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Scientific Research Monitoring on COVID-19

19 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.)

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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

Todays' Highlights



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

Scientific Research

- **Public health response :** a study compared different disinfectants for the purpose of reuse of different masks (N95,KN95 & surgical mask) found the hydrogen peroxide is better outcome than chlorine dioxide.
- **Public health response:** Europe have released their strategy on health research as lesson from COVID19 pandemic.
- **Public Health Response:** article on food security highlight the need to create new food system.



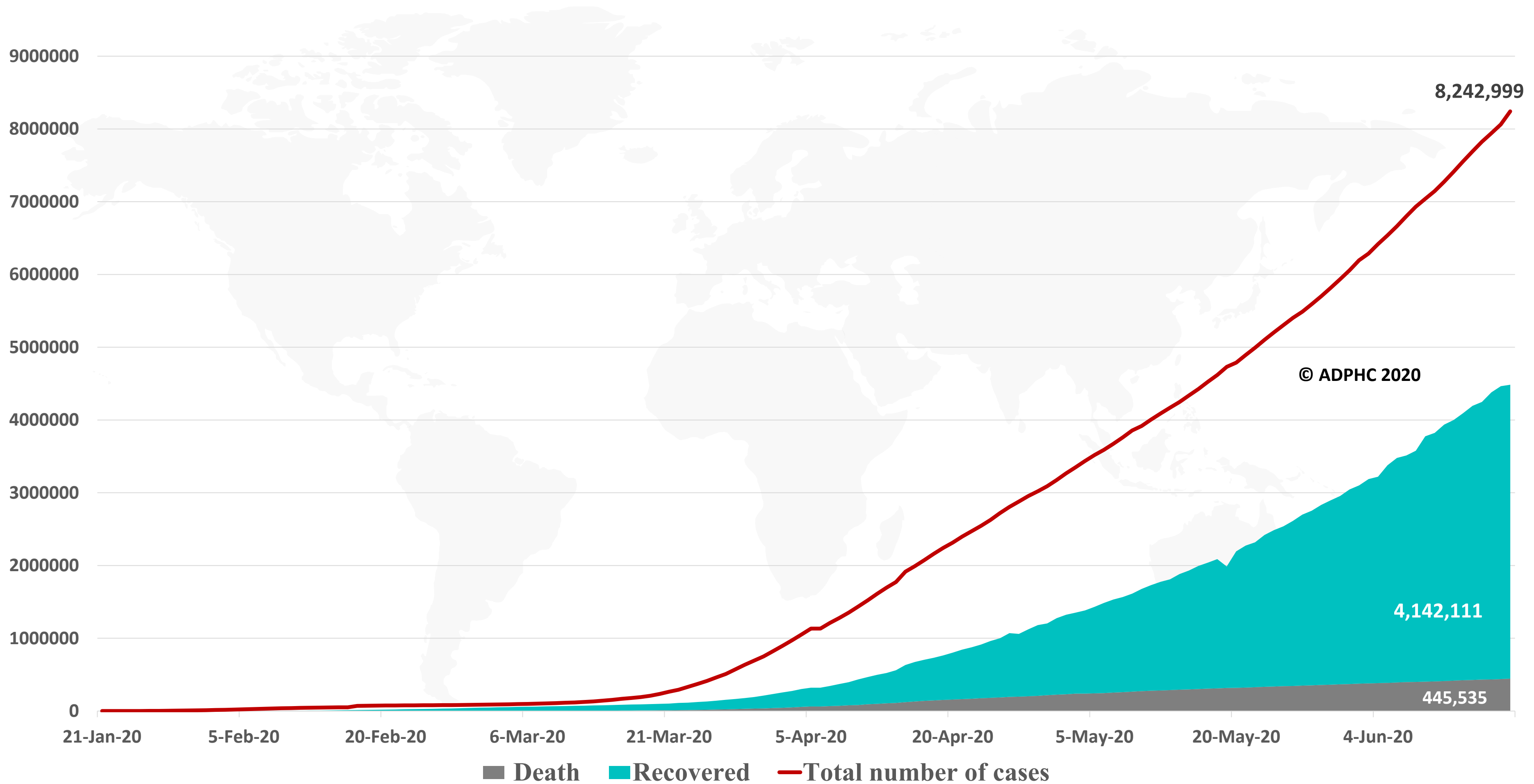
WHO Daily Report 18 June 2020

- The investigation of a cluster of COVID-19 cases in **Beijing** associated with a wholesale market continues. As of 18 June, 10AM CEST, Chinese authorities have reported a total of 172 cases since 11 June, including 158 in Beijing, 10 linked cases in Hebei Province, 2 in Liaoning Province, 1 in Sichuan Province and 1 in Zhejiang Province. Three genetic sequences related to Xinfadi cluster have been uploaded to the GISAID database. WHO is closely monitoring the situation and is in close contact with national authorities in China.
- **Chile** has reported 36 179 cases in last 24 hours. Of these 36 179 cases, 4 757 correspond to new cases and the remaining 31 422 cases were added by the national authorities following data reconciliation activity.
- WHO have updated their guideline on caring for infants and young children of mothers with COVID-19.
 - The main points addressed were mothers shall still breastfeed if they are not severely sick , mother shall clean their chest after cough , mother shall have skin to skin contact after delivery, mother shall use mask while breast feeding if available.

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to Jun 18, 2020)

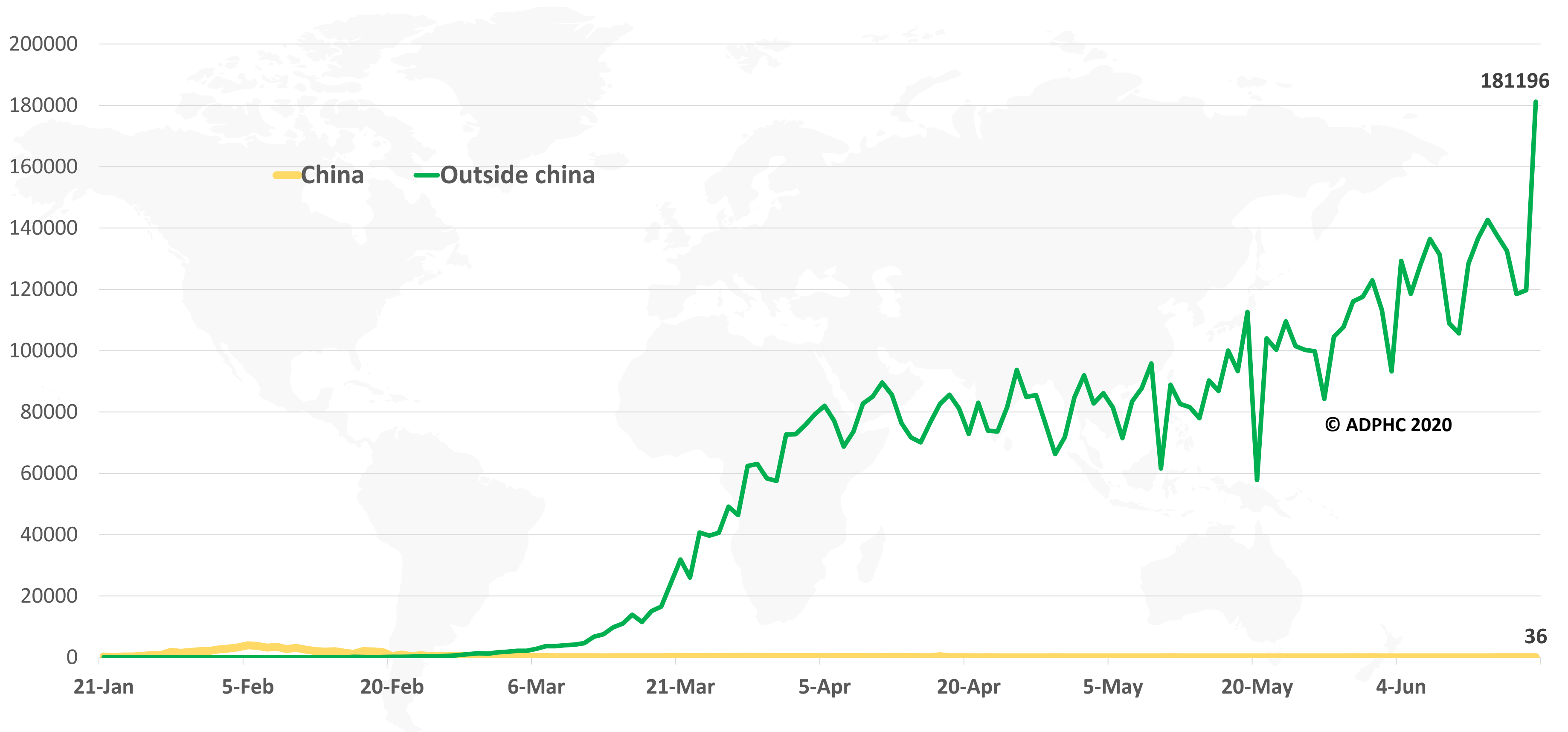


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 18, 2020).



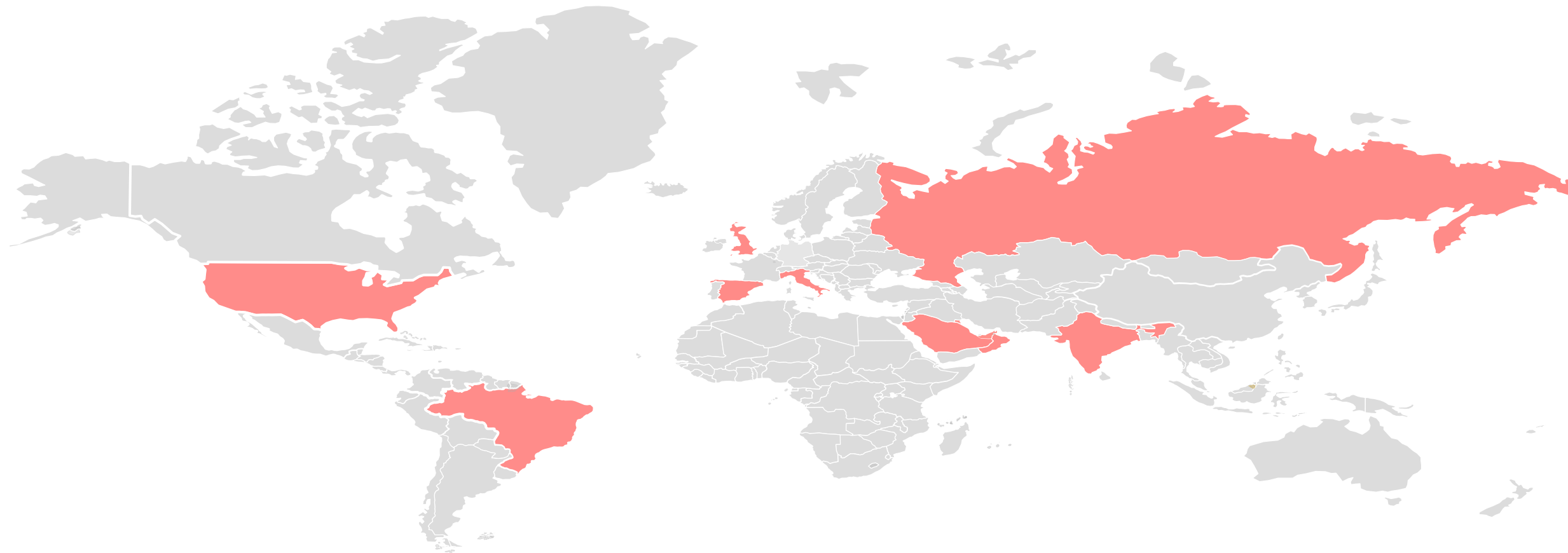
Line graph published by Abu Dhabi Public Health Center 2020.

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

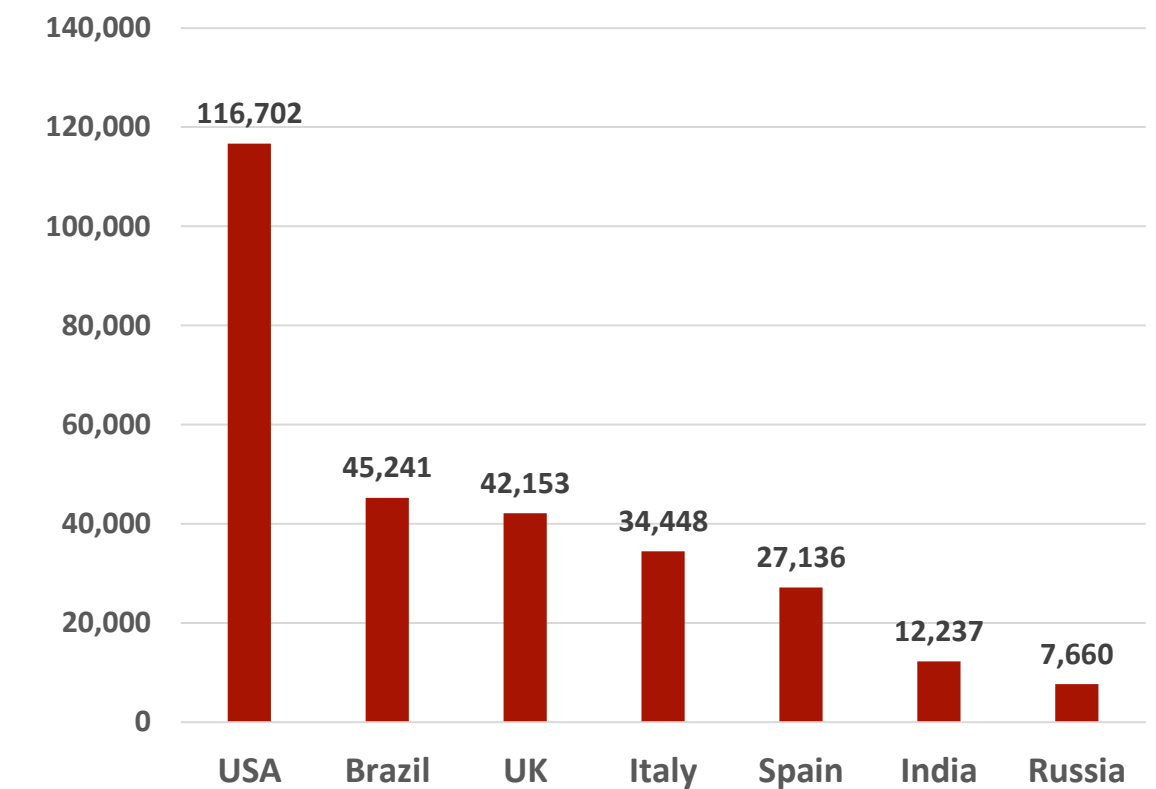
Epidemiology



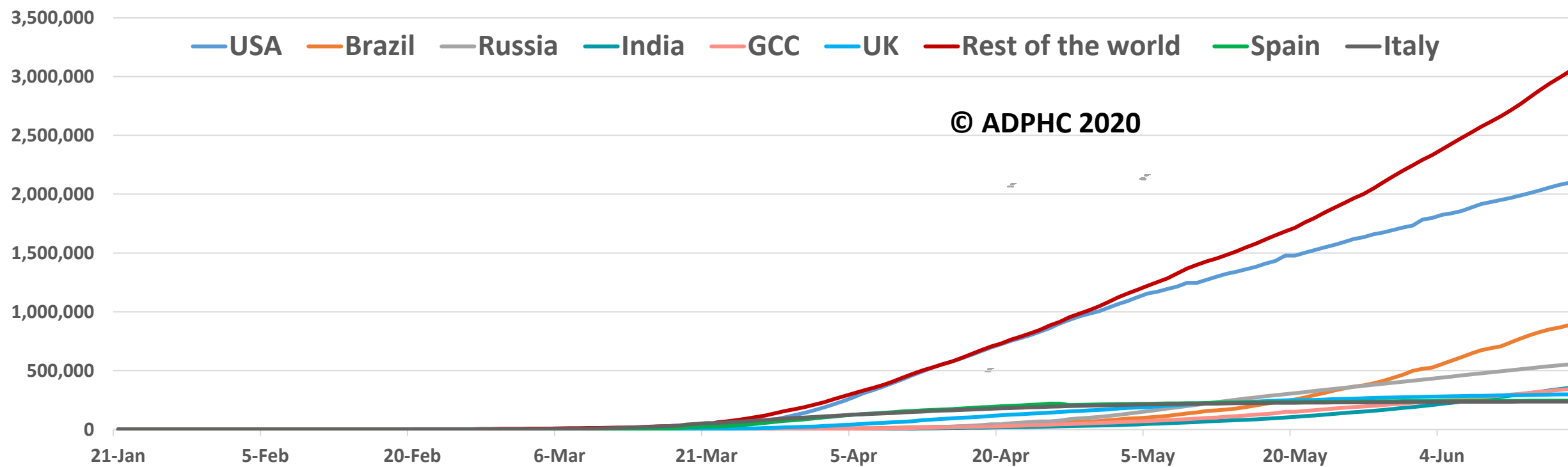
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 18, 2020).



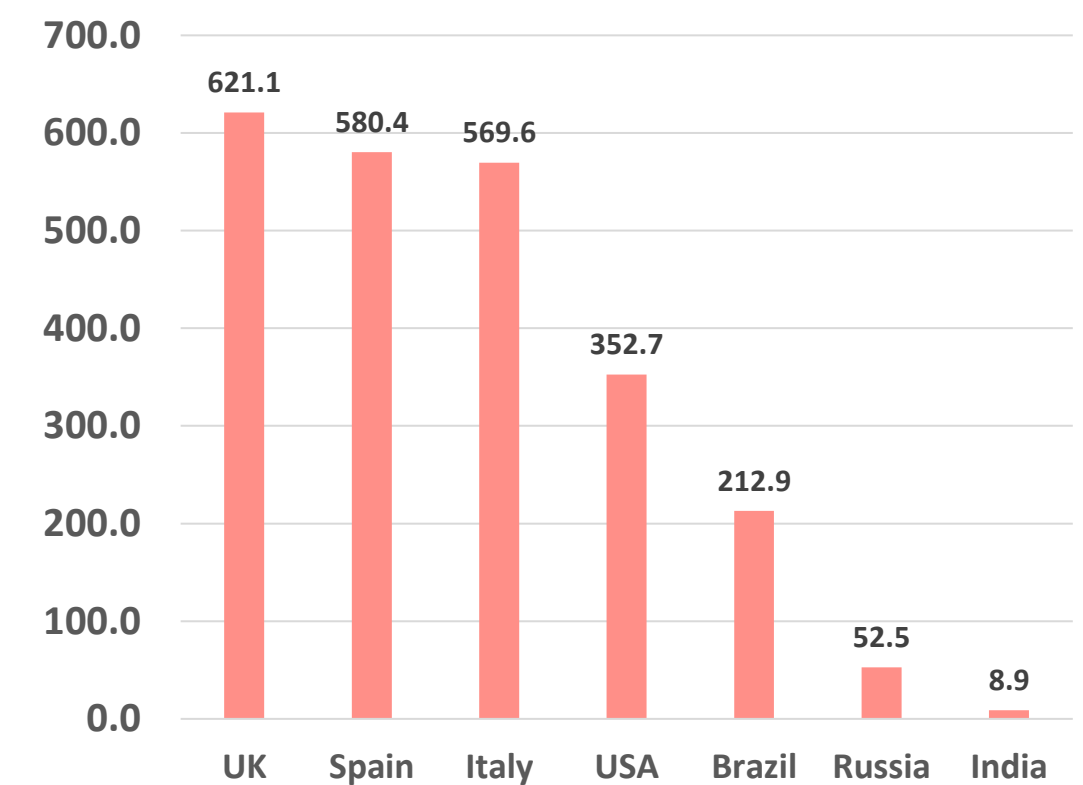
TOTAL DEATHS



TOTAL INFECTED CASES



DEATHS PER MILLION

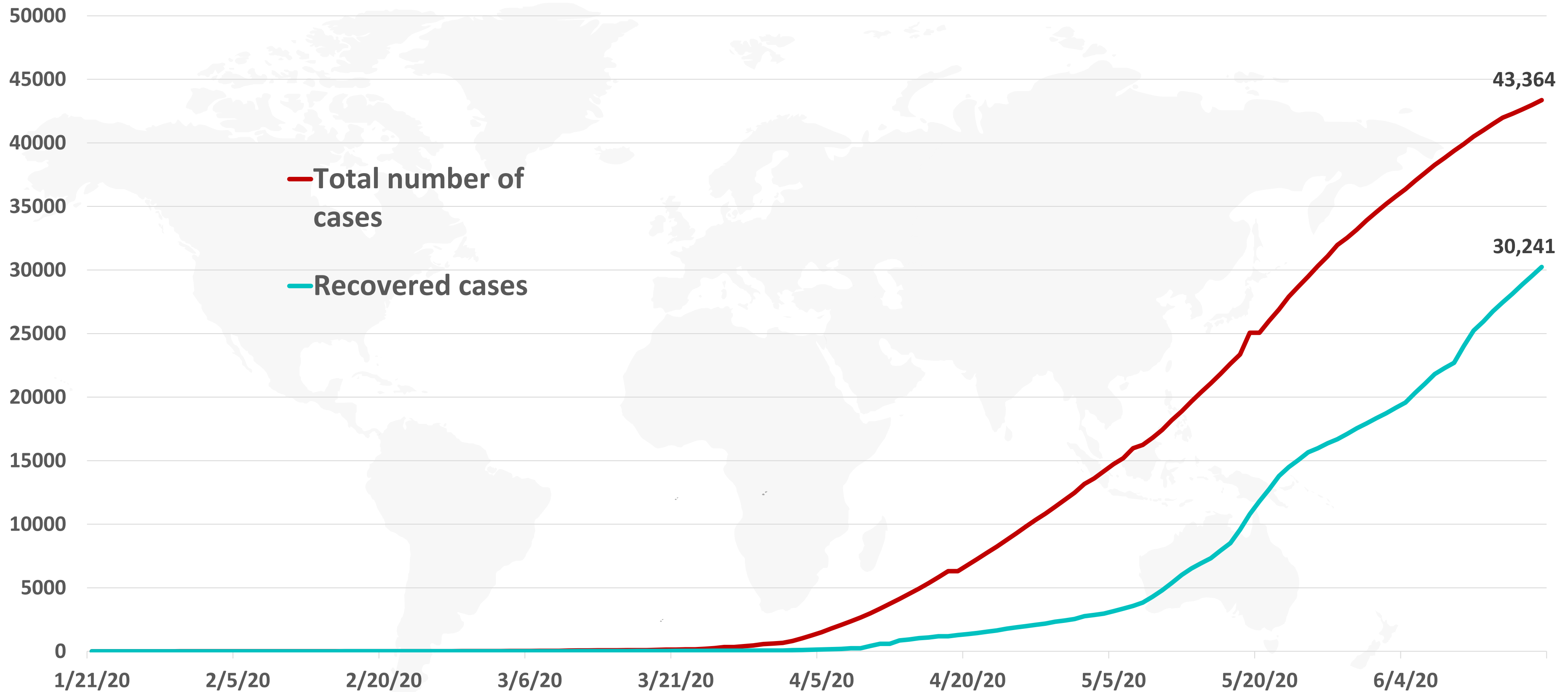


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



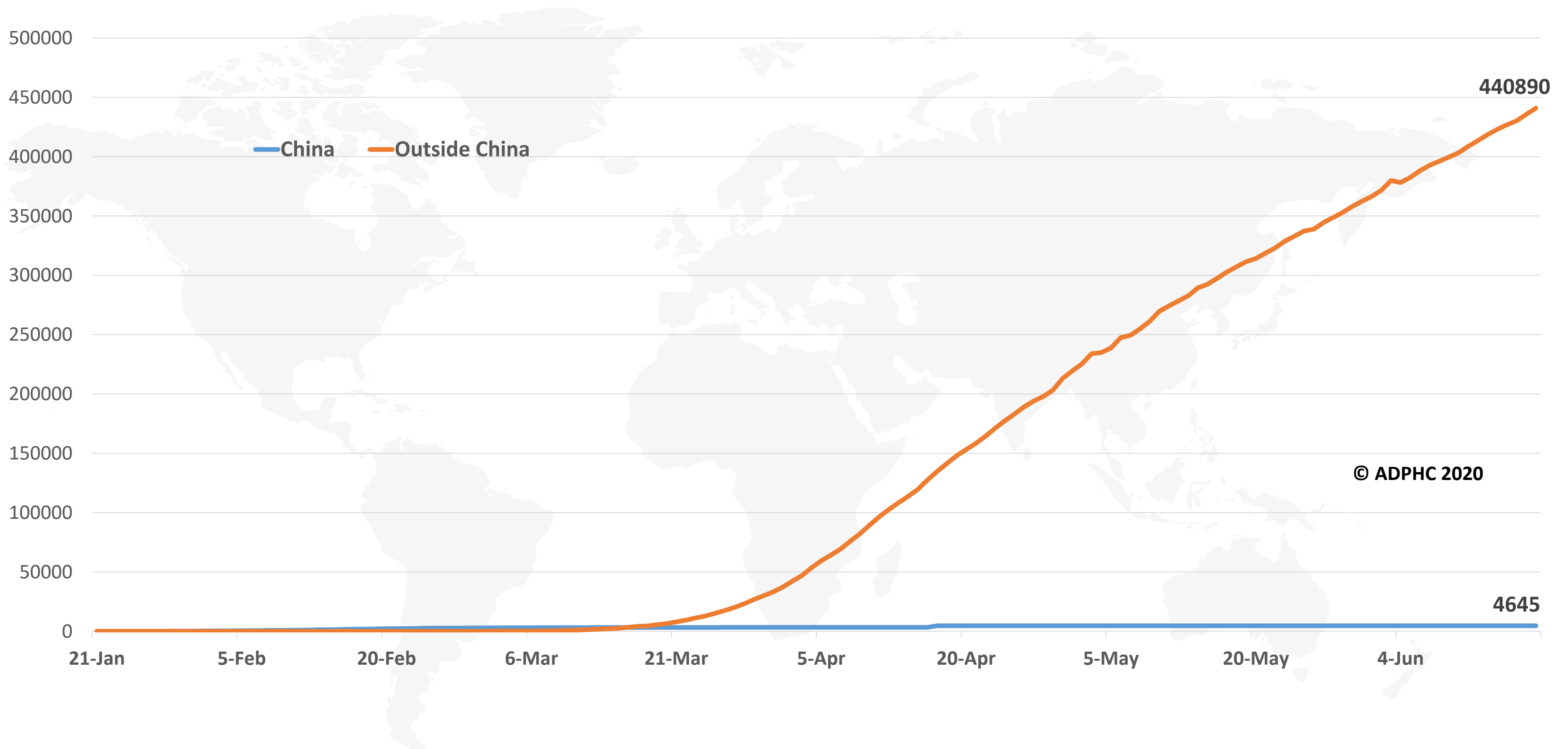
Line graph published by Abu Dhabi Public Health Center 2020.

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 18, 2020).



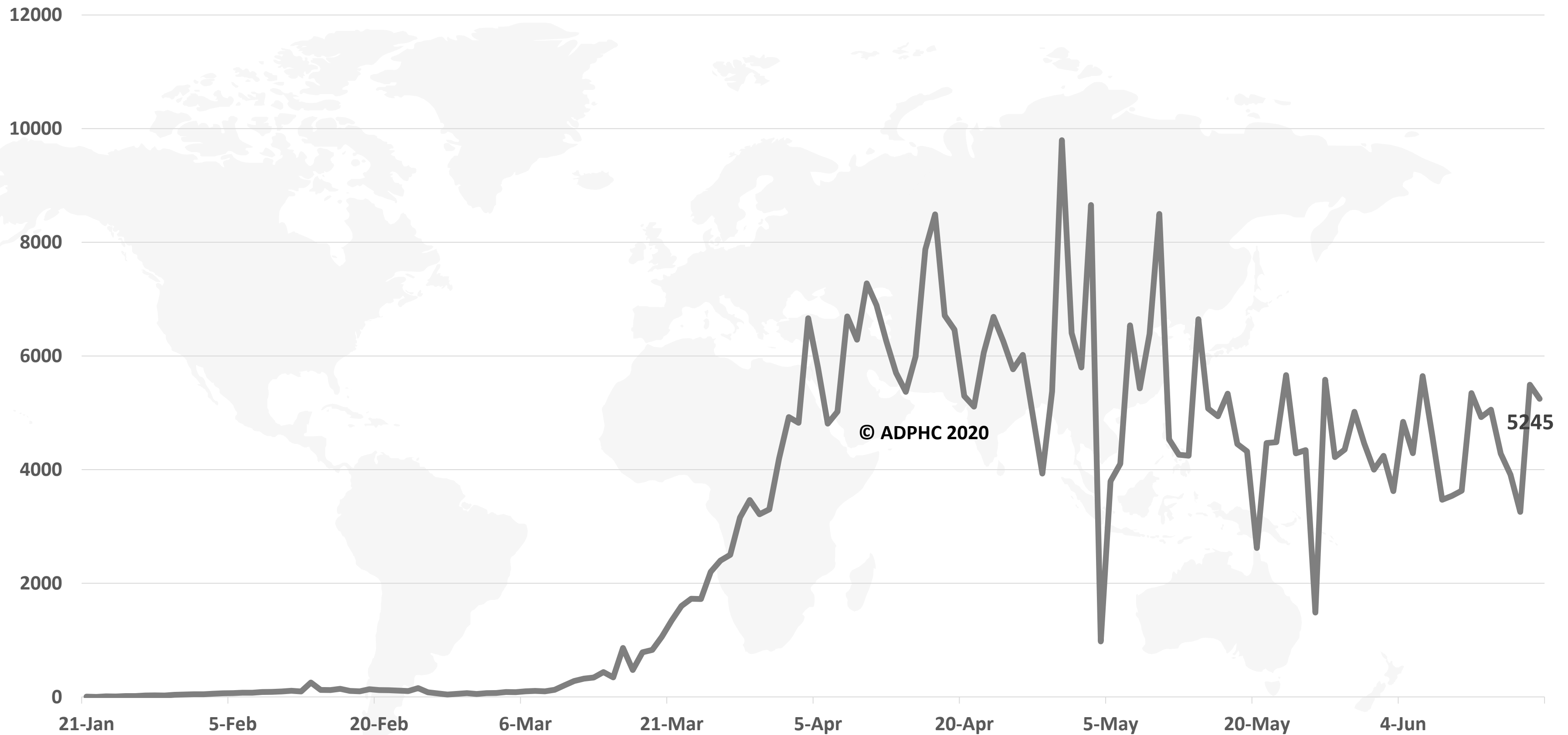
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Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 18, 2020).



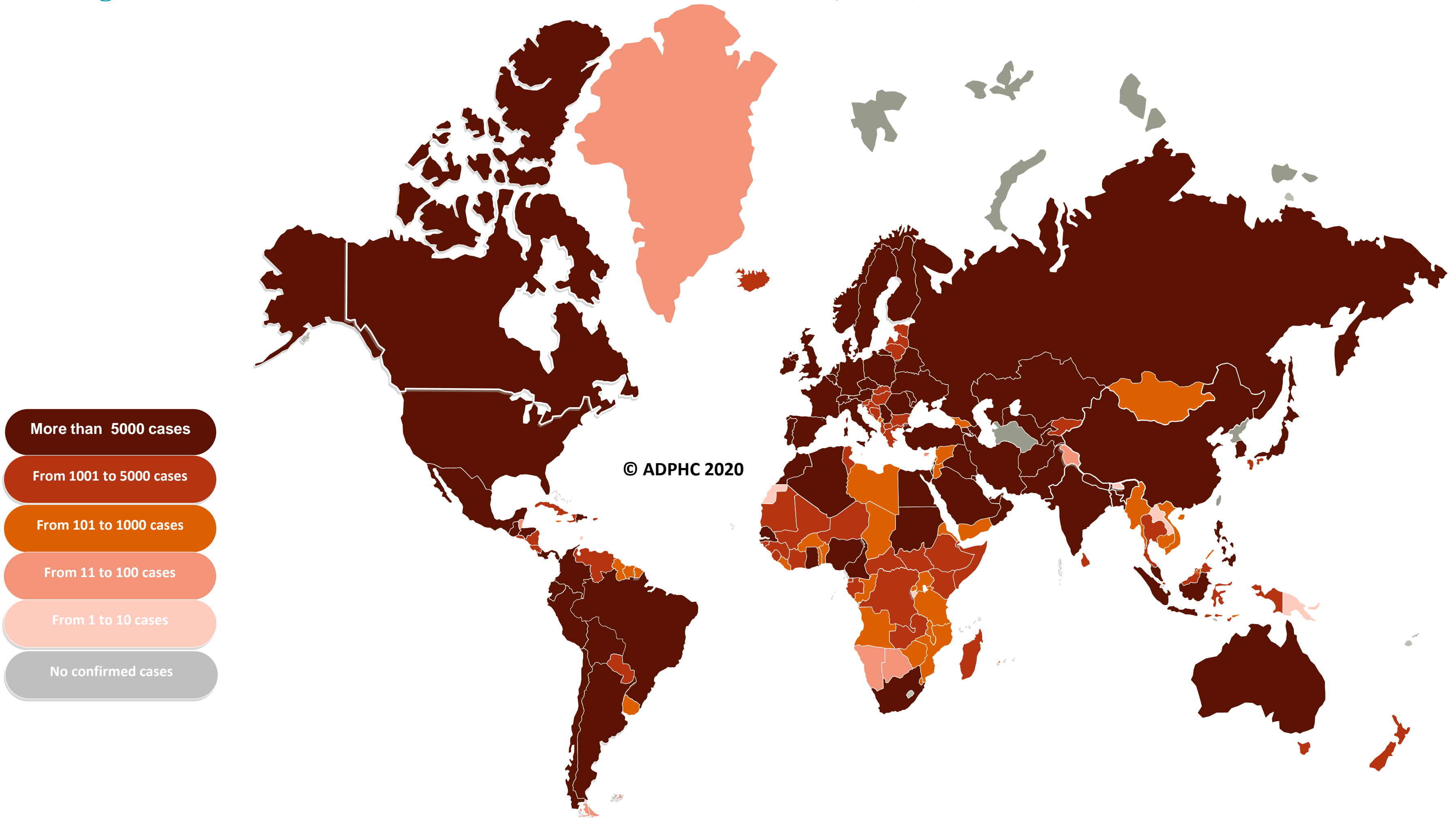
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



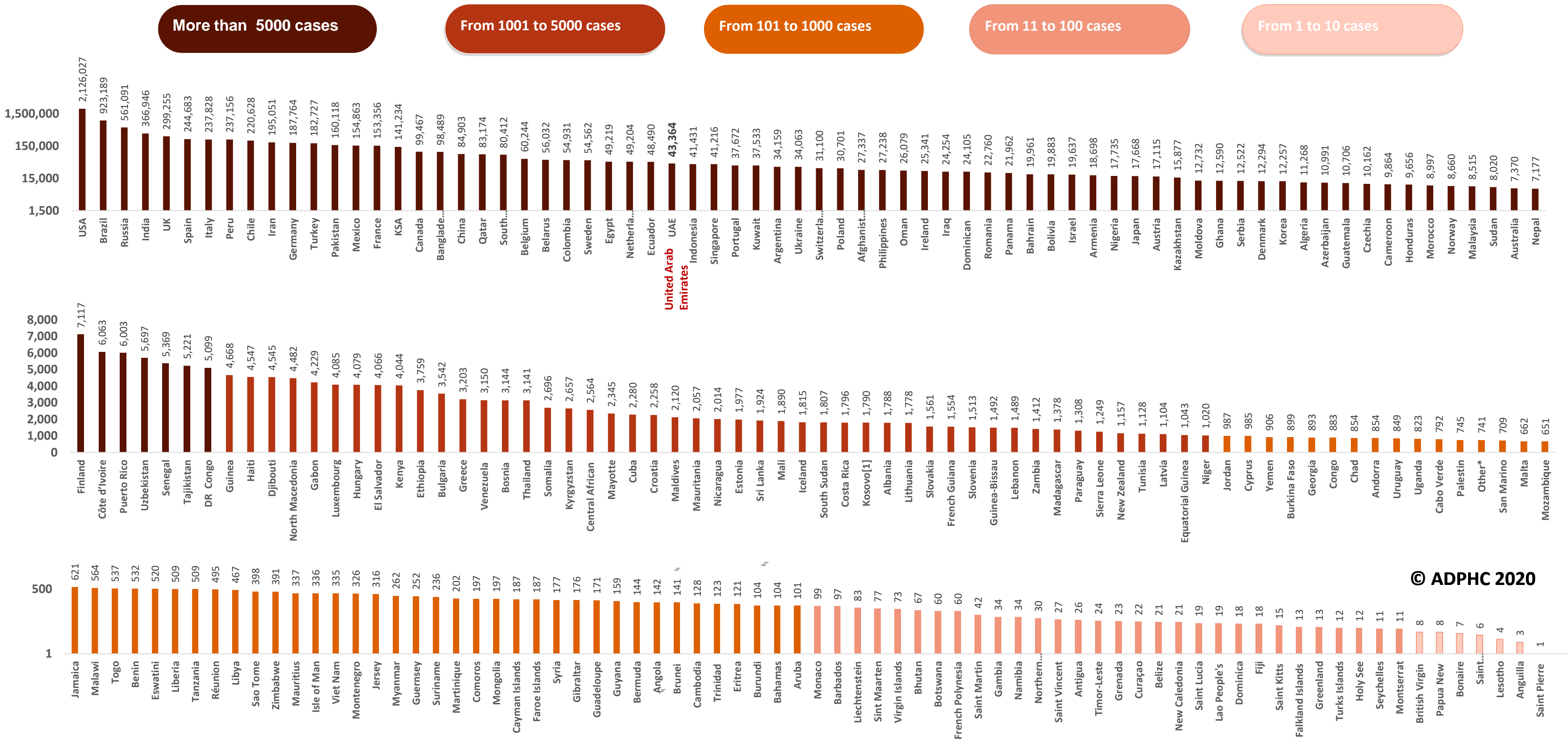
Figure 7a : Global distribution of COVID-19 cases (Jun 18, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 18, 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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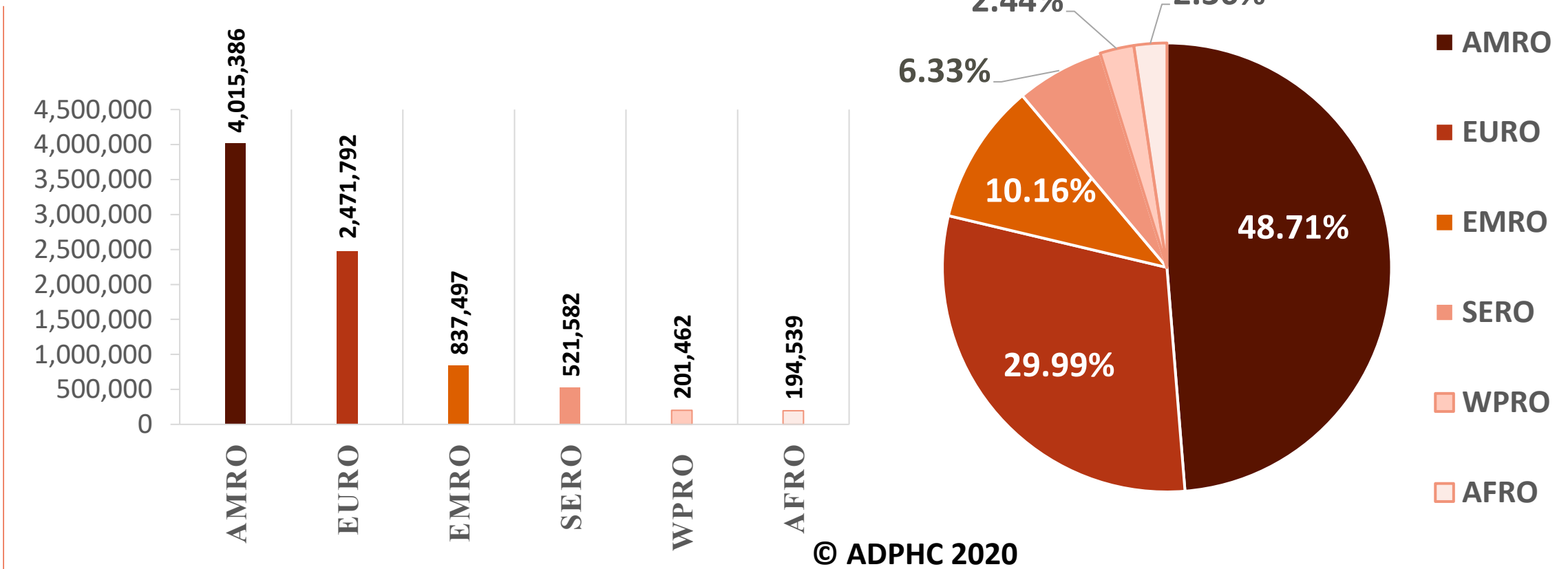
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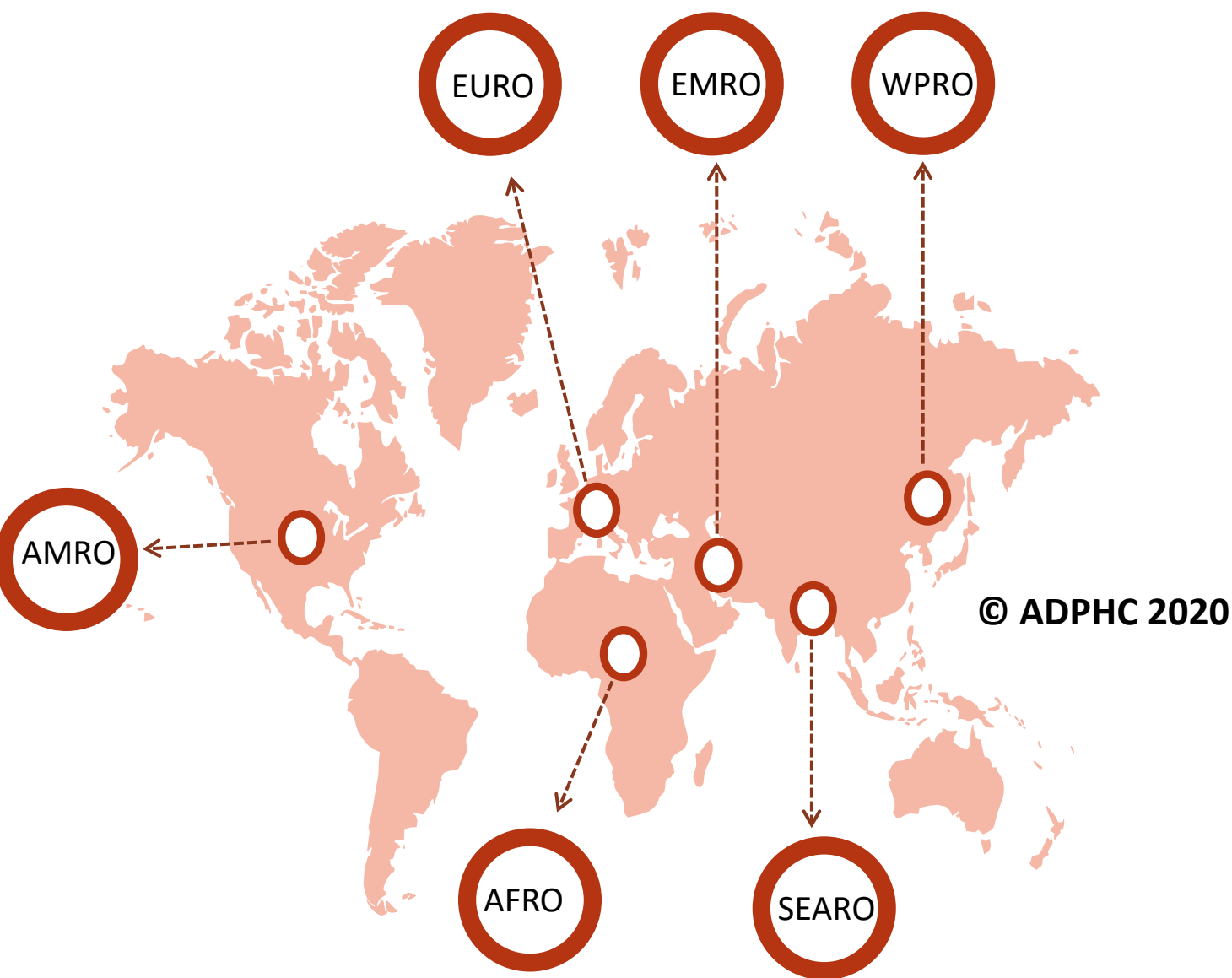
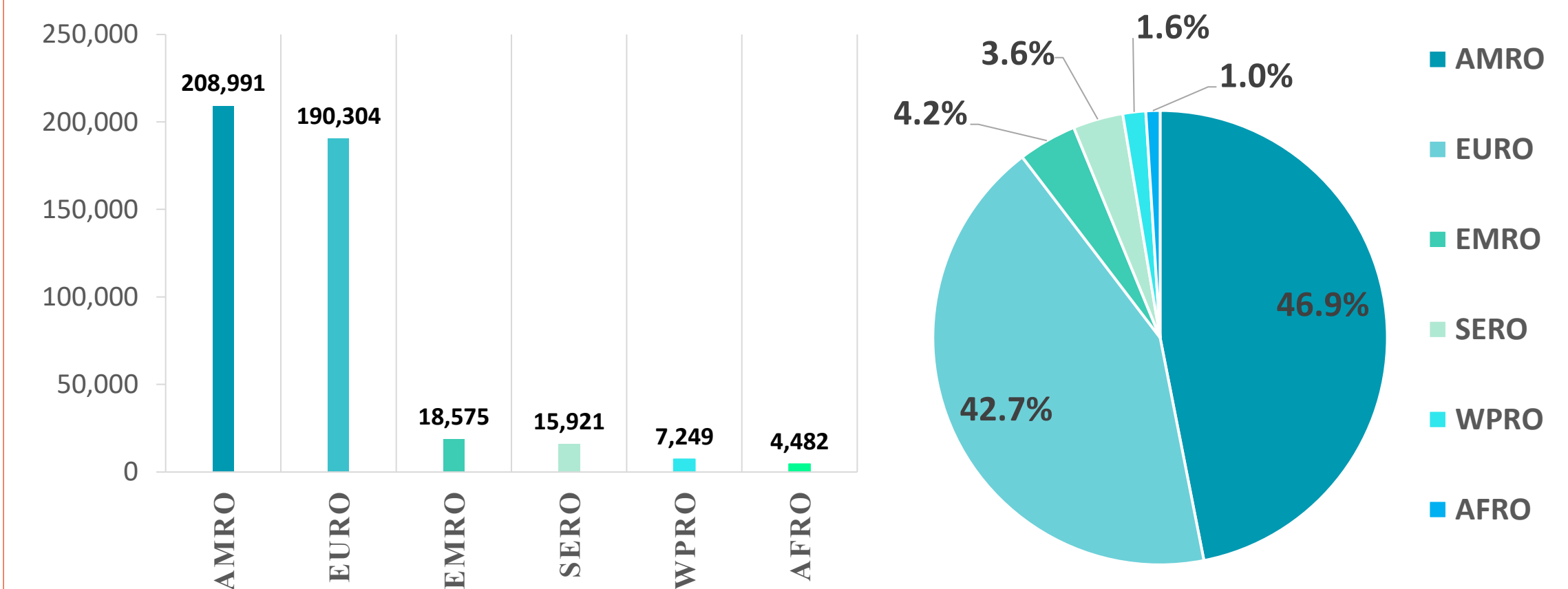


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 18, 2020)

INFECTED



DEATH



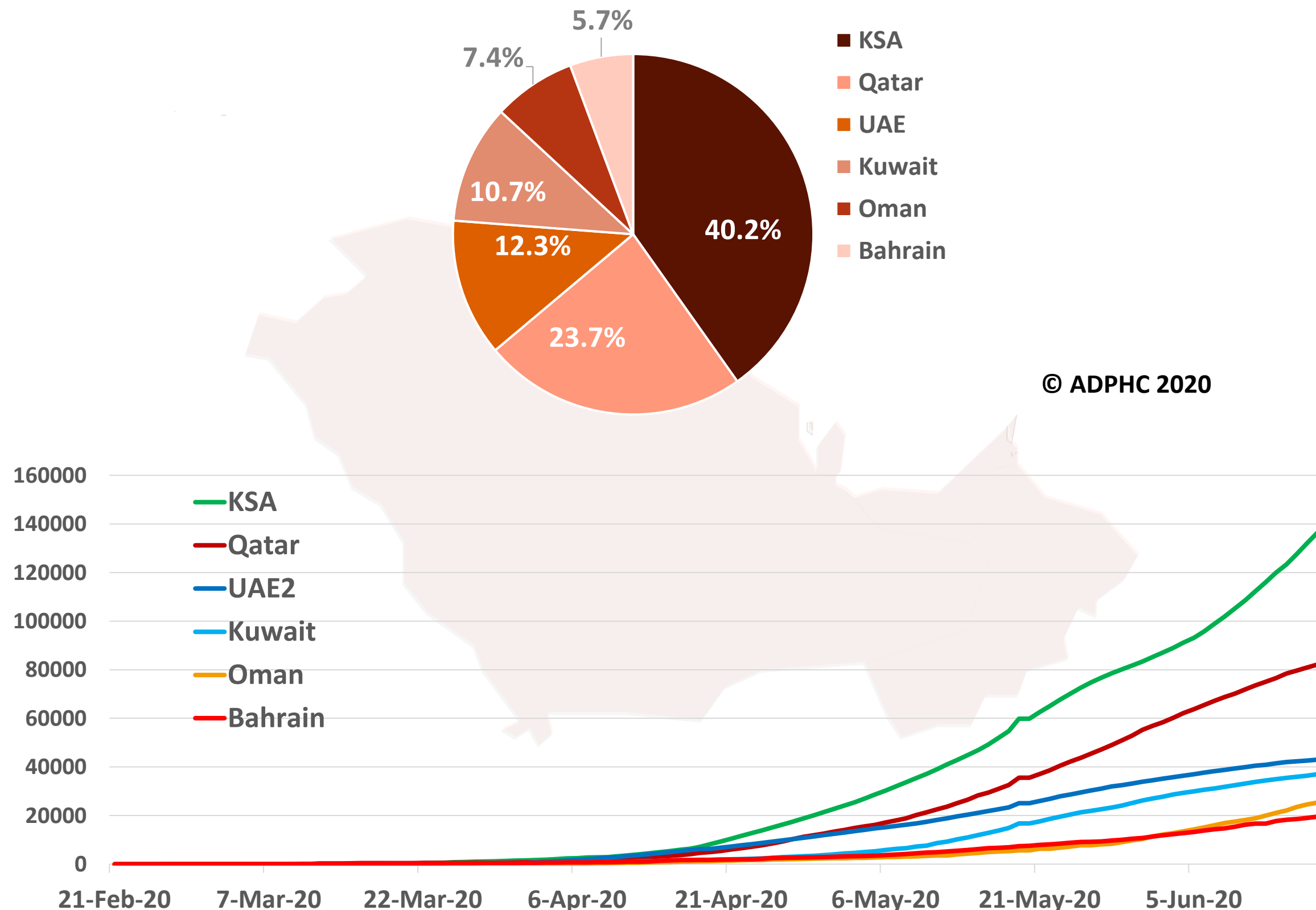
Map chart published by Abu Dhabi Public Health Center 2020.

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



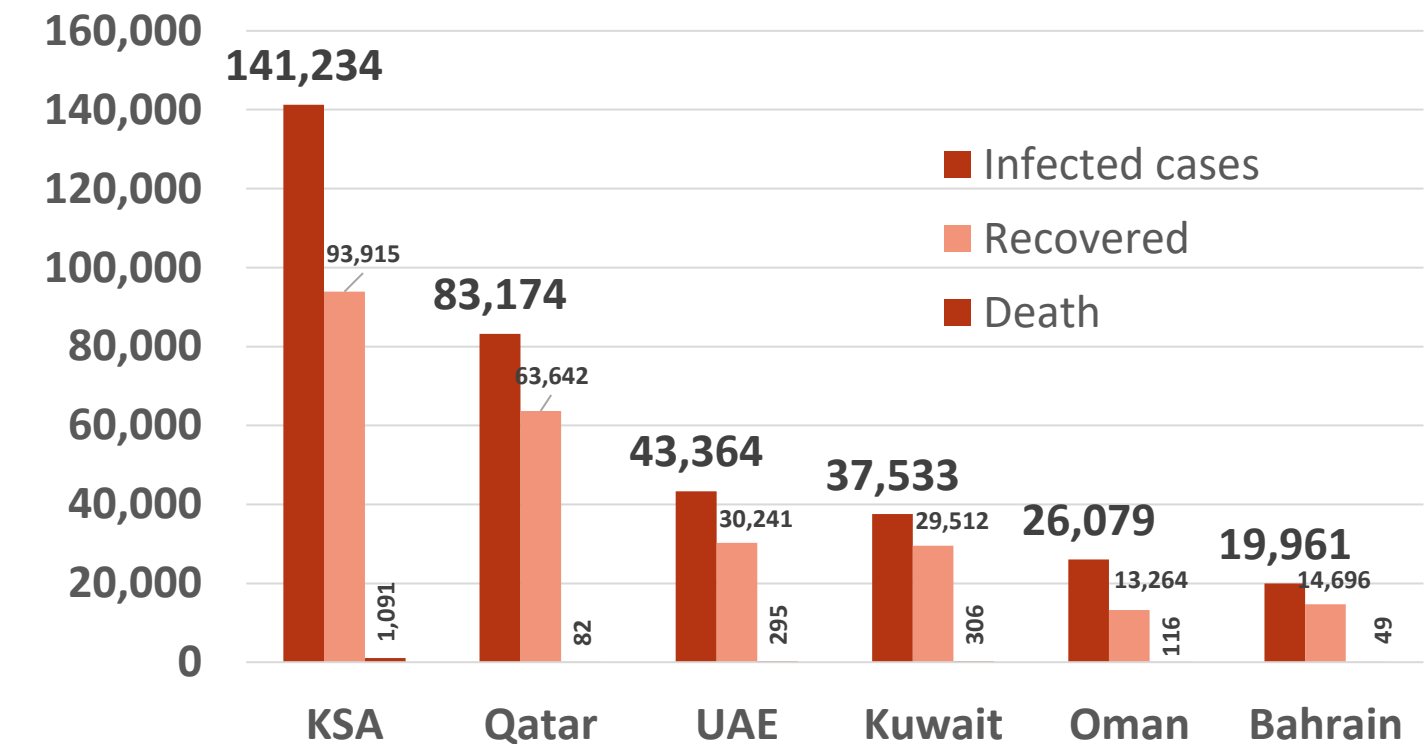
Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 18, 2020)

TOTAL NUMBER OF INFECTED CASES



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Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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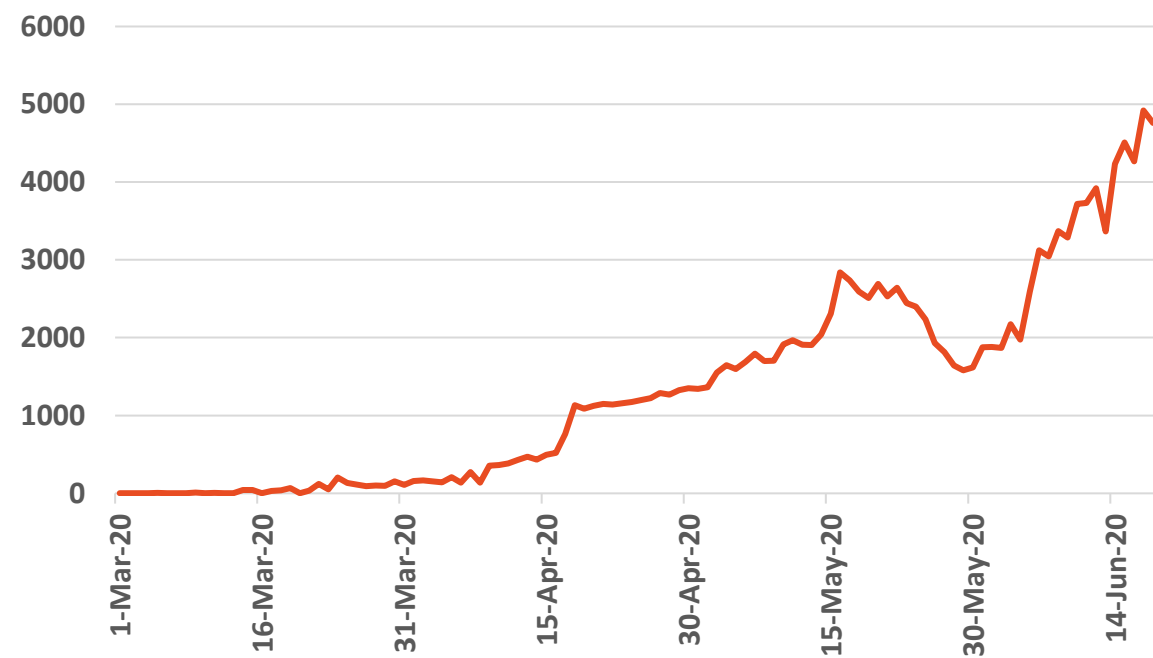
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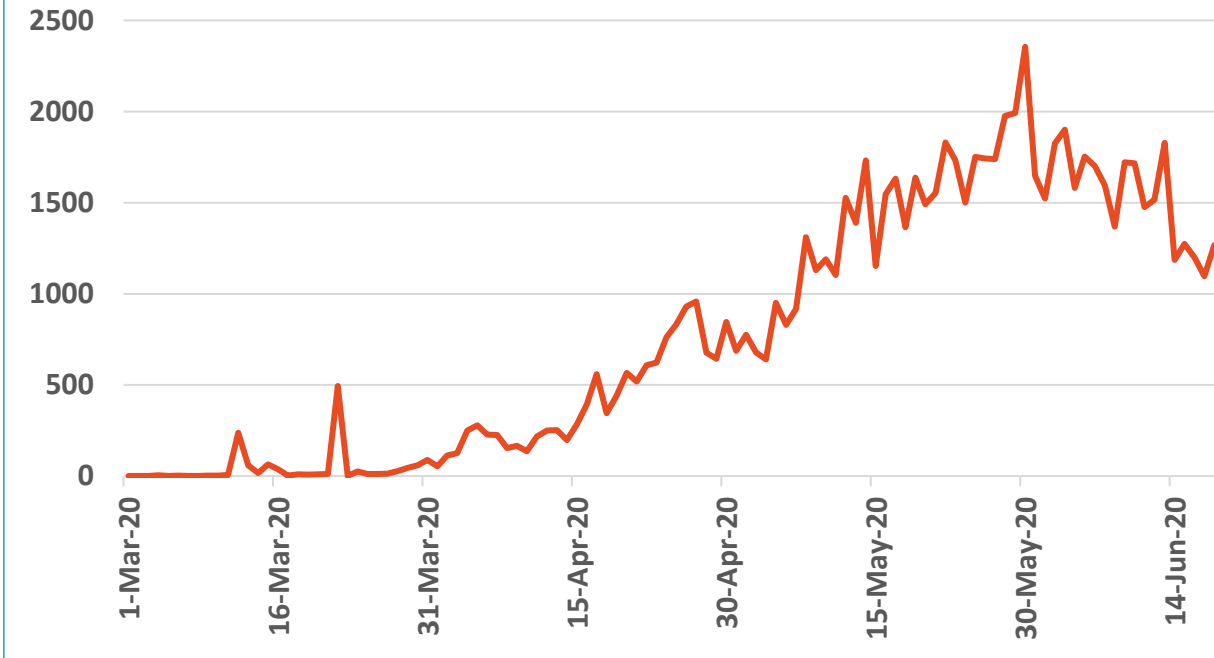
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 18, 2020)

KSA



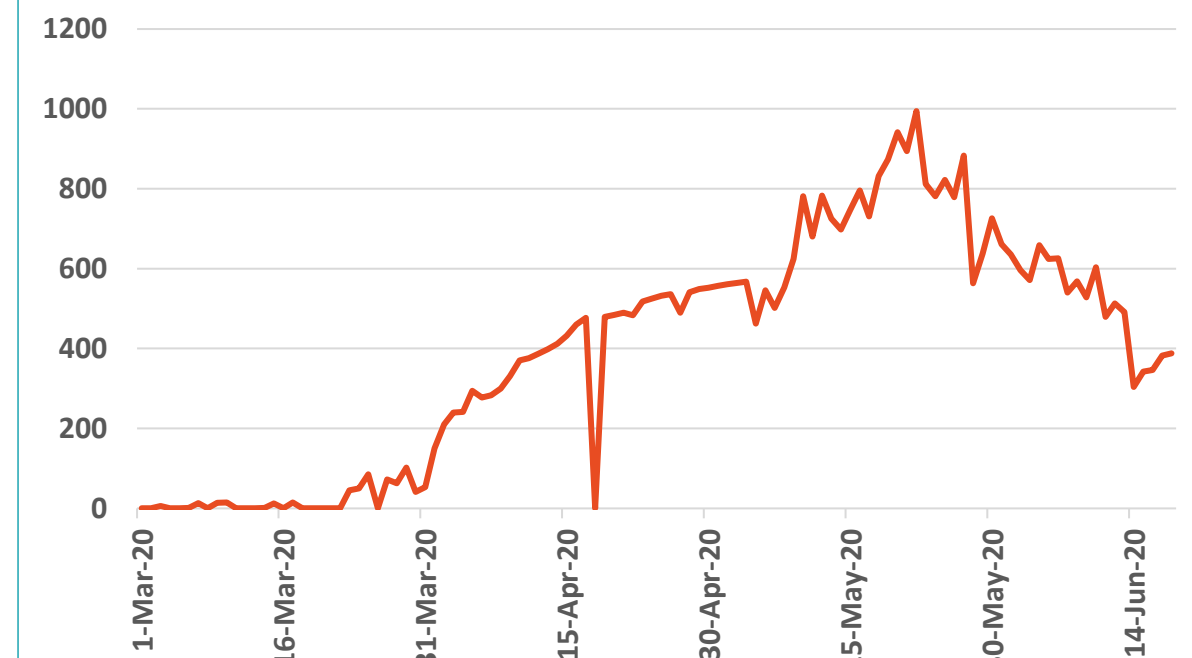
Source : [KSA ministry of health](#)

Qatar



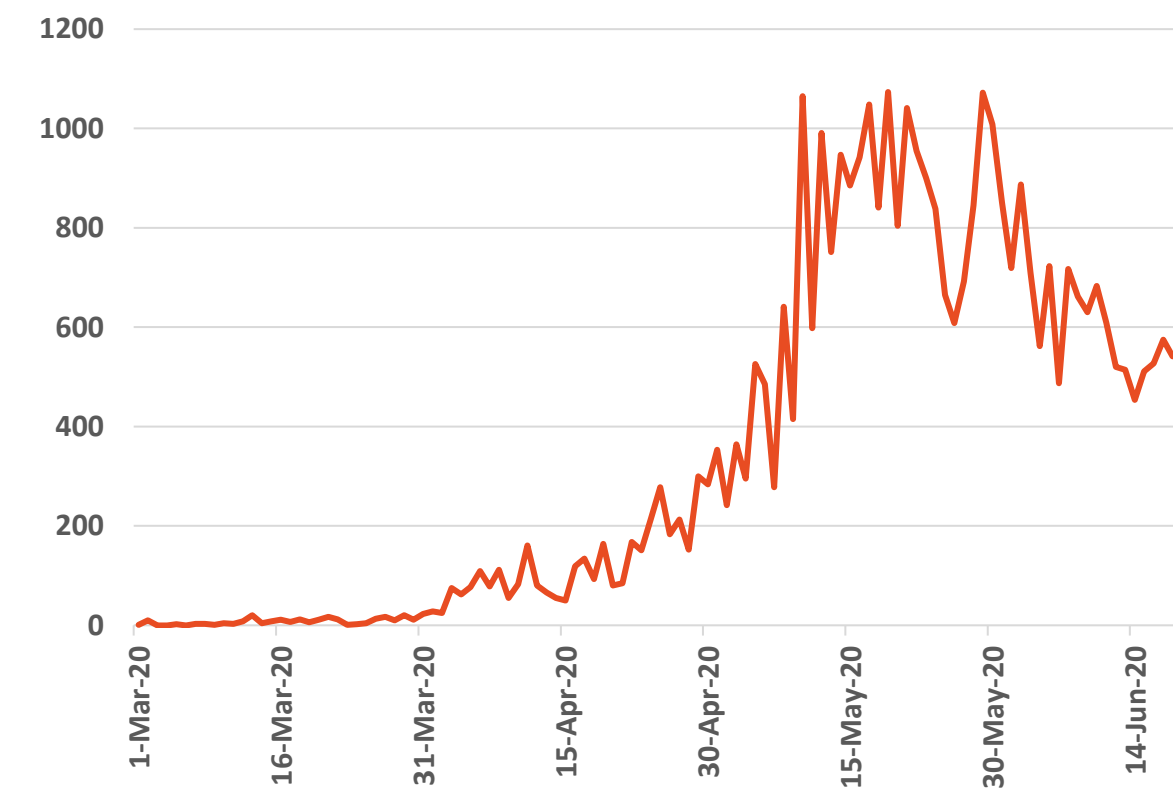
Source : [Qatar ministry of health](#)

UAE



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

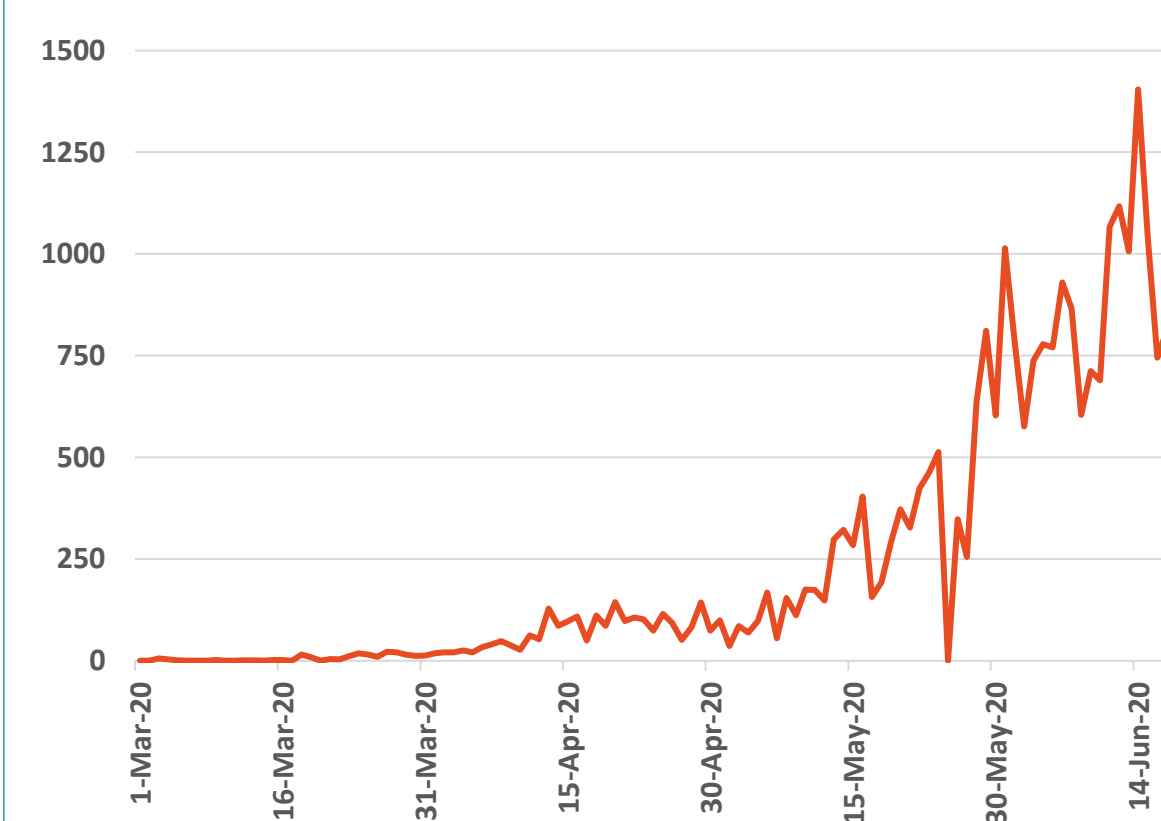
Kuwait



Source : [Kuwait ministry of health](#)

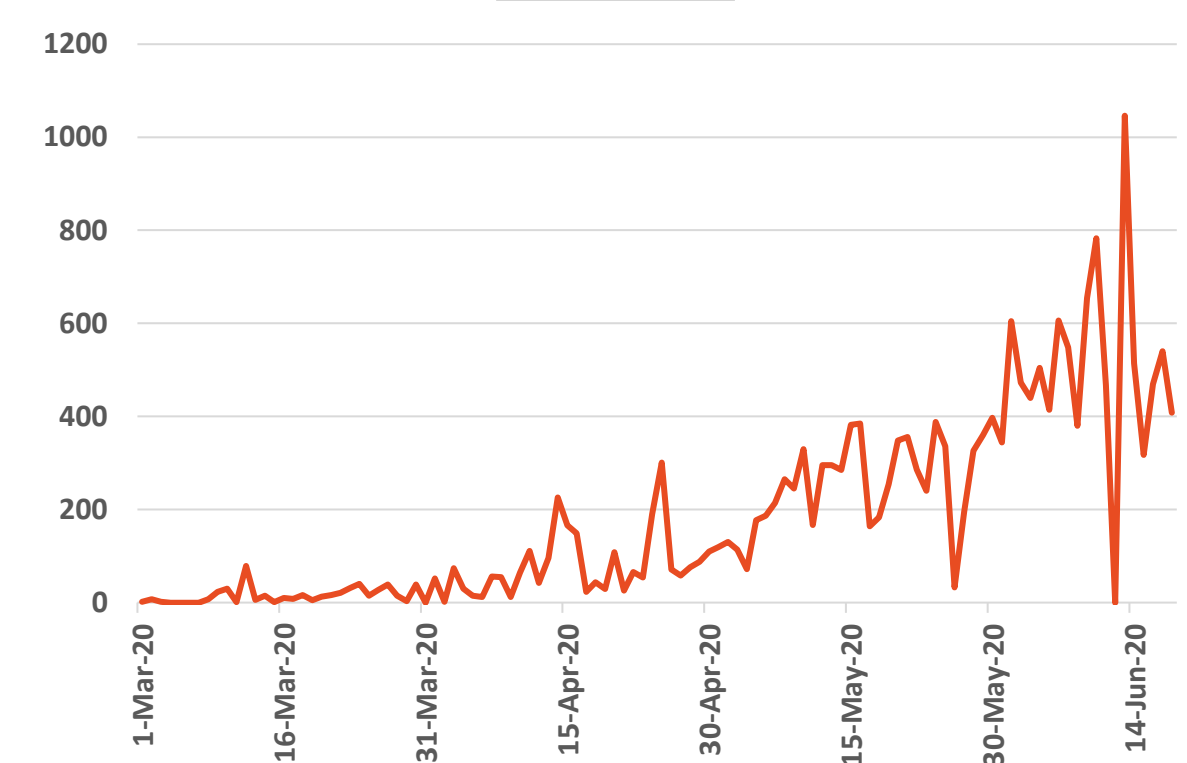
Oman

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Source : [Oman ministry of health](#)

Bahrain



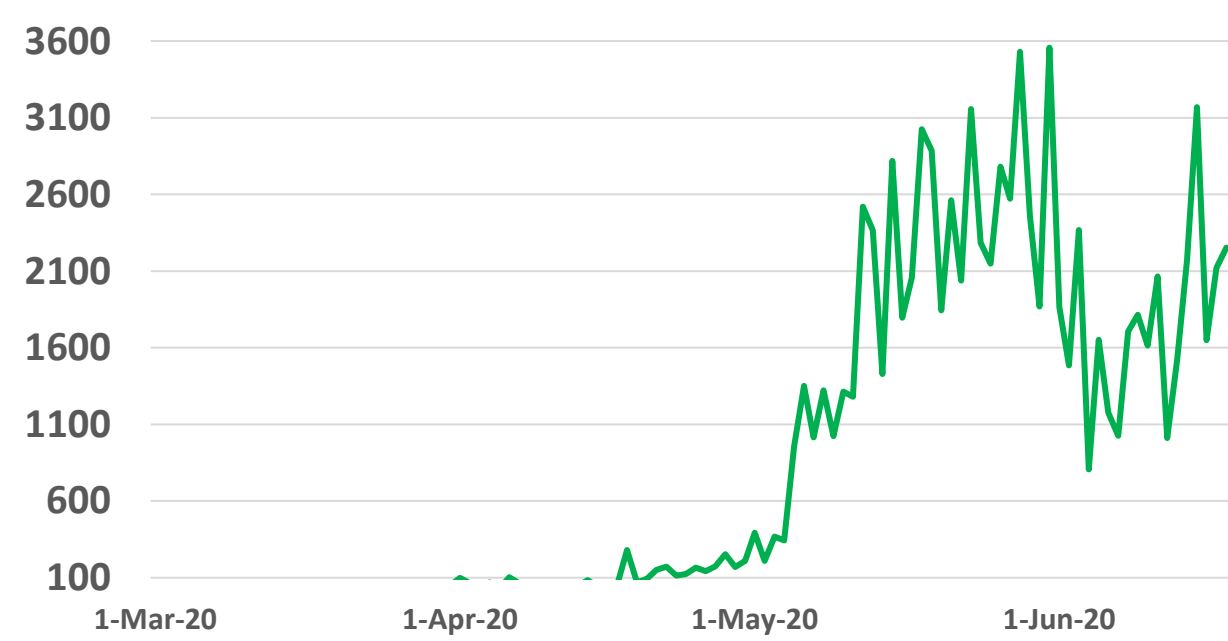
Source : [WHO](#)

Epidemiology



Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 18, 2020)

KSA



Source : KSA ministry of health

Qatar



Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

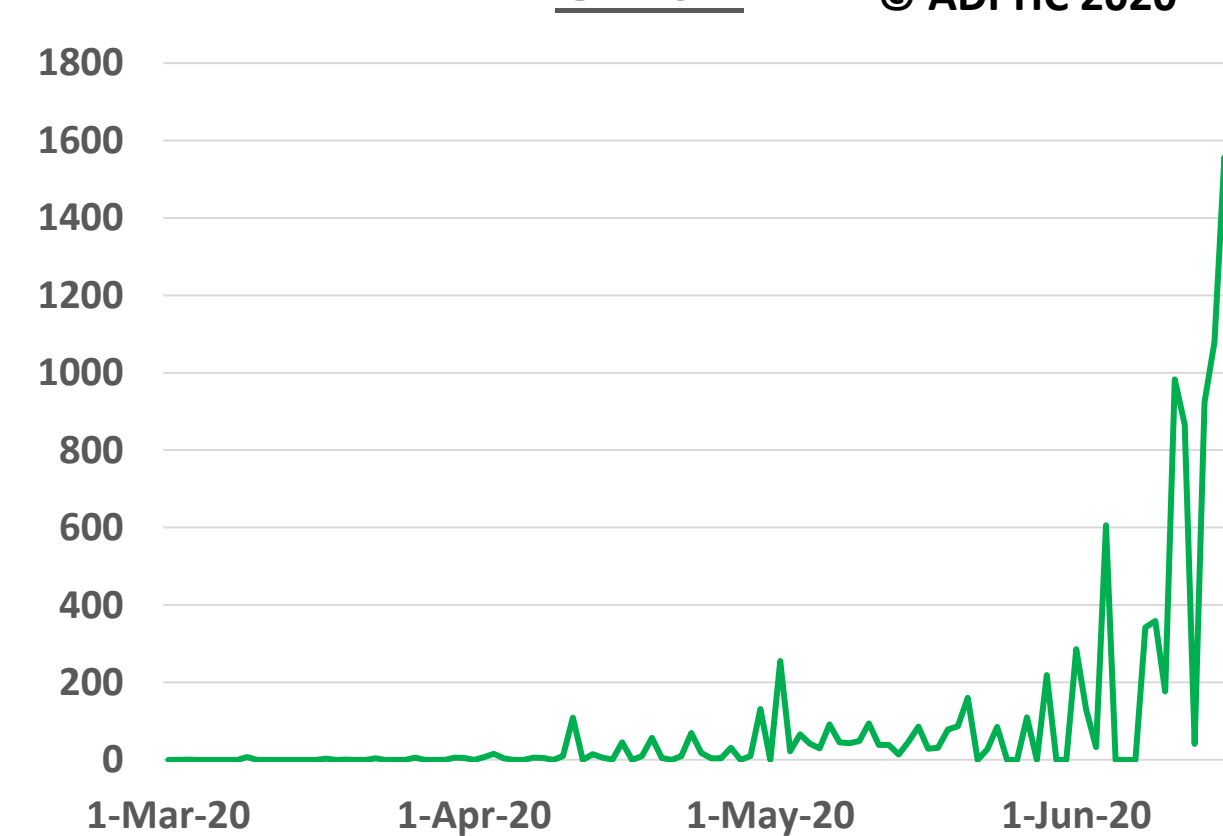
Kuwait



Source : Kuwait ministry of health

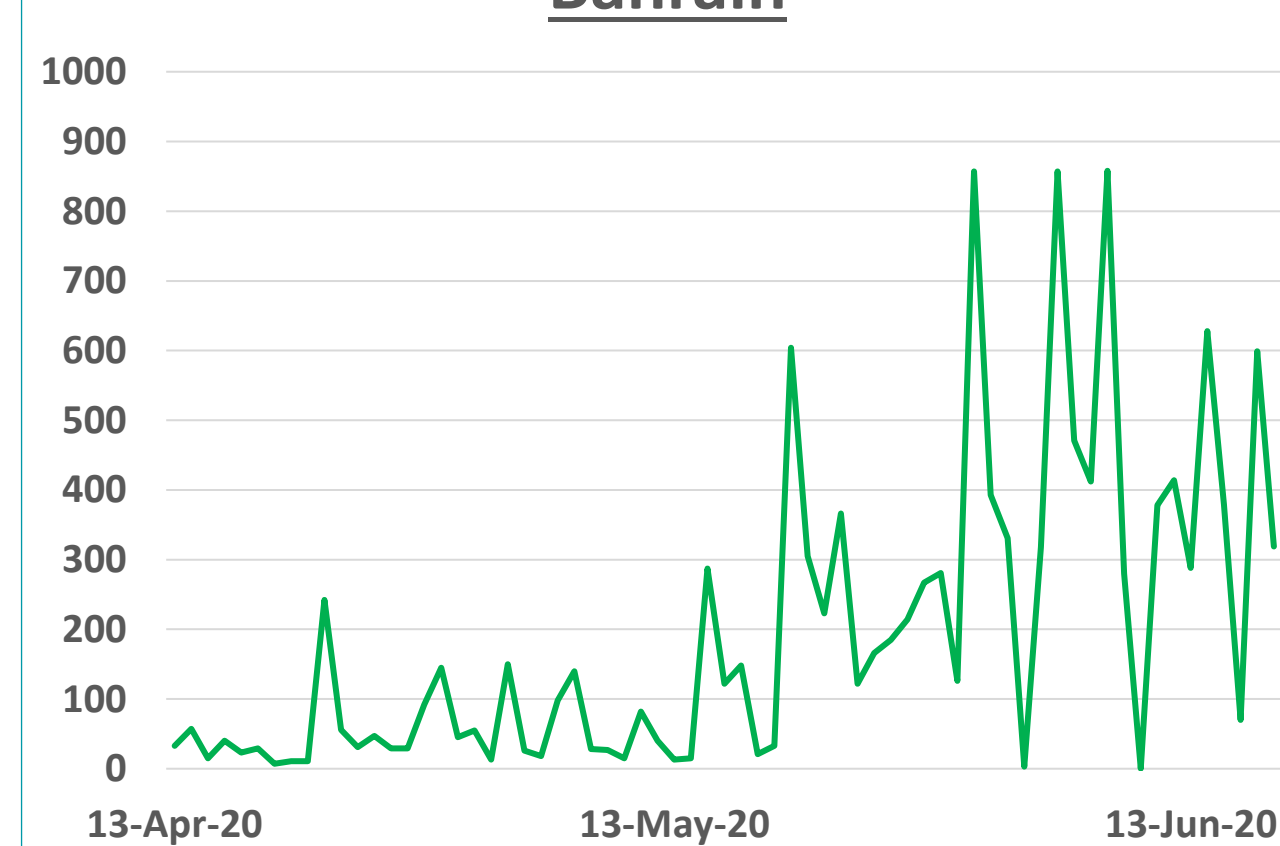
Oman

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Source : Oman ministry of health

Bahrain



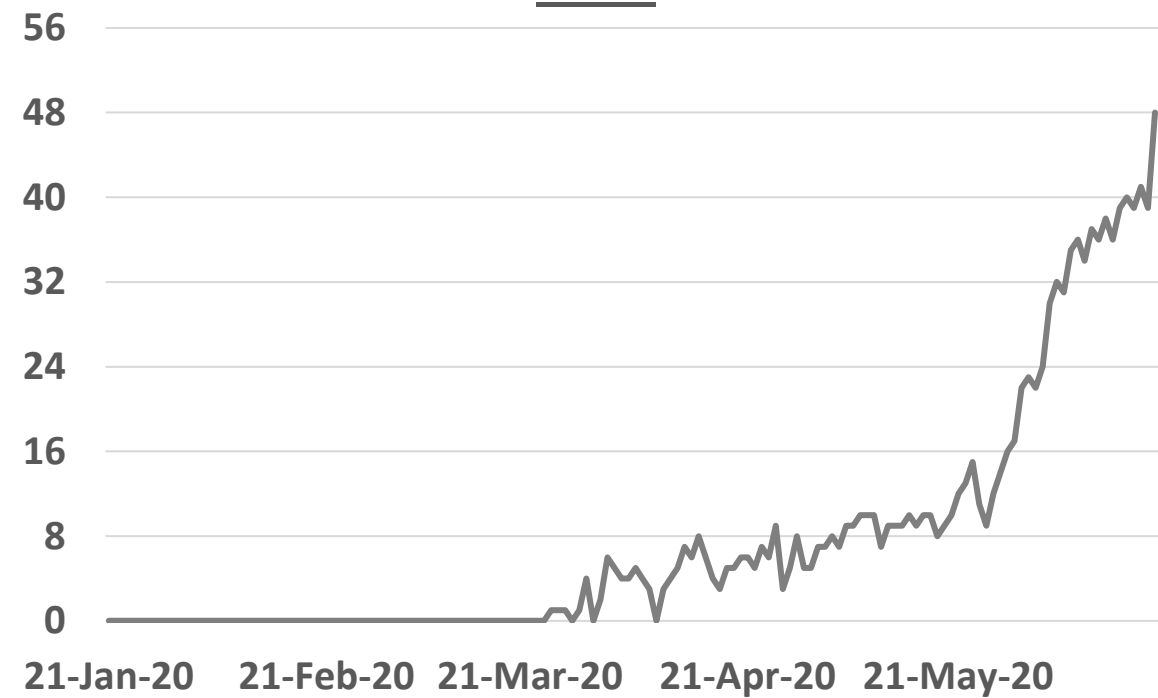
Source : GCCStat

Epidemiology



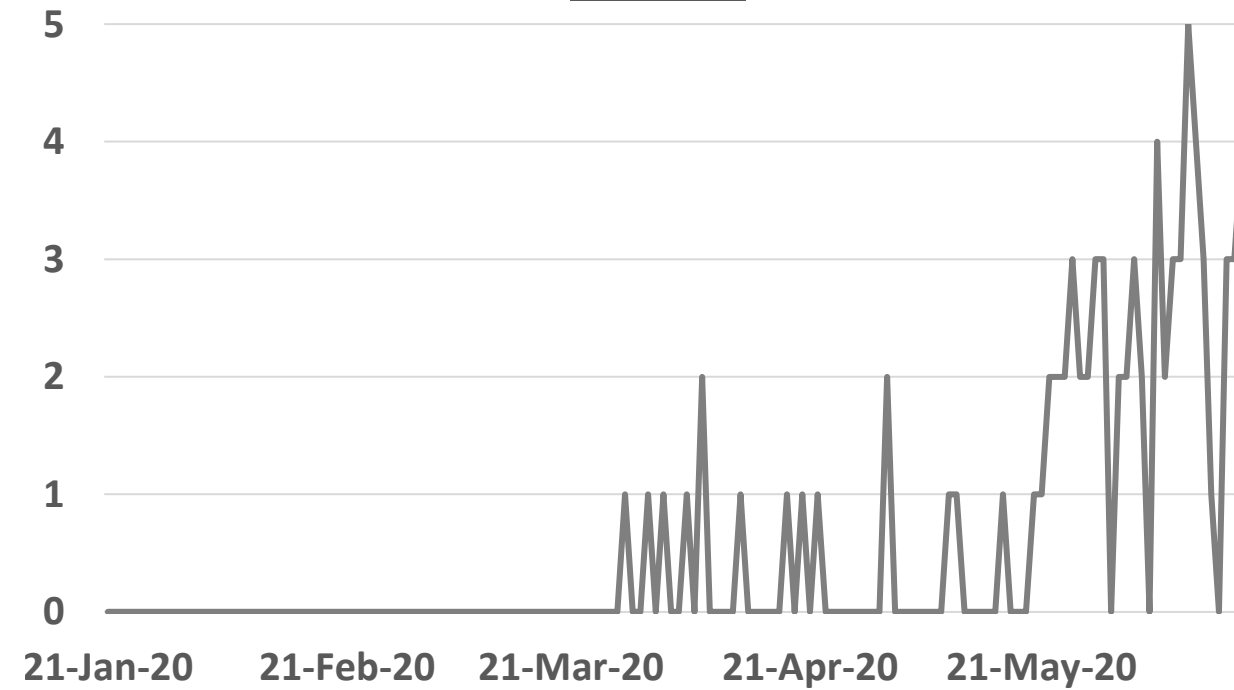
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 18, 2020)

KSA



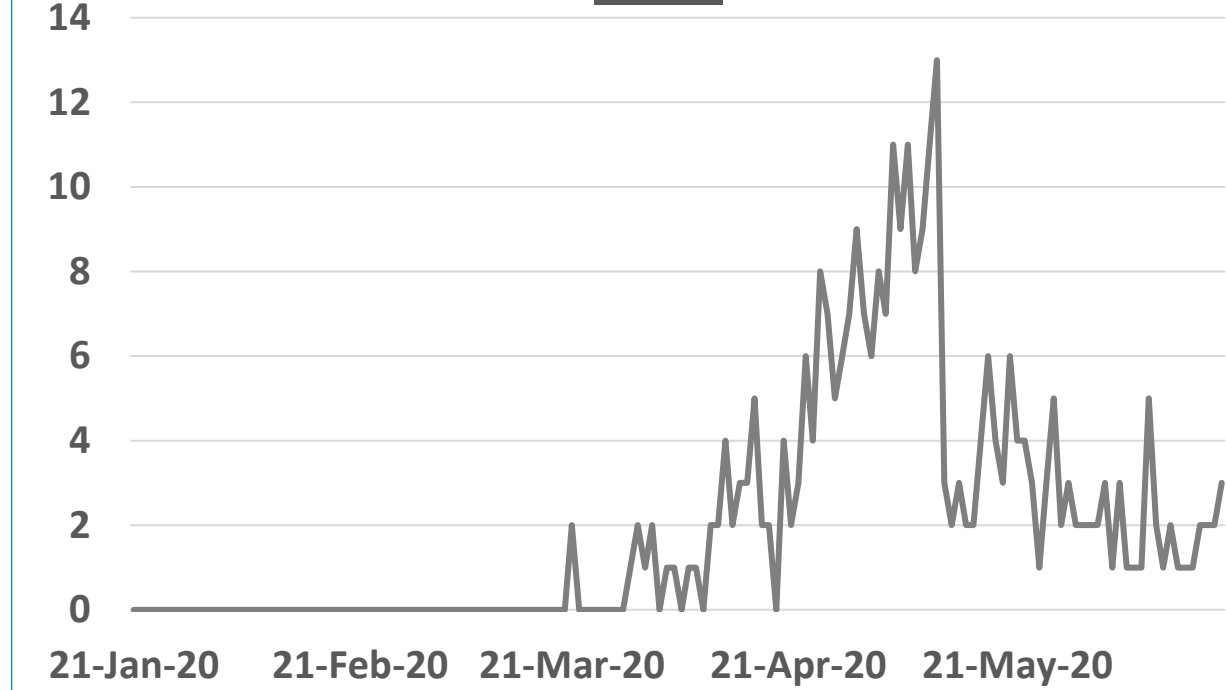
Source : KSA ministry of health

Qatar



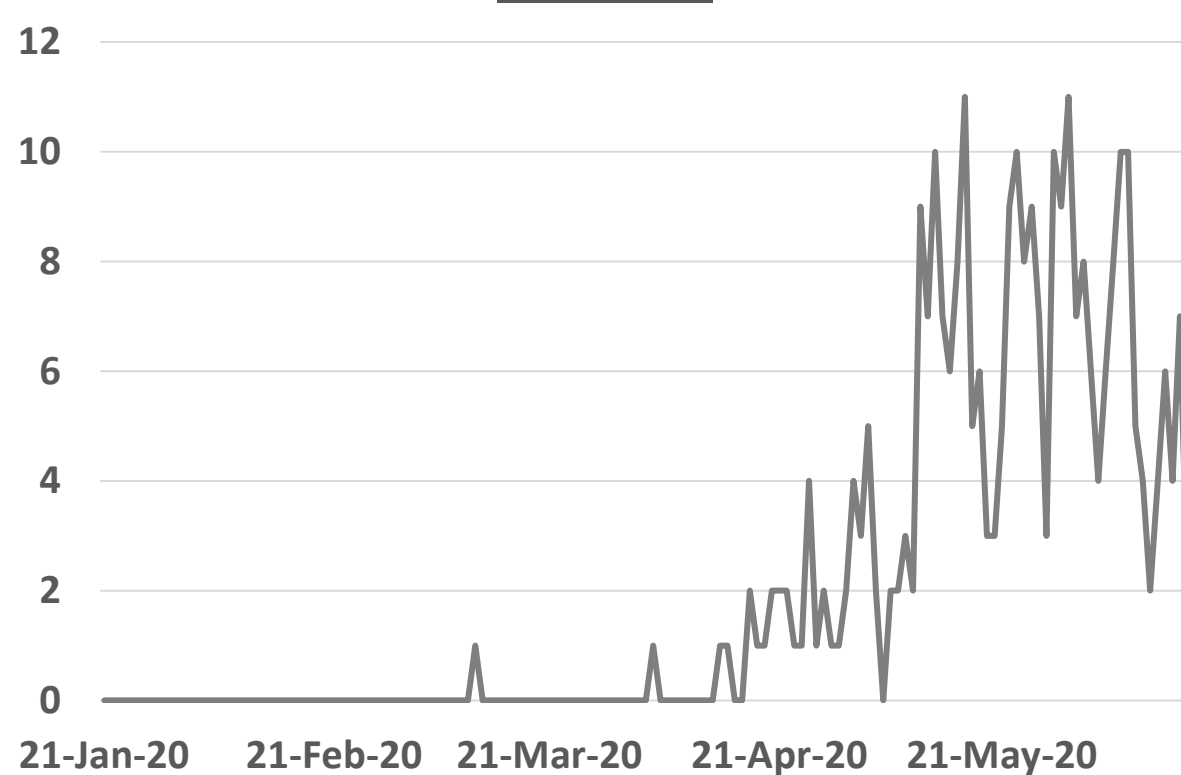
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

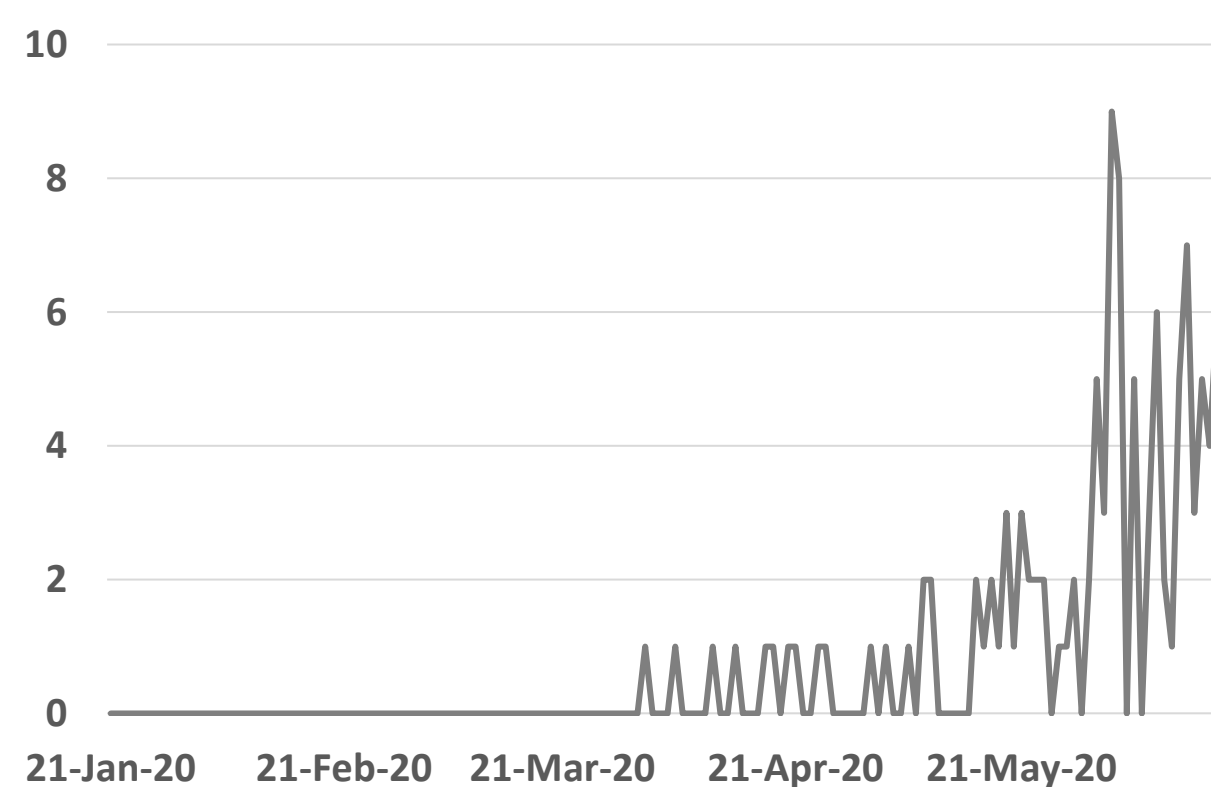
Kuwait



Source : Kuwait ministry of health

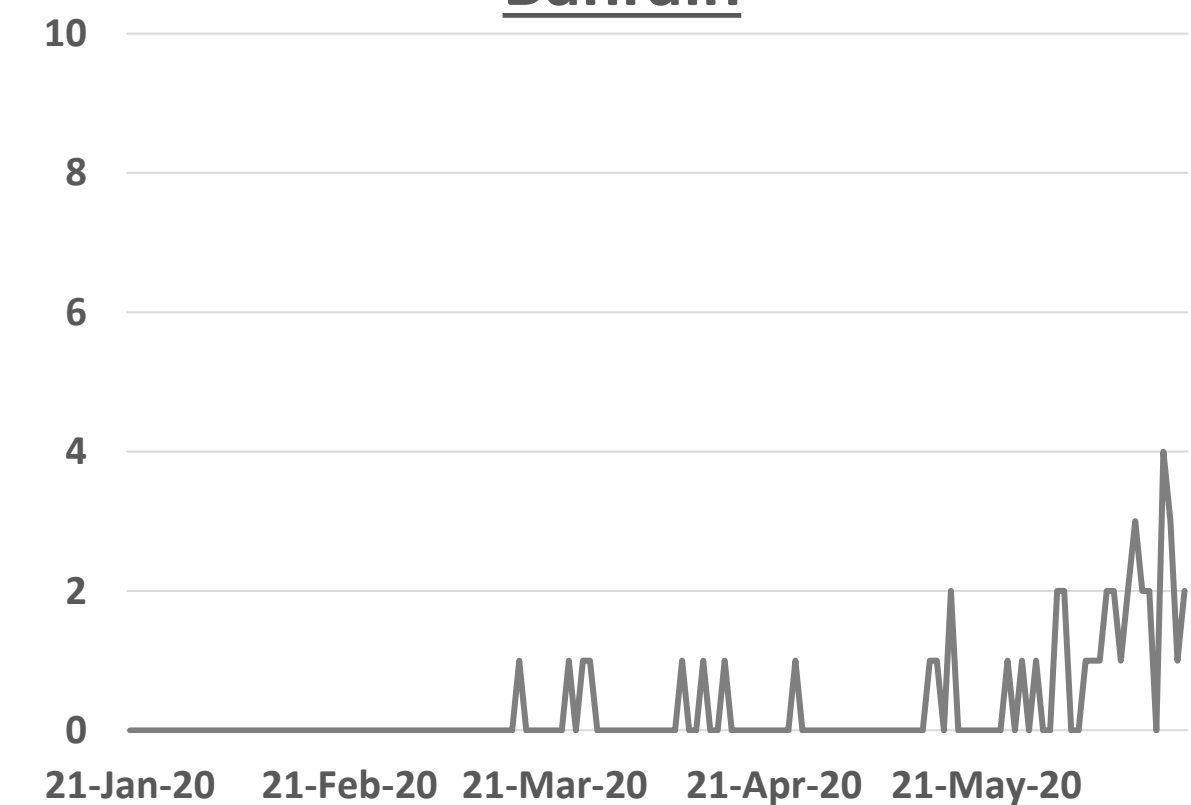
Oman

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Source :Oman ministry of health

Bahrain



Source :WHO



Article 1: Effects of Sterilization With Hydrogen Peroxide and Chlorine Dioxide on the Filtration Efficiency of N95, KN95, and Surgical Face Masks

Published: 15 June 2020 in the [JAMA](#)

Summary:

Summarized by subject matter expert

This article investigated the effect of different methods for cleaning of face masks for their re-use.

Background

- Because of global high demand of face masks during Covid-19 pandemic, CDC has suggested the potential reuse of disposable respirators to conserve available supplies

How the study was done?

Three types of masks were tested:

- N95
- KN95 (the Chinese version of the N95)
- Surgical face mask

Two types of sterilization (cleaning) methods were used:

- Hydrogen peroxide (H₂O₂)
- Chlorine dioxide (ClO₂)
- Filtration efficiency of all masks were calculated.

What this study found?

- Filtration efficiencies of untreated (new) masks were 97.3% for N95s, 96.7% for KN95s, and 95.1% for surgical face masks.
- After H₂O₂ sterilization, the filtration efficiencies were 96.6% for N95s, 97.1% for KN95s, and 91.6% for surgical face masks.
- After ClO₂ sterilization, the filtration efficiencies were 95.1% for N95s, 76.2% KN95s, and 77.9% for surgical face masks.
- The effects of sterilization on filtration efficiency by aerosol size showed that treatment with H₂O₂ was better than ClO₂ to protect against air particles

Public Health Message

- Sterilization with H₂O₂ had fewer negative effects than ClO₂.
- Disposable face mask maybe cleaned using proper methods and can be re-used.

Public Health Response:



Article 2: Overcoming fragmentation of health research in Europe: lessons from COVID-19

Published: June 16, 2020 [in the lancet](#)

Summary:

- On May 27, 2020, the European Commission (EC) presented its recovery plan (Europe4Health) integrated in the proposal for the **next Multiannual Financial Framework 2021–27**.
- EU framework program and initiatives have shown the power and impact of research collaborations that cross borders and sectors. In response to COVID-19, substantial research funding was quickly made available.
- Most initiatives remain with member states who provide more than 85% of total spending for publicly funded.
- The Scientific Panel for Health expert group throughout Europe have met to formulate recommendations for health research
- The European Council for Health Research (EuCHR), was considered an urgent, necessary first step:
- A multistakeholder policy board would develop a long-term vision and strategy, and a scientific translational board would enhance synergies between research program and implement action through funding mechanisms.
- **Rather than adding an organizational layer**, a EuCHR would build on existing structures and mandates in the spirit of health in all policies
- **Four key strategic priorities are listed in the panel :**
 - Focus on healthy life, wellbeing, and public health
 - Investment in translational research (health-care organisation, outcomes, financing models, and attrition of ineffective treatments for affordable health care)
 - Capacity building (training , artificial intelligence system)
 - Partnerships (Bundling of activity)



Public Health Response:

Article 3: Food security in uncertain times

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

Summary:

- According to the World Food Program (WFP), 265 million people in low- and middle-income countries will be suffering acute food insecurity by the end of 2020 due to the effects of COVID-19 and its economic consequences unless mitigatory action is taken.
- The WFP report requires preventive measures to avoid the socio-economic implications of the pandemic, calling on governments, humanitarian, and development actors to work together to expand food security monitoring, preserve critical humanitarian food, livelihood, and nutrition assistance to the vulnerable, assist vulnerable countries with social protection systems, scale up support for food processing and transport, and advocate for trade corridors to stay open.
- There are many ways that the COVID-19 pandemic and its control measures are expected to impact food systems. In the first **instance food supply** is expected to be relatively unaffected, although **lack of labor mobility and access to markets** will likely **reduce some food supplies** and will certainly **increase food waste**, particularly of perishable items. The main impacts though are likely to be through **problems with distribution and affordability**.
- In order to respond to the immediate hunger crisis that the pandemic threatens, food systems need to be restructured to better serve people. The list for doing this is long - more sustainable foods are needed that are less harmful to the environment, and more healthy and nutritious foods need to be produced. In addition, foods need to be distributed more equally and much more resilience into the food systems need to be built particularly for vulnerable people.