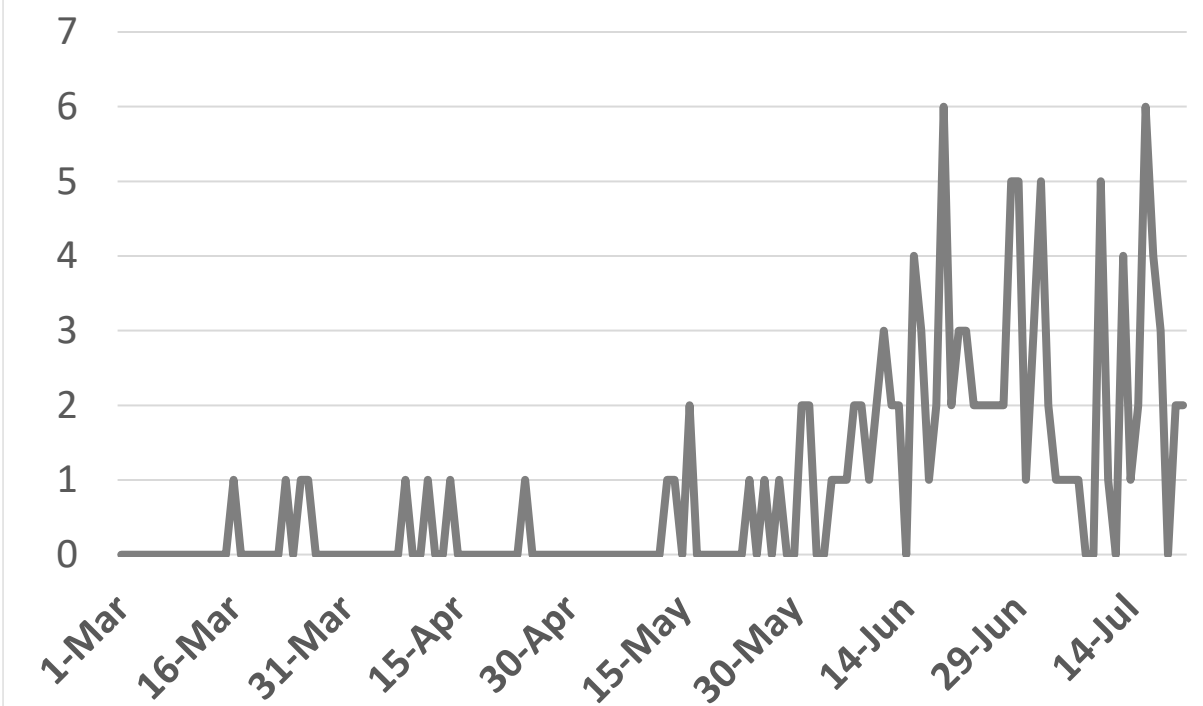
Source : National Emergency Crisis and Disaster Management Authority

KSA



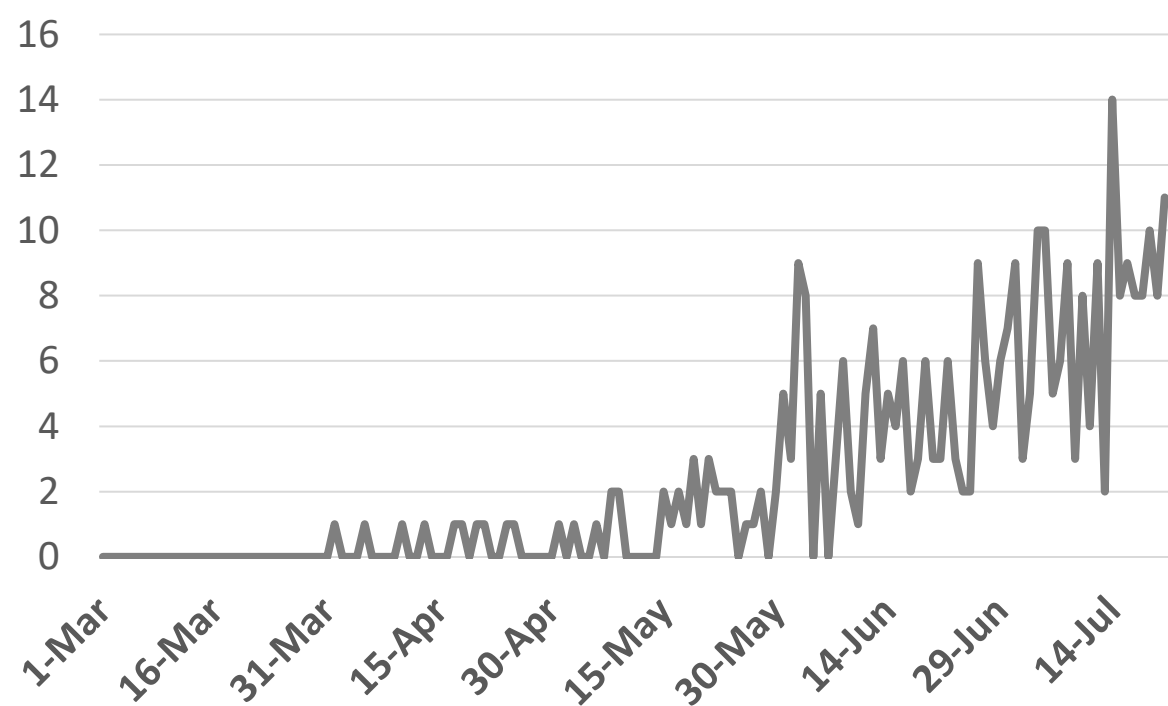
Source : KSA ministry of health

Bahrain



Source :WHO

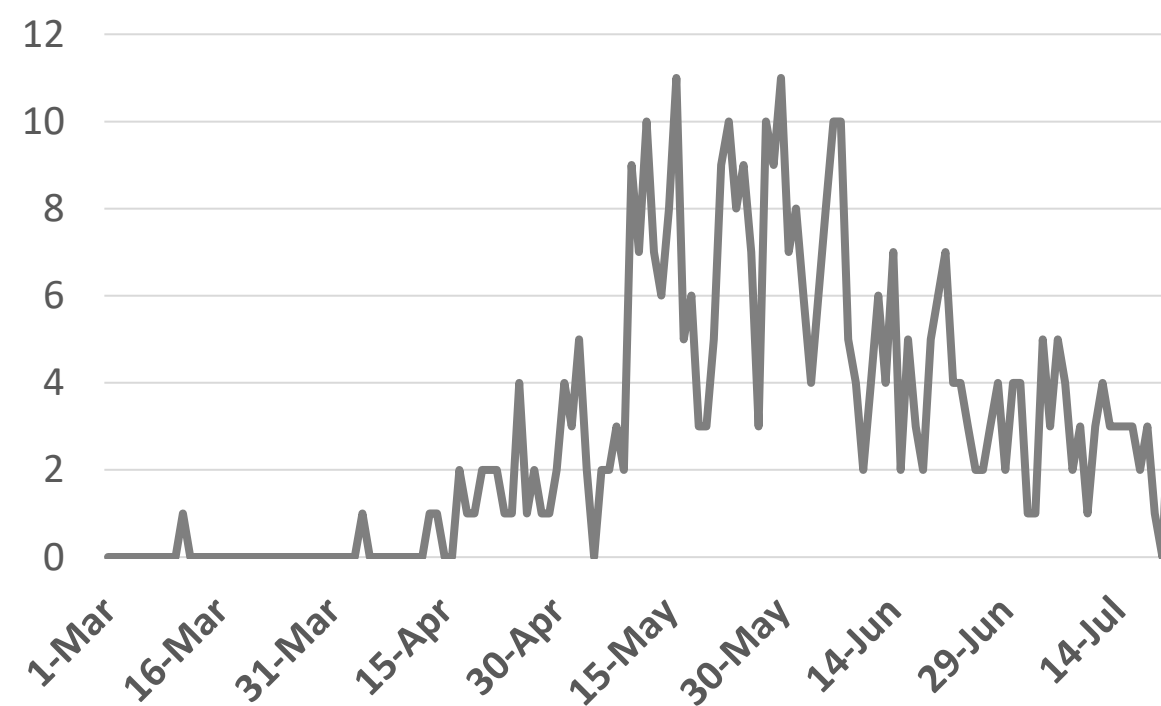
Oman



Source :Oman ministry of health

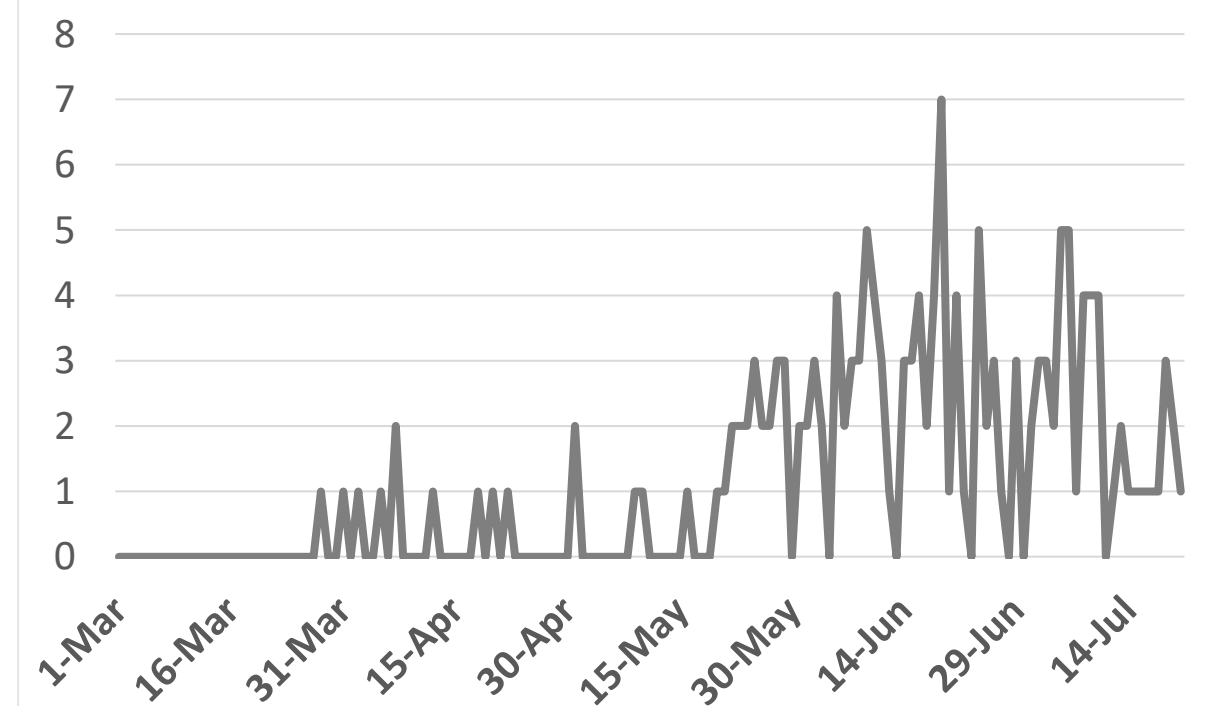
Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health



Article 1: Histopathology and Ultrastructural Findings of Fatal COVID-19 Infections in Washington State: A Case Series

Published

16 July 2020 [The LANCET](#)

- This case series aimed to provide a clinic-pathological report of severe COVID-19 cases by documenting histopathological variations and evidence of SARS-CoV-2 tissue tropism. The study was conducted using a sample of 14 people; median age of 73.5 years (range 42–84; IQR 67.5–77.25) who died from COVID-19 at the King County Medical Examiner's Office (Seattle, WA, USA) and Snohomish County Medical Examiner's Office (Everett, WA, USA) in negative-pressure isolation suites during February and March 2020. Patients showing positive ante-mortem or post-mortem SARS-CoV-2 outcomes were considered eligible for enrolment. Laboratory and clinical data were reviewed, and examination of tissues was undertaken using quantitative RT-PCR, electron microscopy, immunohistochemistry, and light microscopy.
- Patients were found to have clinically significant comorbidities, most commonly being obesity, metabolic disease including diabetes, obstructive sleep apnoea, chronic kidney disease, and hypertension. Five of the patients showed focal pulmonary microthrombi, and the major pulmonary results were diffuse alveolar damage in the acute or organising phases. Particles like Coronavirus were also discovered in the kidney, respiratory system and gastrointestinal tract. The findings offered a histological explanation for physiological derangements observed by clinicians in patients who died with COVID-19. Further investigations are needed to characterise the degree of extra-pulmonary injury caused by severe acute respiratory syndrome coronavirus-2 infection.





Article 2:

Risk Factors Associated With Mortality Among Patients With COVID-19 in Intensive Care Units in Lombardy, Italy

Published

15 July 2020 [JAMA](#)

- This retrospective, observational cohort study aimed to study the risk factors associated with mortality among critically ill patients with laboratory-confirmed coronavirus disease 2019 admitted to intensive care units in Lombardy, Italy.
- Around 3988 critically ill patients admitted from February 20 to April 22, 2020, with laboratory-confirmed COVID-19 were recruited in the study. The hospital mortality rate as of May 30 was 12 per 1000 patient-days after a median observation time of 70 days.
- Results showed that in the subgroup of the first 1715 patients, 865 (50.4%) had been discharged from the ICU, 836 (48.7%) had died in the ICU, and 14 (0.8%) were still in the intensive care unit; 915 patients died in the hospital for overall hospital mortality of (53.4%).
- Results of the study demonstrated that most critically ill patients with coronavirus disease 2019 in the intensive care unit needed invasive mechanical ventilation. While the mortality rate and absolute mortality rates were high, supportive care is the mainstay of treatment for critically ill patients.





Article 3: Factors Associated With Death in Critically Ill Patients With Coronavirus Disease 2019 in the US

Published

15 July 2020 [JAMA](#)

- This multi-centre cohort study observed the comorbidities, demographics, organ dysfunction, treatment, and outcomes of patients with COVID-19 admitted to ICUs across the United States. The study further assessed the factors associated with death and examined inter-hospital variation in outcomes and treatments of patients with COVID-19.
- The study included 2215 consecutive adult patients (≥ 18 years of age) with laboratory-confirmed COVID-19 (detected by nasopharyngeal or oropharyngeal swab) admitted to a participating ICU for illness related to COVID-19 at 65 sites between March 4 and April 4, 2020. The mean (SD) age was 60.5 (14.5) years, and 1436 (64.8%) of them included men.
- Results suggest that 784 (35.4%) died within 28 days, with wide variation among hospitals. Factors associated with death included male sex, older age, coronary artery disease, obesity, cancer, acute organ dysfunction, and admission to a hospital with fewer intensive care unit beds.
- Thus, the study identified clinical, demographic, and hospital-level factors associated with death in critically ill patients with COVID-19 that may be utilized to facilitate the identification of medications and supportive therapies that can improve outcomes.
- Future research shall assess the patients with COVID-19 at greatest risk of adverse outcomes and seek to discover medications or supportive therapies that help in improving these outcomes





Article 4: Impact of Delays on Effectiveness of Contact Tracing Strategies for COVID-19: A Modelling Study

Published

16 July 2020 [The LANCET](#)

- This study aimed to identify key factors for a contact tracing strategy to be successful, through evaluation of the impact of completeness and timeliness in different steps of contact tracing strategy utilizing stochastic mathematical model with explicit time delays between the time of infection and symptom onset, and between symptom onset, diagnosis by testing, and isolation (testing delay).
- This analysis addressed that strategy of contact tracing can solely contribute to the COVID-19 containment if it can be organised, such that delays in the process from symptom onset to isolation of the index case and their contacts are very short.
- Conventional contact tracing processes are often required to be reviewed and streamlined, whereas the mobile app technology might offer a tool for speeding up this process.
- Reducing delay in testing people for SARS-CoV-2 should be a key objective of a contact tracing strategy.



THANK YOU

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