

SCIENTIFIC RESEARCH MONITORING ON COVID-19

26 AUGUST 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 206)

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



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).

Click on icon to view content

Clinical Features

COVID-19 and Multisystem Inflammatory Syndrome in Children and Adolescents

Transmission

Comparison of Molecular Testing Strategies for COVID-19 Control: A Mathematical Modelling Study

Public Health Response

Revised COVID-19 Case Definitions

Clinical Features

Association of Race with Mortality Among Patients Hospitalized with Coronavirus Disease 2019 (COVID-19) at 92 US Hospitals

Clinical Features

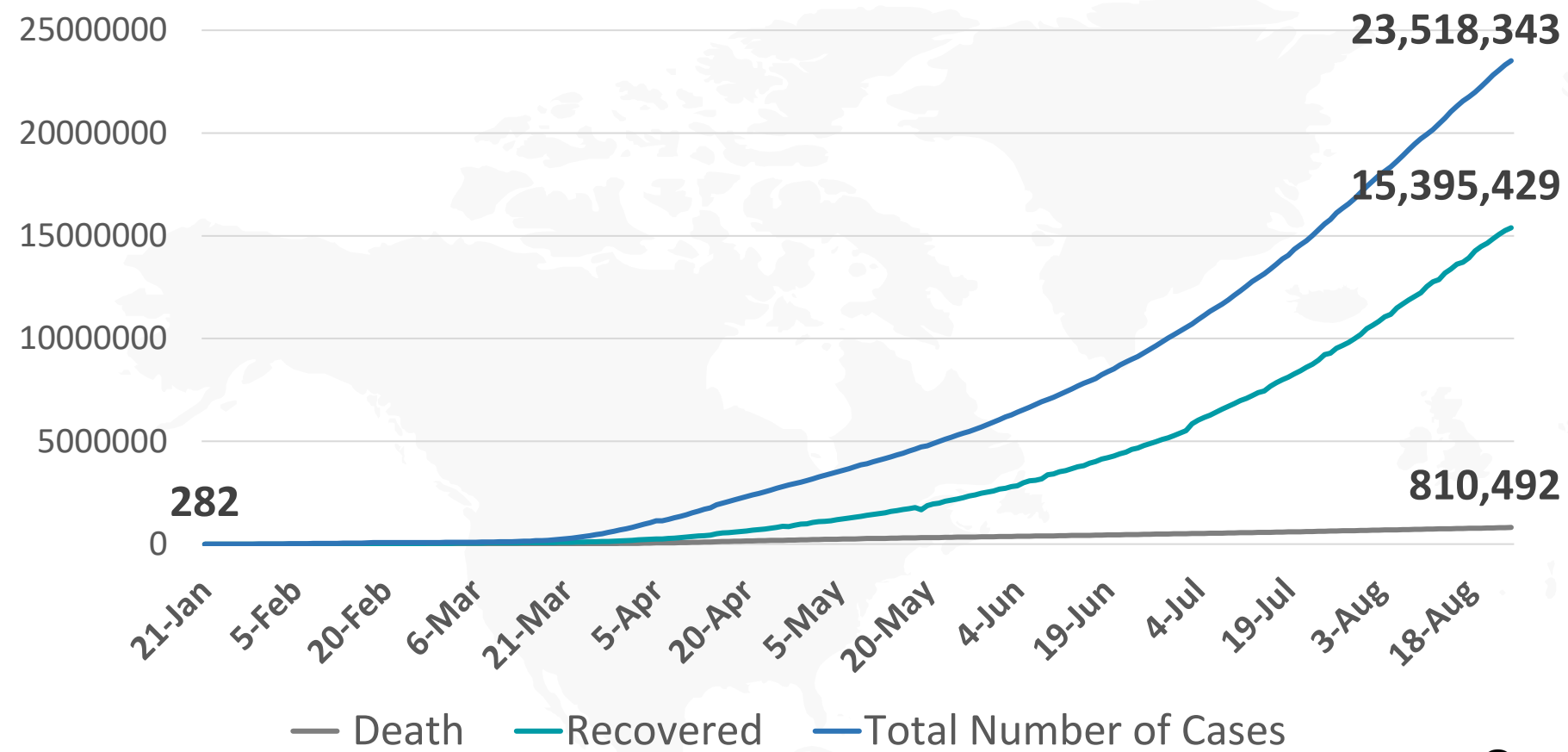
COVID-19-Associated Hyperinflammation and Escalation of Patient Care: A Retrospective Longitudinal Cohort Study

Clinical Features

Histopathological Findings and Viral Tropism in UK Patients with Severe Fatal COVID-19: A Post-Mortem Study



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



© ADPHC 2020

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

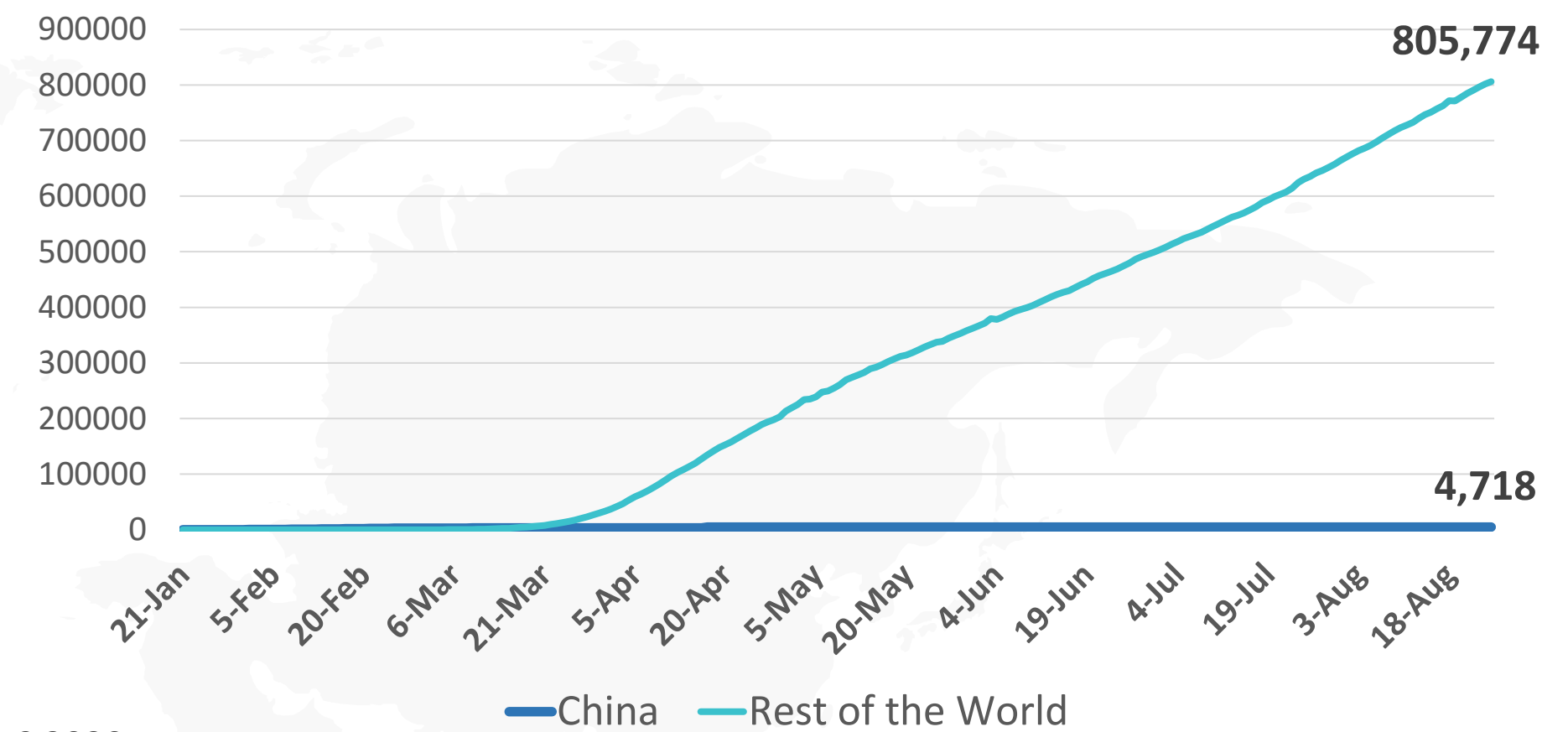


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

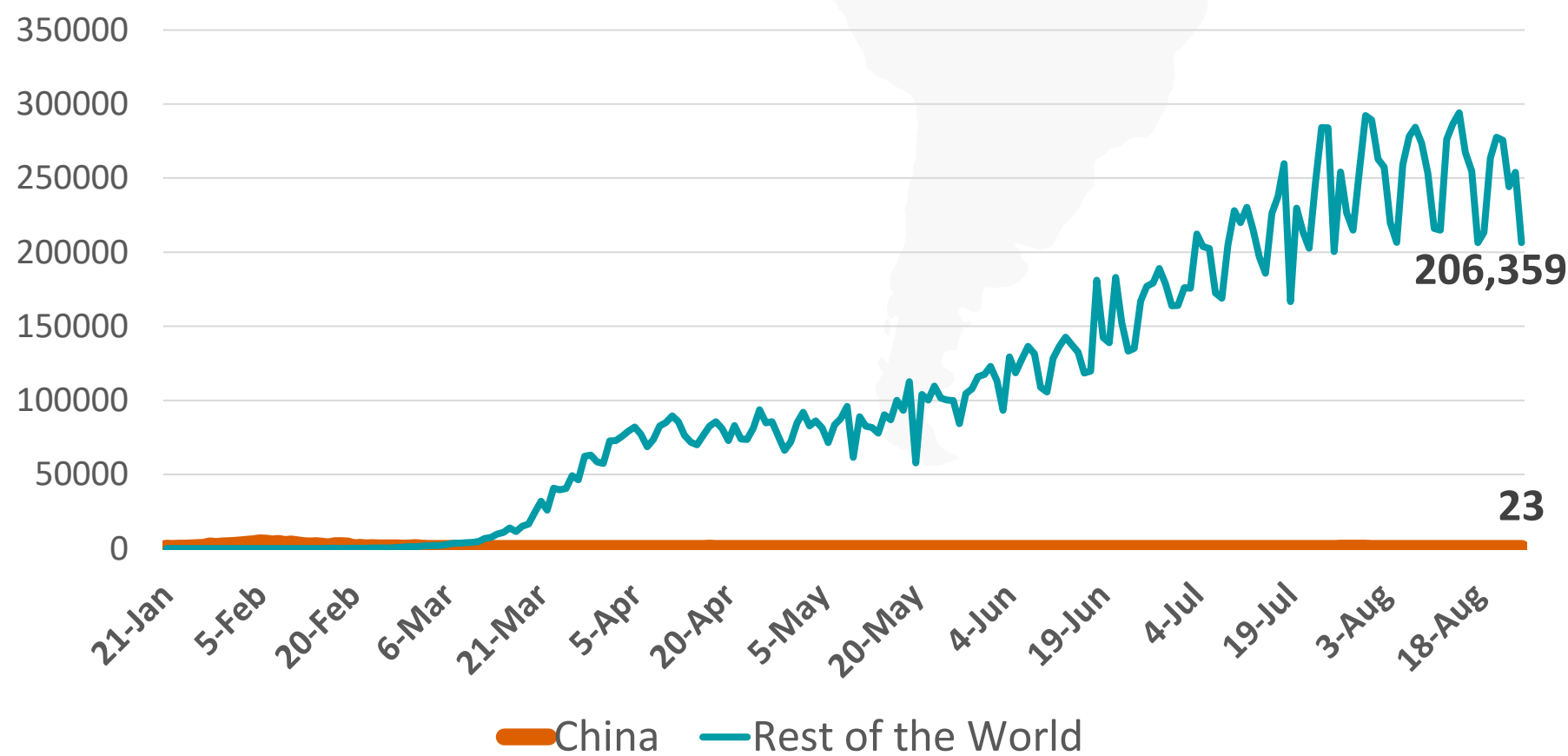


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)

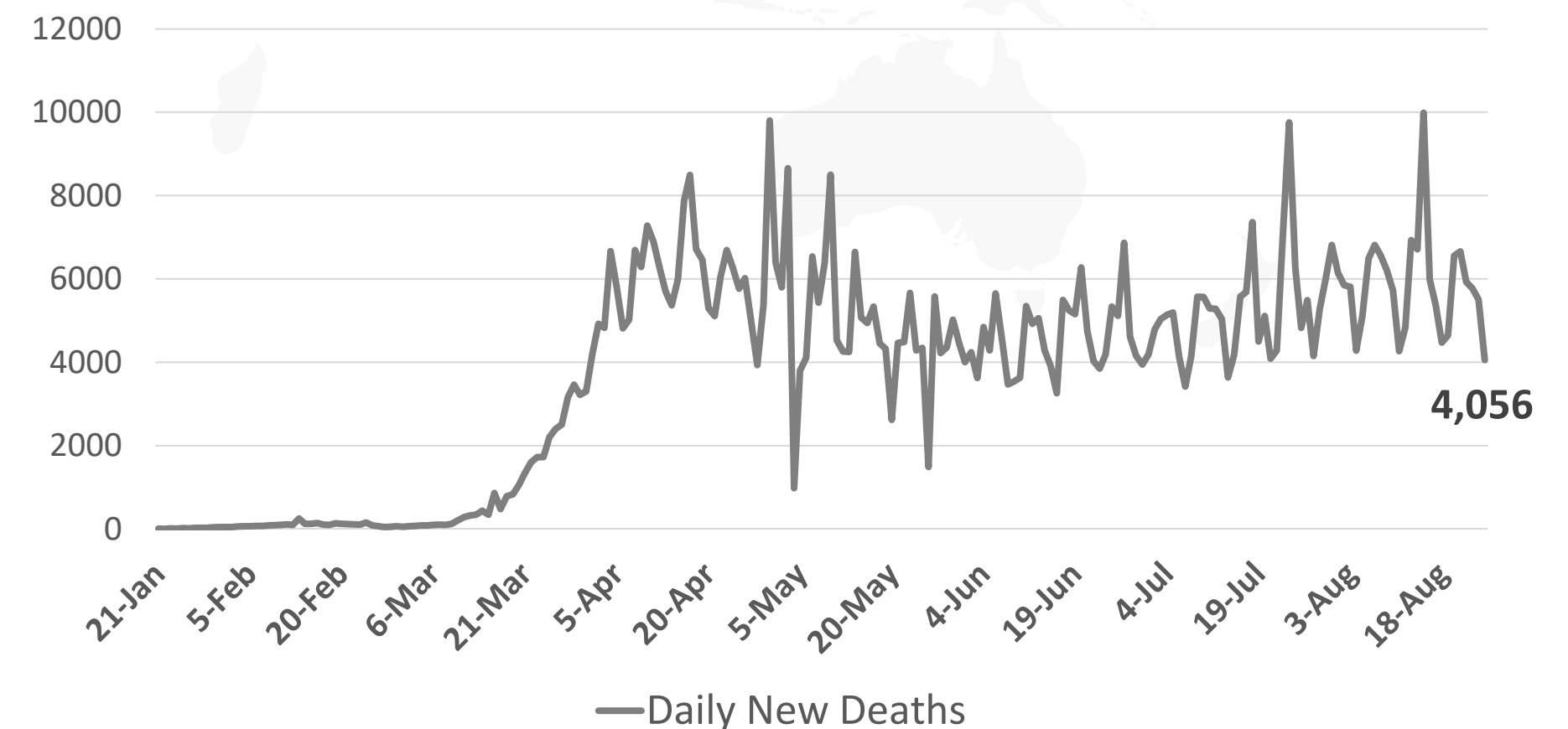
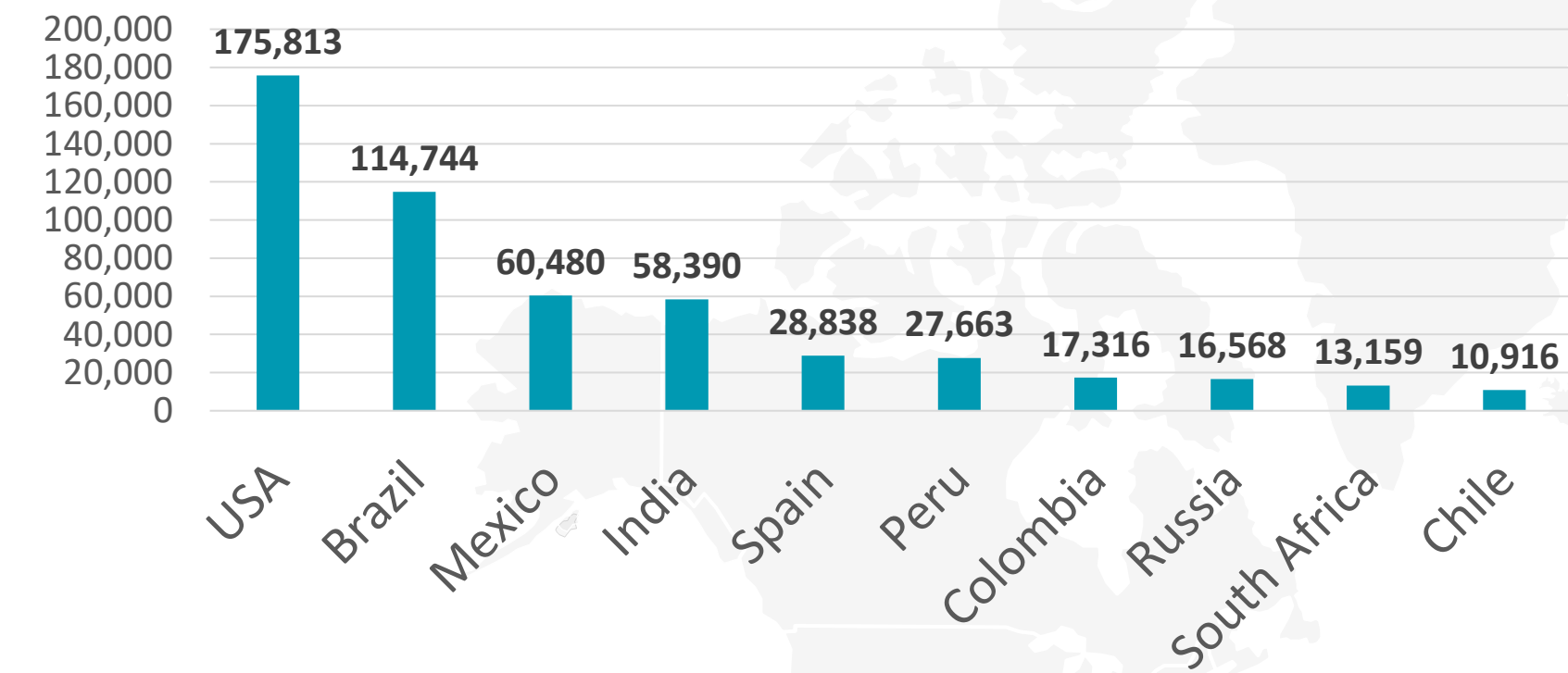
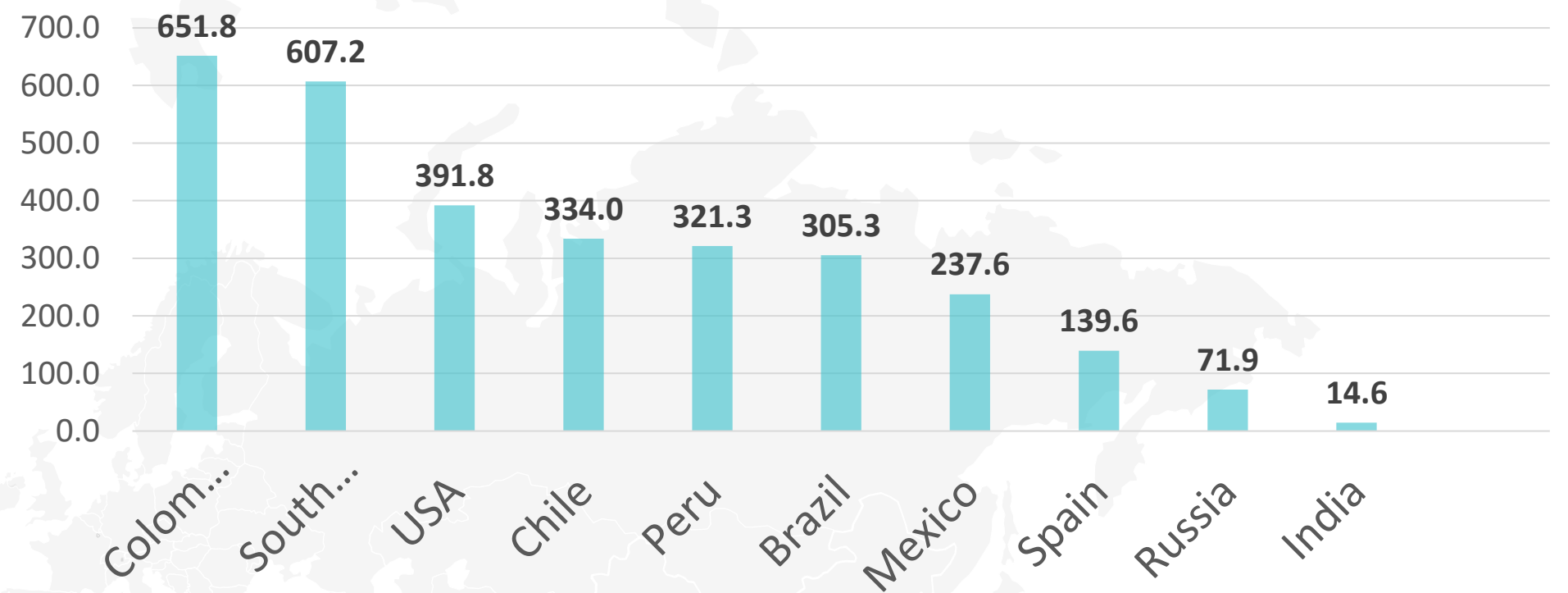


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

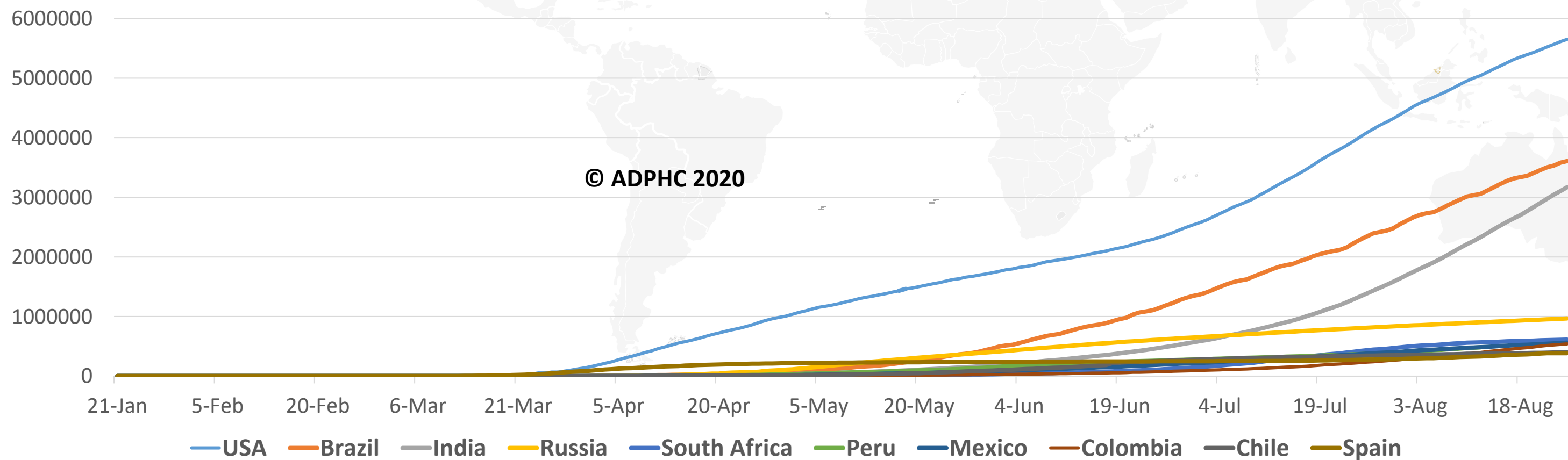
TOTAL DEATHS



DEATHS PER MILLION

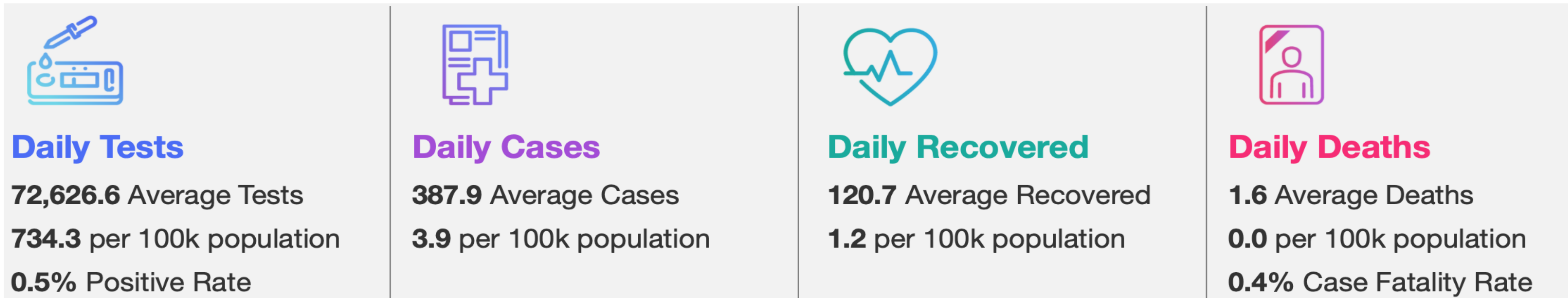


TOTAL INFECTED CASES



USA	5,649,928
Brazil	3,605,783
India	3,167,323
Russia	966,189
South Africa	611,450
Peru	594,326
Mexico	560,164
Colombia	541,147
Chile	399,568
Spain	399,568

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

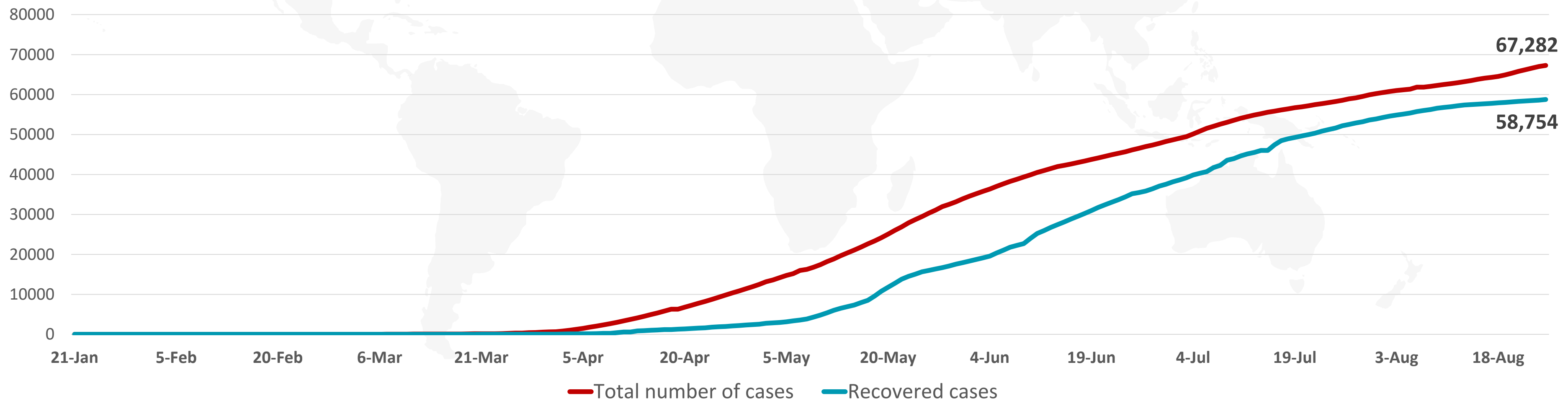
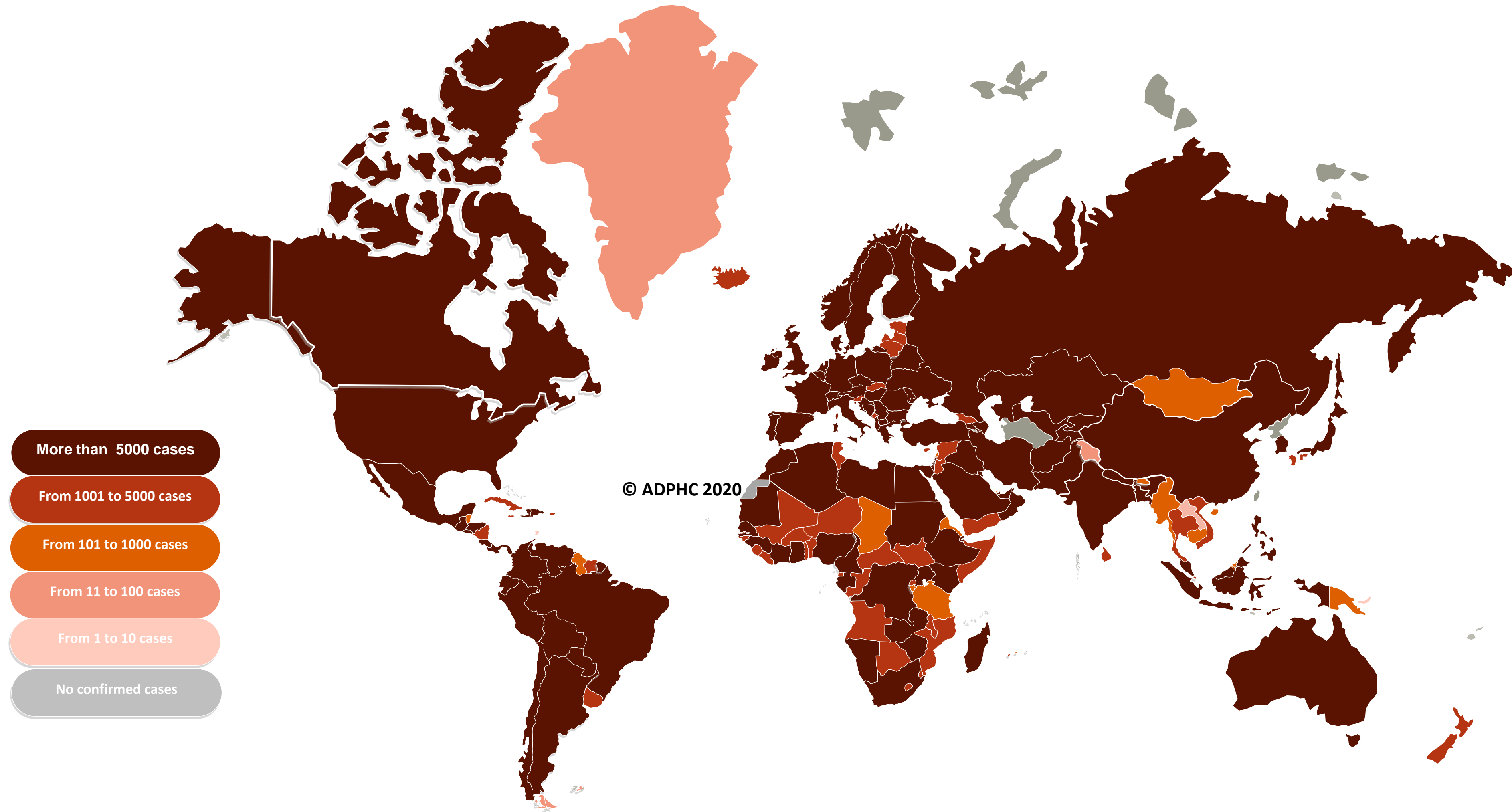


Figure 7A : Global Distribution of COVID-19 Cases



More than 5000 cases

From 1001 to 5000 cases

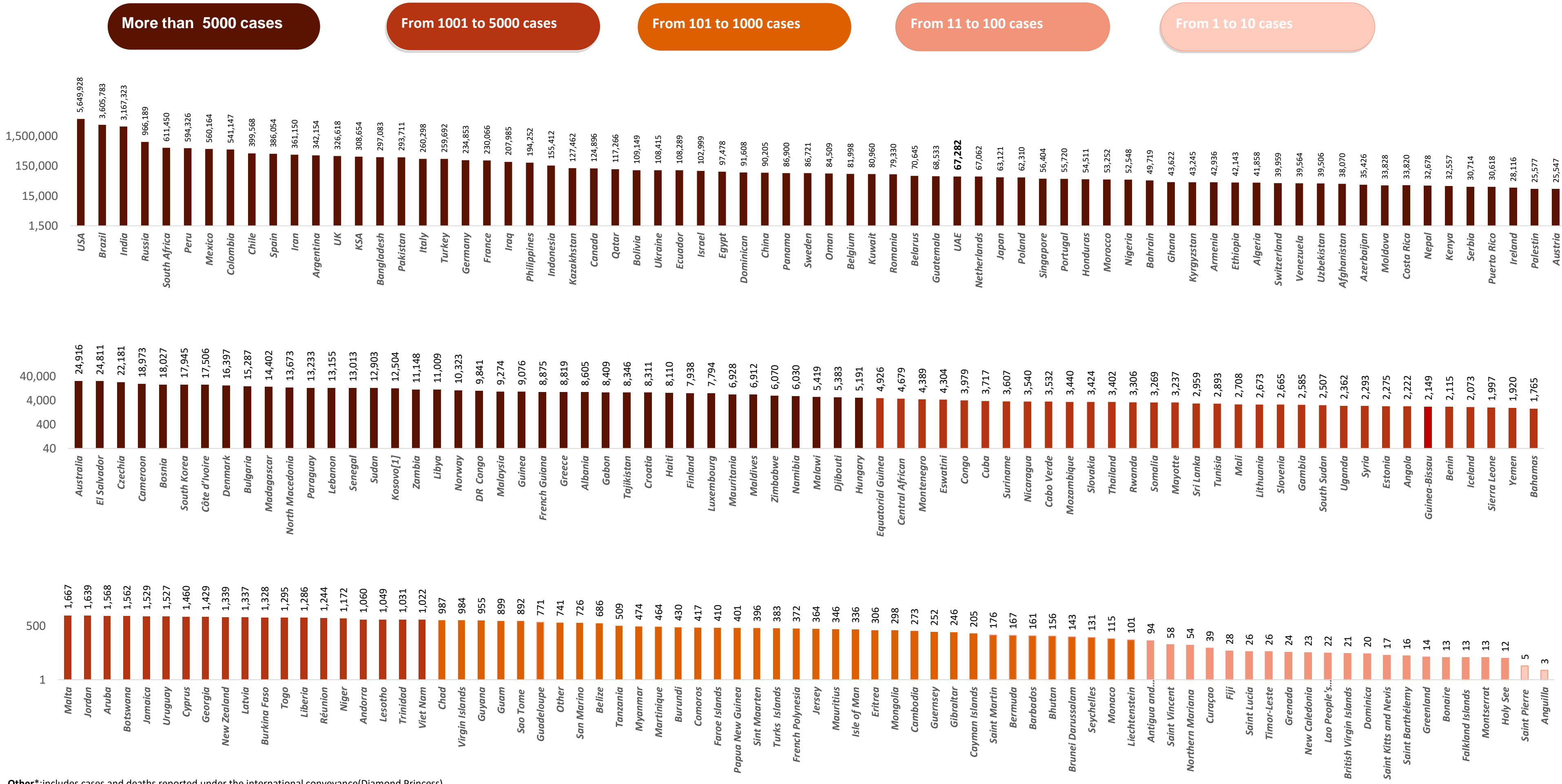
From 101 to 1000 cases

From 11 to 100 cases

From 1 to 10 cases

No confirmed cases

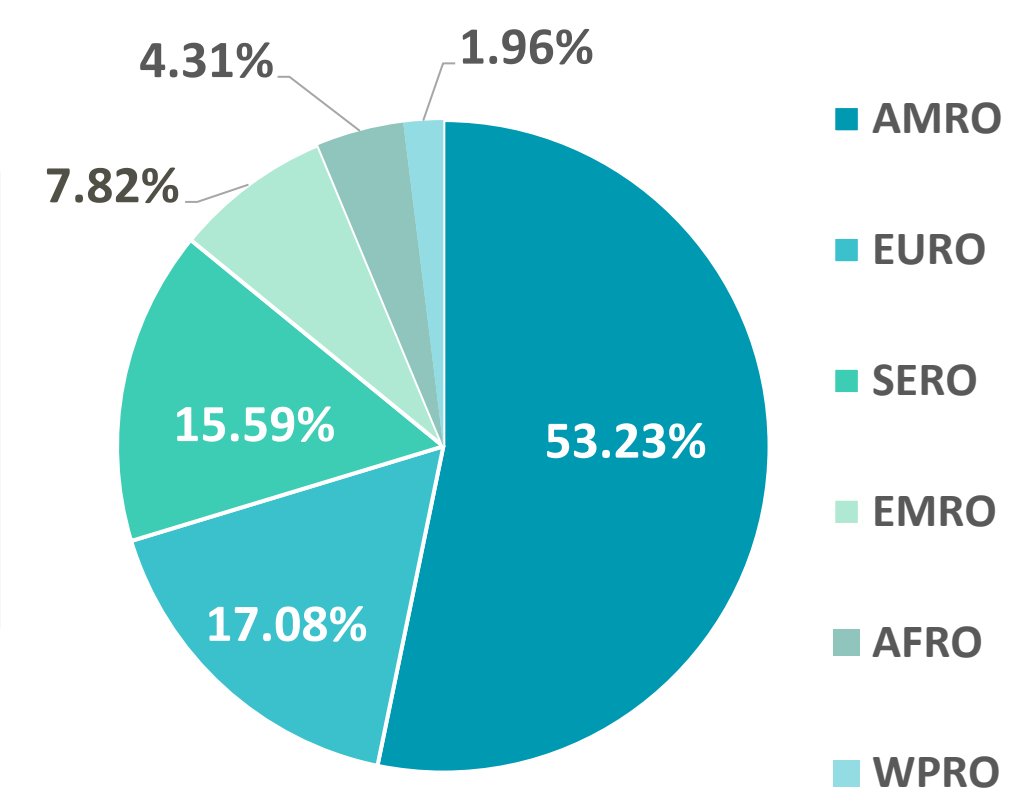
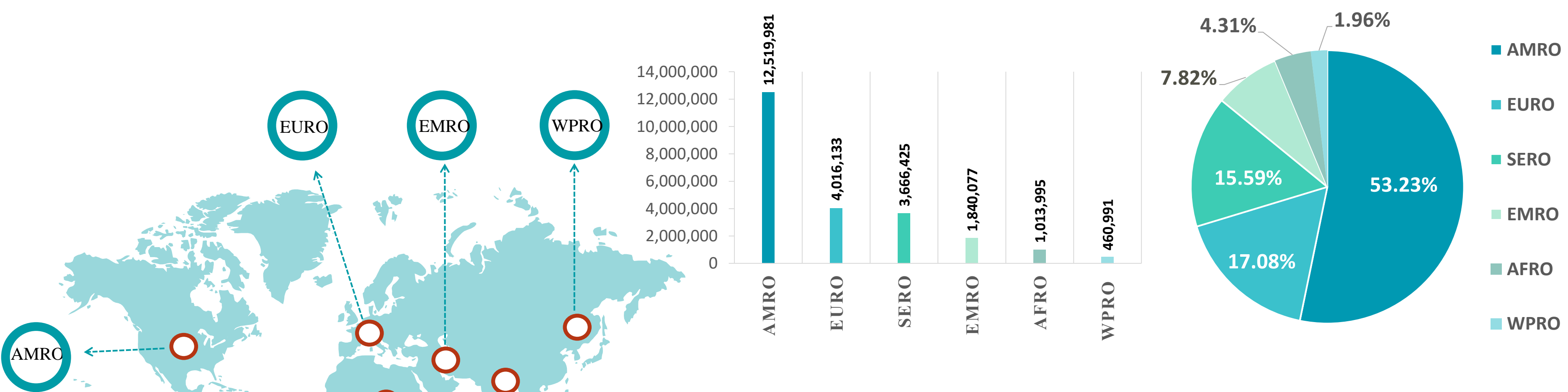
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



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

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

INFECTED



DEATHS

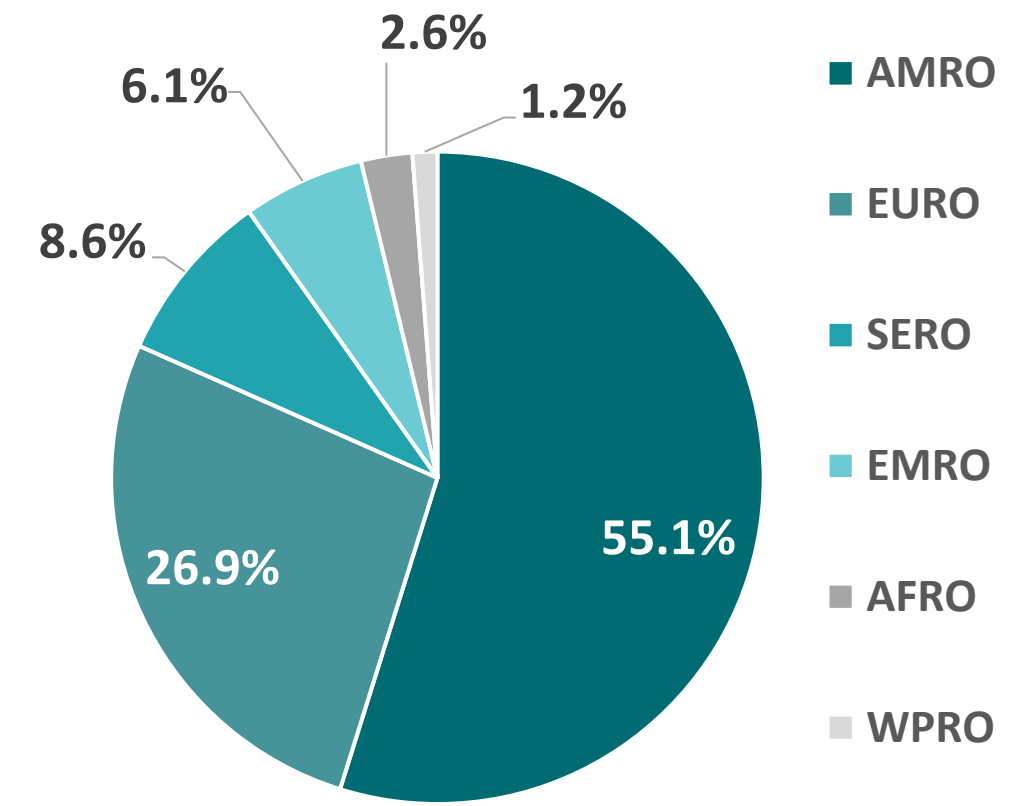
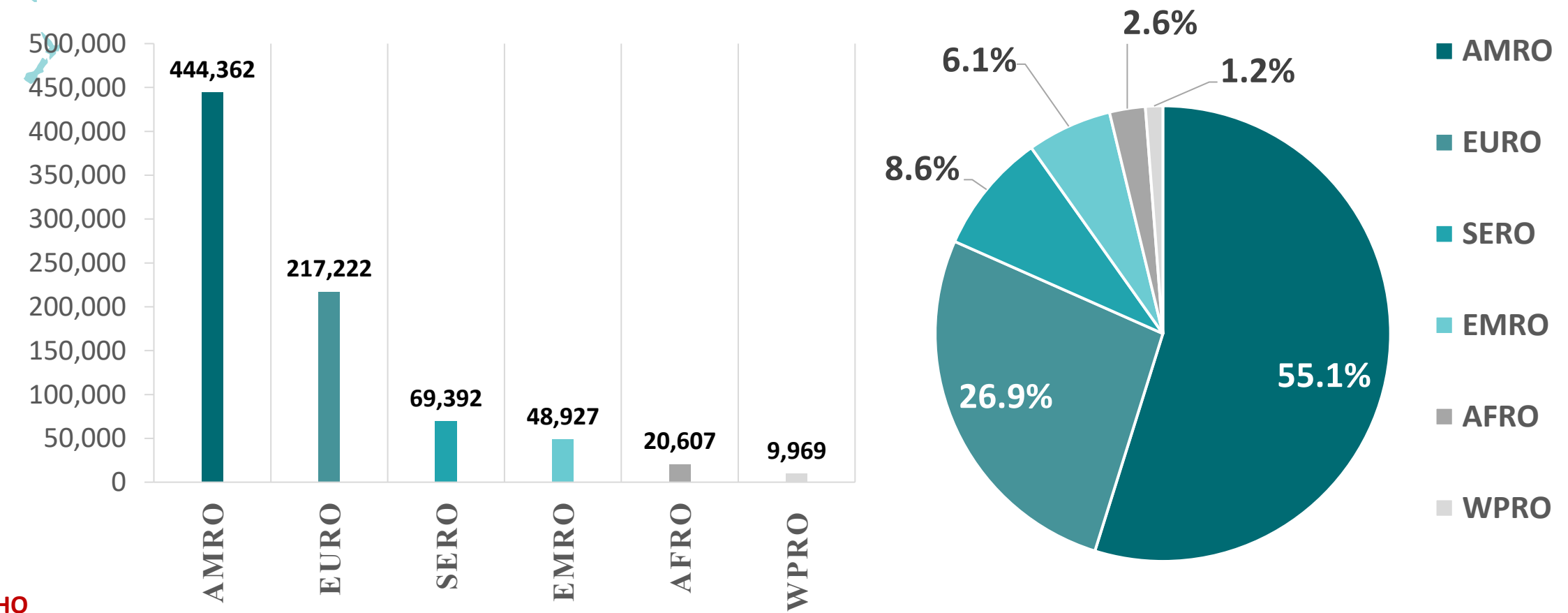
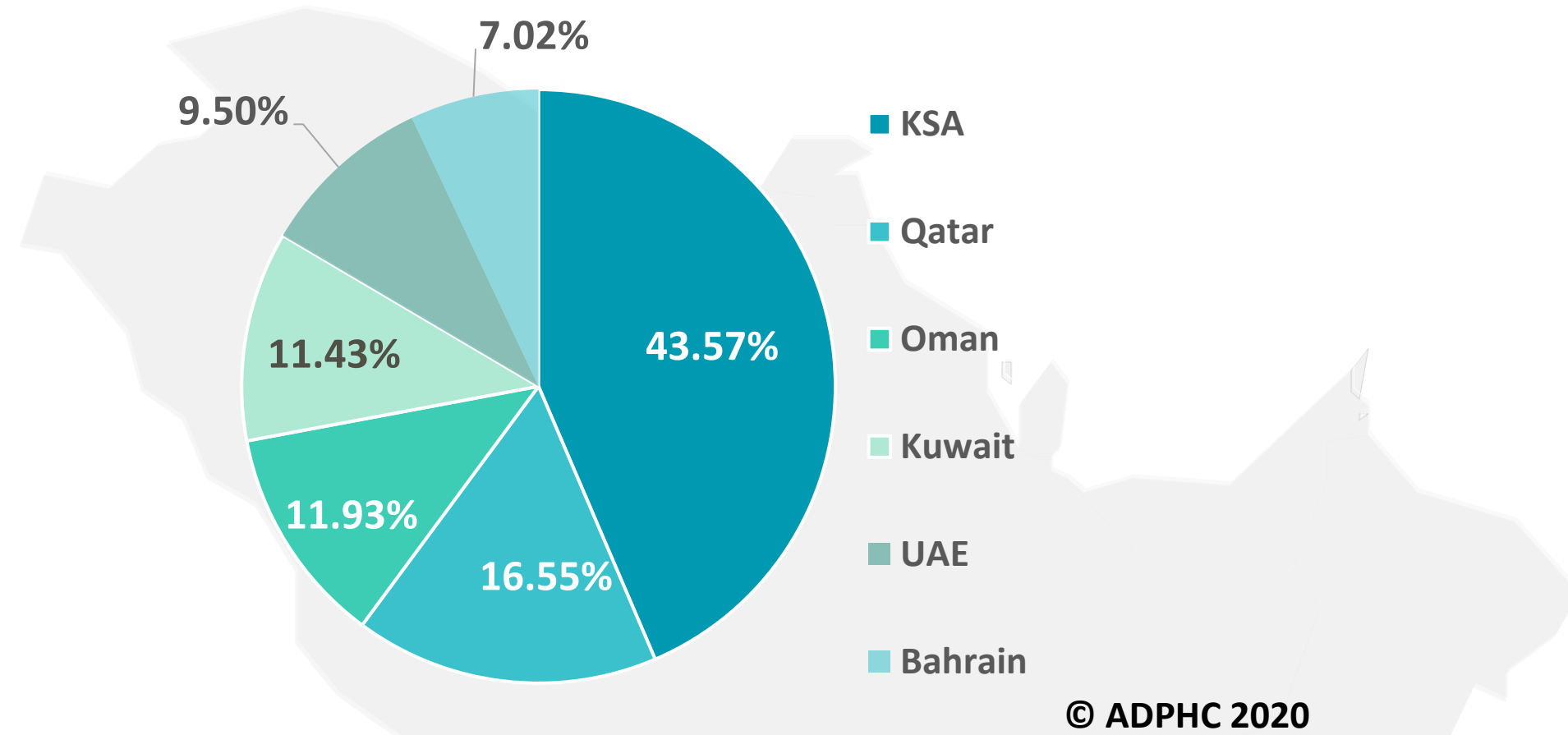
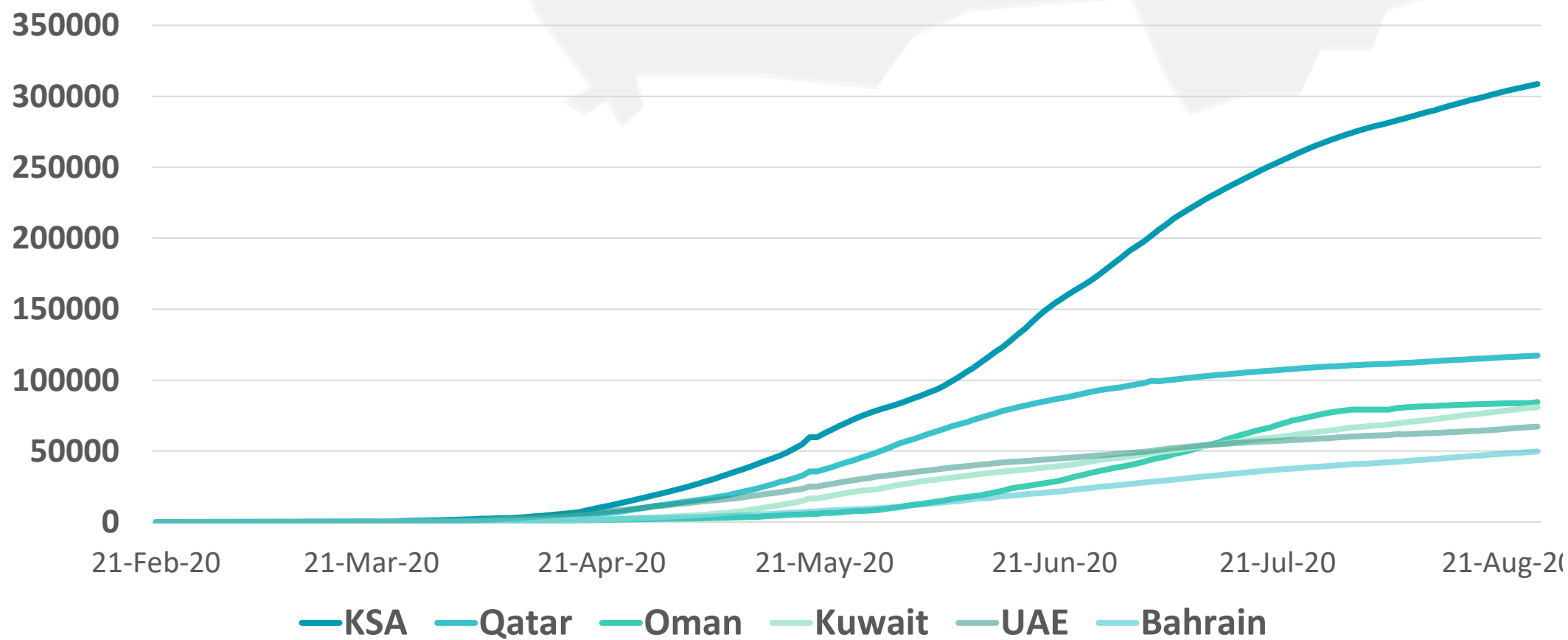
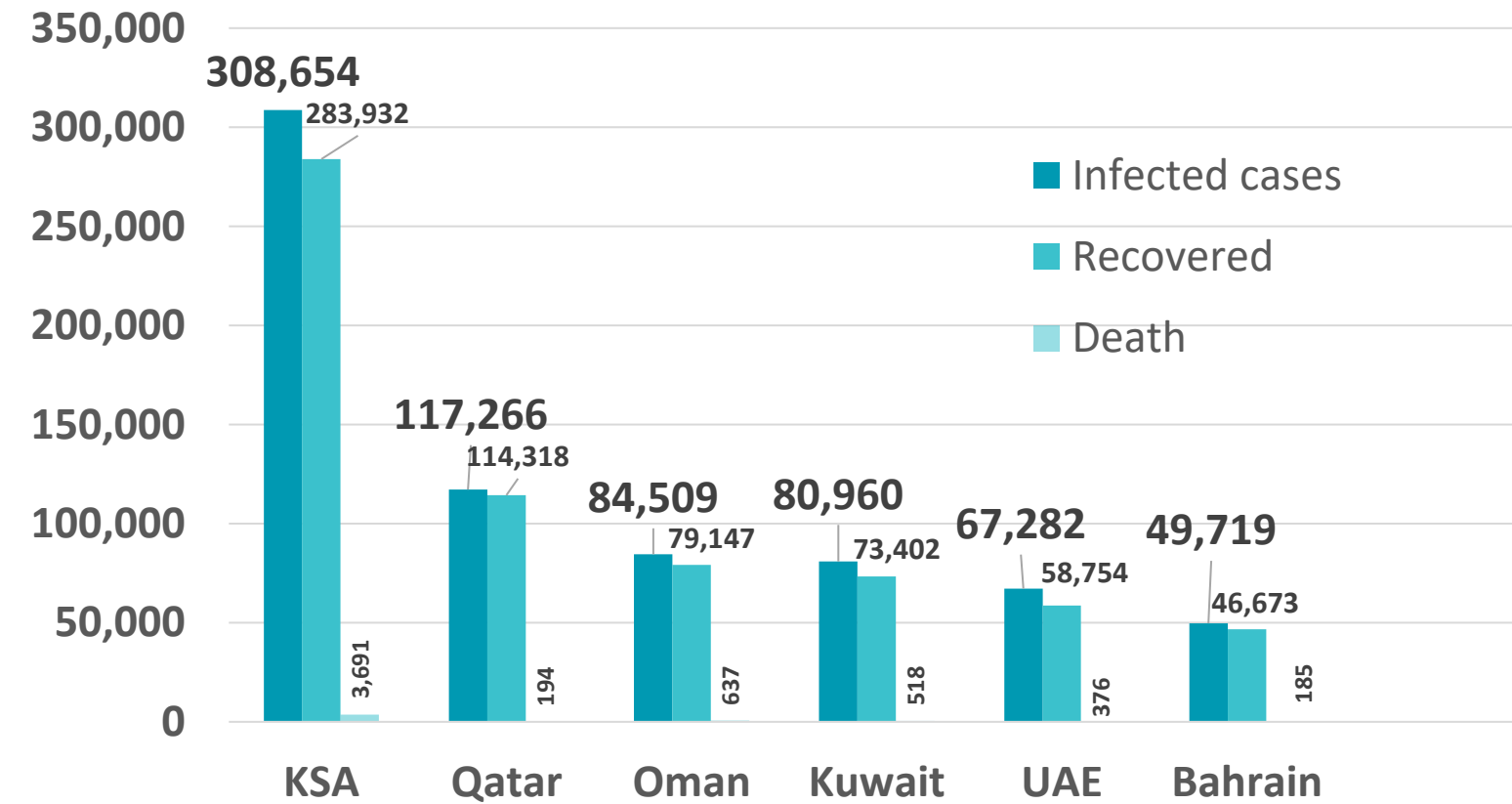


Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION

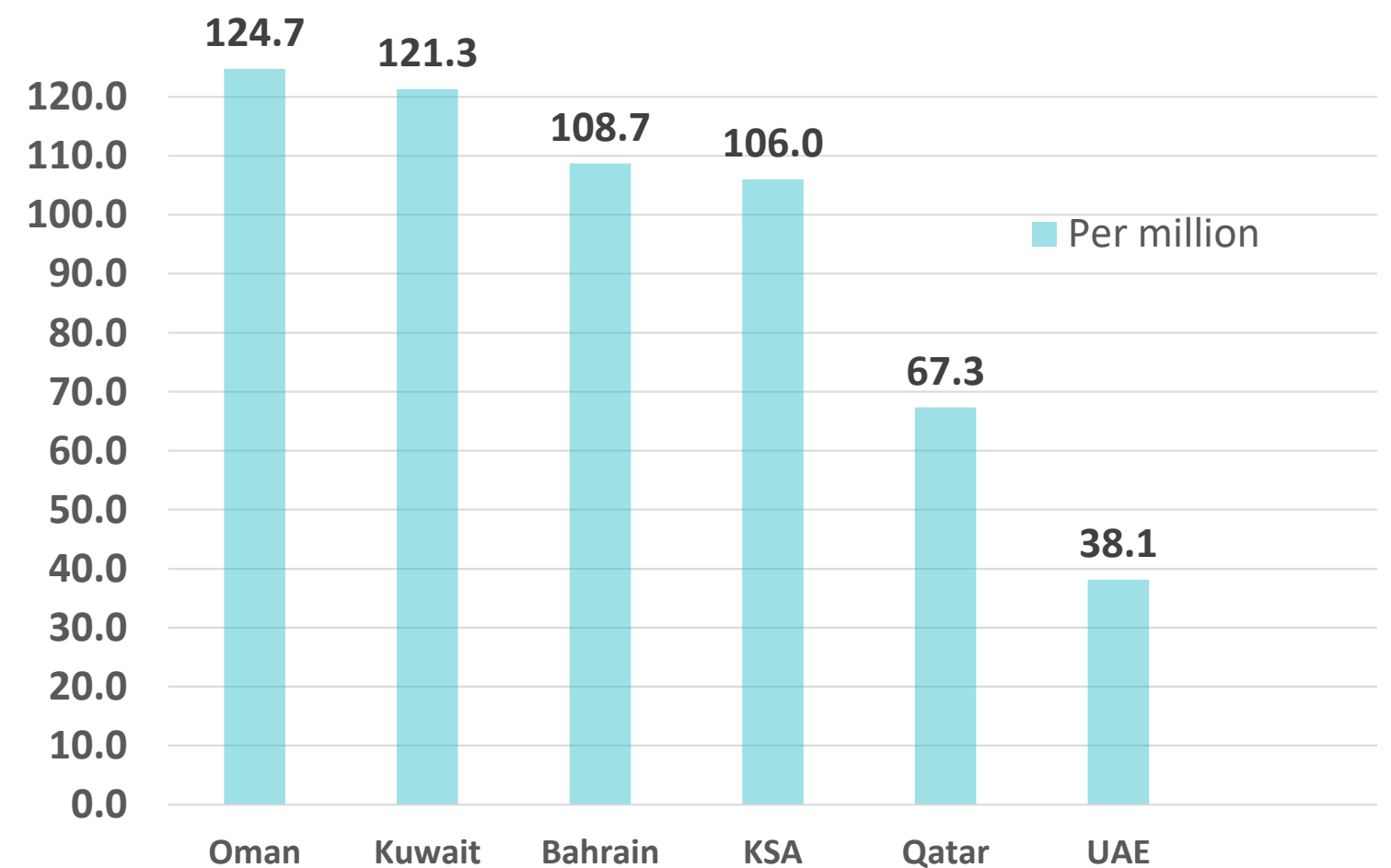


Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

UAE



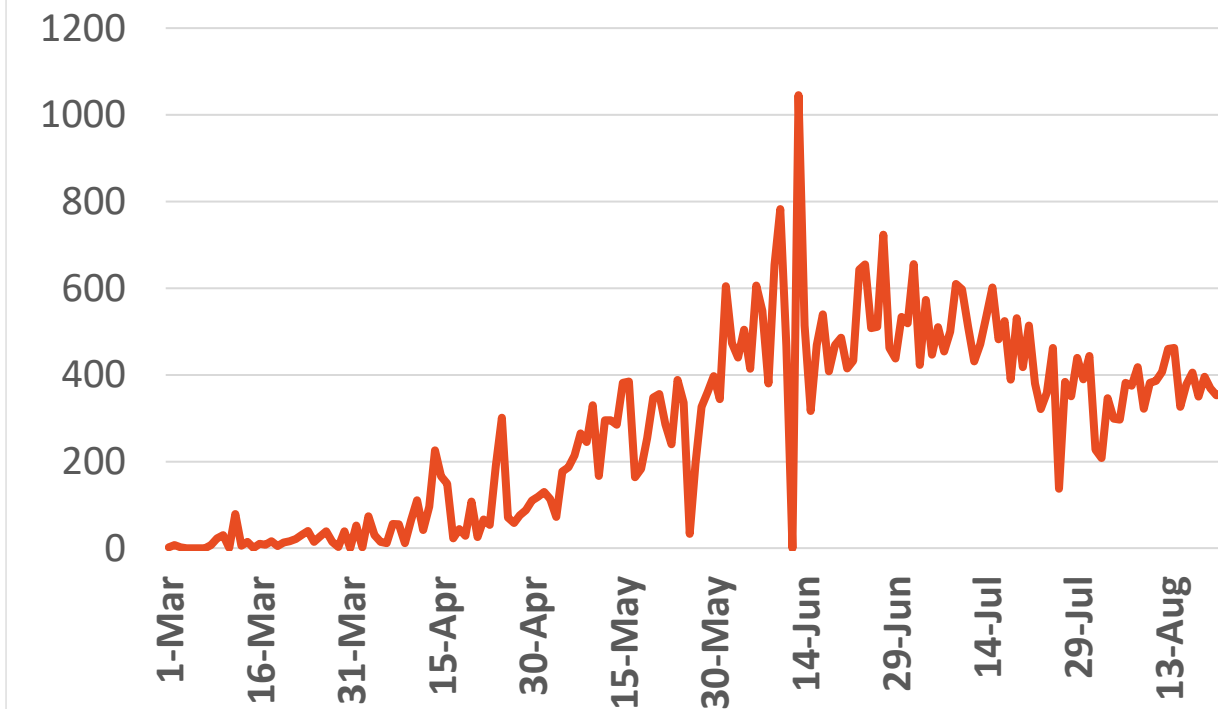
Source : National Emergency Crisis and Disaster Management Authority

KSA



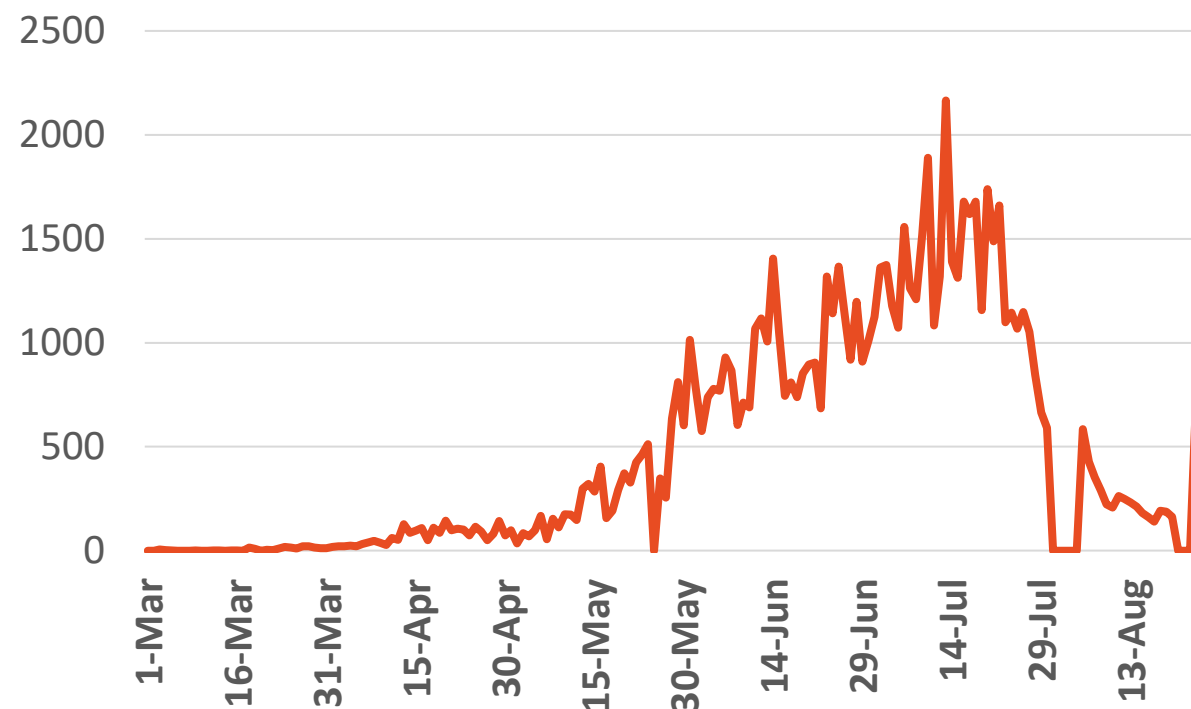
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

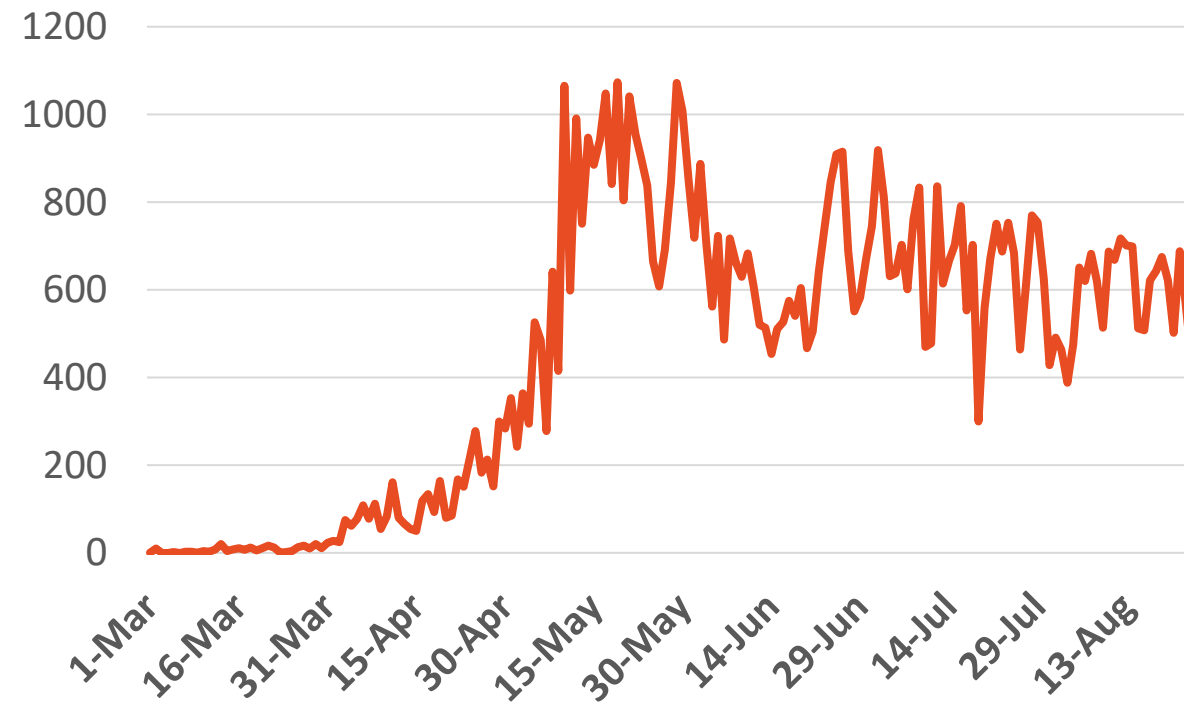


Source :Oman ministry of health

*No announced statistic data from 31 July to 4 August & from 21 to 23 August
*No announced statistic data on weekends and official holidays.

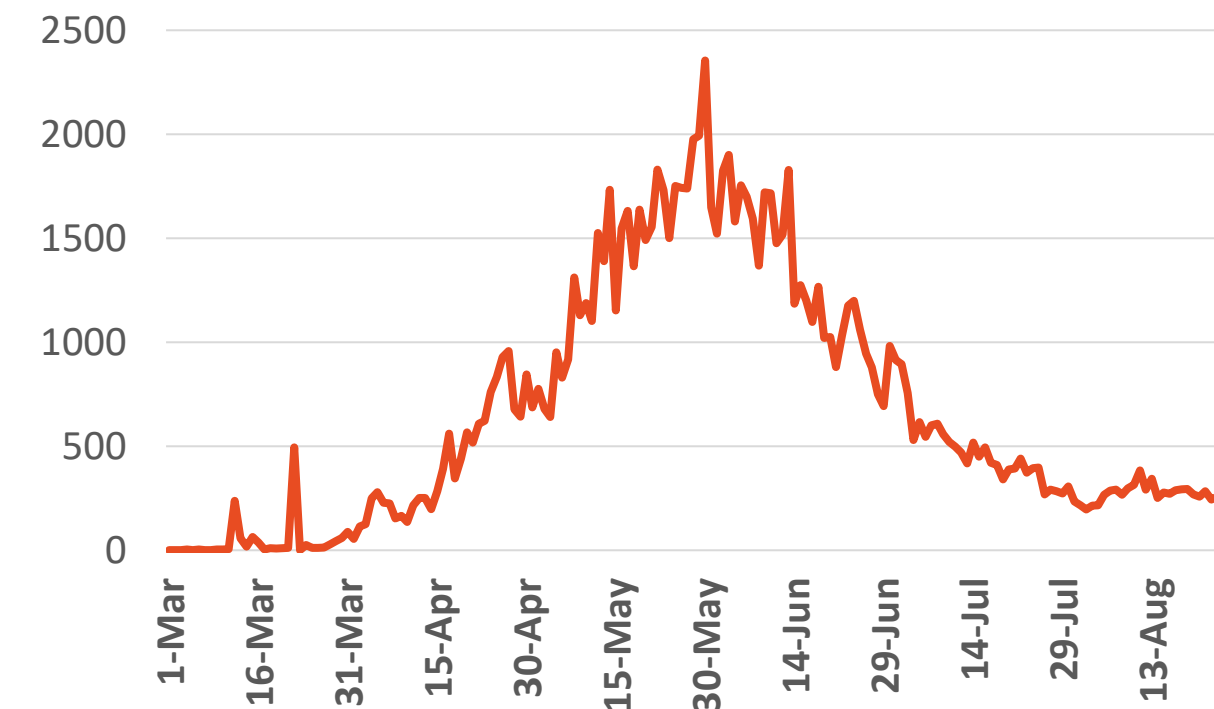
Kuwait

© ADPHC 2020



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

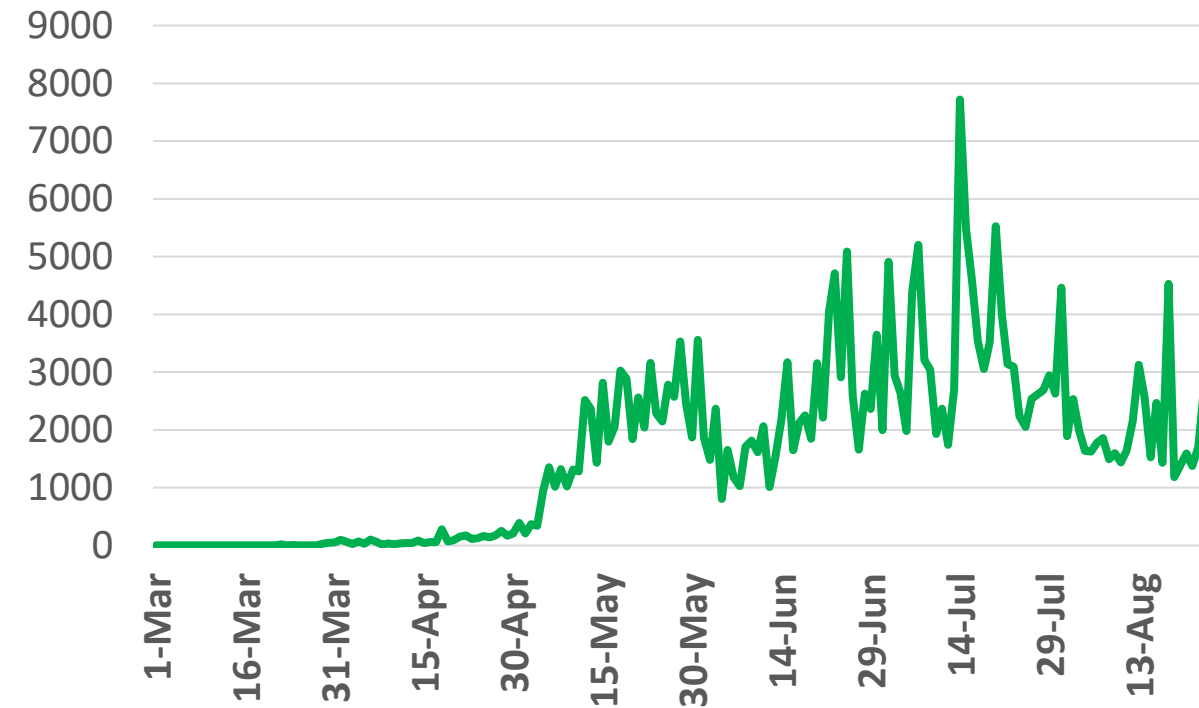
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



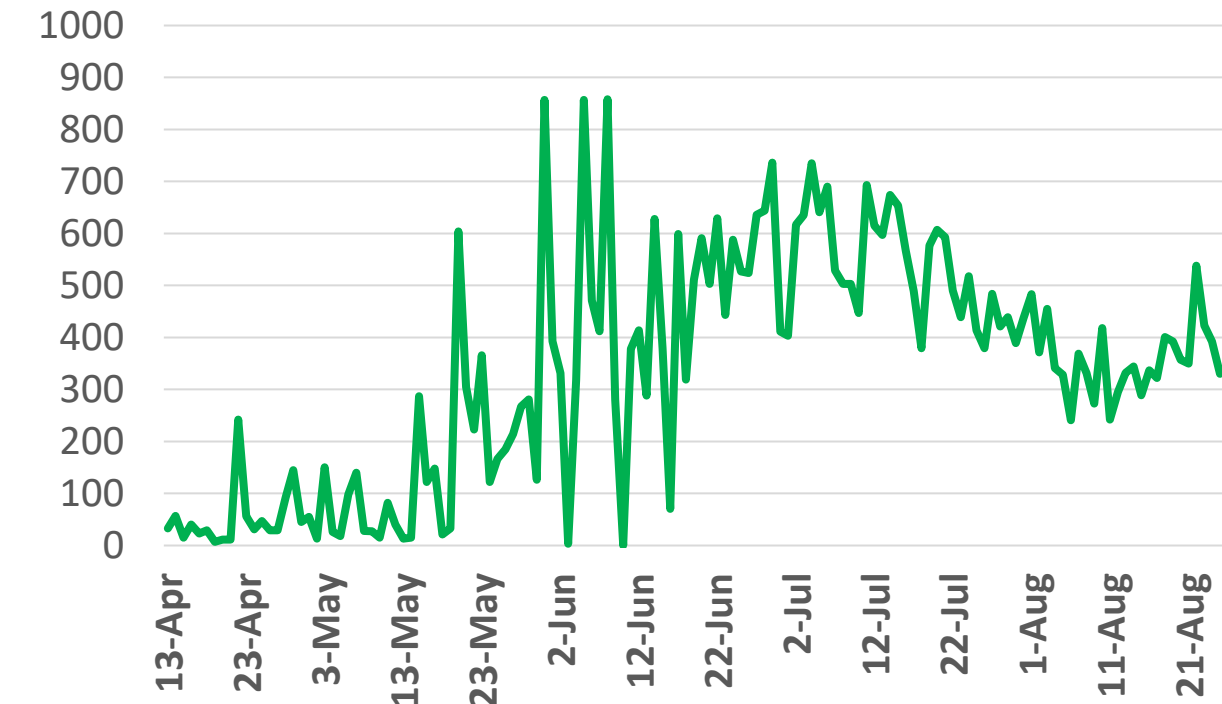
Source : [National Emergency Crisis and Disaster Management Authority](#)

KSA



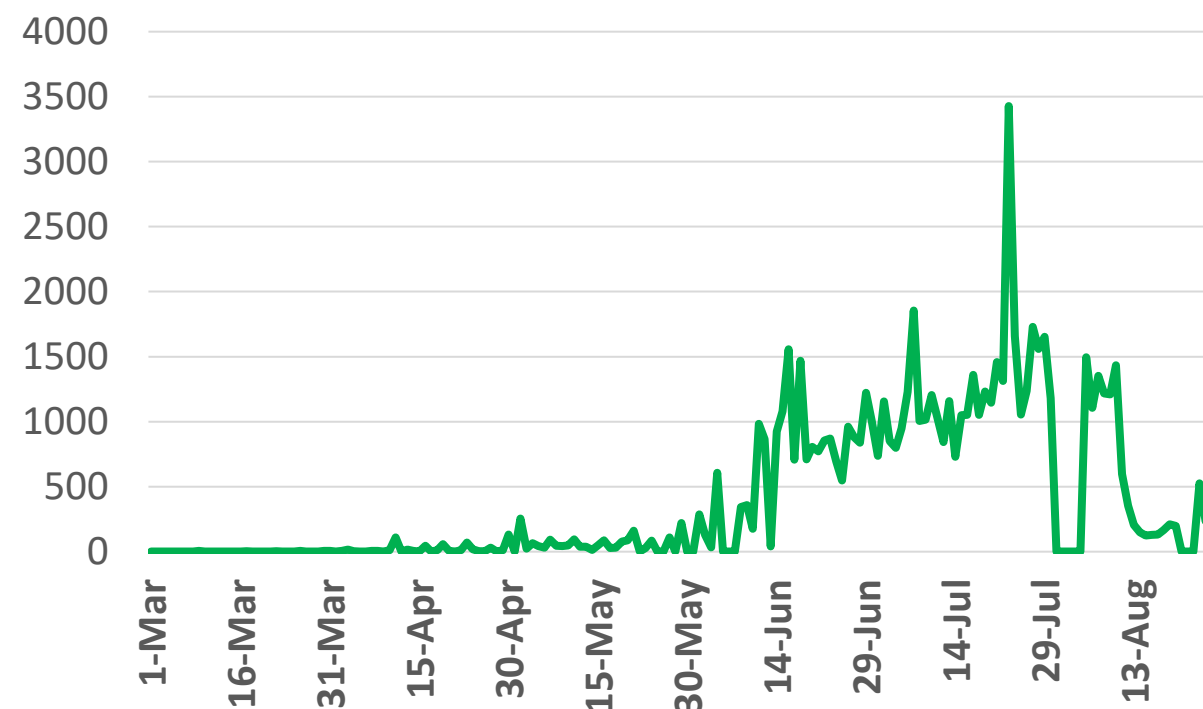
Source : [KSA ministry of health](#)

Bahrain



Source : [GCCStat](#)

Oman



Source : [Oman ministry of health](#)

Kuwait

© ADPHC 2020



Source : [Kuwait ministry of health](#)

Qatar



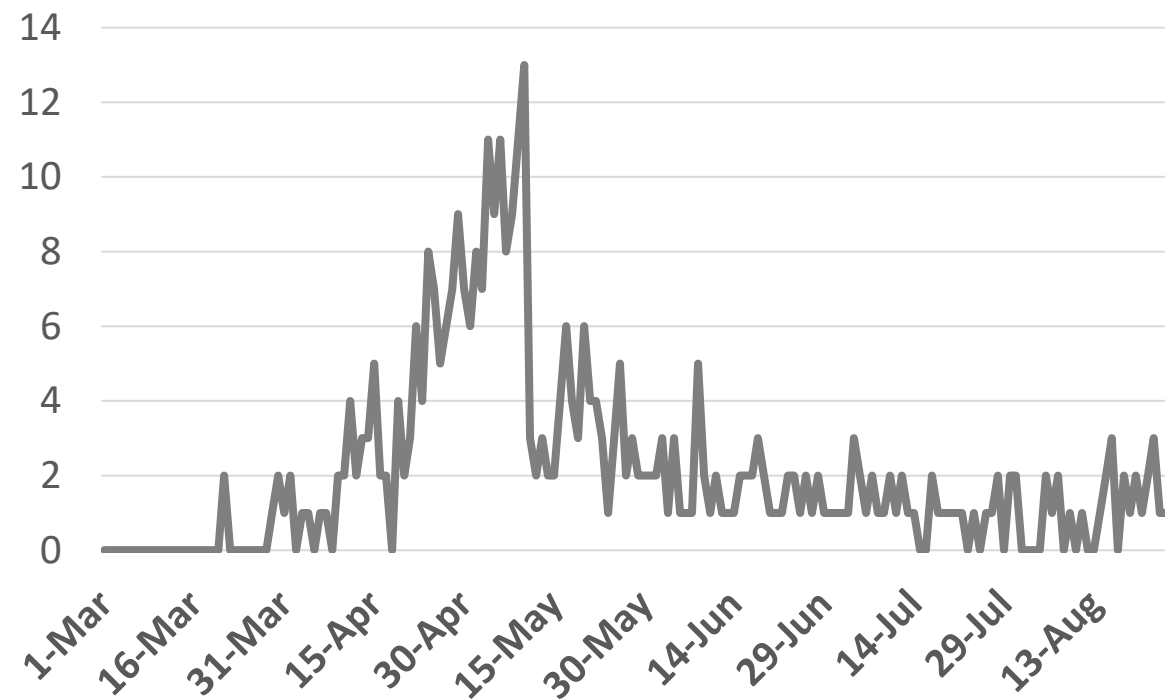
Source : [Qatar ministry of health](#)

*No announced statistic data from 31 July to 4 August & from 21 to 23 August

*No announced statistic data on weekends and official holidays.

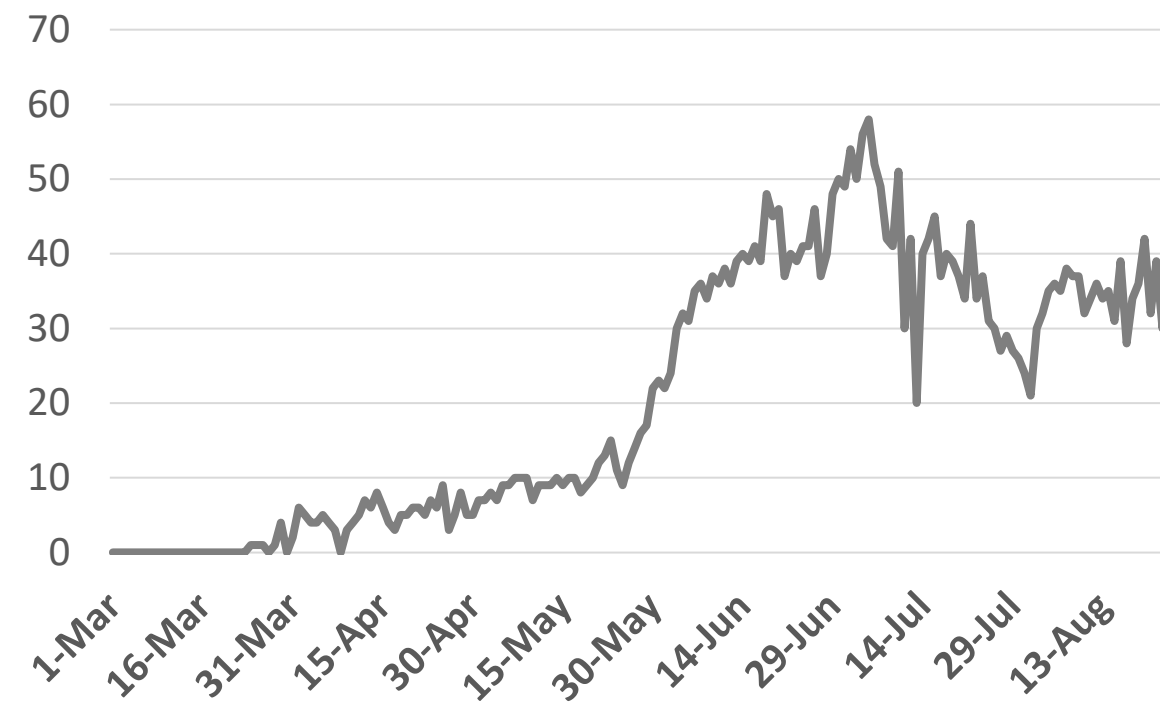
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



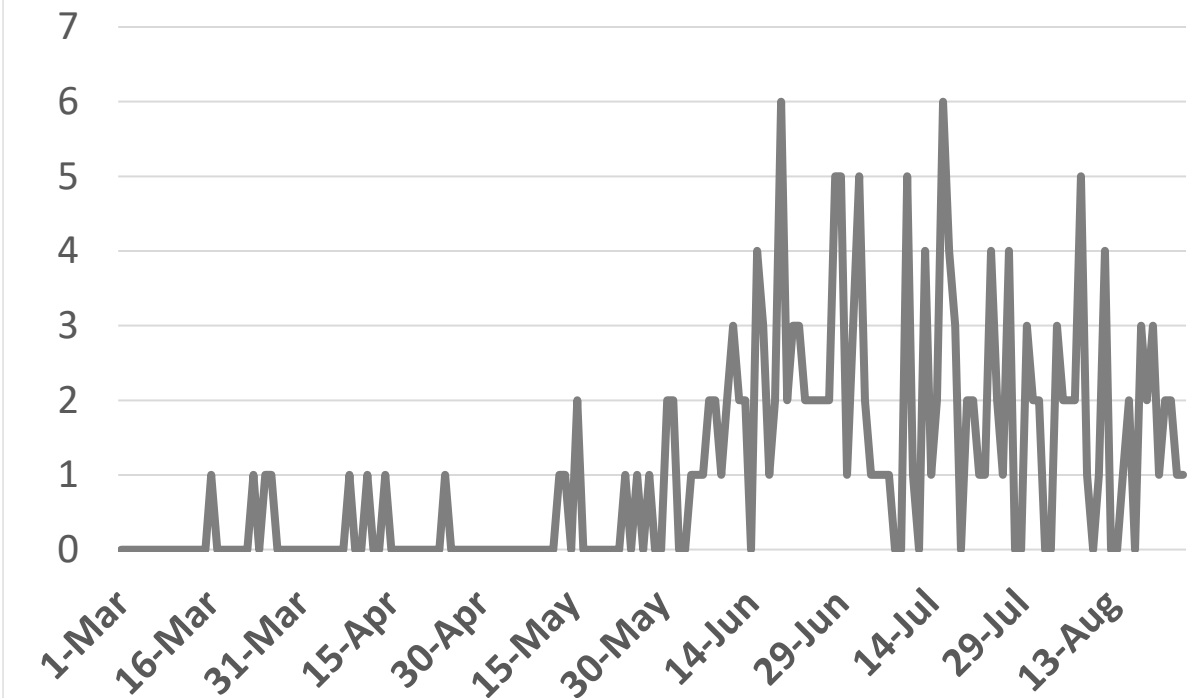
Source : National Emergency Crisis and Disaster Management Authority

KSA



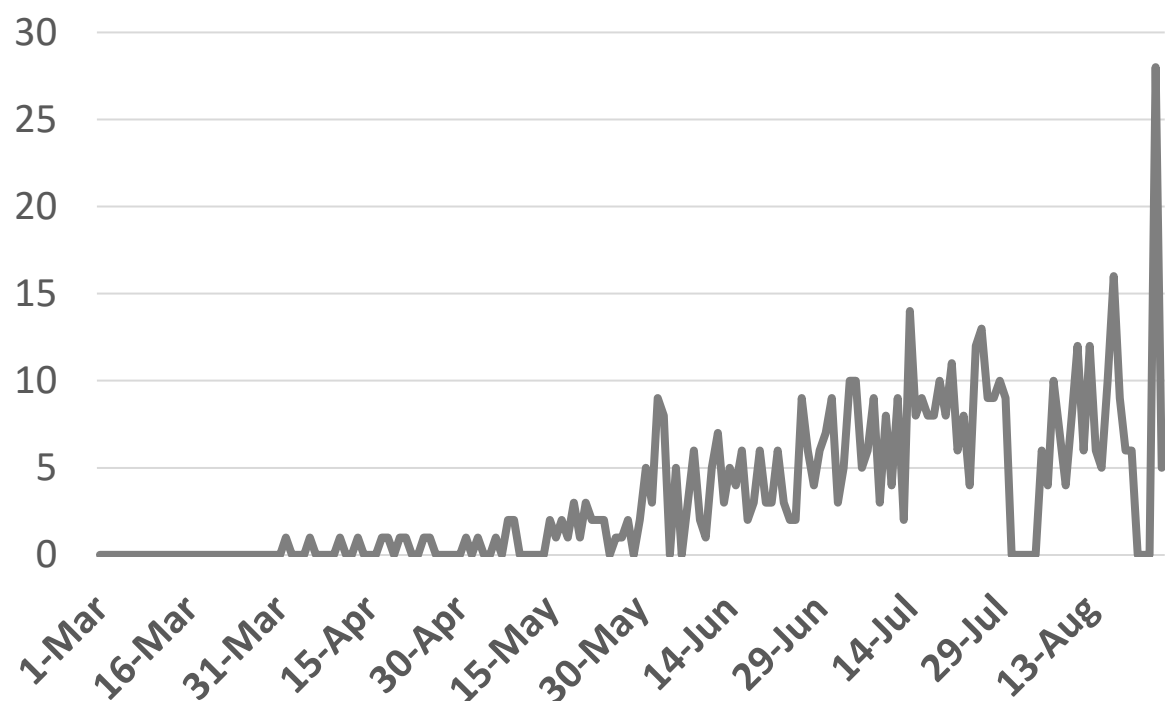
Source : KSA ministry of health

Bahrain



Source :WHO

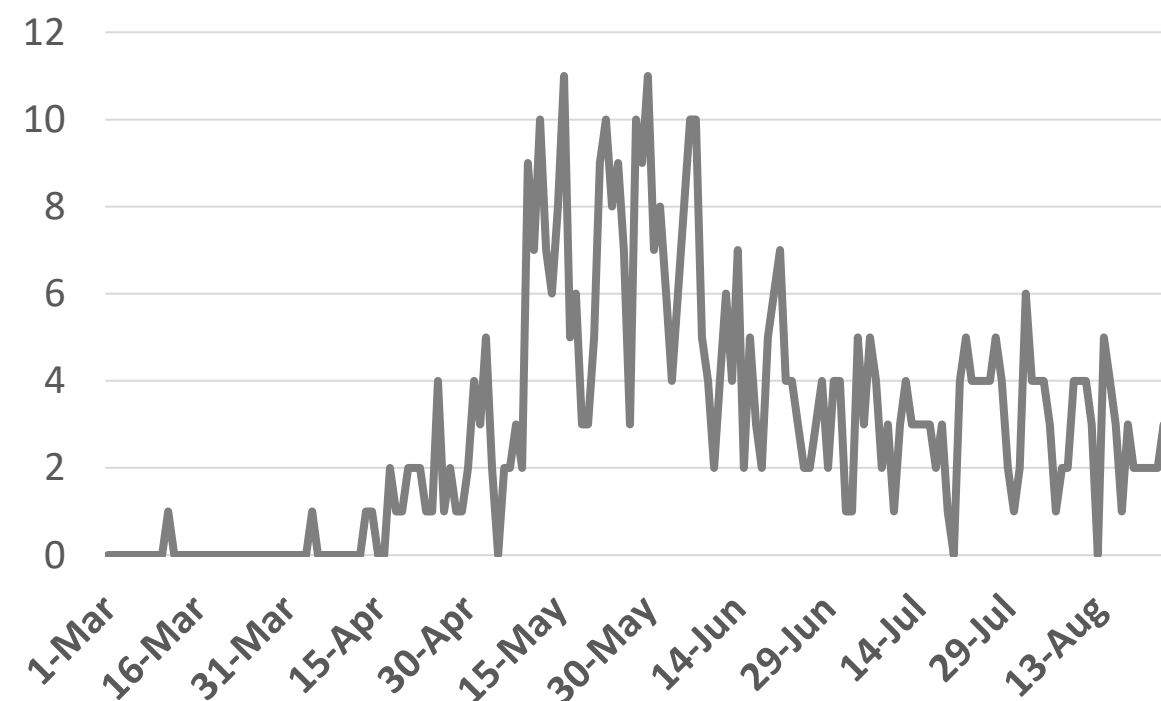
Oman



Source :Oman ministry of health

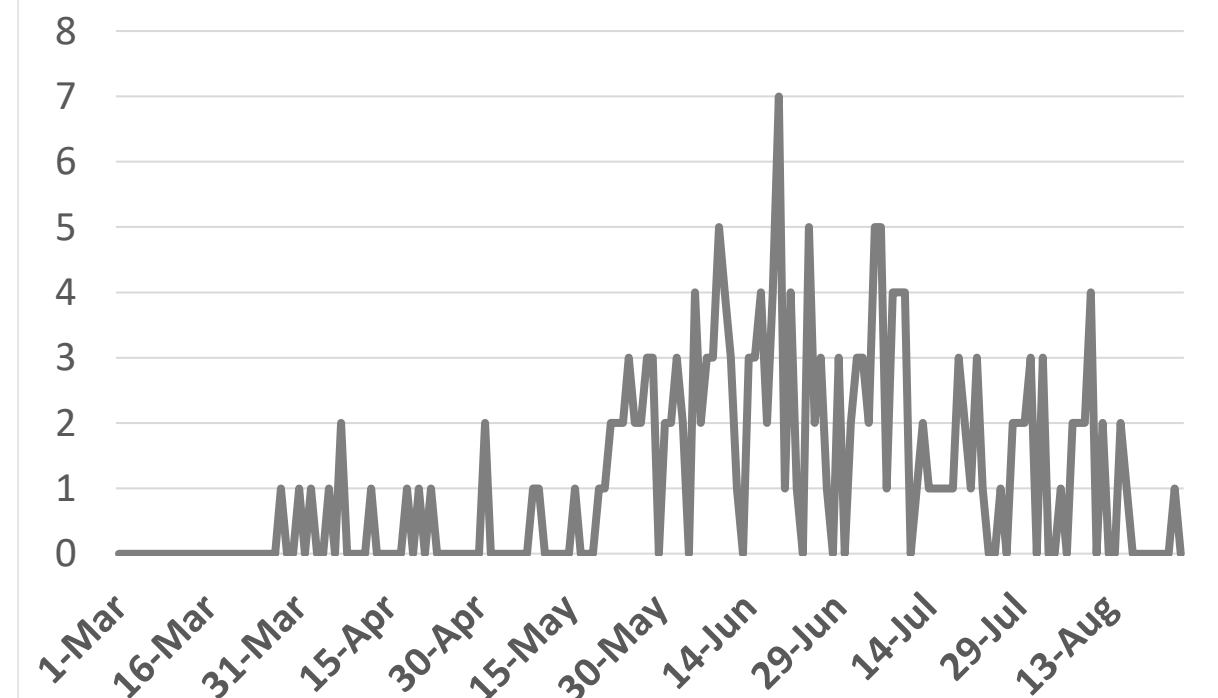
Kuwait

© ADPHC 2020



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

*No announced statistic data from 31 July to 4 August & from 21 to 23 August

*No announced statistic data on weekends and official holidays.



Article 1

COVID-19 and Multisystem Inflammatory Syndrome in Children and Adolescents

Published

17 August 2020 [THE LANCET](#)

- The COVID-19-associated multisystem inflammatory syndrome in children and adolescents is also interchangeably referred to as pediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 (PIMS-TS) or multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19.
- MIS-C can lead to shock and multiple organ failure that requires intensive care. The association between multisystem inflammatory syndrome in children and COVID-19 is still unknown.
- This review, therefore, critically appraised and summarized the available evidence to provide insights into current clinical practice and implications for future research directions.
- These insights also provide evidence for the need to develop a clear case definition and treatment protocol for this novel condition and also sheds light on future therapeutic interventions and the potential for vaccine development.





Article 2

Comparison of Molecular Testing Strategies for COVID-19

Published

Control: A Mathematical Modelling Study

18 August 2020 [THE LANCET](#)

This article aims to investigate the potential impact of different testing and isolation strategies on the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Methodology

- A mathematical model of SARS-CoV-2 transmission was developed based on infectiousness and PCR test sensitivity over time since infection.
- The expected effectiveness of different testing strategies was defined as the percentage reduction in R .
- The data on the performance of antibody tests reported by the Foundation for Innovative New Diagnostics was reviewed, and their implications for the use of so-called immunity passport was also examined.

Conclusion

- The results of the study show that molecular testing can play a significant role in SARS-CoV-2 transmission prevention, particularly among health-care workers and other high-risk groups. However, no single strategy will reduce R below 1 at current levels of population immunity. Immunity passports based on antibody tests or tests for infection face substantial technical, legal, and ethical challenges.
- The findings show that antibody testing and PCR are needed for the surveillance of the COVID-19 pandemic and will play an important role in informing the lifting or re-imposing of different components of physical distancing interventions by allowing accurate estimates of R and recognizing the degree of transmission. It also plays a significant role in SARS-CoV-2 transmission prevention, with effectiveness strongly dependent on speed to results and coverage.





Article 3

Revised COVID-19 Case Definitions

Published

August 13, 2020 in [WHO EUROPE](#)

Revised interim guidance on public health surveillance for COVID-19 cases by WHO has been published. This document consists of a revision of probable and suspected case definitions to integrate amplified knowledge on the clinical spectrum of COVID-19 signs and symptoms. It also provides guidance to the Member States on the implementation of surveillance for COVID-19 and the reporting requirements for WHO.





Article 4

Published

18 August 2020 [JAMA](#)

Association of Race with Mortality Among Patients Hospitalized with Coronavirus Disease 2019 (COVID-19) at 92 US Hospitals

This study aims to explore the association of race, adjusting for sociodemographic and clinical factors, on all-cause, in-hospital mortality for patients with COVID-19 in the United States.

Methodology

- This cohort study included 11,210 individuals with COVID-19 presenting for care at 92 hospitals across 12 states.

Conclusion

- No difference was observed in all-cause, in-hospital mortality between White and Black patients after adjusting for age, sex, insurance status, comorbidity, neighborhood deprivation, and site of care.
- Thus, the results of the study suggest that race was not independently associated with in-hospital mortality after adjusting for differences in sociodemographic and clinical factors.





Article 5

Published

COVID-19-Associated Hyperinflammation and Escalation of Patient Care: A Retrospective Longitudinal Cohort Study

21 August 2020 [THE LANCET](#)

This retrospective longitudinal cohort study explores a specific phenotype of COVID-19-associated hyperinflammation (COV-HI) and its associations with the escalation of respiratory support and survival. Around 269 patients (aged ≥ 18 years) were consecutively recruited from University College London Hospitals and Newcastle upon Tyne Hospitals in the UK.

- Of these, 178 (66%) were eligible for escalation of respiratory support, and 91 (34%) patients were not eligible. From the entire cohort, 90 (33%) of the patients met the COVID-19-associated hyperinflammation criteria (COV-HI) at admission.
- Despite having a younger median age and lower median Charlson Comorbidity Index scores, a higher proportion of patients with COV-HI on admission were known to die during follow-up compared with the patients without COV-HI on admission.
- Meeting the COV-HI criteria was associated significantly with the risk of next-day escalation of respiratory support or death after adjustment for sex, age, and comorbidity.
- Associations between elevated inflammatory markers, escalation of respiratory support, and survival in people with COVID-19 indicate the existence of a high-risk inflammatory phenotype.
- COV-HI can be considered useful to stratify patient groups in trial design. Researches conducted in future can facilitate targeted trials of intervention with immunomodulation and support in identifying patients who likely need escalation of care.



Article 6

Histopathological Findings and Viral Tropism in UK Patients with Severe Fatal COVID-19: A Post-Mortem Study

Published

20 August 2020 [THE LANCET](#)

This case series documents the major pathological findings of ten post-mortem examinations conducted on patients with clinically confirmed COVID-19.

Methodology

- This case series documents the major pathological findings of ten post-mortem examinations conducted on patients with clinically confirmed COVID-19 and examined the histopathological discoveries and viral tropism in patients who died of severe COVID-19.

Conclusion

- Viral genomes were detected outside of the respiratory tract in 4 of five patients. The presence of subgenomic viral RNA transcripts provided evidence of active viral replication outside the respiratory tract in 3 of the five patients. Hence, four dominant interrelated pathological processes in severe COVID-19 included immune cell depletion, haemophagocytosis, thrombosis, and diffuse alveolar damage.
- Several different novel autopsy findings were also included such as brain microglial activation, secondary disseminated mucormycosis, adrenal micro-infarction, pancreatitis, and pericarditis, which may need further investigation to understand their role in COVID-19.
- Thus, the results of the study suggest that race was not independently associated with in-hospital mortality after adjusting for differences in sociodemographic and clinical factors.



THANK YOU

 ADPHCAE  ADPHC_AE  ADPHC_AE  ADPHC.AE  ADPHC-AE  056 2312171