



# Scientific Research Monitoring on COVID-19

12 June 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>

# Summary on COVID19



## SARS-COV2 virus

- The virus have been sequenced and found to be similar to MERS-CoV and SARS-CoV. Research revealed that the virus originated in a bat reservoir.
- New designation for the disease and the virus: COVID-19 and SARS-COV2.
- Two strain have been identified for SARS-COV2 (L type (more aggressive ) and S type .and 3 cluster groups.

## Transmission

- Transmission from human to human has been confirmed. Incubation period ranges from 5 days and can reach up to 14 days.
- Suggested human-to-human transmission occurs through droplets, contact and fomites, similar to Severe Acute Respiratory Syndrome (SARS).

## Clinical features and outcome

- Non-specific and the disease presentation can range from no symptoms (asymptomatic) to severe pneumonia and death.
- Highest risk for severe disease and death include people aged over 60 years and those with underlying conditions
- Pregnant women infected with SARS-COV2 may experience symptoms similar to those of non-pregnant adults. No evidence suggests transmission from mother to newborn if infected late in pregnancy.

## Therapies and vaccination

- Efforts currently in developing therapies for this virus focus on previously known medications and vaccination for MERS-CoV and SARS-CoV. In addition to other type of medication.
- Also more therapies are currently under investigation including immunomodulatory, antimalarial and others.
- Vaccination are under clinical trial stage in many countries around the world.

# Summary on COVID19 (Cont.)



## COVID19 in figure

- 80% of laboratory confirmed patients have had mild to moderate disease
- 13.8% have severe disease.
- 6.1% are critical
- Children account for 2.4% of all reported cases.(less than 19 years) data from china

# Today's Highlights



All articles presented in this report represent the authors' views and not necessarily represent Abu Dhabi Public Health Center views or directions.

## Scientific Research

- **Public Health response:** Article on emergency department experience and shift during COVID19 pandemic.
- **Clinical feature:** another article describes the presentation of inflammatory like illness in 59 cases of children, showed that those children are older and have high inflammatory marker CRP compared to true kawaski disease patients.
- **Treatment:** research suggest that pathogen inactivation of convalescent plasma from patients who have recovered from COVID-19 does not alter the potential therapeutic potency and should be recommended to mitigate the risk for transfusion associated viral transmission.



## WHO Daily Report 11 June 2020

- The Director of WHO Eastern Mediterranean Regional has warned that cases in the region have increased during the past three weeks and there is the risk cases will continue to increase as many countries ease restrictions.
- Somalia is expanding its Early Warning, Alert and Response Network (EWARN) across the country to facilitate early detection of suspected cases of COVID-19, with supporting of roll out from WHO.
- **New updated guidance on the use of masks in the context of COVID-19 replacing the previous guidance in April:**
  - The updated guidance provides practical advice to decision-makers as to who needs to wear a mask, which type of mask should be used, and when it should be worn.
  - In the health care facilities, WHO recommend the use of a medical mask in addition to other personal protective equipment (PPE).
  - WHO recommends that a person with symptoms suggestive of COVID-19, even if symptoms are mild should wear a medical mask.
  - WHO advises governments to encourage the use of medical masks among vulnerable populations: people aged 60 years and older, and those with comorbidities.

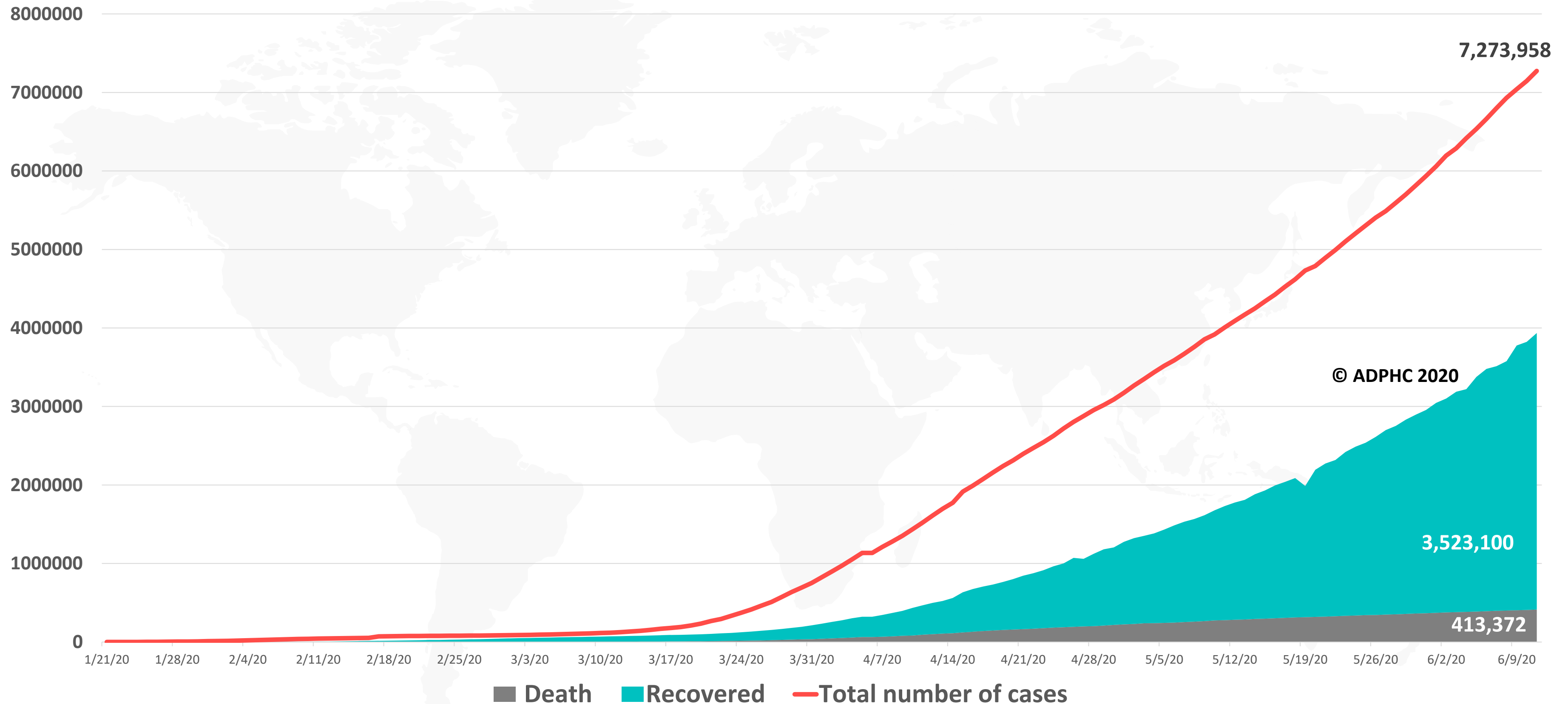
# Epidemiology

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HEALTH CENTRE

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**Figure 1: Total number of infected, recovered, and death cases (January 21<sup>st</sup> to Jun 11, 2020)**

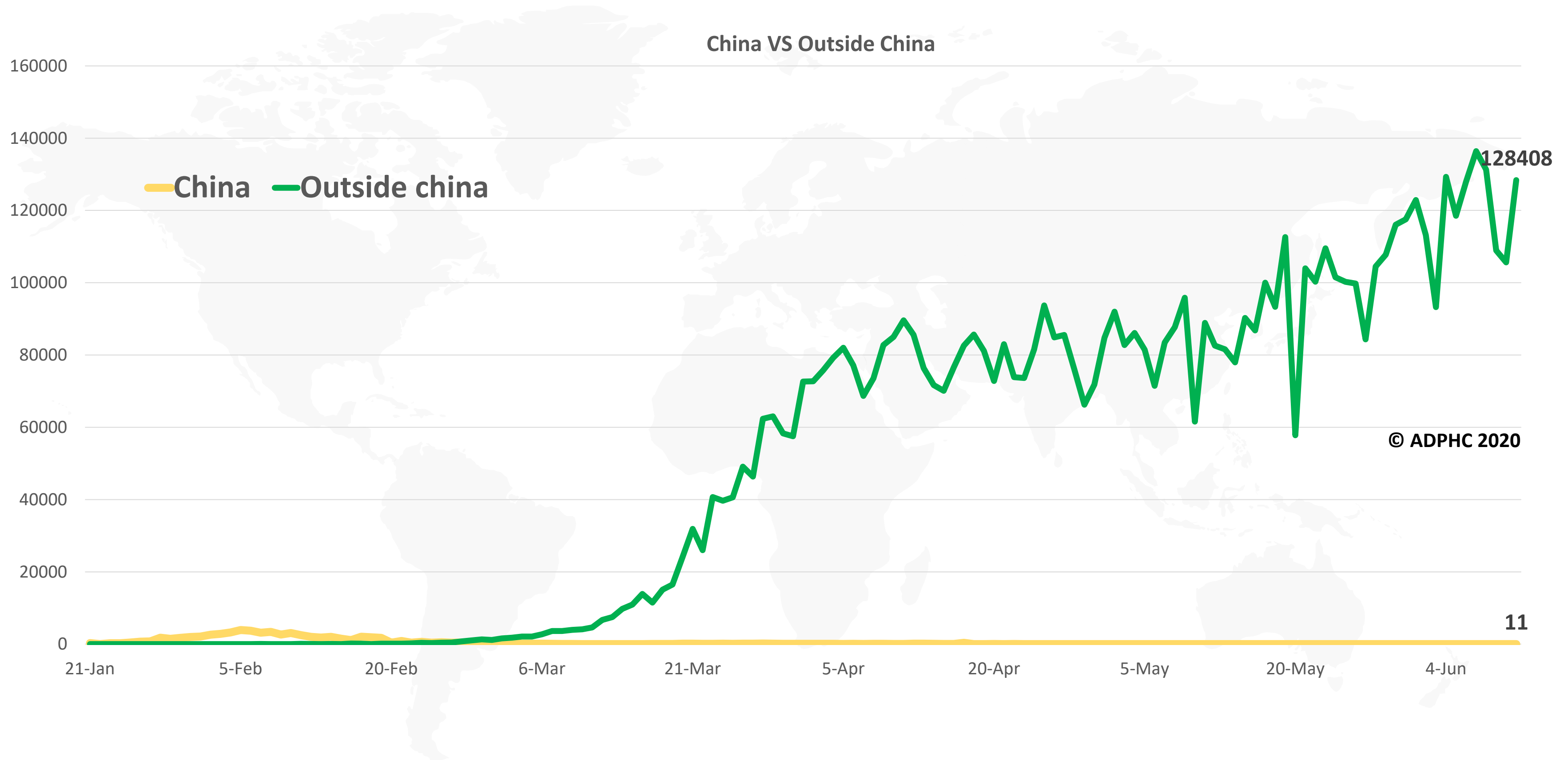


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#), [John Hopkins University](#)



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 11, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

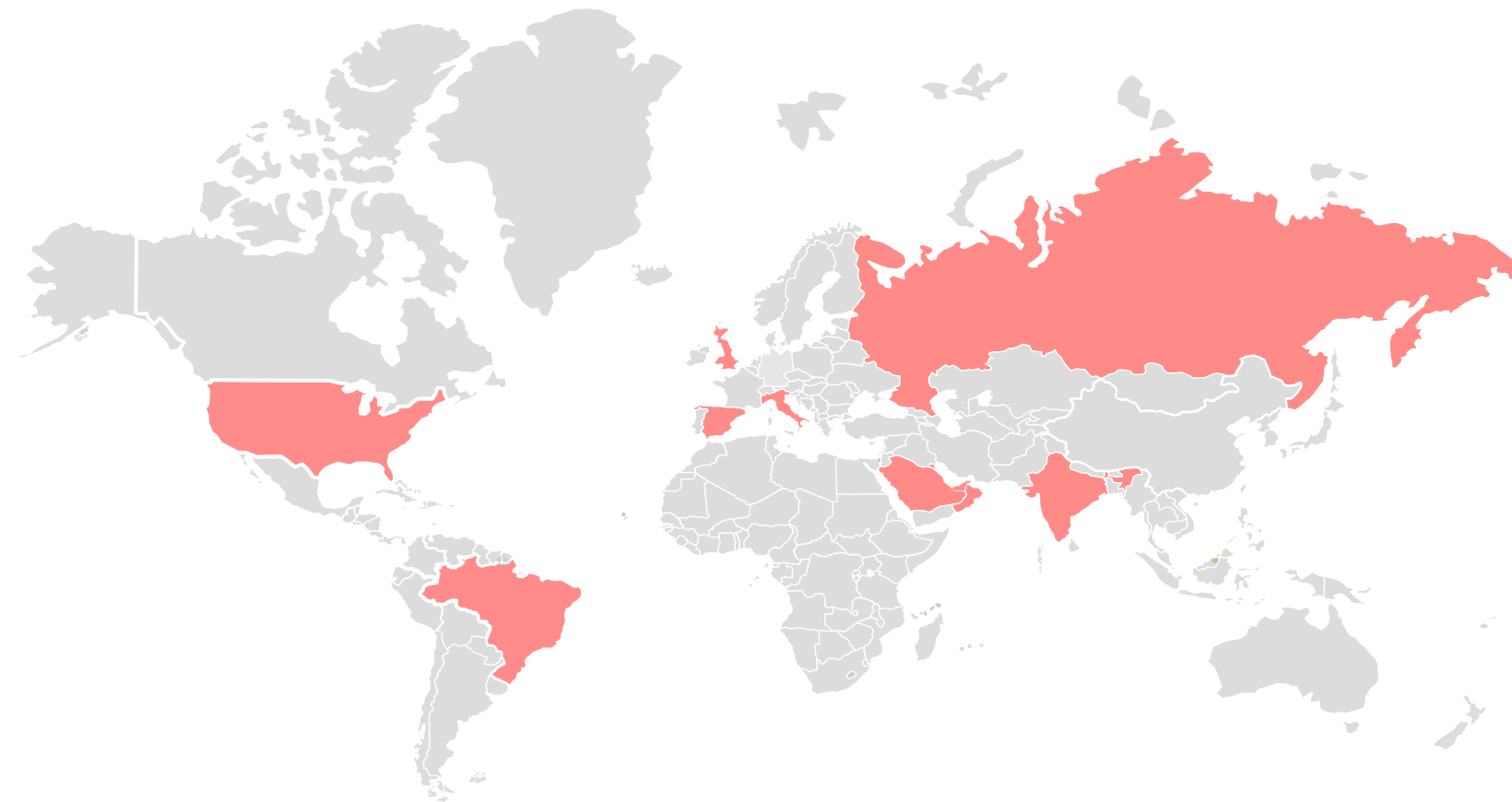
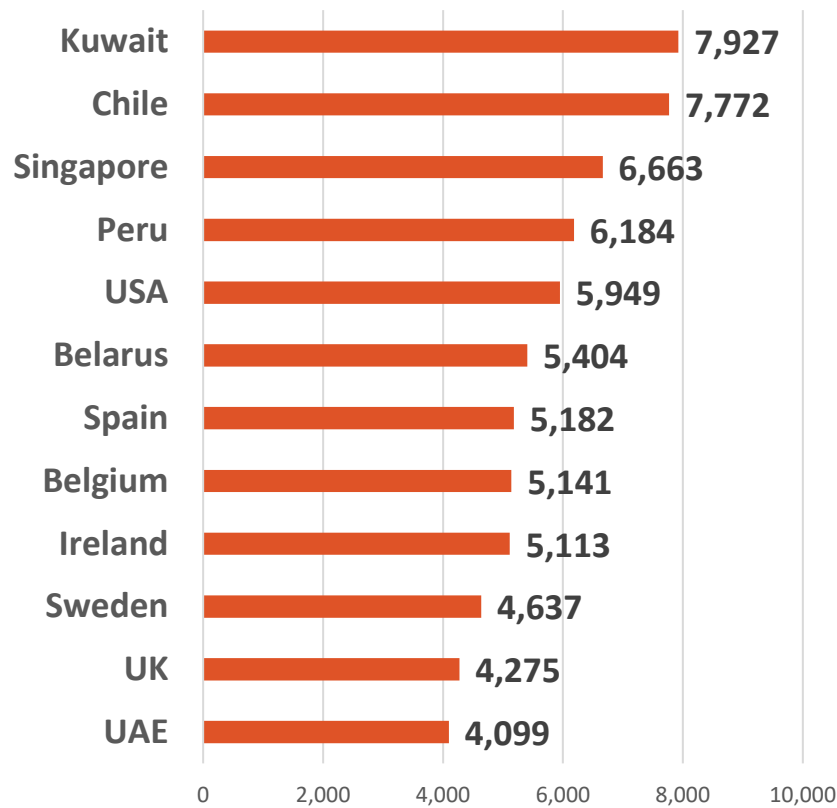
Data resources: [WHO](https://www.who.int/)

# Epidemiology

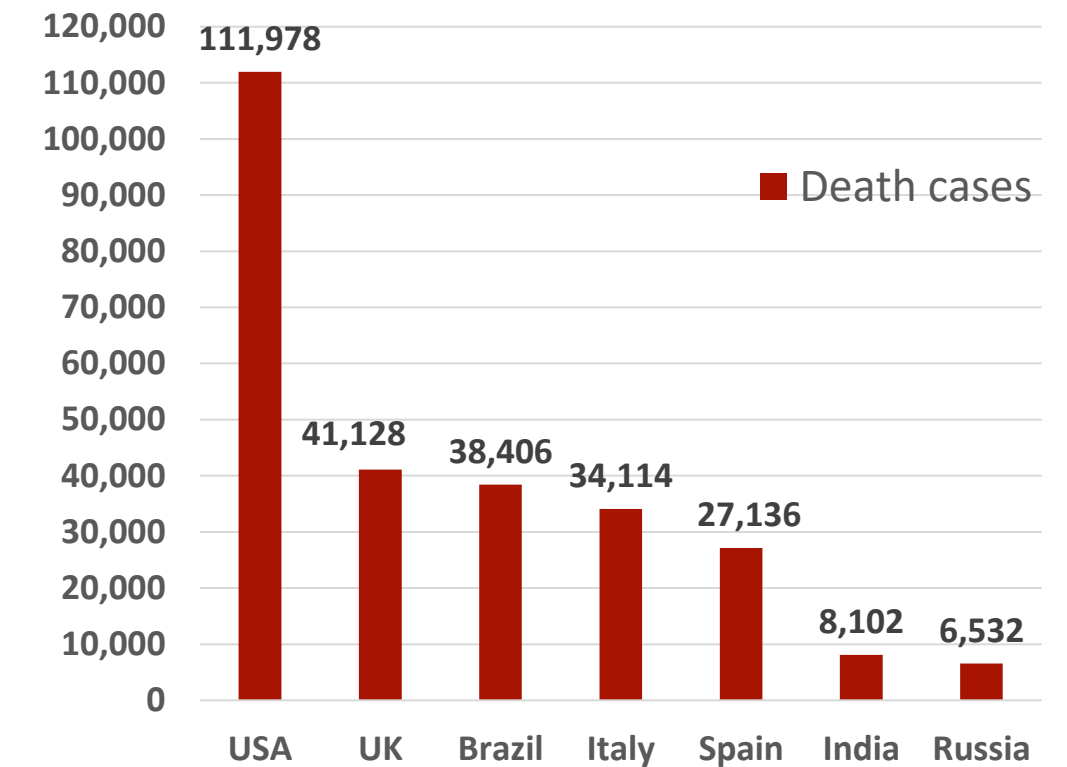


Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 11, 2020).

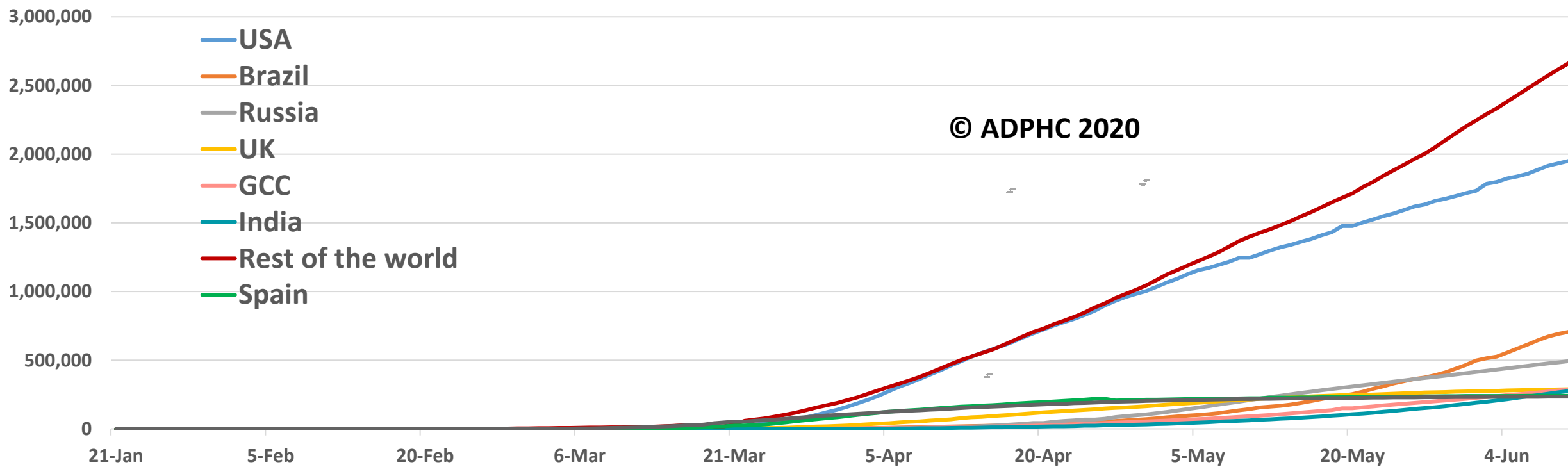
## COVID-19 CASES PER MILLION



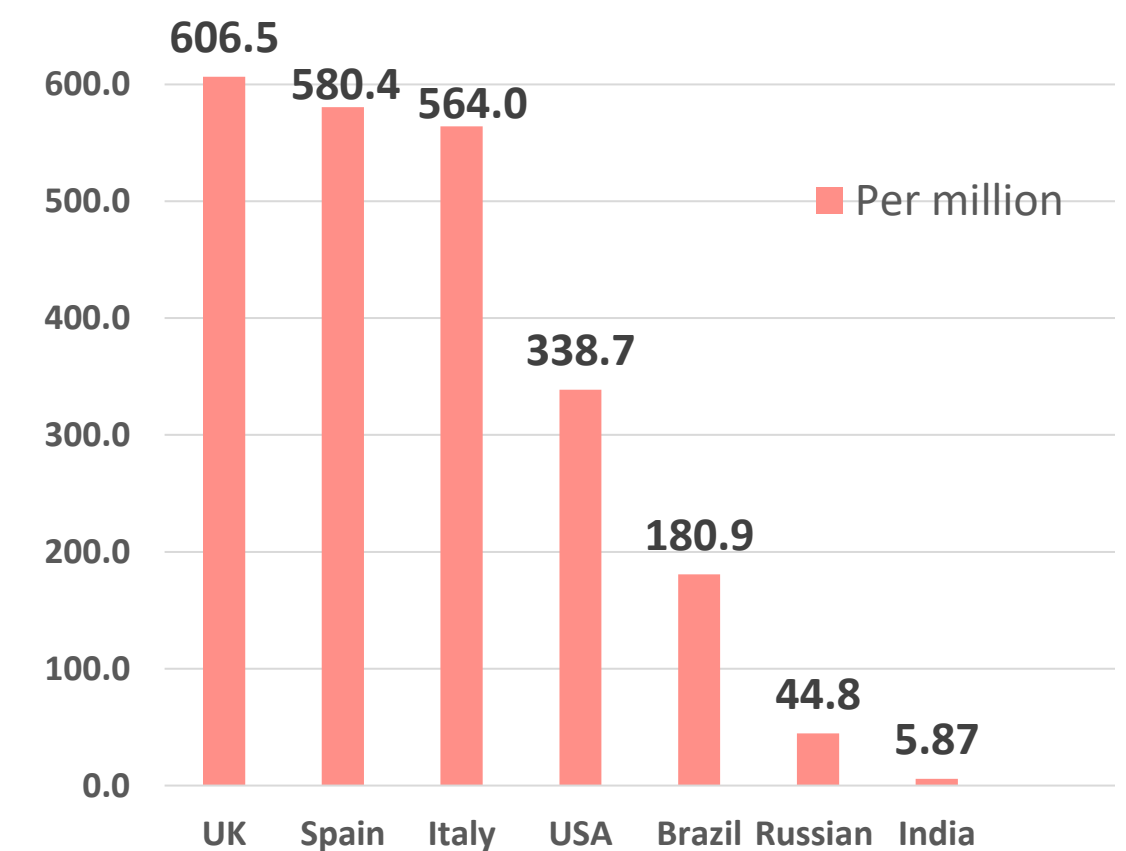
## TOTAL DEATHS



## TOTAL INFECTED CASES



## DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

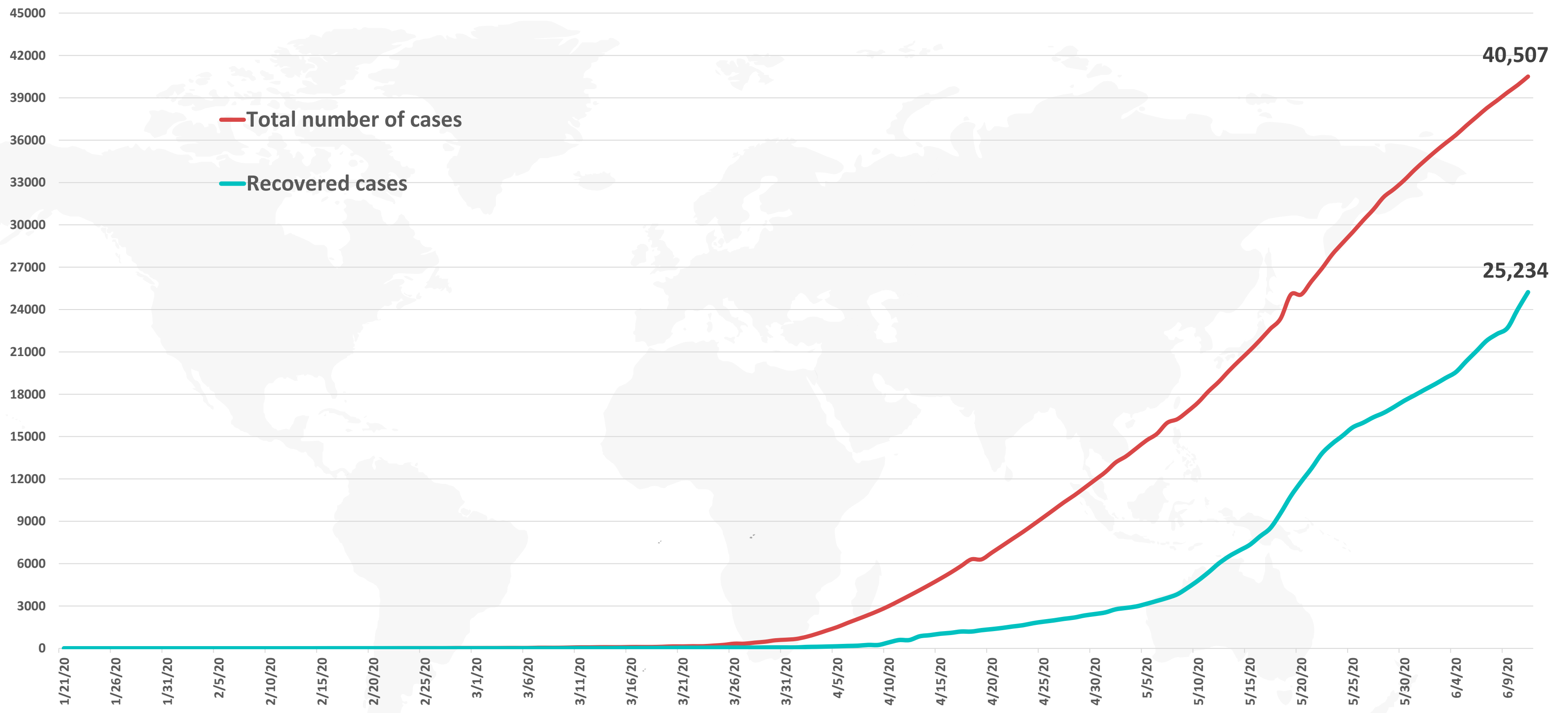
Data resources: [WHO](https://www.who.int)



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**Figure 4: Total number of COVID-19 infected and recovered cases in UAE over time**



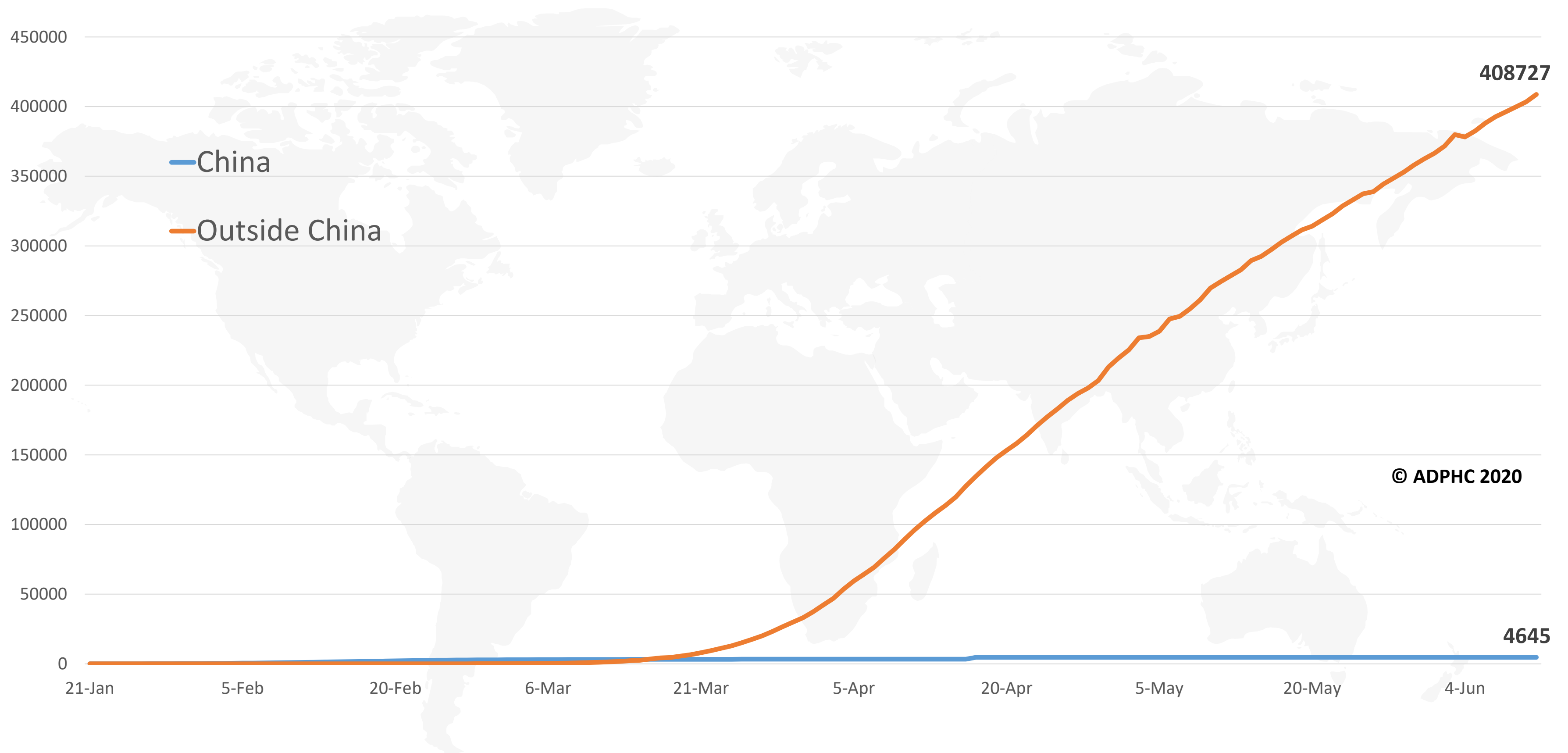
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#), [John Hopkins University](#)

# Epidemiology



**Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to Jun 11, 2020).**



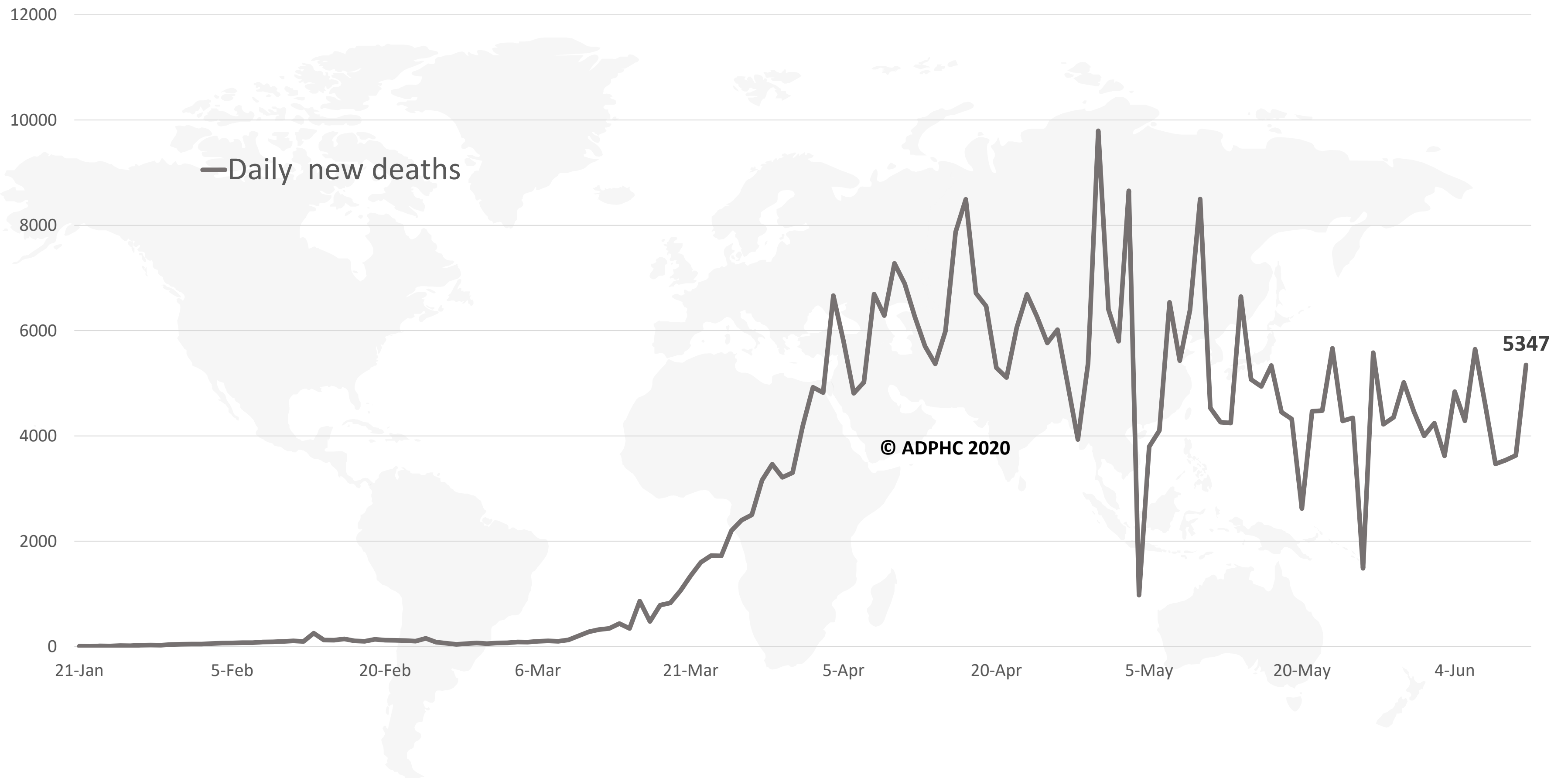
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Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



**Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 11, 2020).**



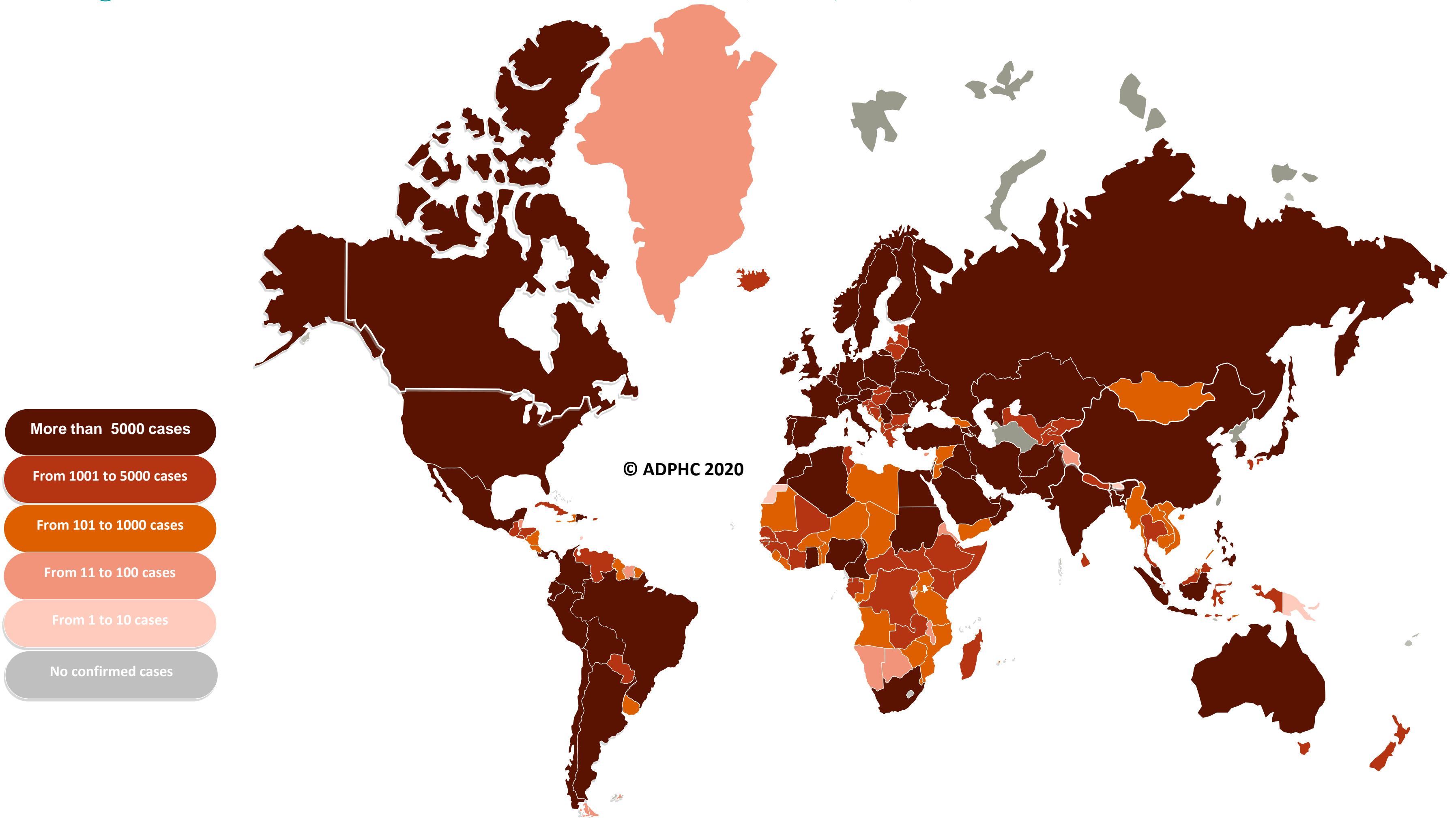
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int/)

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Figure 7a : Global distribution of COVID-19 cases (Jun 11, 2020).

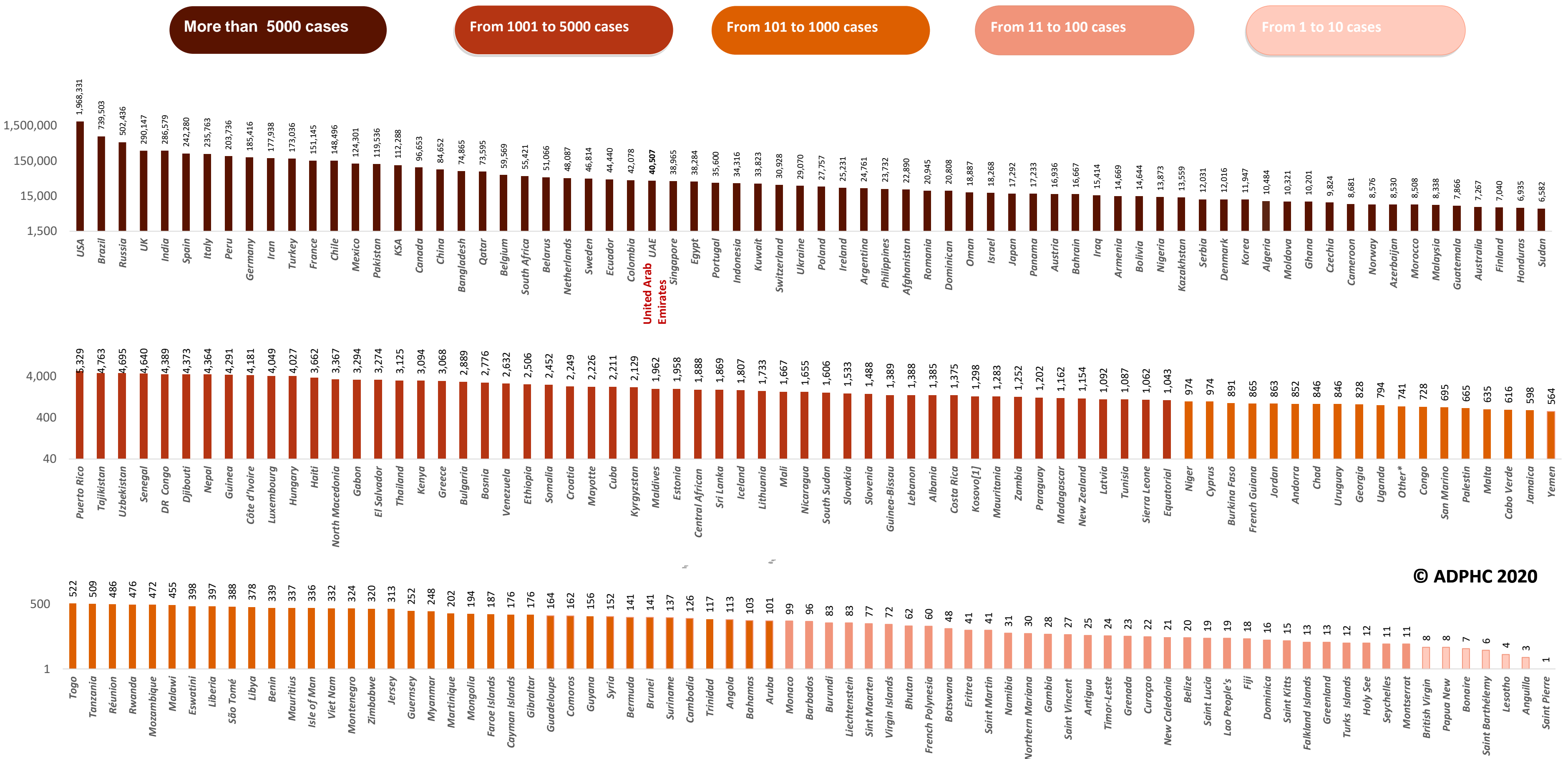


Map chart published by Abu Dhabi Public Health Center 2020.

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Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 11, 2020)



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

Map chart published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int/)

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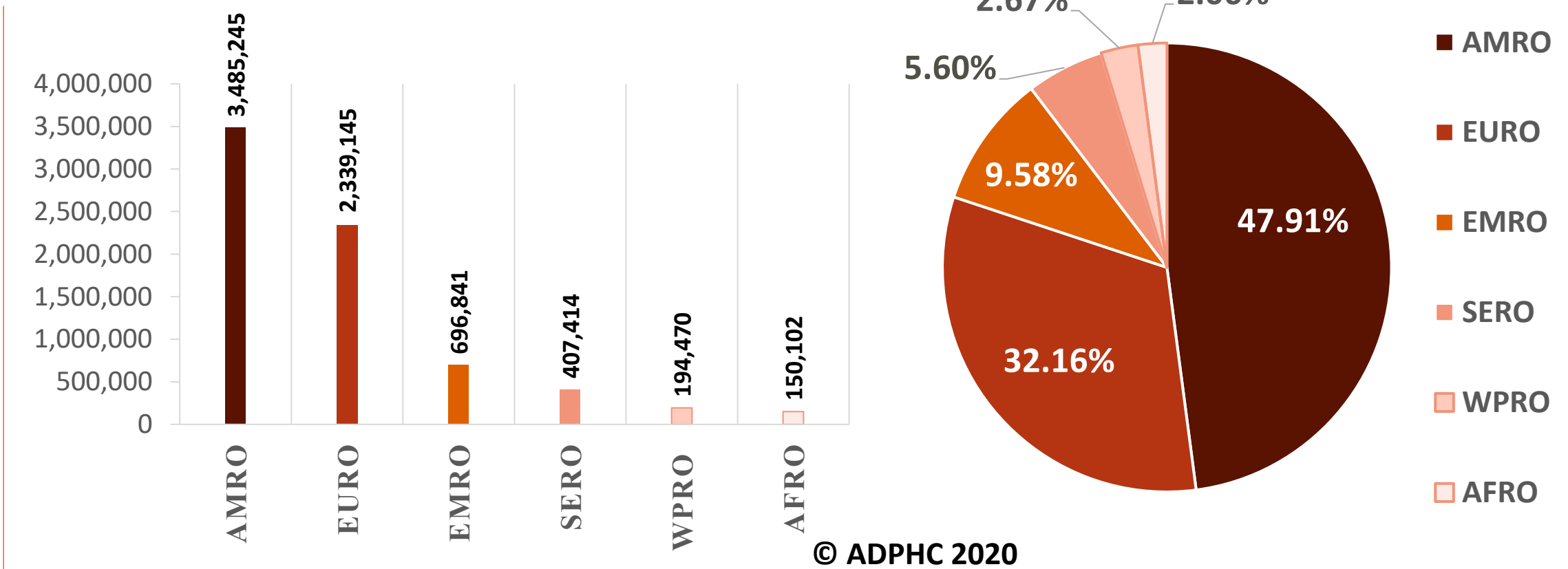
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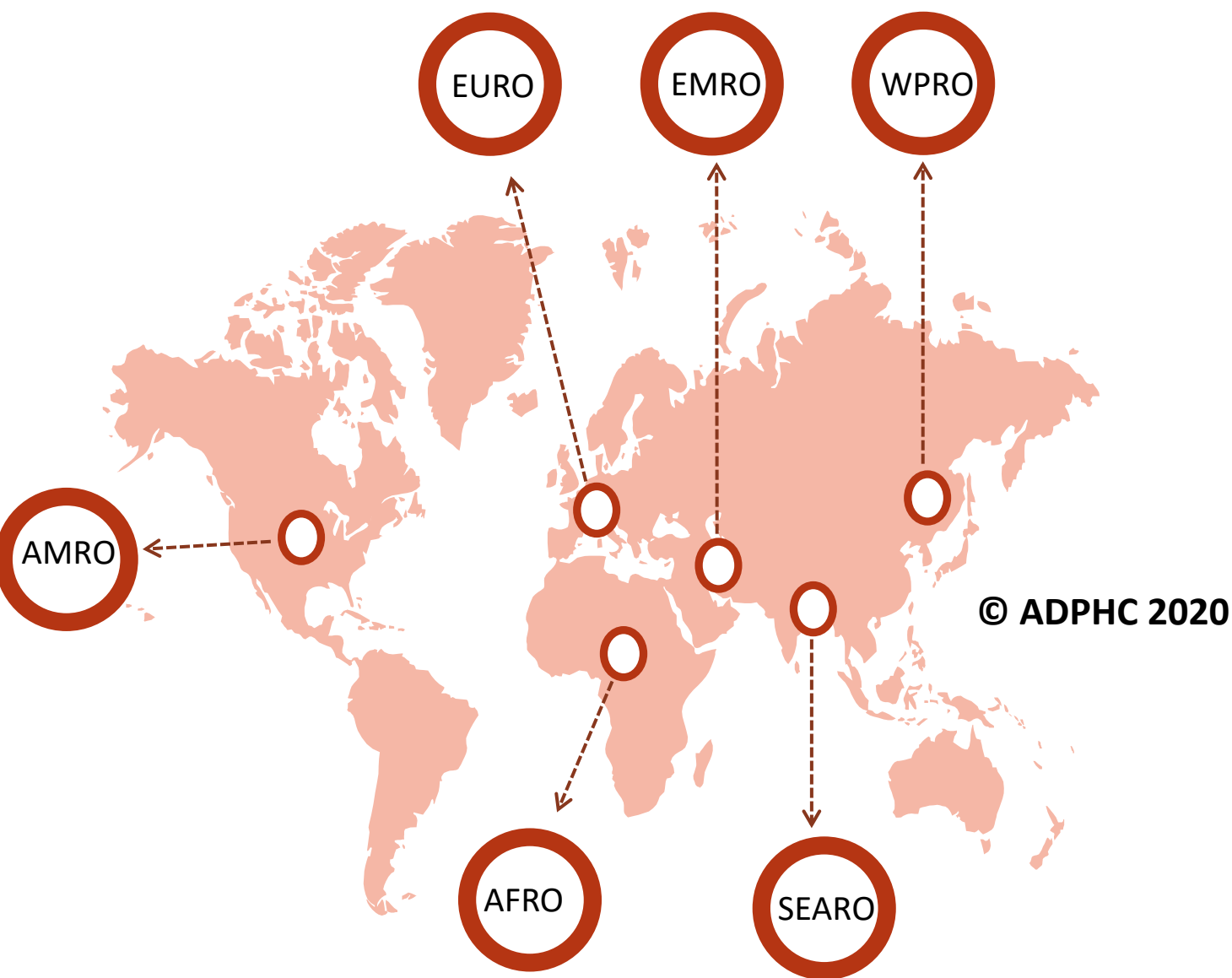
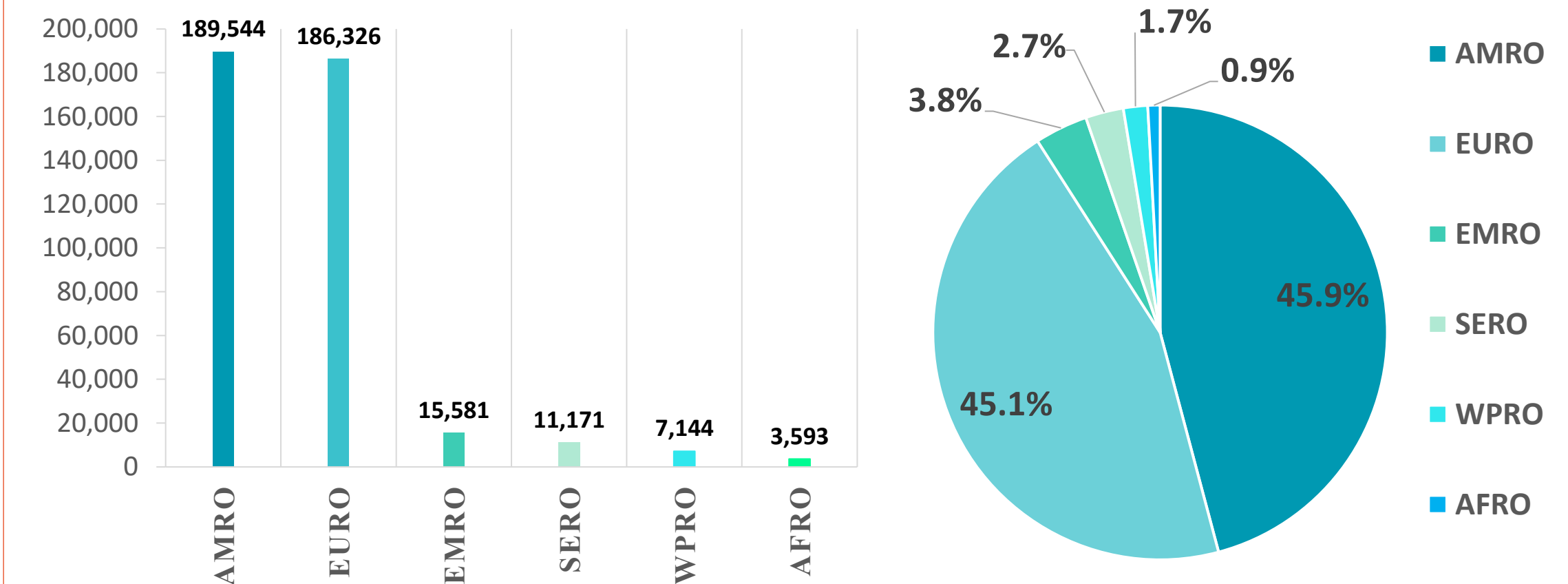


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 11, 2020)

## INFECTED



## DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

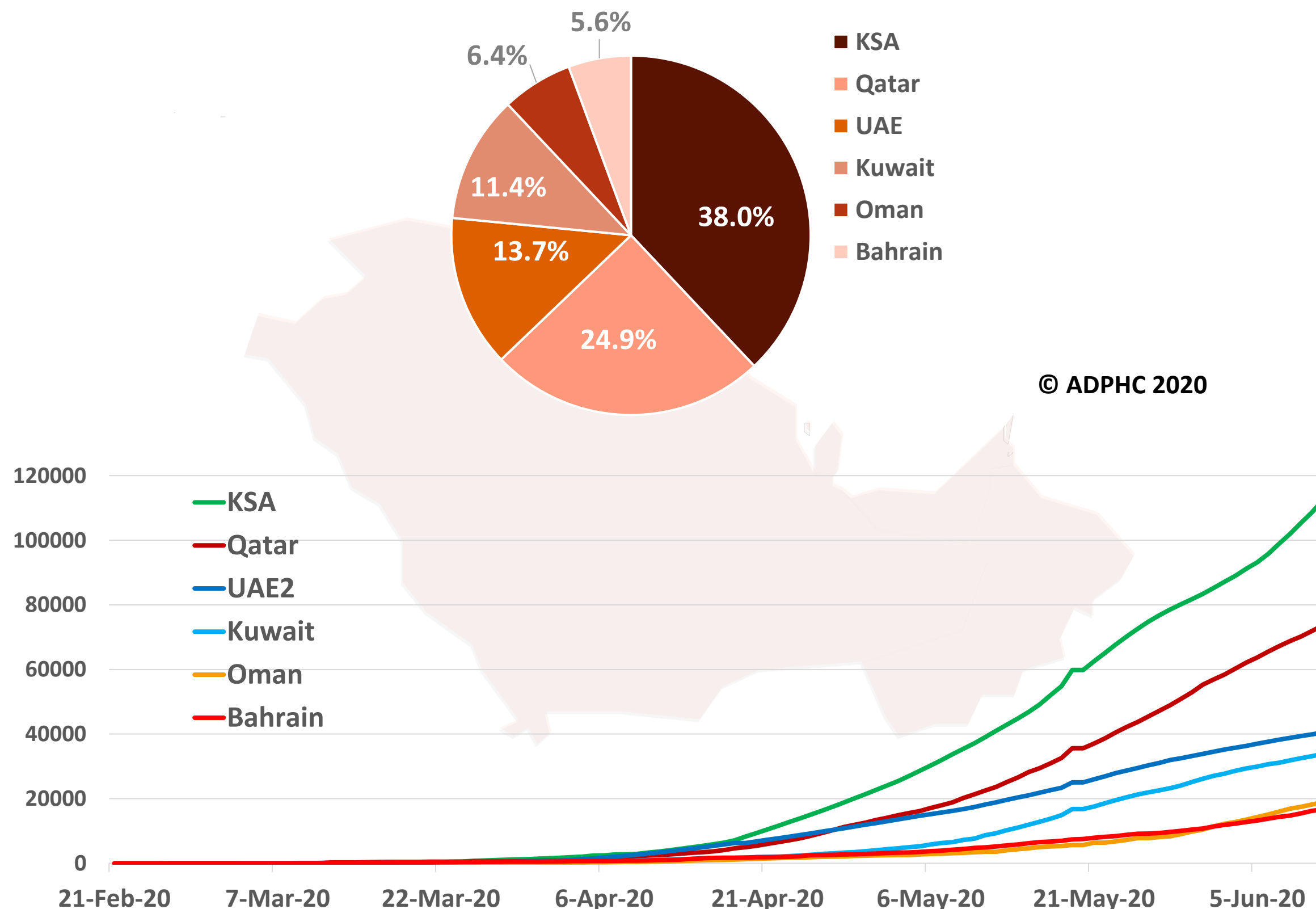
Data resources: [WHO](https://www.who.int/)

# Epidemiology



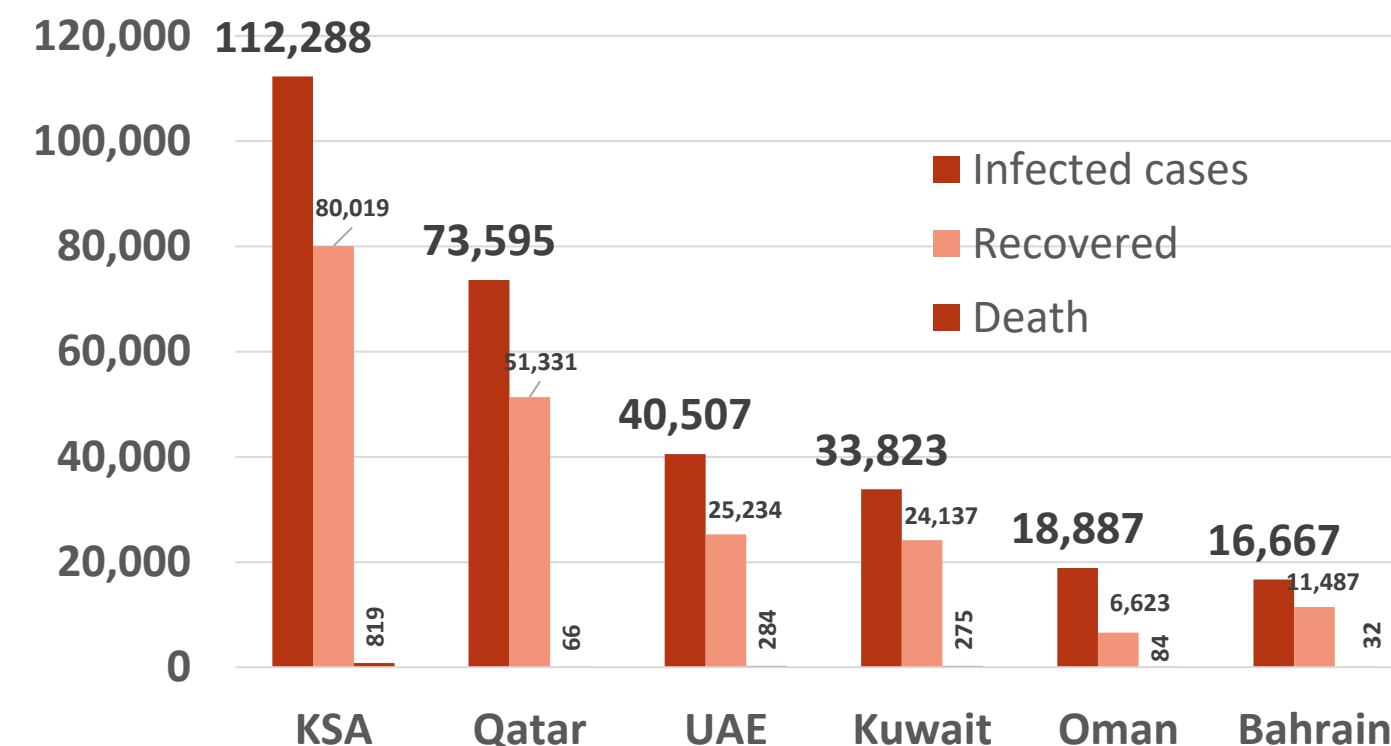
**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 11, 2020)**

## TOTAL NUMBER OF INFECTED CASES

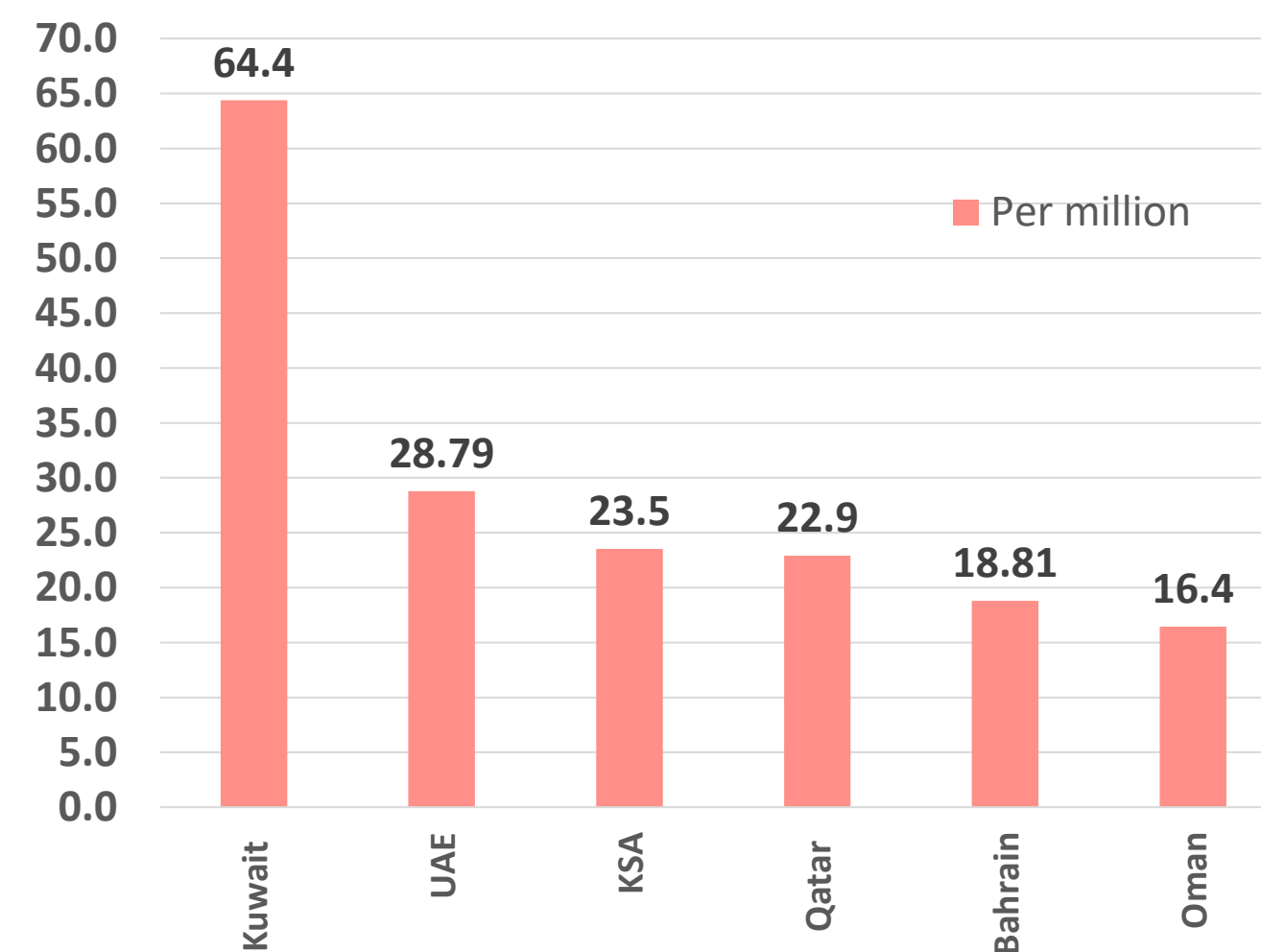


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## Total number of infected, recovered and Deaths



## Death per million



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Data resources: [WHO](#), [John Hopkins University](#)

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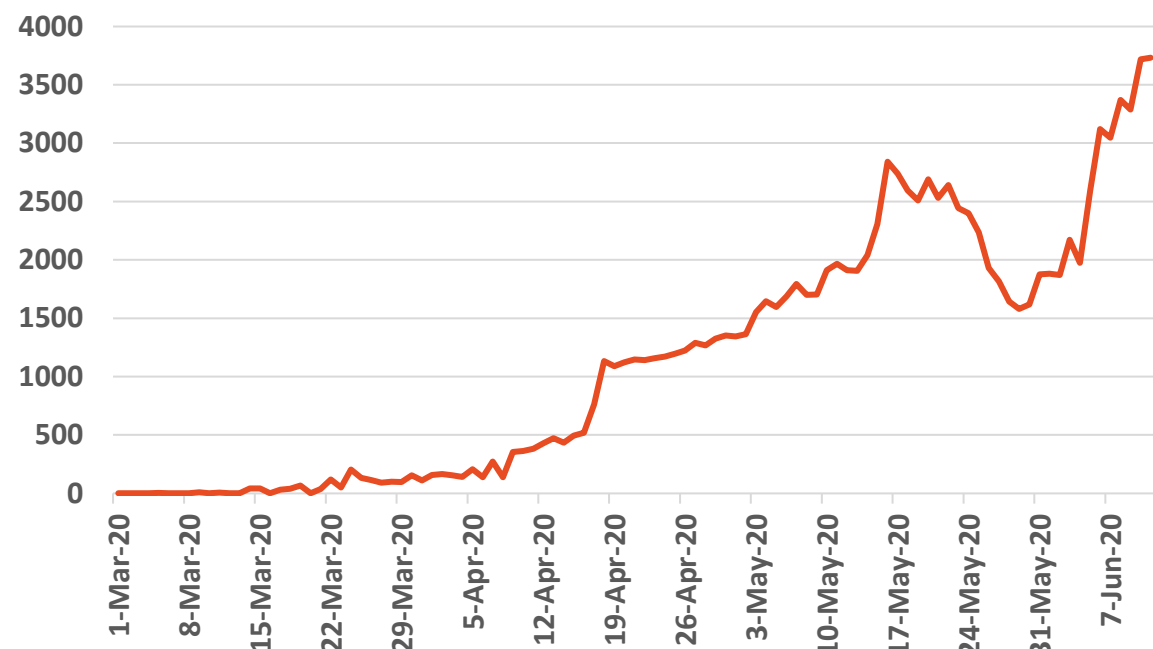
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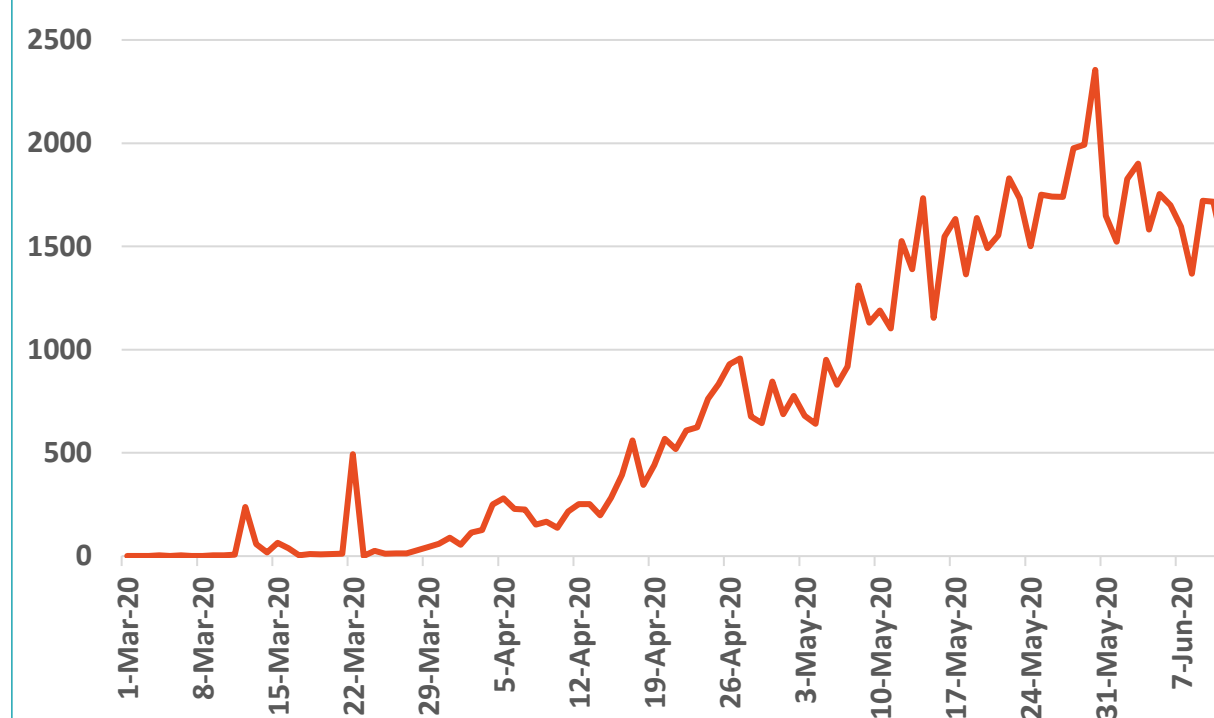
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 11, 2020)

## KSA



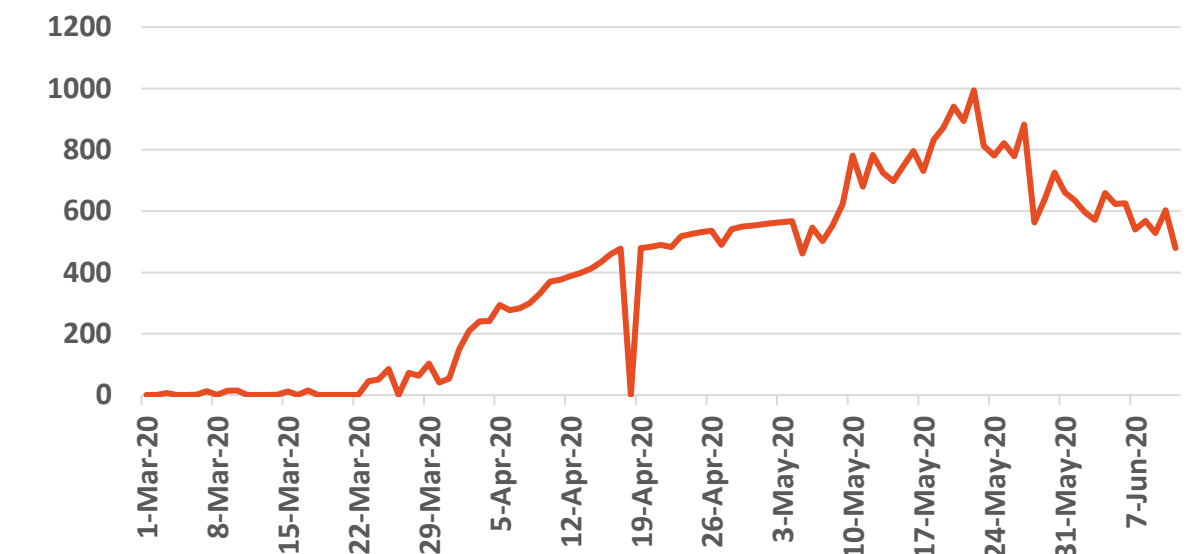
Source : KSA ministry of health

## Qatar



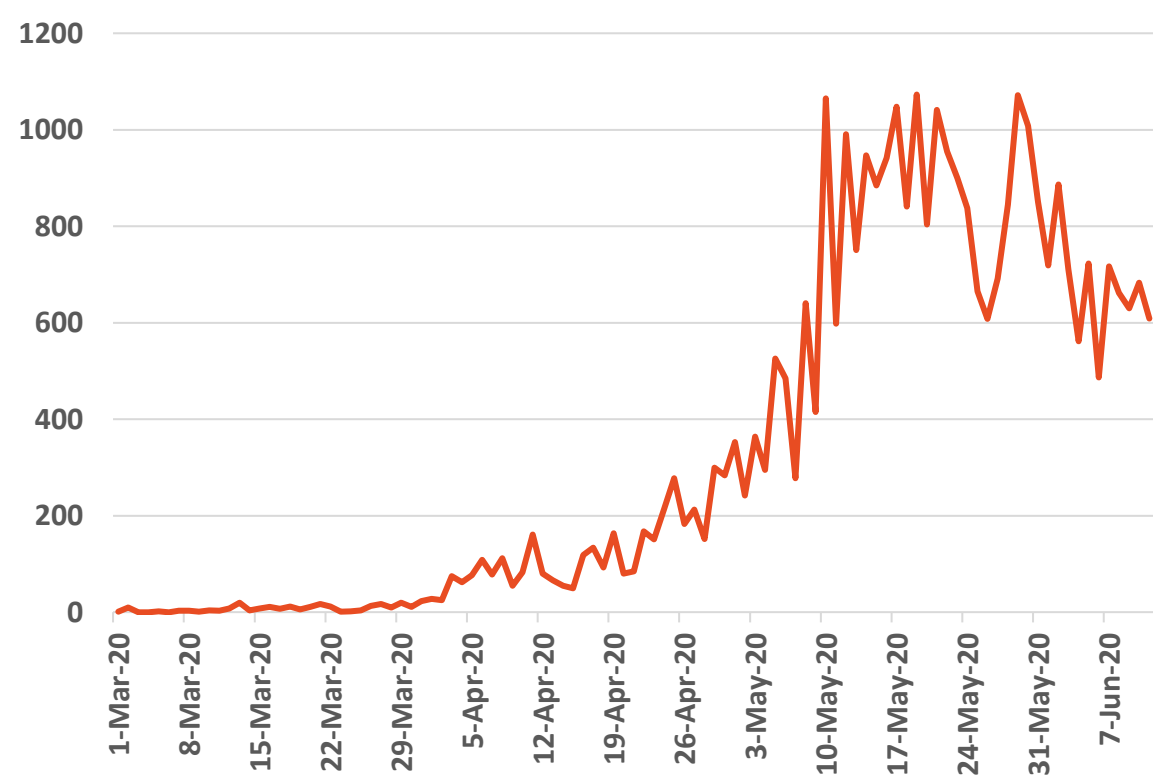
Source : Qatar ministry of health

## UAE



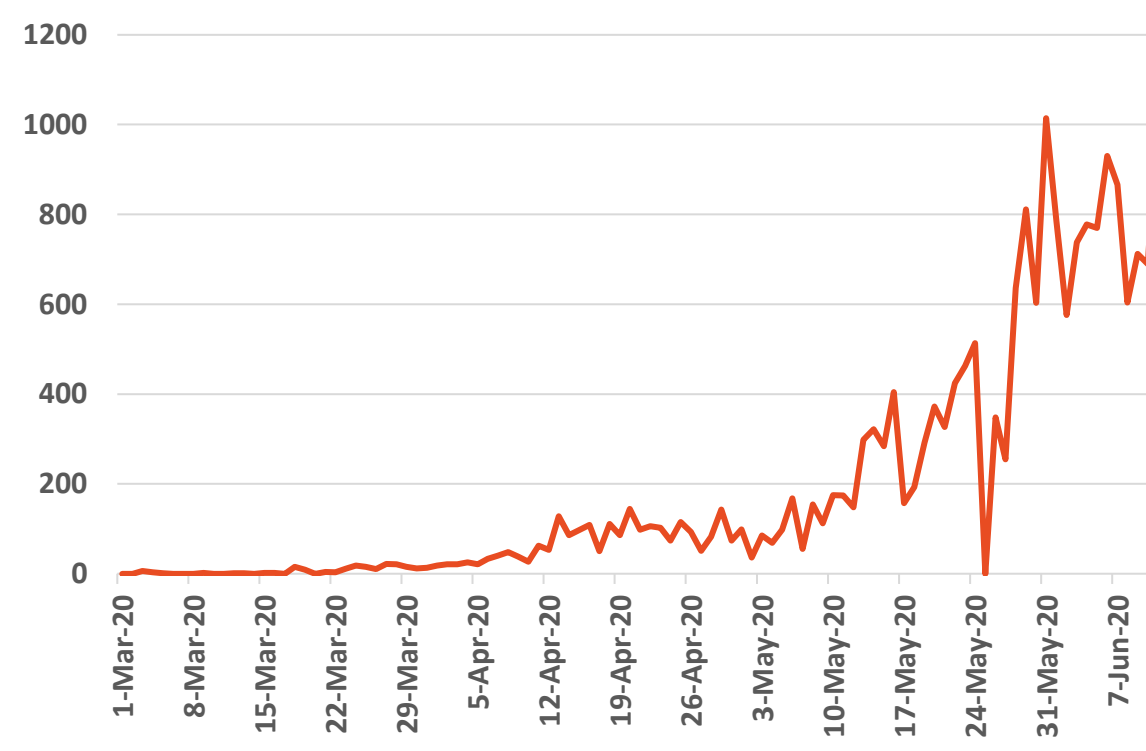
Source : UAE ministry of health

## Kuwait



Source : Kuwait ministry of health

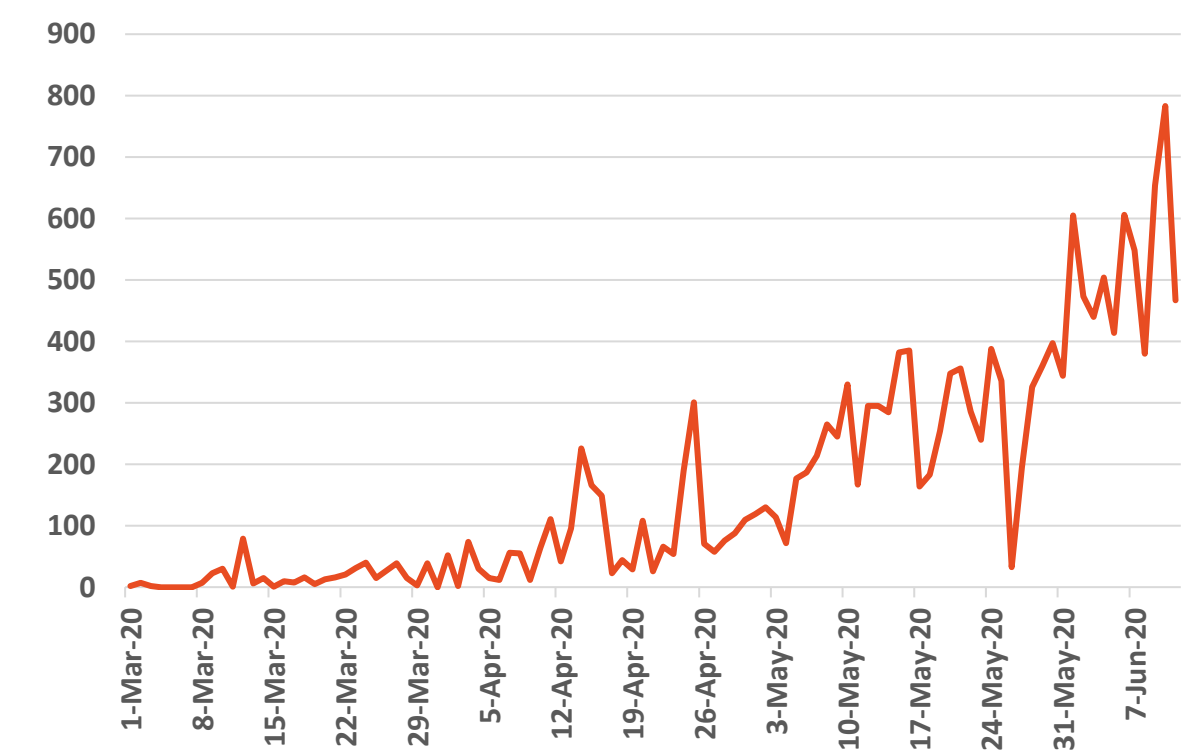
## Oman



Source :Oman ministry of health

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## Bahrain



Source :WHO

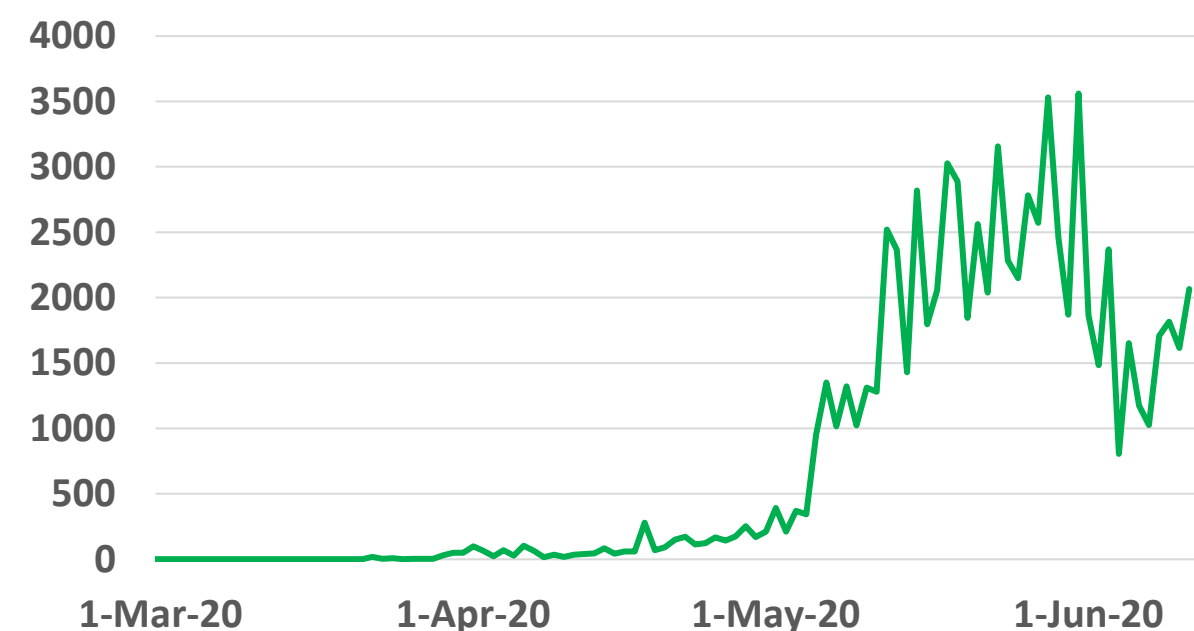


# Epidemiology



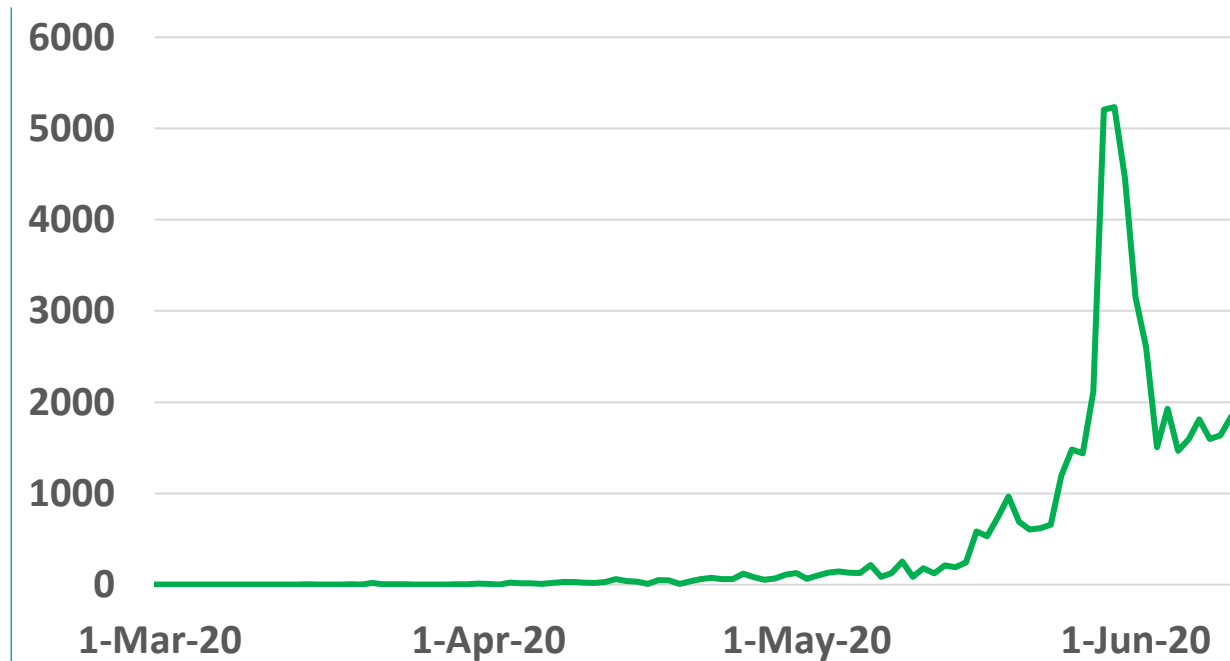
**Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 11, 2020)**

## KSA



Source : KSA ministry of health

## Qatar



Source : Qatar ministry of health

## UAE



Source : UAE ministry of health

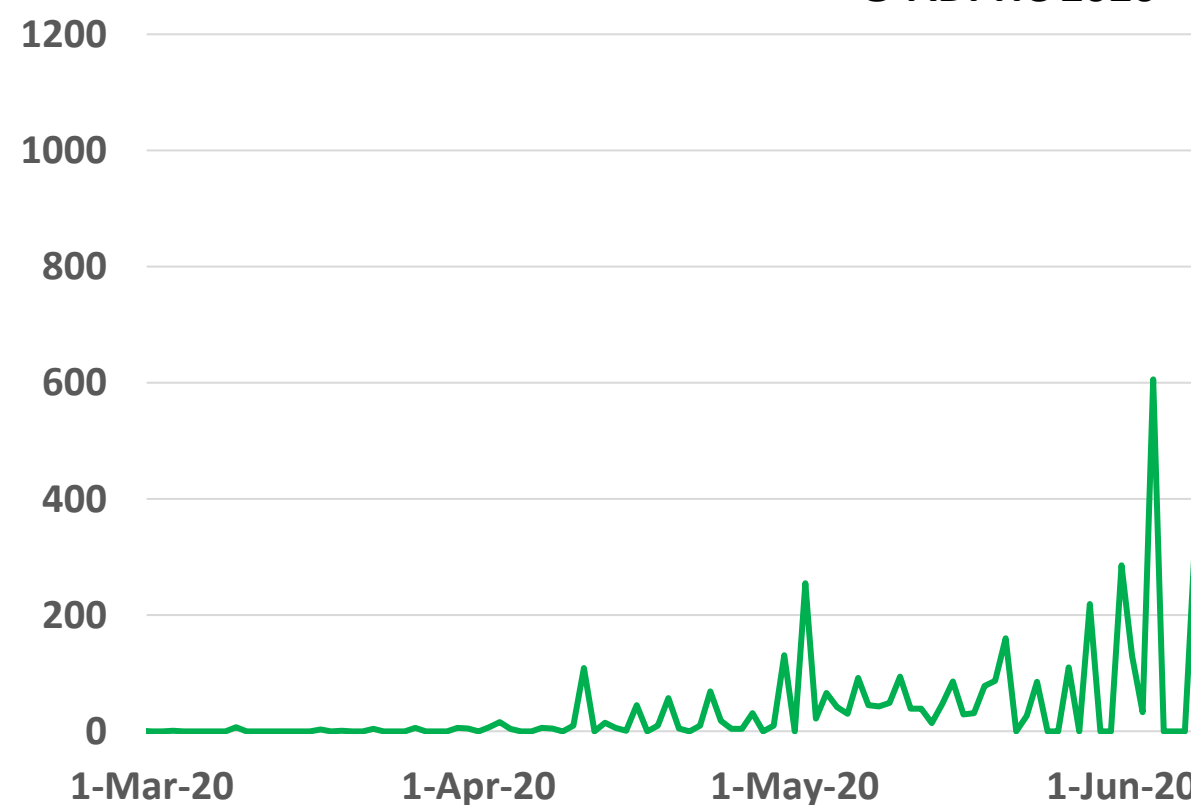
## Kuwait



Source : Kuwait ministry of health

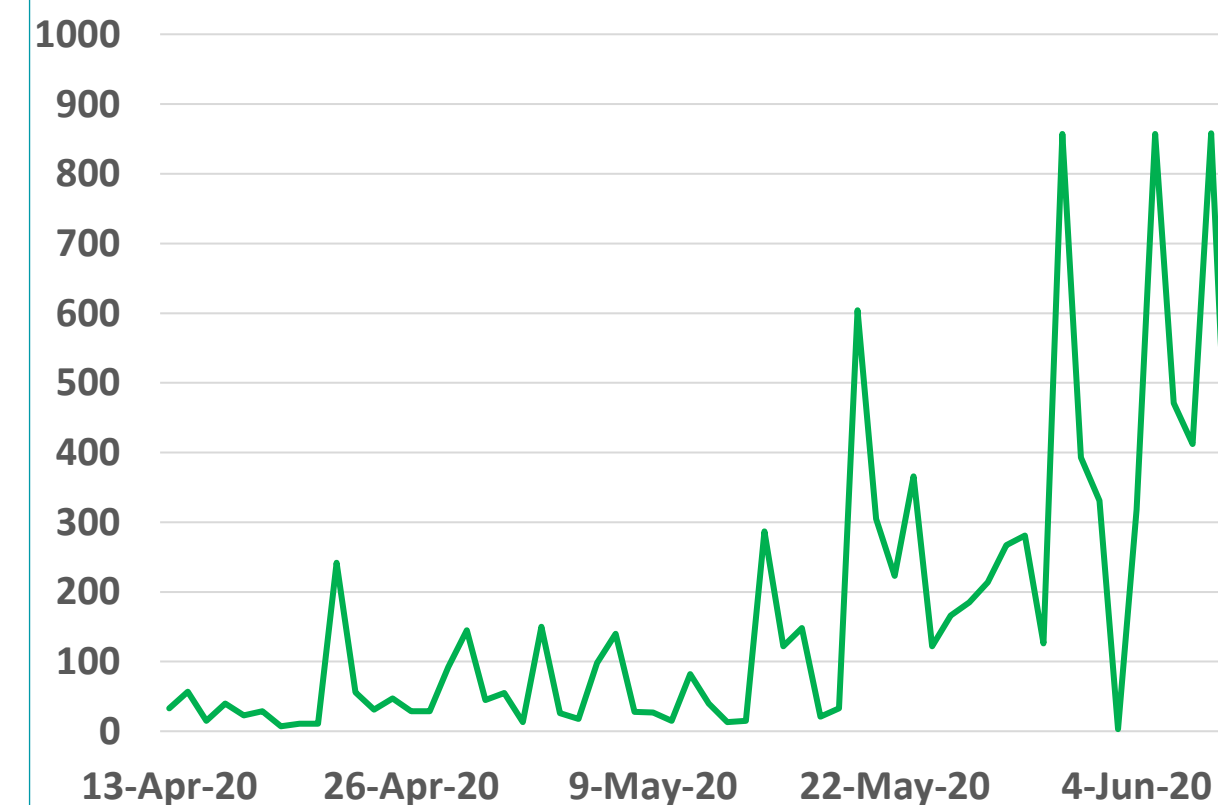
## Oman

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Source : Oman ministry of health

## Bahrain



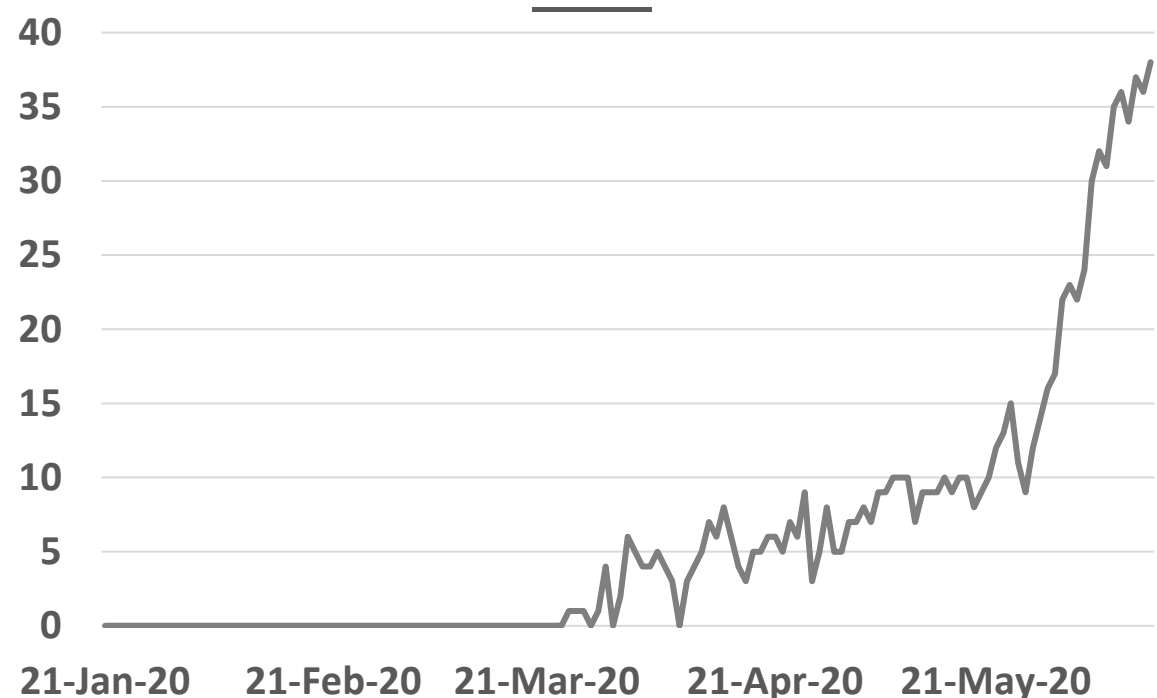
Source : GCCStat

# Epidemiology



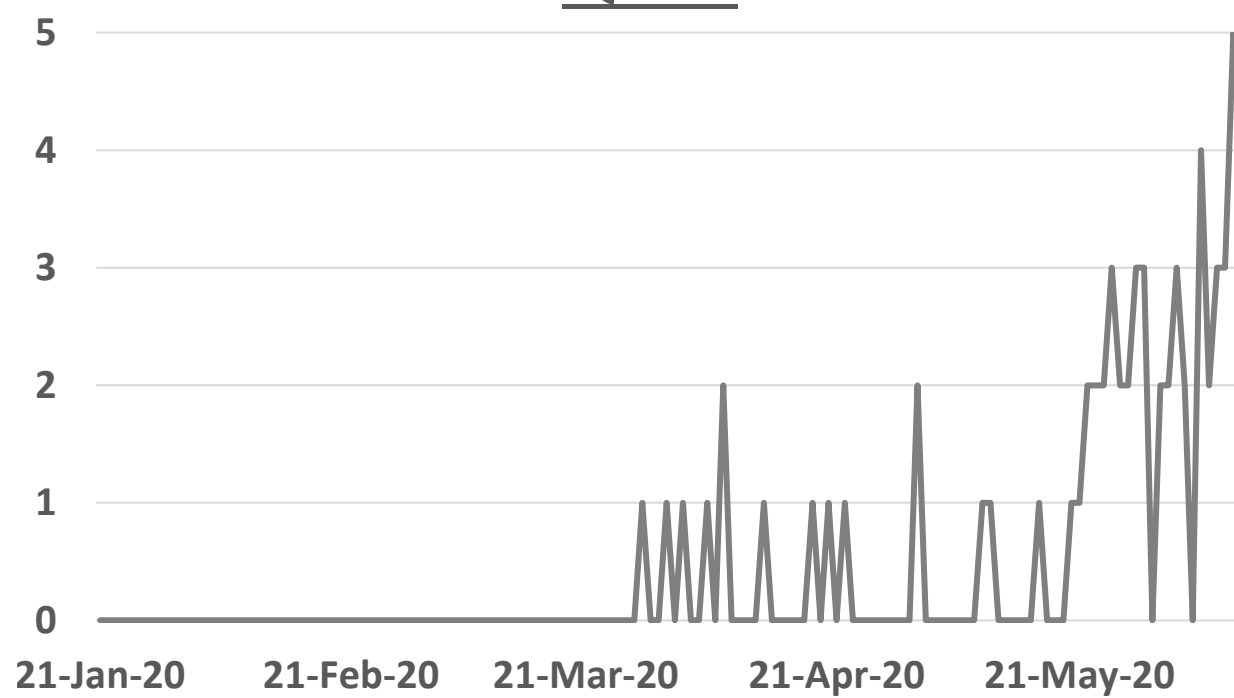
**Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 11, 2020)**

## KSA



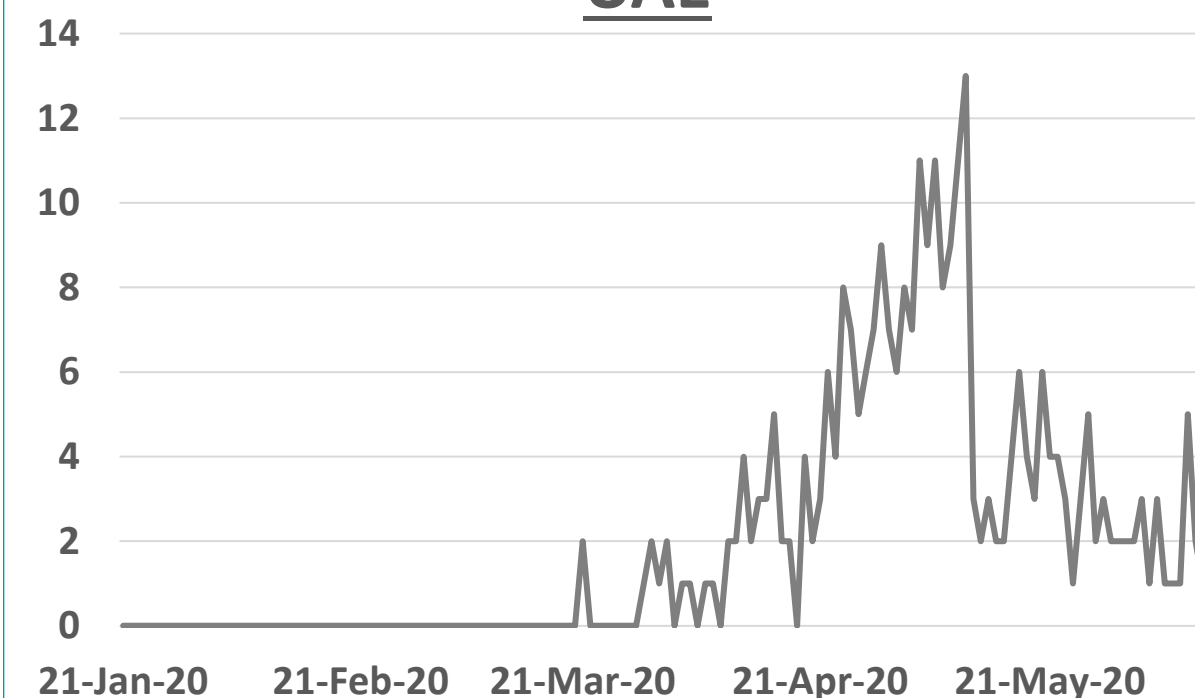
Source : KSA ministry of health

## Qatar



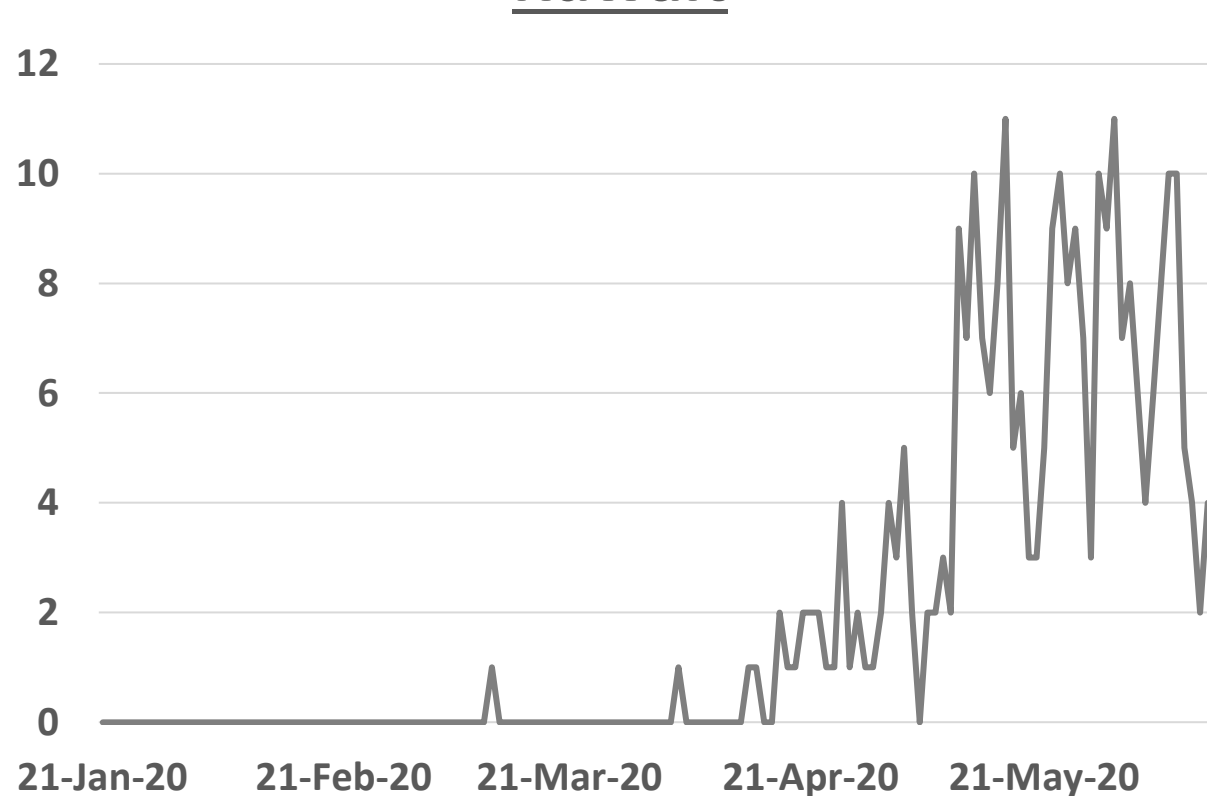
Source : Qatar ministry of health

## UAE



Source : UAE ministry of health

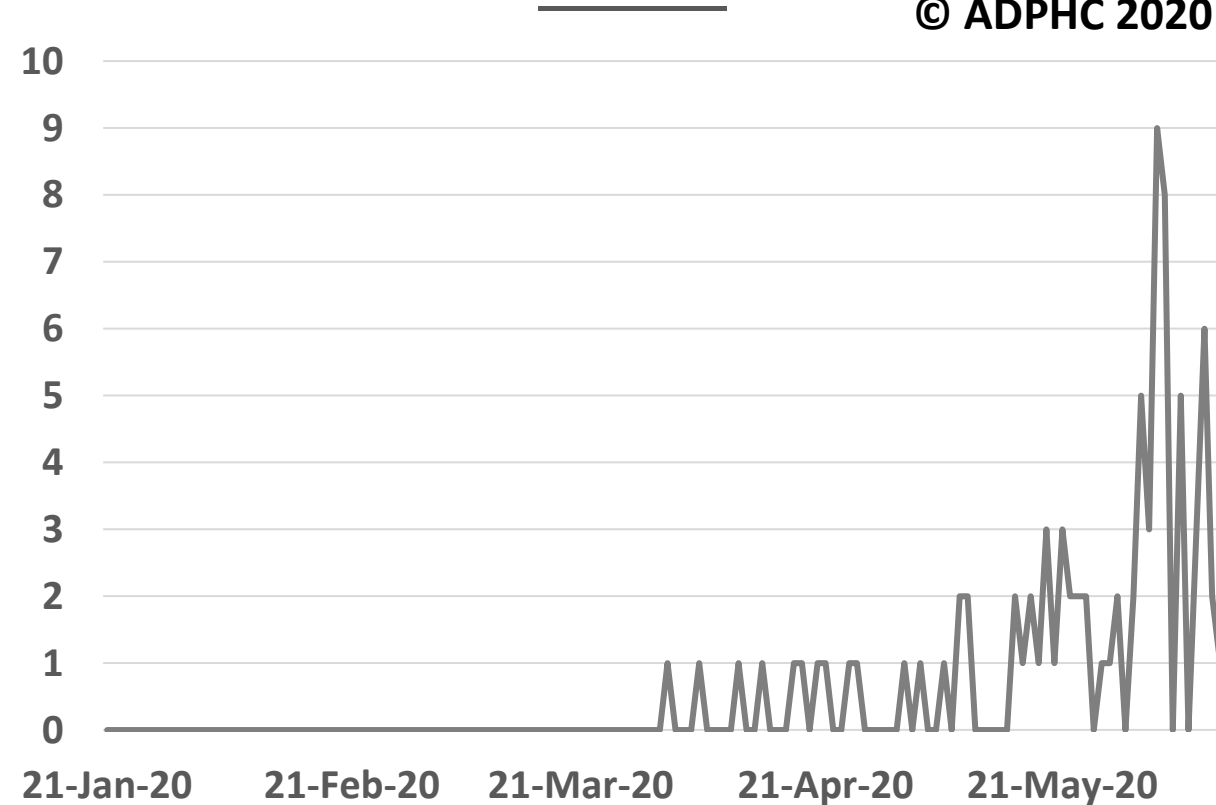
## Kuwait



Source : Kuwait ministry of health

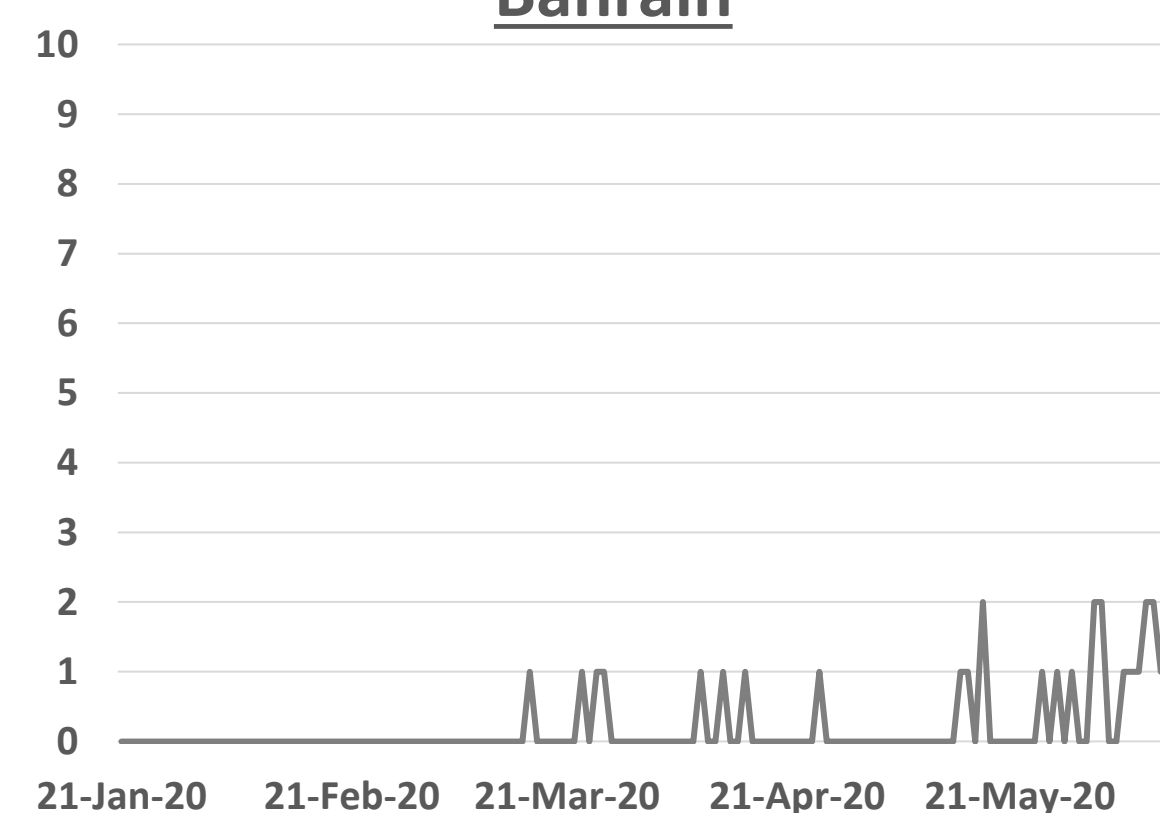
## Oman

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Source :Oman ministry of health

## Bahrain



Source :WHO



## **Article1: Emergency Department Patients in the Early Months of the Coronavirus Disease 2019 (COVID-19) Pandemic- What Have We Learned?**

**Published: June 1, 2020 in the [JAMA](#)**

### **Summary:**

- Emergency department (ED) demand is sensitive to factors related to the physical and social environment. Public health measures to counter this pandemic decreased the requirement for ED care by reducing the spread of other infections. As mentioned in the previous reports, decreases in seasonal influenza activity concurrent with the COVID-19 response particularly among children, are often why the public seeks care in EDs.
- This pandemic distorted standard for care delivery across all sectors of the health system. Scheduled operations, procedures, and diagnostic tests were suspended to create additional hospital capacity. Primary and specialty care providers made adjustments in practice including the use of centralized call centers and telehealth visits. These strategies were particularly intended to better support patients at home and divert them from the ED.
- The pandemic reset how quickly and under what circumstances patients turned to the ED. Usually, patients aimed care in EDs for a wide range of self-limited conditions. However, during this pandemic, patients were more willing to self treat at home because of concerns that they may be exposed to COVID-19. Patient preferences for ED care are also shaped by financial risk that has been aggravated by the loss of health insurance due to unemployment.
- Anxiety related to the perceived risks of contracting COVID-19 and lasting access to on demand substitutes for ED visits like telehealth can be expected to influence where the public seeks care for acute needs for the foreseeable future.

# Diagnosis



## Article 2: Clinical Characteristics of 58 Children With a Pediatric Inflammatory Multisystem Syndrome Temporally Associated With SARS-CoV-2

**Published:** June 8, 2020, in the [JAMA](#)

### Summary

Descriptive study hospitalized children who met criteria for the pediatric inflammatory multisystem syndrome temporally associated with (SARS-CoV-2) (PIMS-TS) and compare these characteristics with other pediatric inflammatory disorders.

Case series of 58 children from 8 hospitals in England admitted (March 23 and May 16, 2020), were compared with clinical characteristics of patients with Kawasaki disease (KD) (n = 1132), KD shock syndrome (n = 45), and toxic shock syndrome (n = 37) who had been admitted to hospitals in Europe and the US from 2002 to 2019.

### Results

- Fifty-eight children (median age, 9 years, girls [57%] were identified . SARS-CoV-2 were positive in 15 of 58 patients (26%).
- Antibody tests (IgG) were positive in 40 of 46 (87%).
- 78% had evidence of current or prior SARS-CoV-2 infection.
- 23 had fever and inflammation without features of shock or KD
- All children presented with fever and nonspecific symptoms.
- increase C-reactive protein assessed in 58 of 58) and ferritin (610 µg/L) assessed in 53 of 58).
- Complication: 29 developed shock. Eight patients (14%) developed coronary artery dilatation or aneurysm.
- Comparison of PIMS-TS with KD and with KD shock syndrome showed differences in clinical and laboratory features, including **older age**, and **greater elevation of inflammatory markers such as C-reactive protein**



**Article 2: Cont.,** The study also provide a comparison table of different definition used to identify the inflammatory disorder by different organization

Table 1. Case Definitions for Emerging Inflammatory Condition During COVID-19 Pandemic From the World Health Organization, Royal College of Paediatrics and Child Health, and Centers for Disease Control and Prevention

World Health Organization <sup>8</sup>	Royal College of Paediatrics and Child Health (United Kingdom) <sup>7</sup>	Centers for Disease Control and Prevention (United States) <sup>9</sup>
<p>Children and adolescents 0-19 y of age with fever &gt;3 d AND 2 of the following:</p> <ol style="list-style-type: none"> <li>1. Rash or bilateral nonpurulent conjunctivitis or mucocutaneous inflammation signs (oral, hands, or feet)</li> <li>2. Hypotension or shock</li> <li>3. Features of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including ECHO findings or elevated troponin/NT-proBNP)</li> <li>4. Evidence of coagulopathy (by PT, APTT, elevated D-dimers)</li> <li>5. Acute gastrointestinal problems (diarrhea, vomiting, or abdominal pain)</li> </ol> <p>AND</p> <p>Elevated markers of inflammation such as ESR, CRP, or procalcitonin.</p> <p>AND</p> <p>No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes.</p> <p>AND</p> <p>Evidence of COVID-19 (RT-PCR, antigen test, or serology positive), or likely contact with patients with COVID-19</p> <p>Consider this syndrome in children with features of typical or atypical Kawasaki disease or toxic shock syndrome</p>	<p>A child presenting with persistent fever, inflammation (neutrophilia, elevated CRP, and lymphopenia) and evidence of single or multiorgan dysfunction (shock, cardiac, respiratory, kidney, gastrointestinal, or neurological disorder) with additional features (see listed in eAppendix in Supplement 2). This may include children fulfilling full or partial criteria for Kawasaki disease<sup>a</sup></p> <p>Exclusion of any other microbial cause, including bacterial sepsis, staphylococcal or streptococcal shock syndromes, infections associated with myocarditis such as enterovirus (waiting for results of these investigations should not delay seeking expert advice)</p> <p>SARS-CoV-2 PCR test results may be positive or negative</p>	<p>An individual aged &lt;21 y presenting with fever, laboratory evidence of inflammation, and evidence of clinically severe illness requiring hospitalization, with multisystem (&gt;2) organ involvement (cardiac, kidney, respiratory, hematologic, gastrointestinal, dermatologic, or neurological)</p> <p>Fever &gt;38.0 °C for ≥24 h or report of subjective fever lasting ≥24 h</p> <p>Laboratory evidence including, but not limited to, ≥1 of the following: an elevated CRP level, ESR, fibrinogen, procalcitonin, D-dimer, ferritin, lactic acid dehydrogenase, or IL-6; elevated neutrophils; reduced lymphocytes; and low albumin</p> <p>AND</p> <p>No alternative plausible diagnoses</p> <p>AND</p> <p>Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test, or COVID-19 exposure within the 4 wk prior to the onset of symptoms</p> <p>Additional comments</p> <p>Some individuals may fulfill full or partial criteria for Kawasaki disease but should be reported if they meet the case definition for MIS-C</p> <p>Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection</p>

## Conclusions

The comparison with patients with KD and KD shock syndrome provides insights into this syndrome, and suggests this disorder differs from other pediatric inflammatory entities.

# Public health response



## Article 3: Stability and neutralising capacity of SARS-CoV-2-specific antibodies in convalescent plasma

Published: June 1, 2020 [in the lancet](#)

### Summary:

- As convalescent plasma therapy is one of the candidate therapy for management of COVID19 cases. The risk of transfusion plasma carry a risk of transmitting many other pathogens as well. WHO is recommending using a method to inactivate pathogen one of these method are psoralen and ultraviolet light to inactivate the transfused product. The question tried to be addressed in this research , if we have used this inactivating method, is it going to affect the stability of the neutralizing antibody which is the main killer component in the plasma therapy. The study compared the plasma with and without inactivation. Finding shows that the pathogen inactivation of convalescent plasma does not impair the stability and neutralising capacity of SARSCoV-2-specific antibodies
- This data suggest that pathogen inactivation of convalescent plasma from patients who have recovered from COVID-19 does not alter the potential therapeutic potency and should be recommended to mitigate the risk for transfusion associated viral transmission. Considering the currently unproven clinical benefit of convalescent plasma obtained from patients who have had COVID-19, a shift in the risk–benefit ratio towards benefit by means of pathogen inactivation should be employed in all cases, in settings where the use of pathogen inactivation methods are available and established.