



# Scientific Research Monitoring on COVID-19

14 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

# 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:** summary and updates on the Global vaccine summit.
- **Public Health response:** modelling models studied policy measures in Six countries found in the absence of any policy measures, Covid-19 infection rate grow on average 43% per day, meaning that infection numbers will be double in two days.
- **Diagnosis:** a study collected evidence from multiple studies on RT-PCR testing accuracy found Care must be taken in interpreting RT-PCR tests for COVID-19 infection—particularly early in the course of infection if clinical suspicion is high, infection should not be ruled out on the basis of RT-PCR alone



## WHO Daily Report 13 June 2020

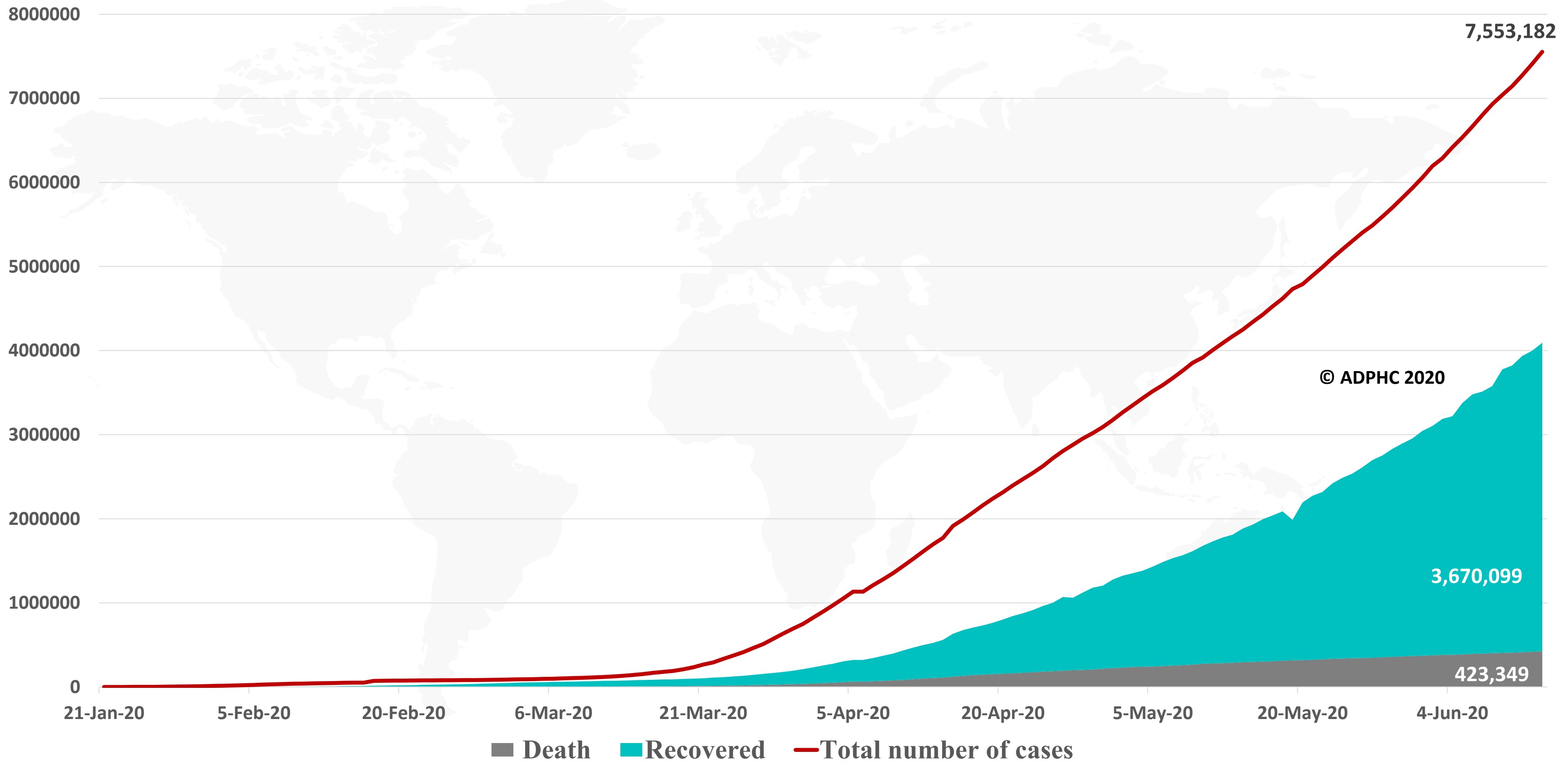
- New confirmed cases in China:
  - 12 confirmed cases have been reported in China, 6 cases of them in Beijing, additional information on cases reported will be presented in the subsequent Situation Reports..
- The WHO Regional Director for the Americas, emphasizes the importance of Blood donations.
- A COVID-19 survivor, a Stress Counsellor and a WHO Mental Health officer in Nigeria share their experiences with stigma associated with COVID-19 and approaches to curb stigma associated with the disease



# Epidemiology



### Figure 1: Total number of infected, recovered , and death cases (January 21<sup>st</sup> to Jun 13, 2020)

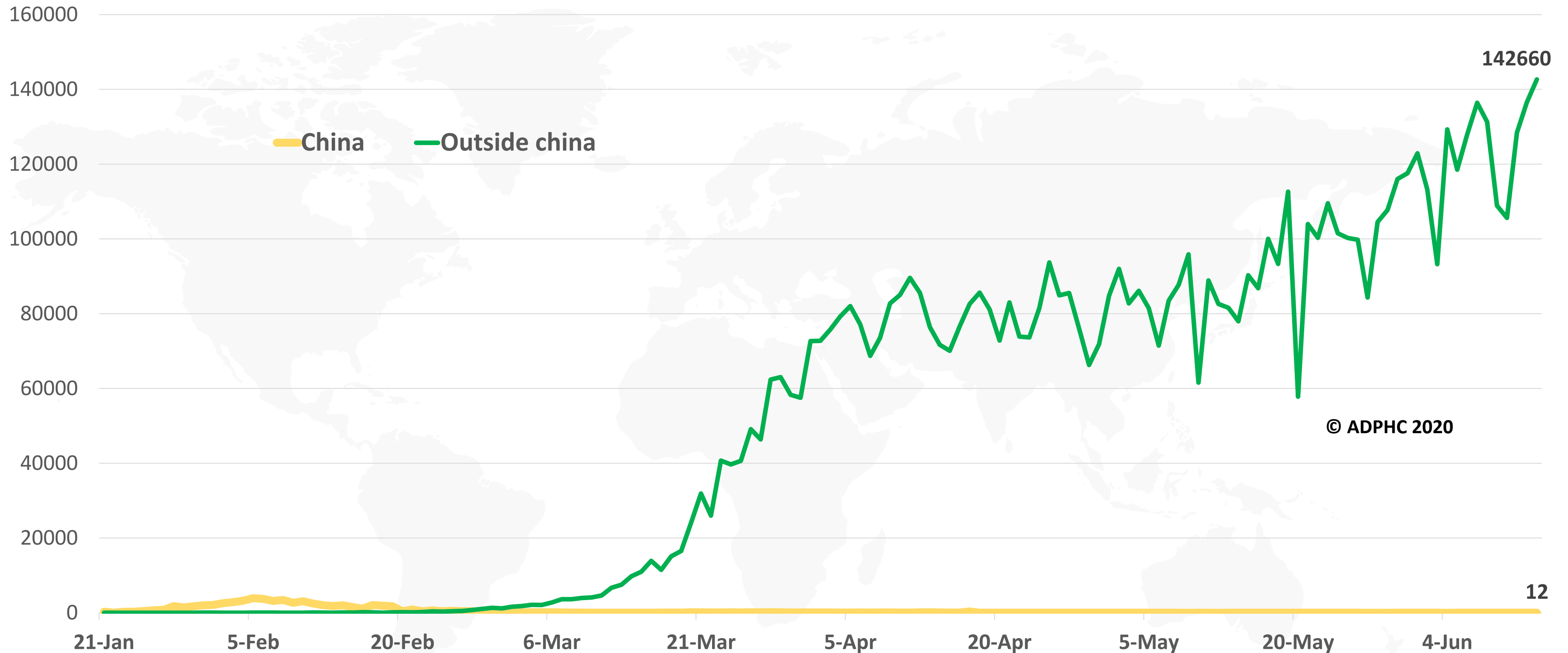


Line graph published by Abu Dhabi Public Health Center 2020.

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



**Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 13, 2020).**



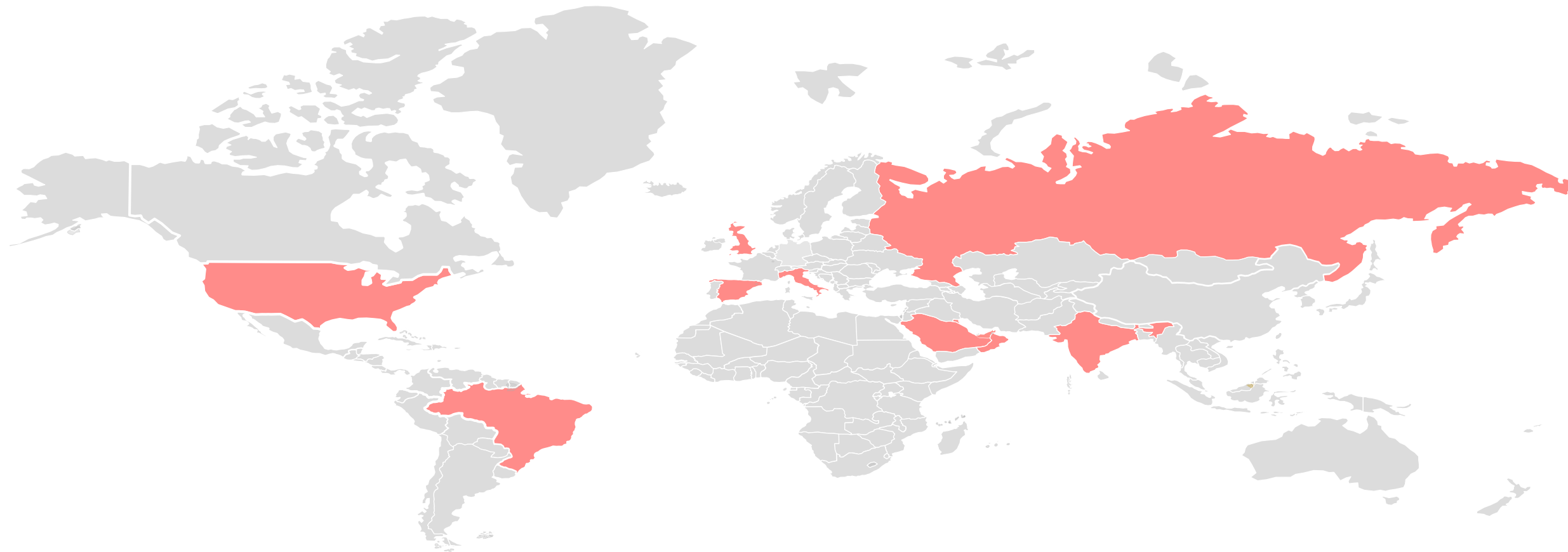
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

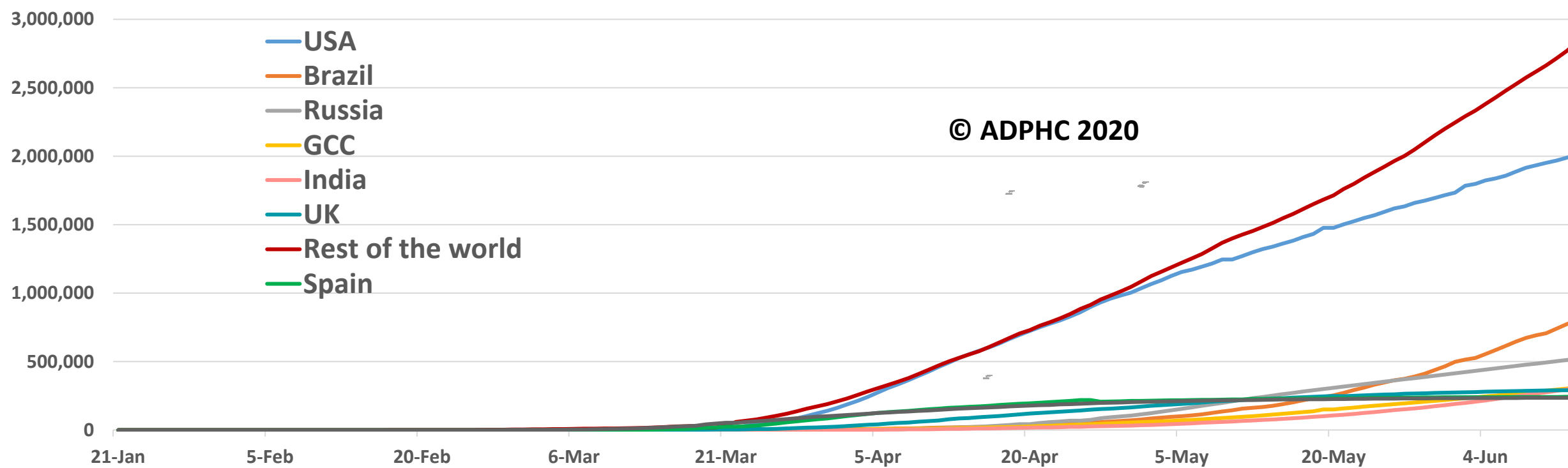
# Epidemiology



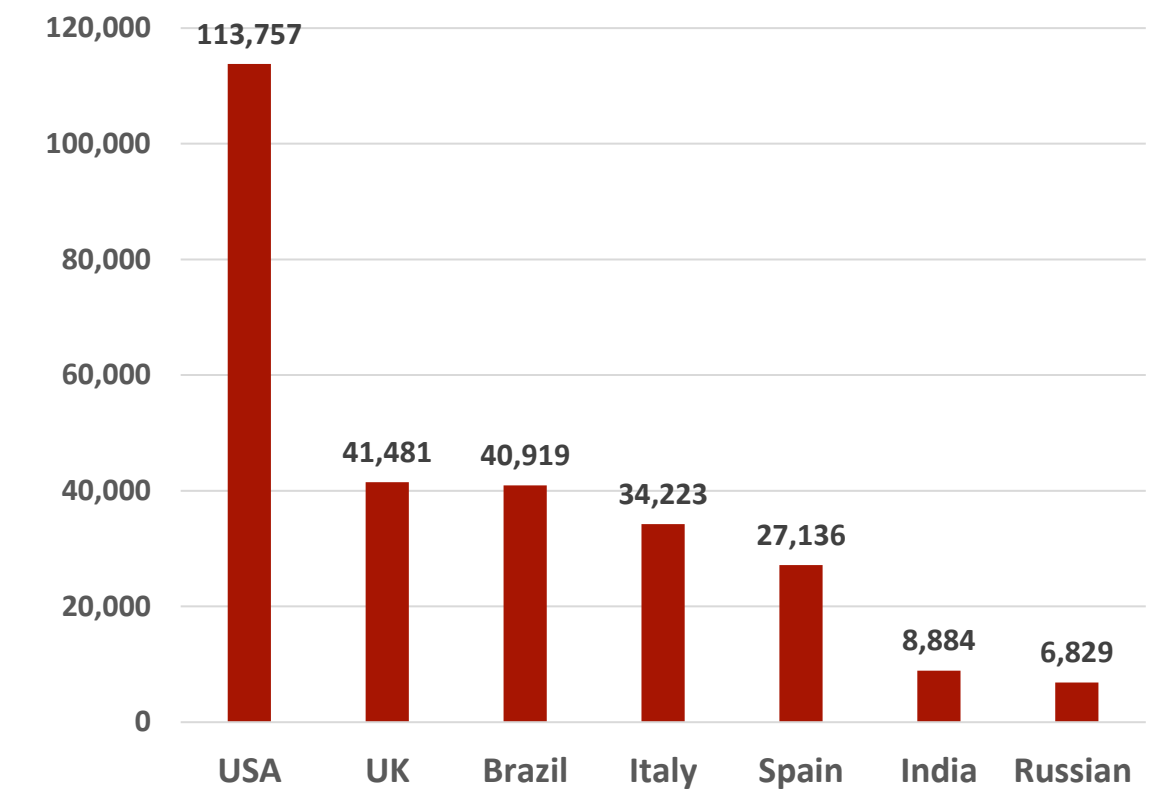
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 13, 2020).



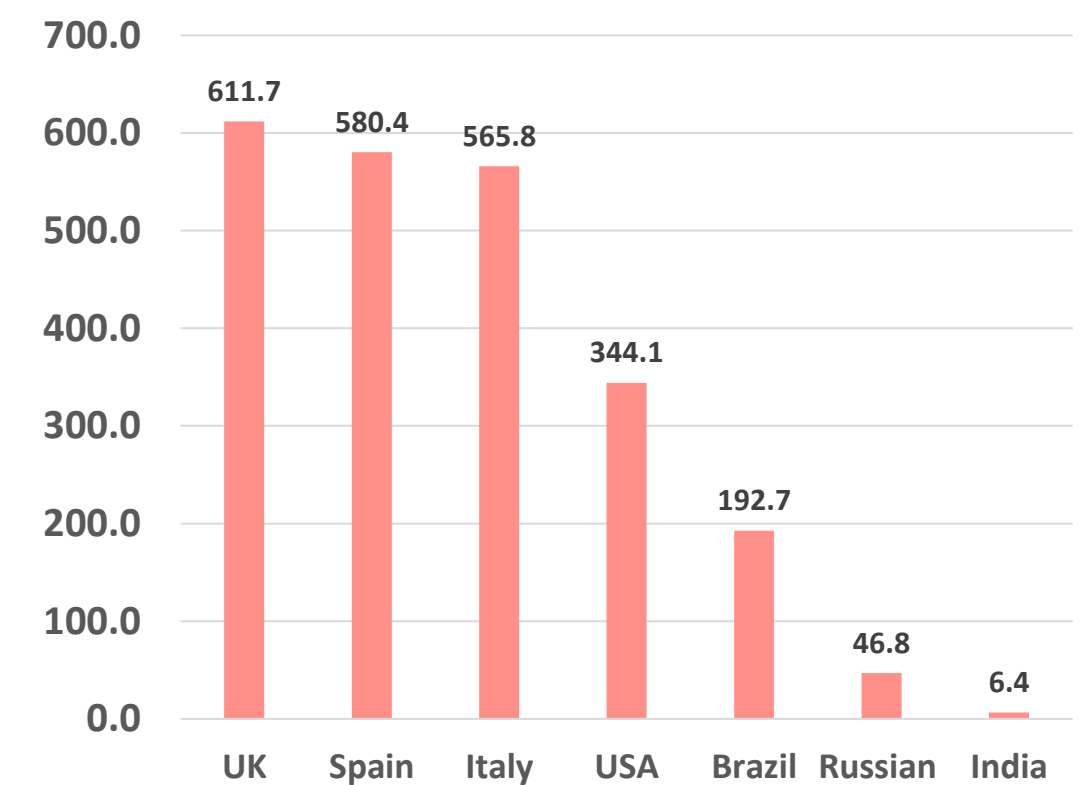
## TOTAL INFECTED CASES



## TOTAL DEATHS



## DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

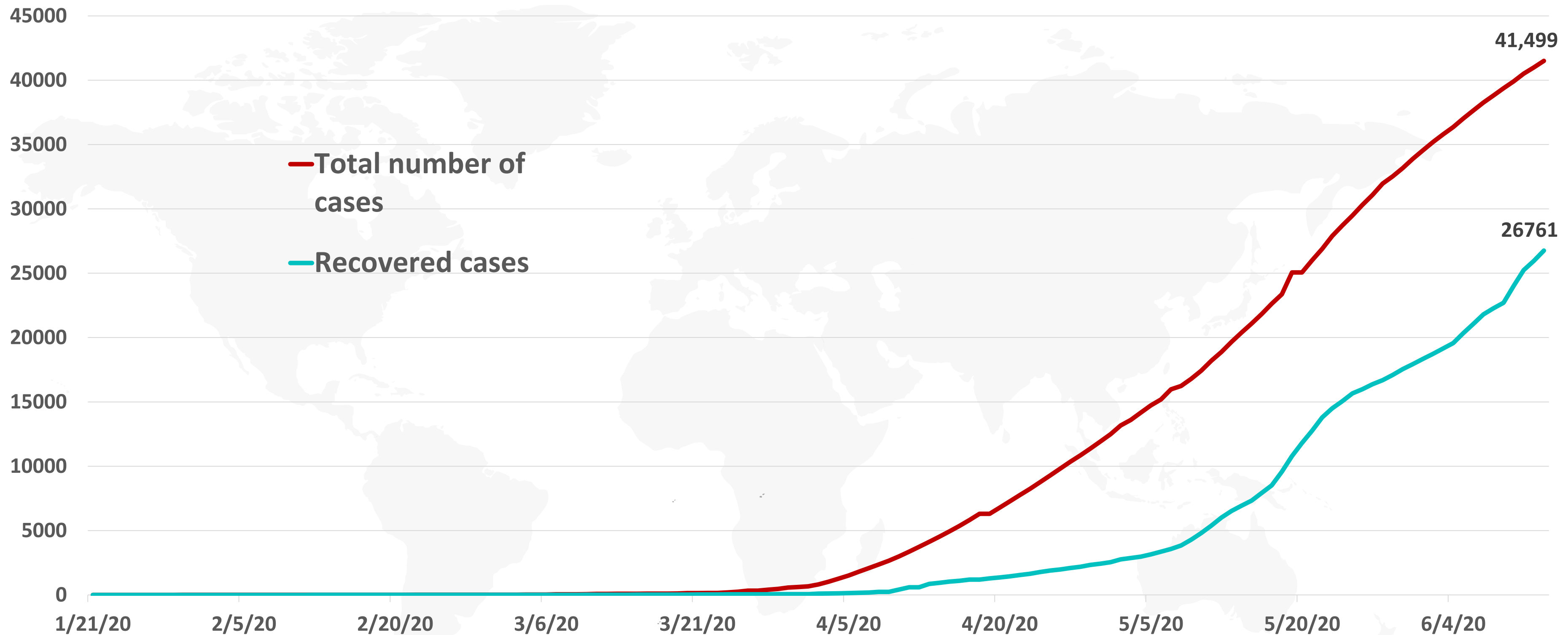
Data resources: [WHO](https://www.who.int)



# Epidemiology



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



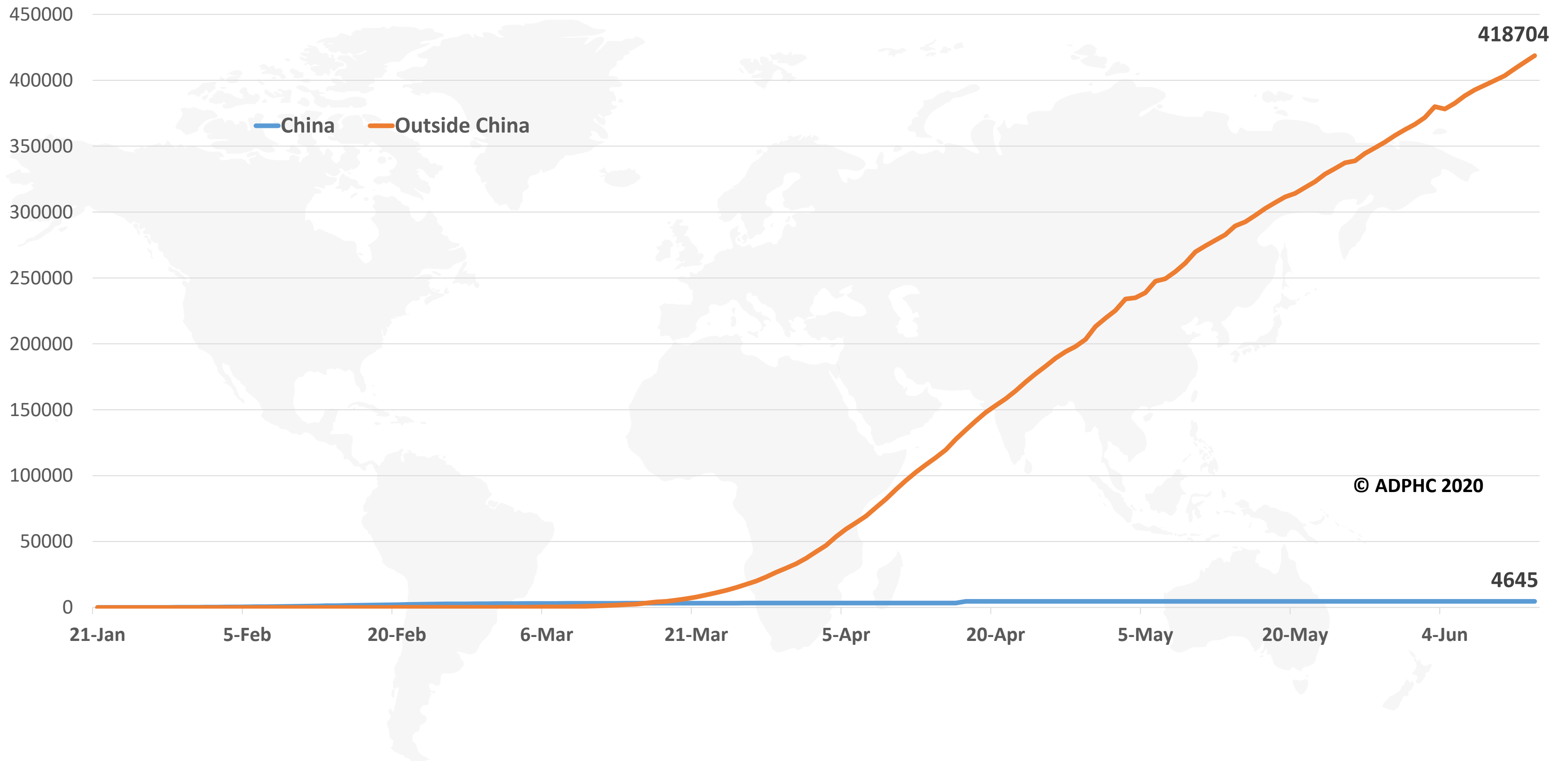
Line graph published by Abu Dhabi Public Health Center 2020.

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 13, 2020).**

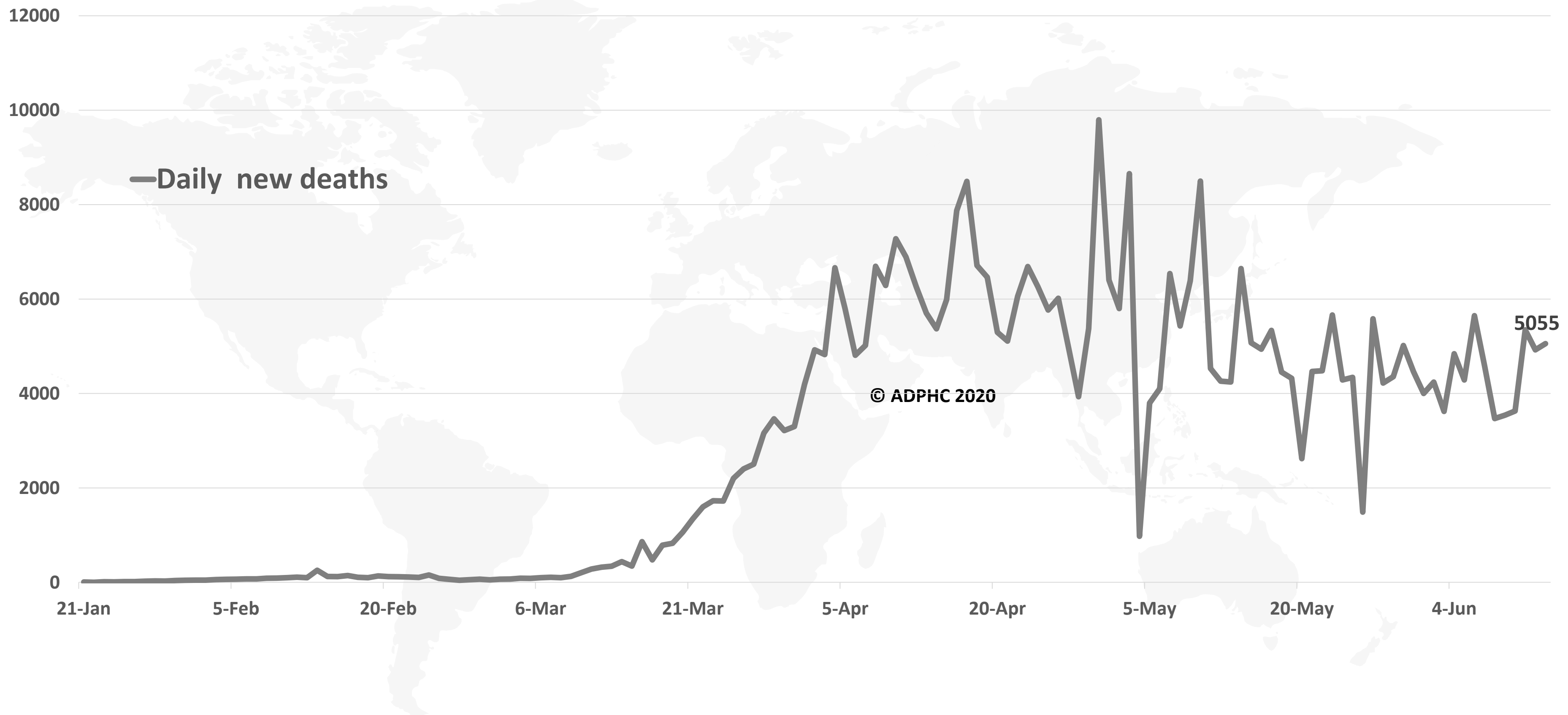


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 13, 2020).



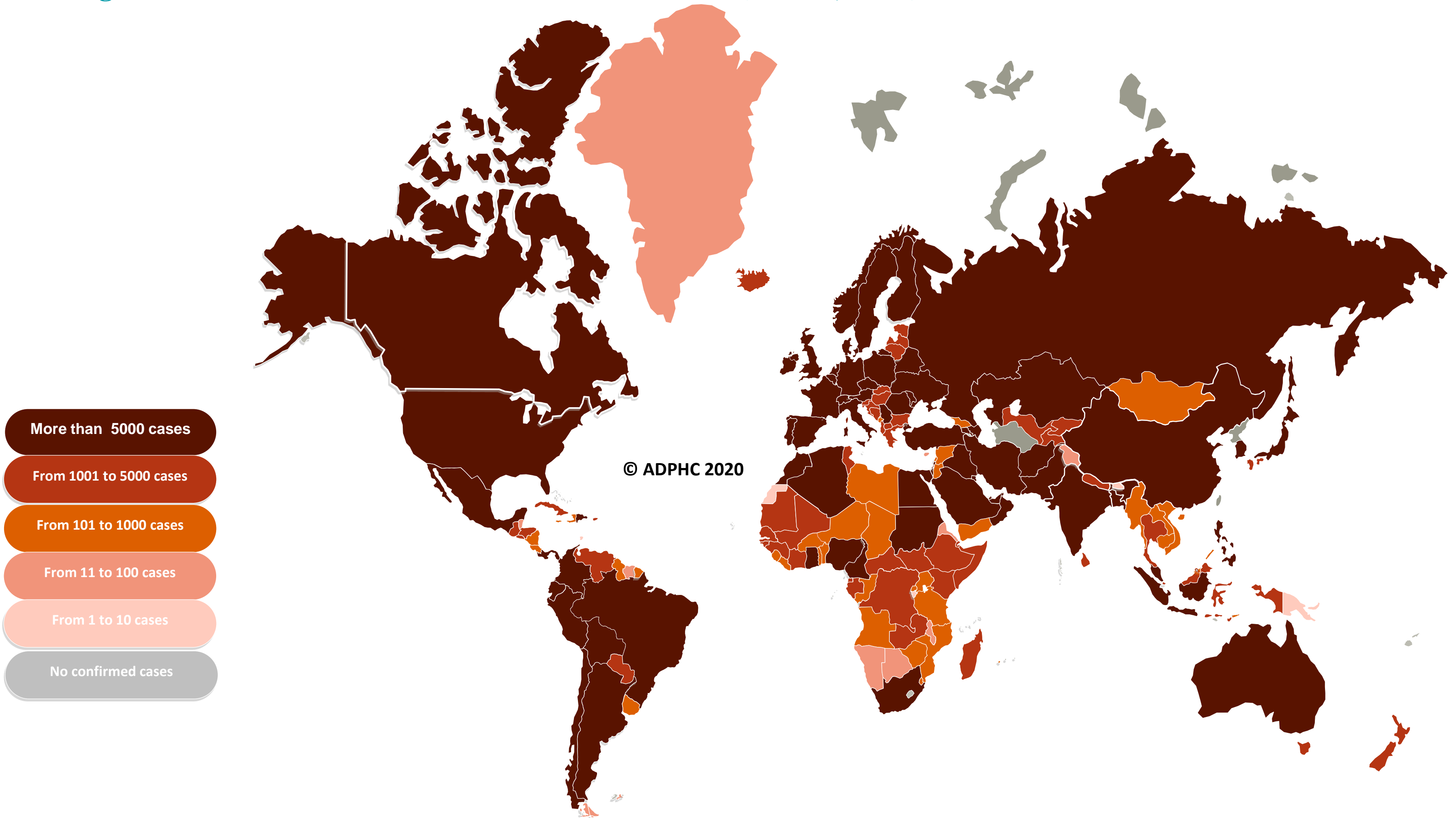
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



Figure 7a : Global distribution of COVID-19 cases (Jun 13, 2020).



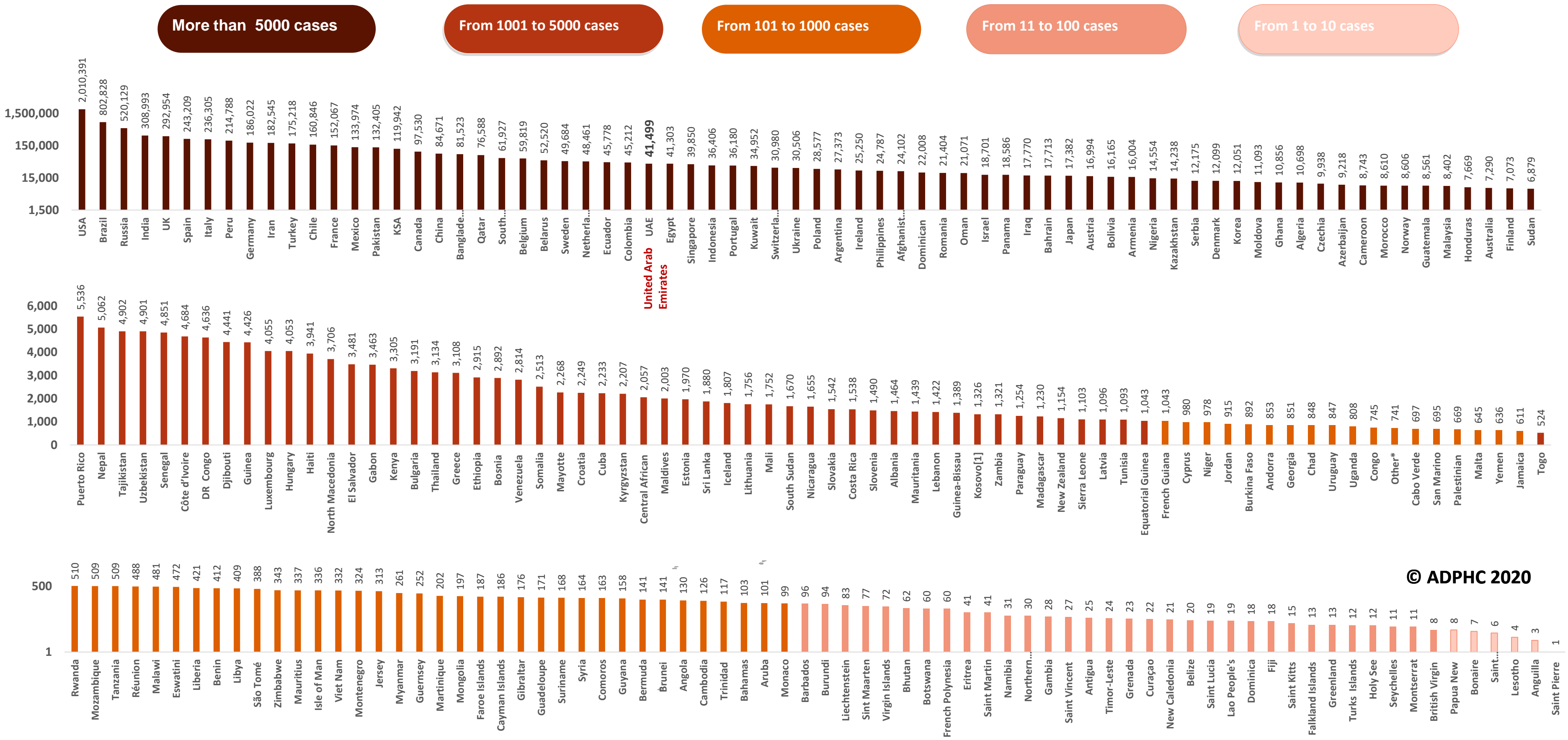
Map chart published by Abu Dhabi Public Health Center 2020.



# Epidemiology



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 13, 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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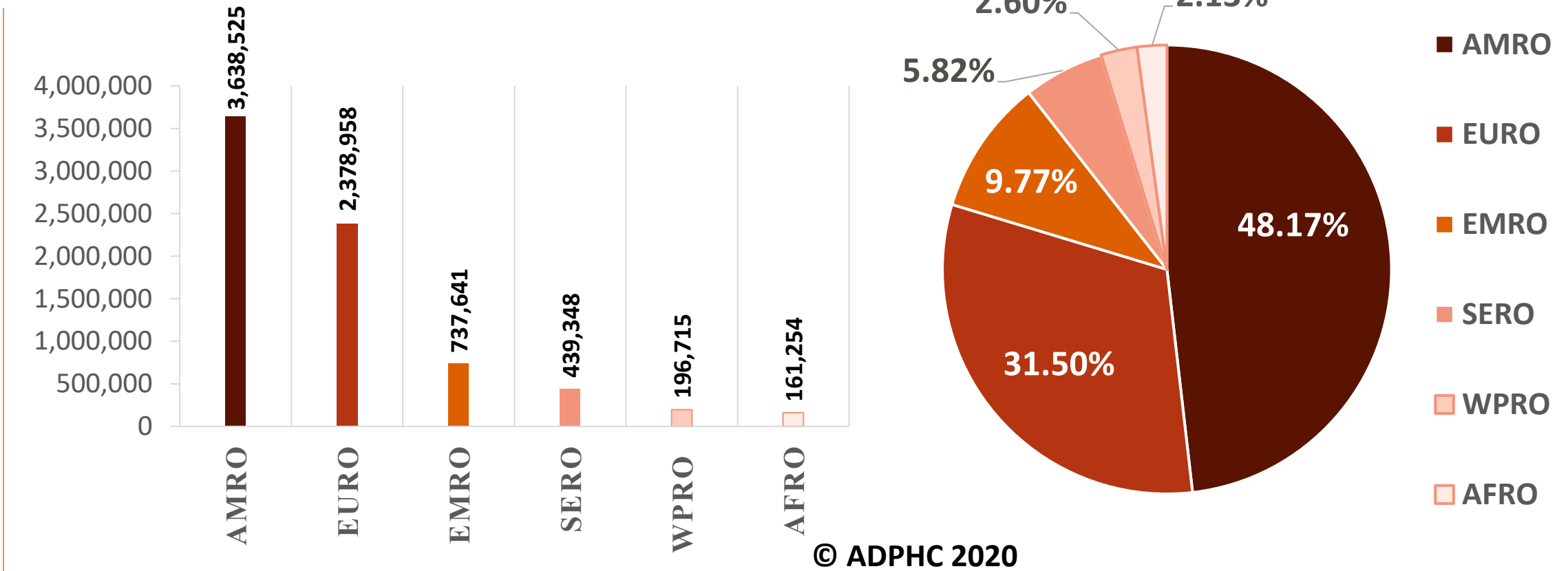
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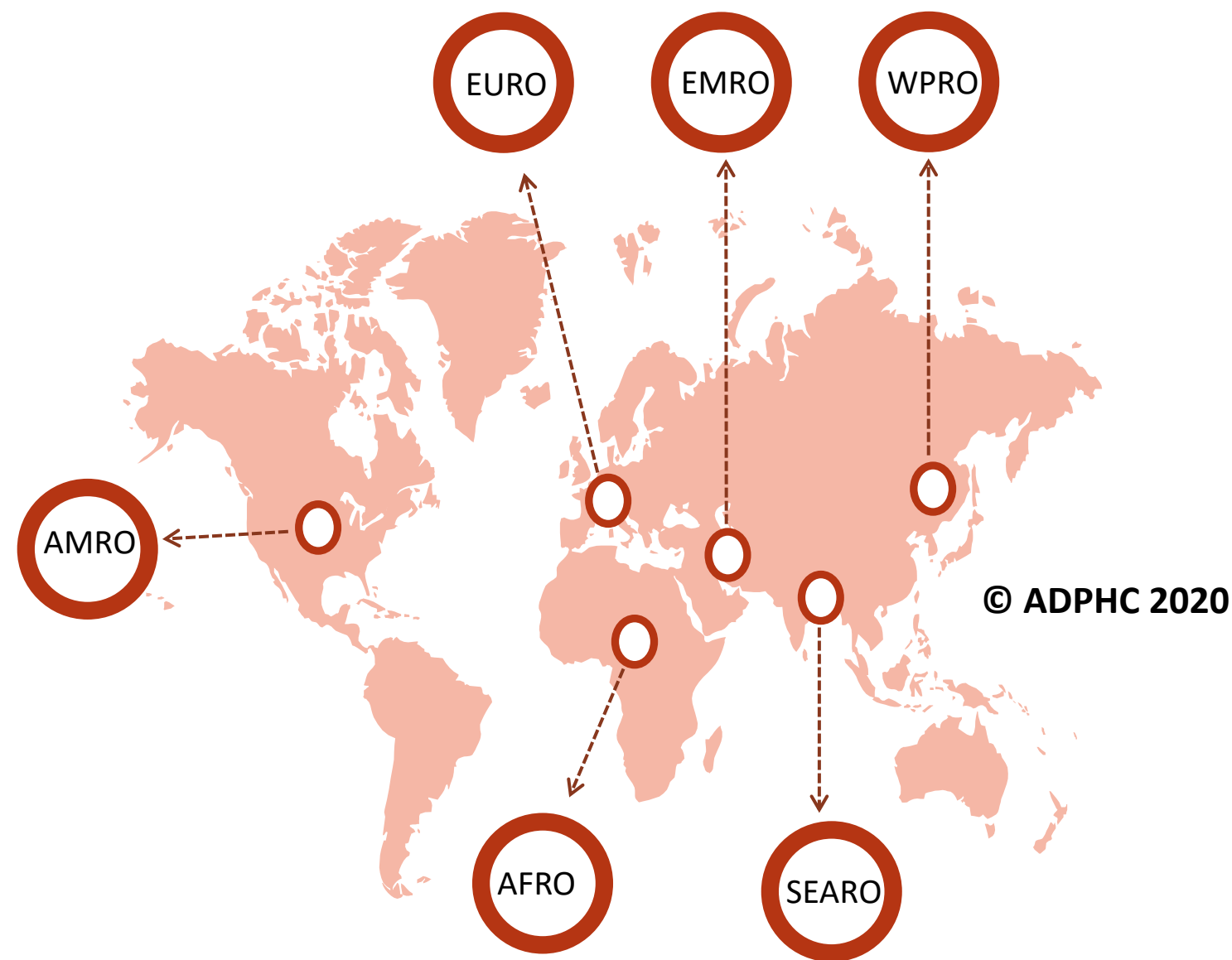
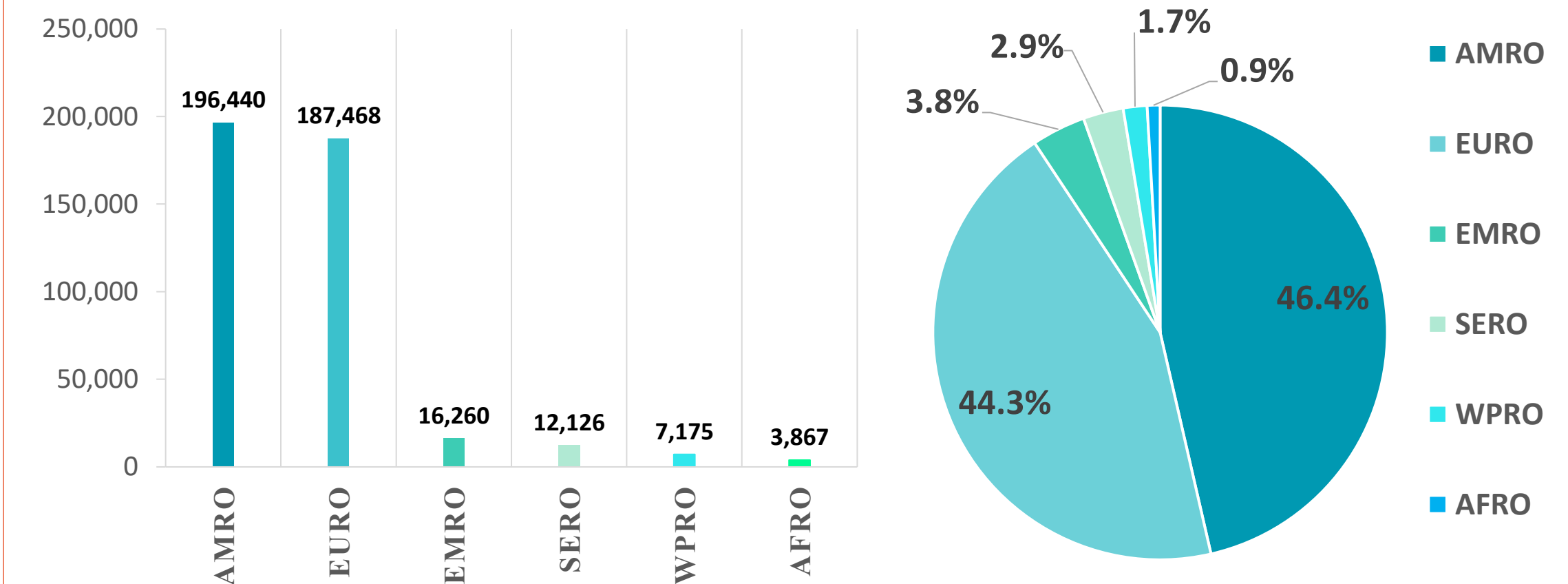


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 13, 2020)

## INFECTED



## DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

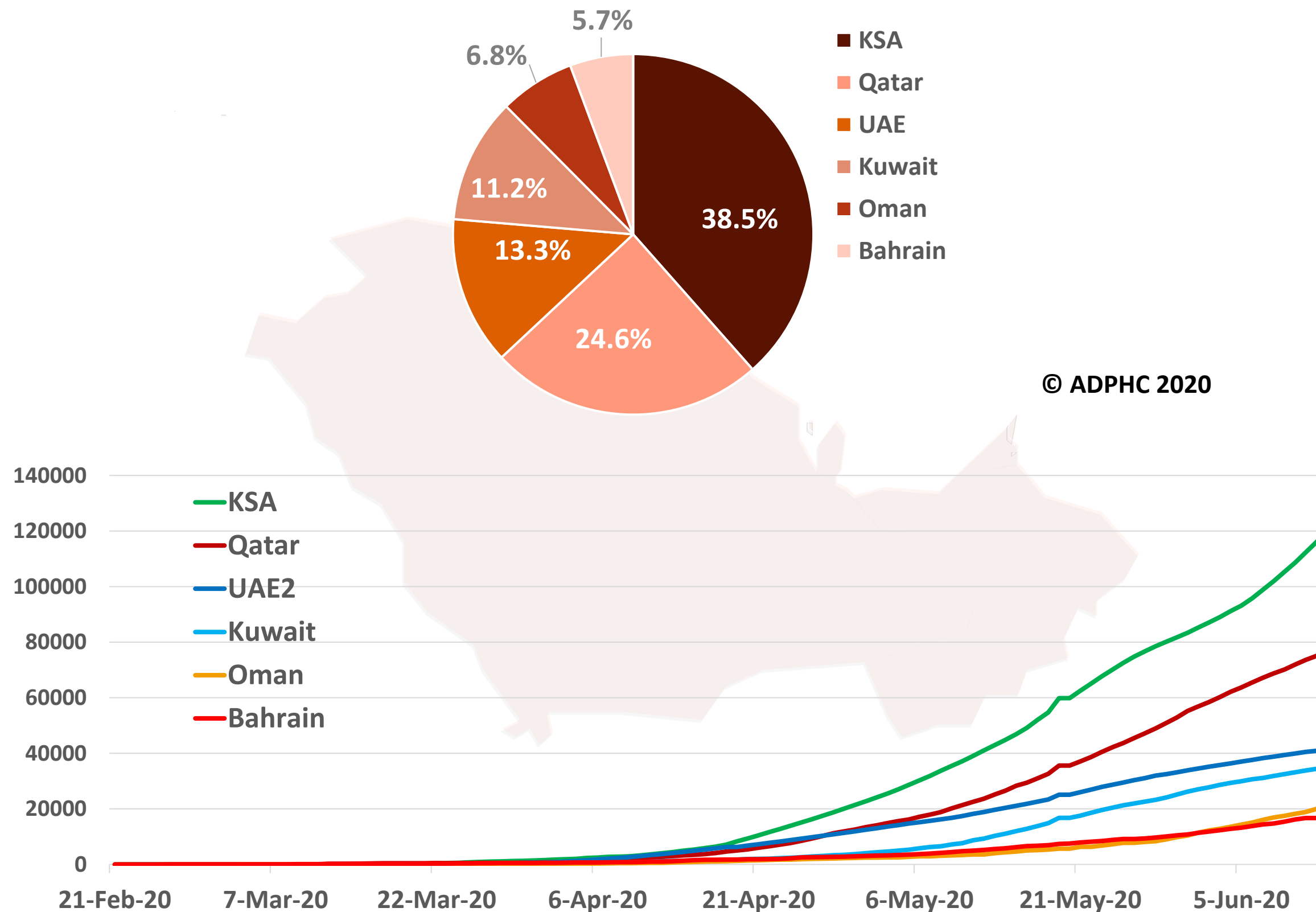
Data resources: [WHO](https://www.who.int/)

# Epidemiology

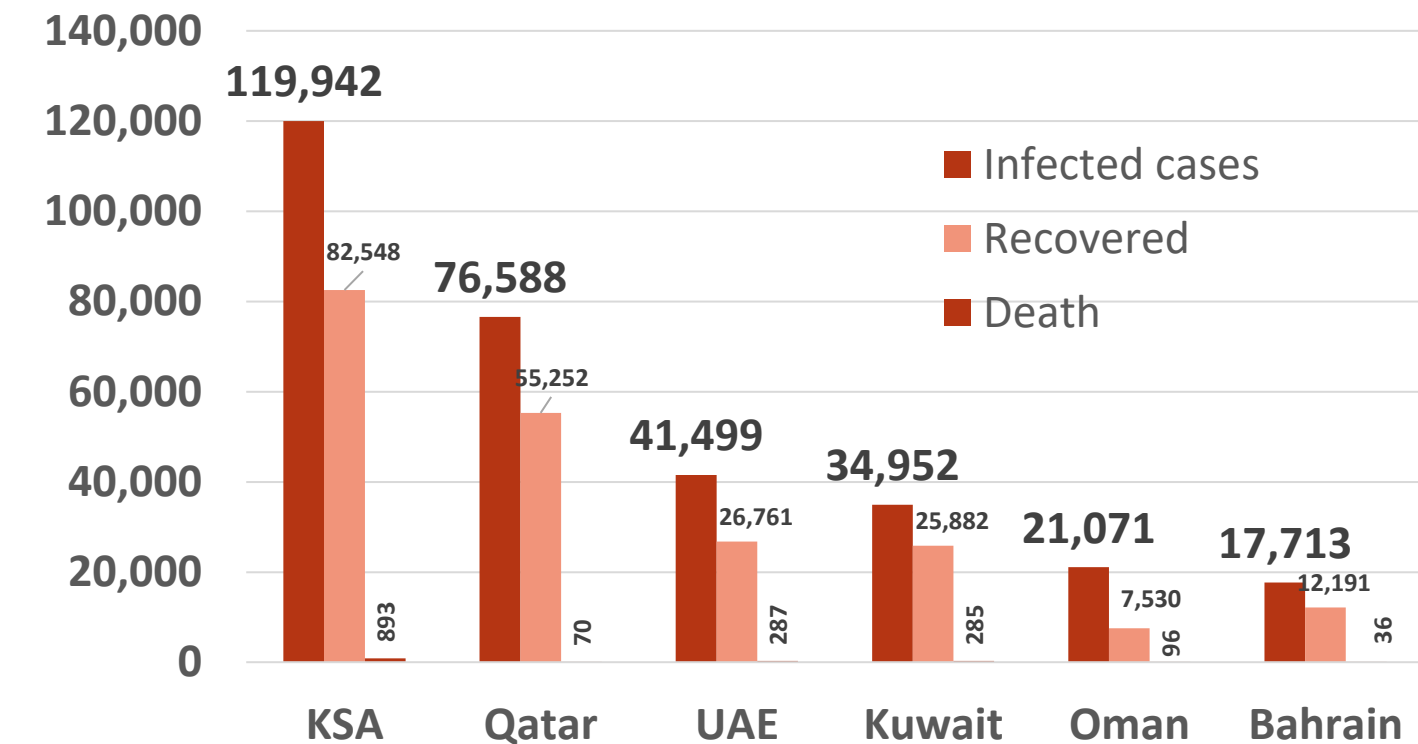


**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 13, 2020)**

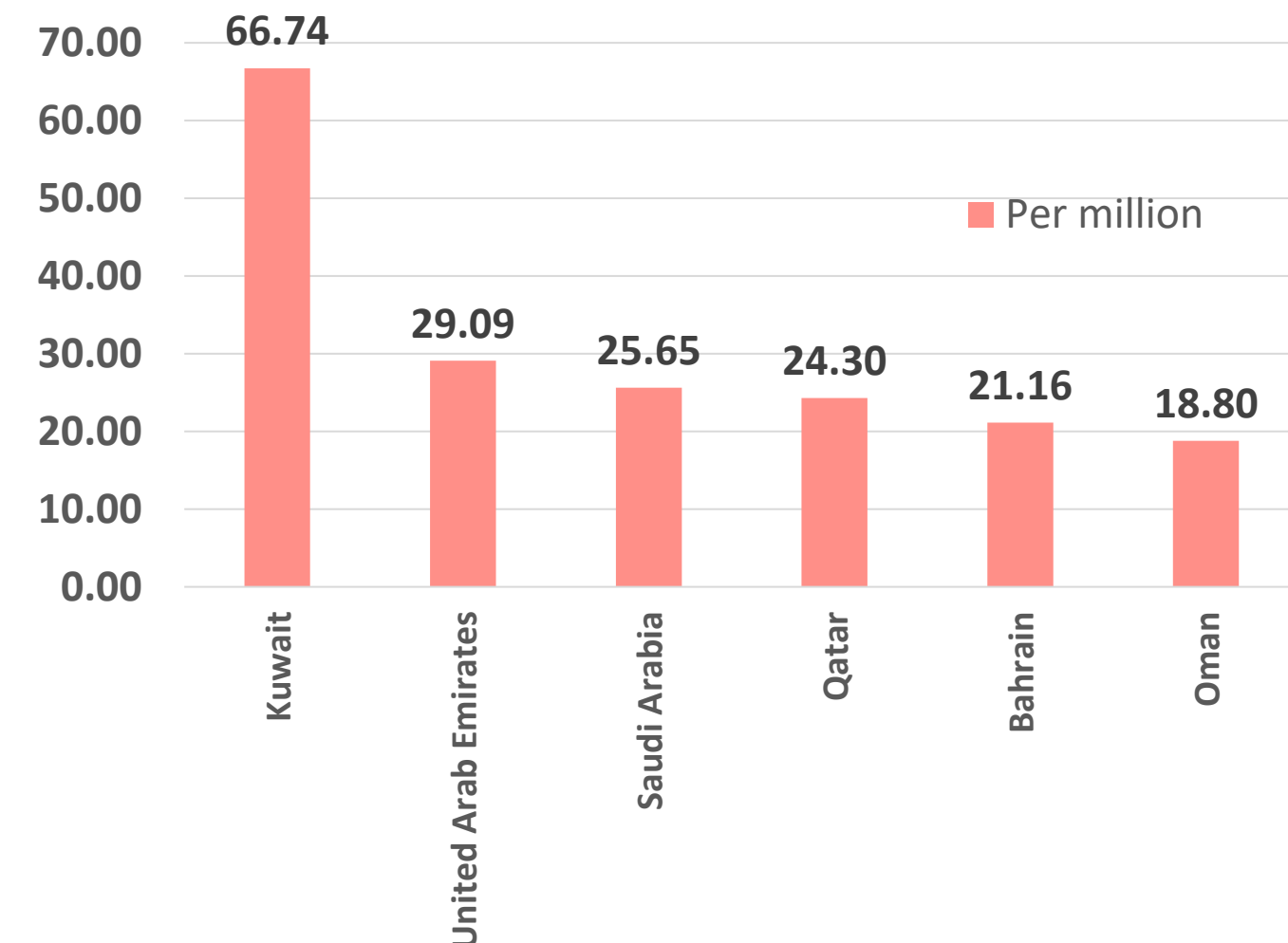
## TOTAL NUMBER OF INFECTED CASES



## 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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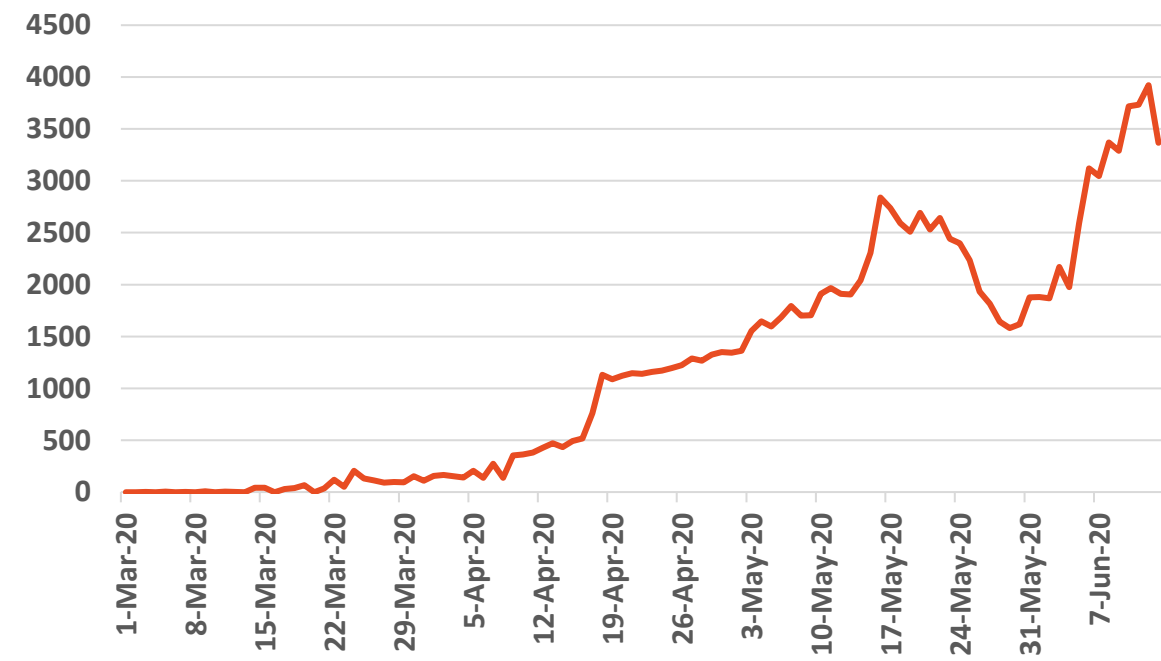
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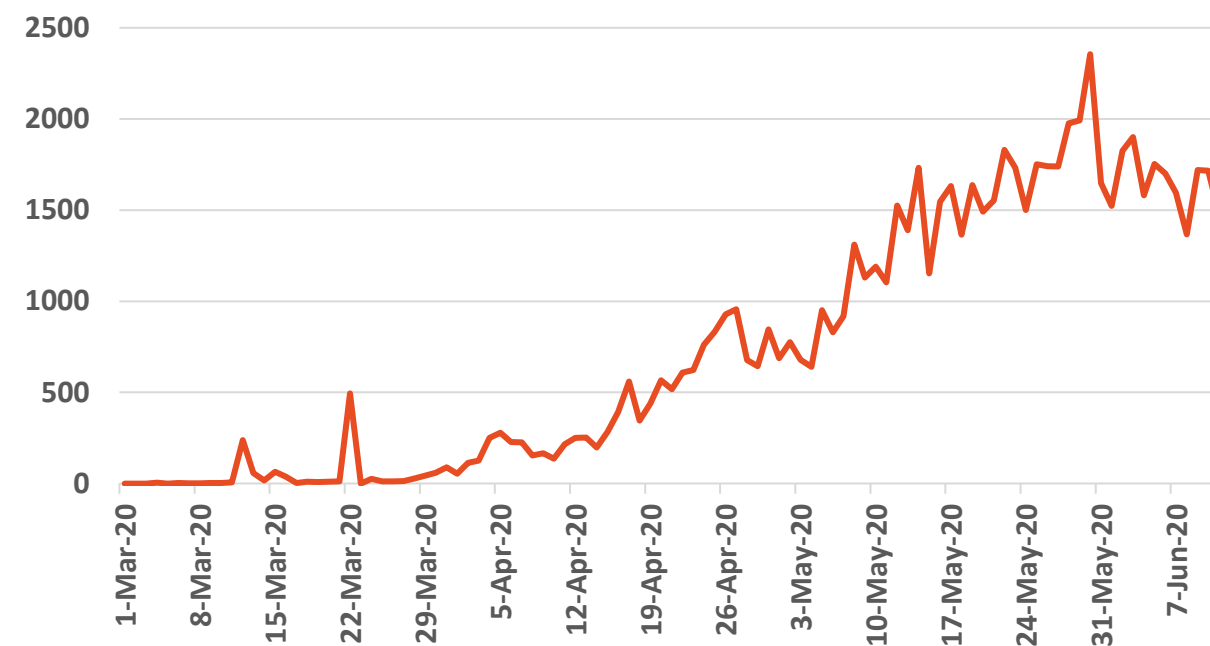
**Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 13, 2020)**

## KSA



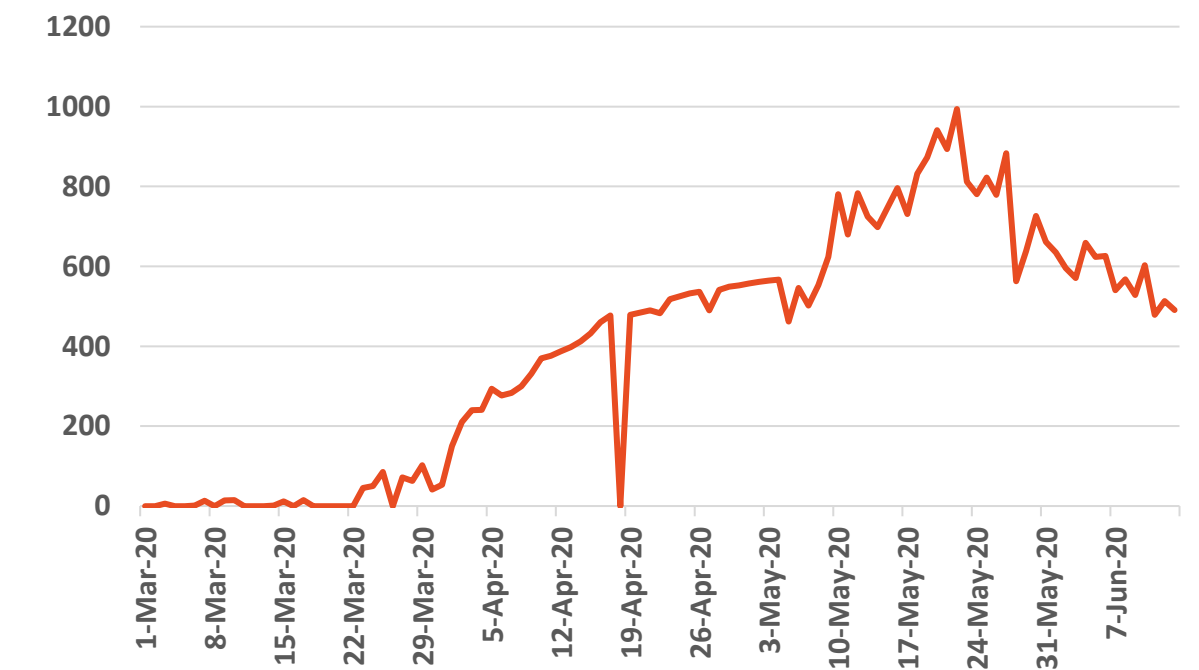
Source : KSA ministry of health

## Qatar



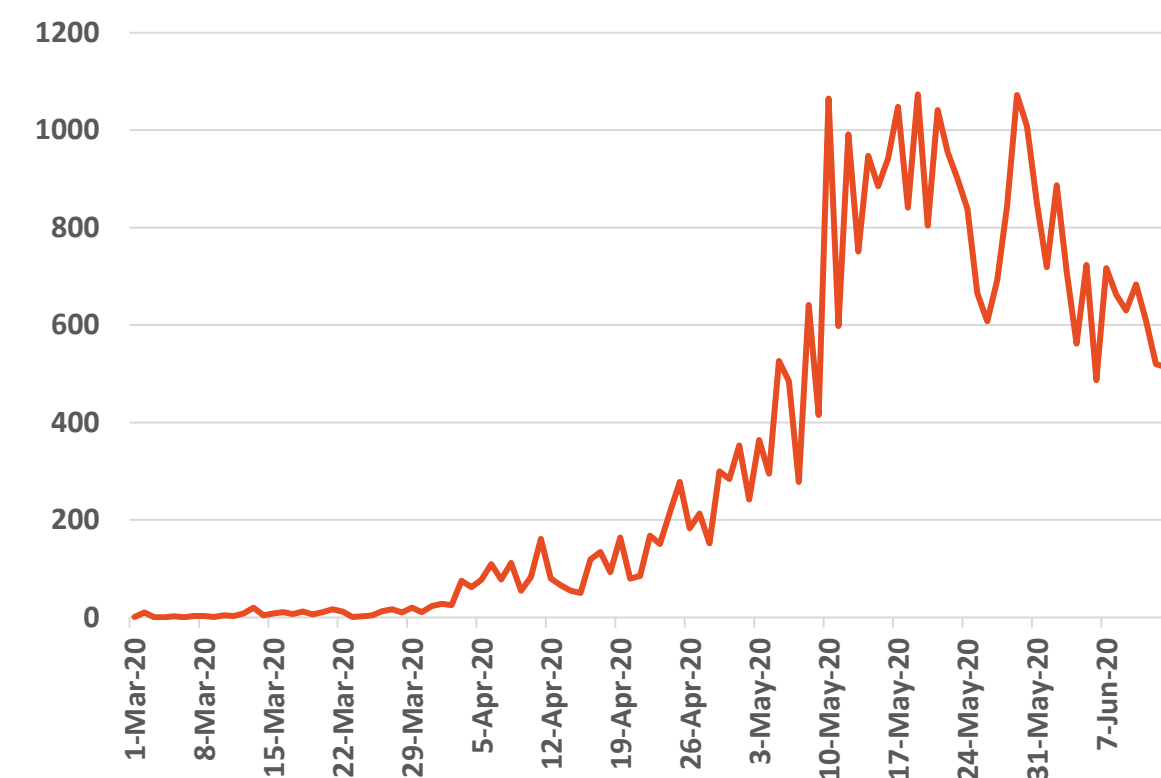
Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

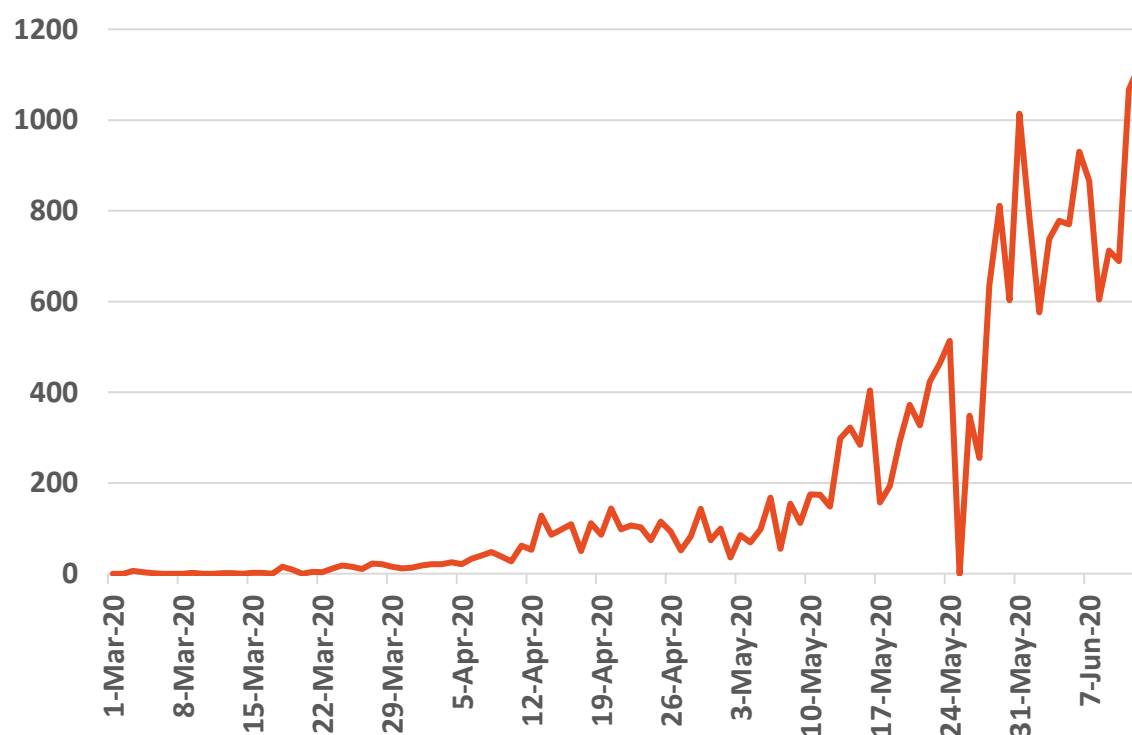
## Kuwait



Source : Kuwait ministry of health

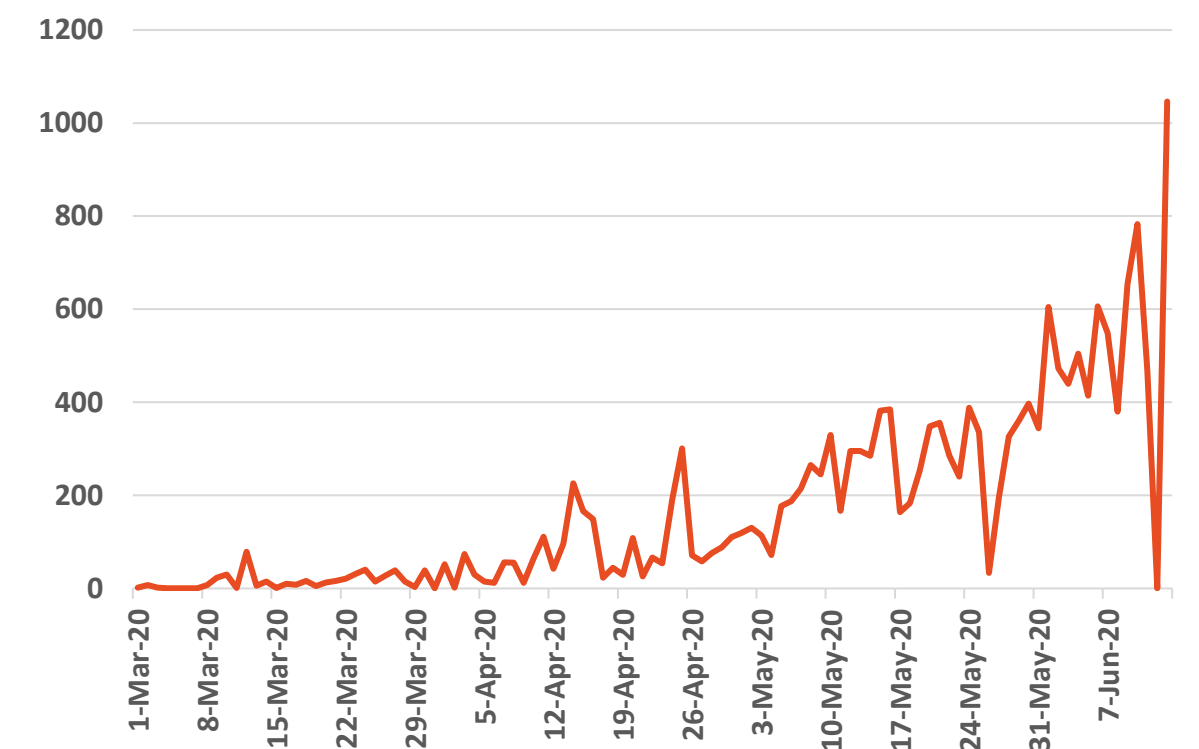
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## Oman



Source : Oman ministry of health

## Bahrain



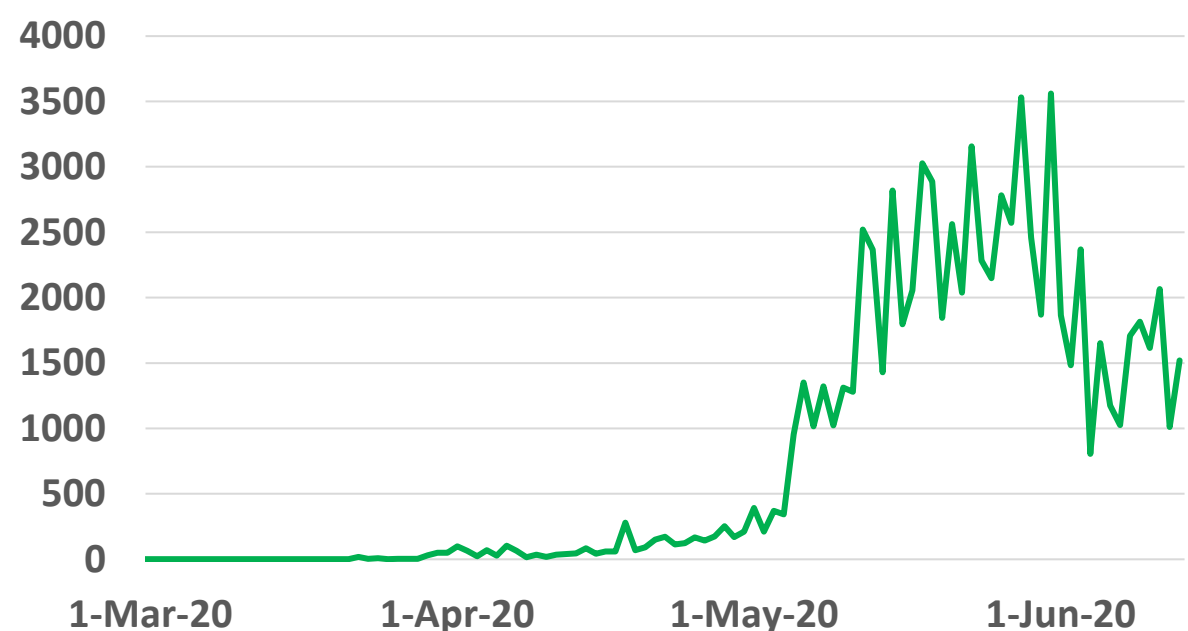
Source : WHO

# Epidemiology



**Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 13, 2020)**

## KSA



Source : KSA ministry of health

## Qatar



Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

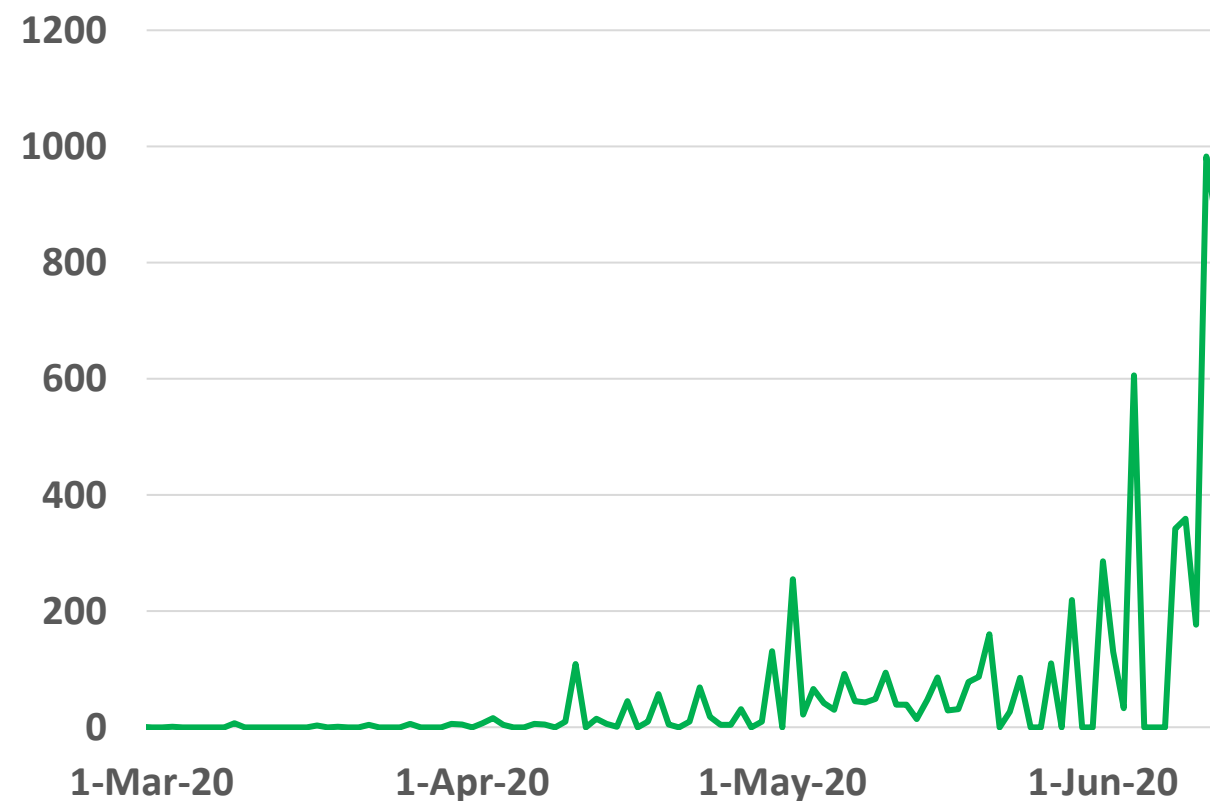
## Kuwait



Source : Kuwait ministry of health

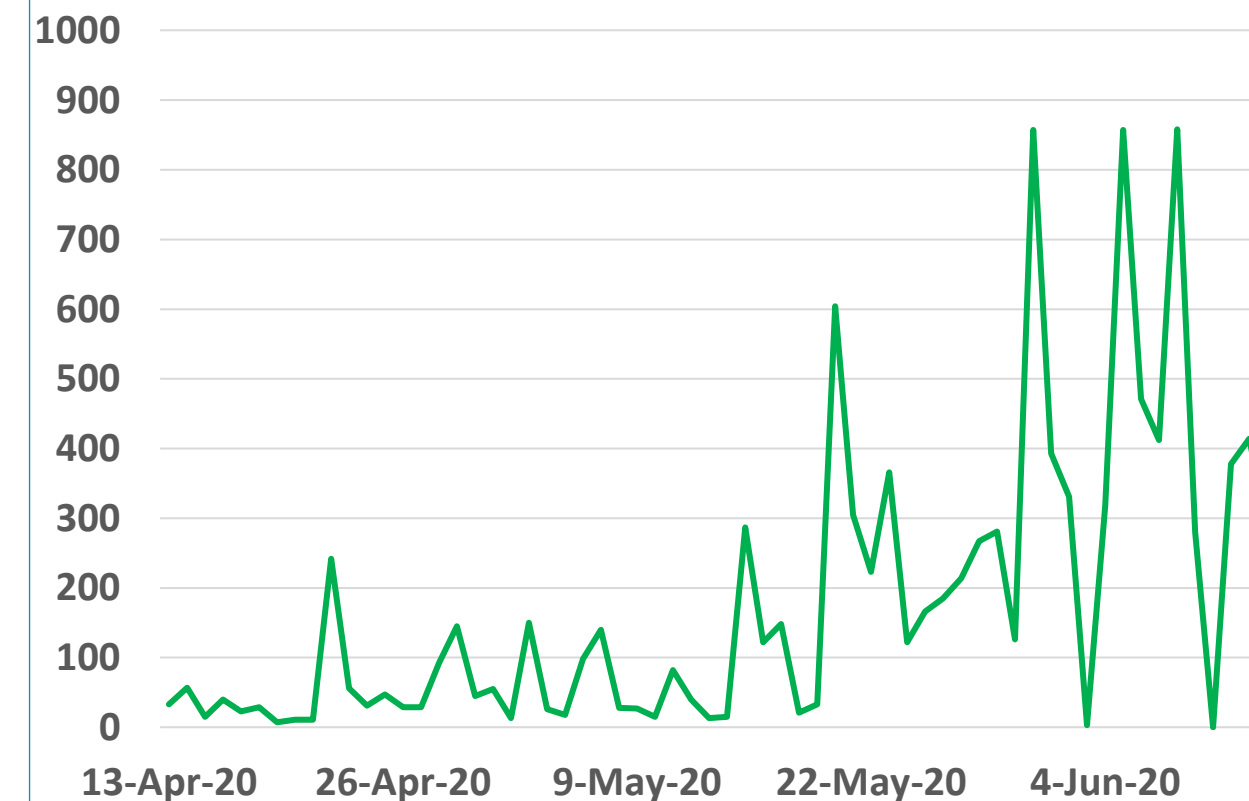
## Oman

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Source : Oman ministry of health

## Bahrain



Source : GCCStat



# Epidemiology



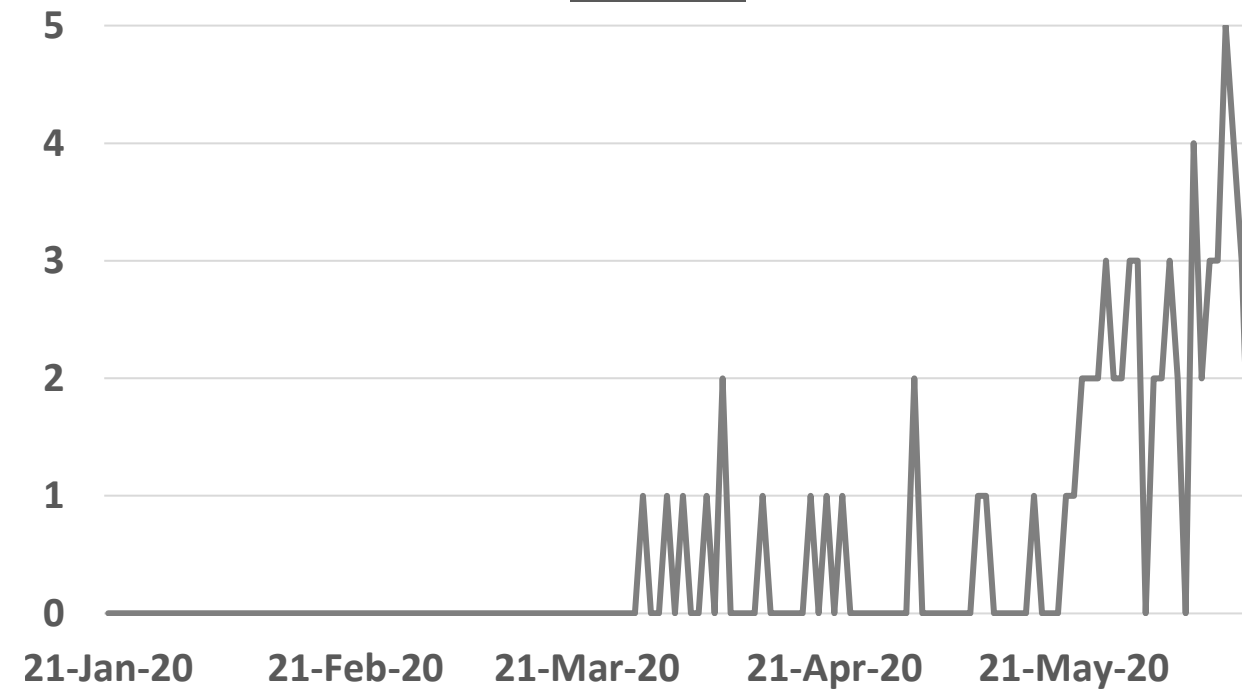
**Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 13, 2020)**

## KSA



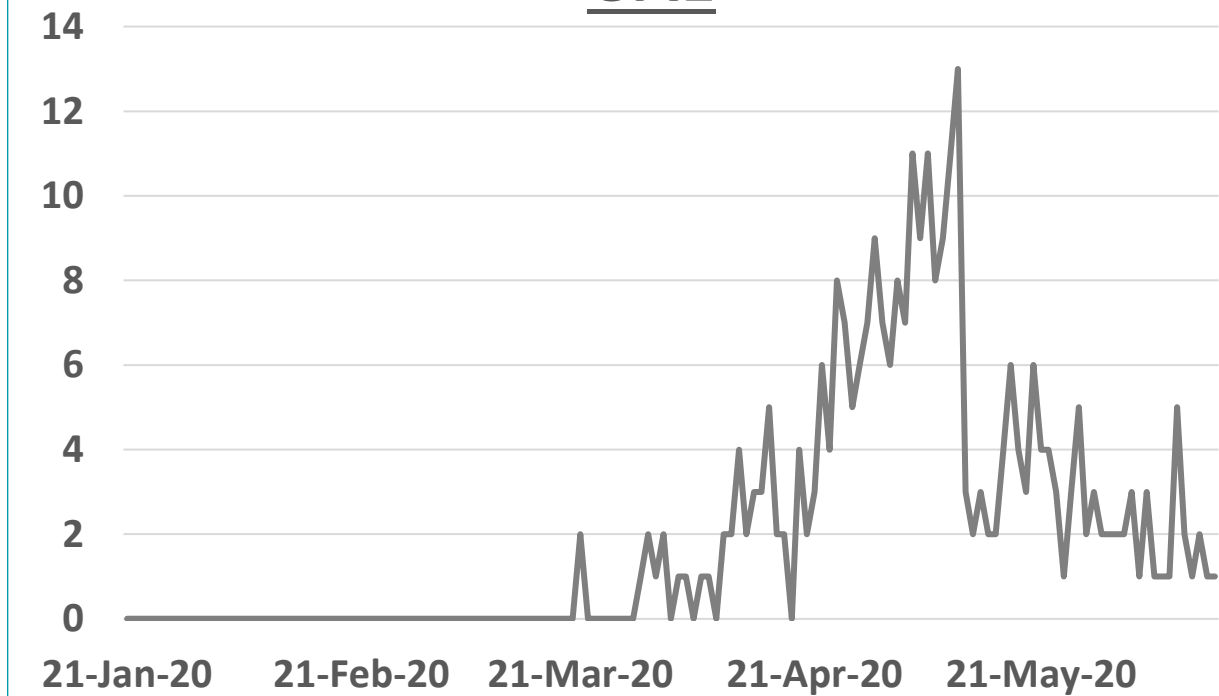
Source : KSA ministry of health

## Qatar



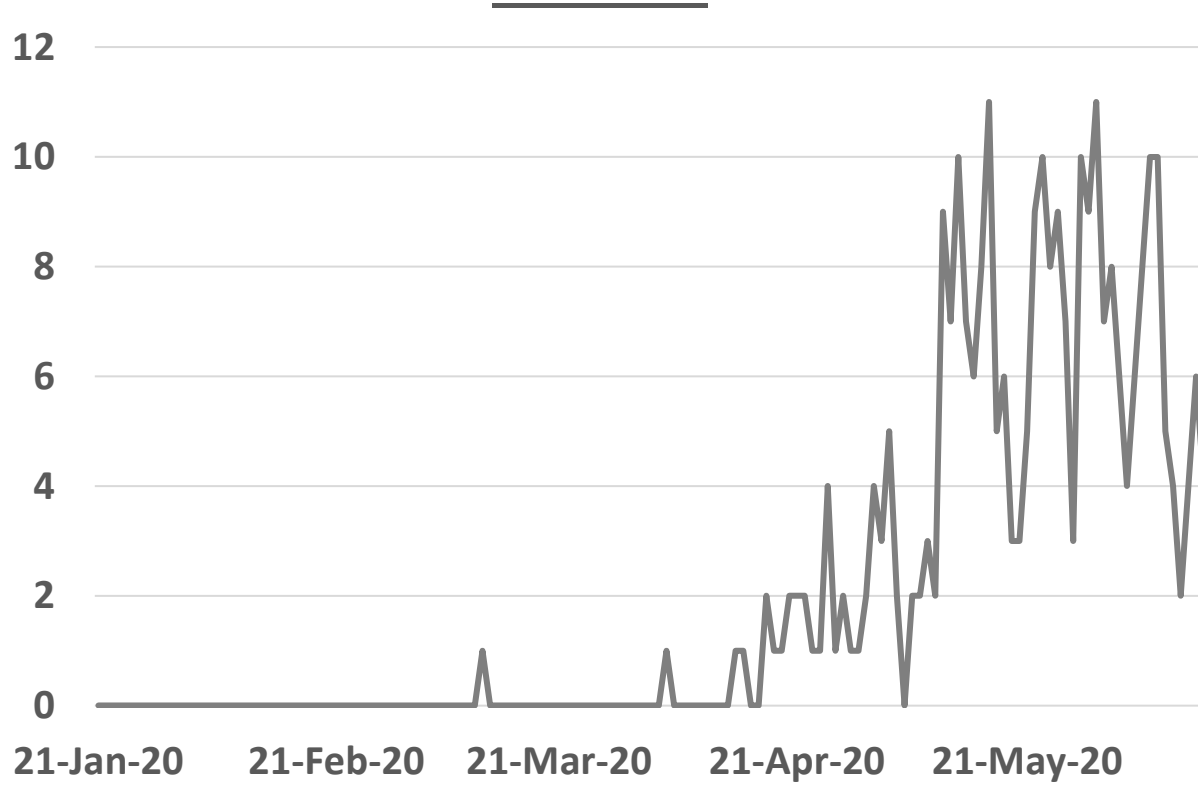
Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

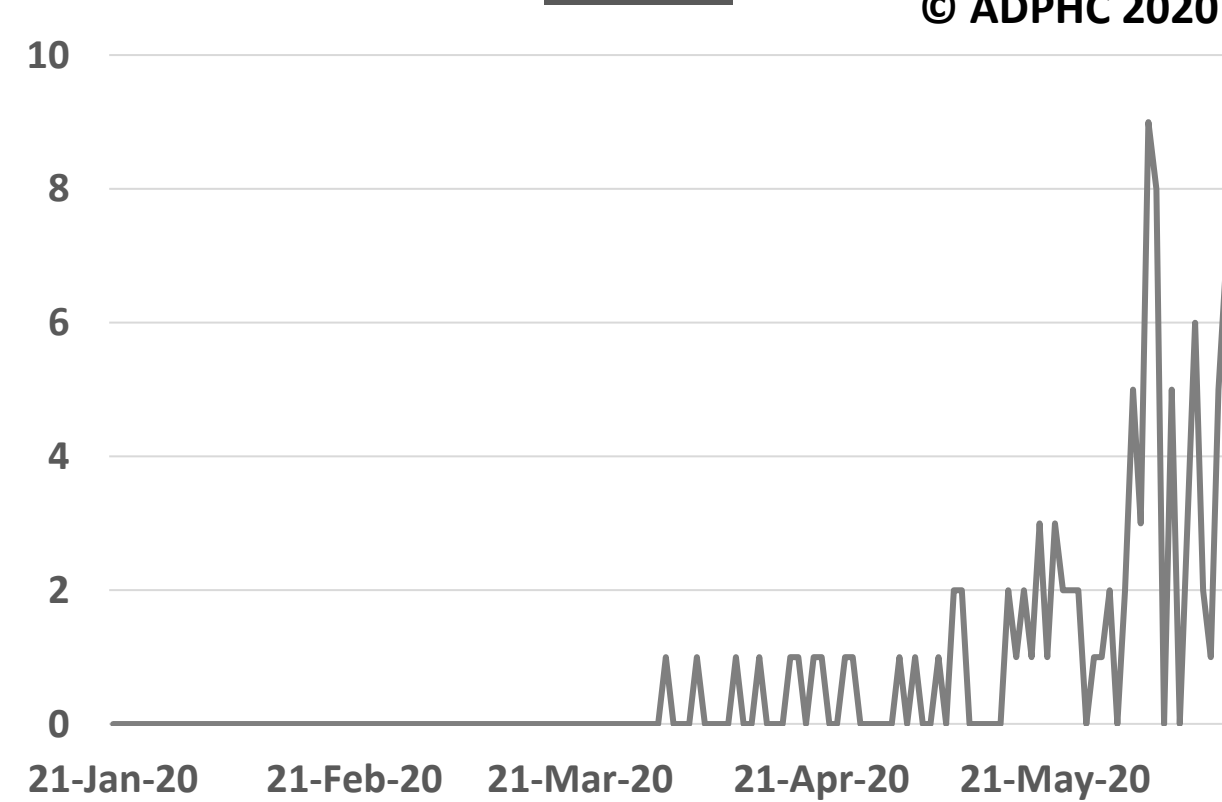
## Kuwait



Source : Kuwait ministry of health

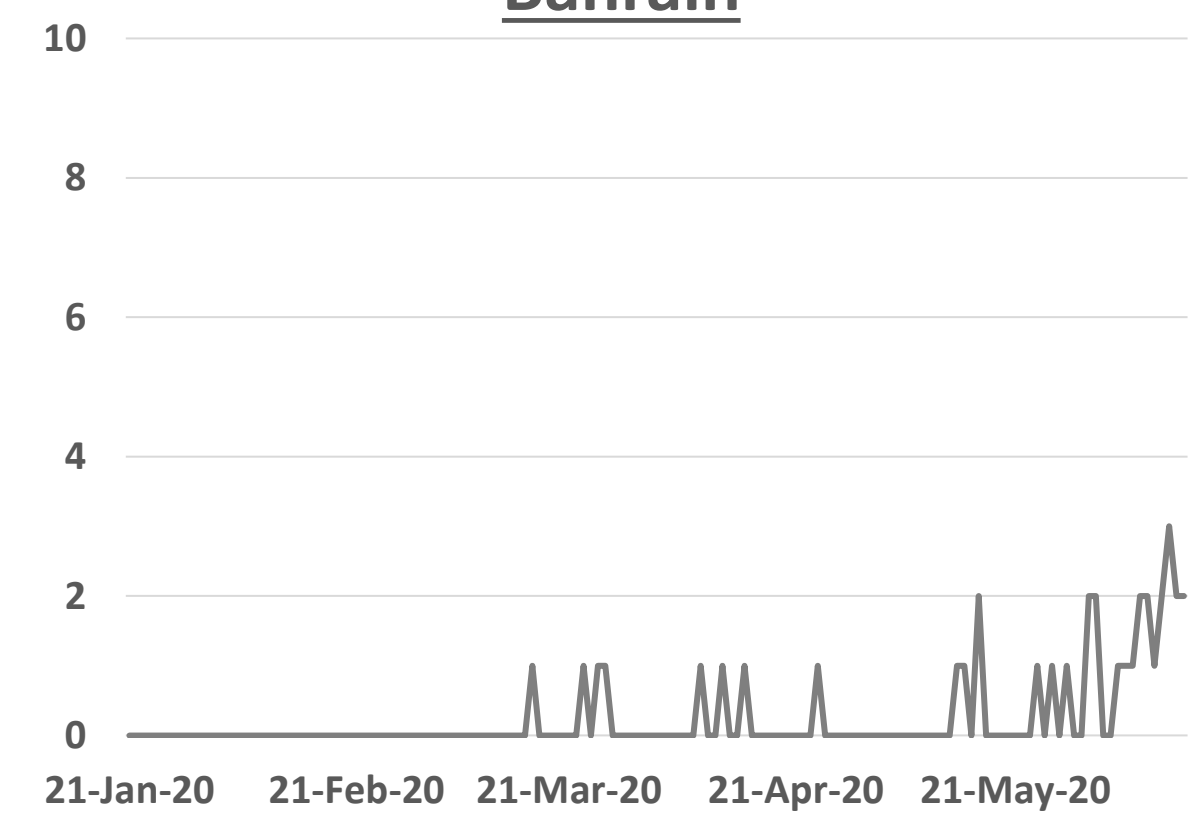
## Oman

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Source :Oman ministry of health

## Bahrain



Source :WHO





# Public Health response

## Updated on the Global vaccine summit

June 4, 2020 the **GAVI**

### background:

- Vaccine global summit have been lunched on 4th of June 2020.
- This summit have more than 50 countries and leader from around the world ( discussing all type of vaccines including measles , COVID19..etc)
- The summit was hosted by UK prime minister.
- The Global Vaccine Summit saw the launch of the Advance Market Commitment for COVID-19 Vaccines (Covax AMC), a new innovative financing instrument to provide access to COVID-19 vaccines for low- and middle-income countries. This is the first building block towards a global mechanism to ensure equitable access to future COVID-19 vaccines. US\$ 567 million was raised today in initial seed money for the AMC from 12 donors.

### The Main Outcomes of the Global Vaccine Summit:

#### Boosting vaccine supply for the world's poorest countries:

- AstraZeneca today became the first vaccine manufacturer to sign up to the Gavi Covax AMC. Under the terms of a Memorandum of Understanding signed today, AstraZeneca will guarantee 300 million doses of the COVID-19 vaccine it is developing in collaboration with the University of Oxford. These doses will be supplied upon licensure or WHO prequalification.

#### Support for Frontline Health Workers

- The Rockefeller Foundation will invest & Laerdal Global Health, and the Laerdal Million Lives Fund to scale up of **innovative approaches and digital technologies** that empower frontline health workers responding to the COVID-19 & **building resilient health and education systems**

#### Digitizing Immunization Data

- Mastercard will adapt its **Wellness Pass solution for the COVID-19** response and is connecting with customers and cardholders through its donation platform, in an effort to mobilize millions of pounds of resources for Gavi.

#### Generating Demand for Vaccines

- TikTok have committed US\$ 10 million to its strengthening of routine immunization program.
- **Unilever**, through its **Lifebuoy brand**, expand its integrated handwashing with soap and immunization demand generation program – which is currently being implemented **in India**. This is in addition to a donation of **almost 2.9 million bars of Lux soap to the Pakistan immunization** program to protect to parents seeking immunization services and healthcare workers on the frontline
- **Gamers Without Borders (GWB)**, an initiative of **Saudi Arabian Federation**, has **raised to date more than US\$1.3 million for Gavi** through an online gaming competition. The competition concluded on 7 June 2020, with a total US\$ 10 million prize fund being donated to charities leading the fight against the spread of coronavirus.
- co-founder and CEO of Netflix, and Patty Quillin have committed US\$ 30 million to support the Alliance's response to COVID-19.

# Public Health Response:



## Article 2: The effect of large-scale anti-contagion policies on the COVID-19 pandemic

Published: 08 June 2020 in [the nature](#)

### Summary:

Summarized by subject matter expert

**This article estimated the impact of different control measures policies on the growth rate of Covid-19 infections across six countries.**

#### How the study was done?

- Data from six countries – China, South Korea, Italy, Iran, France and the United States
- “Reduced-form econometric techniques” were applied to analyze the data
- Infection growth rate was estimated when control measures policies were applied and in a “no-policy measure” scenario
- Results were reported as the difference between these two predictions

#### What the study found?

- **In the absence of any policy measures, Covid-19 infection rate grow on average 43% per day, meaning that infection numbers will be double in two days.**
- The ongoing control measure policies have already substantially reduced the number of Covid-19 infections observed in the world today.

- Small delays in the control measures likely produce different health outcomes.
- Results show that interventions may have prevented or delayed a total of 55–66 million confirmed cases.

#### Public Health Message

- Different control measures policies help to reduce the total number of infections due to Covid-19.
- The effects of same policy differ between countries, perhaps because policies are not implemented identically or because populations behave differently.
- These findings may help inform whether or when these policies should be deployed, intensified, or lifted, and they can support decision-making across the world.



# Public Health Response:



## Article: Cont., Summary:

Figure1: estimated accumulative covid19 infections

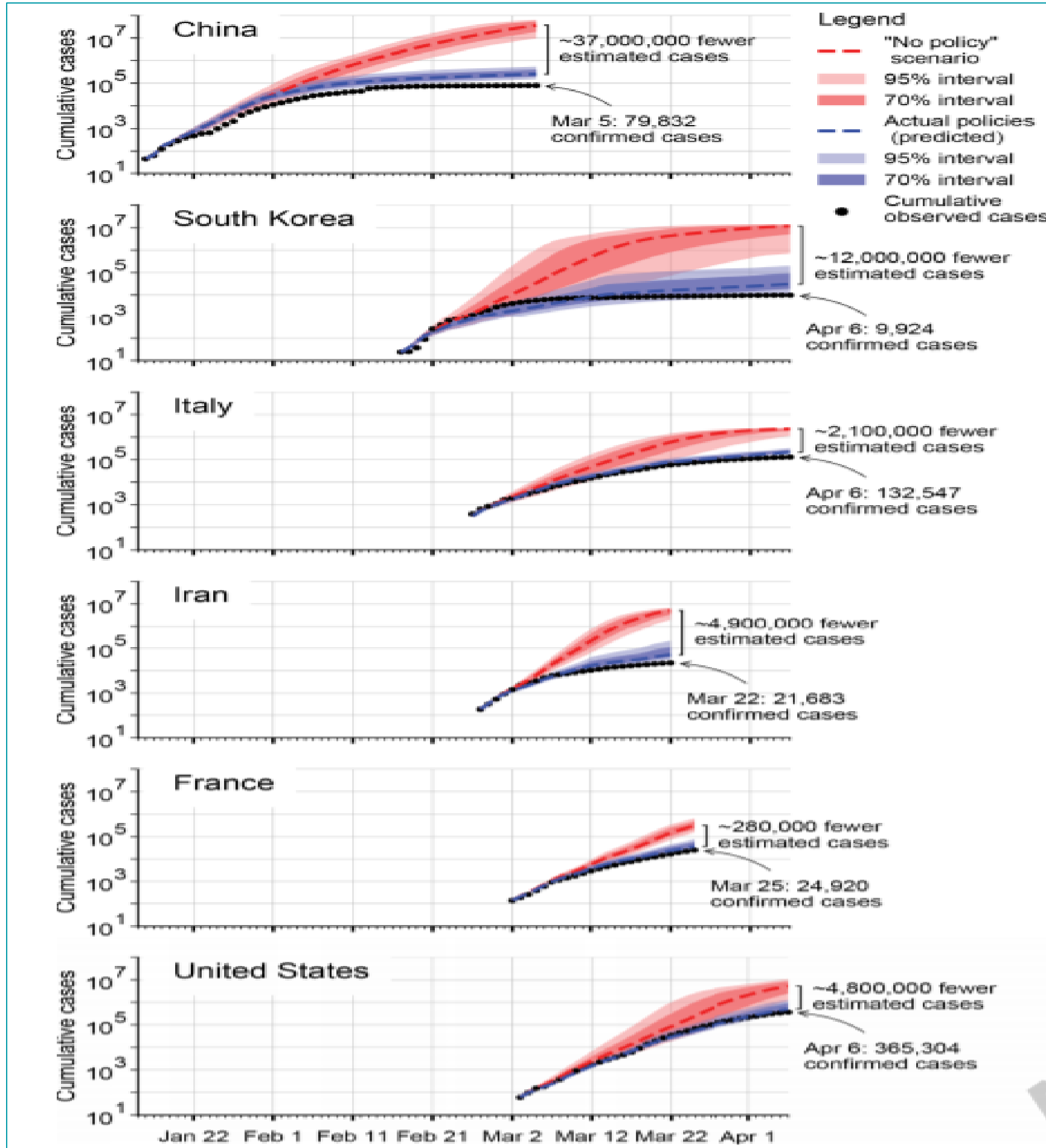
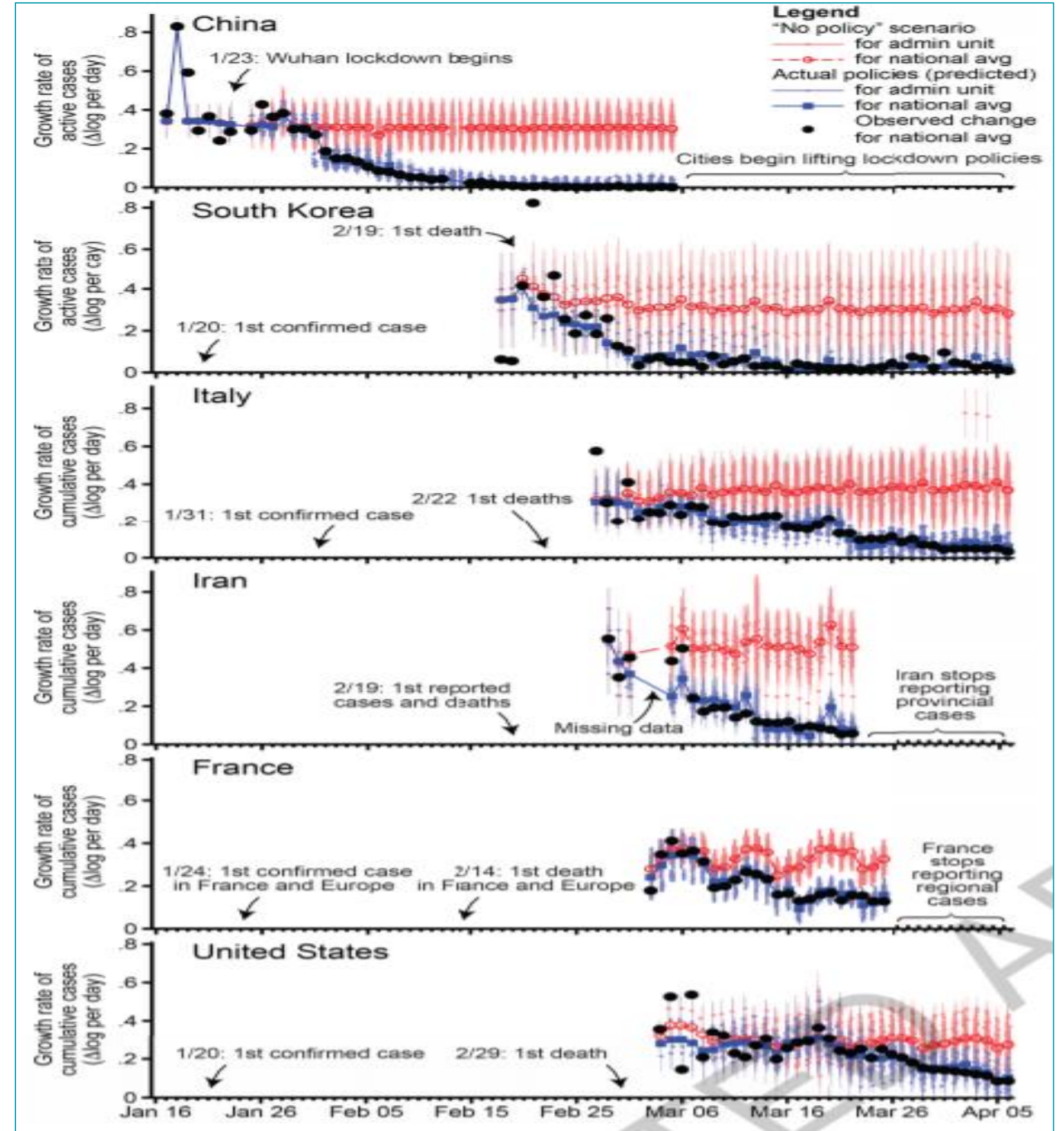


Figure2: estimated growth rate





## Article 3: Variation in False-Negative Rate of Reverse Transcriptase Polymerase Chain Reaction–Based SARS-CoV-2 Tests by Time Since Exposure

Published: 13 May 2020 in the [Annals of Internal Medicine](#)

Summarized by subject matter expert

### Summary

- The study reviewed the literature and **estimated the false-negative rate of the COVID-19 testing using RT-PCR**, through producing pooled estimates
- The study included **seven published studies providing data on RT-PCR performance by time since symptom onset or COVID-19 exposure** using samples from the upper respiratory tract.

### Findings (Figures 1 and 2 in the next page)

- The probability of an **RT-PCR false-negative result in an infected person decreased from 100% .**
- **on day 1 to 67% (CI, 27%-94%) on day 4.**
- On the **day of symptom onset**, the median probability of an RT-PCR false-negative rate **was 38%.**
- **Probability of an RT-PCR false-negative result in an infected person further:**
  - **Decreased** from 38% on the day of symptom onset to 20% on day 8 (3 days after symptom onset)
  - **Increased** from 21% (CI, 13% to 31%) on day 9 to 66% (CI, 54% to 77%) on day 21.

### Conclusion

- Care must be taken in interpreting RT-PCR tests for COVID-19 infection—particularly early in the course of infection—when using these results as a basis for removing precautions intended to prevent onward transmission.
- If **clinical suspicion is high, infection should not be ruled out on the basis of RT-PCR alone**, and the clinical and epidemiologic situation should be carefully considered.

### Limitations

- The study has several methodological limitations. It received, so far, six critical comments from international researchers.
- Although the study recommends not to rely only on the RT-PCR, caution should be exercised when translating findings of this study into policy and practice.



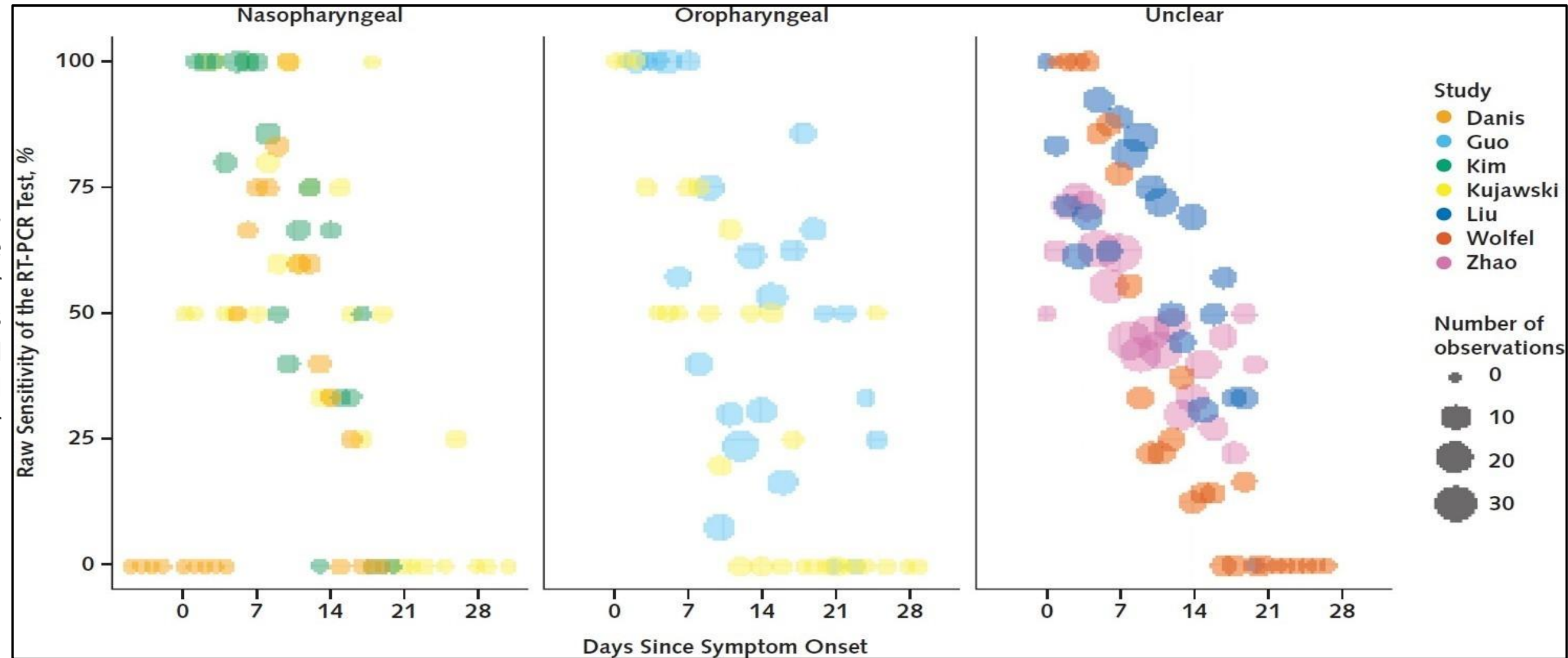


# Diagnosis

## Article 3: Summary

**Figure 1.**

Sensitivity of RT-PCR tests, by study and days since symptom onset, for nasopharyngeal samples (left), oropharyngeal samples (middle), and unspecified upper respiratory tract (right).



**Figure 2.** Probability of having a negative RT-PCR test result given SARS-CoV-2/COVID-19 infection (top) and of being infected with SARS-CoV-2/COVID-19 after a negative RT-PCR test result (bottom), by days since exposure.

