

SCIENTIFIC RESEARCH MONITORING ON COVID-19

7 SEPTEMBER 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 218)

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



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.

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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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UAE RESEARCH

Knowledge And Practice
Survey On UAE Community
Toward The Emerging
Corona Virus (Covid-19)

Treatment

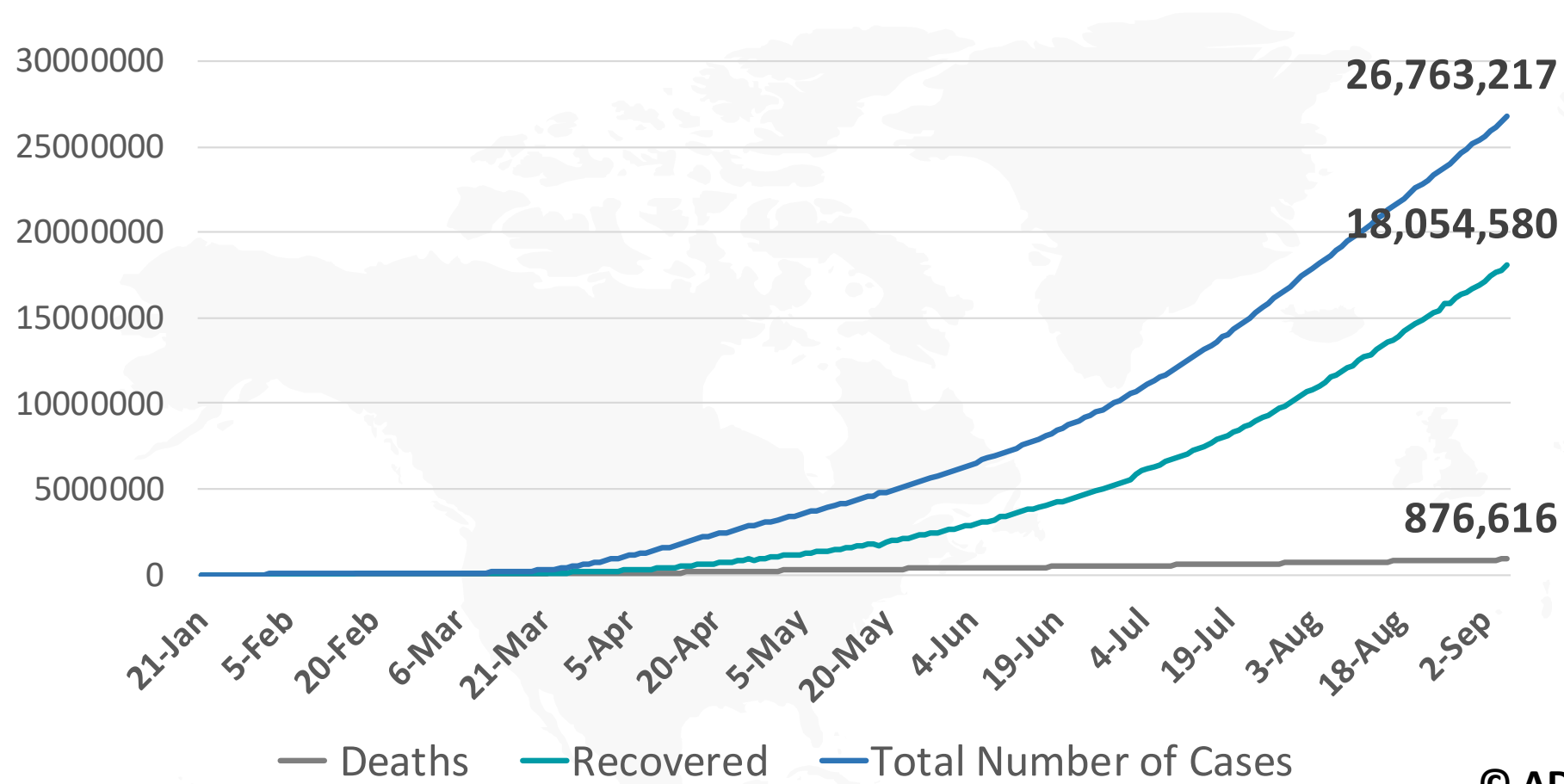
Effect of Convalescent
Plasma on Mortality Among
2 Hospitalized Patients with
COVID-19: Initial Three
Month Experience

Public Health Response

Automated and Partly
Automated Contact Tracing:
A Systematic Review to
Inform the Control of
COVID-19



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)

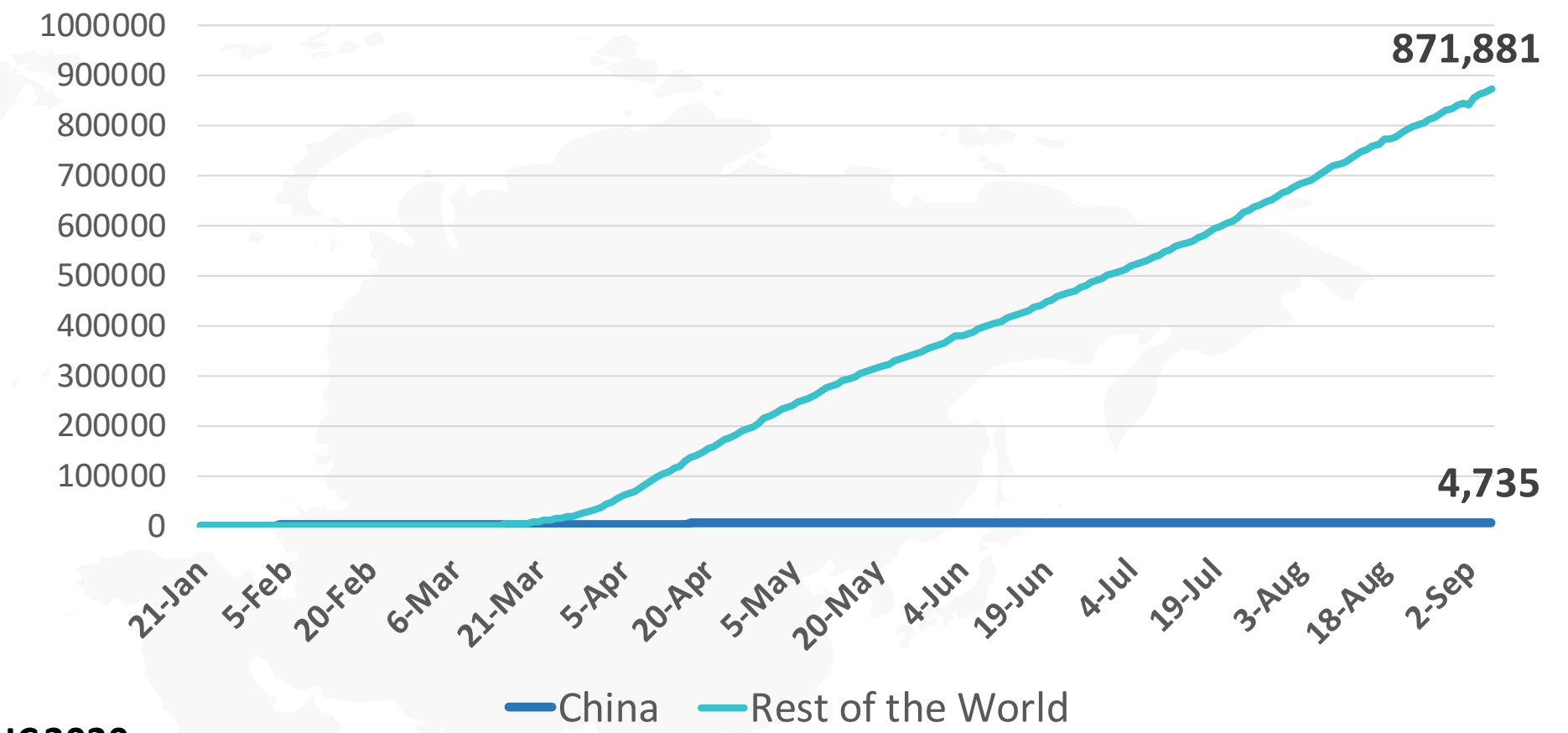


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

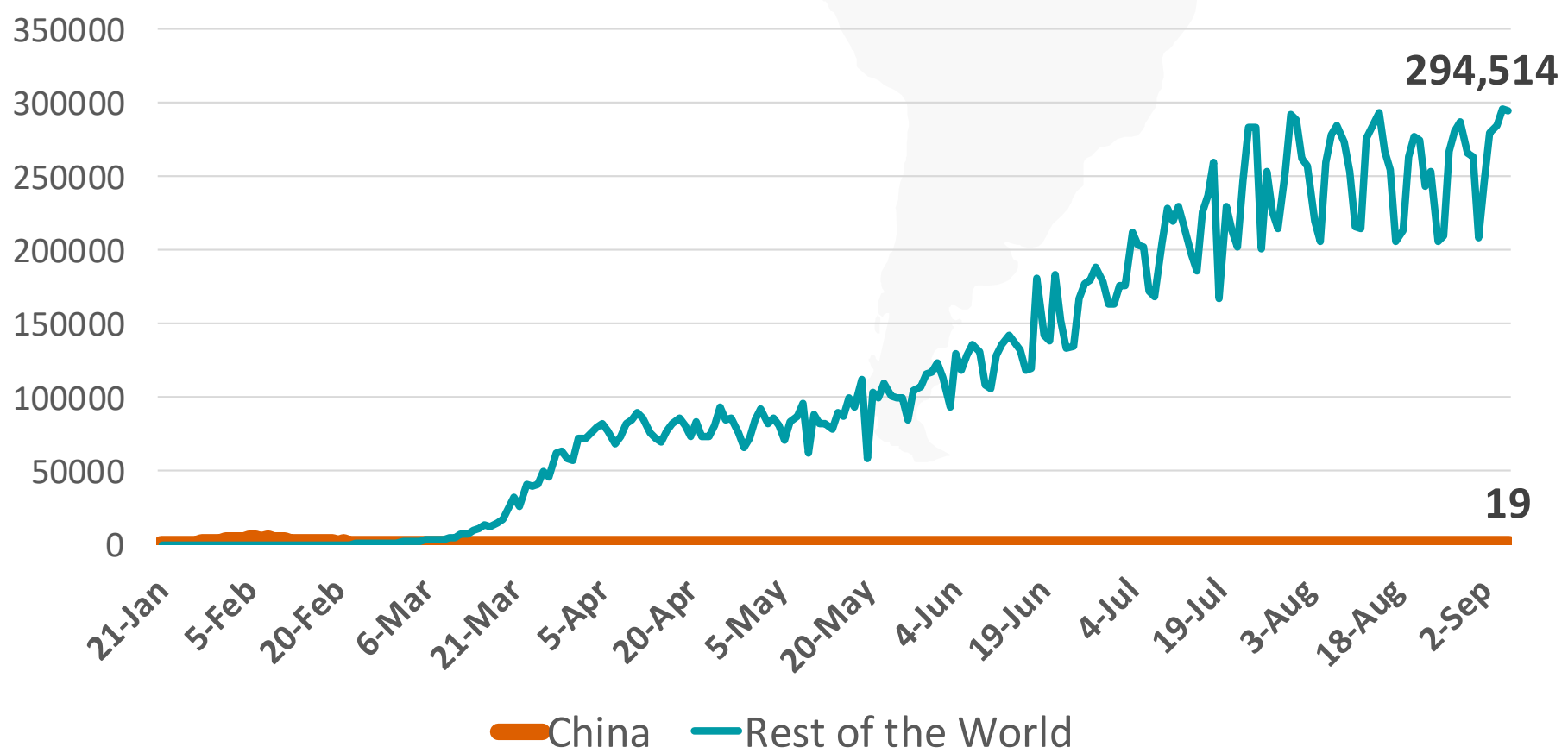


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)

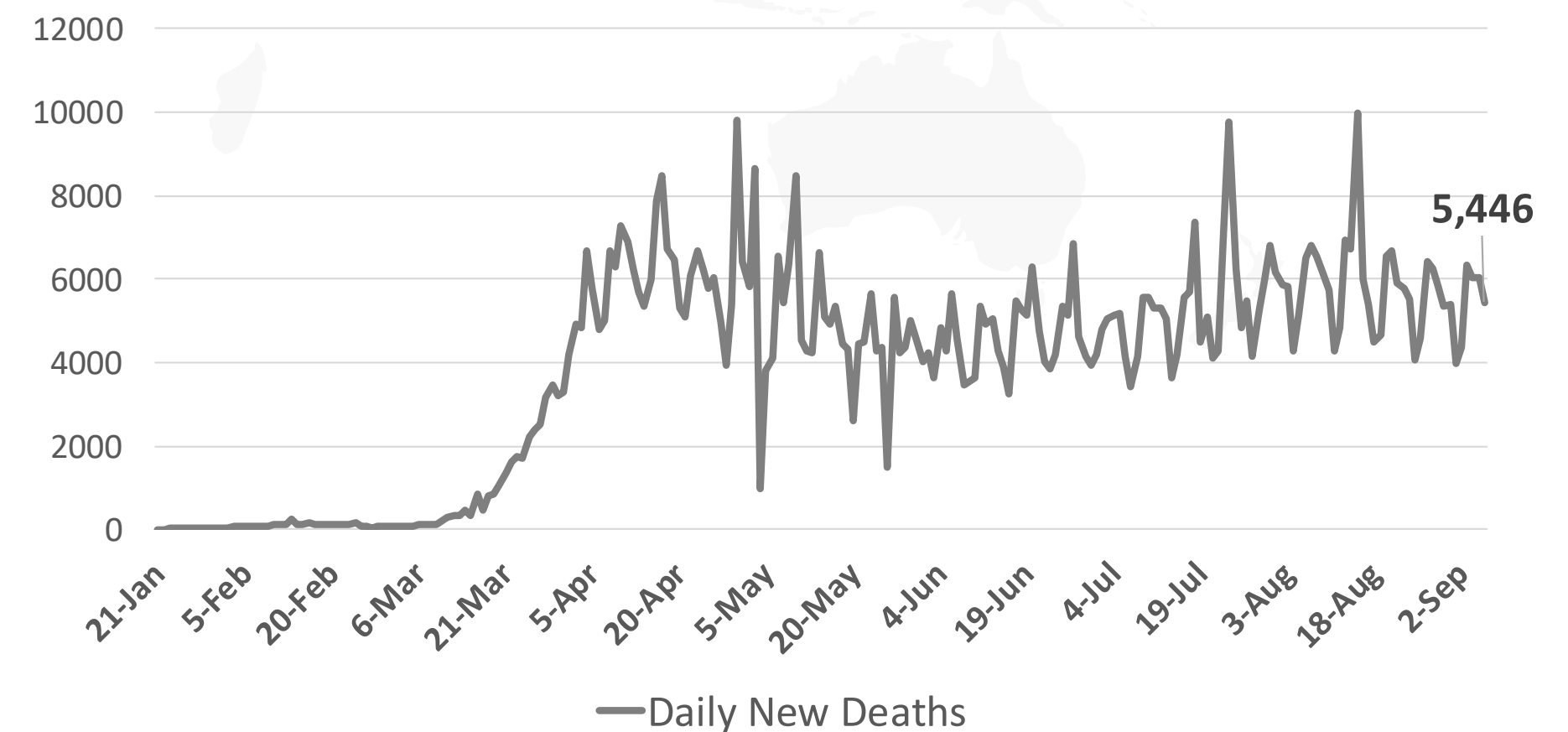


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

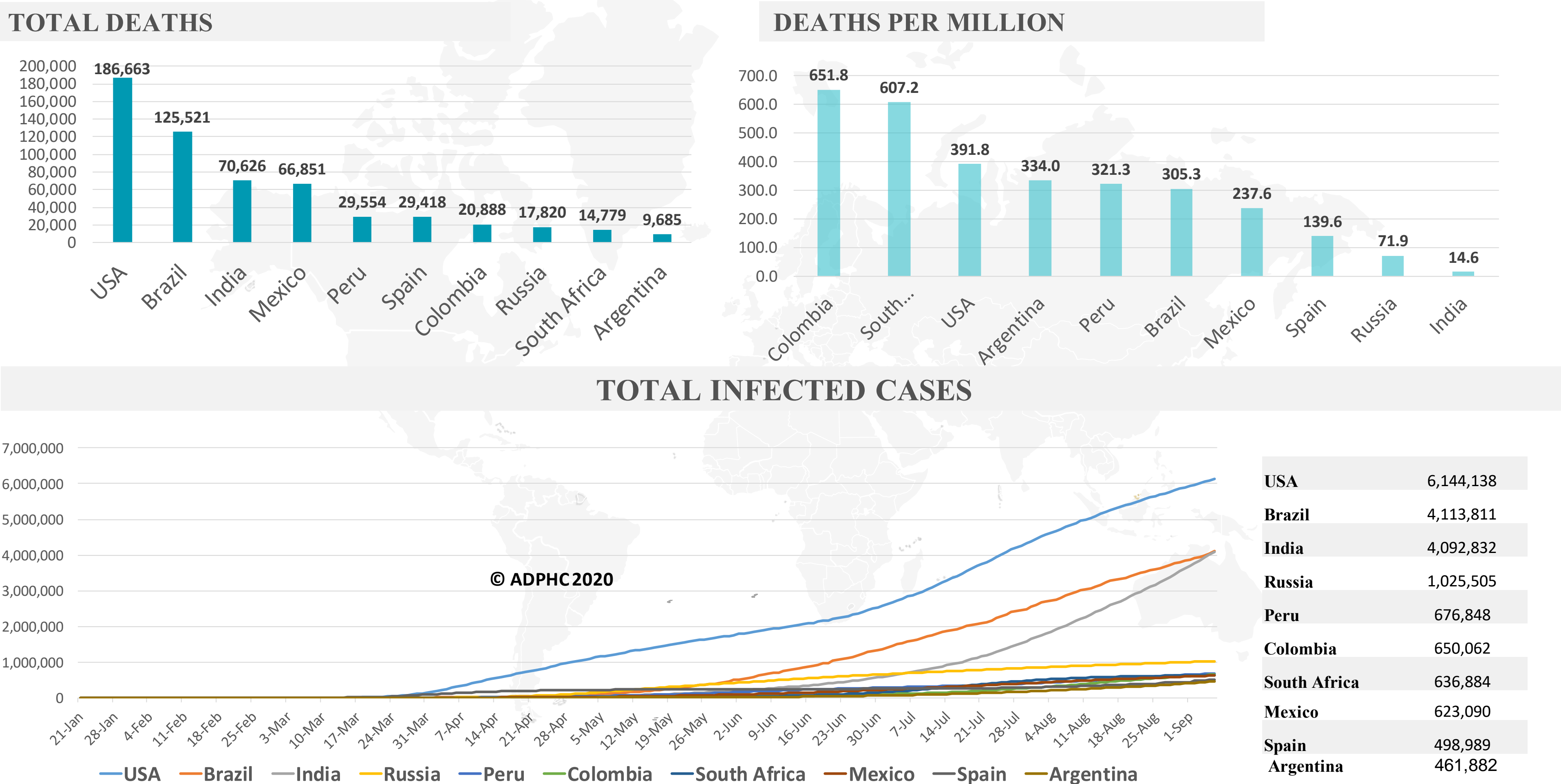
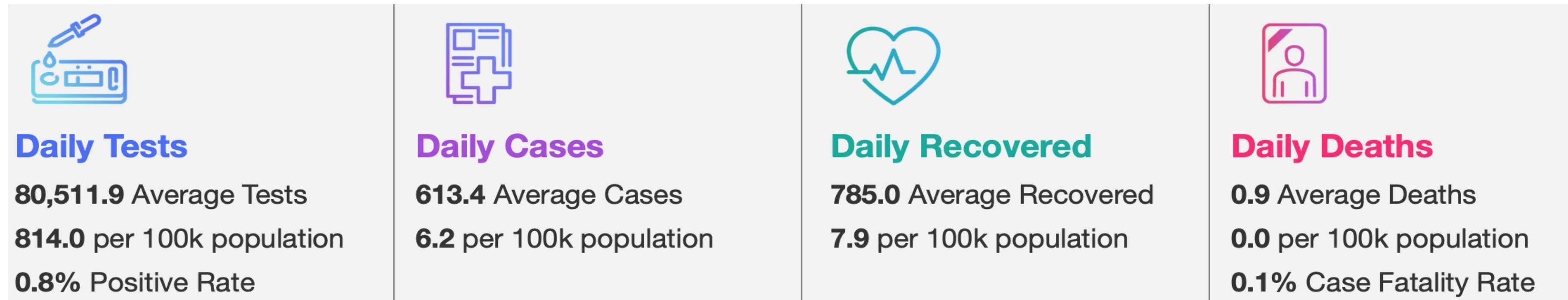


Figure 6: COVID-19 Status in the UAE (Federal Competitiveness and Statistics Authority Dashboard)



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

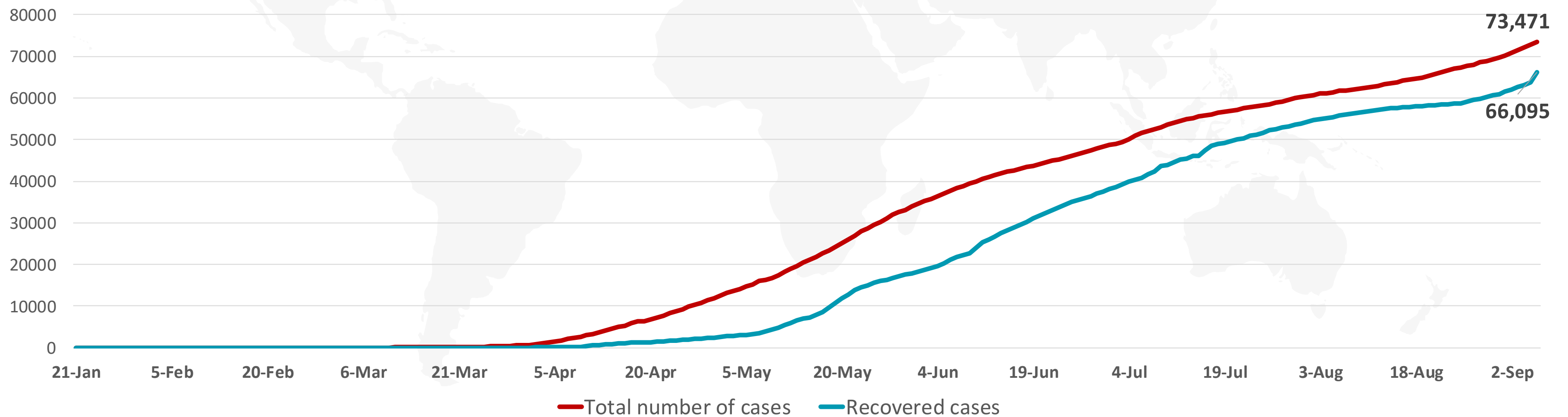
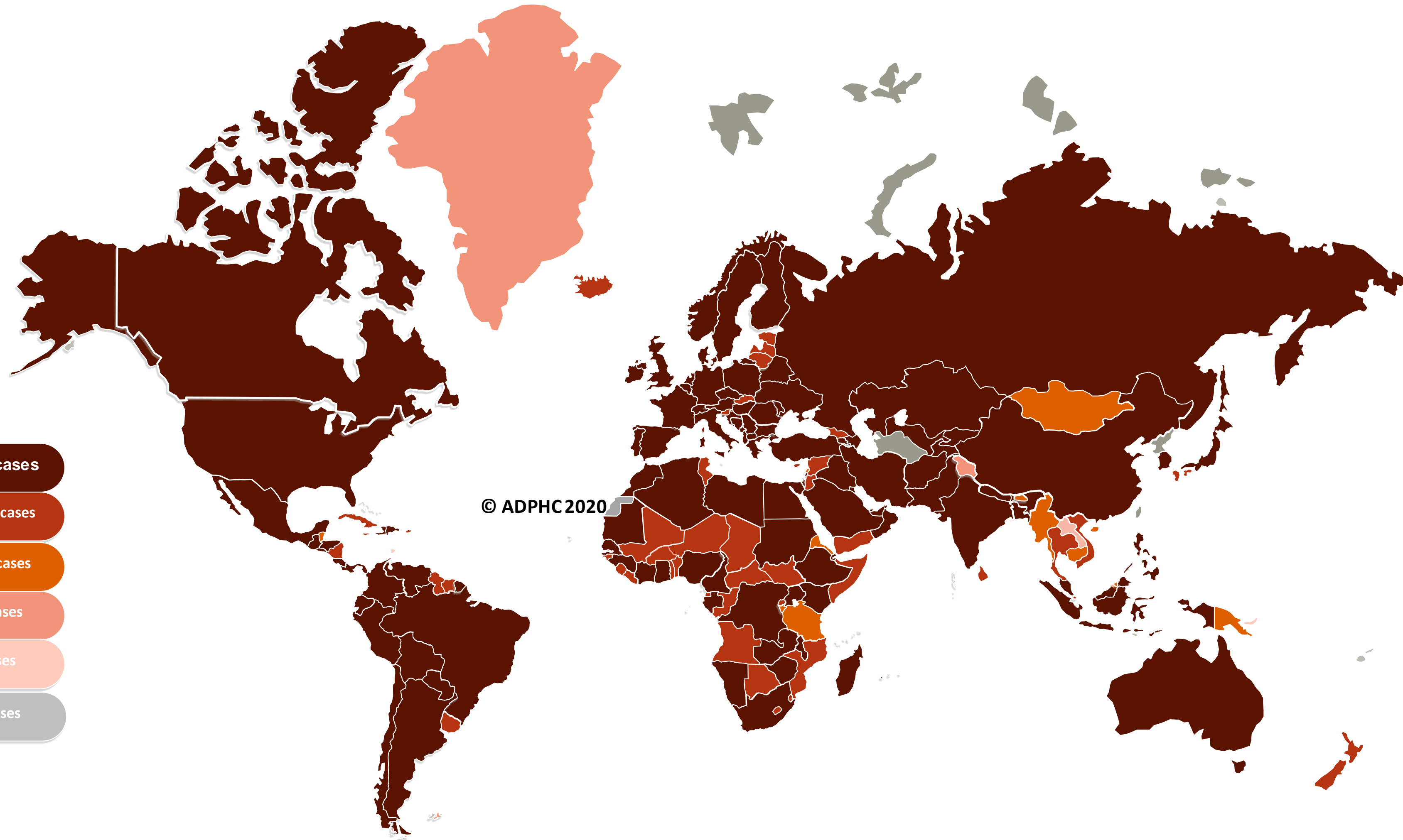


Figure 7A : Global Distribution of COVID-19 Cases



More than 5000 cases

From 1001 to 5000 cases

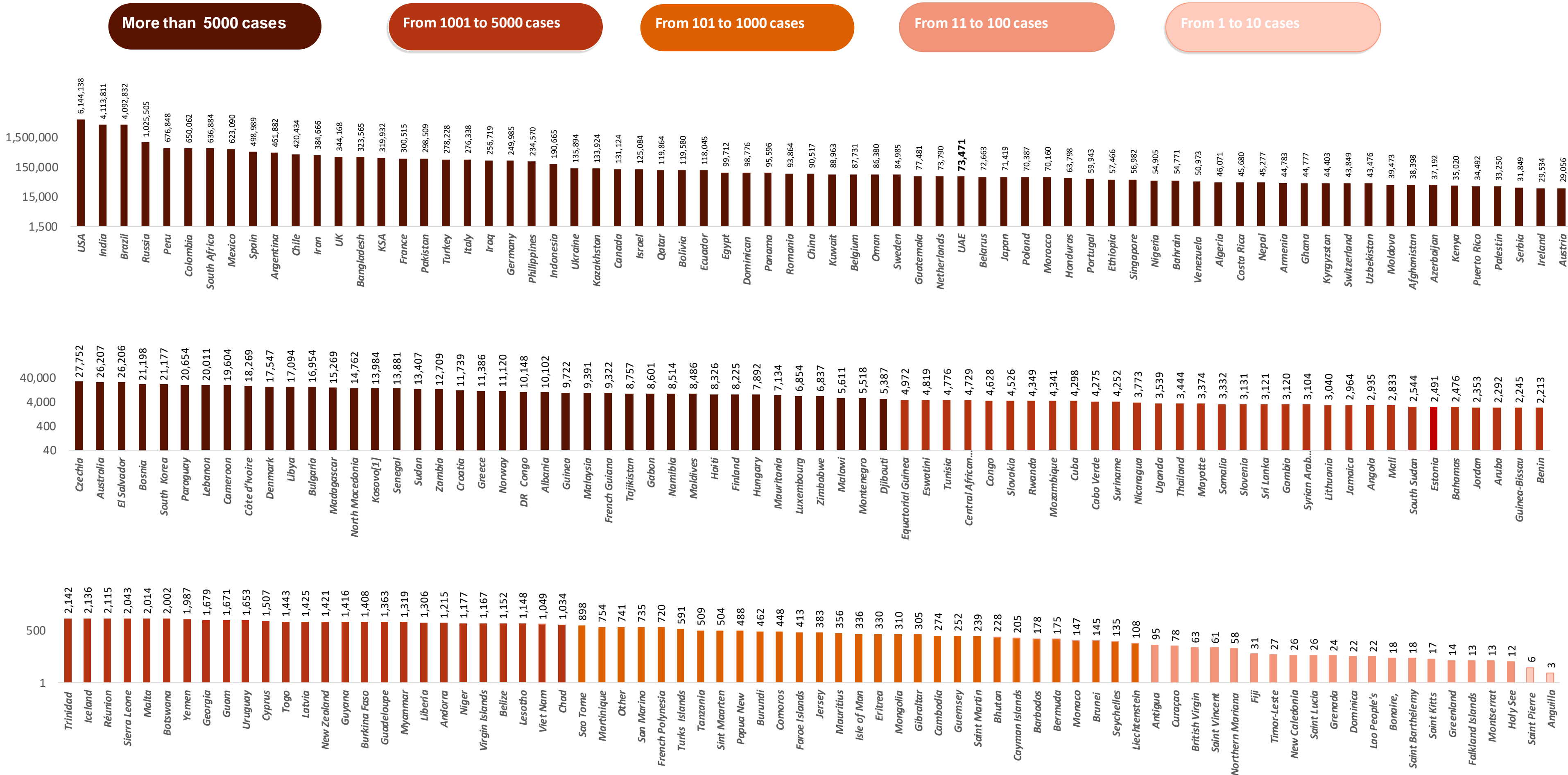
From 101 to 1000 cases

From 11 to 100 cases

From 1 to 10 cases

No confirmed cases

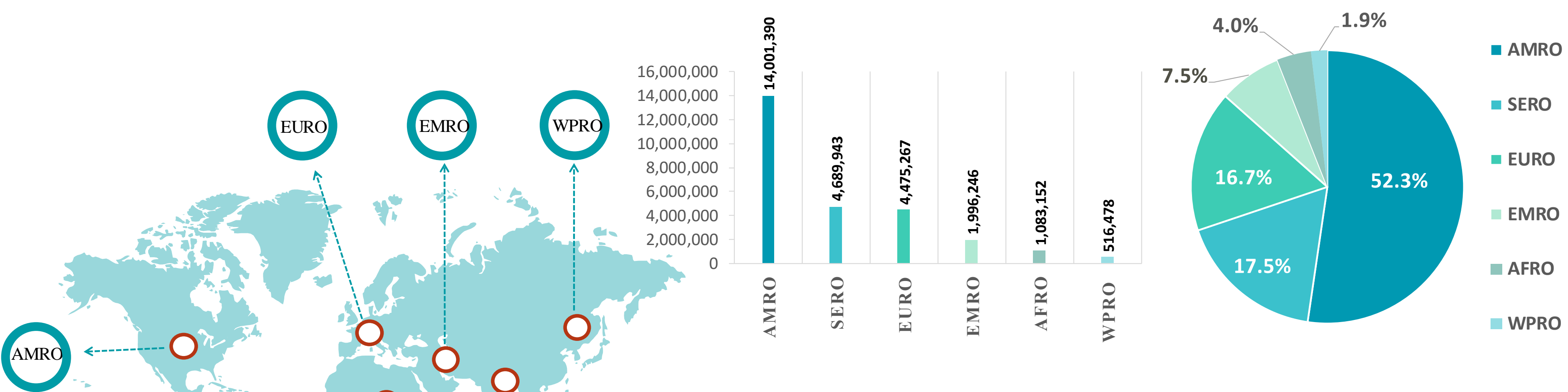
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



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

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

INFECTED



DEATHS

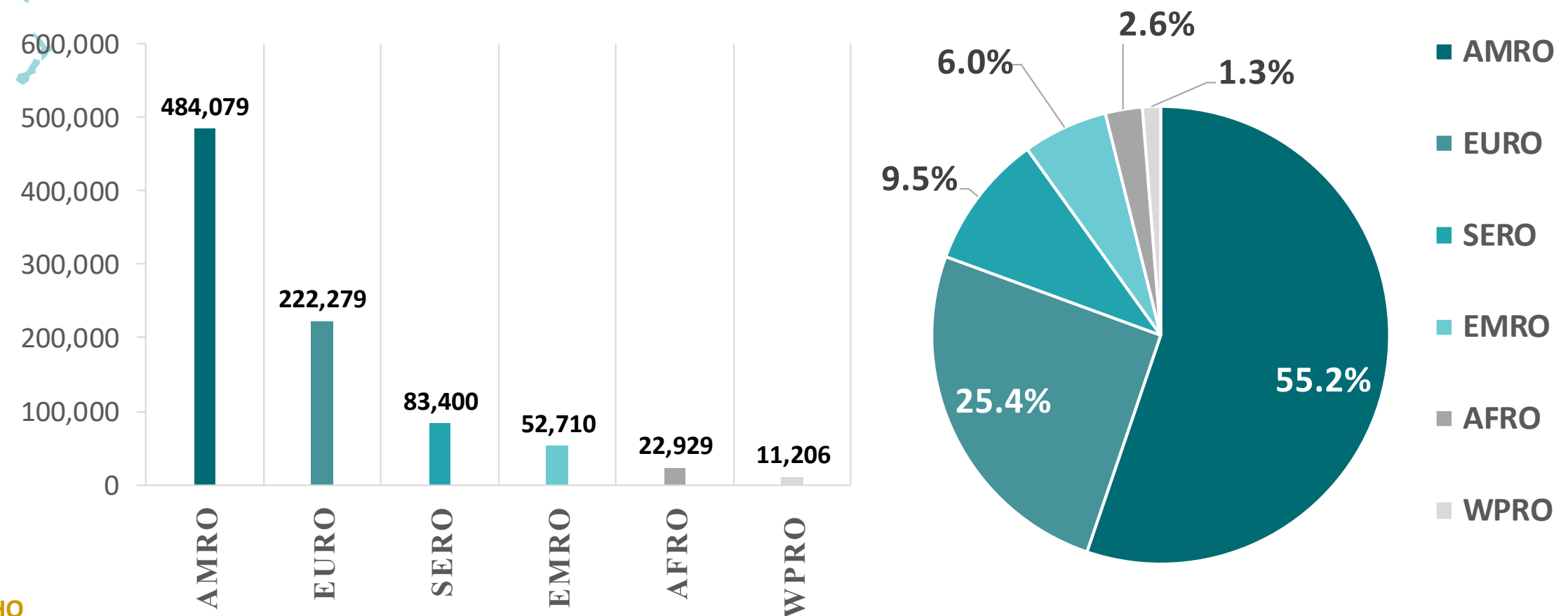
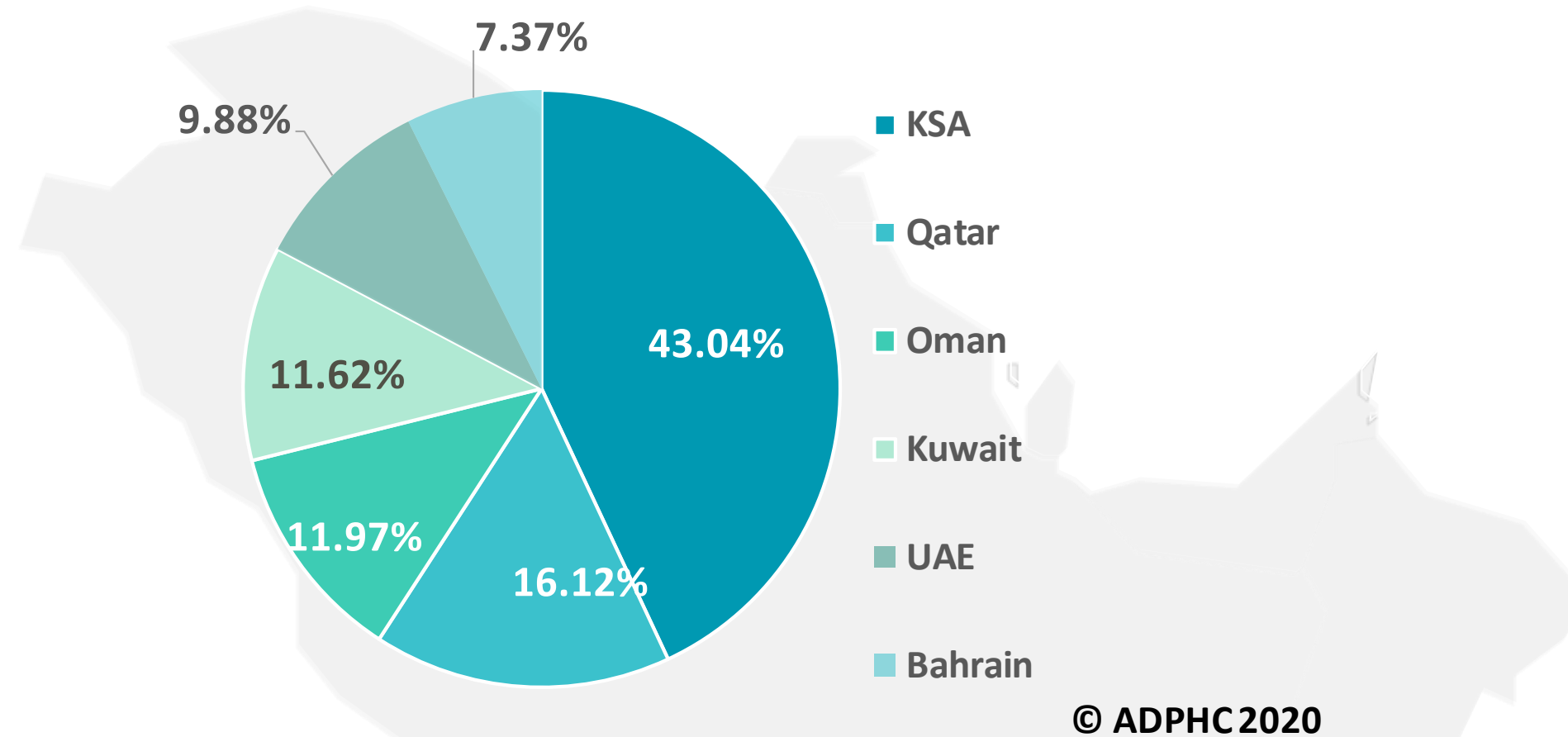
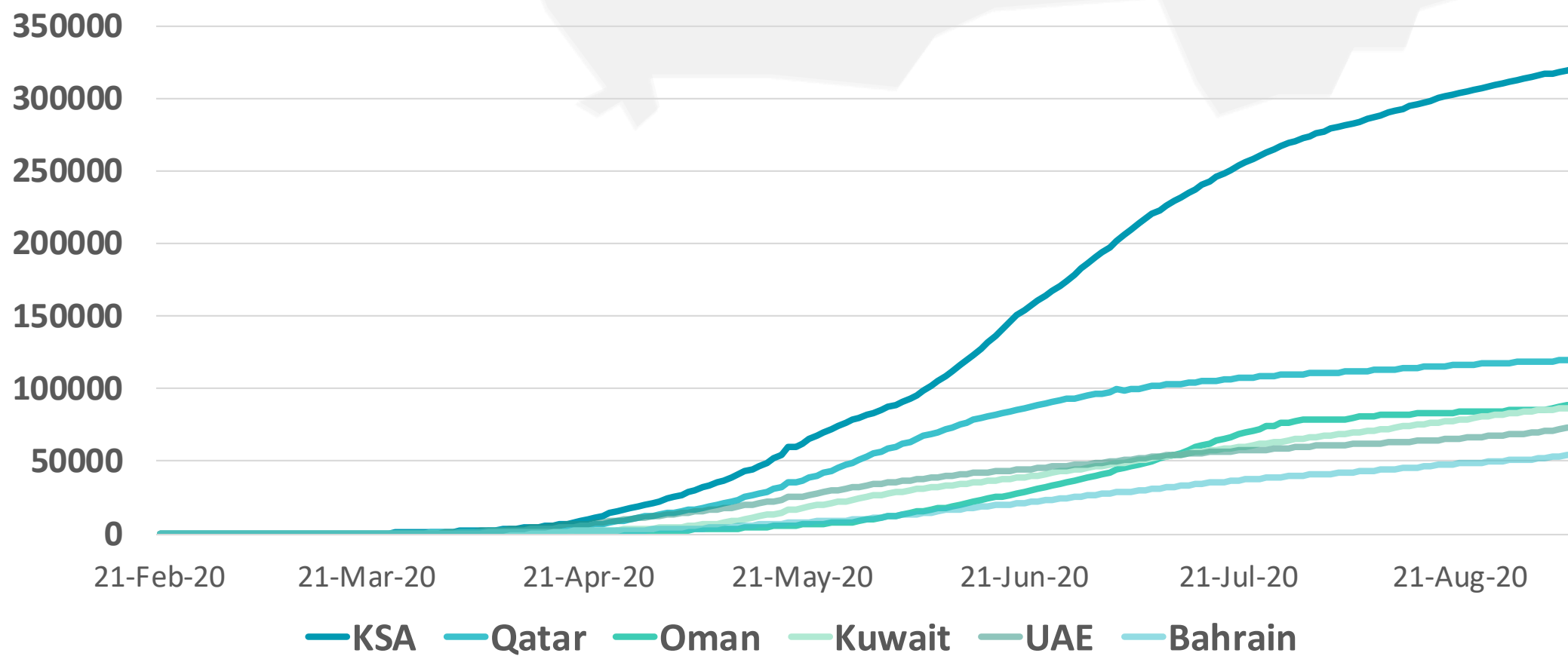
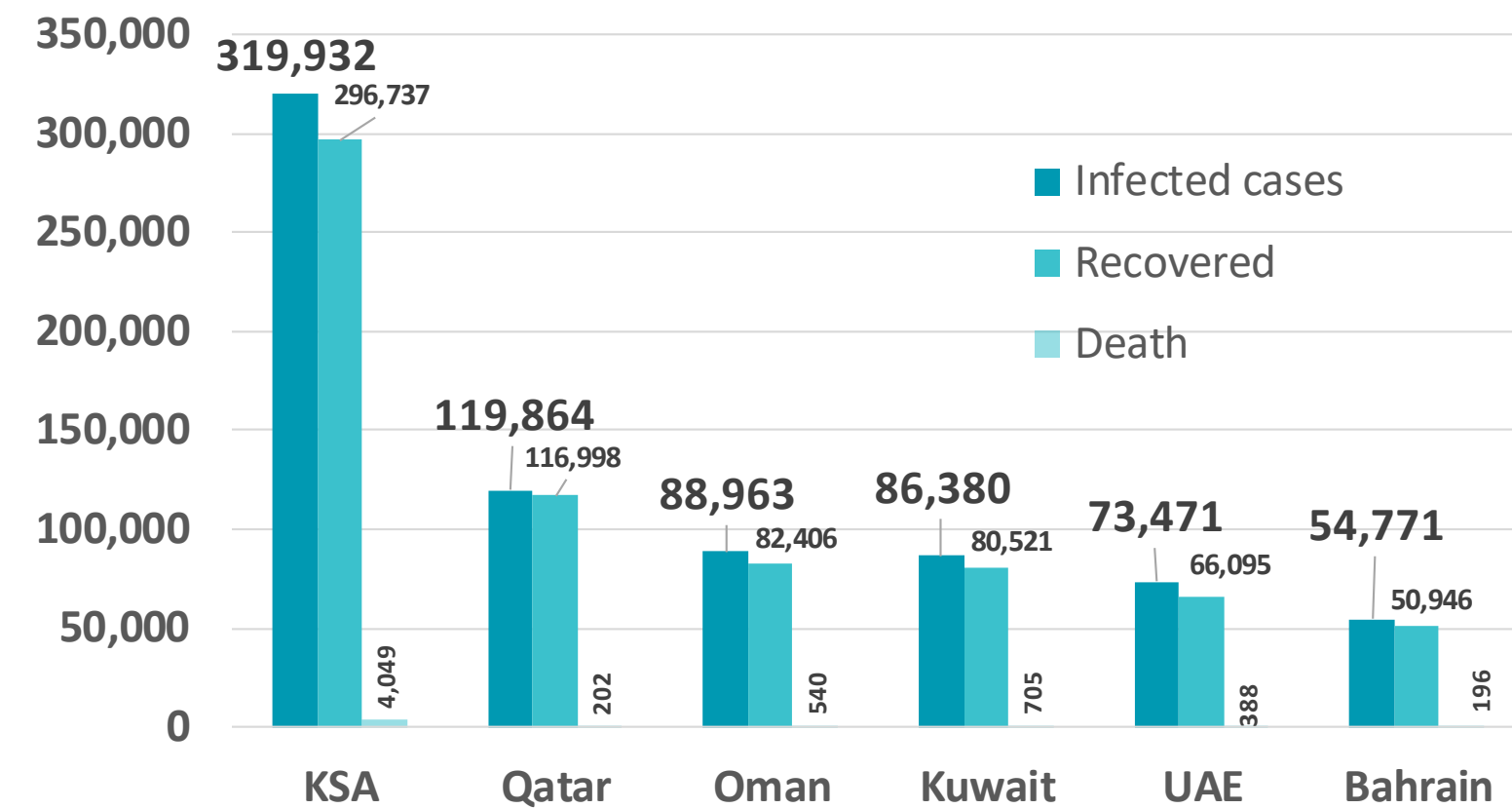


Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

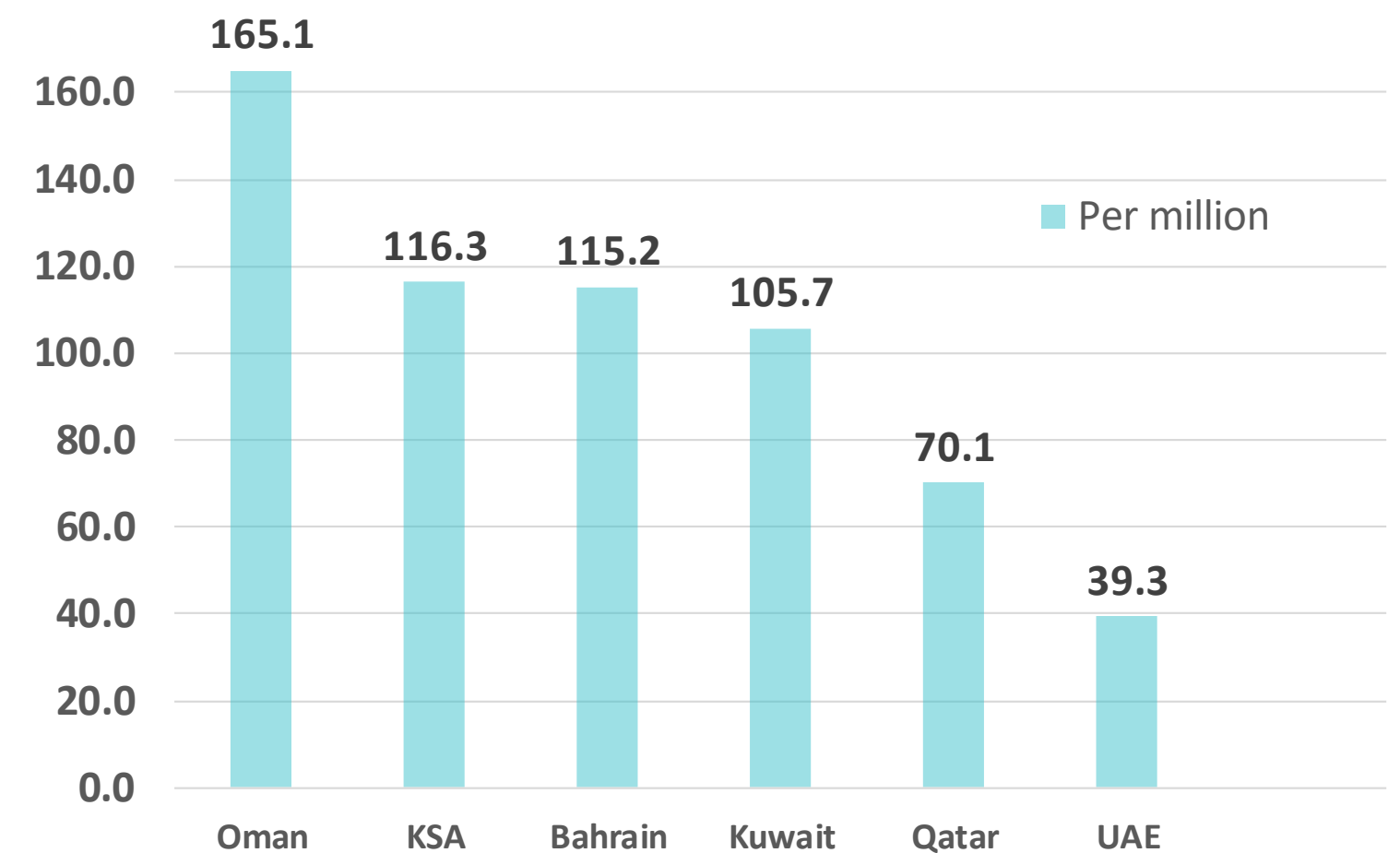
TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION



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



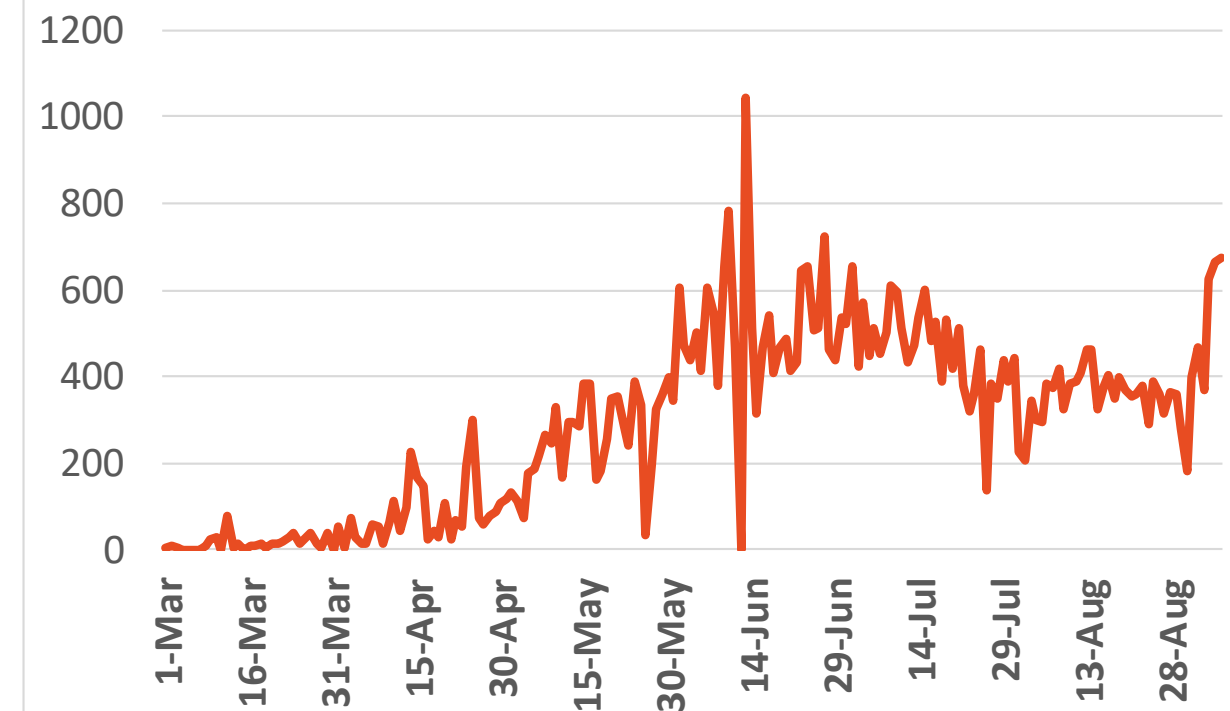
Source : National Emergency Crisis and Disaster Management Authority

KSA



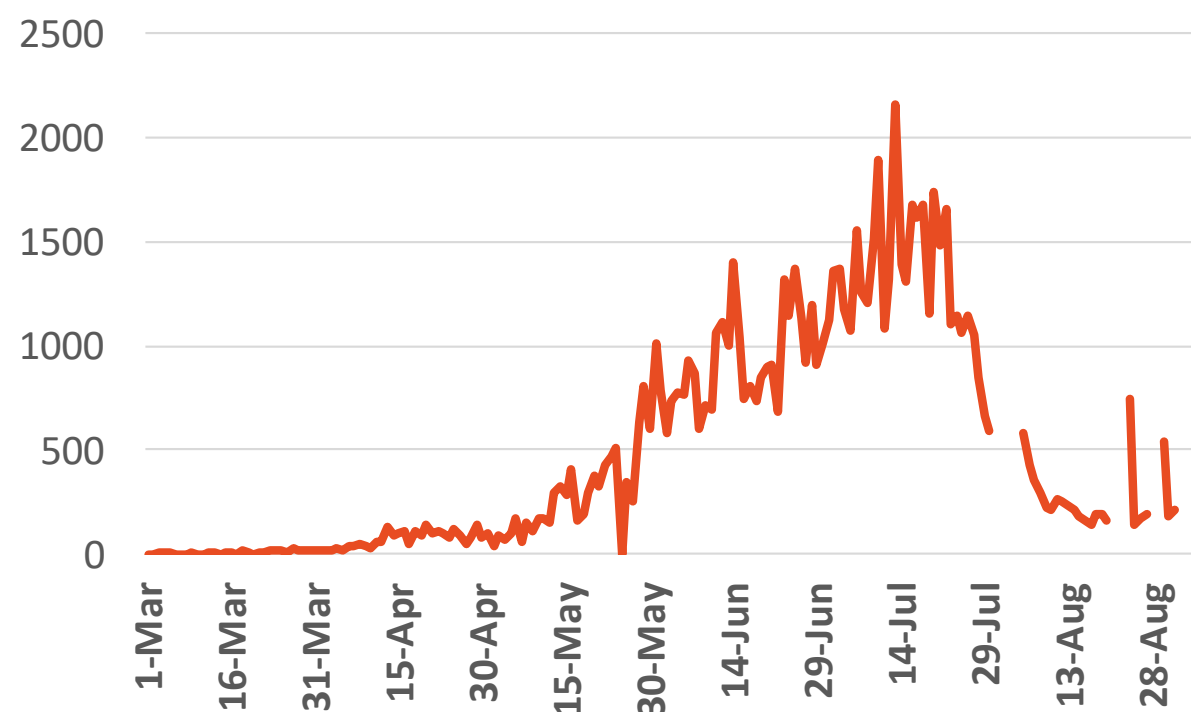
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

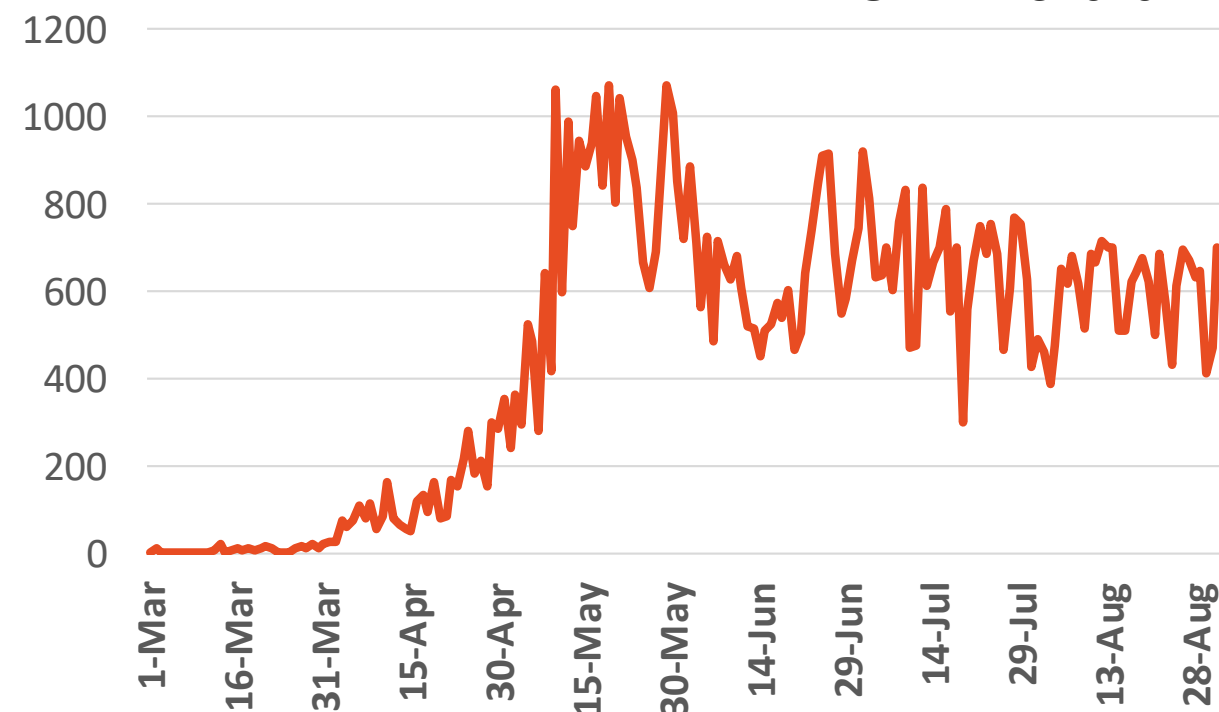


Source :Oman ministry of health

*No announced statistic data from 31 July to 4 August, 21 to 23 August & from 28 to 30 August, 2, 4 & 5 September
*No announced statistic data on weekends and official holidays.

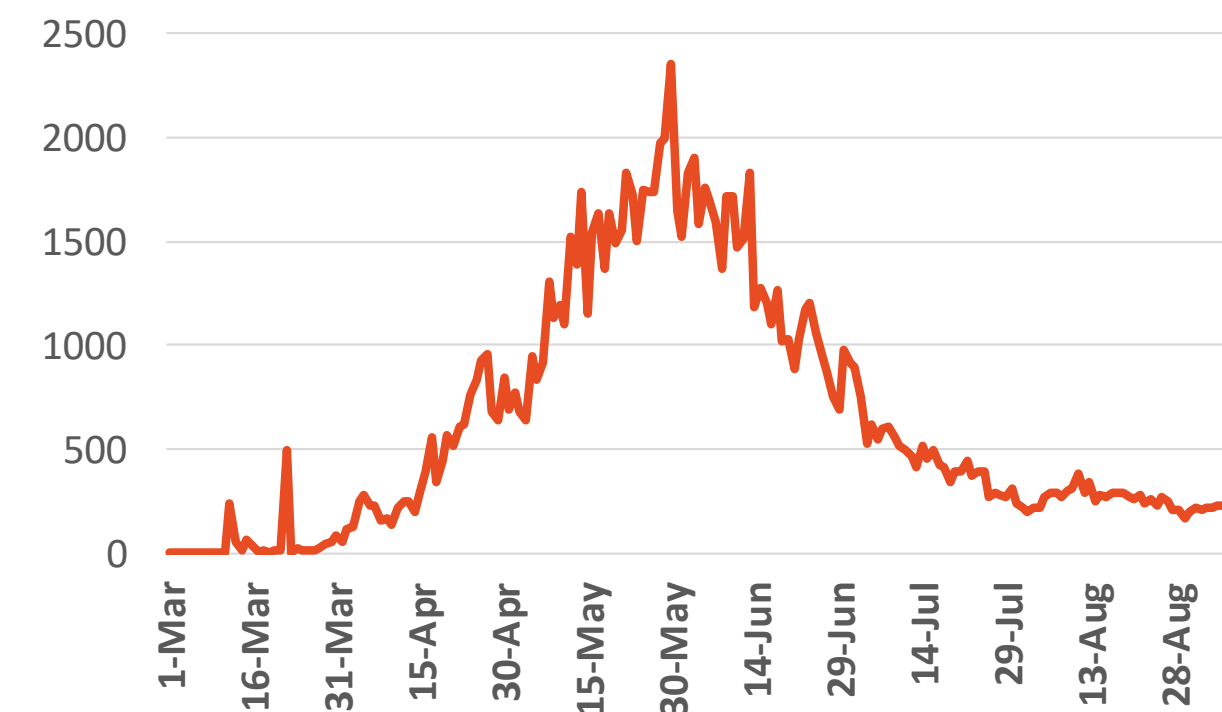
Kuwait

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Source : Kuwait ministry of health

Qatar

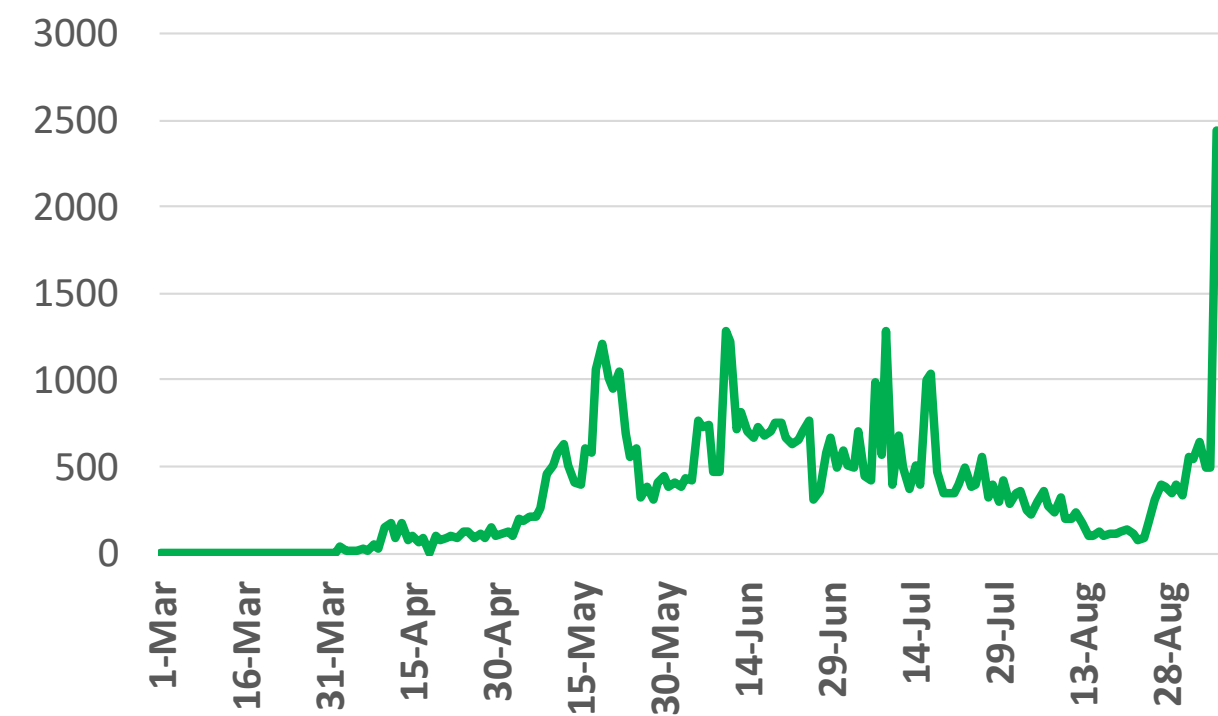


Source : Qatar ministry of health



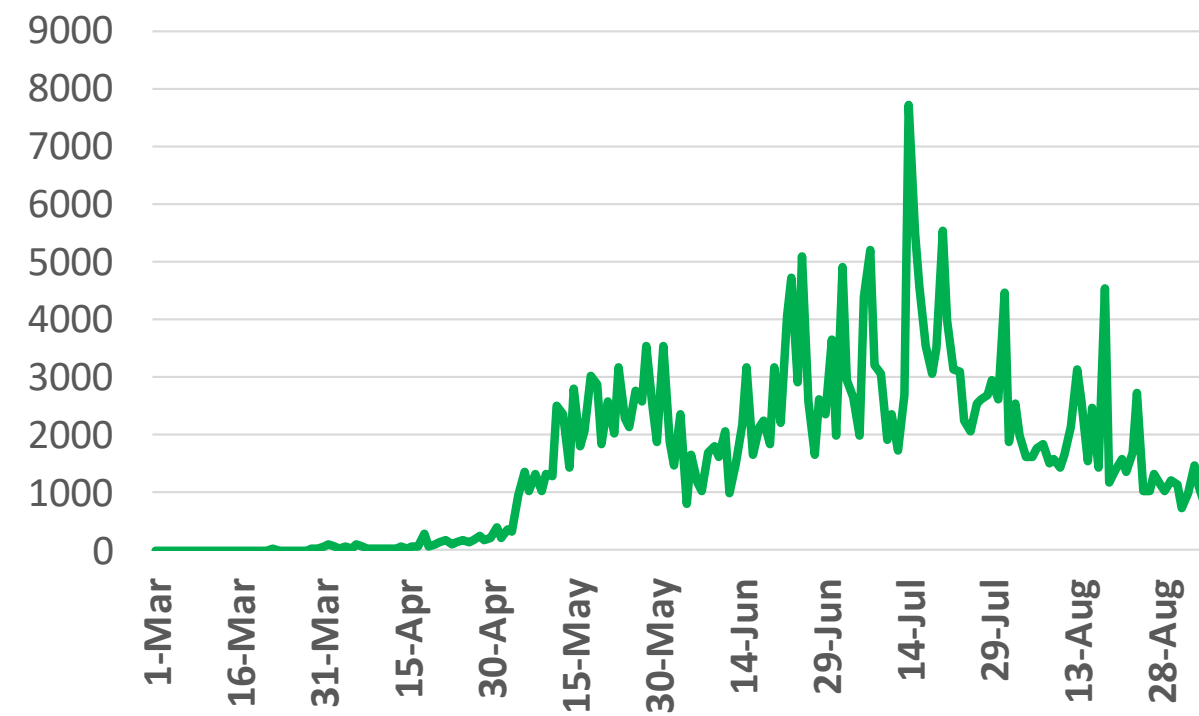
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



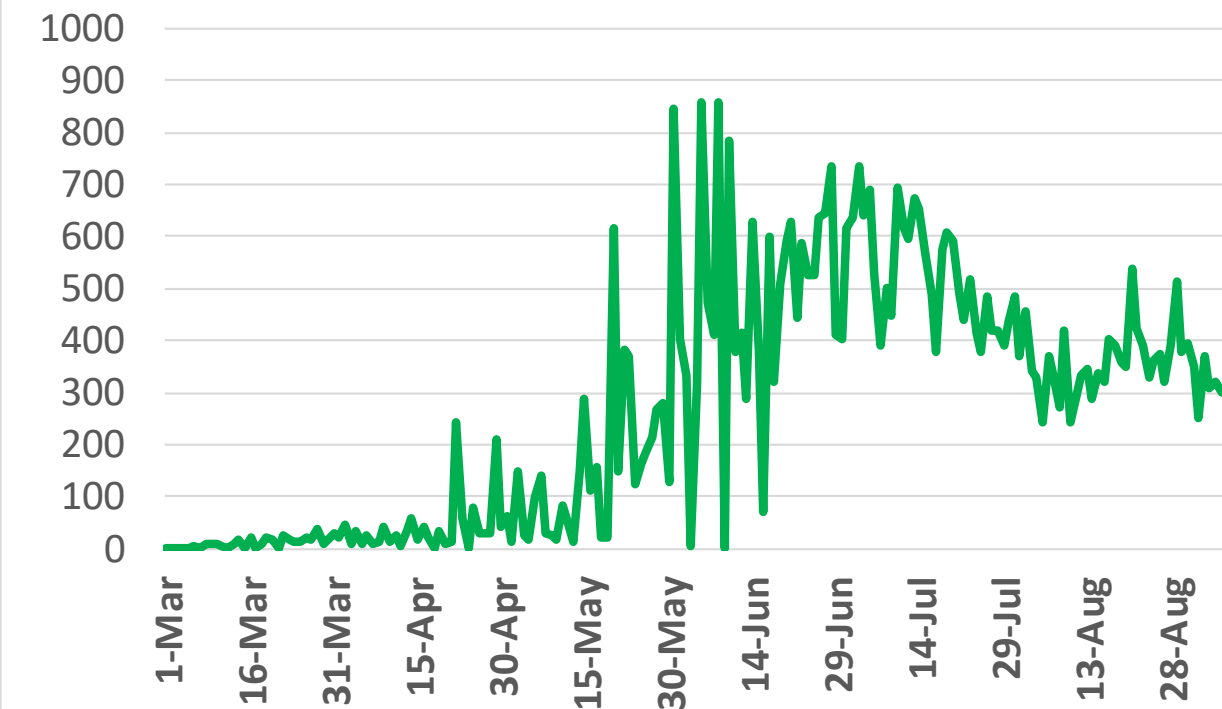
Source : National Emergency Crisis and Disaster Management Authority

KSA



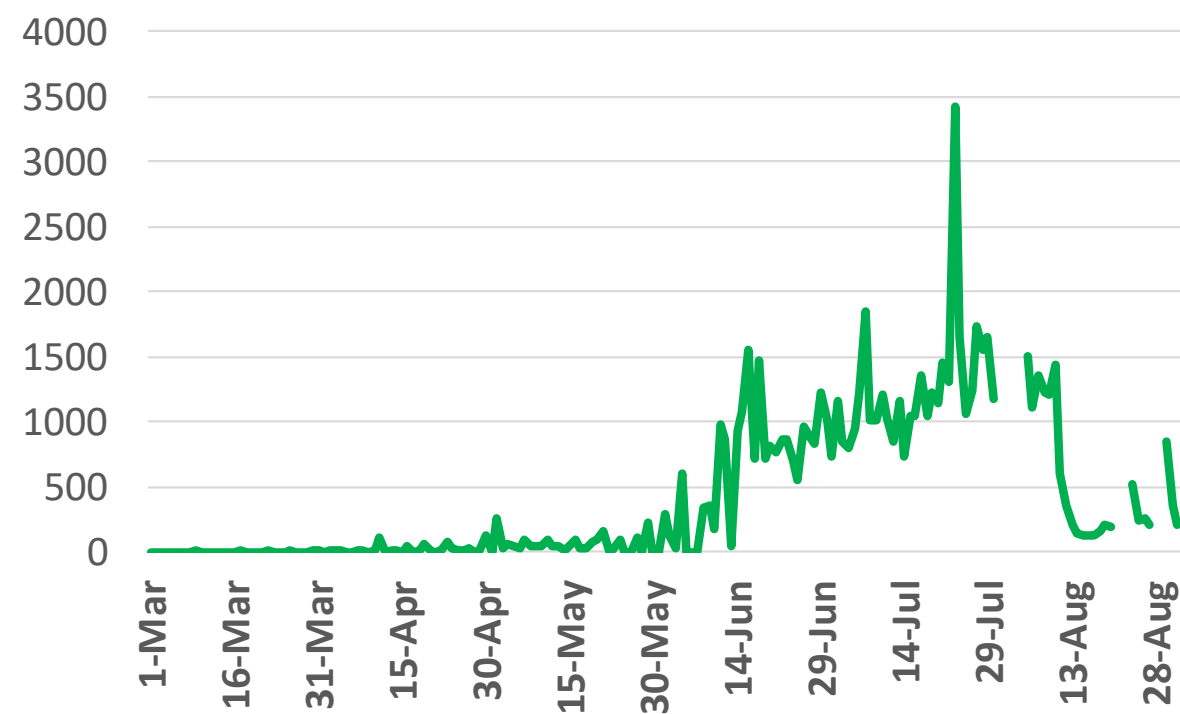
Source : KSA ministry of health

Bahrain



Source : Bahrain ministry of health

Oman



Source : Oman ministry of health

Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

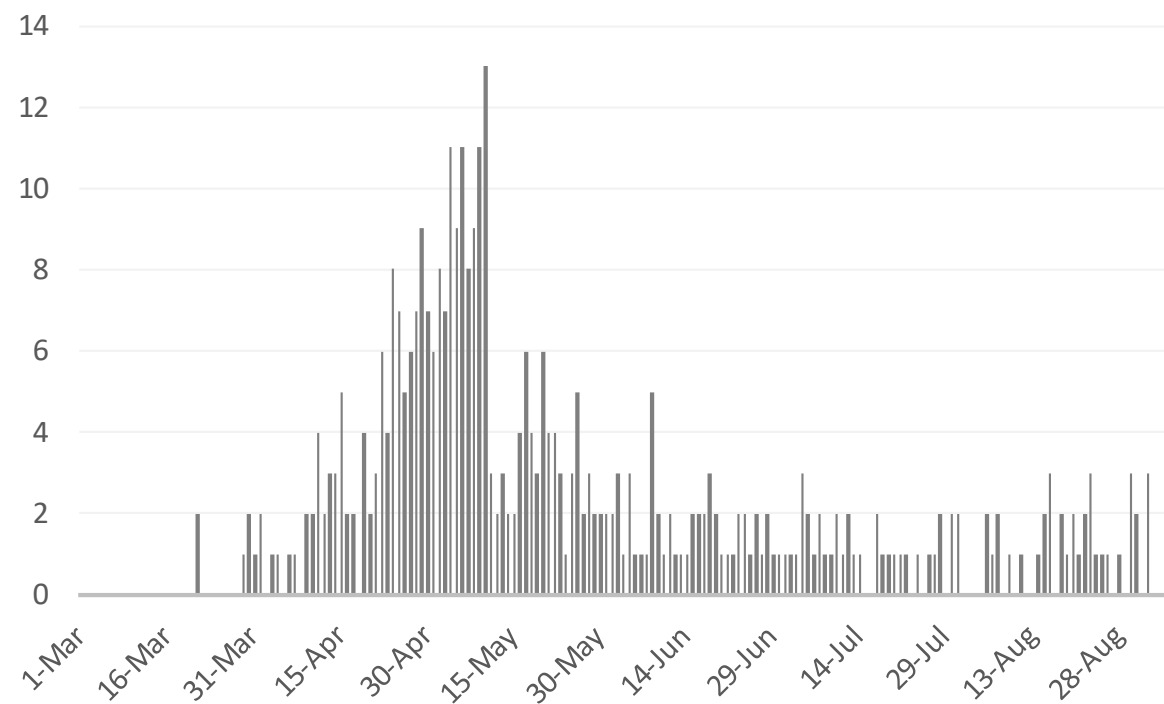
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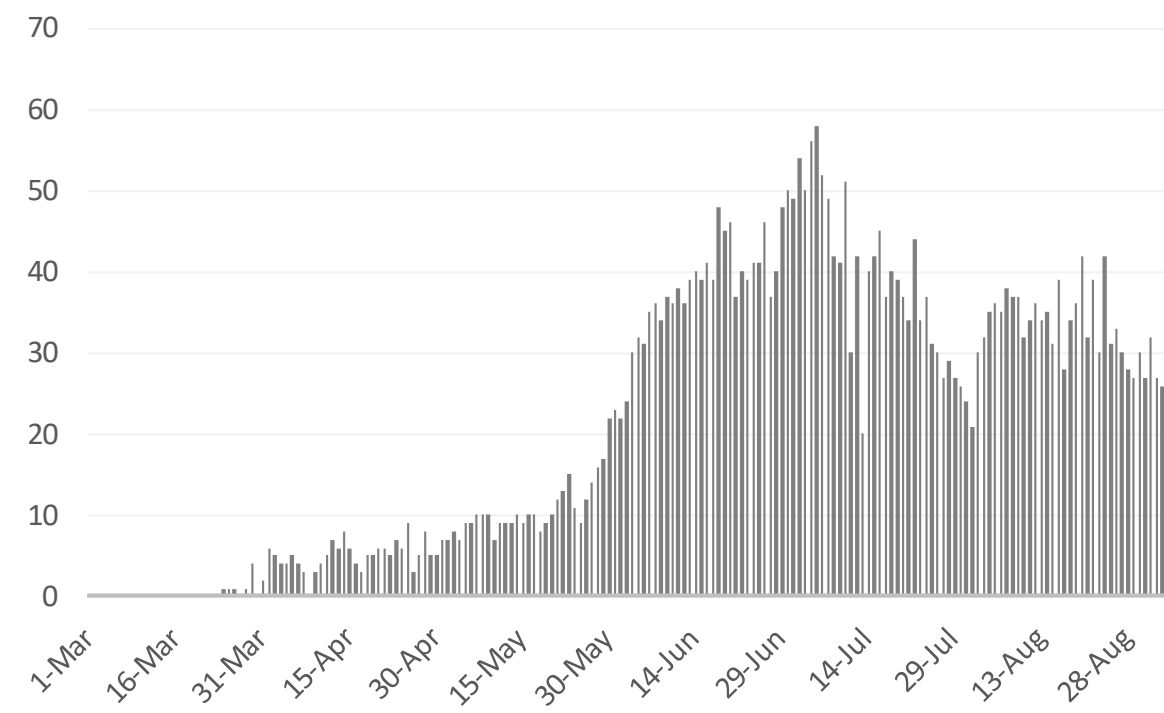
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



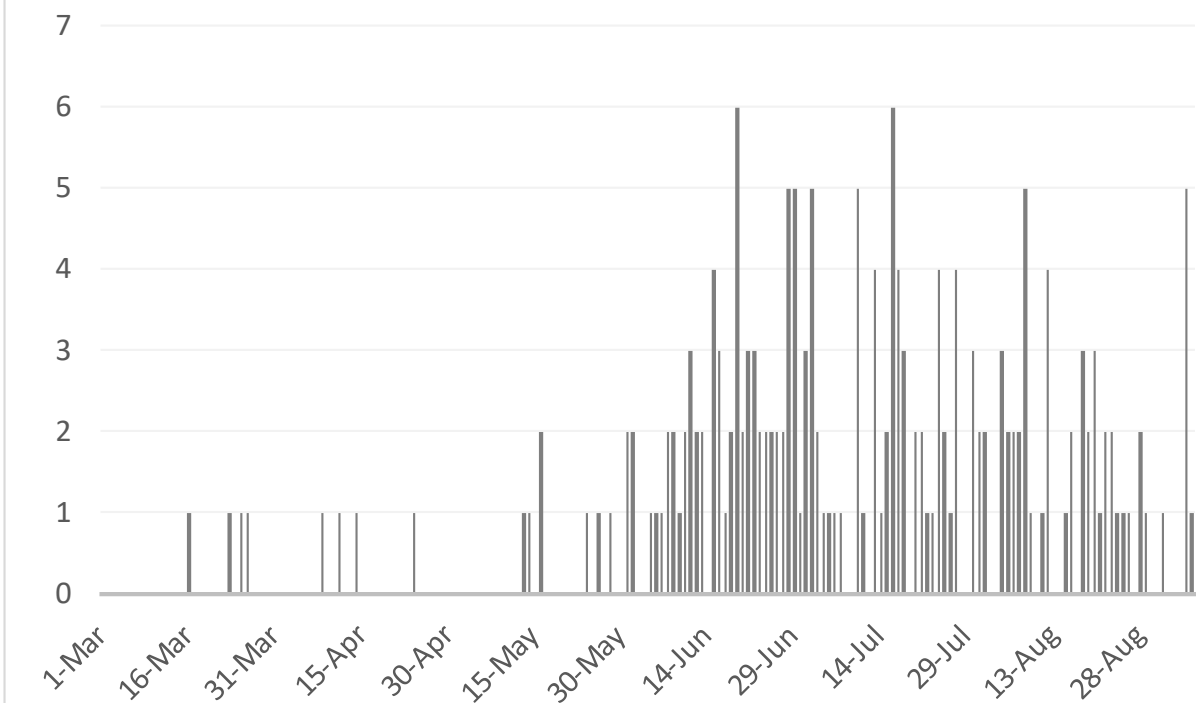
Source : National Emergency Crisis and Disaster Management Authority

KSA



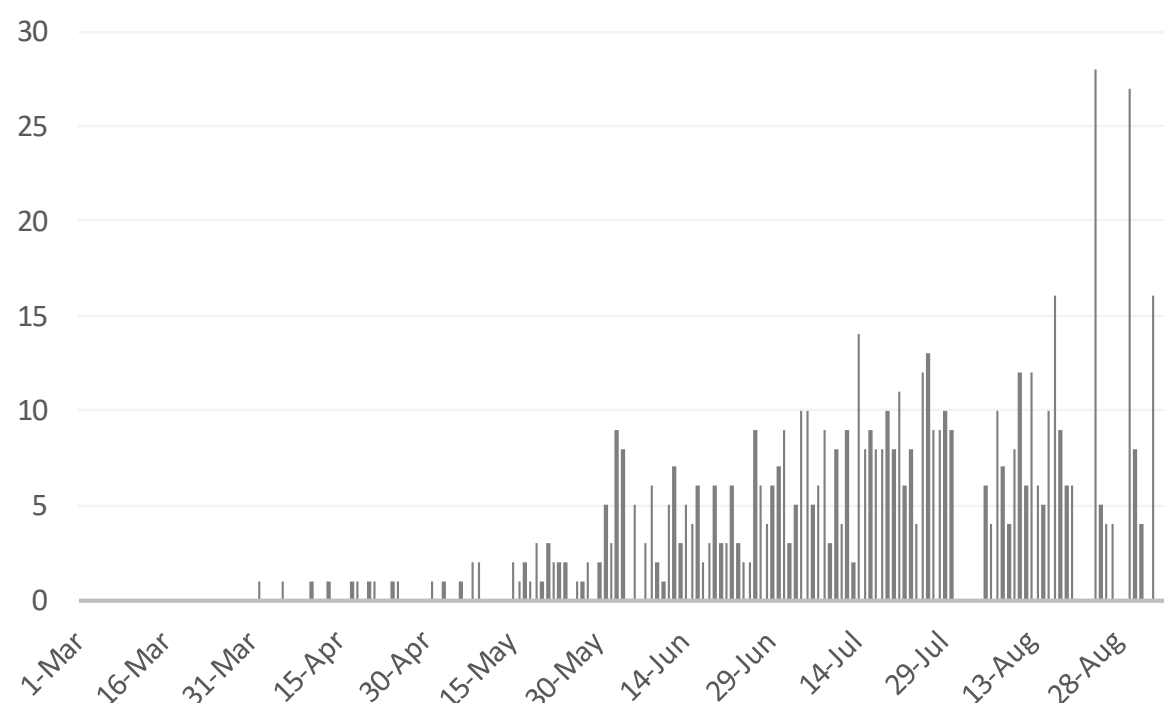
Source : KSA ministry of health

Bahrain



Source :WHO

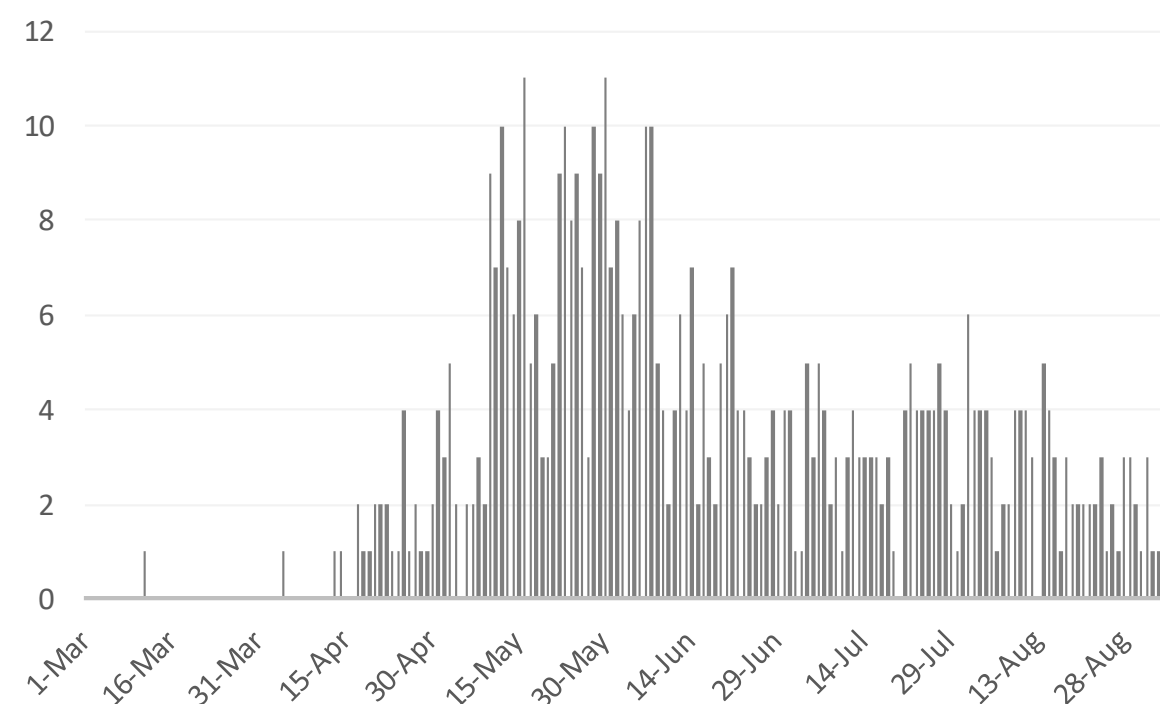
Oman



Source :Oman ministry of health

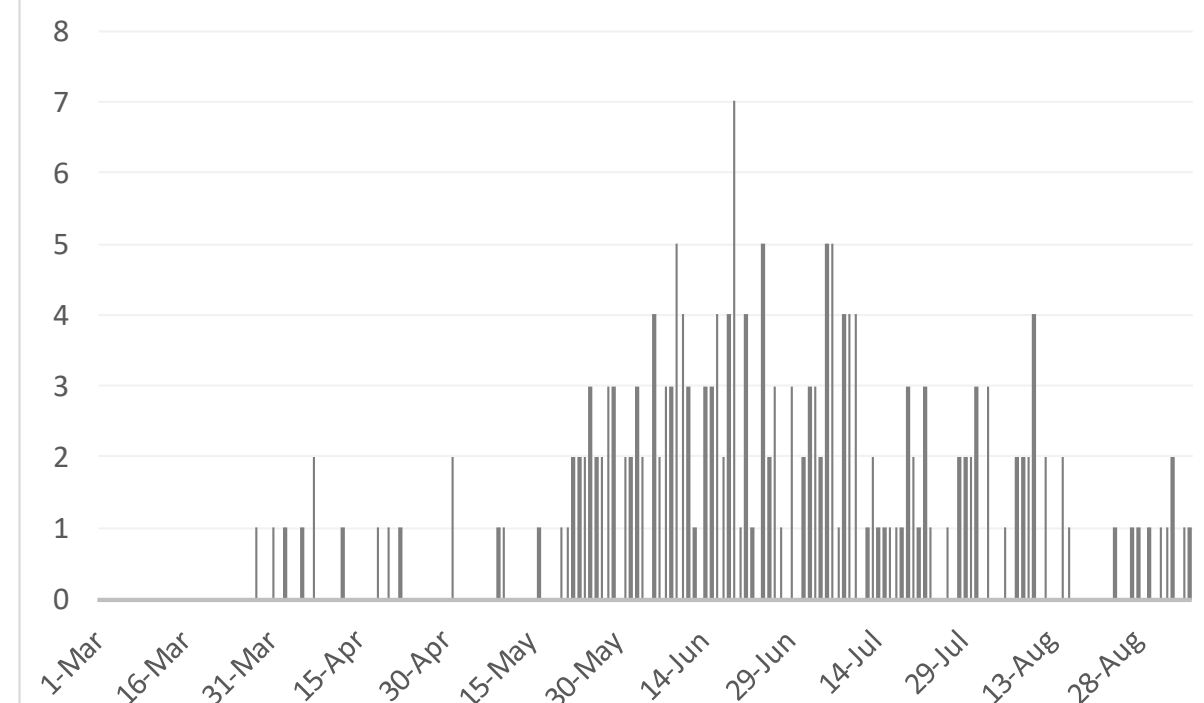
Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

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UAE RESEARCH

Article 1 Knowledge and Practice Survey on UAE Community Toward the Emerging Corona Virus (COVID-19)

Published

In Progress

Authors

Sultan A. AlSharief, Ahmed Qawas & Asma M. Fikri
The Ministry of Health and Prevention

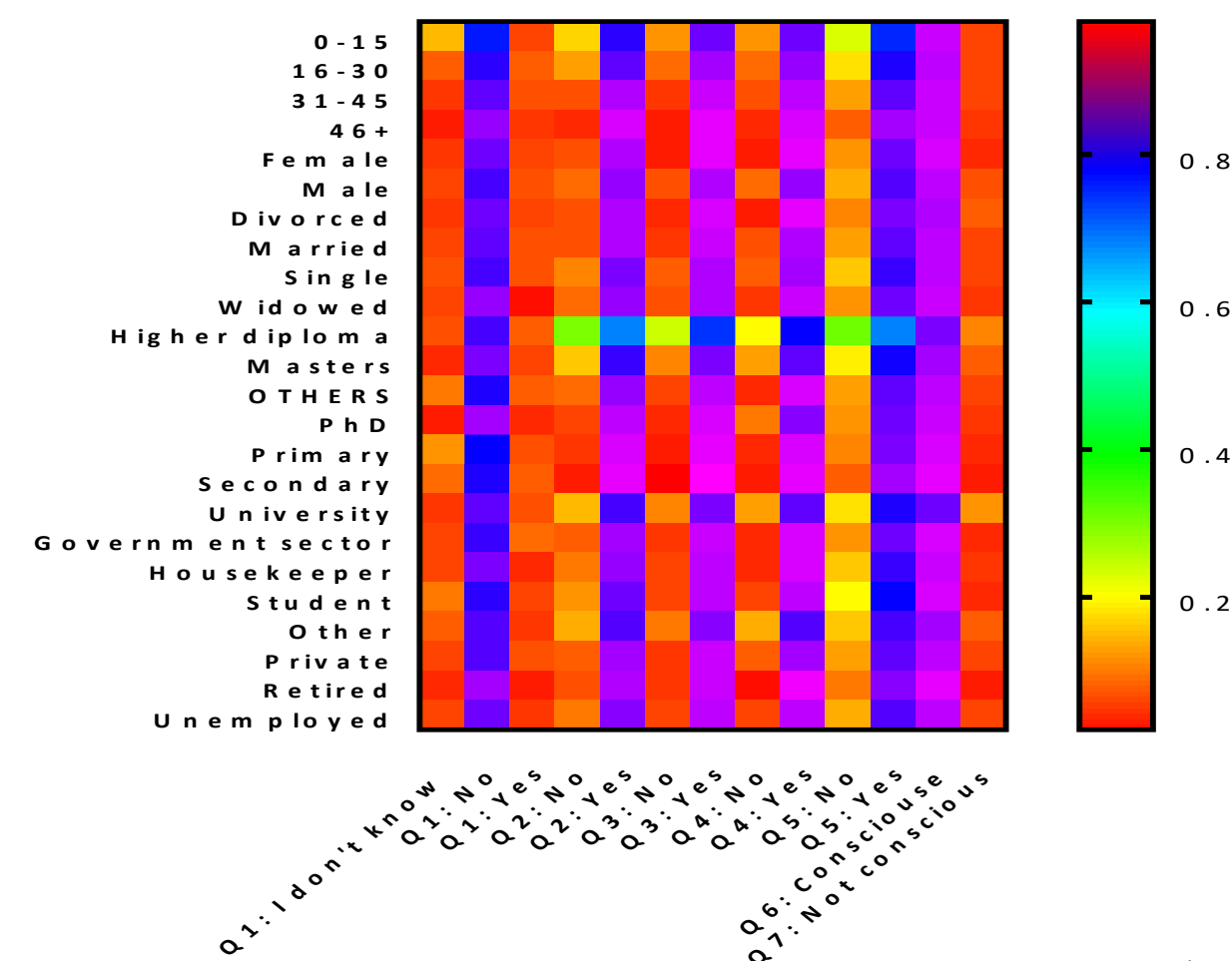
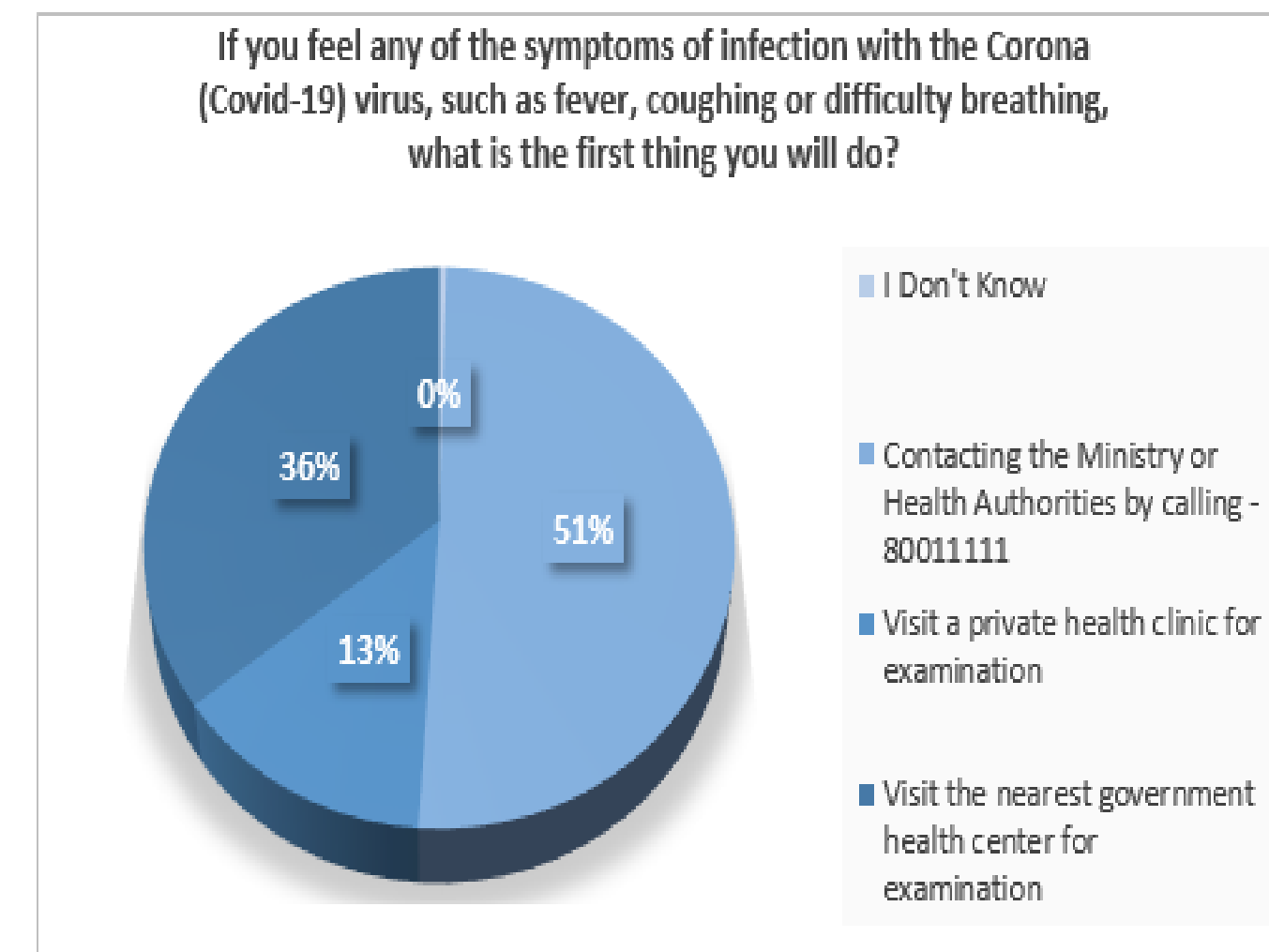
The Ministry of Health and Prevention lead the national campaign to increase awareness and knowledge on COVID-19 infection, symptoms, protective and preventive measures amongst the population of the UAE in its attempt to contain and combat the pandemic. The public awareness survey aimed to investigate the level of knowledge and practice amongst the general population across the UAE as a tool to measure the effectiveness of the pandemic's intensive education and awareness campaigns.

Findings

- Survey results from **158,017 responses** found that **84.2% of participants** indicated no infection in their families, 90.3% had sufficient information about the virus and 93.2% knew about the disease and its symptoms.
- 91.8% intended to seek help in case of suspicion, **85.1% understood the difference between isolation and quarantine.**
- 93.6% were conscious of disease symptoms and methods of transmission.
- Correlation between the number of individuals per demographic group and their level of knowledge was studied; there was a strong positive correlation between the **age, social status, education level, employment and the level of knowledge the person has about COVID-19.**

Conclusion

This survey exhibited the power of educational campaigns as tools for guiding populations, increasing awareness, and measuring the implementation of national strategies. The UAE yet again, proves that its people are the top priority. Their health, safety and security are the drivers of national agendas, and all that care and value has been reflected and is measured quantitatively.





Article 2 Effect of Convalescent Plasma on Mortality among 2 Hospitalized Patients with COVID-19: Initial Three Month Experience

Published

12 August 2020 [MedRxiv](#)

This is a cohort study assessing the efficacy of convalescent in more than 2,807 in the US and territories participant was part of the Convalescent Plasma EAP program between April 4 and July 4, 2020.

Intervention:

Transfusion of at least one unit of human COVID-19 convalescent plasma using standard transfusion guidelines at any time during hospitalization. Convalescent plasma was donated by recently-recovered COVID-19 survivors.

Main Outcomes and Measures:

Seven and thirty-day mortality.

Findings

- 35,322 transfused patients included in this study. This cohort included a high proportion of critically ill patients, with 52.3% in the intensive care unit (ICU) and 27.5% receiving mechanical ventilation at the time of plasma transfusion.
- The seven-day mortality rate was 8.7% in patients transfused **within three days of COVID-19 diagnosis**, but 11.9% in **patients transfused for four or more days after diagnosis** ($p < 0.001$). Similar findings were observed in 30-day mortality (21.6% vs. 26.7%, $p < 0.0001$).
- For patients who received **high IgG plasma** (> 18.45 S/Co), seven-day mortality was 8.9%; for recipients of medium IgG plasma (4.62 to 18.45 S/Co) mortality was 11.6%, and for recipients of **low IgG plasma** (< 4.62 S/Co) mortality was 13.7% ($p = 0.048$).

Conclusion

- Transfusion of convalescent plasma with higher antibody levels to hospitalized COVID-19 patient significantly reduced mortality compared to transfusions with low antibody levels. Transfusions within three days of COVID-19 diagnosis yielded greater reductions in mortality.





Article 3 Automated and Partly Automated Contact Tracing: A Systematic Review to Inform the Control of COVID-19

Published

19 August 2020 [THE LANCET](#)

This systemic review took place in the UK to assess the effectiveness of automated and partly automated contact-tracing systems implemented in different countries during several outbreaks:

- Identifying contacts at risk
- Controlling disease transmission in humans
- 110 studies were reviewed, of which 15 studies were included in the final analysis and assessment.

Outcomes of interest were identified as per the following:

- Primary outcome: number/proportion of identified contacts¹ or subsequent cases
- Secondary outcomes: indicators of outbreak control (R_0 , R_e)², population uptake, resource use, cost-effectiveness, and lessons learnt from implementing automated/partly-automated contact-tracing systems.
- Findings are summarized in the table next slide.

Conclusion

- Importance of reliable internet and electricity infrastructure and the value of customizing systems on the basis of local priorities.
- Setting thresholds that minimize false positives and false negatives relies on gathering and analyzing large datasets of high quality in implementing different system approaches.
- Population uptake is a key factor in determining the effectiveness of an automated approach.
- More studies are needed to evaluate the effectiveness and to investigate integration and relative effects of manual and automated systems. Manual contact tracing on a large scale is still likely to be required in most contexts.



Continued

The table below summarizes the review findings on implementing different system approaches:

System Type	Benefits	Potential Risks
Manual Contact-tracing Systems	<ul style="list-style-type: none"> ✓ Reduce Re by more than automated contact tracing can ✓ Better psychologically as receiving call from human contact tracer, who can give detailed information, check understanding, & address questions/concerns 	<ul style="list-style-type: none"> △ Relatively slow and time-consuming system approach
Automated Contact-tracing Systems	<ul style="list-style-type: none"> ✓ Minimize recall problem of manual approach thus enable tracing of high-risk contacts ✓ Allow faster notification and quarantine ✓ Enable systems to scale up faster with fewer resources than manual approach ✓ Reduce delays to quarantine by a modest amount 	<ul style="list-style-type: none"> △ Not control spread without concurrent measures △ False positives result in reduced uptake & quarantine adherence and can cause adverse psychological effects & wider harms of quarantine. △ False negatives are missed opportunity to prevent onward transmission △ Cannot account for risk-modifying factors effectively such as separation by screens [i.e. Bluetooth signal can pass through, but a virus cannot] △ Potential risks of misusing/hacking data and low population trust △ Vulnerable populations to COVID-19 health impacts are less likely to own smartphones
Partly Automated Contact-tracing Systems	<ul style="list-style-type: none"> ✓ Automatic alerts on new infections & generates contact lists by use of user-defined parameters ✓ Higher identified contacts/person compared to manual system ✓ Automatic updates of dashboard to support decisions ✓ Modest improvement in intervention timeliness ✓ Decreased delays to quarantine of symptomatic contacts ✓ Faster and more accurate than manual system 	<ul style="list-style-type: none"> △ Resource requirements of partly automated systems including hardware, software and supporting infrastructure requirements △ No studies on costs of this approach △ Technical issues including poor network coverage and battery life △ Training by staff who had minimal training and that results in an inefficient & incorrect use of system △ Implementation takes substantial time and effort from users



THANK YOU

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