

SCIENTIFIC RESEARCH MONITORING ON COVID-19

8 NOVEMBER 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 279)

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.

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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Transmission

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Integrated Survival Estimates for Cancer Treatment Delay Among Adults with Cancer During the COVID-19 Pandemic

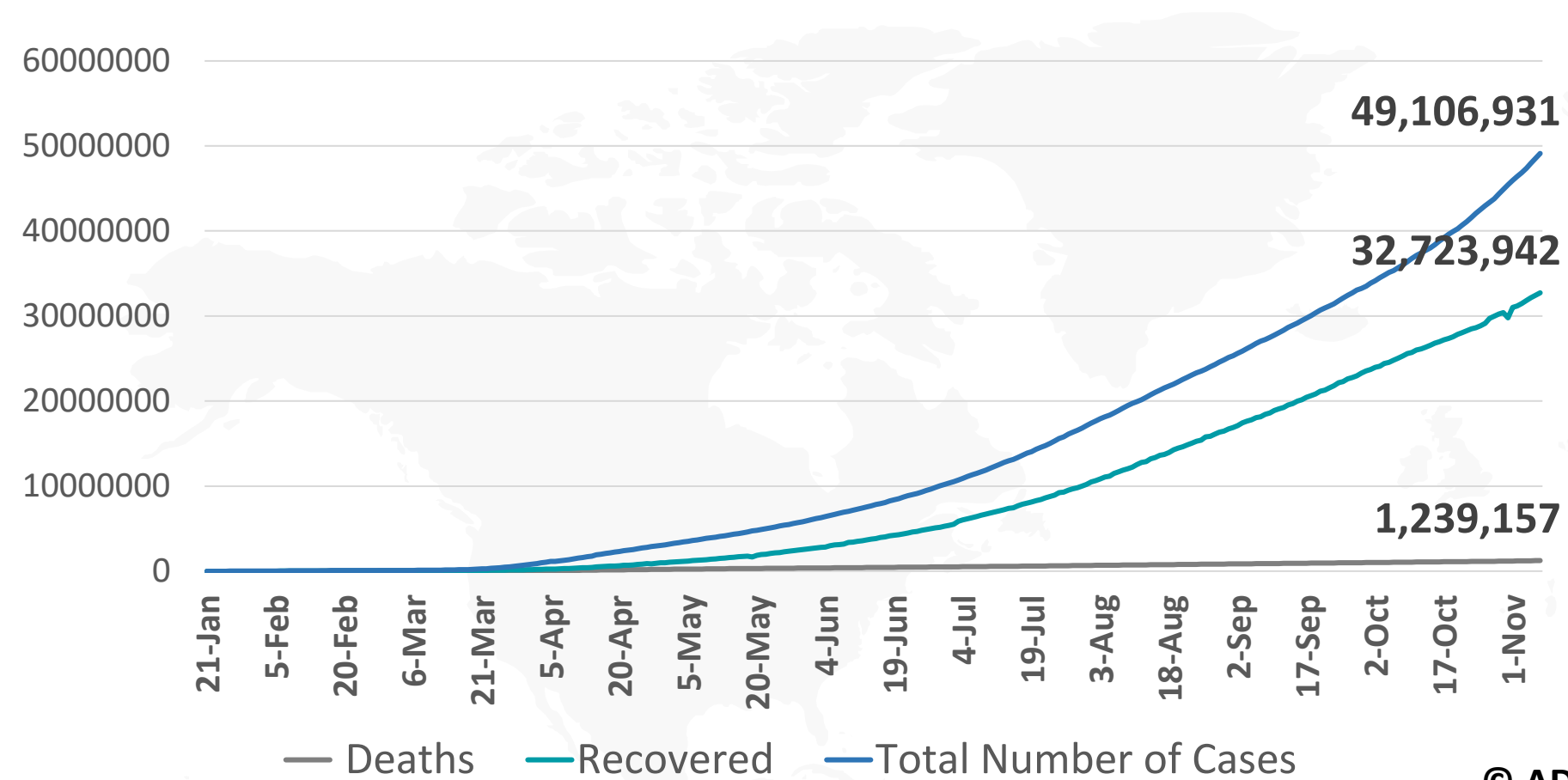
Clinical Feature

Return to Play for Athletes After Coronavirus Disease 2019 Infection—Making High-Stakes Recommendations as Data Evolve

Clinical Feature

Coronavirus Disease 2019 and the Athletic Heart: Emerging Perspectives on Pathology, Risks, and Return to Play

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



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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)

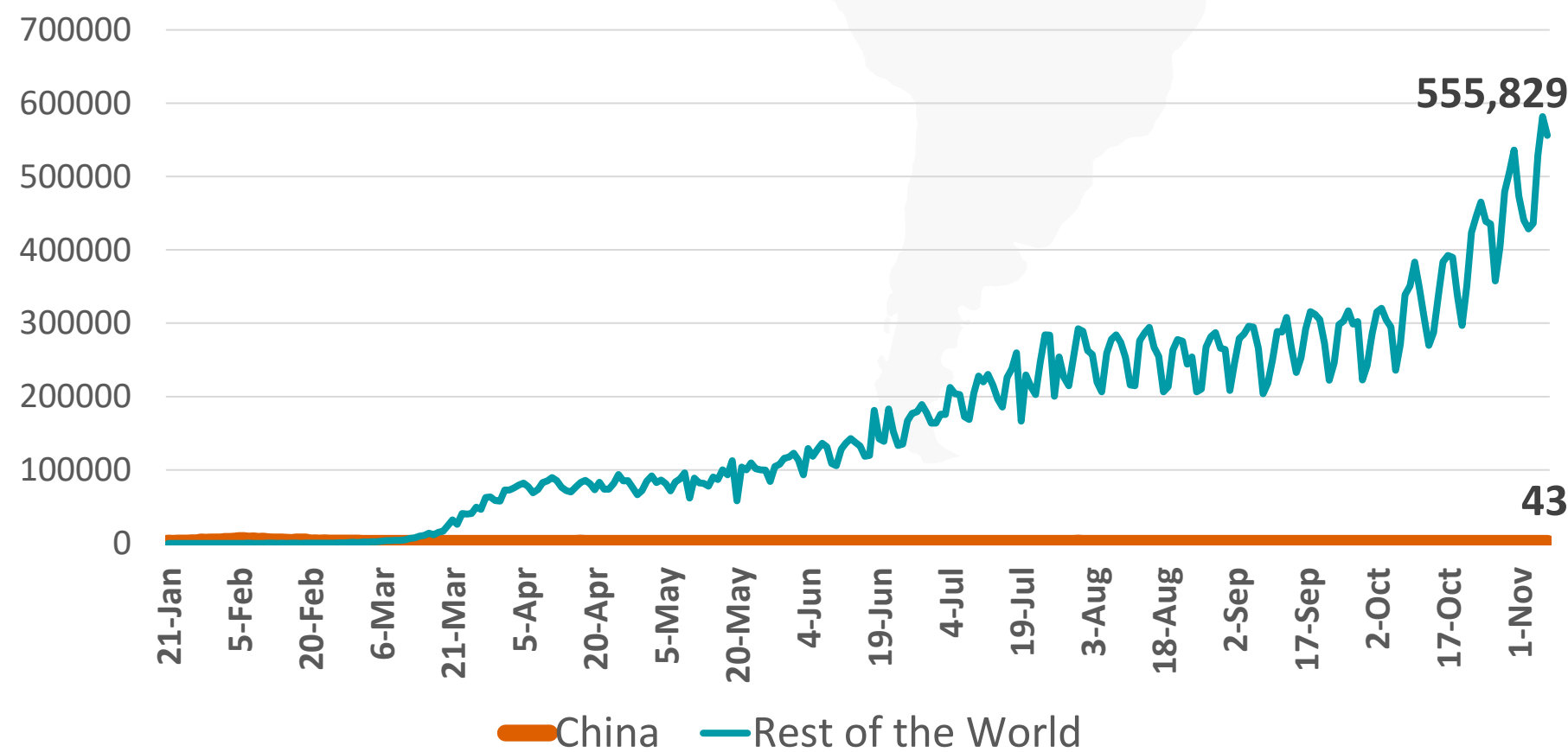


Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)

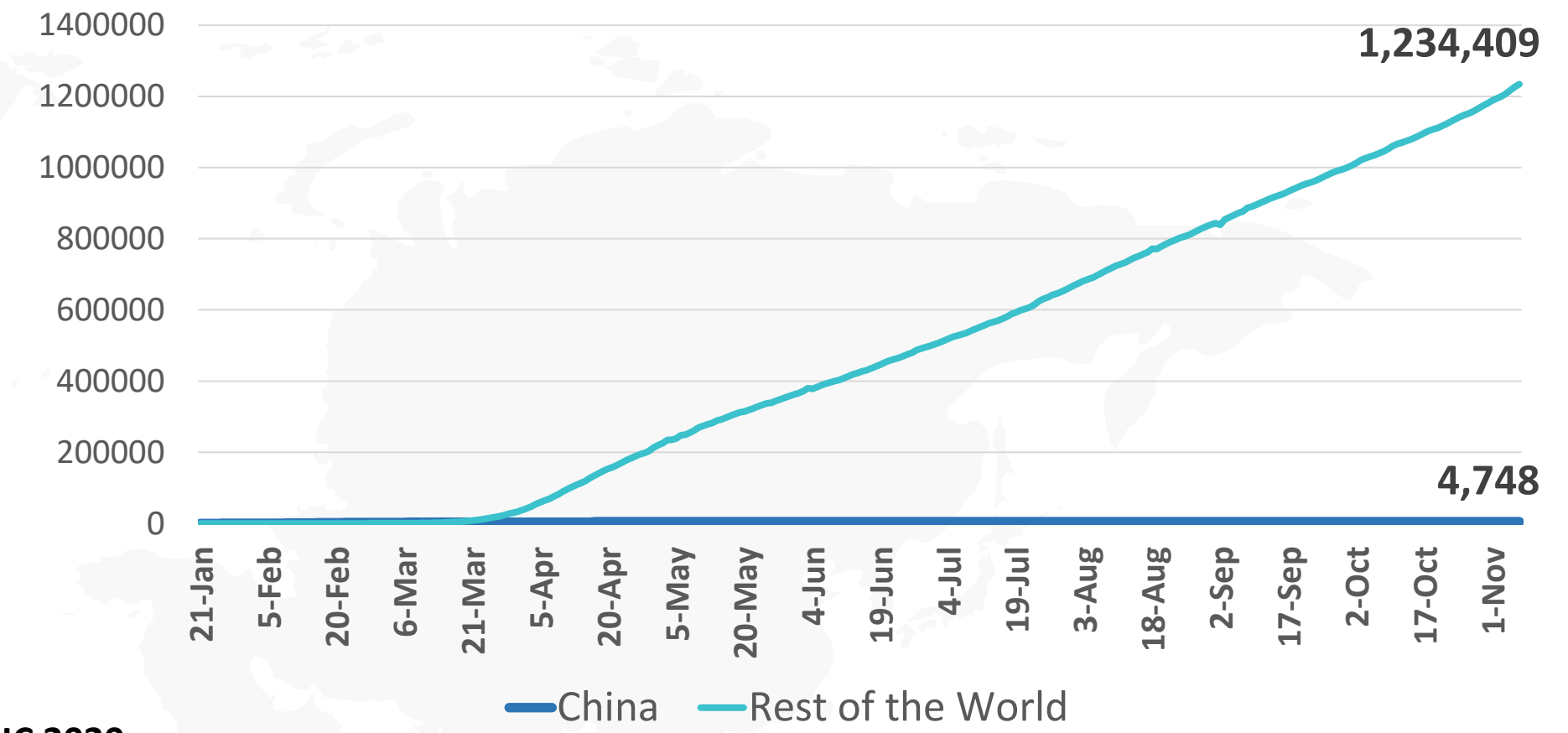


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)

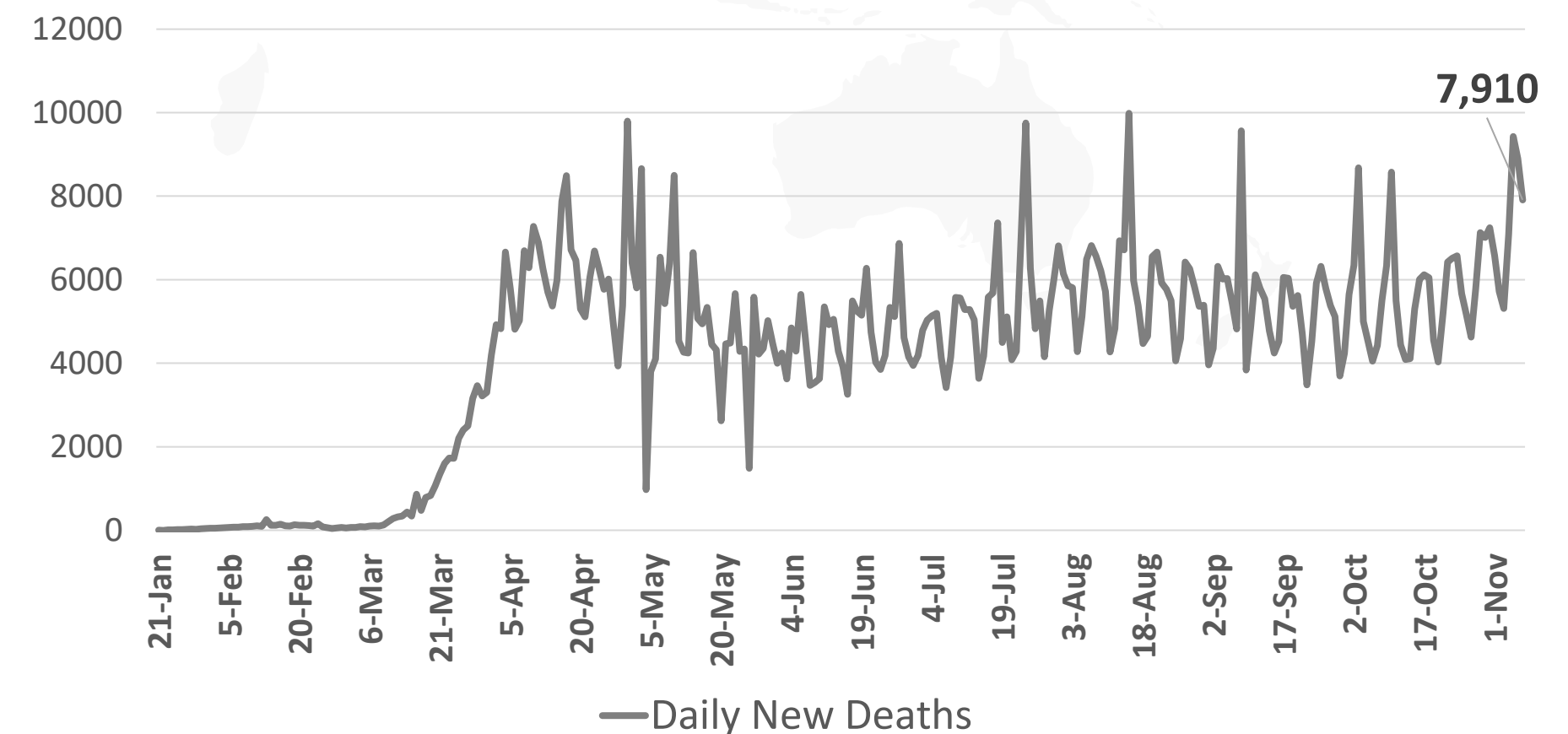
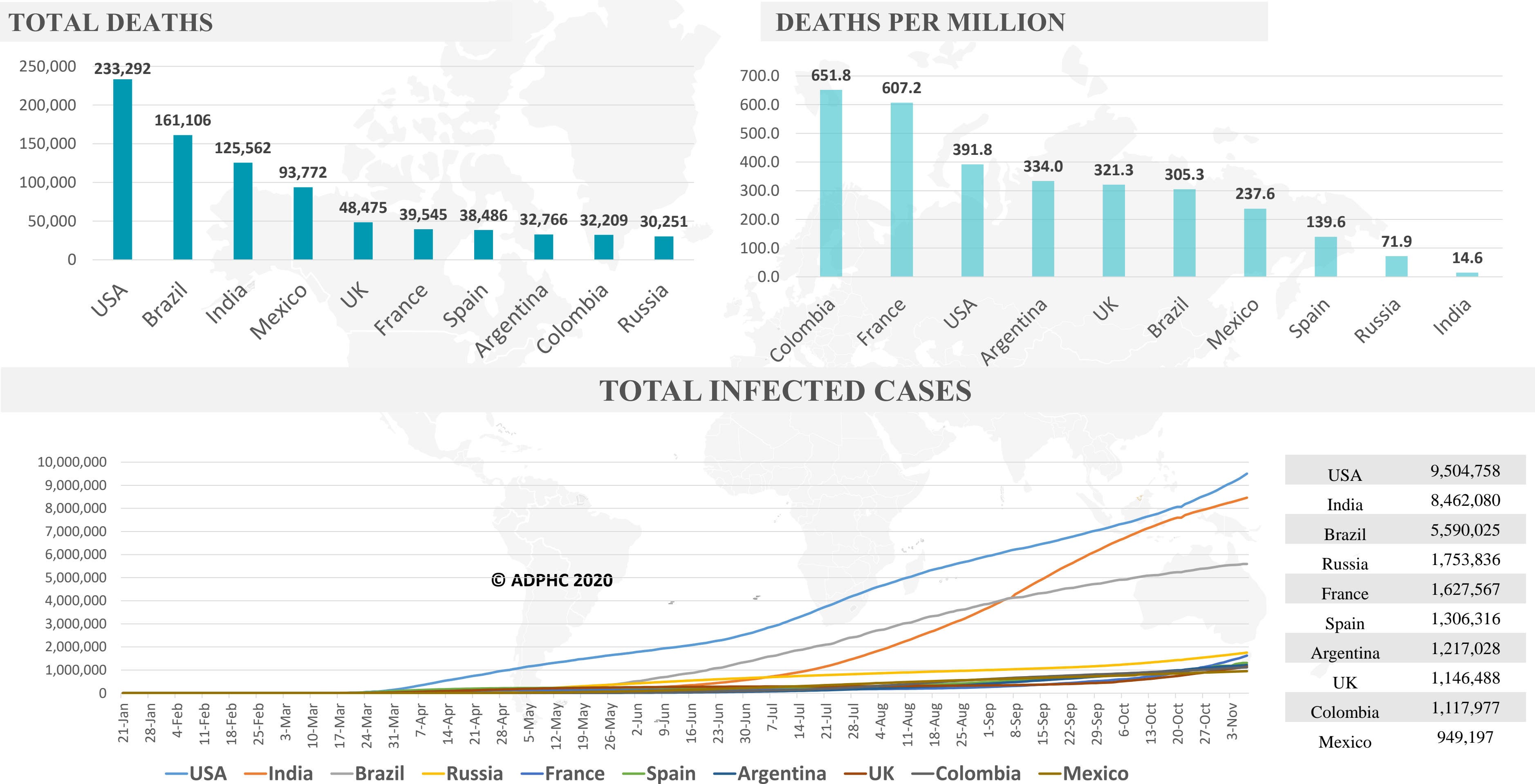
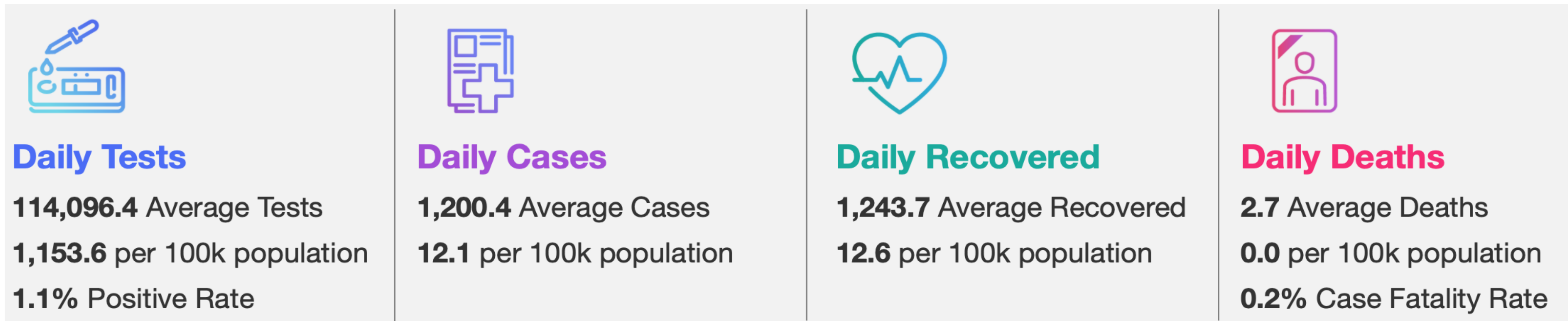


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19



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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

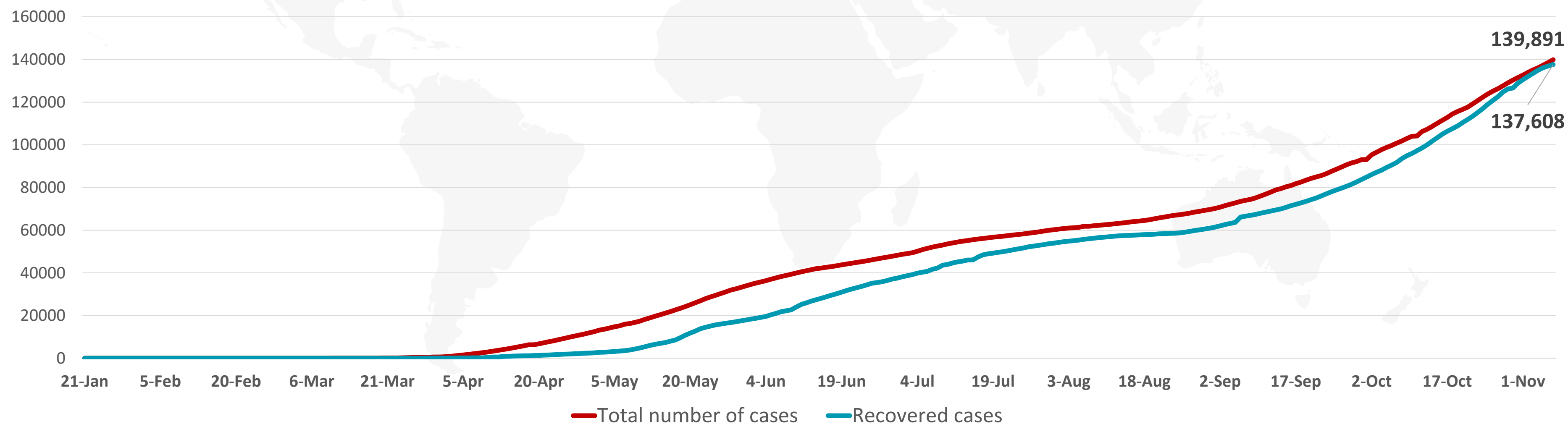


Figure 7A : Global Distribution of COVID-19 Cases

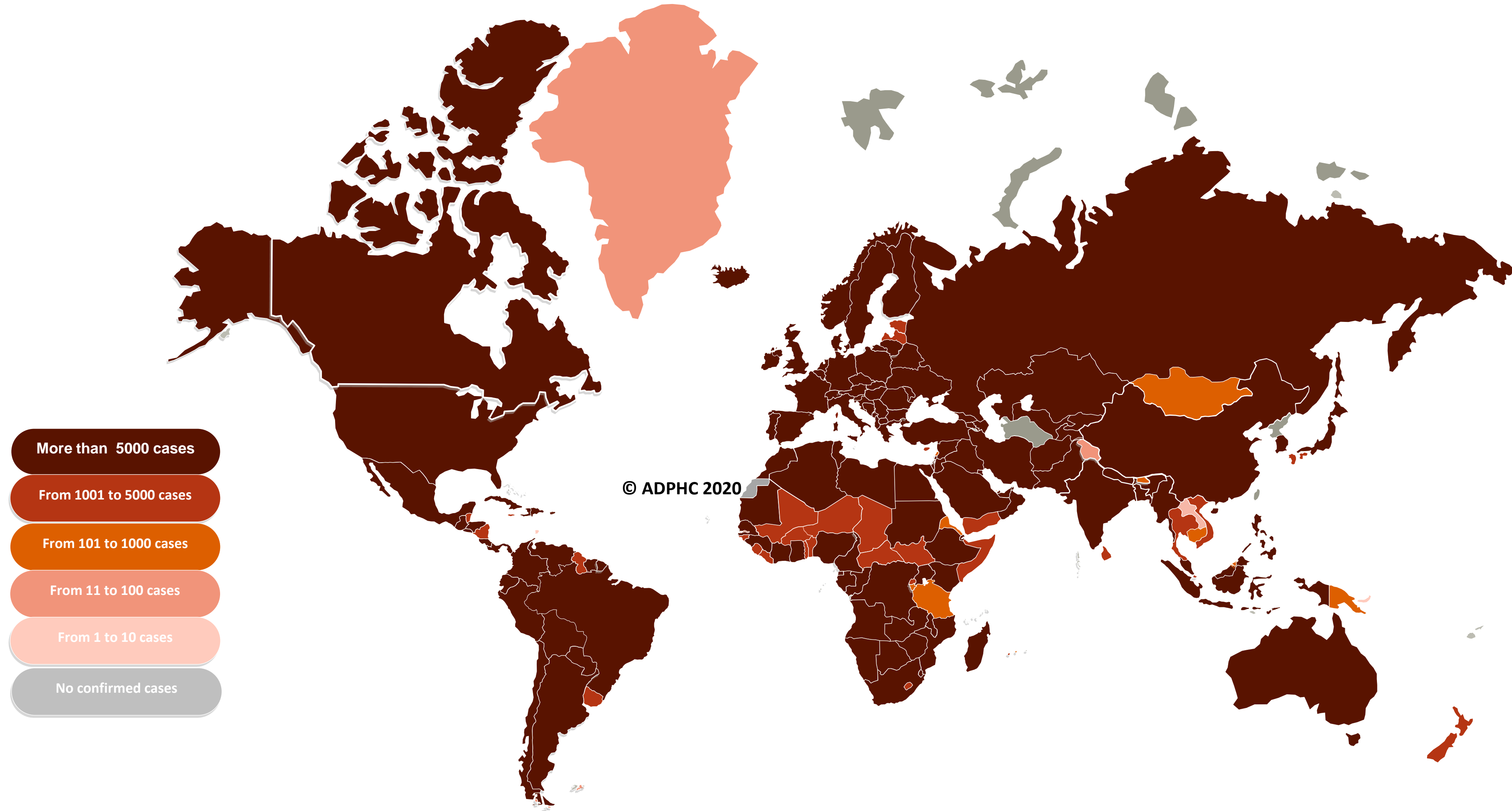
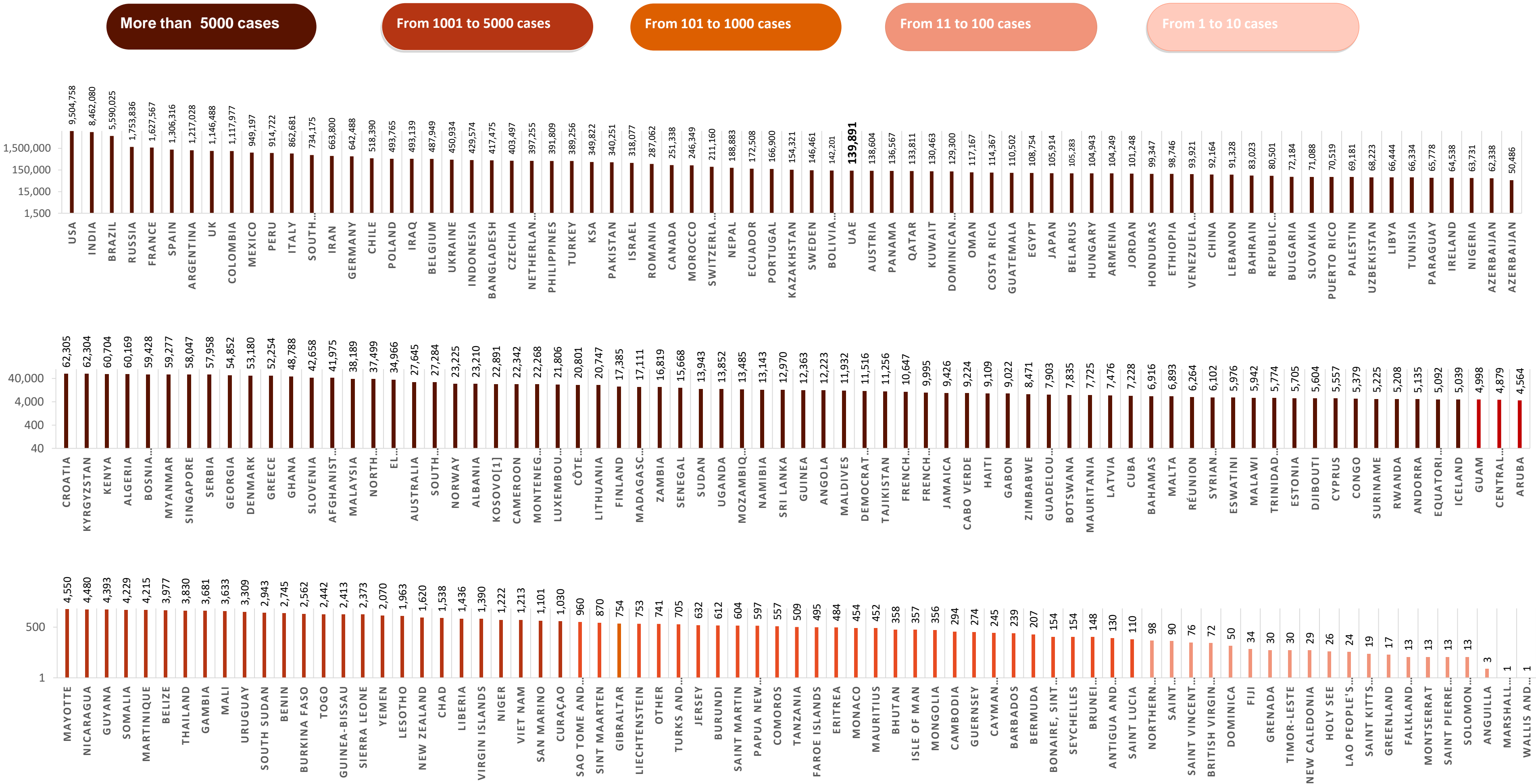


Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



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



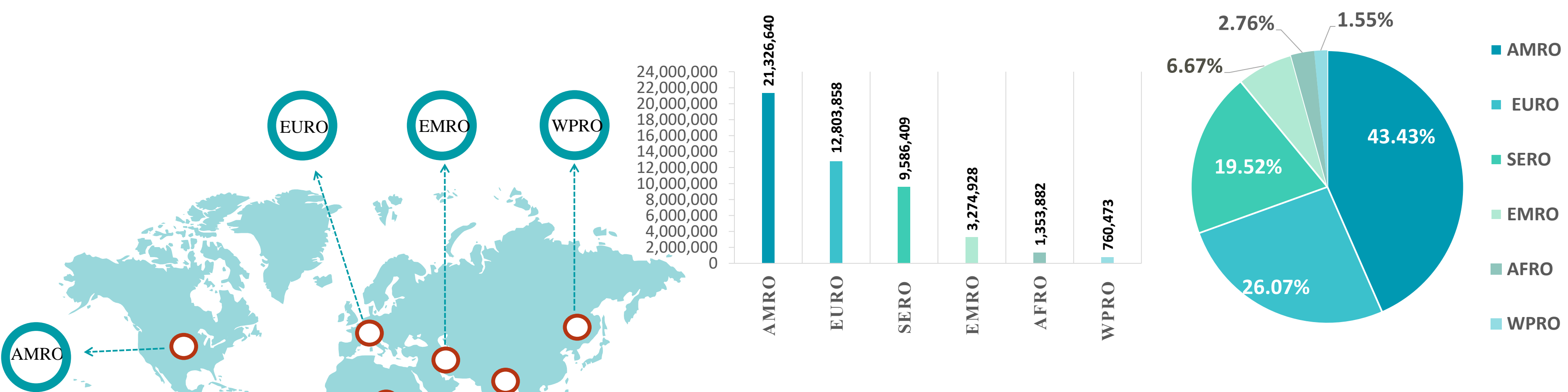
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: [WHO](#)

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

INFECTED



DEATHS

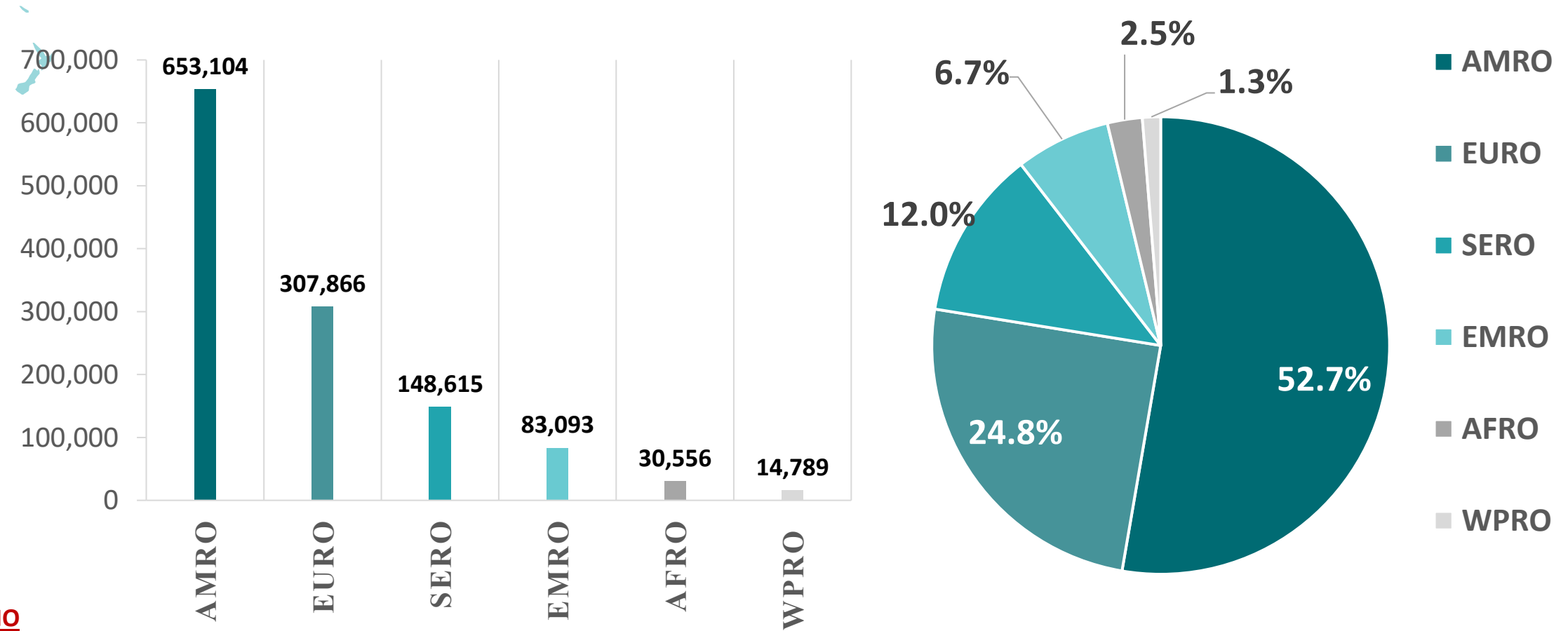
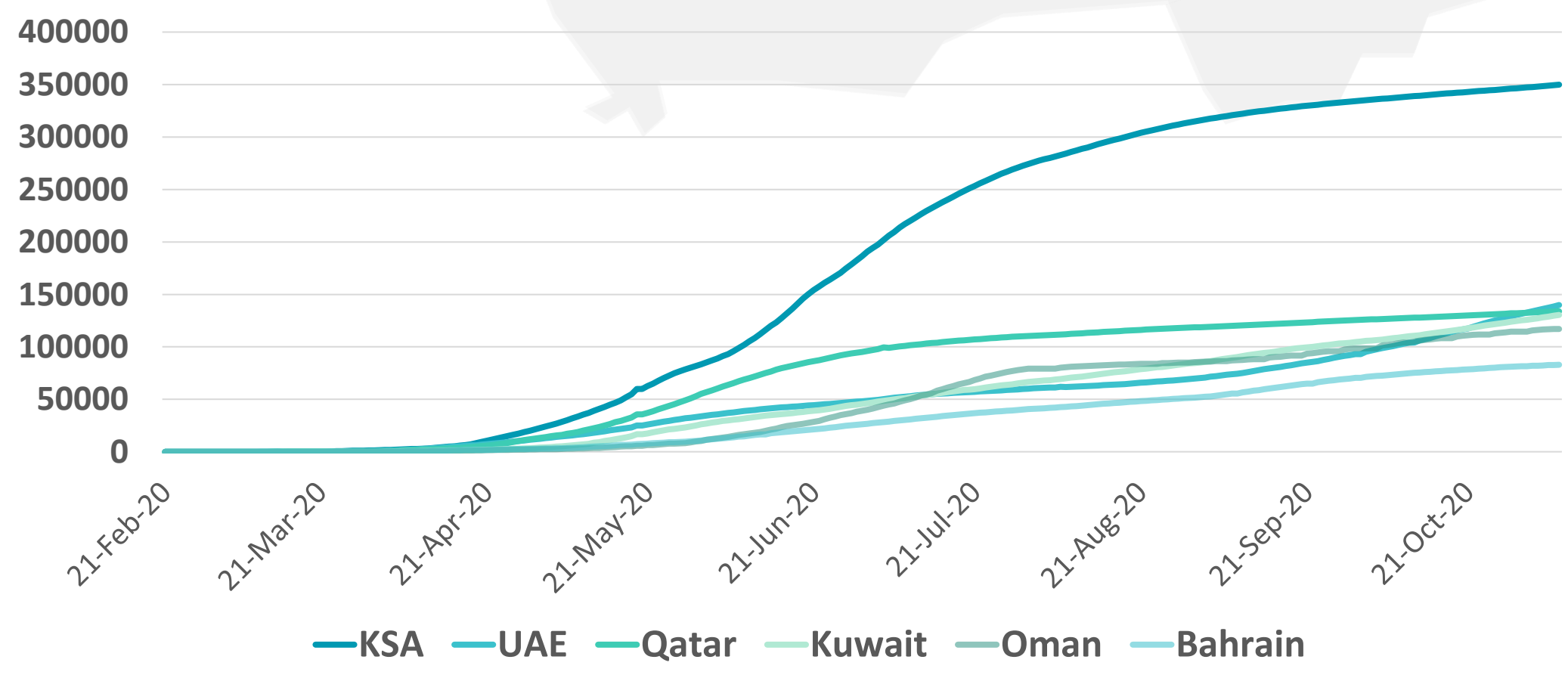
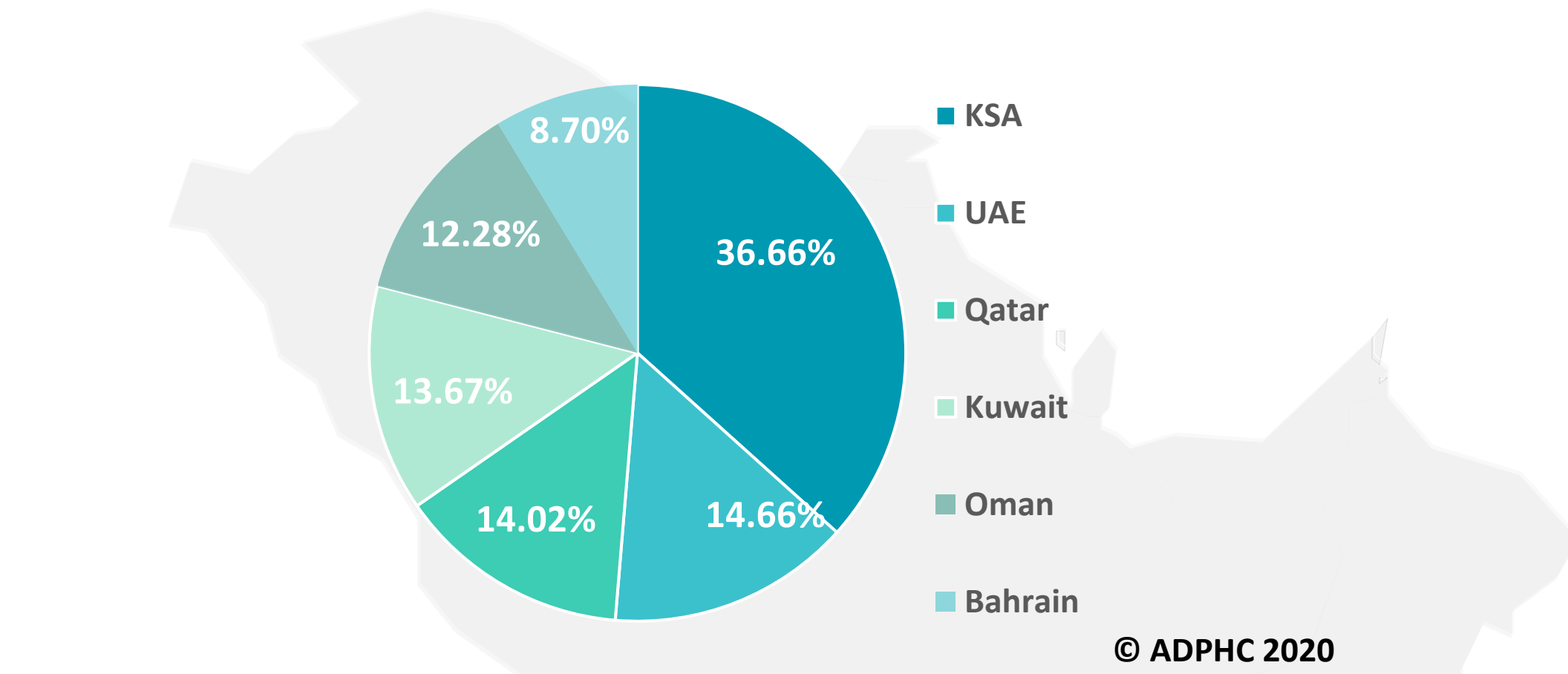
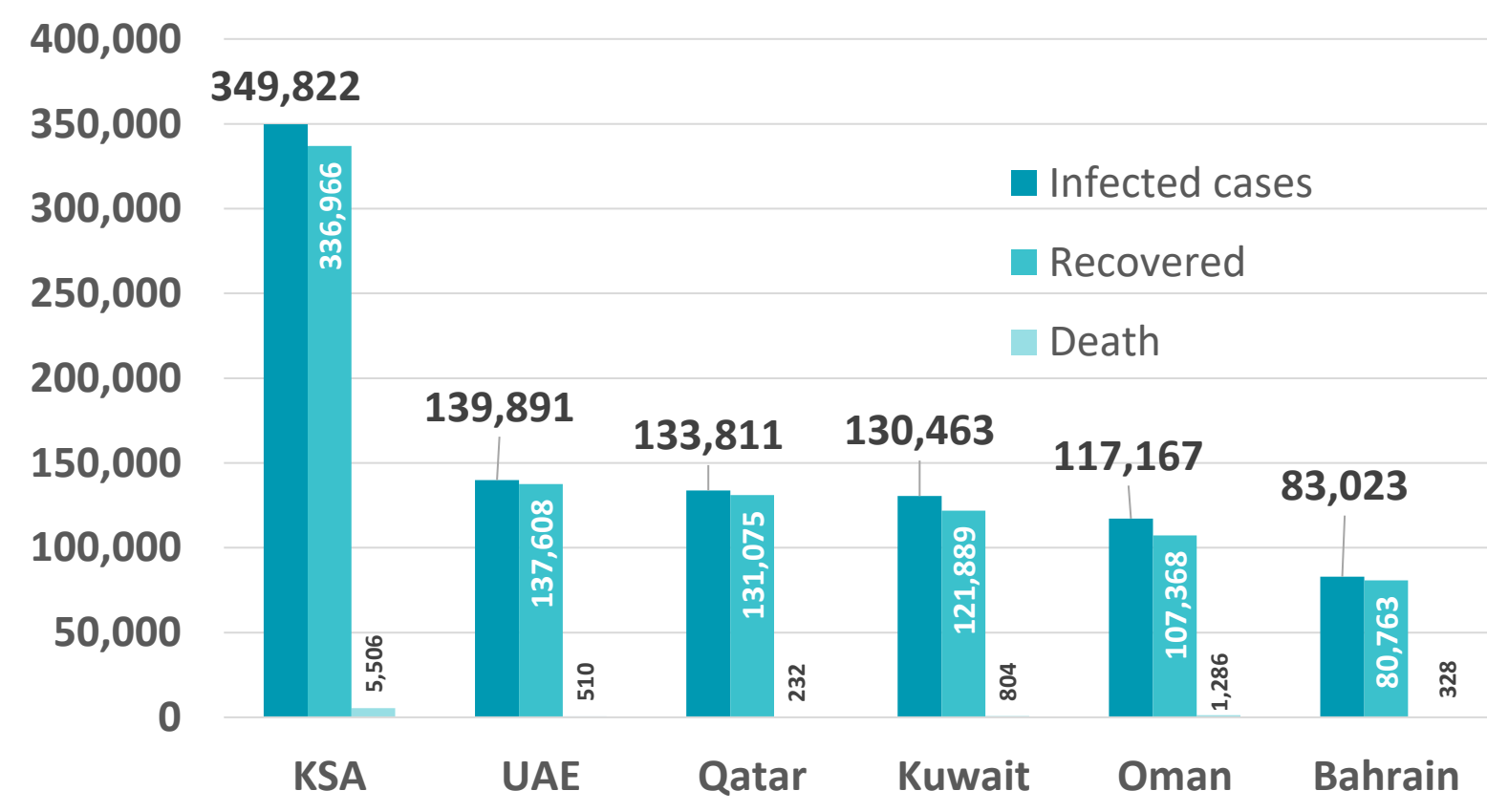


Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

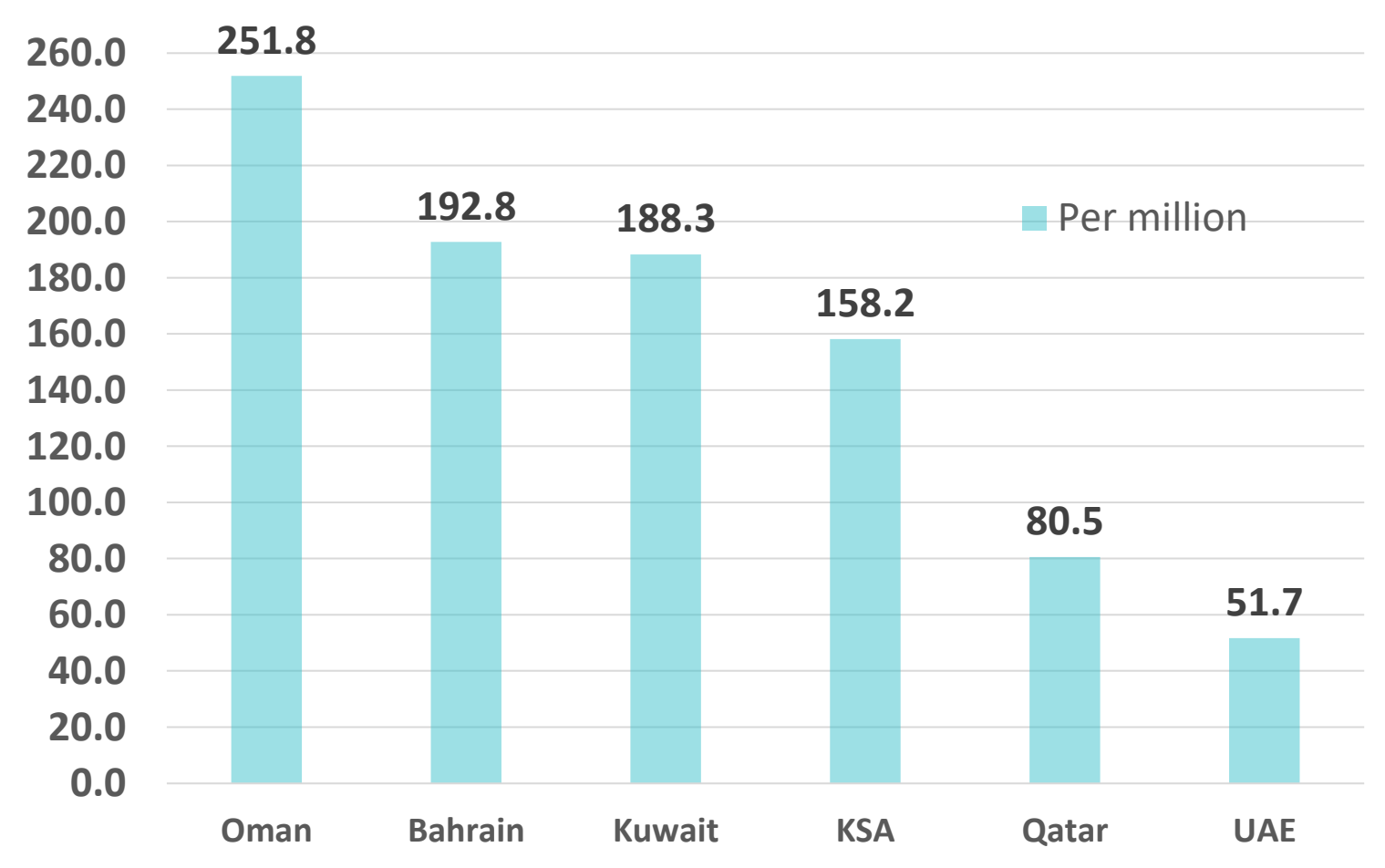
TOTAL NUMBER OF INFECTED CASES



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



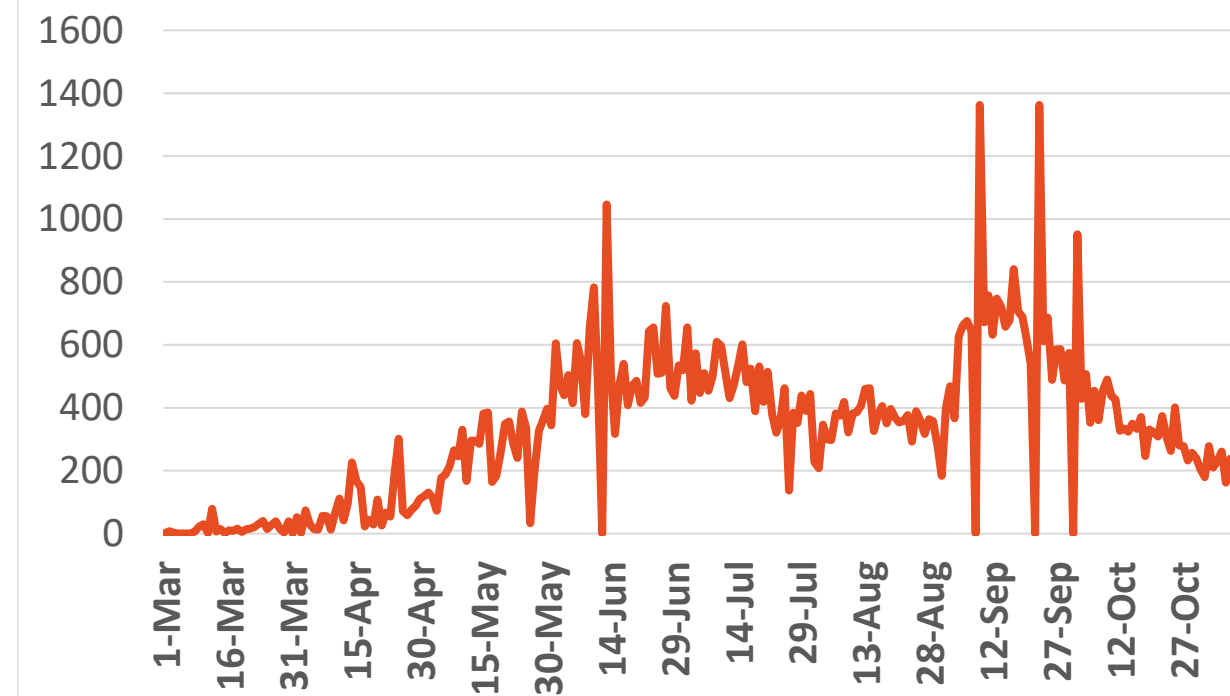
Source : National Emergency Crisis and Disaster Management Authority

KSA



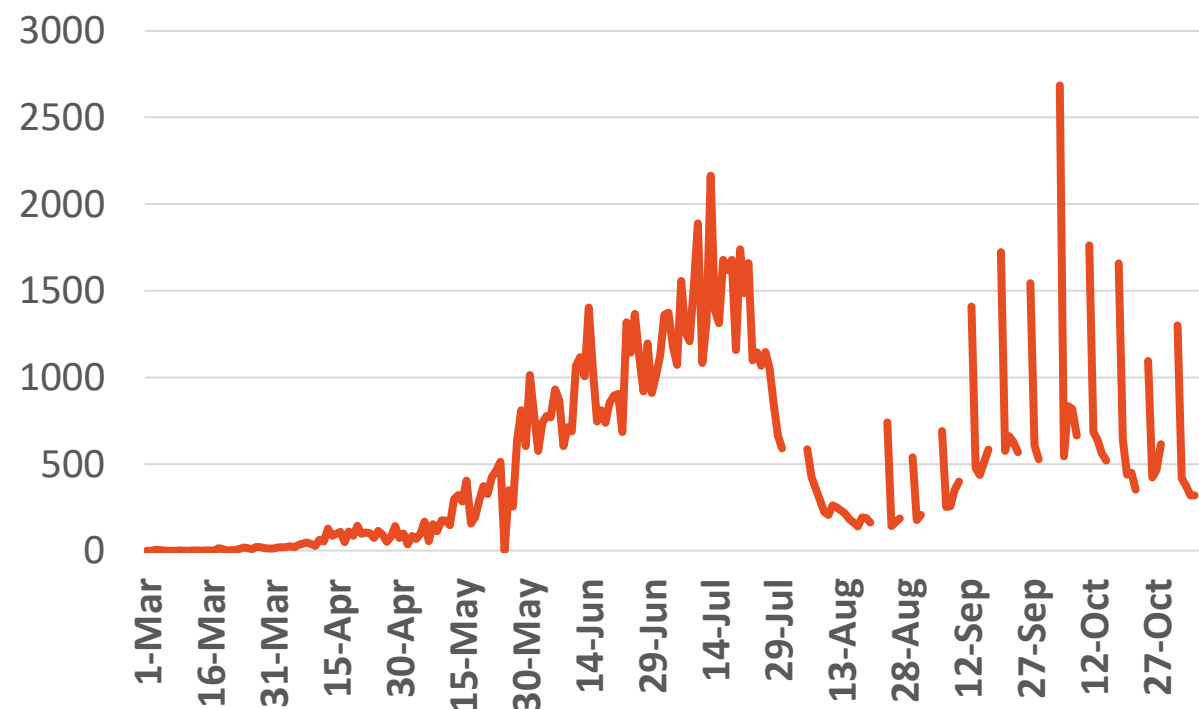
Source : KSA ministry of health

Bahrain



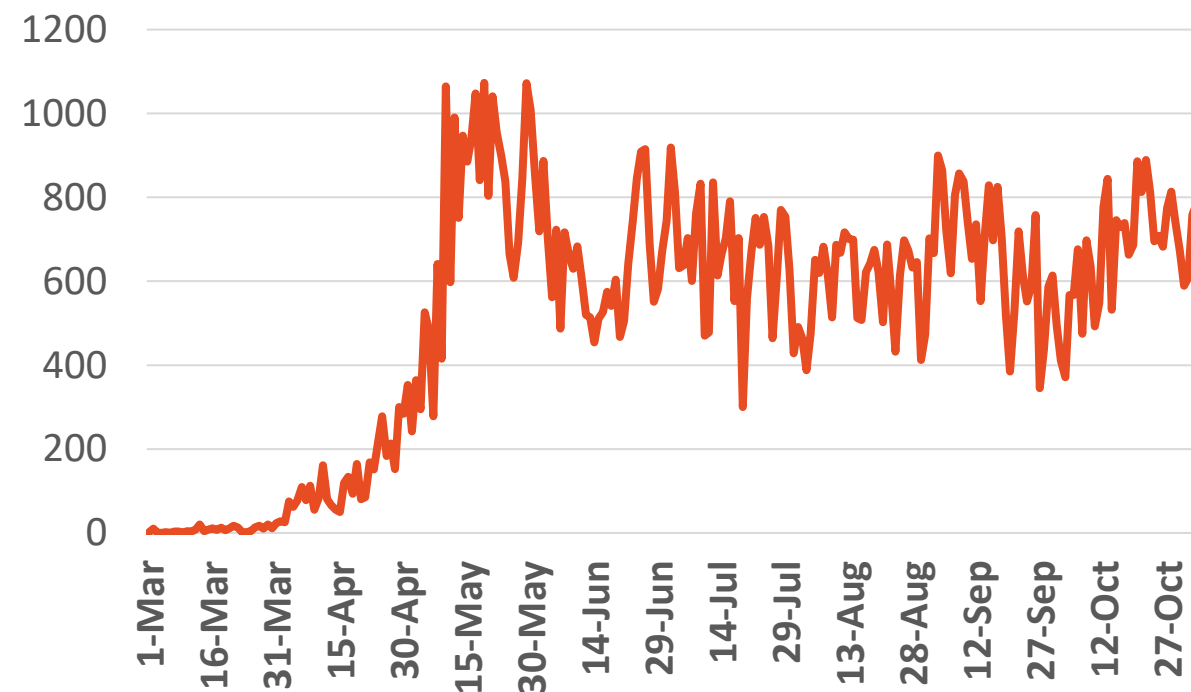
Source :WHO

Oman



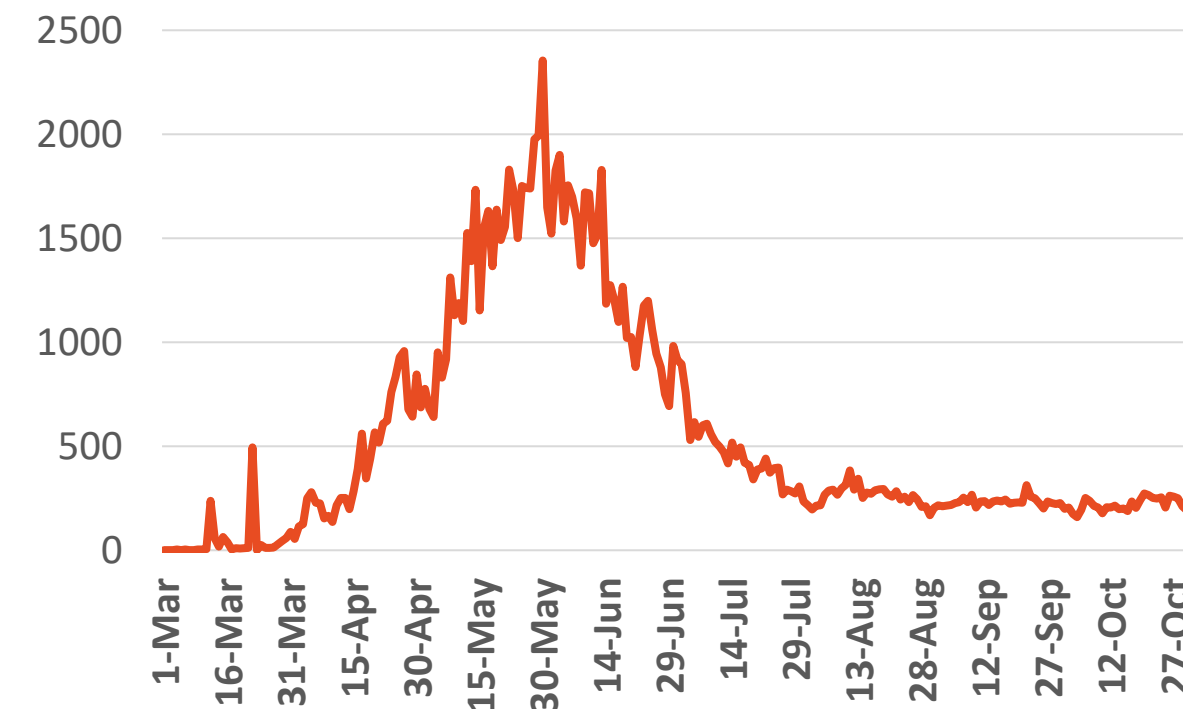
Source :Oman ministry of health

Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

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*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.



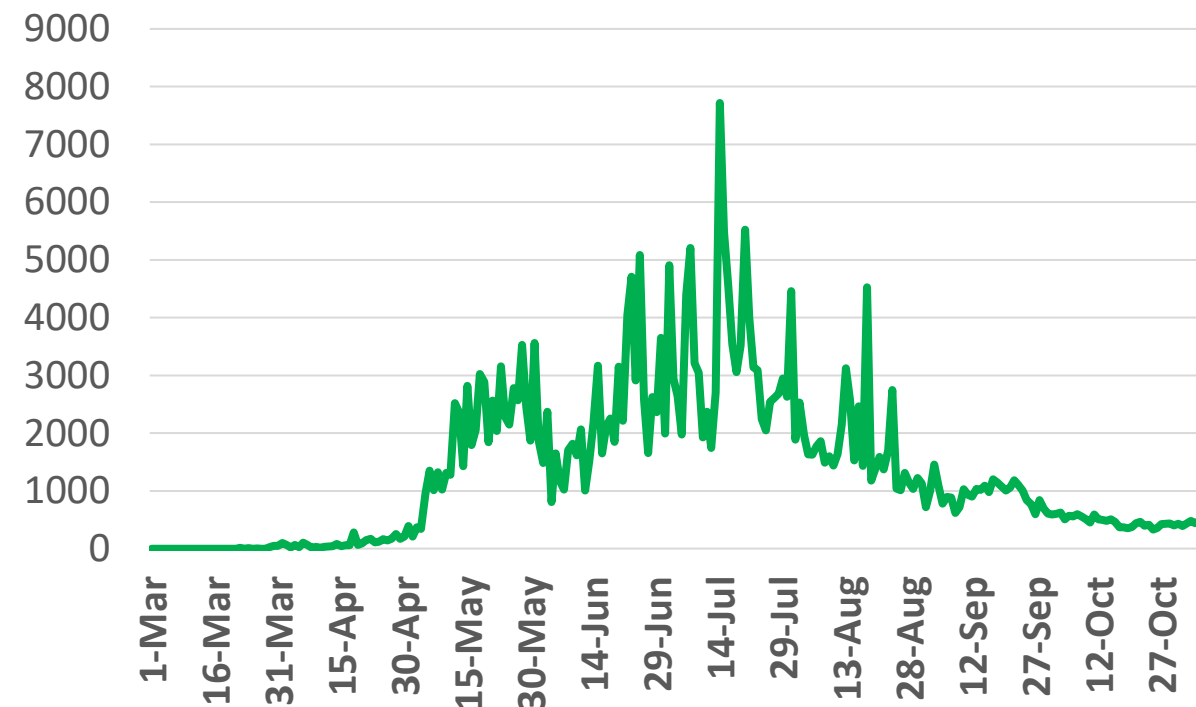
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



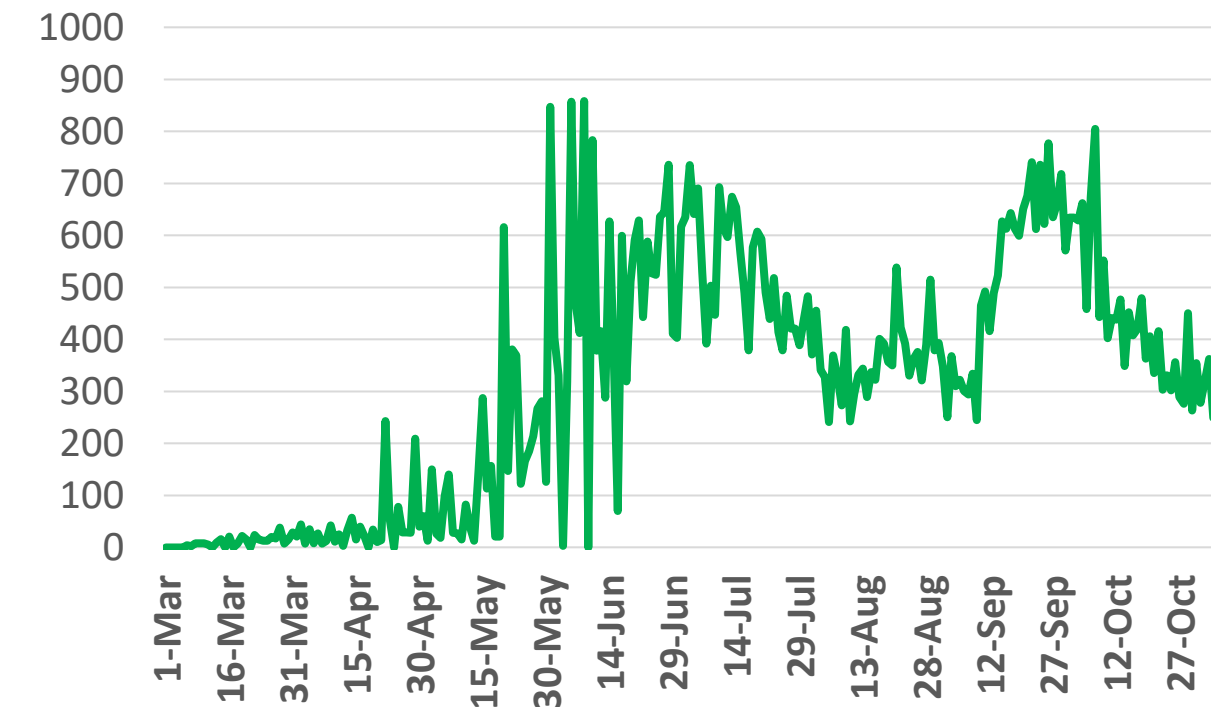
Source : National Emergency Crisis and Disaster Management Authority

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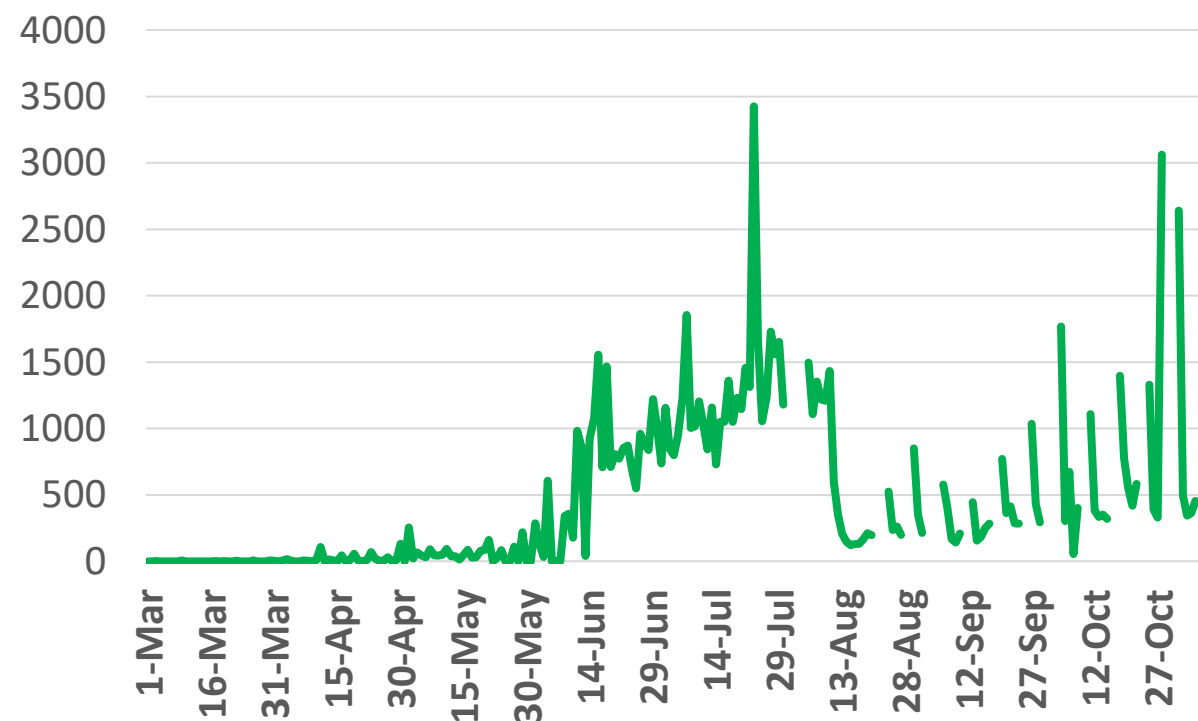
Source : KSA ministry of health

Bahrain



Source : Bahrain ministry of health

Oman



Source : Oman ministry of health

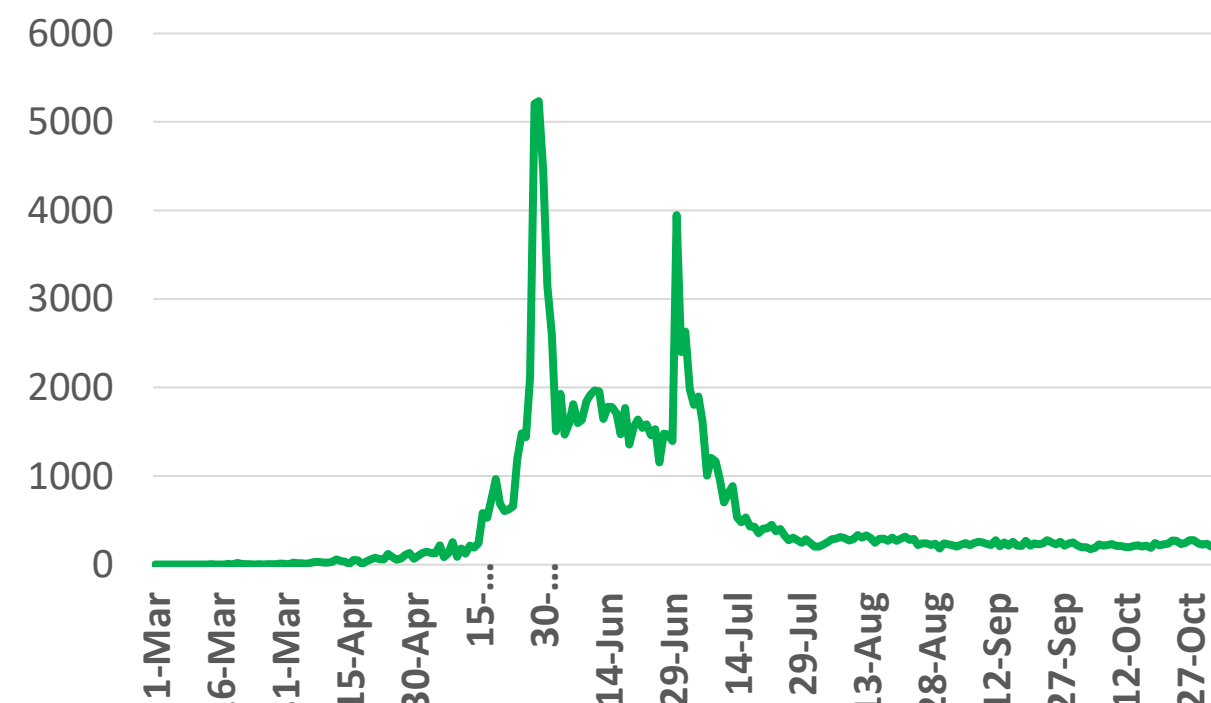
KUWAIT



Source : Kuwait ministry of health

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Qatar



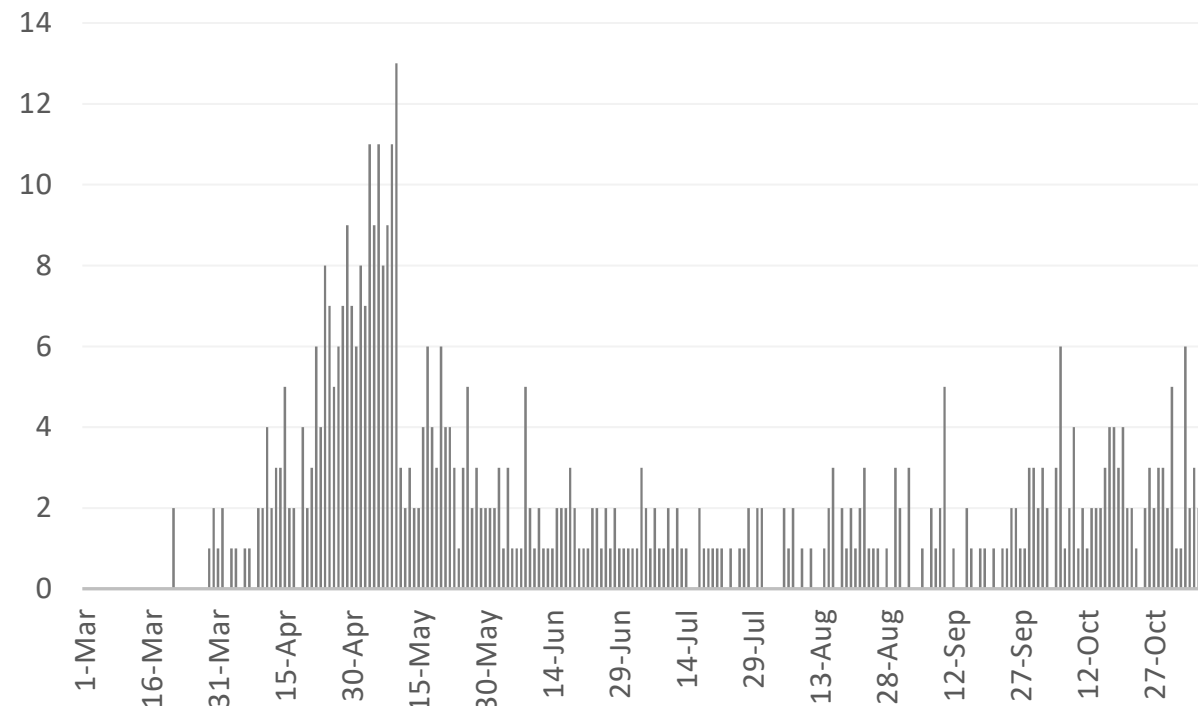
Source : Qatar ministry of health

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*No announced statistic data on weekends and official holidays.



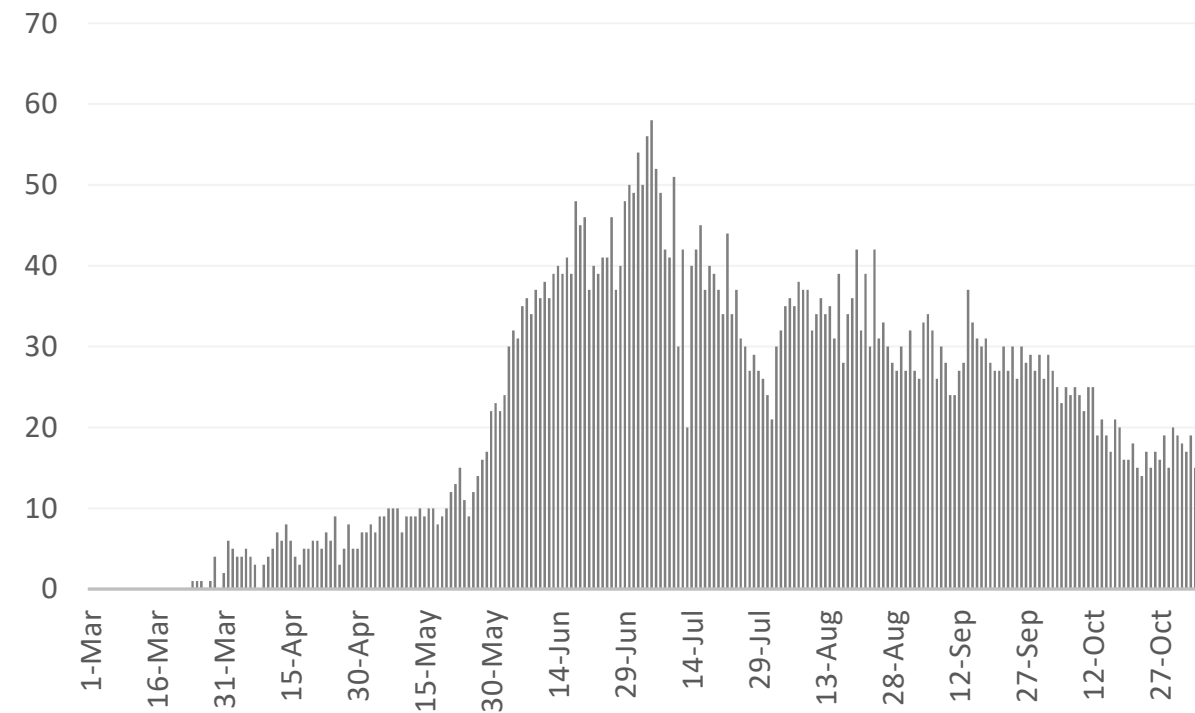
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



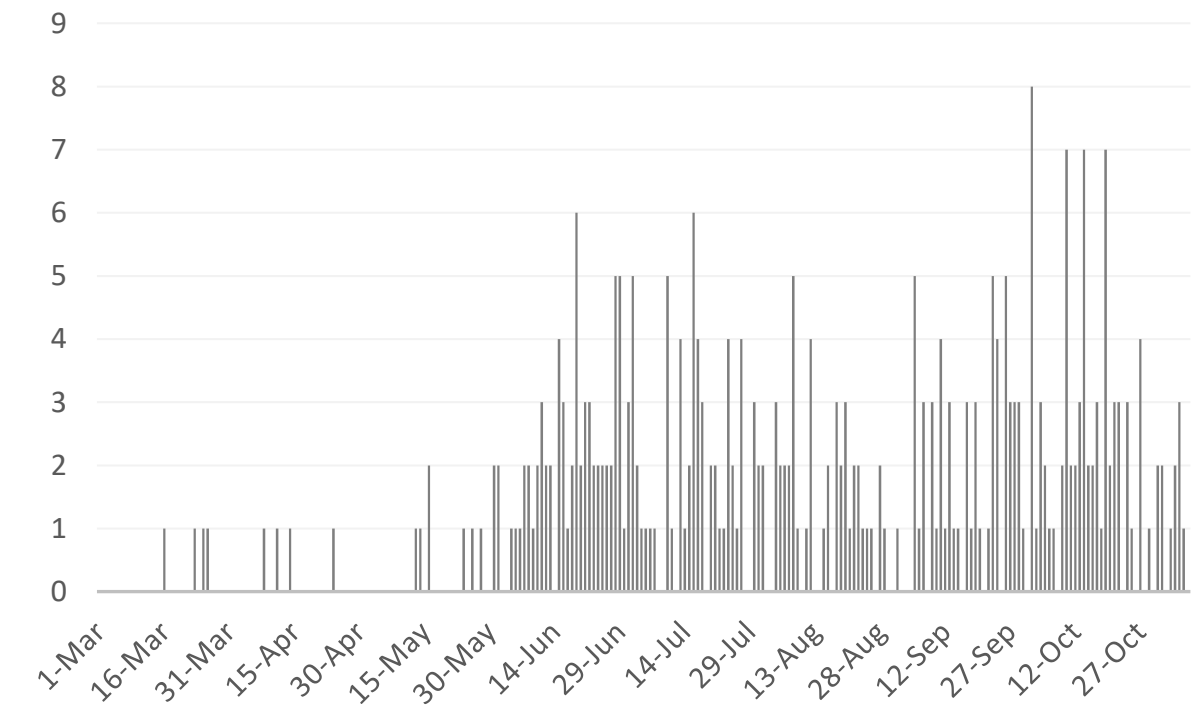
Source : National Emergency Crisis and Disaster Management Authority

KSA



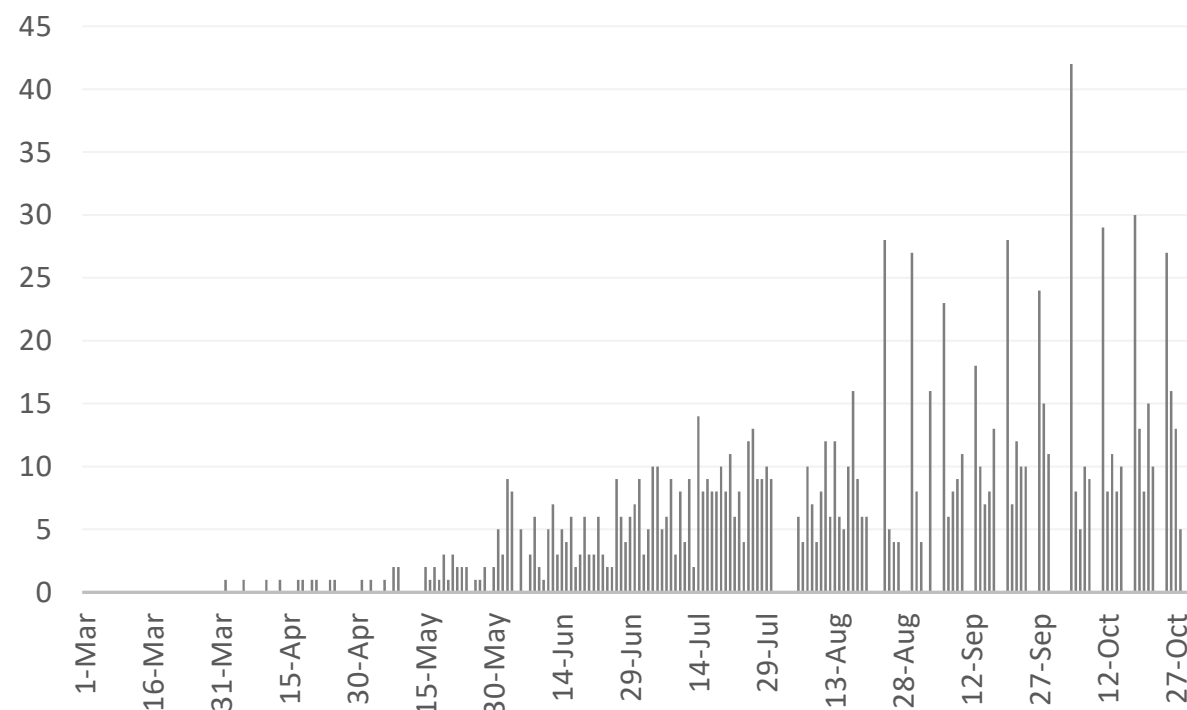
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

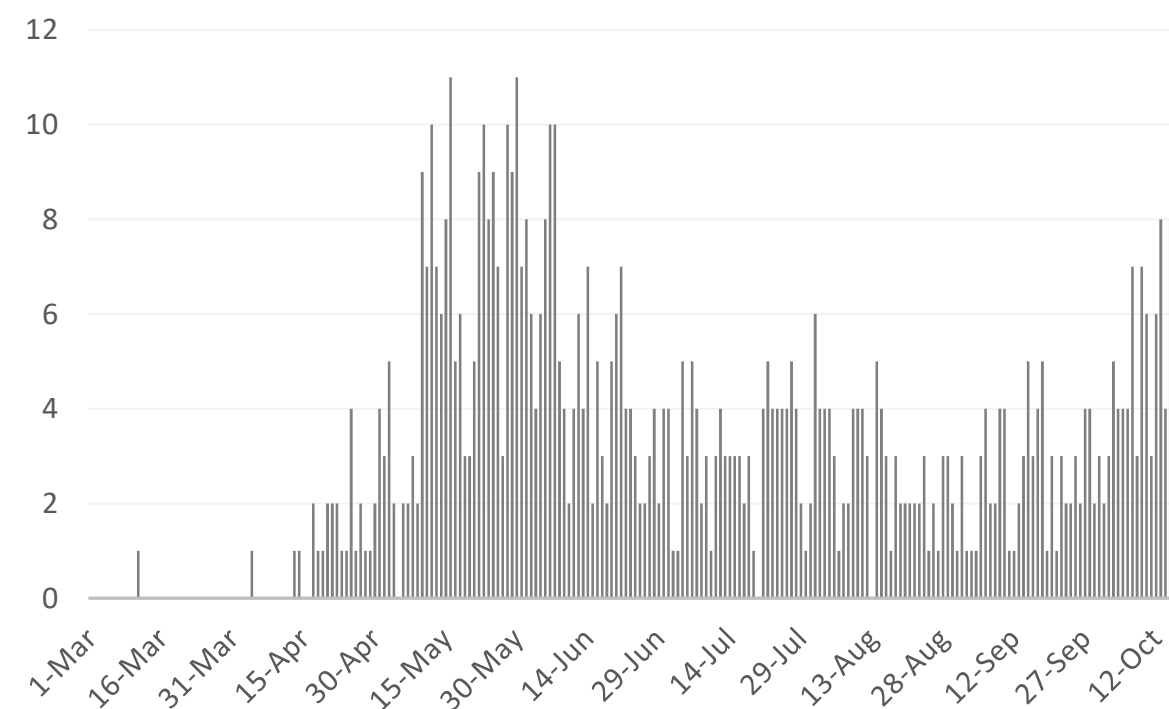


Source :Oman ministry of health

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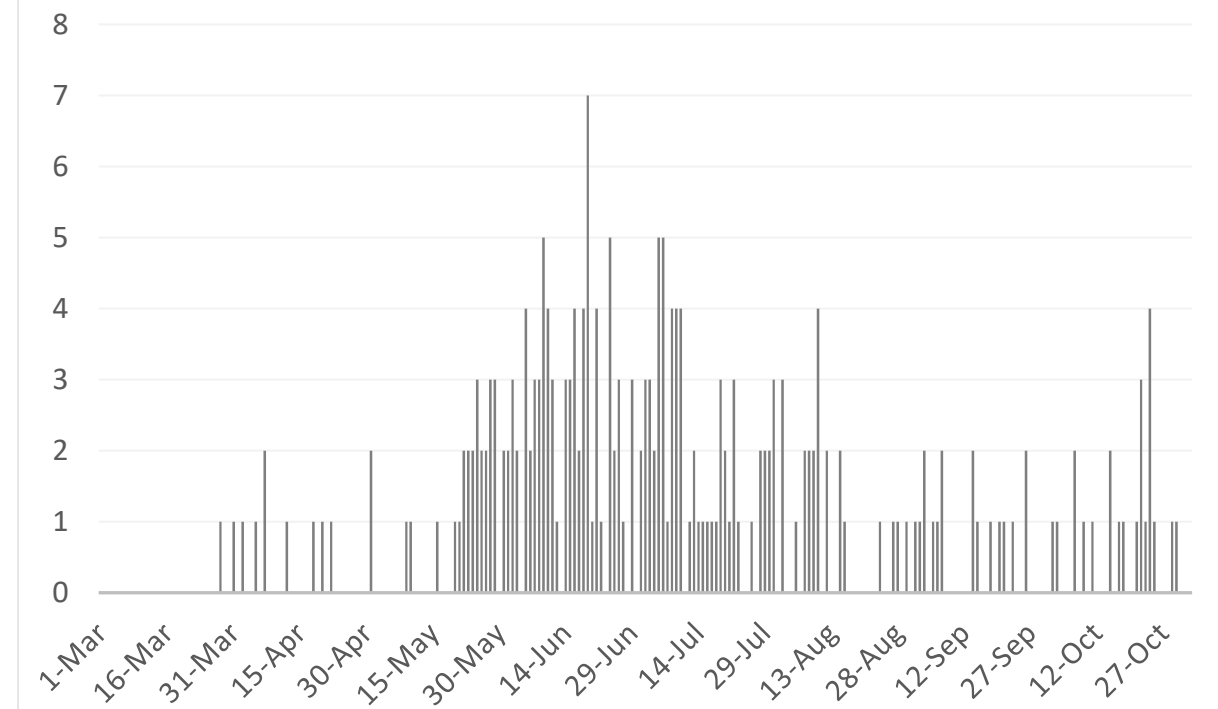
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Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health





Article 1

Published

Best Practices for COVID-19 Positive or Exposed Mothers - Breastfeeding and Pumping Milk

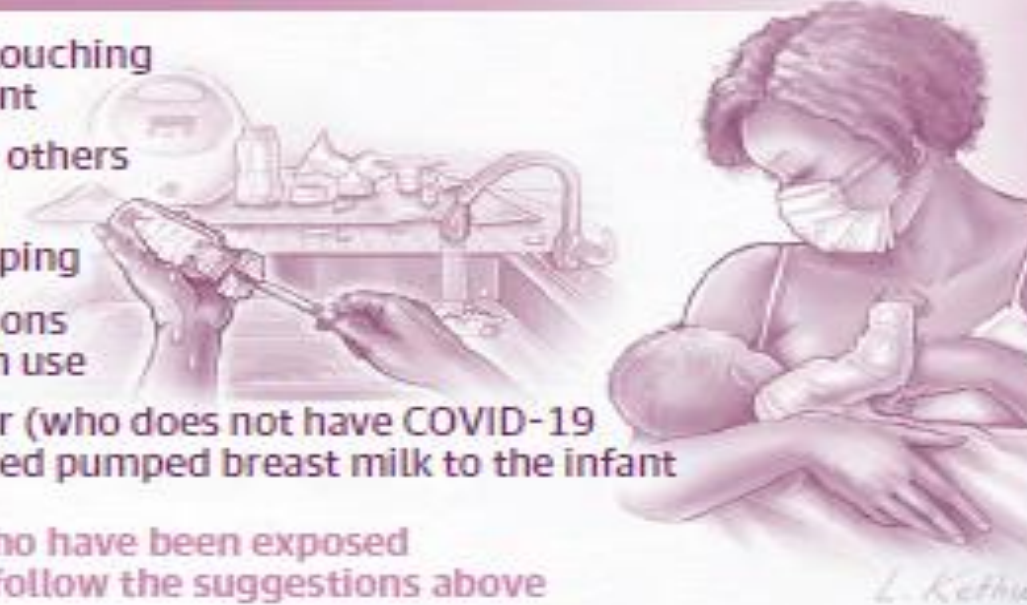
October 26, 2020, [JAMA](#)


- Mothers who may be exposed or diagnosed with COVID-19 might be unsure about breastfeeding their babies. Mothers, along with their family and health care professionals, should decide whether and how to do breastfeeding.

Breastfeeding guidelines for COVID-19-positive or exposed mothers
Breast milk is beneficial for infants because it protects against many illnesses. During the COVID-19 pandemic, some mothers may be unsure about breastfeeding their infant. It is important to use best practices when planning to breastfeed or pump.

Mothers who are COVID-19-positive and want to breastfeed:

- Wash hands before and after touching the infant or feeding equipment
- Avoid using a pump shared by others
- Wear a mask or face covering during breastfeeding and pumping
- Follow manufacturer instructions to clean pump parts after each use
- Try to have a healthy caregiver (who does not have COVID-19 and lives in the same home) feed pumped breast milk to the infant


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Breastfeeding mothers who have been exposed to COVID-19 should also follow the suggestions above

Breastfeeding mothers who work in settings with high risk of exposure:

- Talk to supervisors at work about limiting exposure to situations involving COVID-19-positive individuals
- Clean shared surfaces in lactation rooms before and after use
- After coming home, take off shoes, wash work clothes, and take a shower
- If the infant is high risk for COVID-19, consider isolating from the infant while providing breast milk





Article 2

School Reopenings and the Community during the COVID-19 Pandemic

Published

October 26, 2020, [THE JAMA](#)

- During the COVID-19 pandemic, school closures involve heavy burdens on students, parents, and the economy with profound equity implications. The risk of outbreaks cannot be eliminated in a partial reopening scenario with in-school precautions. The focus of school reopening discussions on in-school mitigation measures has tended to underplay relevant features of the surrounding community and the relationship between school and community transmission.
- There are three community considerations –
 - School reopening increases the risk of transmission within schools as well as in households, workplaces, and the community at large
 - Community disease prevalence affects in-school transmission risk, and
 - Other community characteristics (e.g. community's age structure) drive the potential impact of increased transmission
- A decision-making framework for in-person learning should start with a threshold requirement of strong in-school mitigation measures and then give closer consideration to several factors operating beyond the school boundaries including monitoring for declining community incidence over a defined period and demonstrated a willingness to implement and enforce community mitigation measures such as keeping social distance and wearing a mask.
- There are convincing public health rationales for expanding the considerations informing school reopenings; however, this information itself cannot provide clear answers about when reopening will occur. The major risk associated with school reopening falls on adults outside school settings, reopenings cause distributional justice questions that are ethical.





PUBLIC HEALTH RESPONSE

Article 3

Peripheral Oxygen Saturation in Older Persons Wearing Nonmedical Face Masks in Community Settings

Published

October 30, 2020, [JAMA](#)

- In Canada, a crossover study was conducted (from July 27 to August 10, 2020) in which participants (n=25) recorded peripheral oxygen saturation (SpO₂) before, while, and after wearing a mask. Individuals aged ≥65 years were included in this study. Three-layer plane-shaped disposable nonmedical face masks and portable pulse oximeters were provided to the participants. Participants were instructed to record SpO₂ three times 20 minutes apart for 1 hour before, 1-hour while, and 1 hour after wearing the mask while they were at rest or performing usual activities at home.
- The pooled mean SpO₂ was before (96.1%), while (96.5%), and after (96.3%) wearing the mask. None of the participants' SpO₂ fell below 92% while wearing masks. The paired mean differences in SpO₂, while wearing the mask were minimal when compared with the value before wearing the mask (0.46%) and the value after wearing the mask (0.21%).
- Wearing a 3-layer, nonmedical face mask, was not associated with a decline in oxygen saturation among older participants. These findings do not support claims that wearing nonmedical face masks in community settings is unsafe.

Table 2. Oxygen Saturation Before, While, and After Wearing Nonmedical Face Masks

	SpO ₂ mean (SD), %
No. of participants	25
Before mask wearing, SpO ₂ reading	
1	96.1 (1.3)
2	95.8 (2.1)
3	96.3 (1.6)
Pooled mean SpO ₂ , % (95% CI) ^a	96.1 (95.5-96.7)
While mask wearing, SpO ₂ reading	
1	96.4 (1.2)
2	96.5 (1.3)
3	96.7 (1.1)
Pooled mean SpO ₂ , % (95% CI) ^a	96.5 (96.1-97.0)
After mask wearing, SpO ₂ reading	
1	96.4 (1.3)
2	96.4 (1.4)
3	96.2 (1.4)
Pooled mean SpO ₂ , % (95% CI) ^a	96.3 (95.8-96.8)

Abbreviation: SpO₂, oxygen saturation measured using a portable oximeter.

^a 95% CIs are 2-sided.





PUBLIC HEALTH RESPONSE

Article 4

Lessons from Sweden: Where Can Older Adults Shelter from COVID-19?

Published

October 28, 2020, [THE LANCET](#)

- In Sweden, older adults (aged ≥ 70 years) living in care homes, crowded housing, and in a neighborhood with high population density had increased COVID-19 related mortality as compared with those living in less crowded or less densely populated settings. Furthermore, contact with working-age adults, whether in a household, care homes, or in population-dense neighborhoods, was associated with higher mortality from COVID-19 among older adults.
- The lowest risk of mortality was among older adults whose household included only other older adults (e.g. couples or family members). Currently, COVID-19 testing is available, active contact tracing, is taking place, and wearing face masks are all important measures to reduce transmission and risk of infection; however, these practices are unlikely to prevent spread within households. Household-level preventive measures will be required to protect older adults. A research priority should be understanding the circumstances of social support that protected those households that could help to identify a pandemic mitigation strategy.
- Vaccines and monoclonal antibodies are favorable tools that could reduce the risk of infection and transmission. Once these are available, older adults and their support networks should be among the earliest recipients. COVID-19 mortality will continue to place its burden on older adults unless a comprehensive public health strategy is implemented.



Article 5

COVID-19 human Challenge Studies in the UK

Published

October 31, 2020, [THE LANCET](#)

- In the United Kingdom (UK), the Human Challenge Consortium consists of government representatives and experts from the National Health Service (NHS), academia, and the private sector. They explore the feasibility and ethics of human challenge studies that could potentially expedite the development of vaccines to protect against SARS-CoV-2.
- Intentionally infecting volunteers with a known human pathogen is never undertaken lightly although such studies are very informative about a disease. It is crucial to move as quickly as possible towards getting effective COVID-19 vaccines, and challenge studies have the potential to expedite and de-risk the development of vaccines.
- The significant concern about challenge studies is the safety of the participants as well as the impact of a death on trust in science and medicine. The backlash against the death of a healthy volunteer might likely close or significantly slow down the use of challenge studies and perhaps vaccines in general. Whether challenge studies have a role to play in COVID-19 vaccine development depends on country circumstances, and weighing of all the considerations by regulators, scientists, and ethicists.



Article 6

Innovation in Wastewater Near-Source Tracking for

Published

Rapid Identification of COVID-19 in Schools

October 30, 2020, [THE LANCET](#)

- During COVID-19 pandemic, surveillance focuses on identifying and testing individuals with symptoms. However, it does not capture asymptomatic or presymptomatic individuals. A non-invasive tool that can support the COVID-19 response is the use of wastewater based epidemiology to allow the early identification of local outbreaks and facilitate the use of local clinical testing.
- SARS-CoV-2 has been identified in adult and child urine and faeces, both in asymptomatic and presymptomatic stage. SARS-CoV-2 RNA fragments have been isolated from numerous wastewater treatment works, septic tanks, sewers, hospital wastewater treatment systems, and environmental discharge points and reported to predate the clinical diagnosis of cases.
- The wastewater based approach has been successfully used, for near-source tracking (NST), for instance, in the sewage drains serving buildings, which permit to detect small clusters or individual cases. NST that are used together with targeted clinical testing has the potential to stop the outbreaks. NST might be easily justified, for the vulnerable groups, including individuals in hospitals, prisons, care homes, schools, and factories.
- The wastewater based epidemiology using NST provides public health professionals perception into the transmission of COVID-19 within distinct groups of people for whom rapid action could reduce the risk of a larger outbreak. This approach could be the first line of defense for the vulnerable groups and could offer long term advances in public health surveillance after COVID-19.

Article 7

COVID-19 Transmission - up in the Air

Published

October 29, 2020, [THE LANCET](#)

- During the early stage of the COVID-19 outbreak, it was anticipated that airborne transmission of SARS-CoV-2 was unlikely; however, growing evidence has highlighted that infective microdroplets are small enough to remain suspended in the air and expose individuals at distances beyond two meter from an infected person. This knowledge was validated by investigation of the spread of cases between people who were not in direct or indirect contact suggested that airborne transmission was the primary route of transmission.
- According to the Centers for Disease Control and Prevention (CDC), COVID-19 infection can occur from airborne exposure to the virus under certain circumstances. Cases of transmission from people more than two meters apart have occurred but in enclosed spaces with poor ventilation and typically with extended exposure to an infected person of more than 30 minutes. The CDC has highlighted that most infections are spread through close contact, and airborne transmission is not the primary route of transmission.
- Public health guidance needs to advise people how to navigate risk in indoors and wearing facemask is becoming mandatory. Facemasks and shields offer protection from larger droplets; however, the effectiveness against airborne transmission is less certain. Advice on spending time indoor settings should focus on improved ventilation and avoiding crowded spaces. It is essential to conduct new research and not depend on recommendations based on old data so that more effective infection control guidance can be provided.





Article 8

Published

October 29, 2020, [JAMA](#)

Integrated Survival Estimates for Cancer Treatment Delay Among Adults with Cancer During the COVID-19 Pandemic

- Age and stage-specific estimates of overall survival pre-COVID-19 were adjusted, by the probability of COVID-19, COVID-19 mortality, and delay of cancer treatment in this decision, analytical model. These model estimates were integrated into a web application (OncCOVID) to calculate estimates of the cumulative overall survival and restricted mean survival time of patients who received immediate vs. delayed cancer treatment.
- The OncCOVID model allowed for the selection of 47 inputs, 18 covariates (e.g., age), and 29 parameter estimates (e.g., hazard ratio [HR] for delay of treatment) to characterize individual risk estimates for those receiving immediate vs. delayed cancer treatment. Significant heterogeneity was found regarding the impact of delayed cancer treatment owing to patient and cancer factors that are not currently captured by commonly used triage systems. Whether delayed cancer treatment harms or improves expected survival compared with immediate treatment is dependent on the patient, cancer, treatment, and community factors.
- These findings indicate that the OncCOVID web application may allow physicians to estimate the net impact of delayed cancer treatment for individual patients and to prioritize patients for immediate treatment in settings with limited treatment capacity.





Article 9

Published

Return to Play for Athletes After Coronavirus Disease 2019 Infection—Making High-Stakes Recommendations as Data Evolve

October 26, 2020, [JAMA](#)

- While normalcy has been slowly returning during the COVID-19 pandemic, concern about cardiac involvement in patients who suffered from COVID-19 became a rationale to cancel sporting events.
- Physicians, trainers, coaches, league officials, and those responsible for the welfare of athletes, as well as the athletes and their families themselves, have been faced with substantial uncertainty about the safety of returning to training and competition.
- Going forward, it is likely that Cardiac Magnetic Resonance (CMR) imaging will play an important role in decision-making.
- The authors of this editorial have commented on the updated guidance (in this journal issue) for return to play provided by a group of sports cardiologists. He has also compared it with the UK guidance, which advocates for routine cardiovascular screening.
- For clinicians and practitioners, these proposed guidelines place increased importance on monitoring for cardiovascular symptoms during the gradual return to sporting activities.
- Although there remains uncertainty, it is promising that early experiences have observed that nearly all athletes who recover from mild COVID-19 infection do not develop significant cardiovascular pathology.
- Knowledge gaps remain and call out for the coordinated acquisition of data.
- Clinicians and practitioners must remain vigilant in their care despite even mild severity of initial symptom presentation.
- It is critical that measures to reduce the prevalence of COVID-19 infection are in place.





Article 10

Published

October 26, 2020, [JAMA](#)

Coronavirus Disease 2019 and the Athletic Heart: Emerging Perspectives on Pathology, Risks, and Return to Play

- There is an ongoing concern about COVID-19–associated cardiac pathology among athletes because myocarditis is an important cause of sudden cardiac death during exercise.
- In the absence of definitive data, there is ongoing uncertainty about the optimal approach to cardiovascular risk stratification of athletes in competitive sports following COVID-19 infection.
- This report was designed to address the most common questions regarding COVID-19 and cardiac pathology in athletes in competitive sports, including the extension of return-to-play considerations to discrete populations of athletes not addressed in prior recommendations
- Through all stages of the COVID-19 pandemic and beyond, risk of adverse CV outcomes during athletics will persist despite best CV screening practices, and emergency action planning initiatives represent our best strategy to save lives.
- An emphasis on public health, suppression of viral spread, increased access to testing, and ultimately vaccination should all be prioritized.



THANK YOU

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