

SCIENTIFIC RESEARCH MONITORING ON COVID-19

4 NOVEMBER 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 546)

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



Statistics

[Slide 4](#)



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).

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Clinical Features

Laboratory Findings Associated with Severe Illness and Mortality Among Hospitalized Individuals with Coronavirus Disease 2019 in Eastern Massachusetts

Treatment

Ventilation Management and Clinical Outcomes in Invasively Ventilated Patients with COVID-19 (PRoVENT-COVID): A National, Multicentre, Observational Cohort Study

Clinical Features

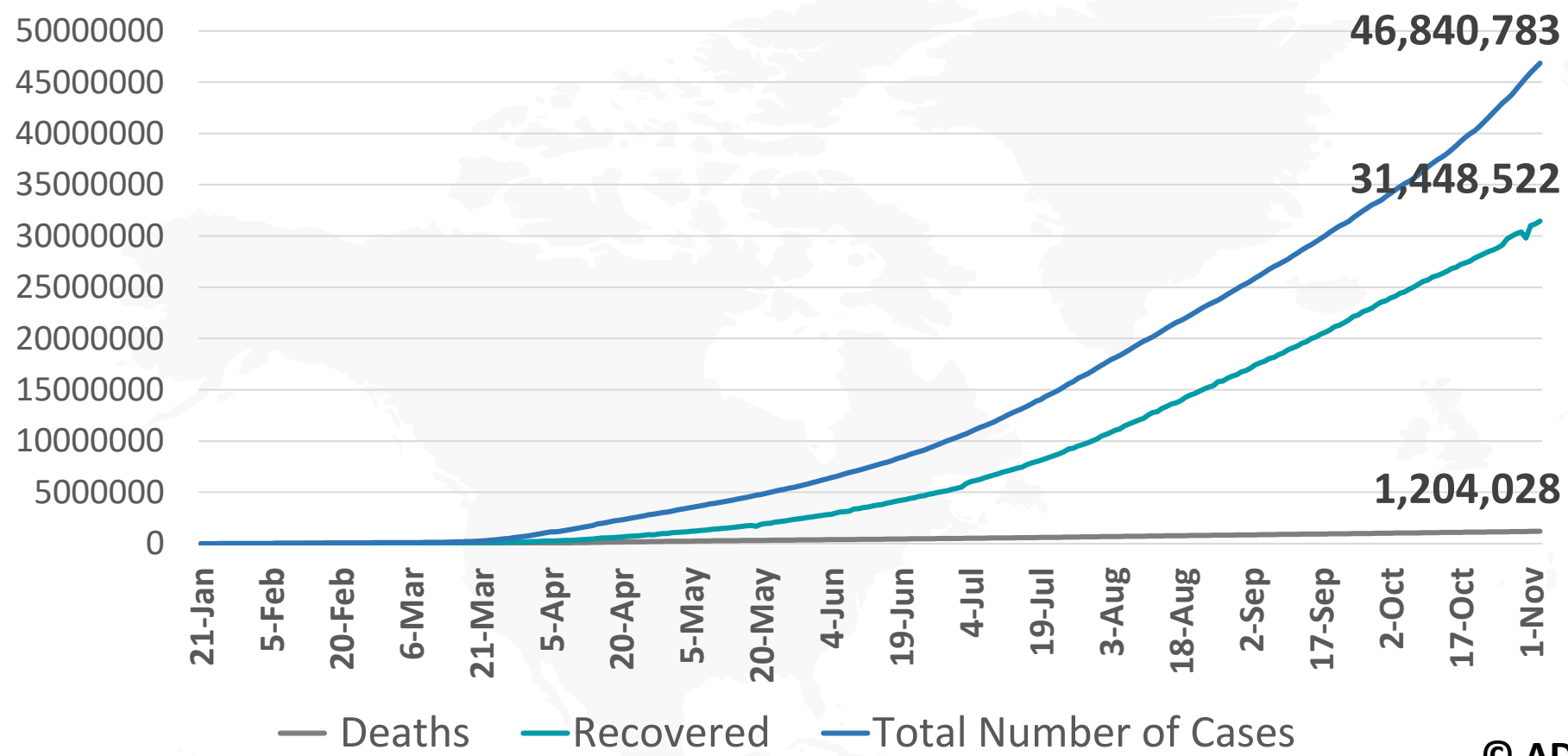
Residential Context and COVID-19 Mortality Among Adults Aged 70 Years and Older in Stockholm: A Population-Based, Observational Study Using Individual-Level Data

Immunology

High Serum IL-6 Values Increase the Risk of Mortality and the Severity of Pneumonia in Patients Diagnosed with COVID-19 External Icon.

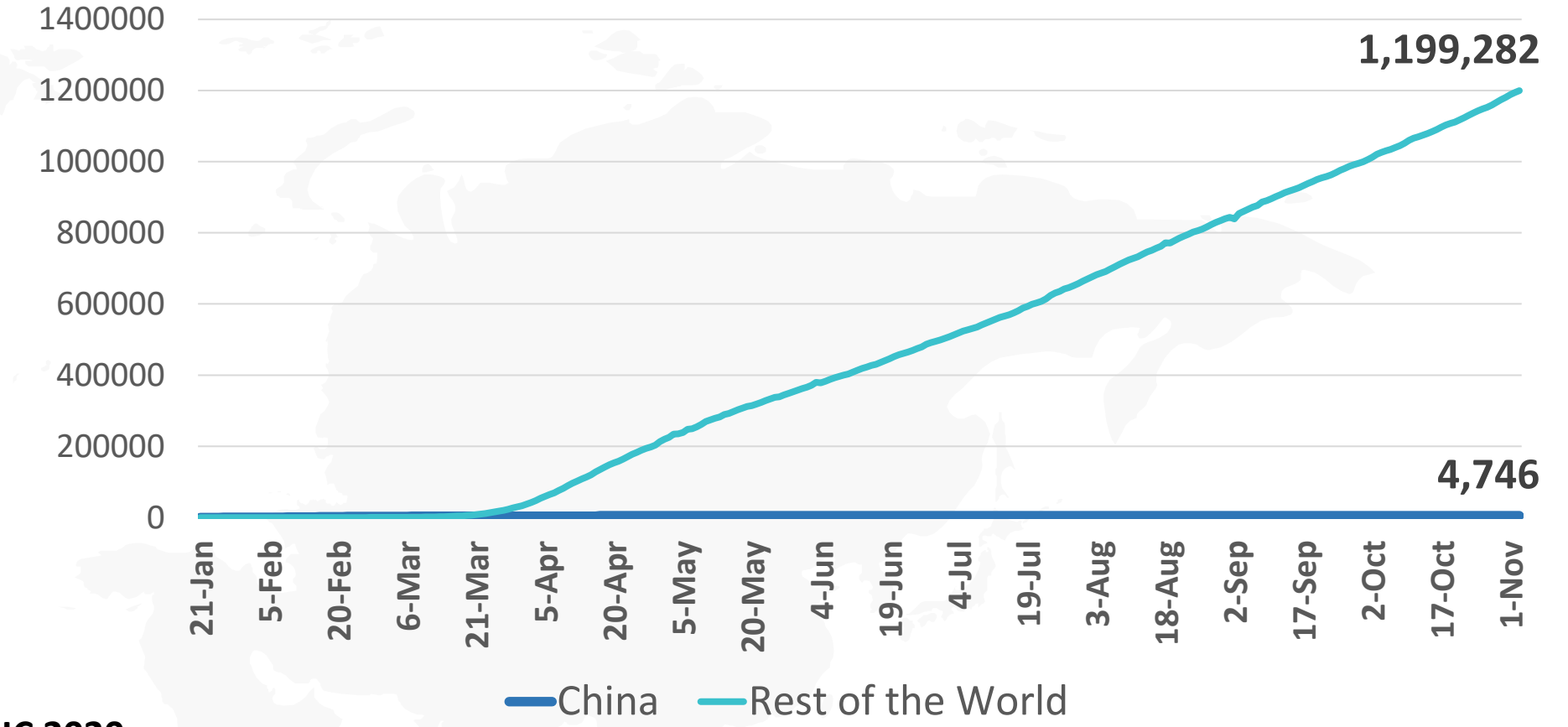


Figure 1: Total Number of Infected, Recovered, and Death Cases



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Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)



Note: the number of recovered cases in 31st October recorrected from 30 million to 29 million in Johns Hopkins website

Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

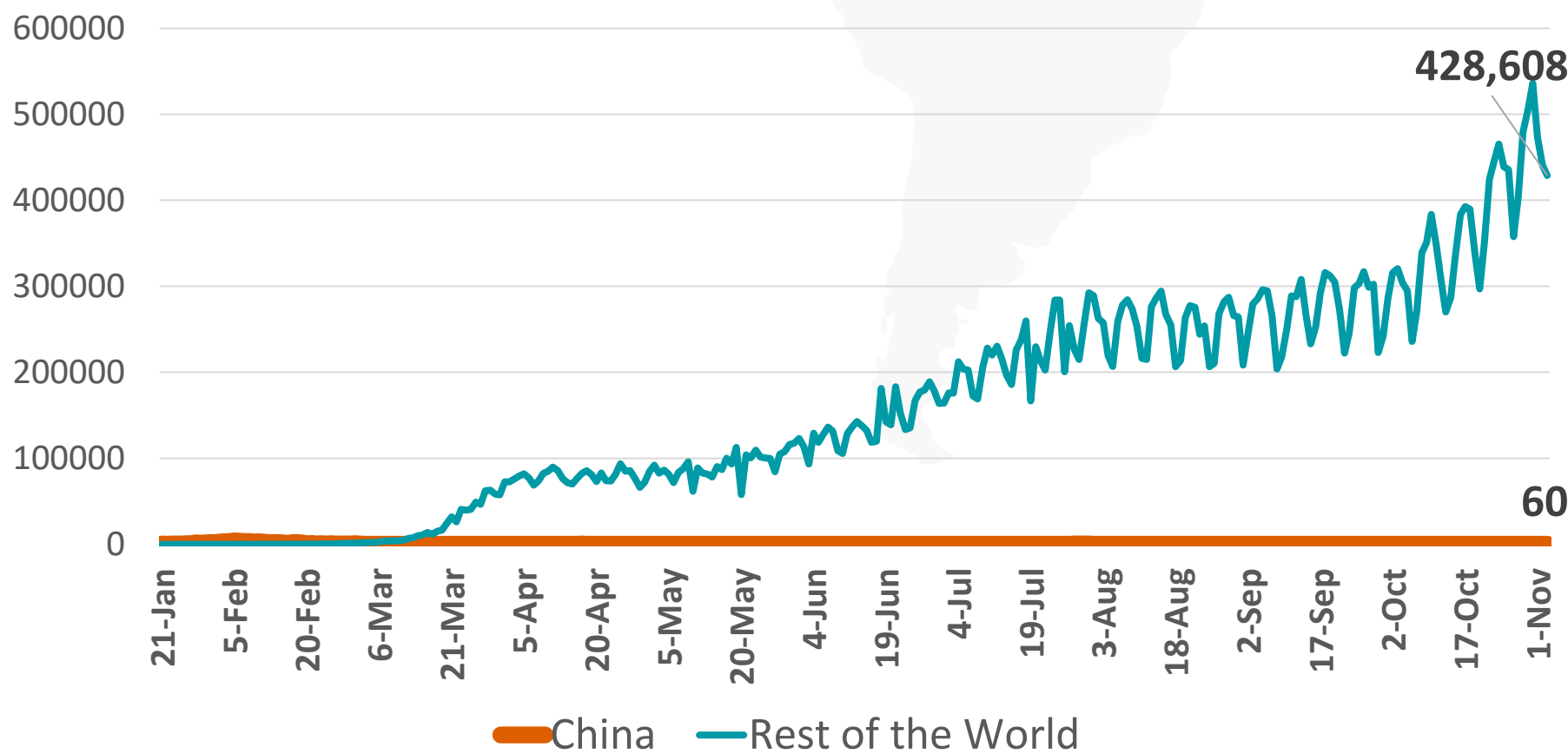


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)

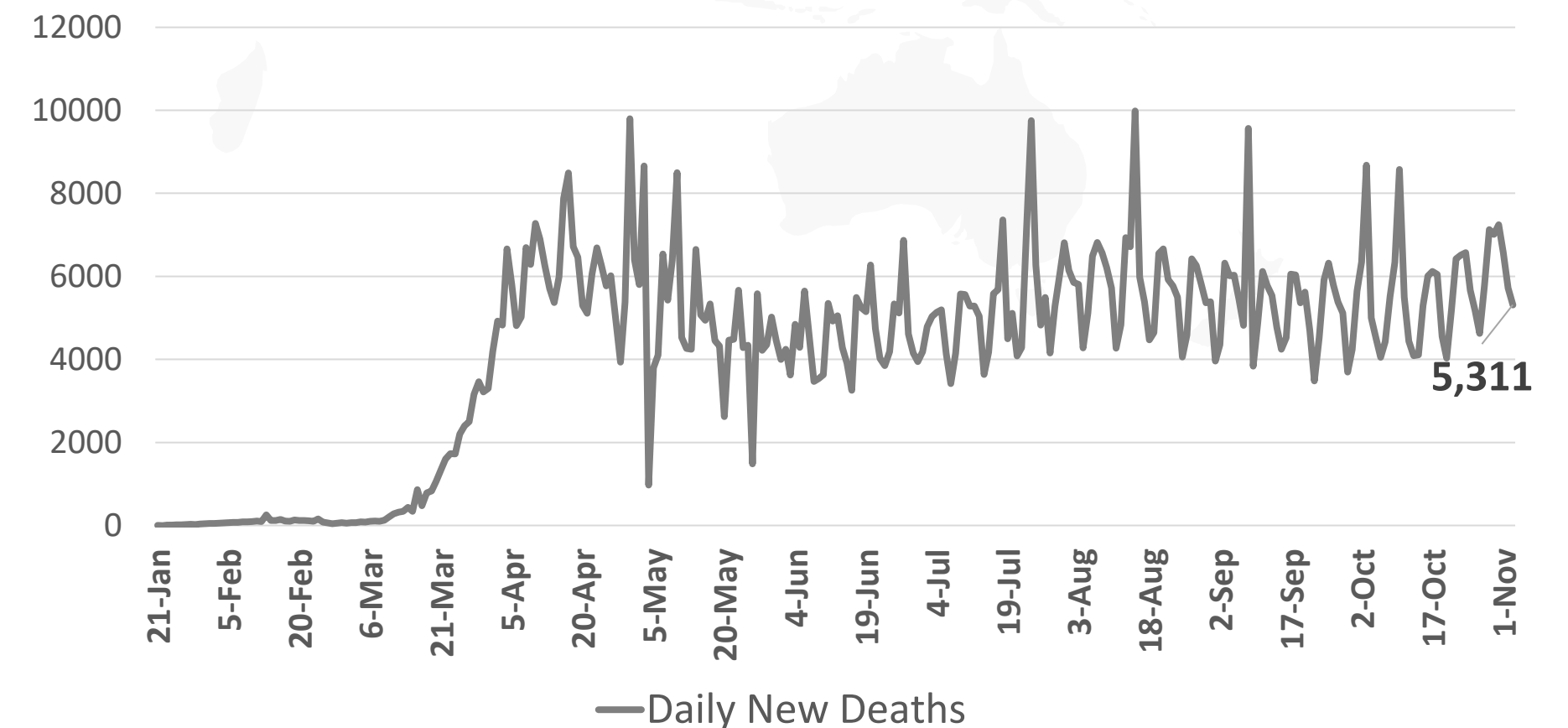
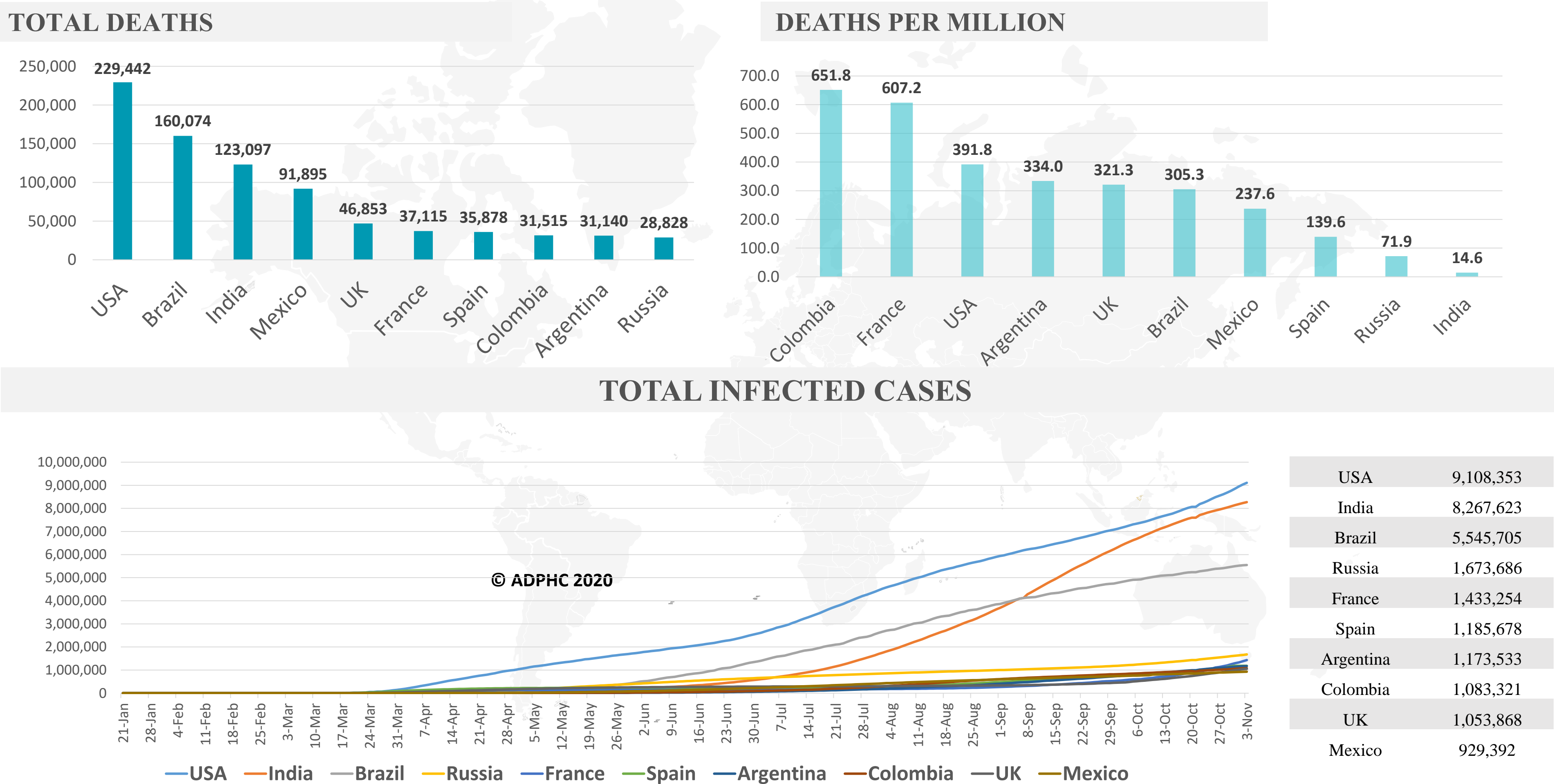
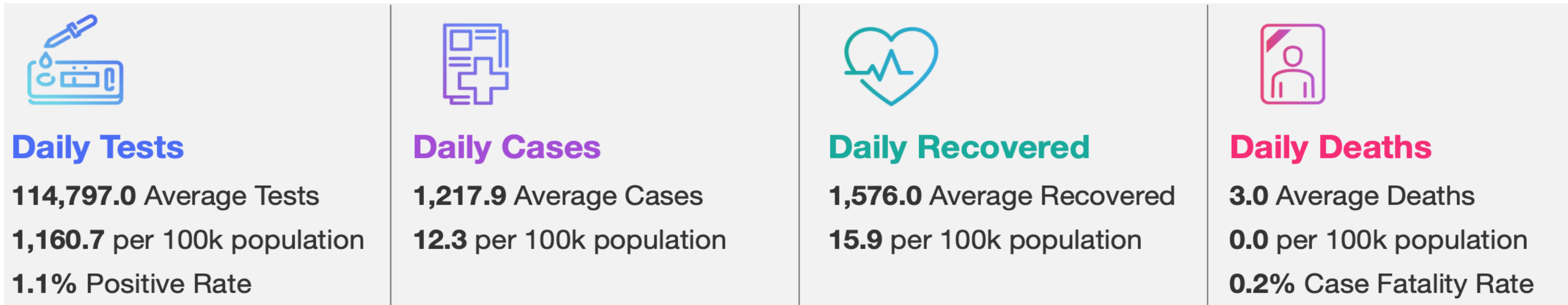


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19



USA	9,108,353
India	8,267,623
Brazil	5,545,705
Russia	1,673,686
France	1,433,254
Spain	1,185,678
Argentina	1,173,533
Colombia	1,083,321
UK	1,053,868
Mexico	929,392

Figure 6: COVID-19 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

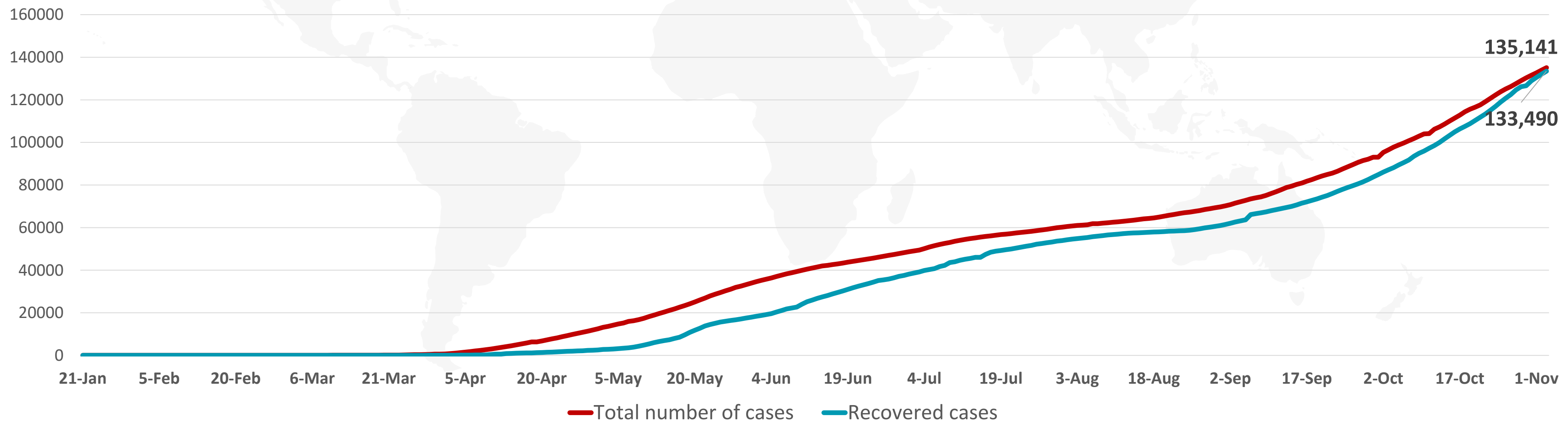
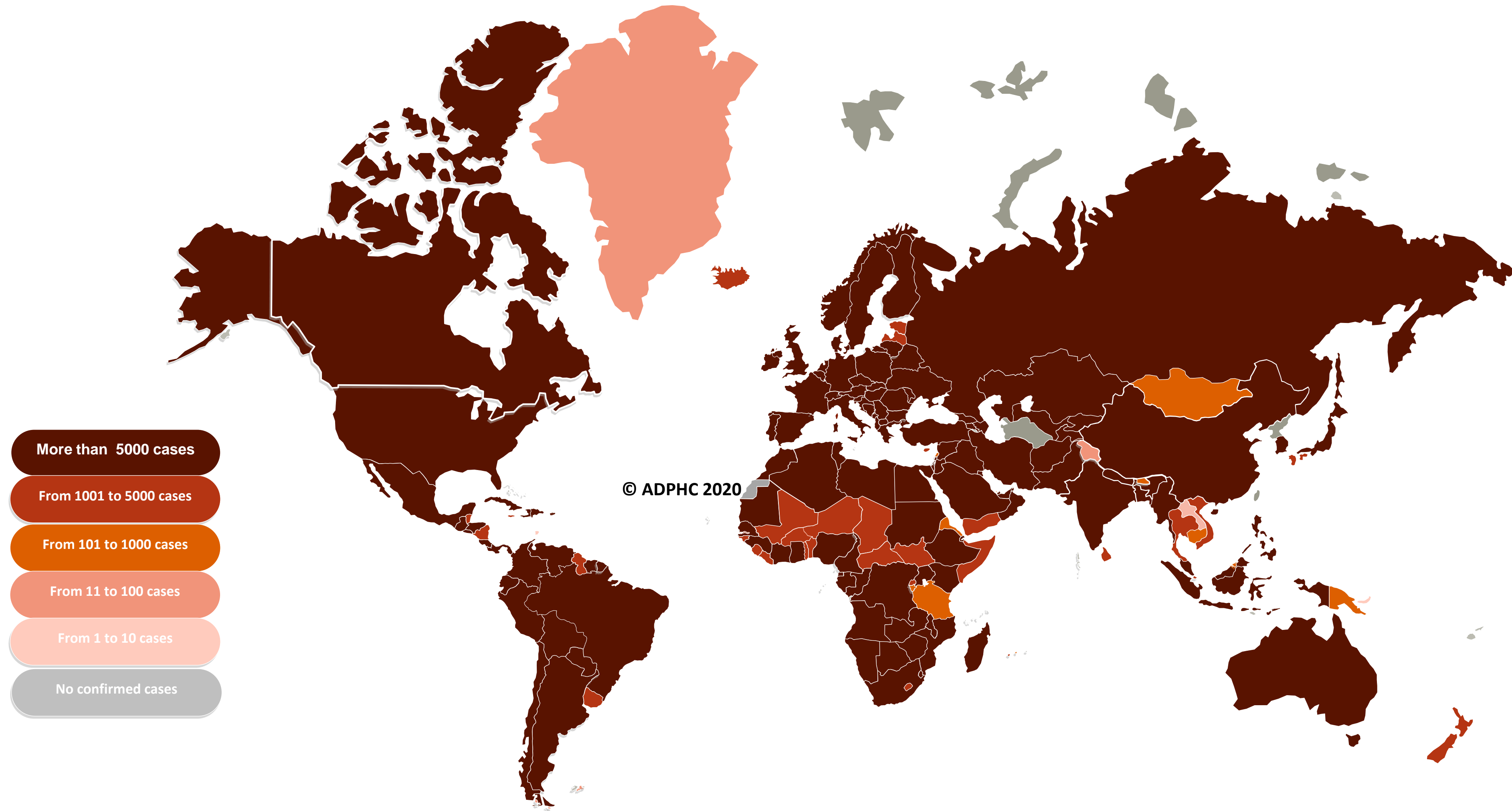


Figure 7A : Global Distribution of COVID-19 Cases



More than 5000 cases

From 1001 to 5000 cases

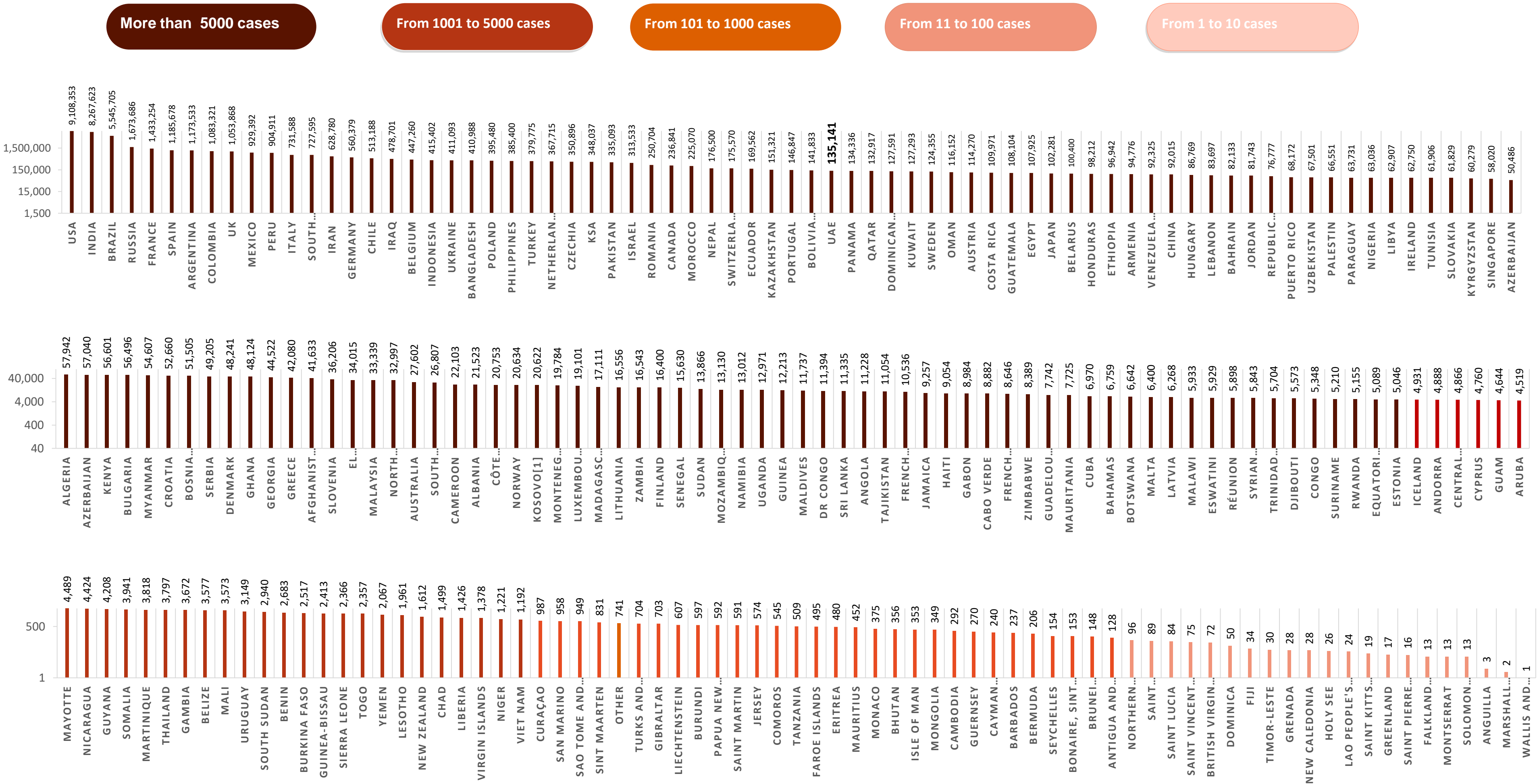
From 101 to 1000 cases

From 11 to 100 cases

From 1 to 10 cases

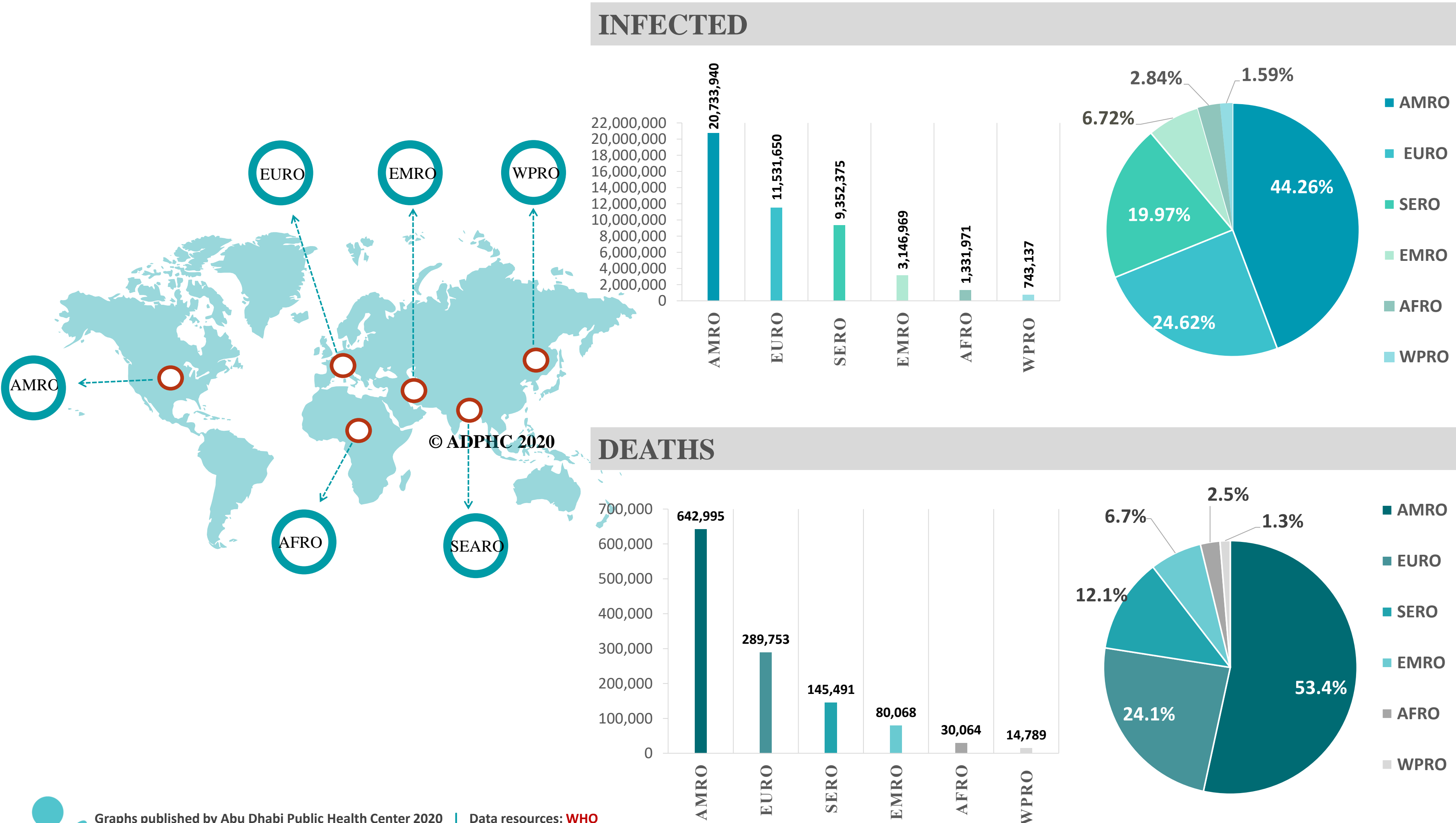
No confirmed cases

Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



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

Figure 8: Global Distribution of COVID-19 Cases per Region



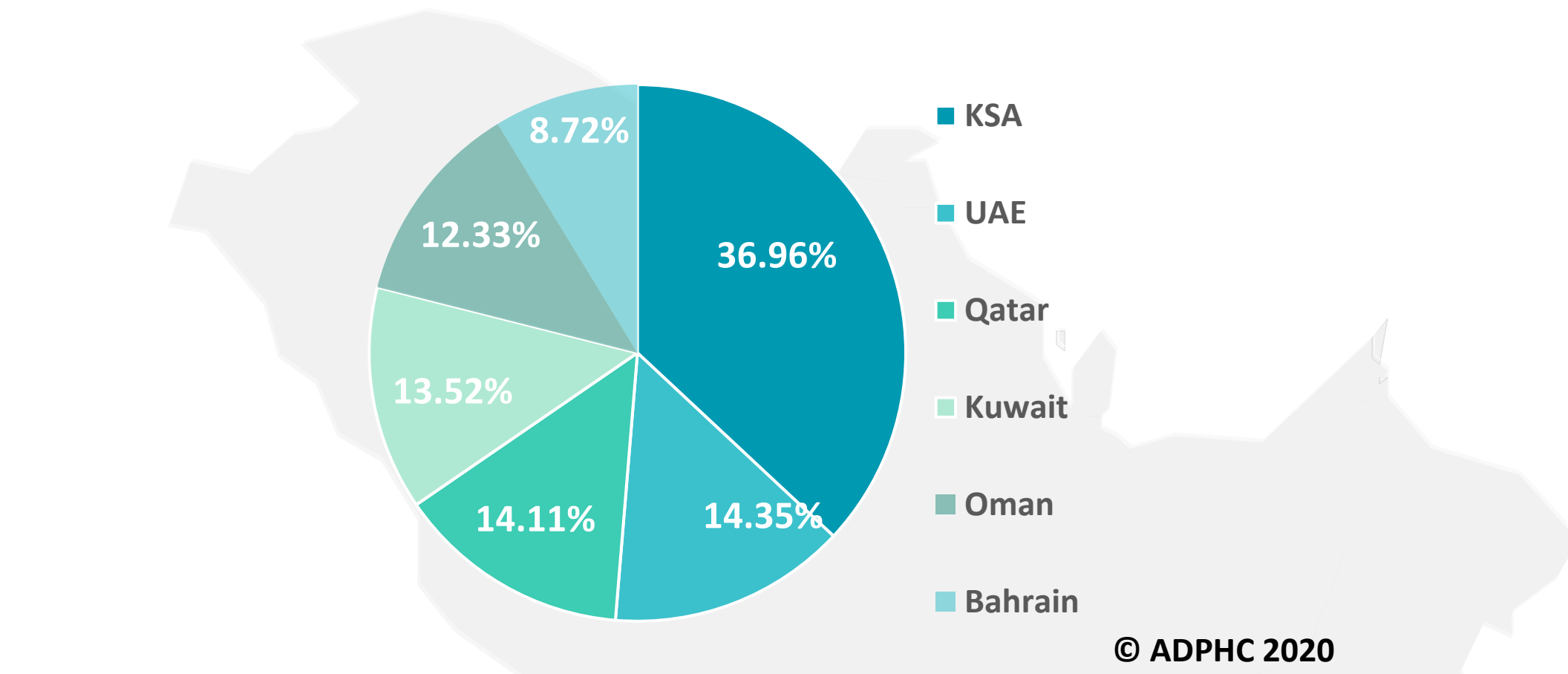
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: [WHO](#)

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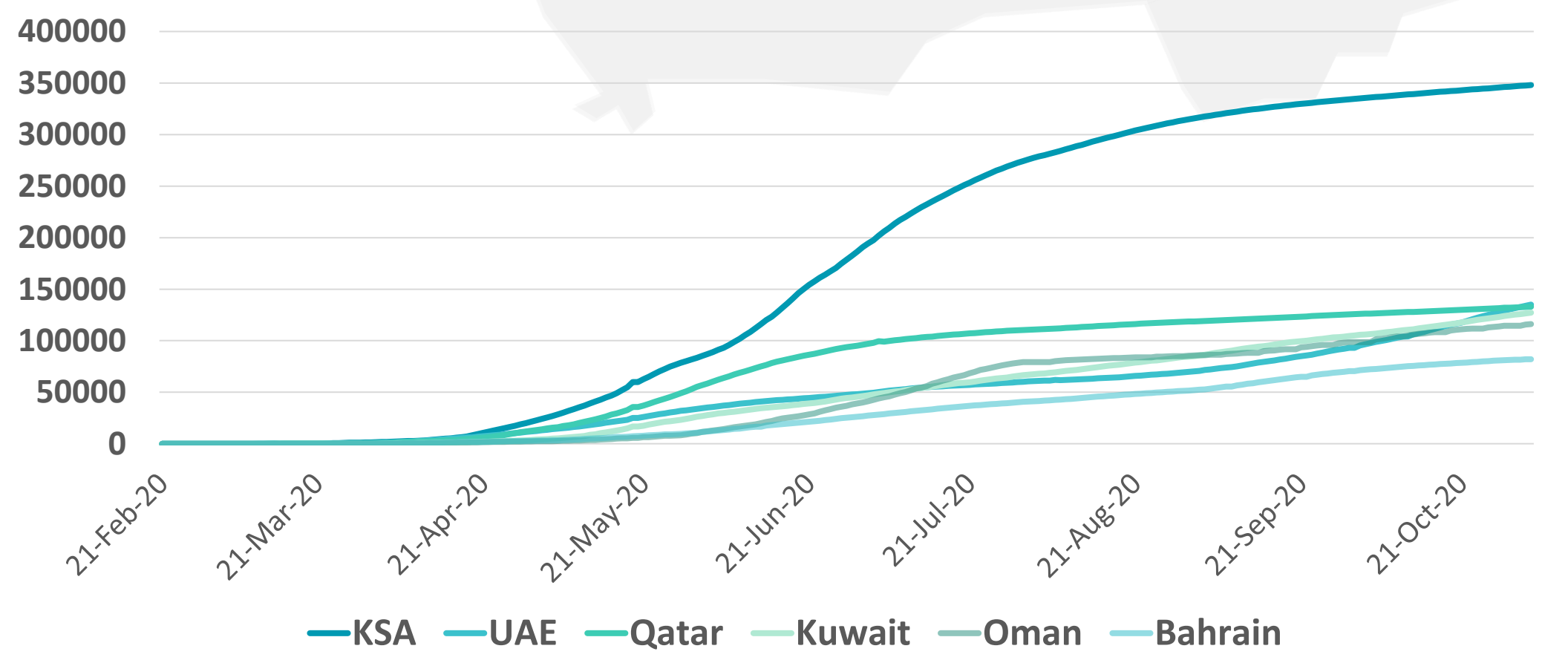
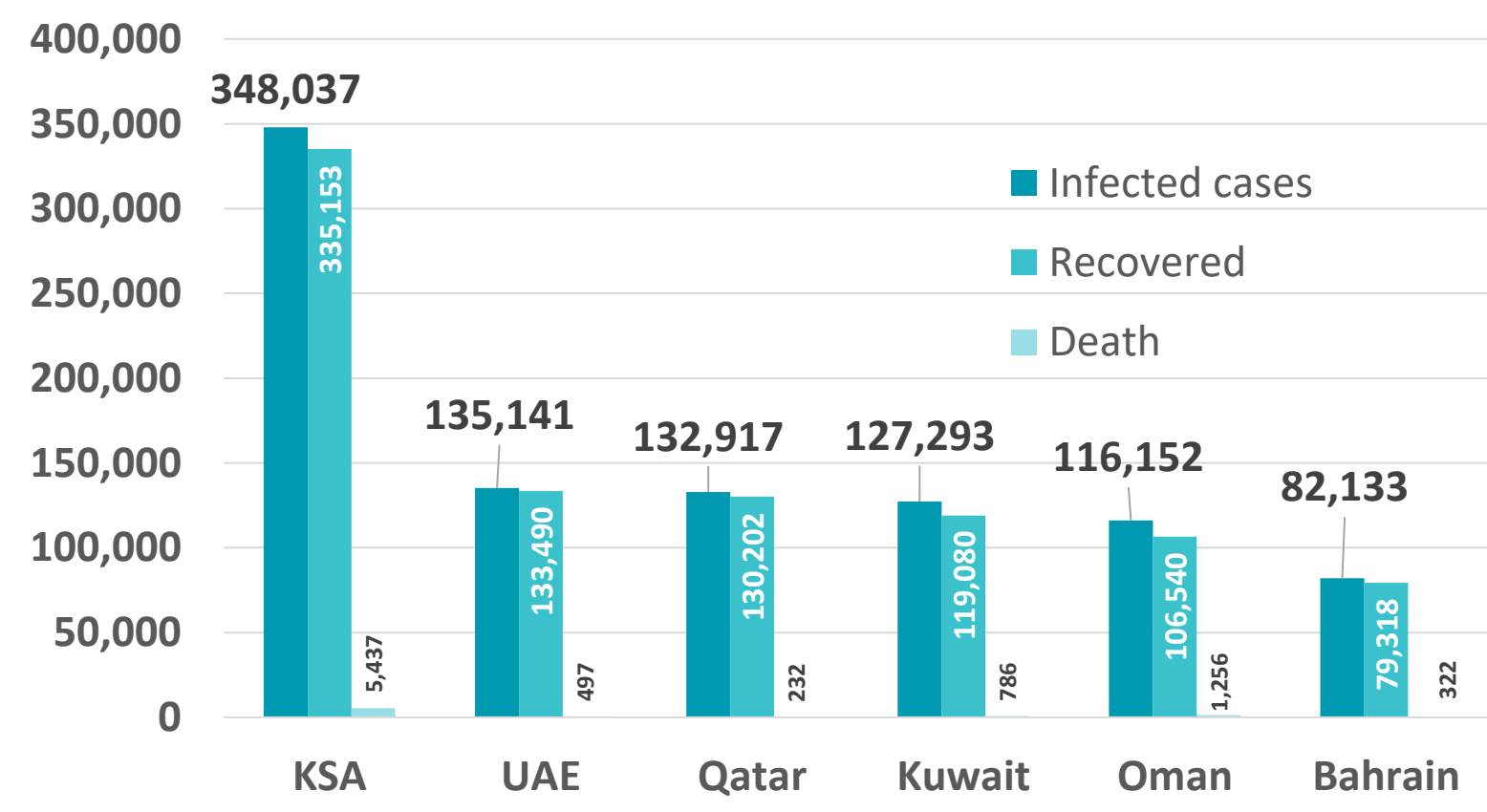
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Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

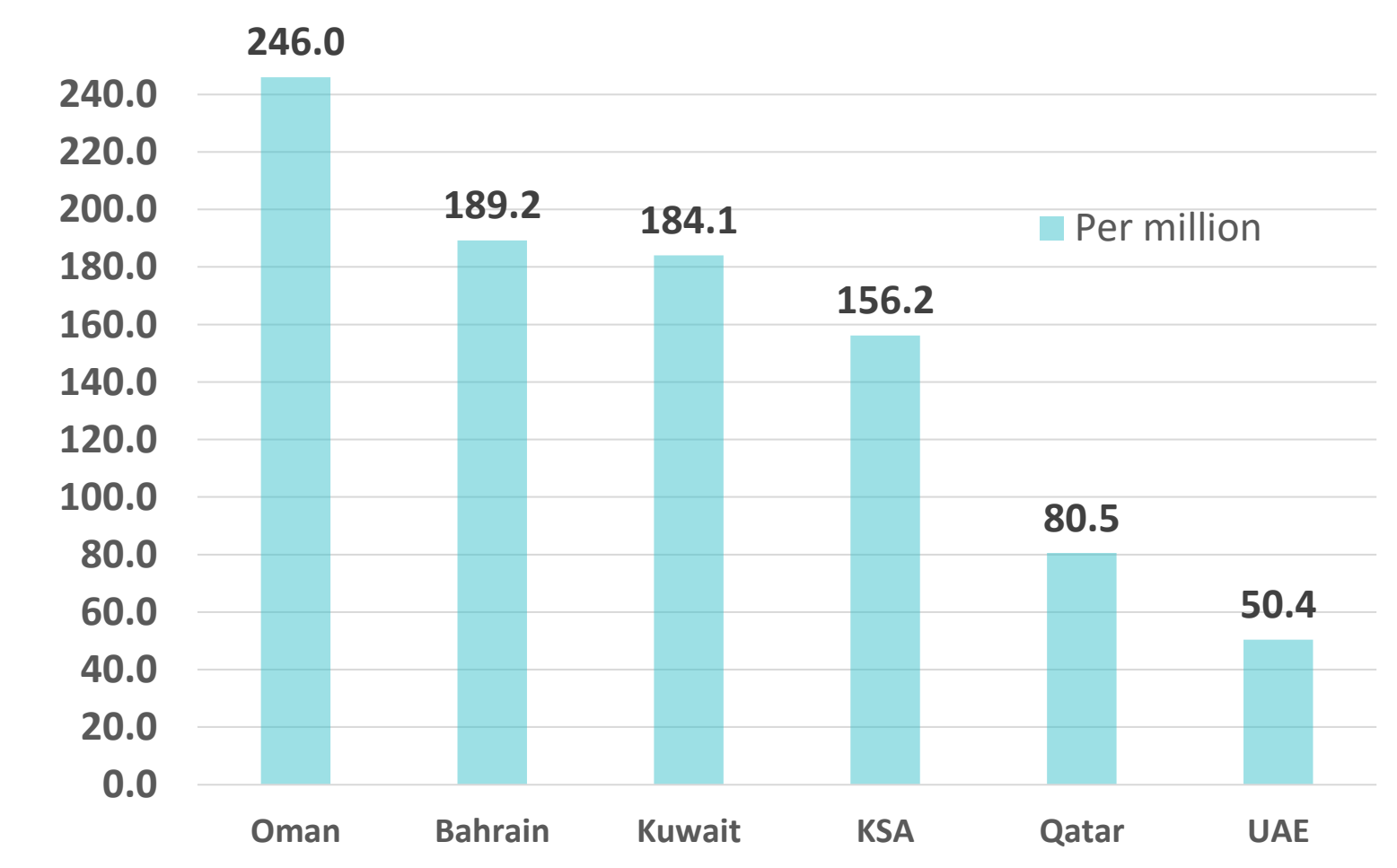
TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: [John Hopkins](#), [WHO](#)

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Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

UAE



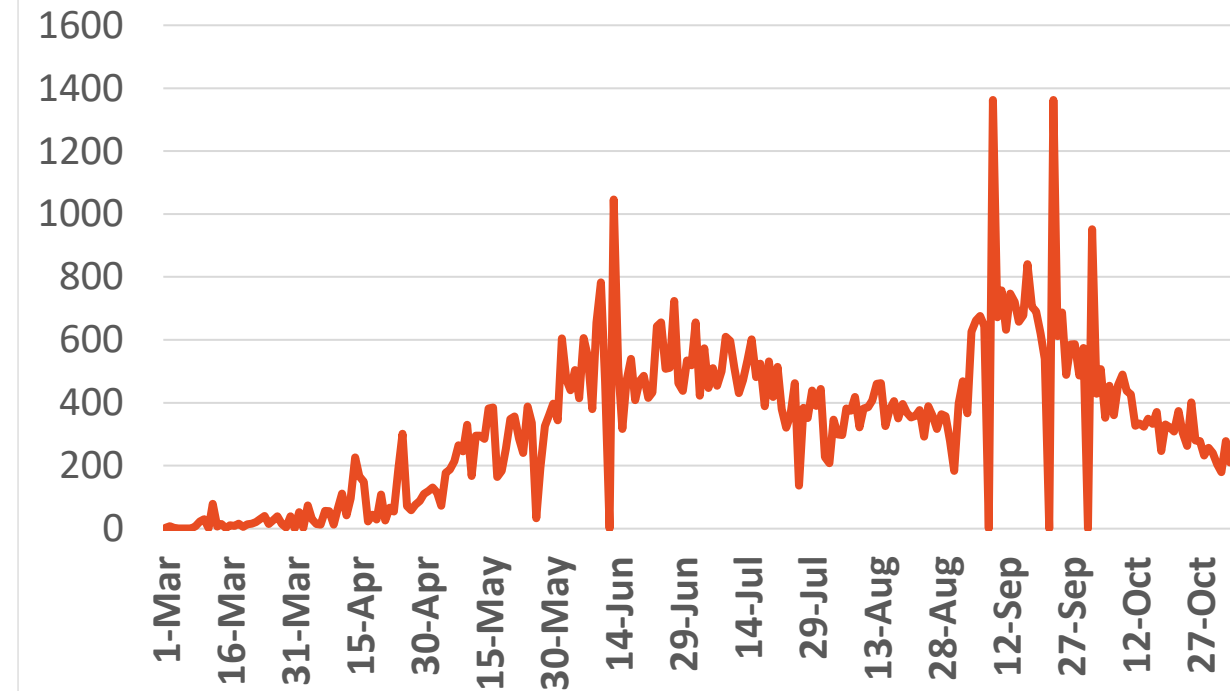
Source : National Emergency Crisis and Disaster Management Authority

KSA



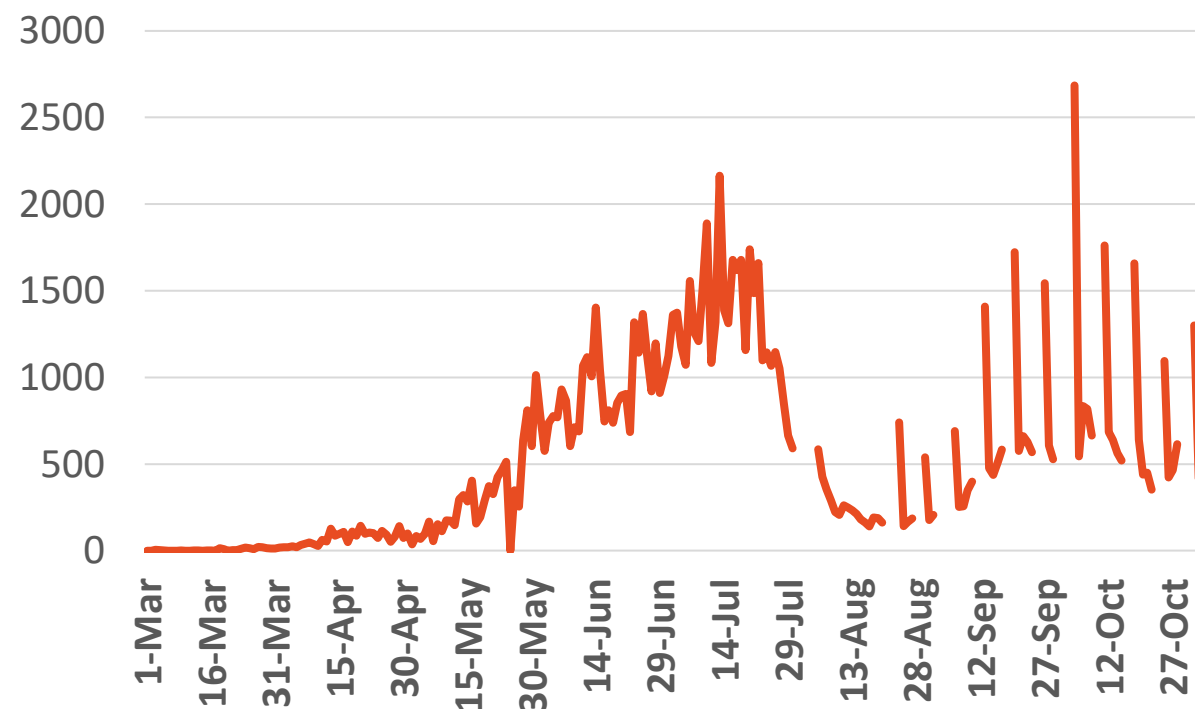
Source : KSA ministry of health

Bahrain



Source :WHO

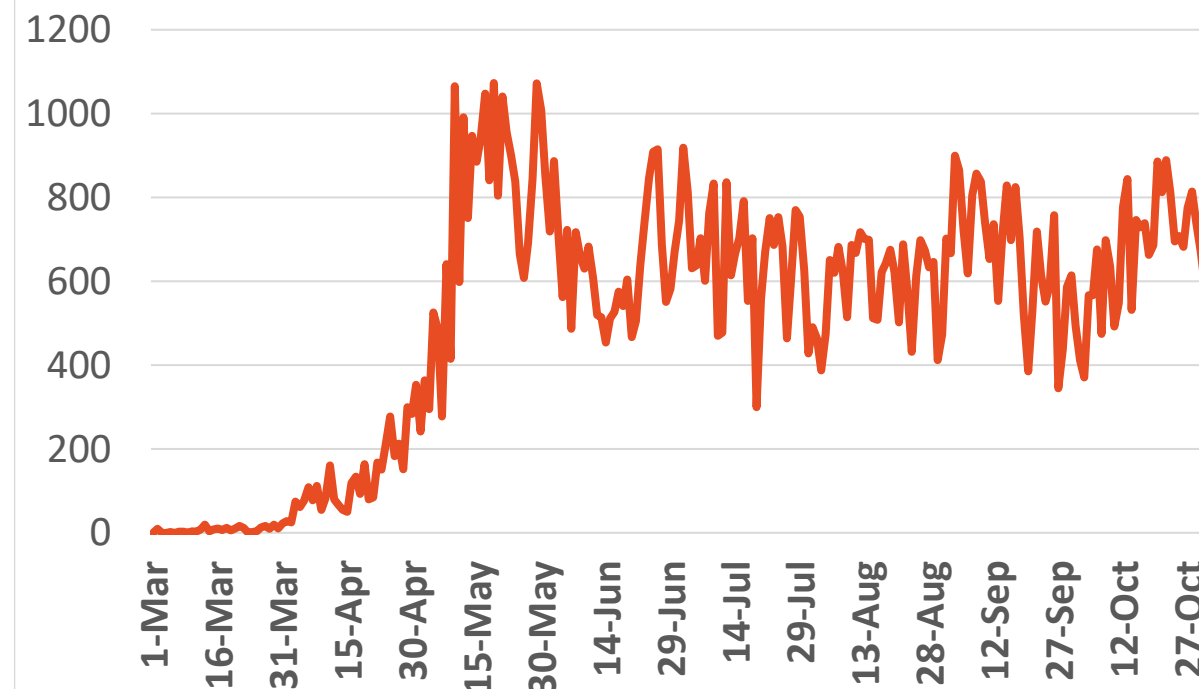
Oman



Source :Oman ministry of health

Kuwait

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Source : Kuwait ministry of health

Qatar



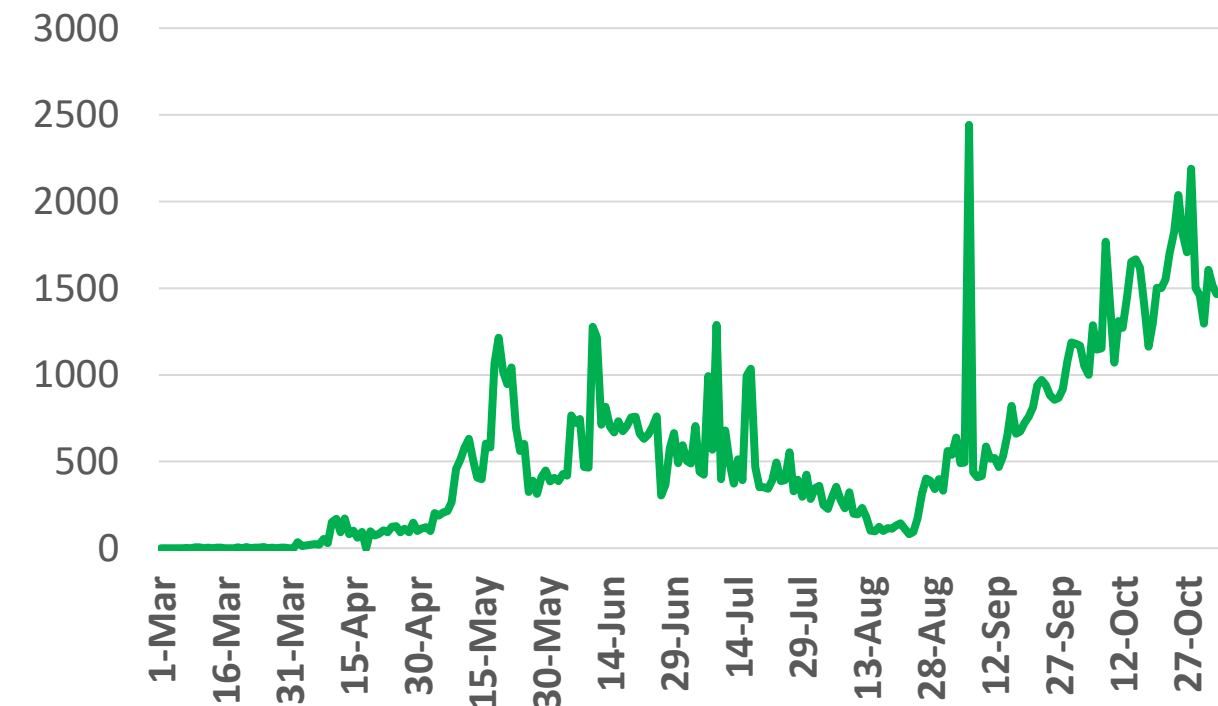
Source : Qatar ministry of health

*No announced statistic data from 31 July to 4 August, 21,23,28,30 August 2, 4, 5,11,12,18,19,25, 26,30 September,1,2,9,10,16,17,23 & 24 October
*No announced statistic data on weekends and official holidays.



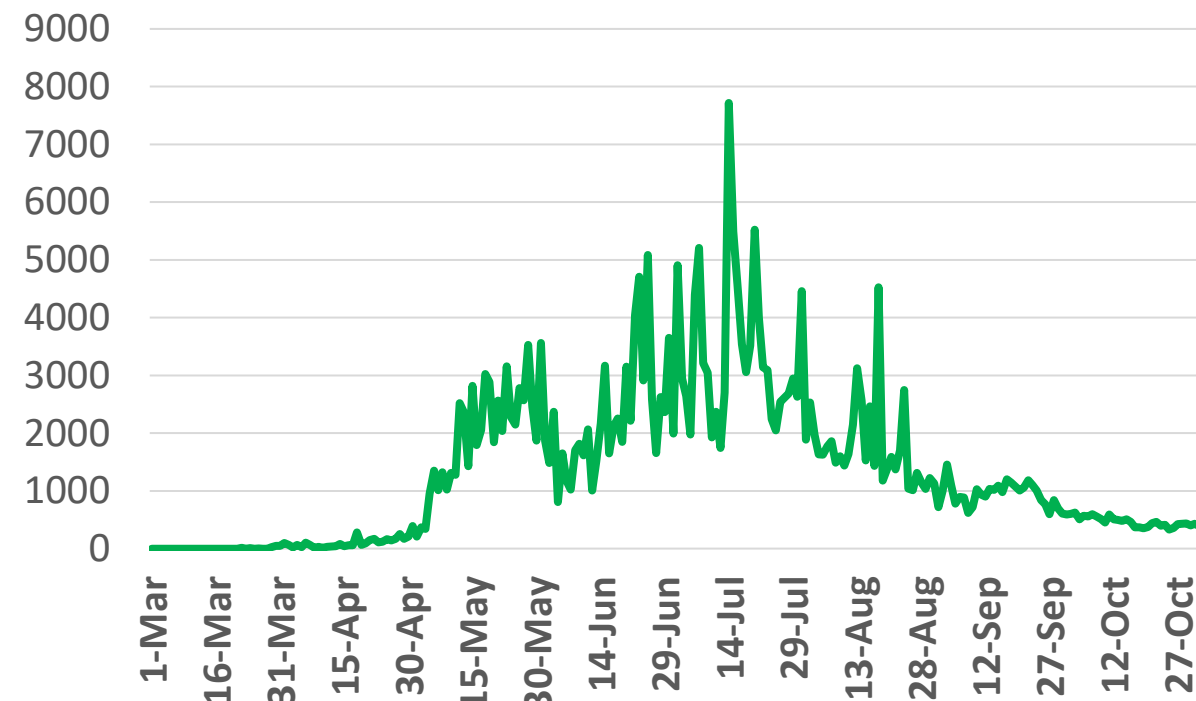
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



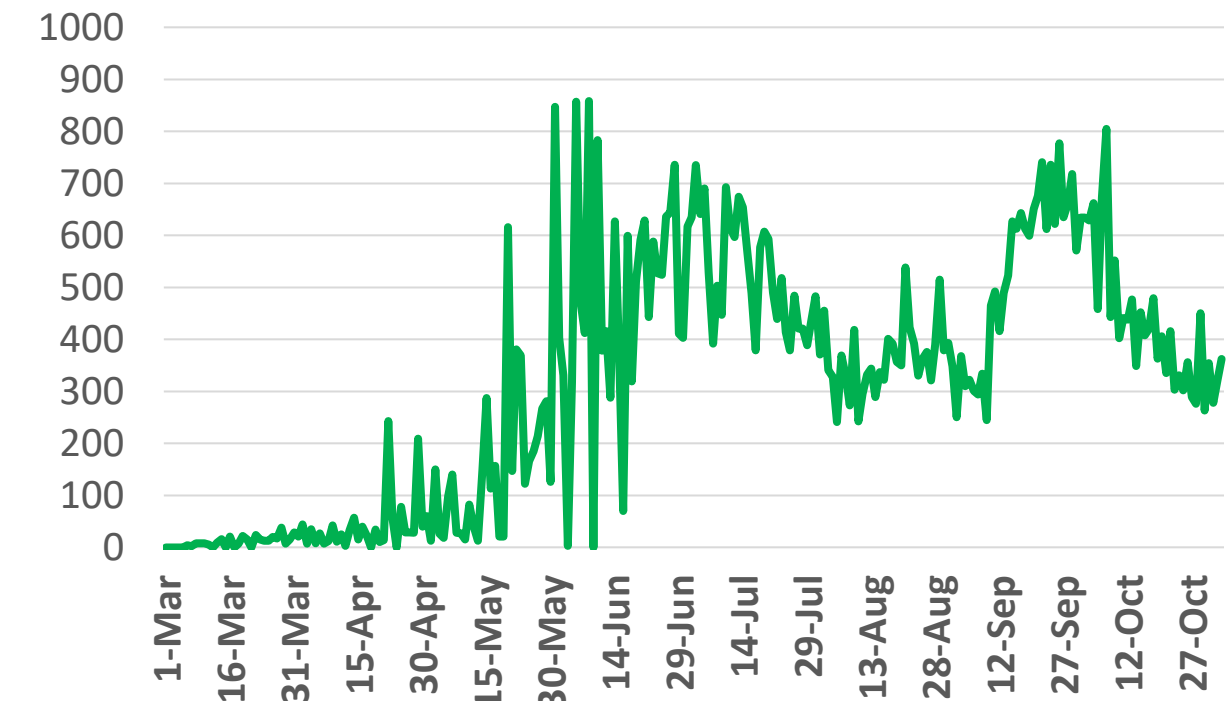
Source : National Emergency Crisis and Disaster Management Authority

KSA



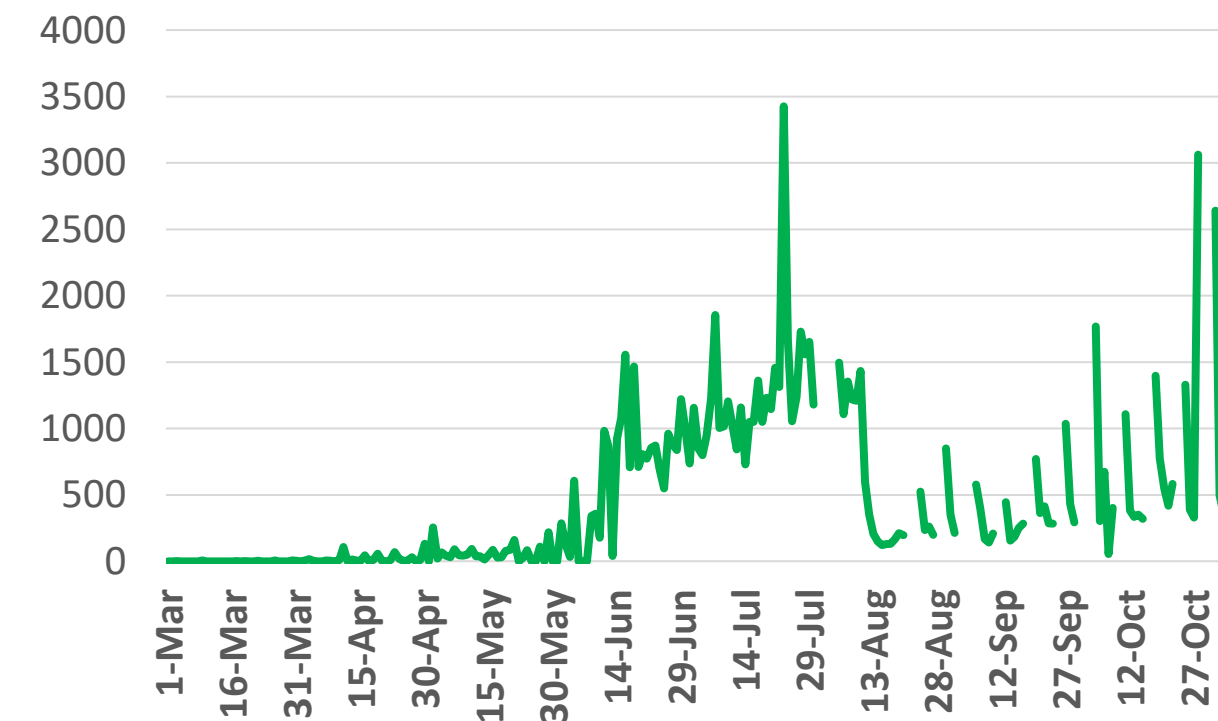
Source : KSA ministry of health

Bahrain



Source : Bahrain ministry of health

Oman



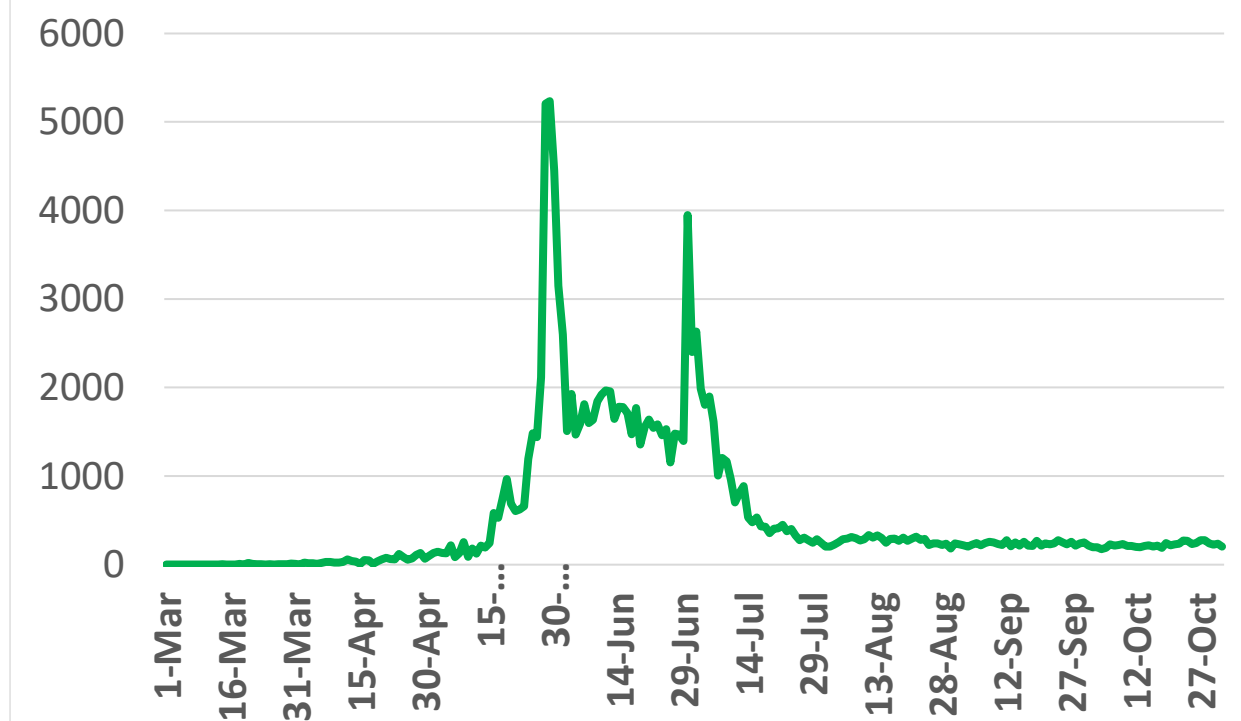
Source : Oman ministry of health

KUWAIT © ADPHC 2020



Source : Kuwait ministry of health

Qatar



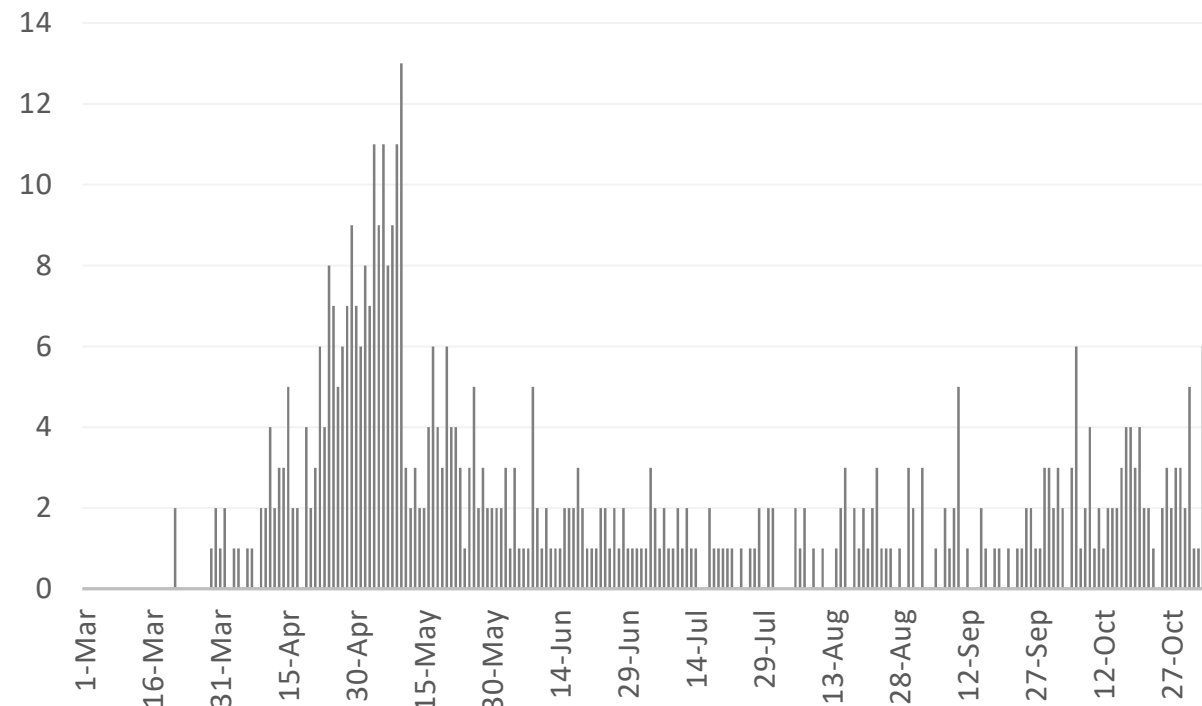
Source : Qatar ministry of health

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*No announced statistic data on weekends and official holidays.



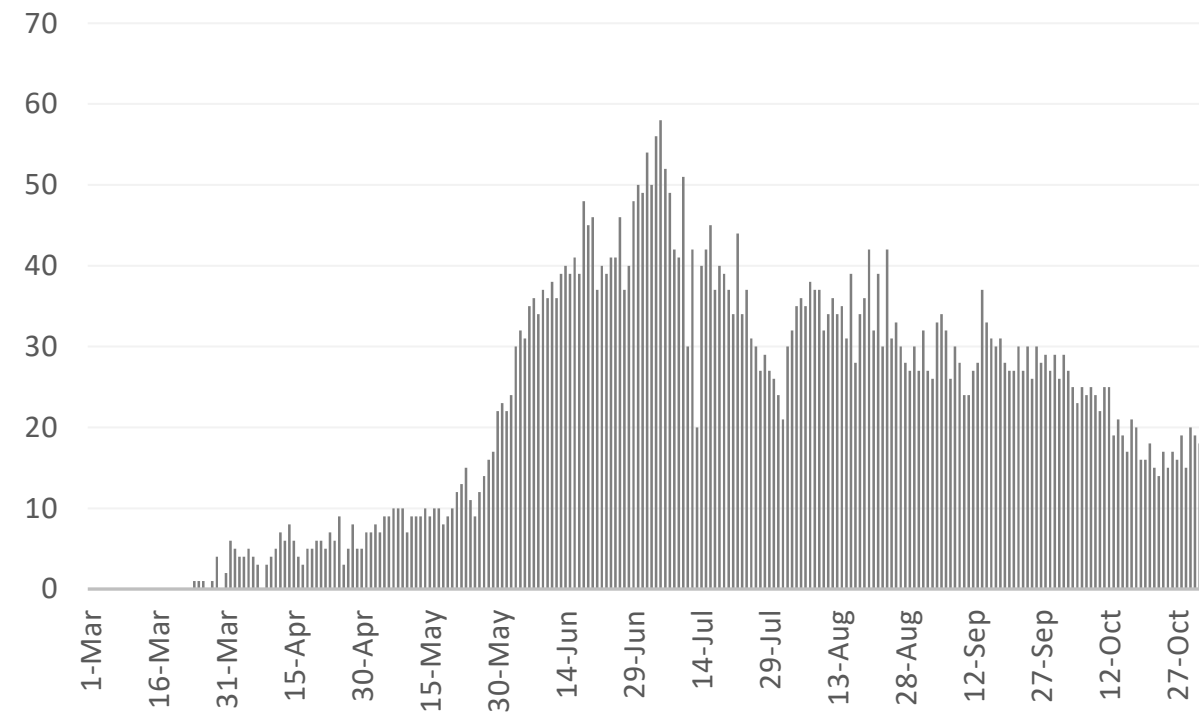
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



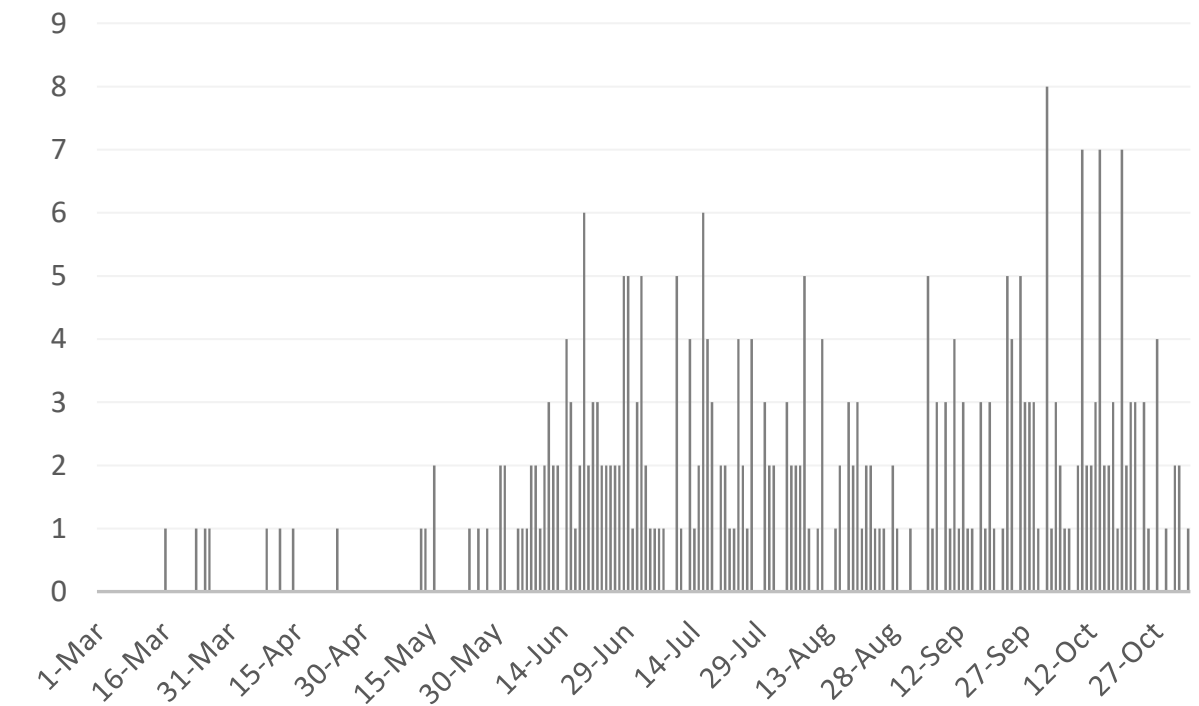
Source : National Emergency Crisis and Disaster Management Authority

KSA



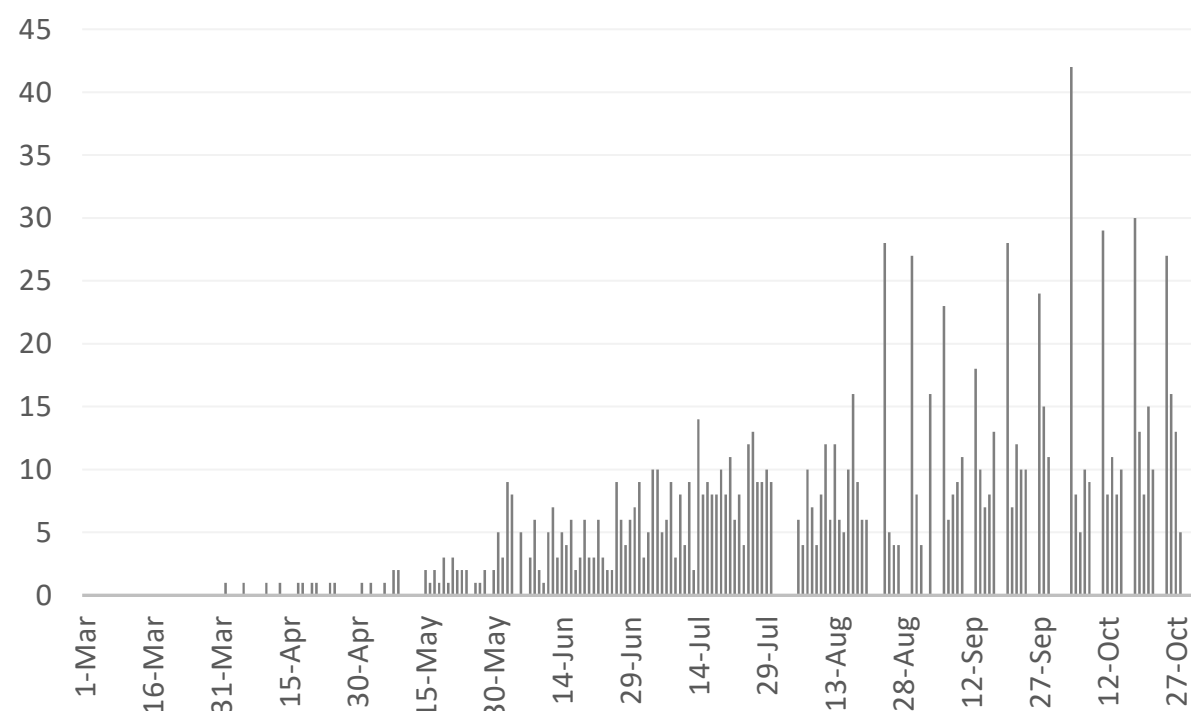
Source : KSA ministry of health

Bahrain



Source :WHO

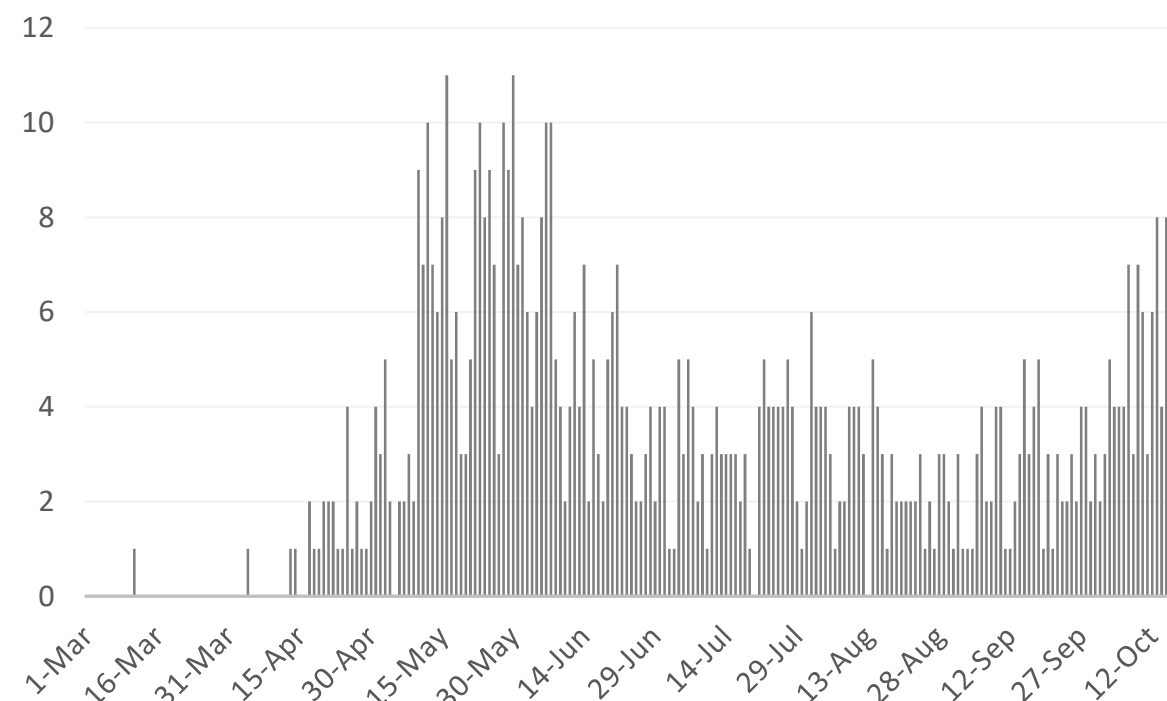
Oman



Source :Oman ministry of health

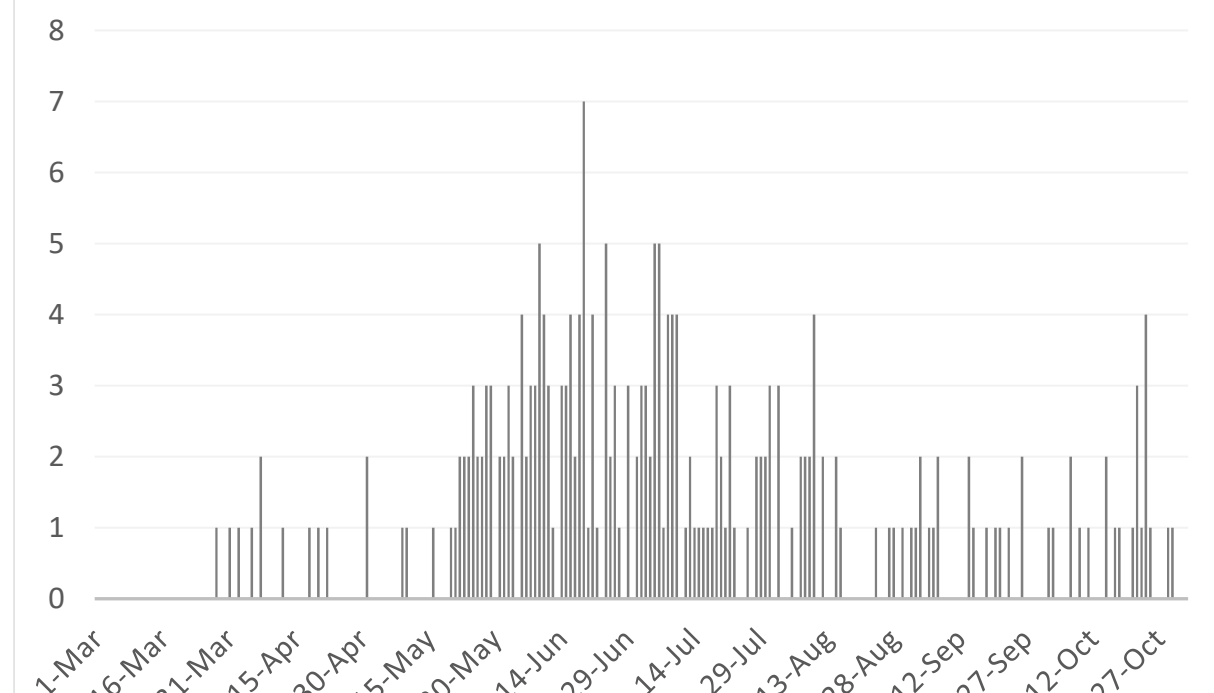
Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

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Article 1

Published

October 30, 2020 [JAMA](#)

Laboratory Findings Associated with Severe Illness and Mortality Among Hospitalized Individuals with Coronavirus Disease 2019 in Eastern Massachusetts

- This study aimed at quantifying the admission laboratory and comorbidity features associated with critical illness and mortality risk across six Eastern Massachusetts hospitals.
- In this retrospective cohort study of 2511 hospitalized individuals positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by polymerase chain reaction who were admitted to one of six hospitals, 215 (8.6%) were admitted to the intensive care unit, 164 (6.5%) required mechanical ventilation, and 292 (11.6%) died.
- In a risk prediction model, 212 deaths (78%) occurred in the top mortality-risk quintile. Therefore, simple prediction models may assist in risk stratification among hospitalized patients with COVID-19.





Article 2

Published

Ventilation Management and Clinical Outcomes in Invasively Ventilated Patients with COVID-19 (PRoVENT-COVID): A National, Multicentre, Observational Cohort Study

October 23, 2020, [THE LANCET](#)

- This national, multicentre, observational cohort study conducted at 18 intensive care units (ICUs) in the Netherlands compared invasive ventilation settings and parameters over the first four days of ventilation in the ICUs of hospitals across the country. The study also established whether some ventilation settings and parameters have an independent association with the duration of ventilation and clinical outcomes.
- Between March 1 and April 1, 2020, 553 patients were included in the study. Predictors of 28-day mortality were gender, age, tidal volume, respiratory system compliance, arterial pH, and heart rate on the first day of invasive ventilation.
- In patients with COVID-19 who were invasively ventilated during the first month of the outbreak in the Netherlands, lung-protective ventilation with low tidal volume and low driving pressure was broadly applied, and prone positioning was often used. The applied positive end-expiratory pressure (PEEP) varied widely, despite an invariably low respiratory system compliance.
- The findings of this national study offered a basis for new hypotheses and sample size calculations for future trials of invasive ventilation for COVID-19. These data could also help in the interpretation of findings from other studies of ventilation practice and outcomes in invasively ventilated patients with COVID-19.





Article 3

Published

October 27, 2020, [THE LANCET](#)

Residential Context and COVID-19 Mortality Among Adults Aged 70 Years and Older in Stockholm: A Population-Based, Observational Study Using Individual-Level Data

- This population-based, observational study used individual-level administrative data to analyse how mortality from COVID-19 in older adults is related to living arrangements and neighbourhood characteristics in Stockholm county, Sweden.
- In fully adjusted models, household and neighbourhood characteristics were independently associated with COVID-19 mortality among older adults. Compared with living in a household with individuals aged 66 years or older, living with someone of working age (<66 years) was associated with increased COVID-19 mortality.
- Living in a care home was associated with an increased risk of COVID-19 mortality compared with living in independent housing. Living in neighbourhoods with the highest population density (≥ 5000 individuals per km²) was associated with higher COVID-19 mortality (1.7; 1.1–2.4) compared with living in the least densely populated neighbourhoods (0 to <150 individuals per km²).
- The findings of the study indicated that close exposure to working-age household members and neighbours is associated with increased COVID-19 mortality among older adults. Likewise, living in a care home is associated with increased mortality, potentially through exposure to visitors and care workers, but also due to poor underlying health among care-home residents. Hence, it is essential to consider these factors when developing strategies to protect this group.





Article 4

Published

High Serum IL-6 Values Increase the Risk of Mortality and the Severity of Pneumonia in Patients Diagnosed with COVID-19

External Icon.

October 27, 2020, [ELSVIER](#)

- This retrospective cohort study assessed IL-6 in a cohort of 50 patients hospitalized with mild (n = 10), moderate (n = 34), or severe (n = 6) SARS-CoV-2 pneumonia in Spain, between April 1 and April 30, 2020. IL-6 serum concentrations were estimated against clinical parameters to establish a predictive indicator of clinical outcomes. Some patients were given tocilizumab. IL-6 serum concentrations above 35 pg/mL were associated with a higher risk of:
 - More severe pneumonia (OR = 4.47, 95% CI 1.15-17.45, p = 0.031).
 - Increased risk of mortality (OR = 20.00, 95% CI 4.21-94.91, p = 0.0001).
 - ICU admission (OR = 12.75, 95% CI 2.16-75.33, p = 0.005).
- Of the 27 patients treated with tocilizumab, 8 (28%) died, while 6 (26%) of the 23 patients who were not treated with tocilizumab died.



THANK YOU

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