

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



# Scientific Research Monitoring on COVID-19

5 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.)

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



## 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 meta-analysis found the physical distancing reduce the viral transmission including COVID19 by 82%, use of face mask in health care setting by 70% and non-health care setting by 44% and use of eye protection by 78%.
- **Public Health Response:** study on 4 US states found that issuing a stay-at-home orders found to be linked to decrease in hospitalizations for COVID-19.
- **Treatment:** response of the lancet editor on the big concern about HCQ study and its harmful effect.



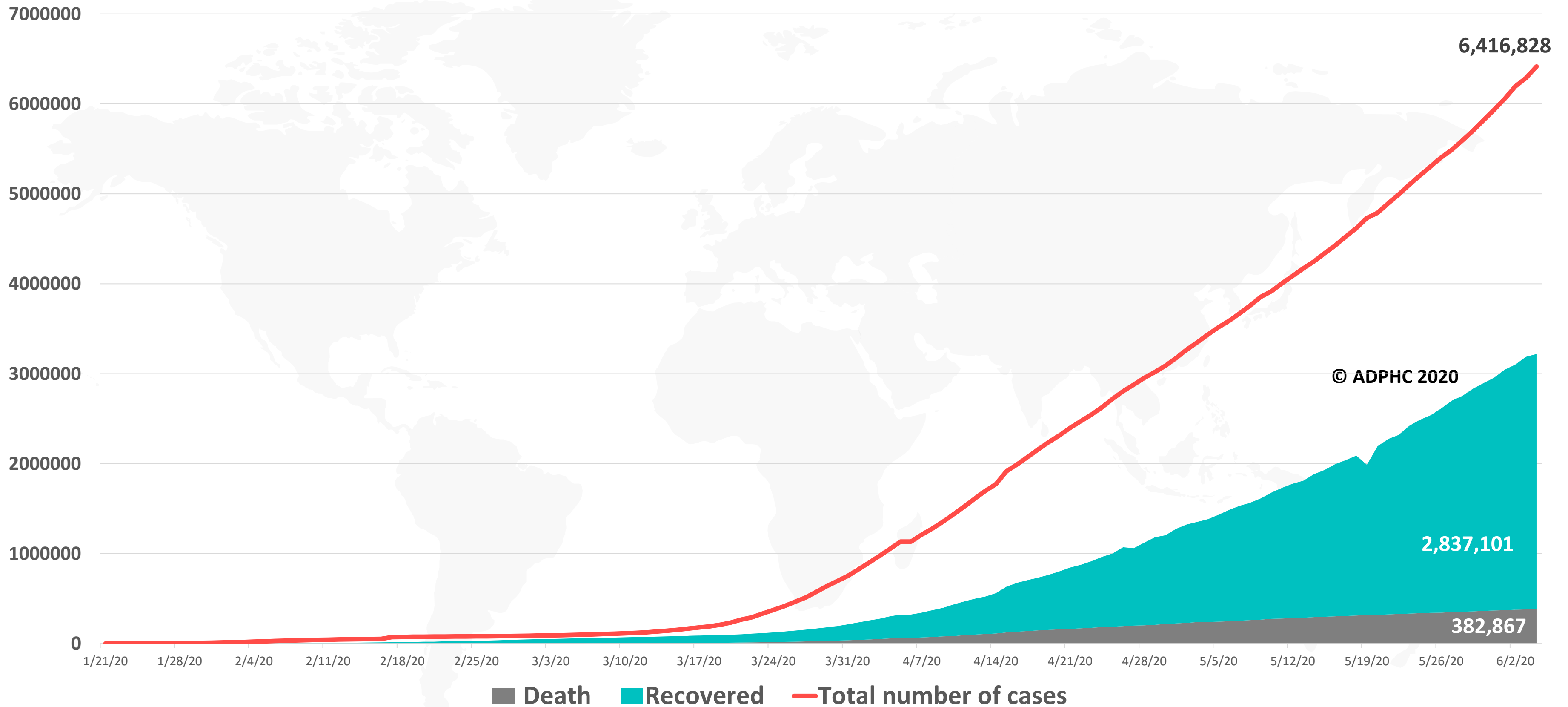
## WHO Daily Report 4 June 2020

- WHO is supporting the response to a new Ebola outbreak in northwest Democratic Republic of the Congo. The new outbreak comes as the country continues to respond to the complex Ebola outbreak in the eastern part of the country, the COVID-19 pandemic, the world's largest measles outbreak, and a complex and long-standing humanitarian crisis.
- The WHO Representative in Mauritius met the President of Mauritius to discuss COVID-19. They also spoke about the overall health system in Mauritius, and what needs to be strengthened.
- The WHO Regional Director for the Americas Dr Carissa F. Etienne said the Americas, “a region of massive inequalities,” are facing simultaneous health, economic and social emergencies from the pandemic. Maintaining social distancing measures, improving surveillance, and strengthening health systems are key to controlling the COVID-19 pandemic in the region.

# Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21<sup>st</sup> to Jun 4, 2020)

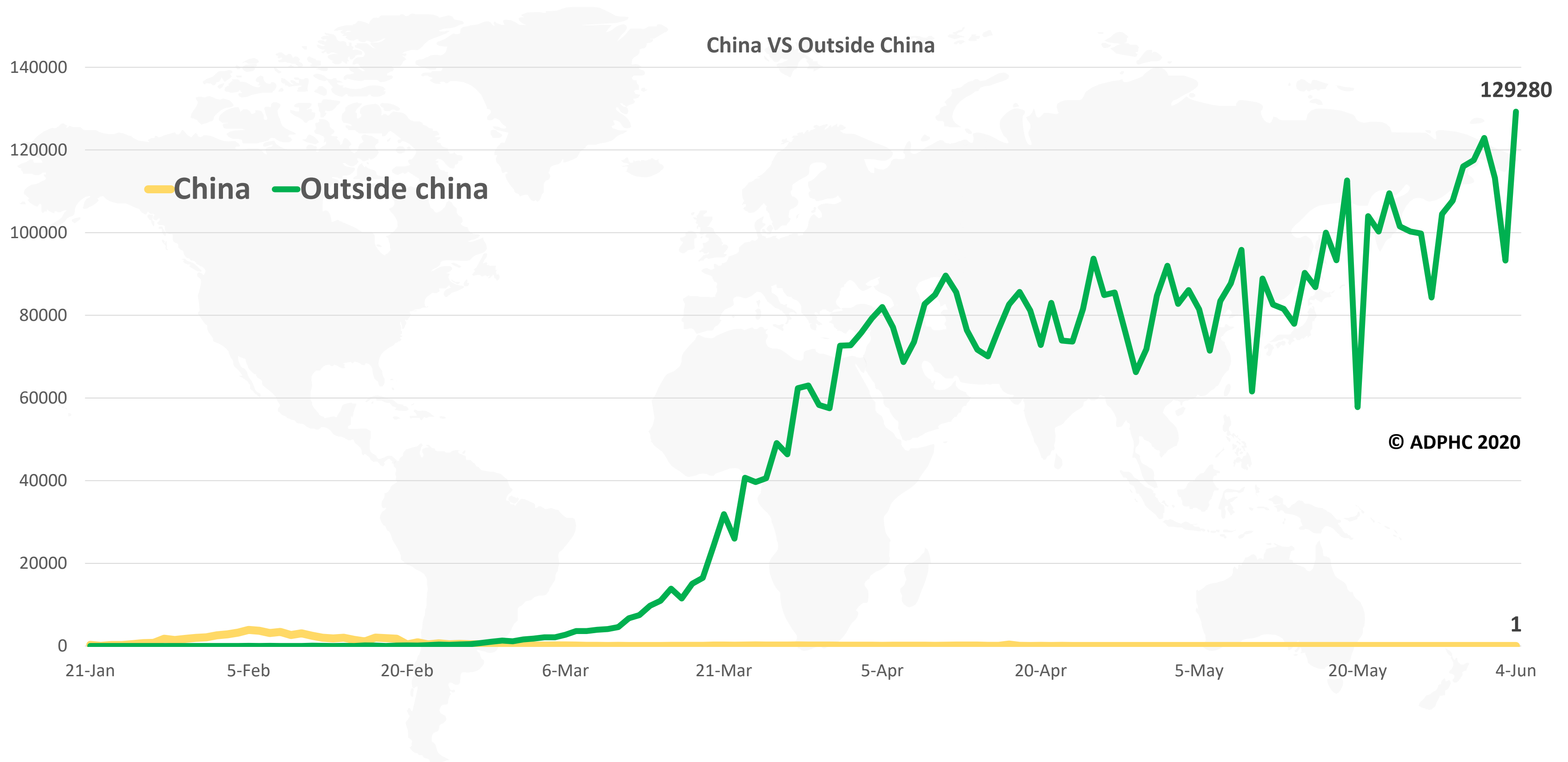


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 4, 2020).



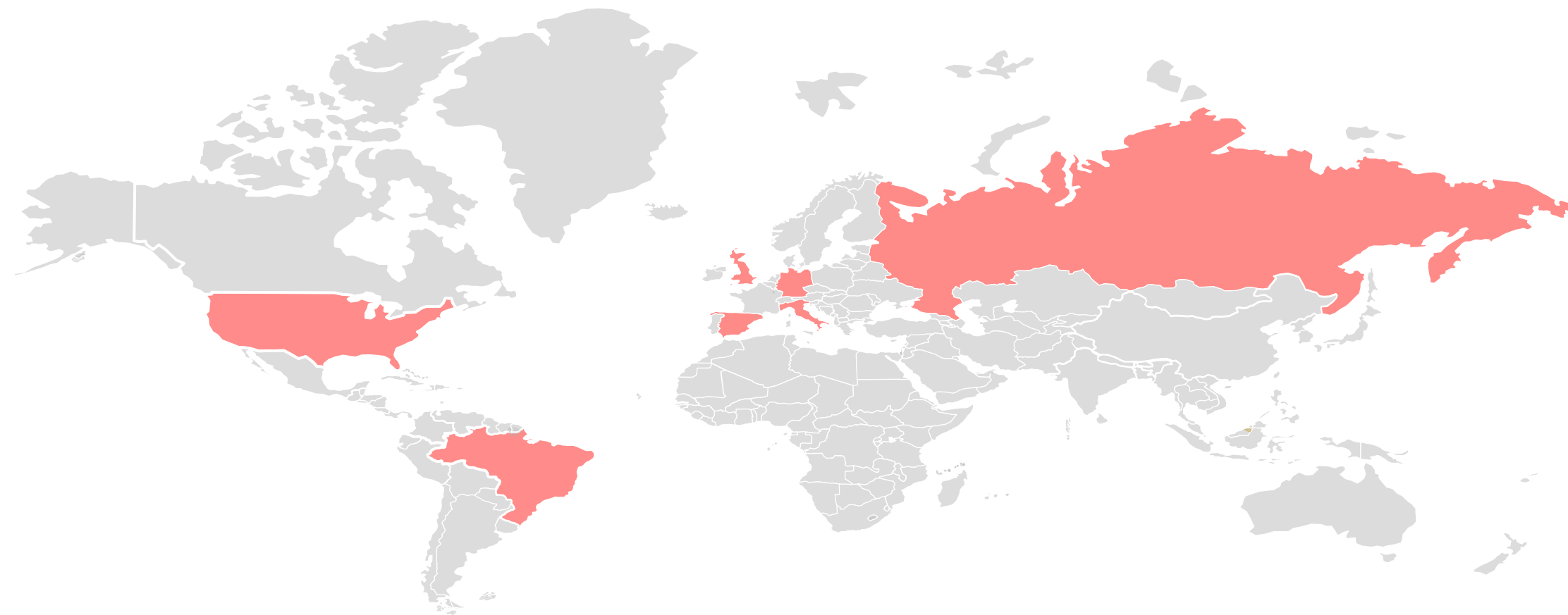
Line graph published by Abu Dhabi Public Health Center 2020.

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

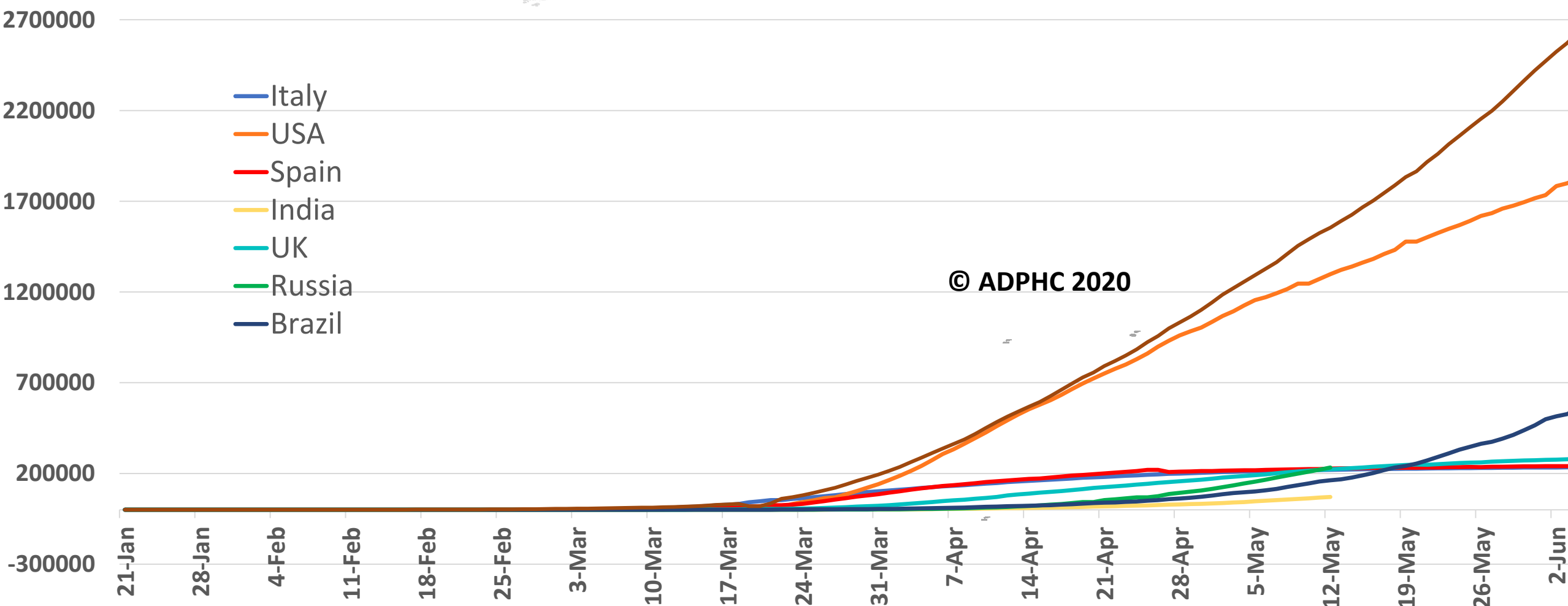
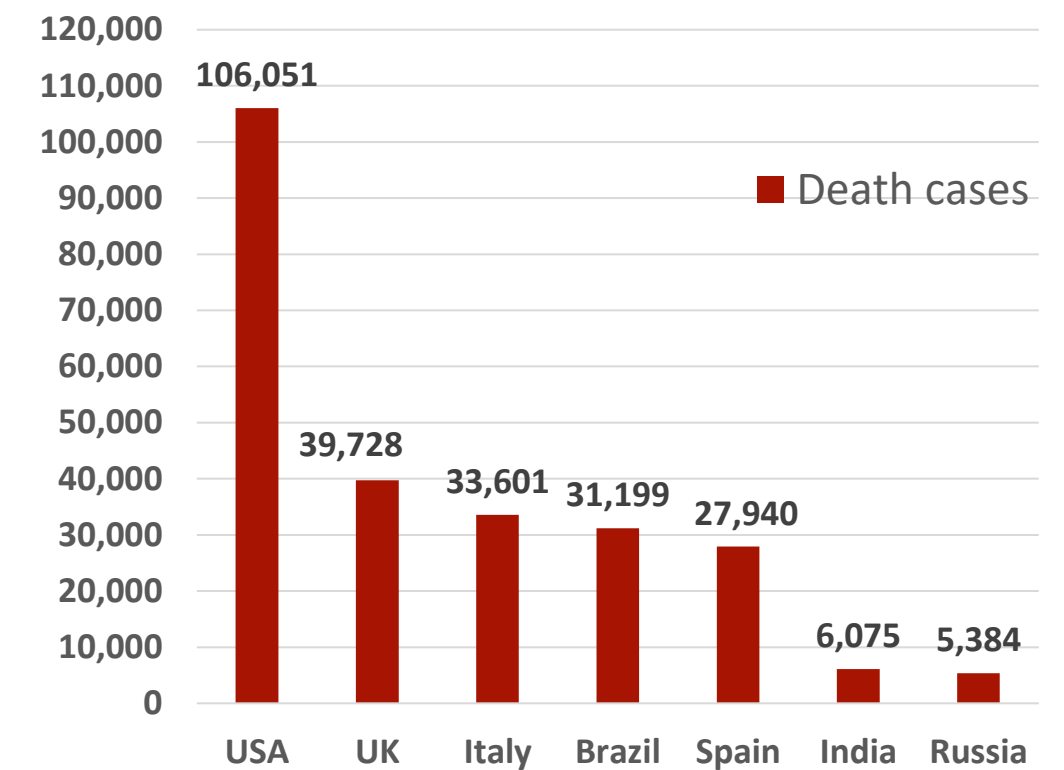
# Epidemiology



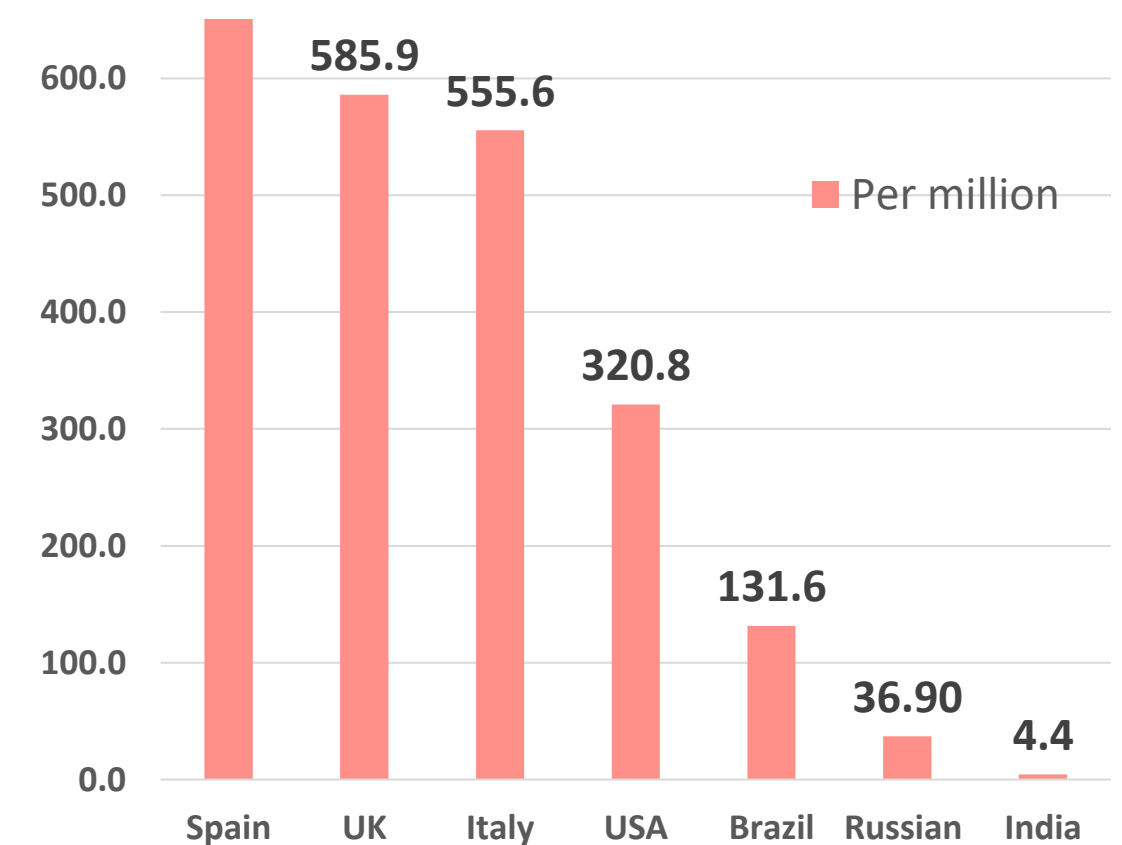
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 4, 2020).



## TOTAL DEATHS



## DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

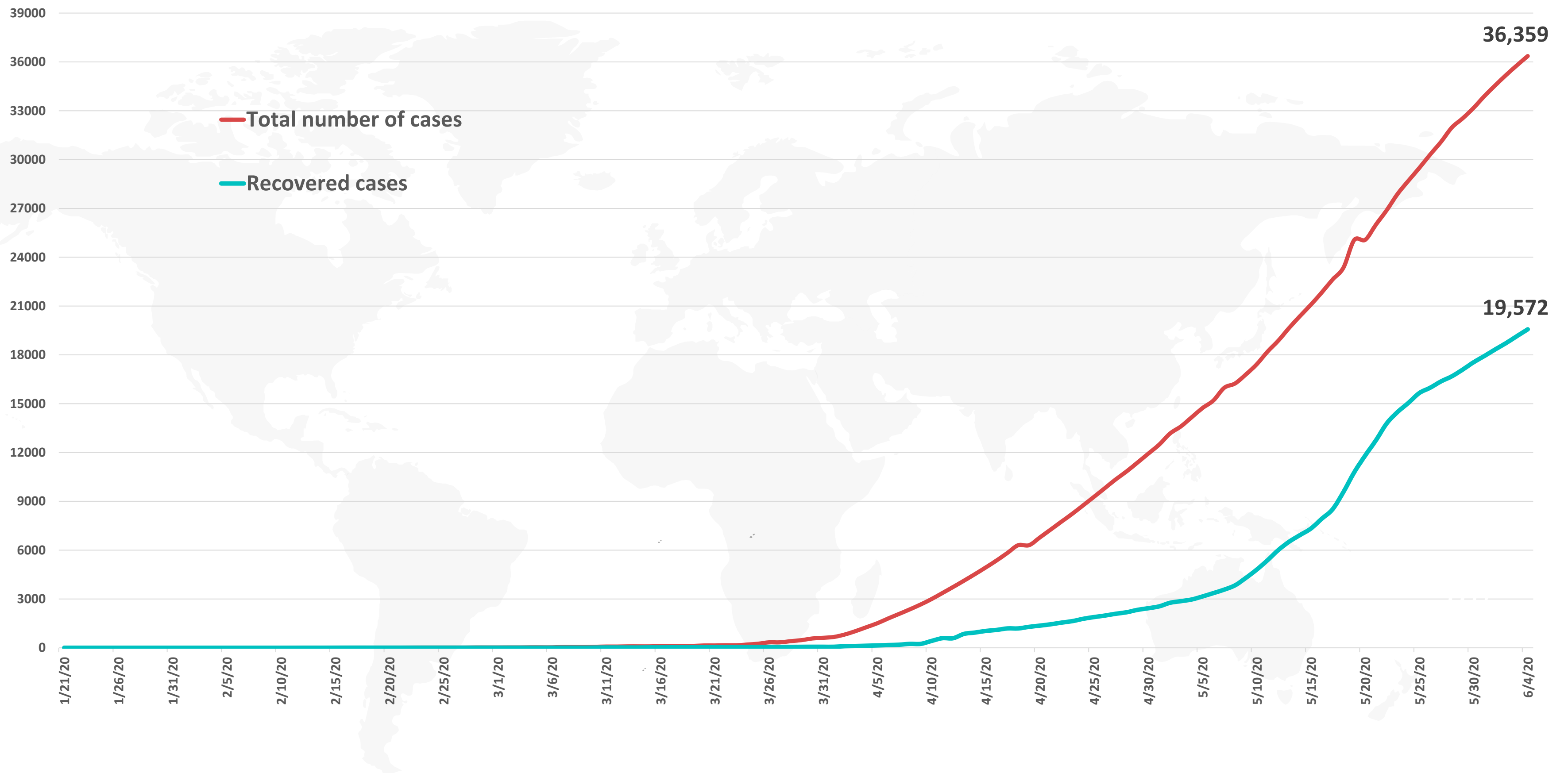
Data resources: [WHO](https://www.who.int)



# Epidemiology



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



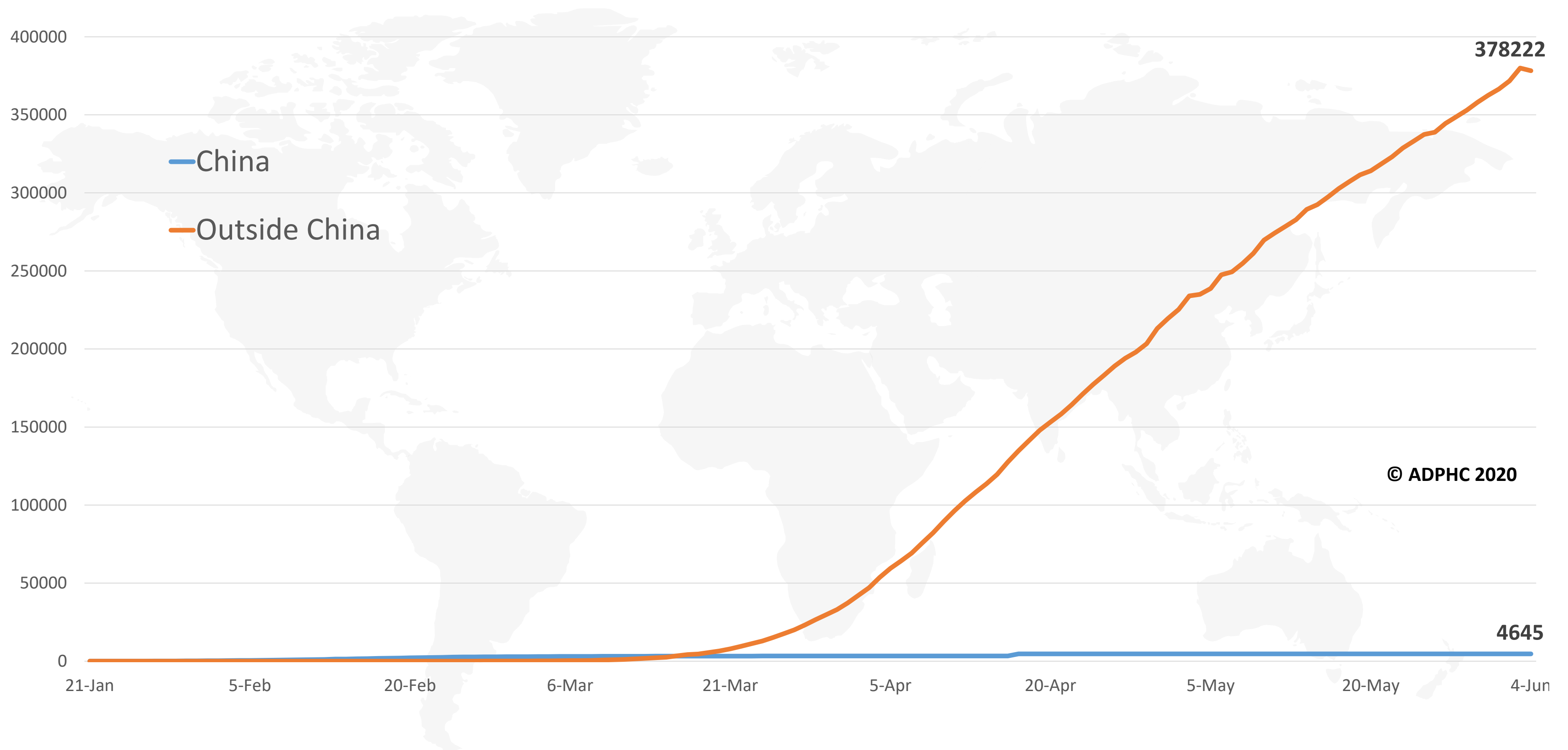
Line graph published by Abu Dhabi Public Health Center 2020.

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 4, 2020).**



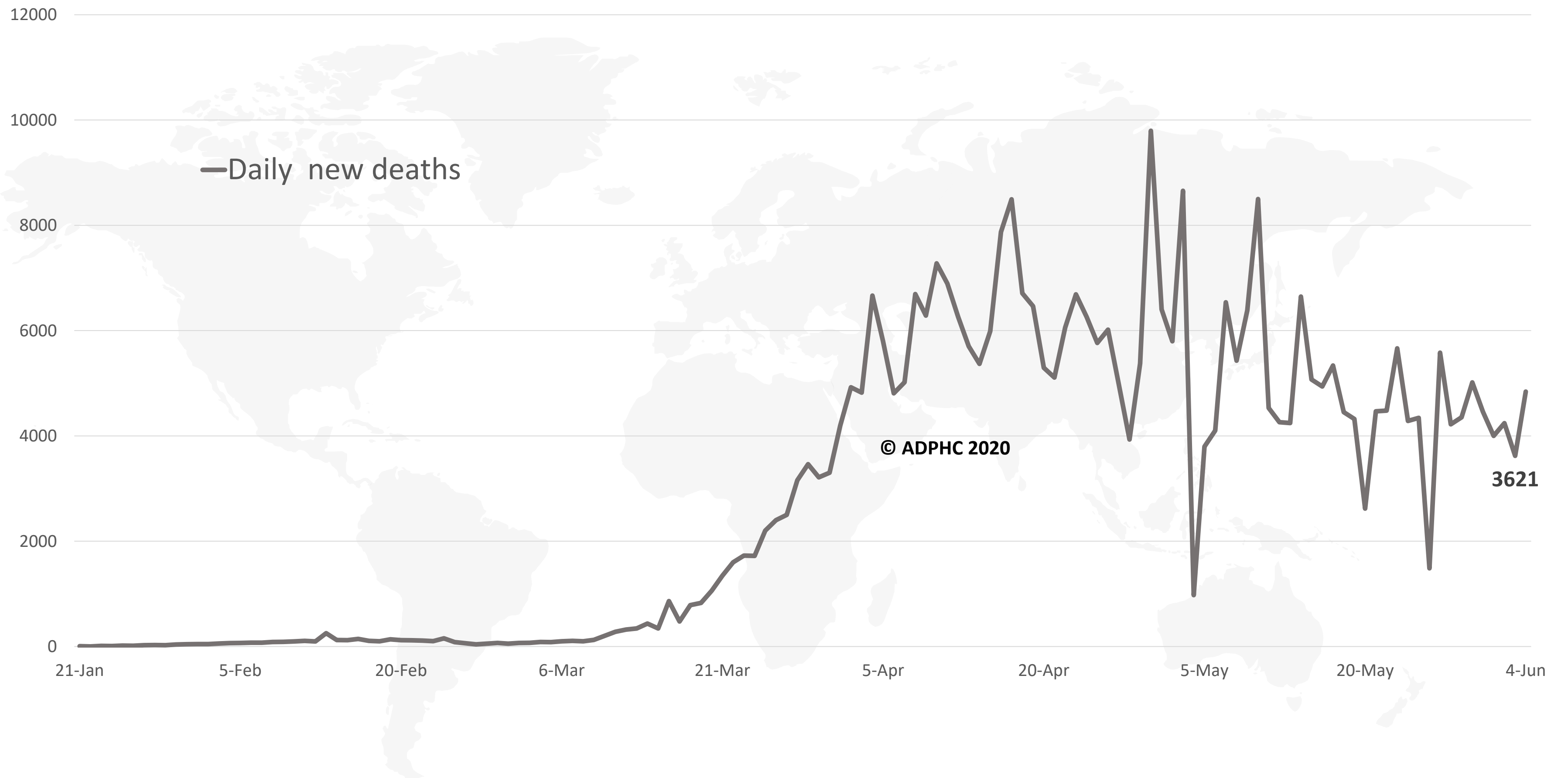
© ADPHC 2020

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 4, 2020).**



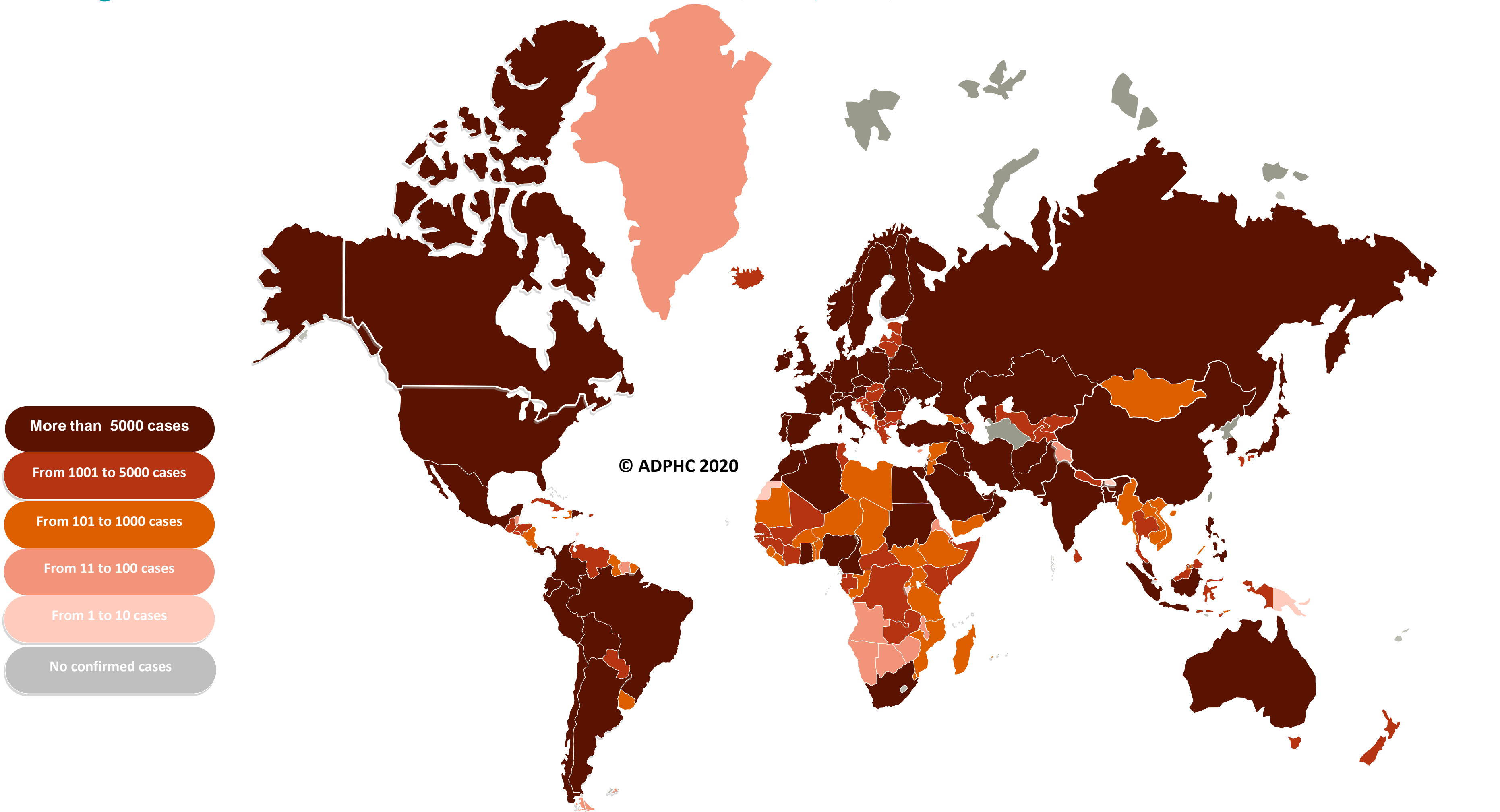
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



Figure 7a : Global distribution of COVID-19 cases (Jun 4, 2020).



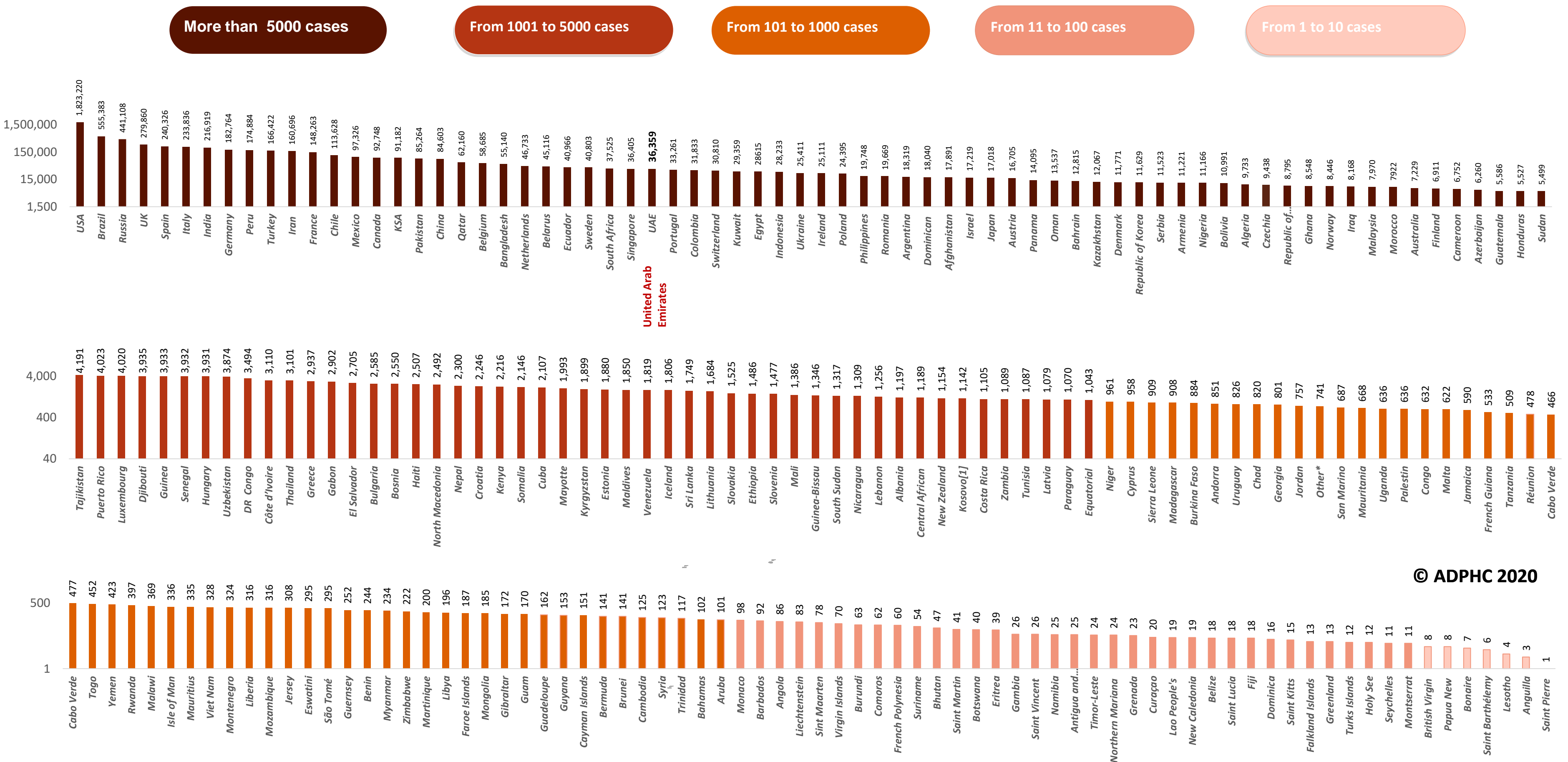
Map chart published by Abu Dhabi Public Health Center 2020.

© ADPHC 2020  
This document was developed by Abu Dhabi Public Health Center - ADPHC. The document is and shall remain the property of ADPHC and may only be used for the purposes for which it was intended. Unauthorized use or reproduction of this document is prohibited.

مركز أبوظبي للصحة العامة 2020 ©  
هذه الوثيقة مملوكة لمركز أبوظبي للصحة العامة، ولا يجوز استخدامها لغير الأغراض المخصصة لها. ويحظر استخدام أو إعادة إنتاج هذه الوثيقة بدون إذن



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 4, 2020)



© ADPHC 2020

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/)

© ADPHC 2020

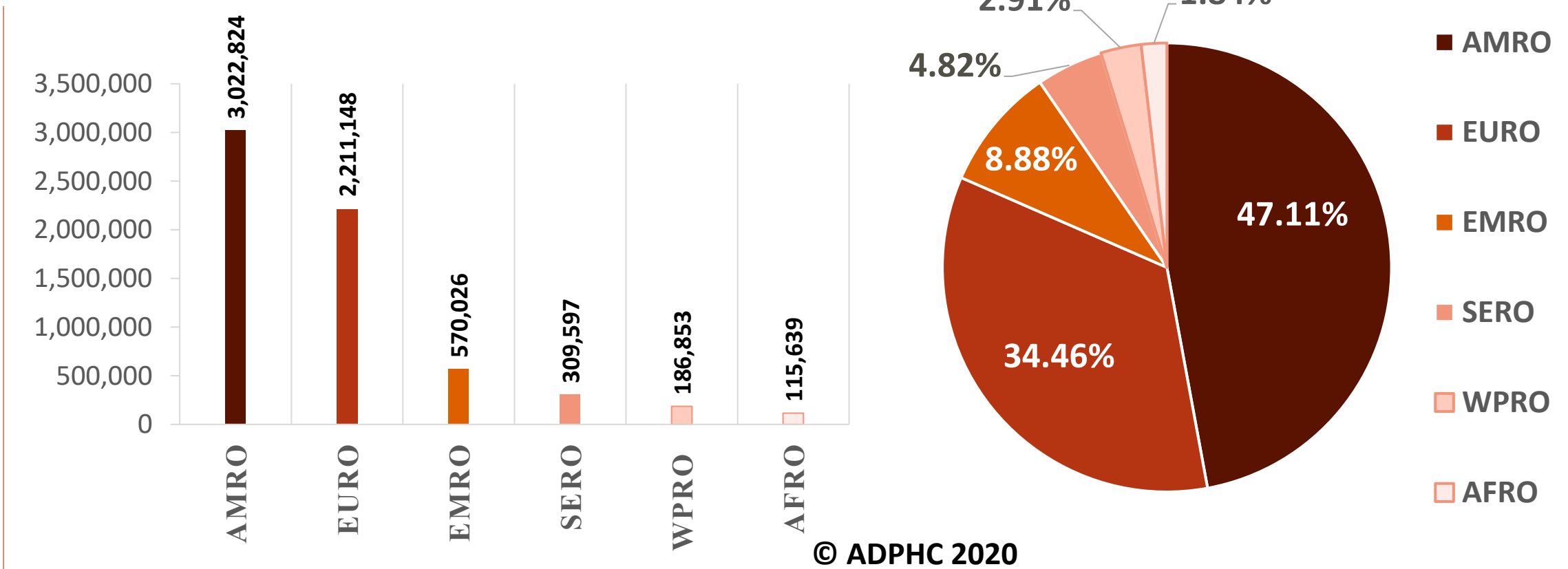
This document was developed by Abu Dhabi Public Health Center - ADPHC. The document is and shall remain the property of ADPHC and may only be used for the purposes for which it was intended. Unauthorized use or reproduction of this document is prohibited.

مركز أبوظبي للصحة العامة 2020 © هذه الوثيقة مملوكة لمركز أبوظبي للصحة العامة، ولا يجوز استخدامها لغير الأغراض المخصصة لها. ويحظر استخدام أو إعادة إنتاج هذه الوثيقة بدون إذن

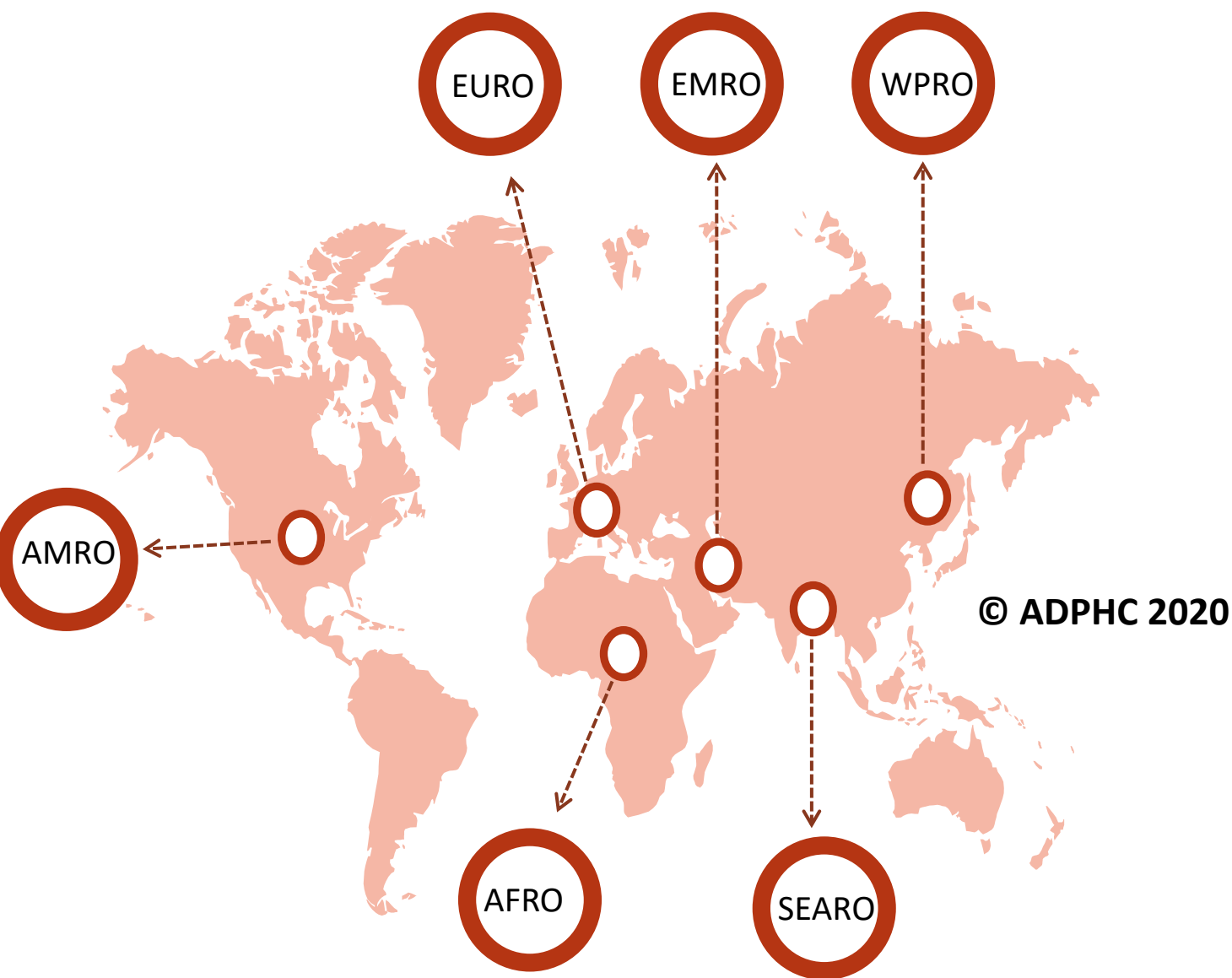
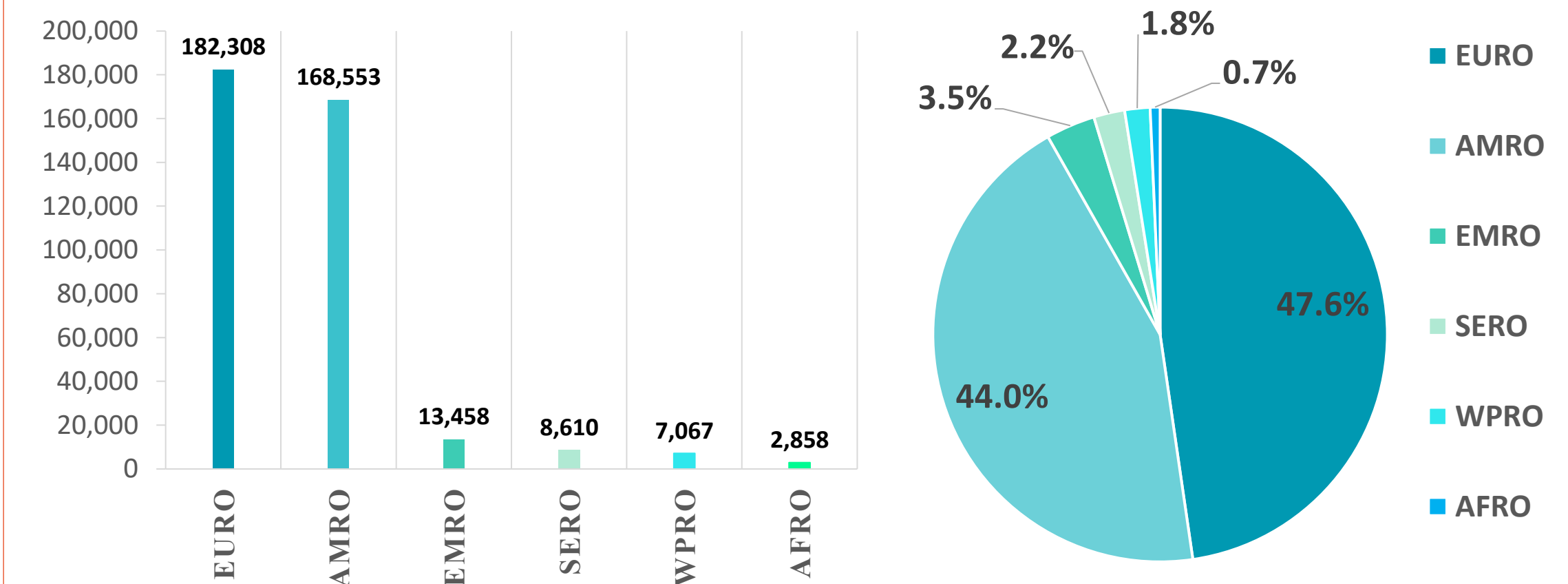


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 4, 2020)

## INFECTED



## DEATH



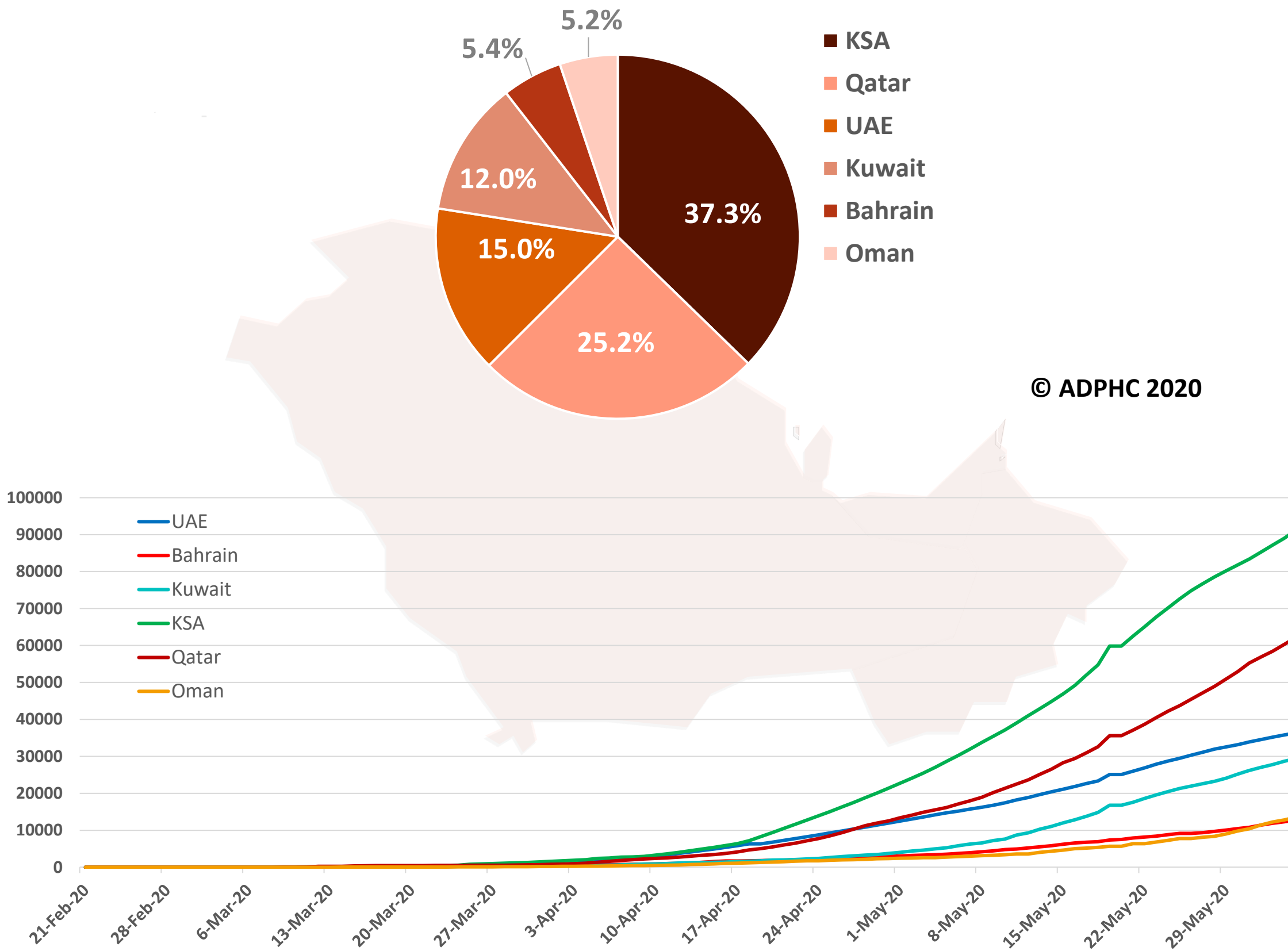
Map chart published by Abu Dhabi Public Health Center 2020.

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



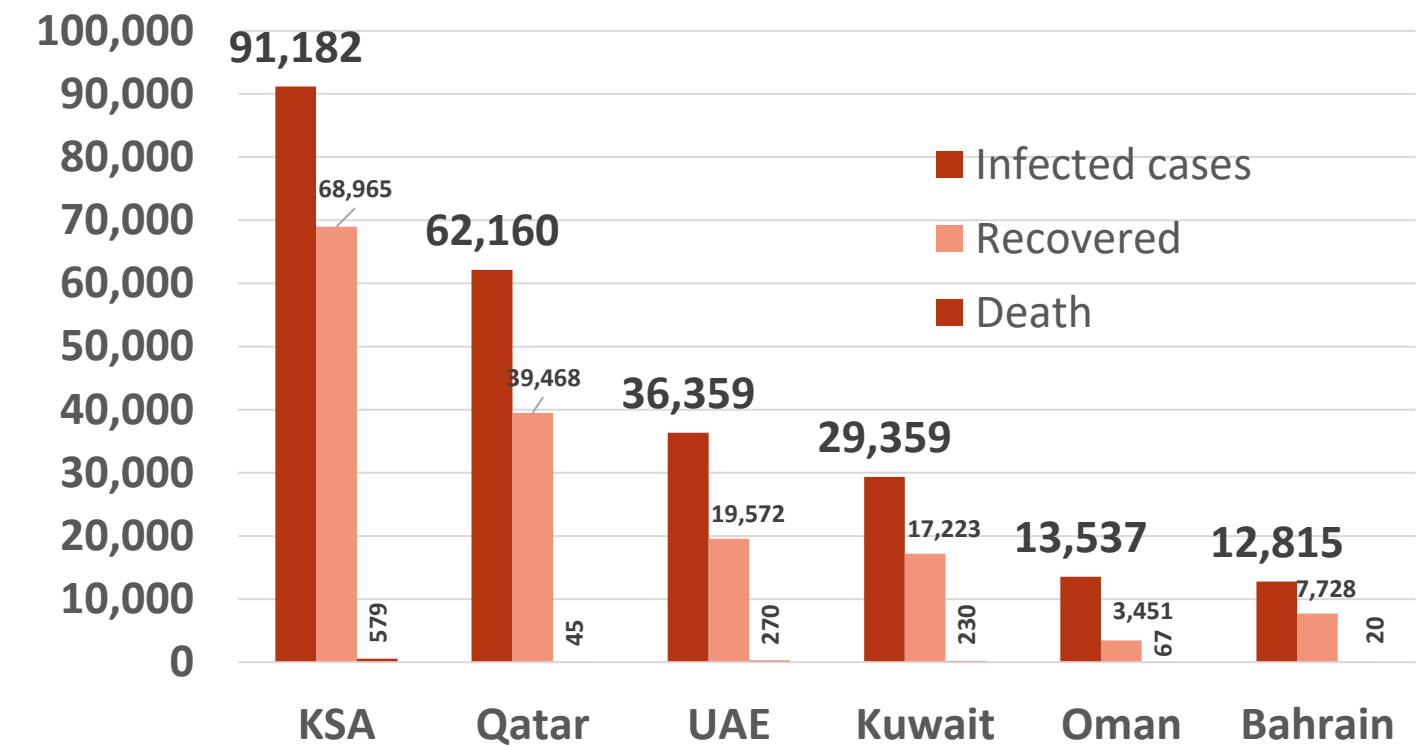
**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 4, 2020)**

## TOTAL NUMBER OF INFECTED CASES

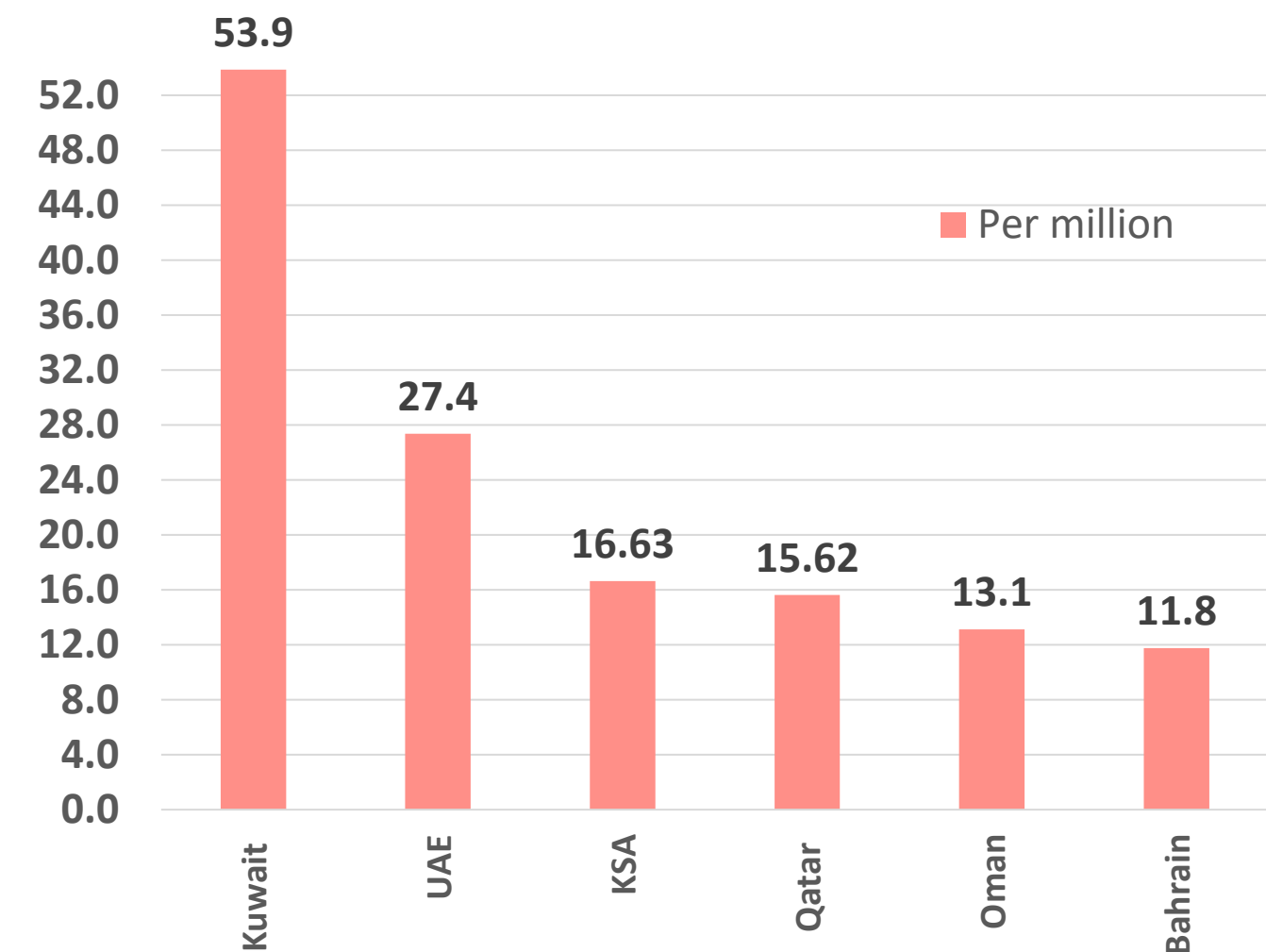


© ADPHC 2020

## Total number of infected, recovered and Deaths



## Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

© ADPHC 2020

This document was developed by Abu Dhabi Public Health Center - ADPHC. The document is and shall remain the property of ADPHC and may only be used for the purposes for which it was intended. Unauthorized use or reproduction of this document is prohibited.

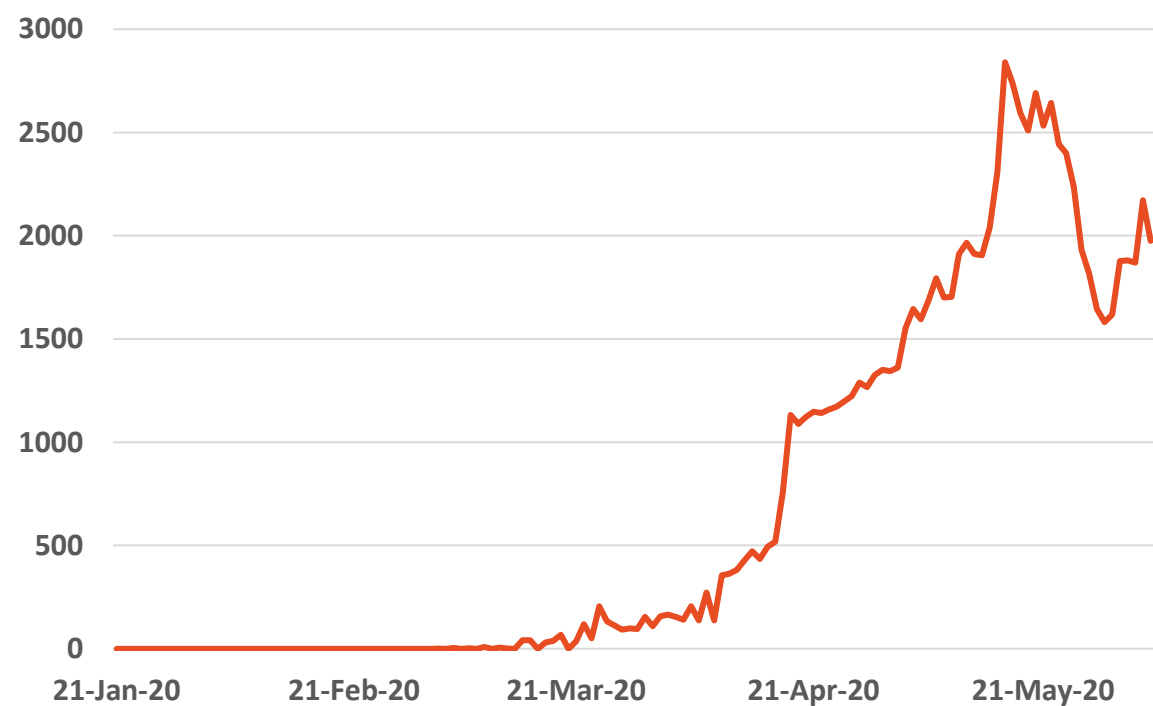
مركز أبوظبي للصحة العامة 2020 © هذه الوثيقة مملوكة لمركز أبوظبي للصحة العامة، ولا يجوز استخدامها لغير الأغراض المخصصة لها. ويحظر استخدام أو إعادة إنتاج هذه الوثيقة بدون إذن

# Epidemiology



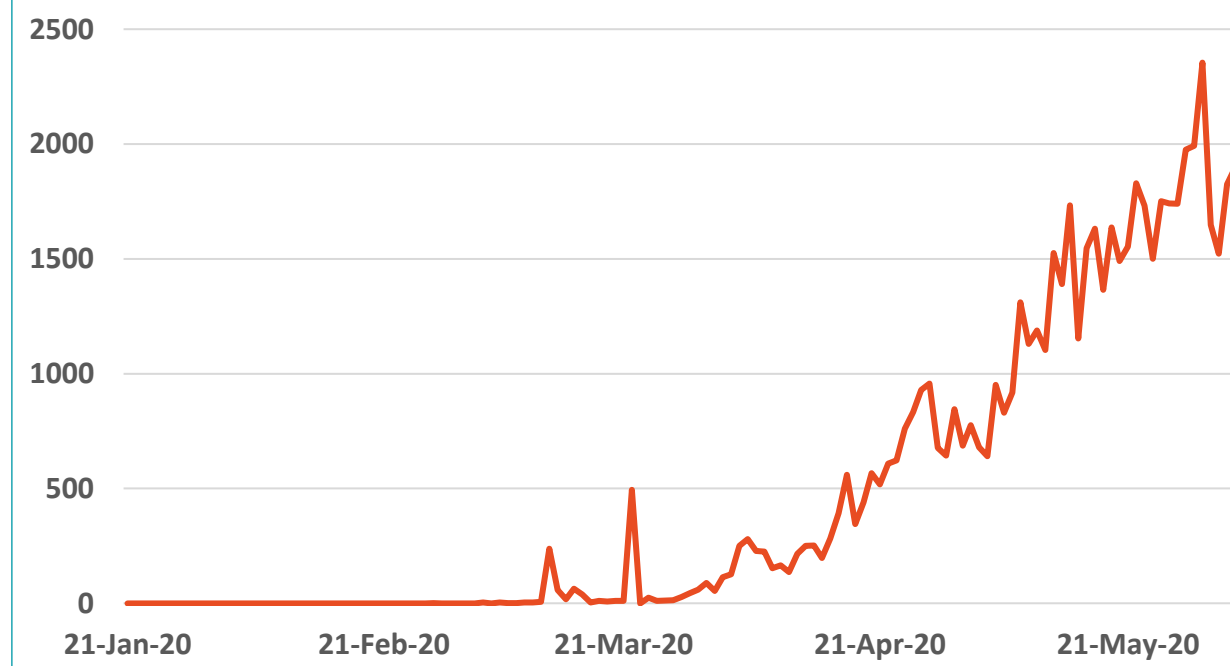
**Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 4, 2020)**

## KSA



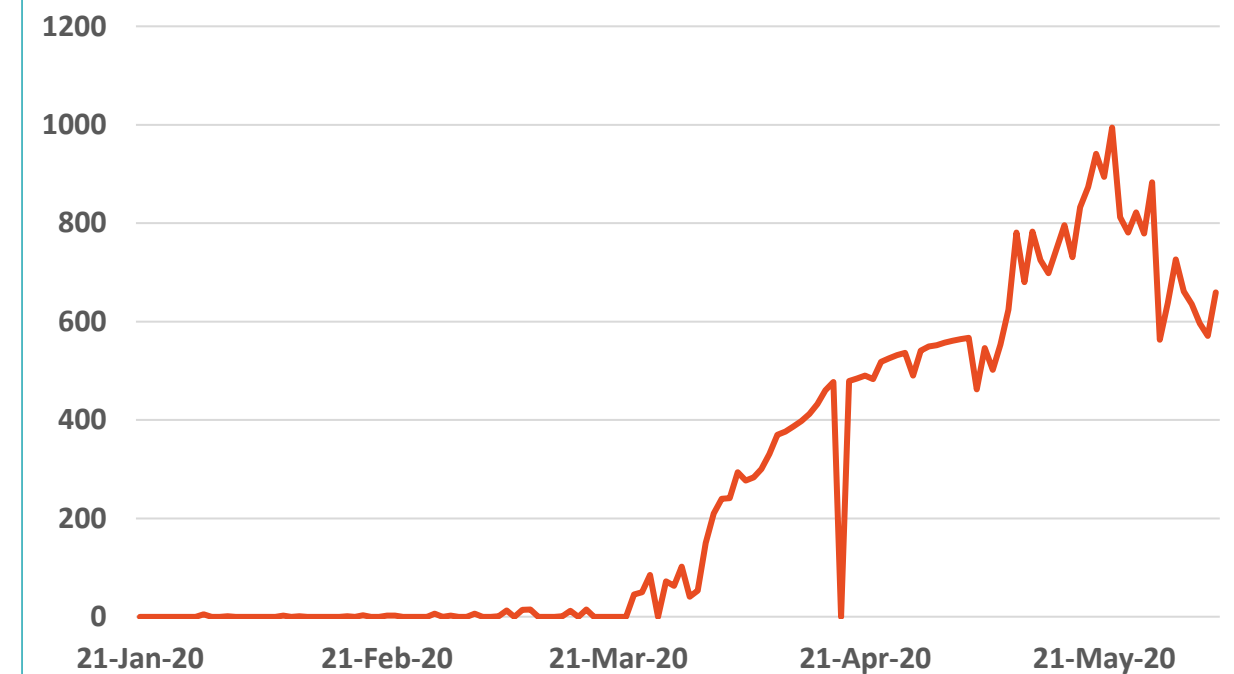
Source : KSA ministry of health & GCCStat

## Qatar



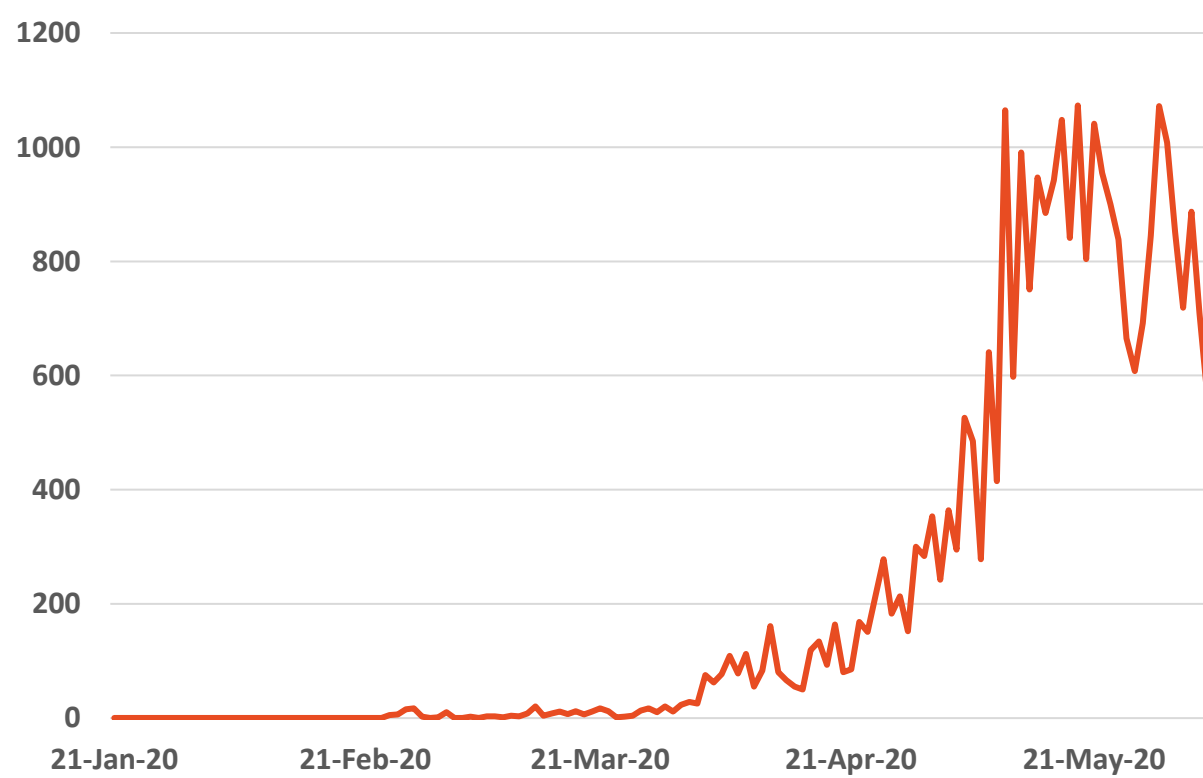
Source : Qatar ministry of health & GCCStat

## UAE



Source : UAE ministry of health & GCCStat

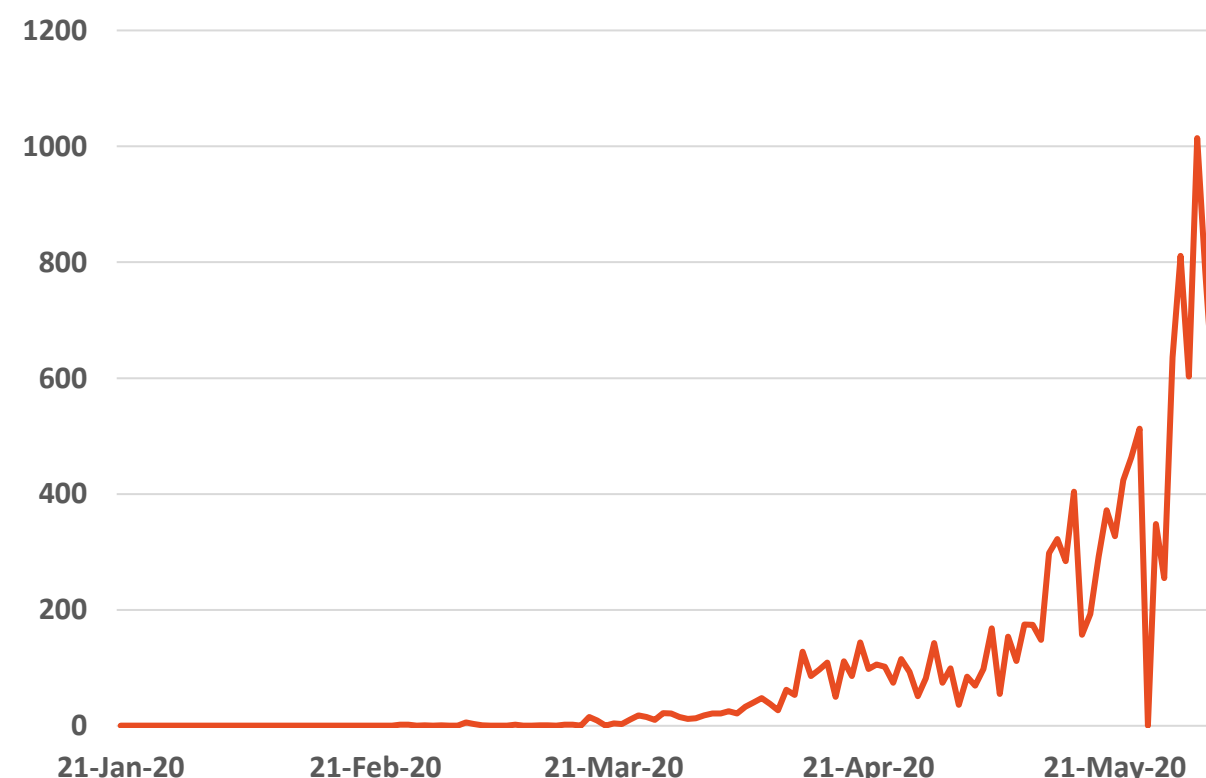
## Kuwait



Source : Kuwait ministry of health & GCCStat

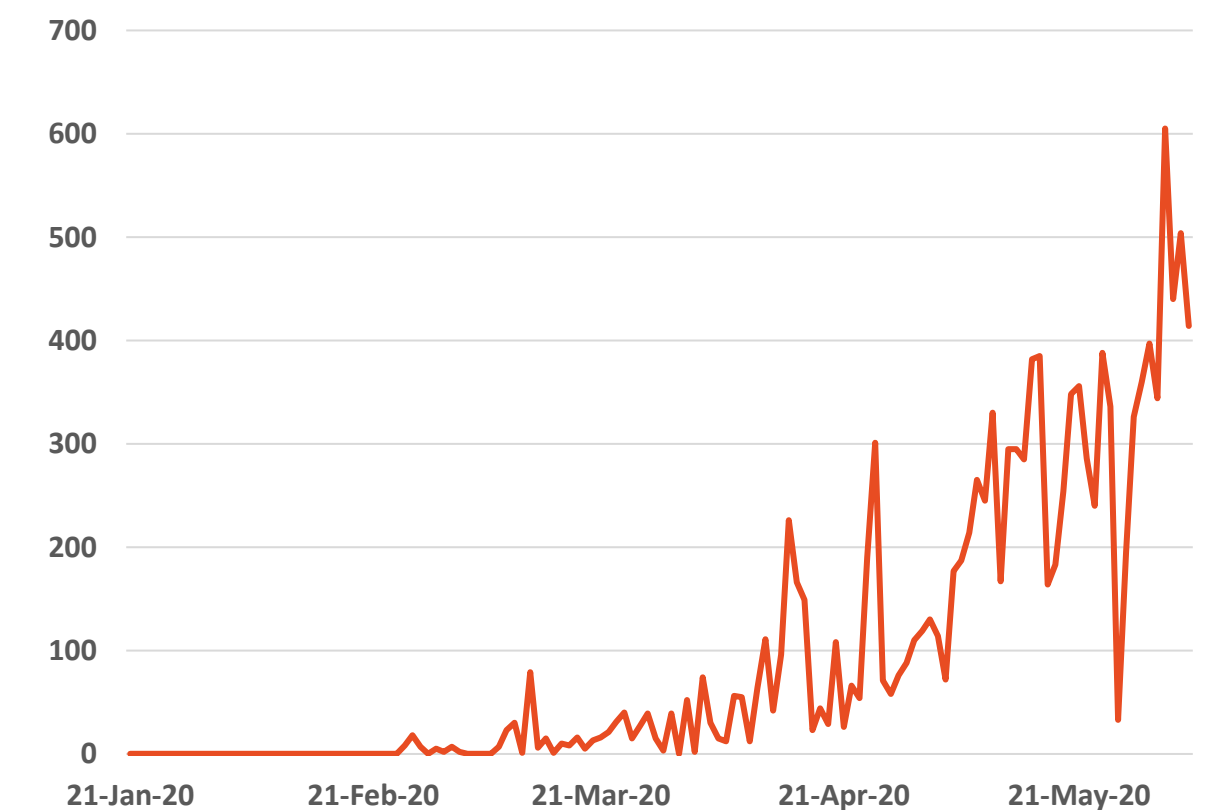
## Oman

© ADPHC 2020



Source : Oman ministry of health & GCCStat

## Bahrain



Source : WHO & GCCStat



# Epidemiology



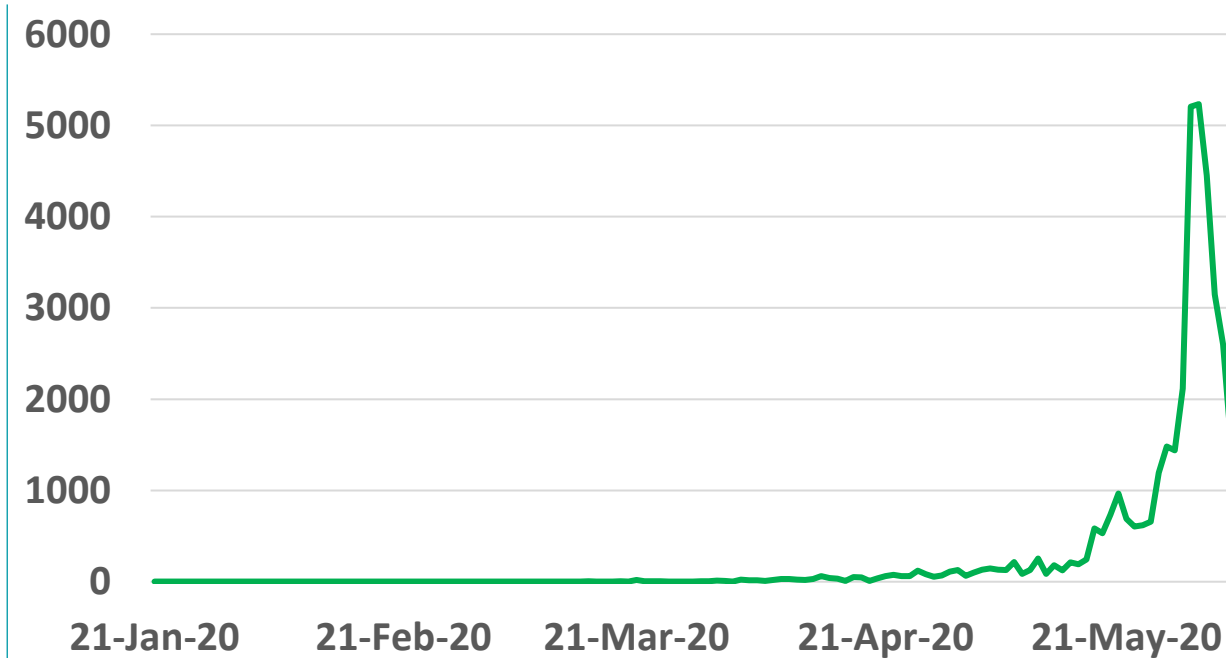
**Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 4, 2020)**

## KSA



Source : KSA ministry of health & GCCStat

## Qatar



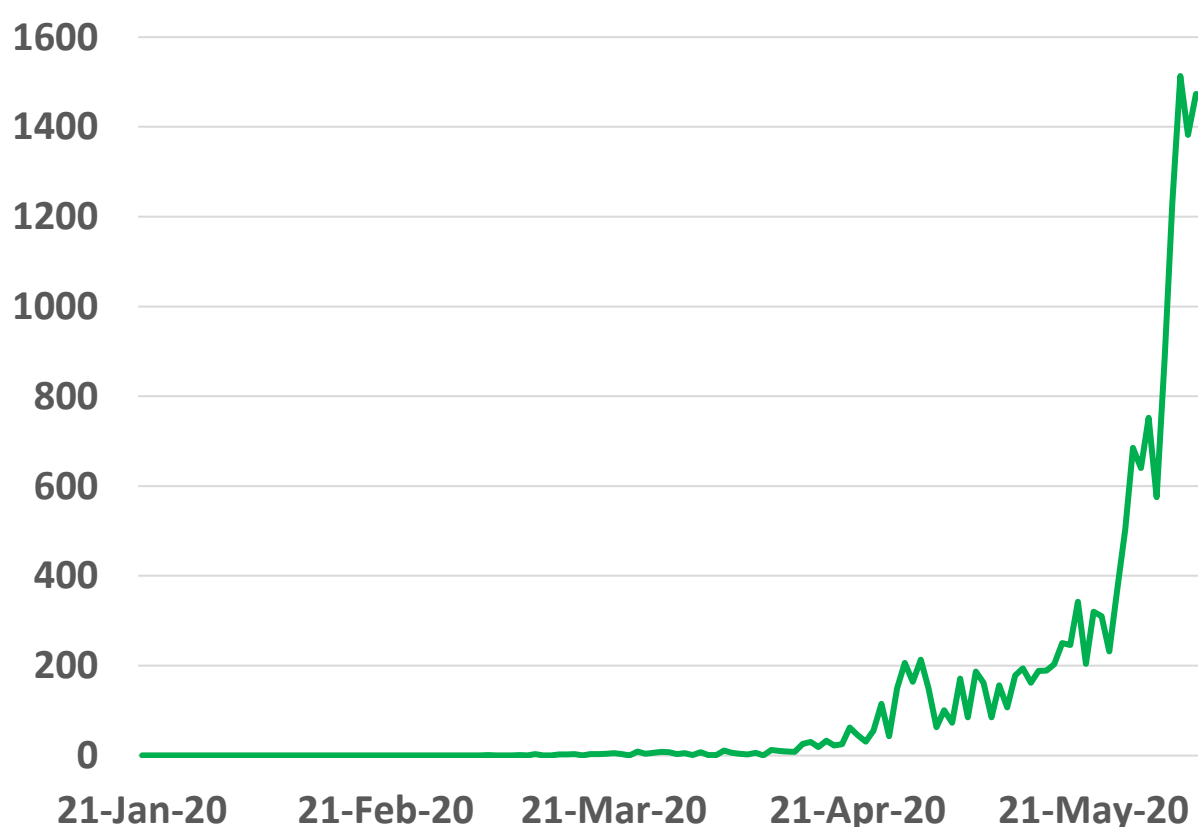
Source : Qatar ministry of health & GCCStat

## UAE



Source : UAE ministry of health & GCCStat

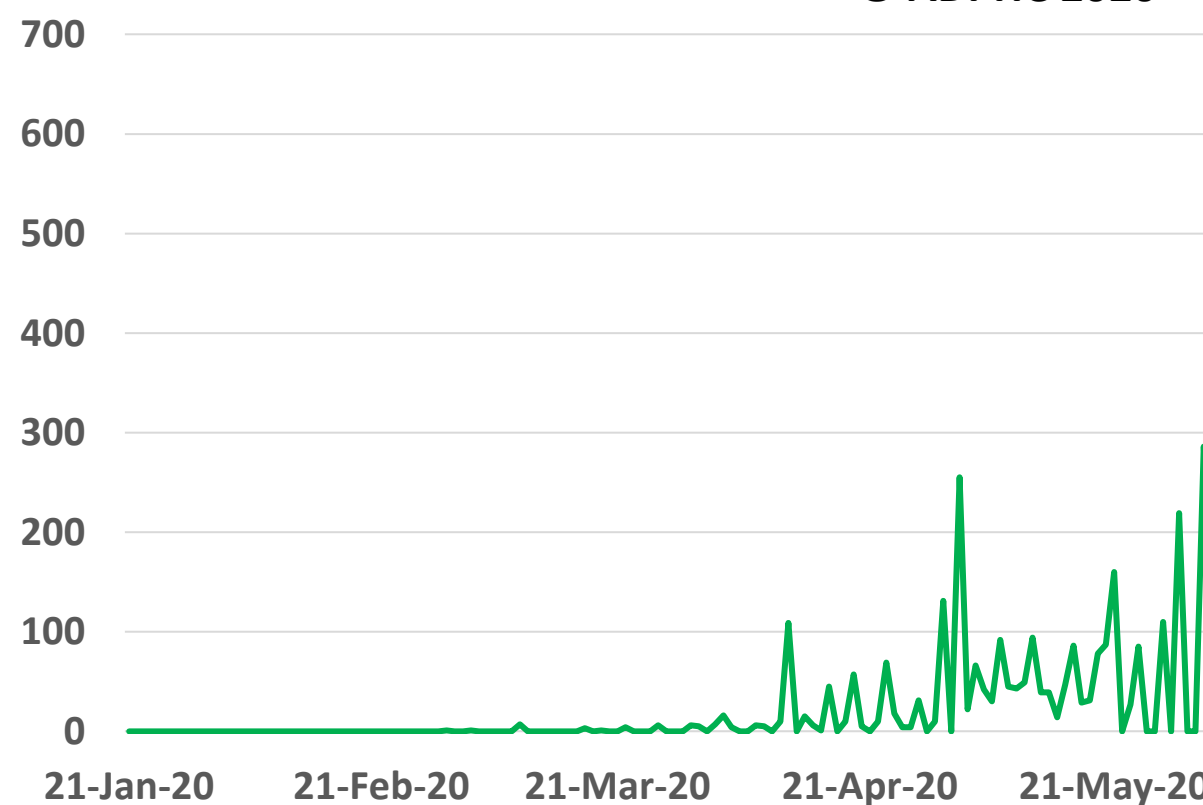
## Kuwait



Source : Kuwait ministry of health & GCCStat

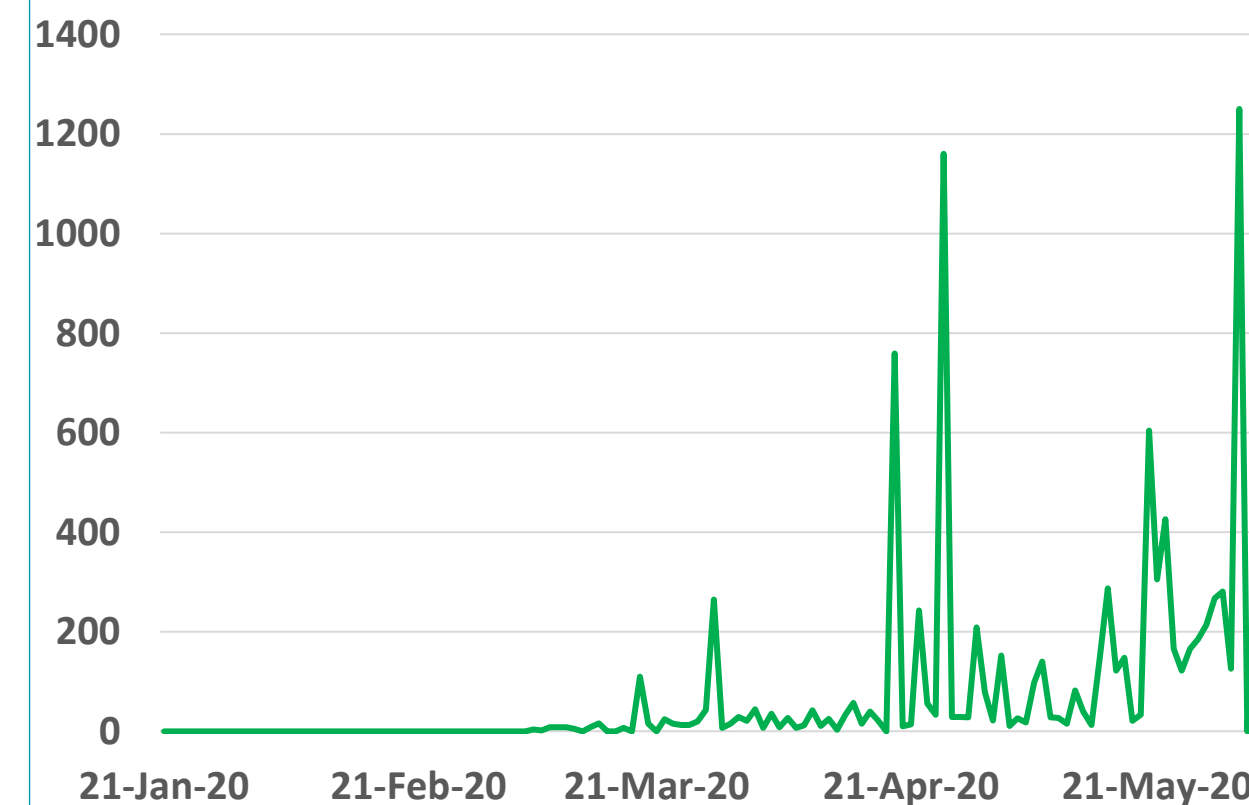
## Oman

© ADPHC 2020



Source : Oman ministry of health & GCCStat

## Bahrain



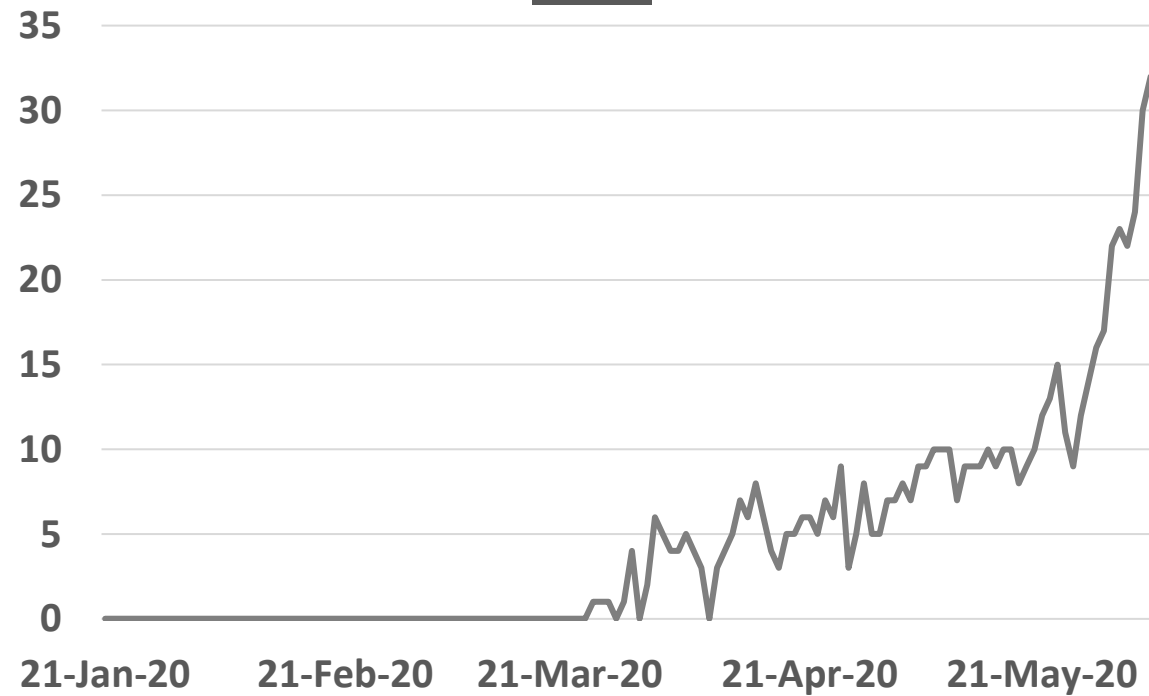
Source : WHO & GCCStat

# Epidemiology



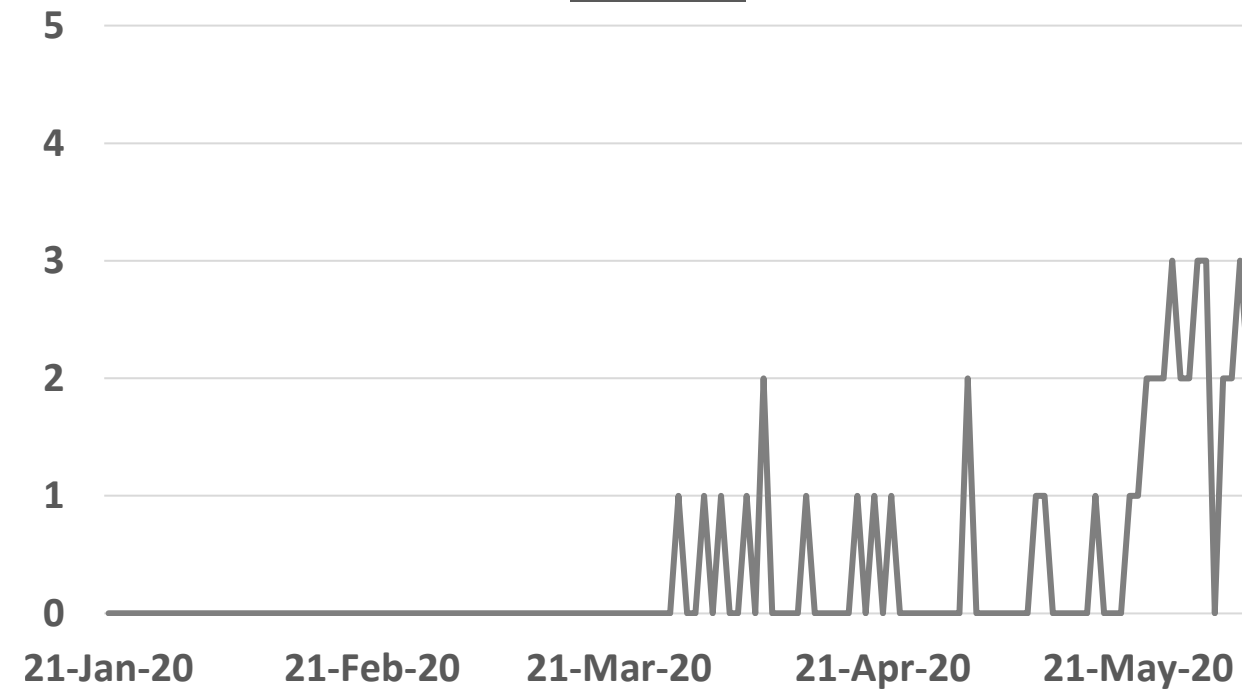
**Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 4, 2020)**

## KSA



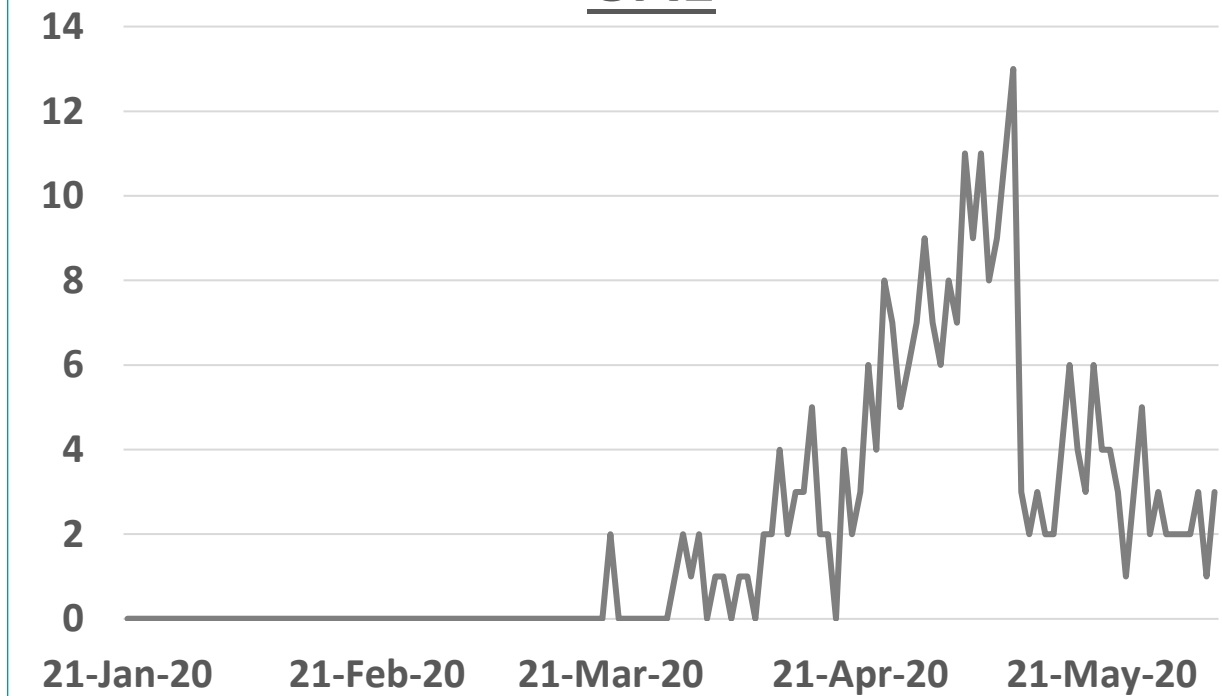
Source : KSA ministry of health & GCCStat

## Qatar



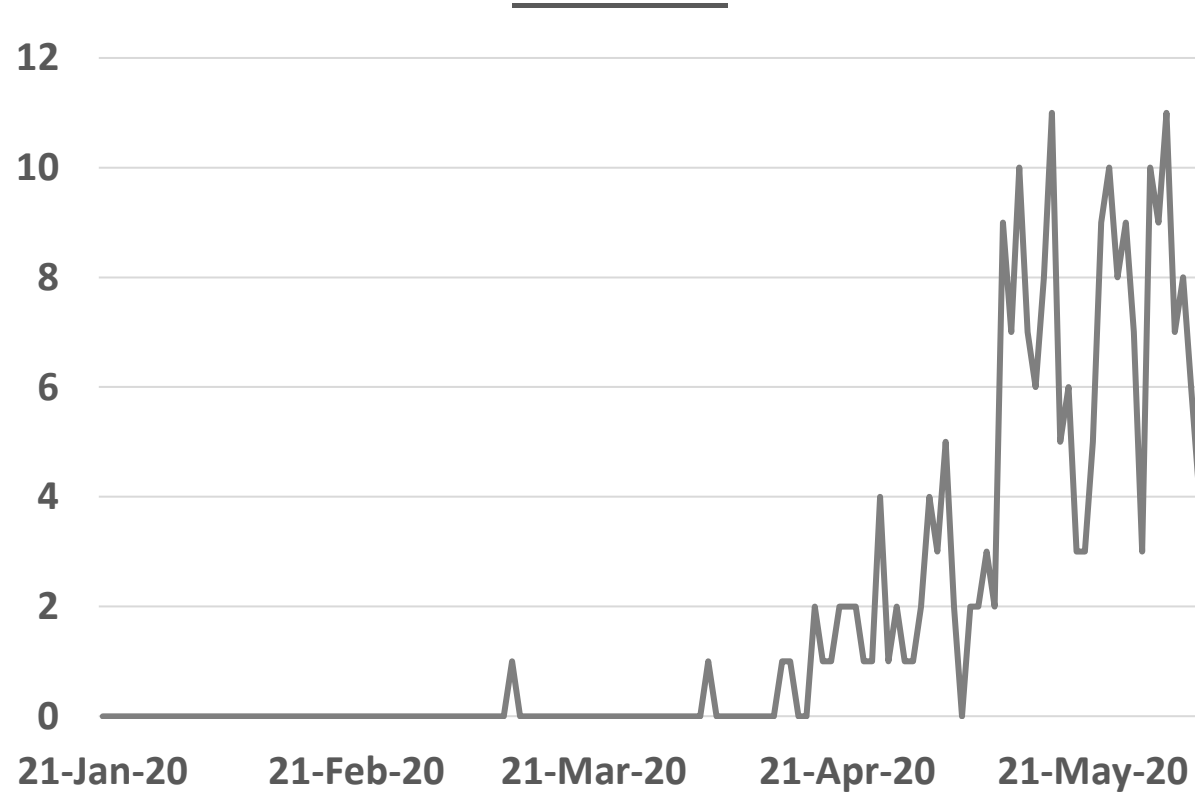
Source : Qatar ministry of health & GCCStat

## UAE



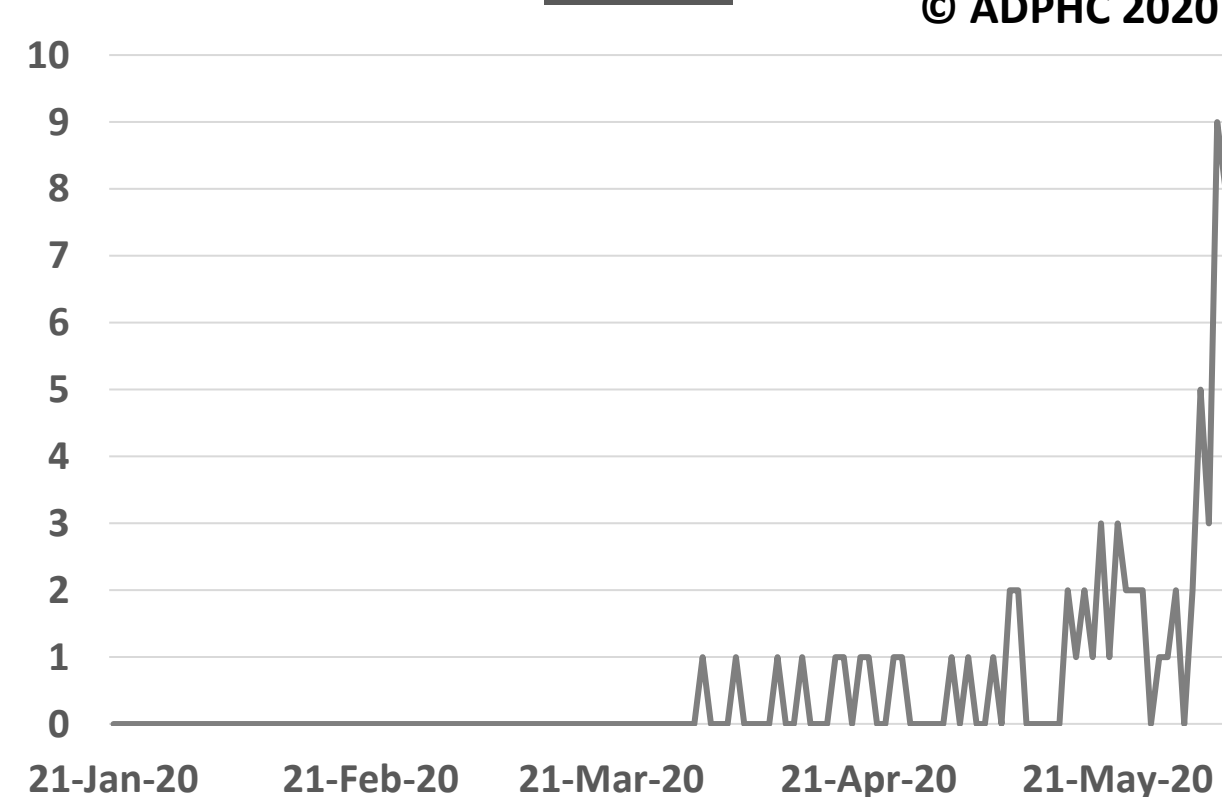
Source : UAE ministry of health & GCCStat

## Kuwait



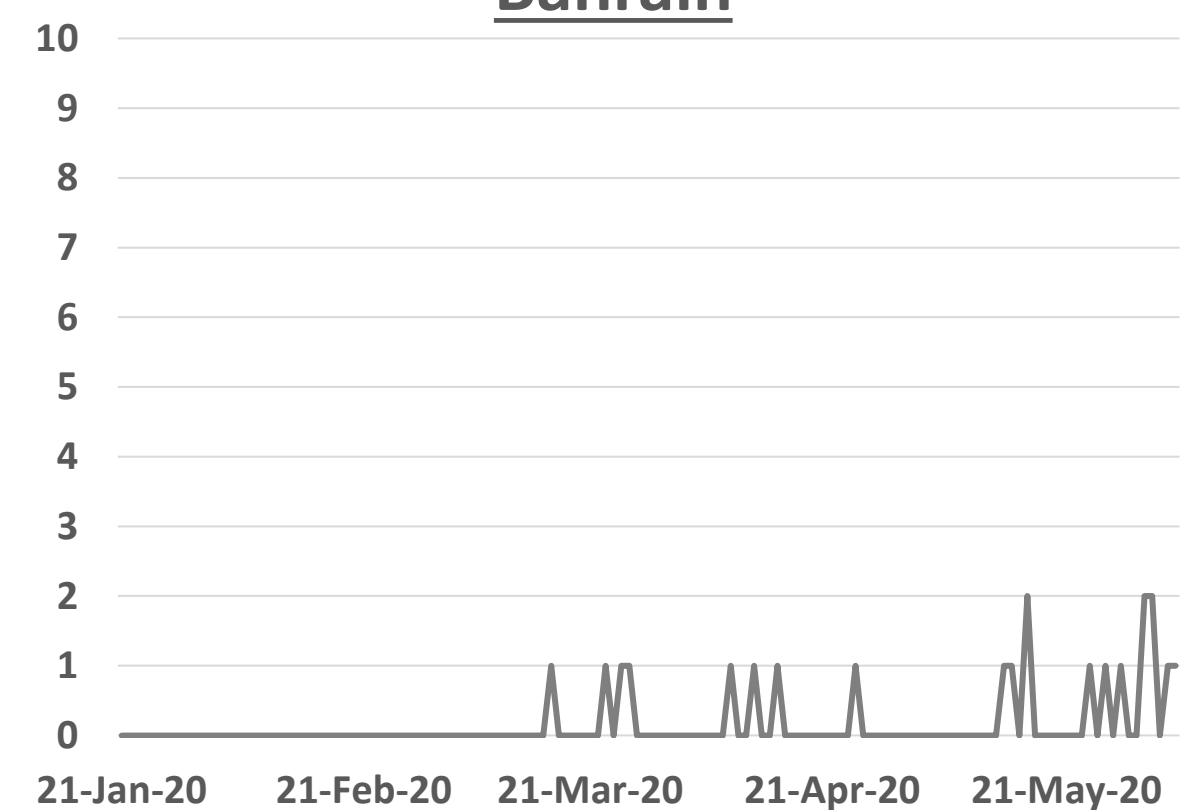
Source : Kuwait ministry of health & GCCStat

## Oman



Source : Oman ministry of health & GCCStat

## Bahrain



Source : WHO & GCCStat

## Article 1: Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis

Published: June 01 2020 [The Lancet Summary](#)

- Using the systematic review and meta-analysis approach, as the strongest evidence-based methodology, the study investigated the effects of physical distance, face masks, and eye protection on MERS, SARS, and COVID-19 transmission in health-care and non-health-care settings.
- The study included 172 observational studies across 16 countries and six continents, that included 25697 patients.

### Results

**Physical distancing (1 meter versus less than one meter). Figure #1.**

- Physical distancing of 1 meter or more, compared with a distance of less than 1m reduces the risk of viral transmission (SARS, MERS, COVID-19) by **82%**.
- For the transmission of COVID-19, the risk reduced by **75%** when physical distancing was maintained at more than 1 meter.

Summarized by subject matter expert

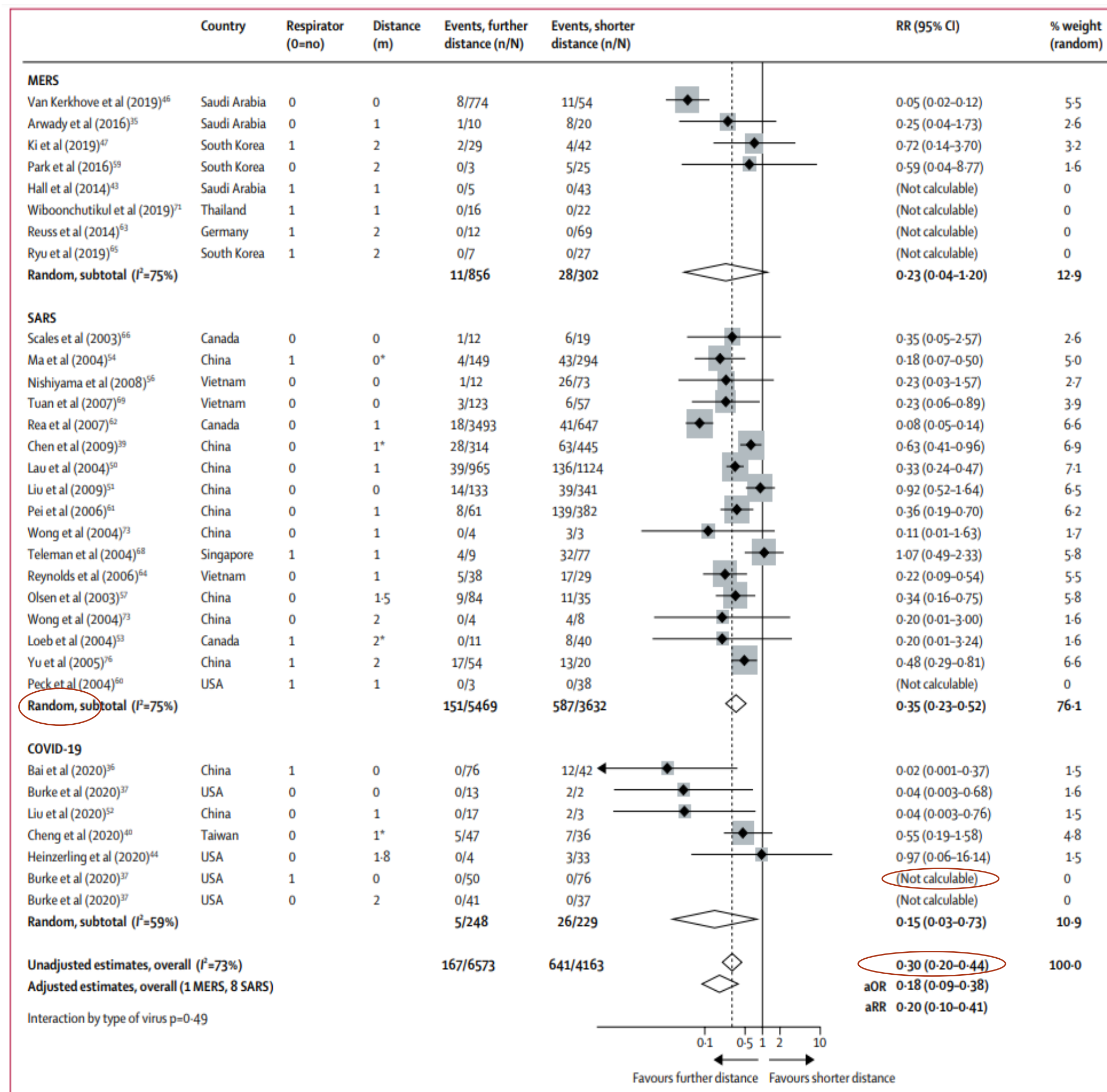


Figure 1: Forest plot showing the pooled association of COVID-19, SARS, or MERS exposure proximity with viral infection. SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk. \*Estimated values; sensitivity analyses excluding these values did not meaningfully alter findings



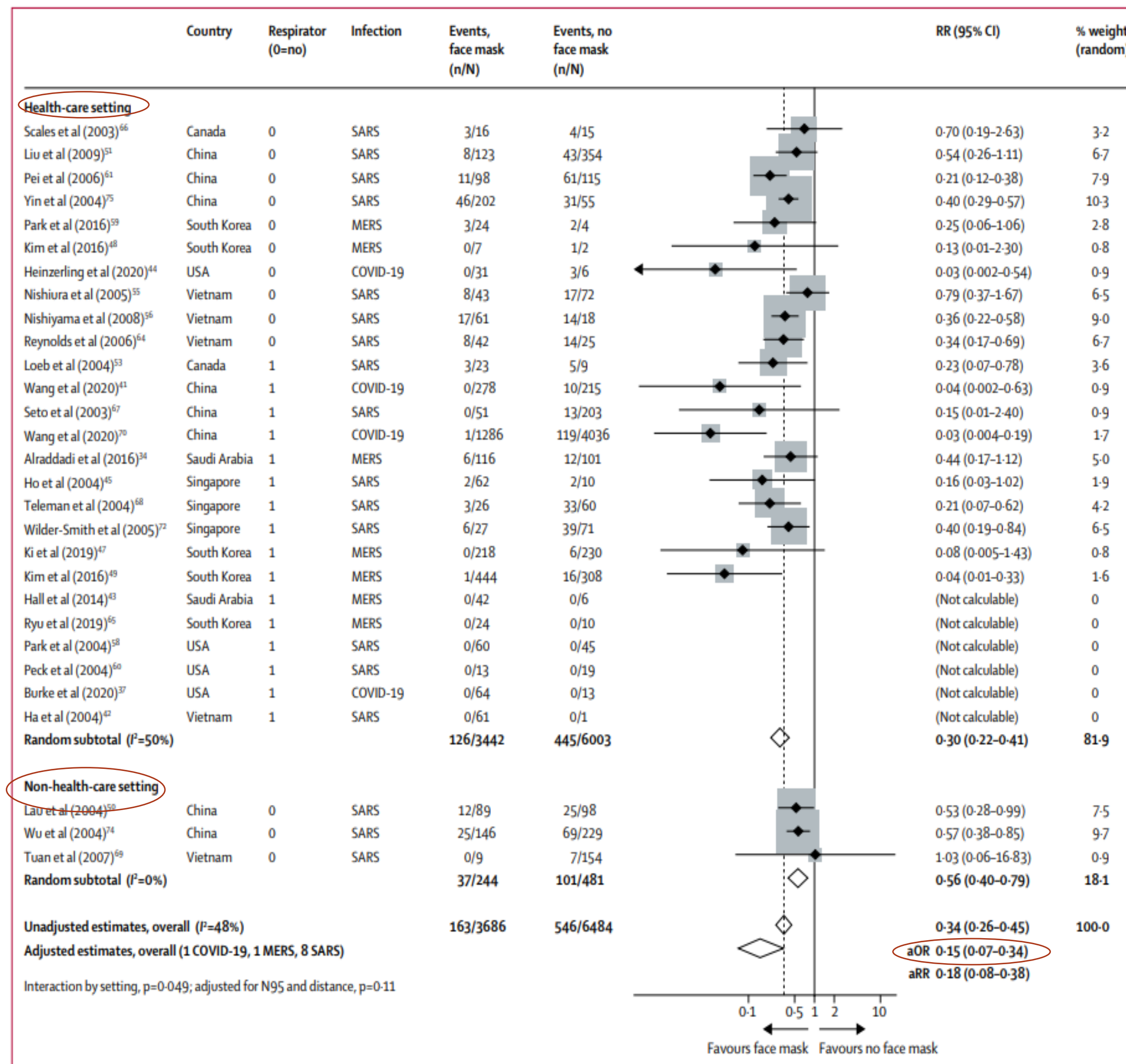
## Article 1: Cont.,

Published: June 01 2020 [The Lancet](#)

## Summary

**Face mask (use versus no use). Figure #2**  
The use of face mask was associated with a reduced risk of viral transmission (SARS, MERS, COVID-19) by 75% .

- In healthcare setting, the risk reduced by 70% . **Figure #2**
- In non-health care setting the risk reduced by 44% (RR, 0.56, 95% CI 0.07-0.34). **Figure #2**
- The reduced risk of viral transmission was greater when N95 respirator was used (aOR, 0.04) compared to when surgical mask or similar was used (aOR, 0.40), compared to no mask use.



**Figure 2: Forest plot showing pooled unadjusted estimates for the association of face mask use with viral infection causing COVID-19, SARS, or MERS. SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk**



**Article 1: Cont.,**  
**Published:** June 01 2020  
**Lancet**

**The**

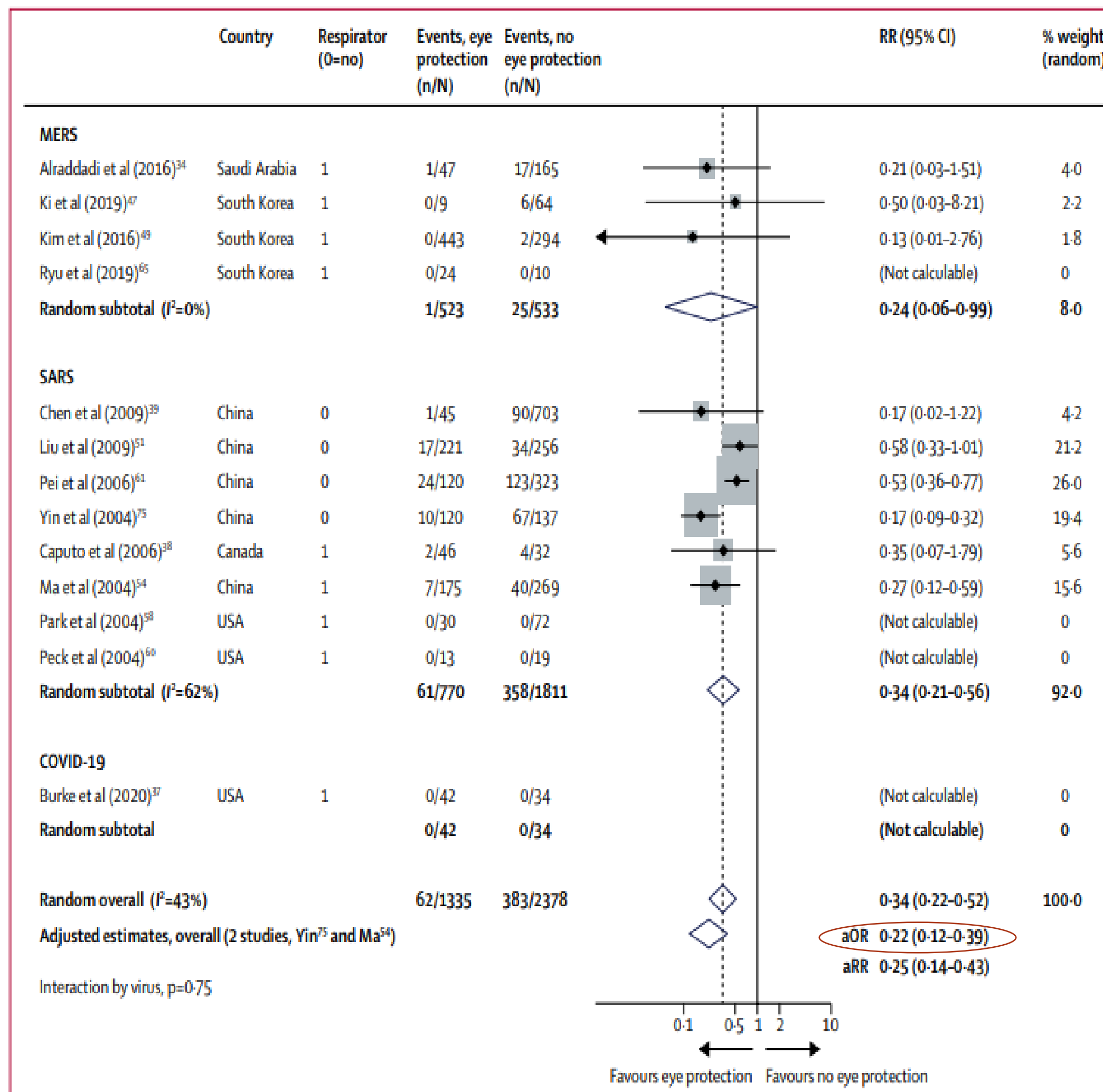
## Summary:

**Eye protection (use versus no use).**  
**Figure #4 in the next pages.**

- The use of eye protection was associated with a **reduced risk of viral transmission by 78%.**

## Conclusion

The Optimum use of face masks, respirators, and eye protection in public and health-care settings should be informed by these findings and contextual factors to help in containment of the viral transmission.



# Public health response



## Article 2: Association of Stay-at-Home Orders With COVID-19 Hospitalizations in 4 States

Published: May 27, 2020 in [the JAMA](#)

link:

Summarized by subject matter expert

### Summary:

- This is a research letter about a study done by the authors to assess the association between “stay-at-home” orders which were issued by the governors of 42 states in the US on April 18 2020 to mitigate the risk of COVID-19 and hospital admissions.
- Most studies use the number of confirmed cases or deaths as an outcome measure to assess the effectiveness of response to the COVID-19 outbreak, however case count is a conservative estimate of the actual number of infected individuals in the absence of community-wide serologic testing and so is the death count. **Hospitalization due to COVID-19 was used as an outcome.**
- Data on confirmed cases of COVID-19 hospitalizations was available on each state’s department of health website on a daily basis from March 2020. Among states issuing a statewide stay-at-home order those states were identified with at least 7 consecutive days of cumulative hospitalization data for COVID-19 before the stay-at-home order date and at least 17 days following the order date. Among the 4 states (Colorado, Minnesota, Ohio, and Virginia) meeting the inclusion criteria, the earliest date with data on hospitalizations was March 10. All states were observed through April 28.

# Public health response



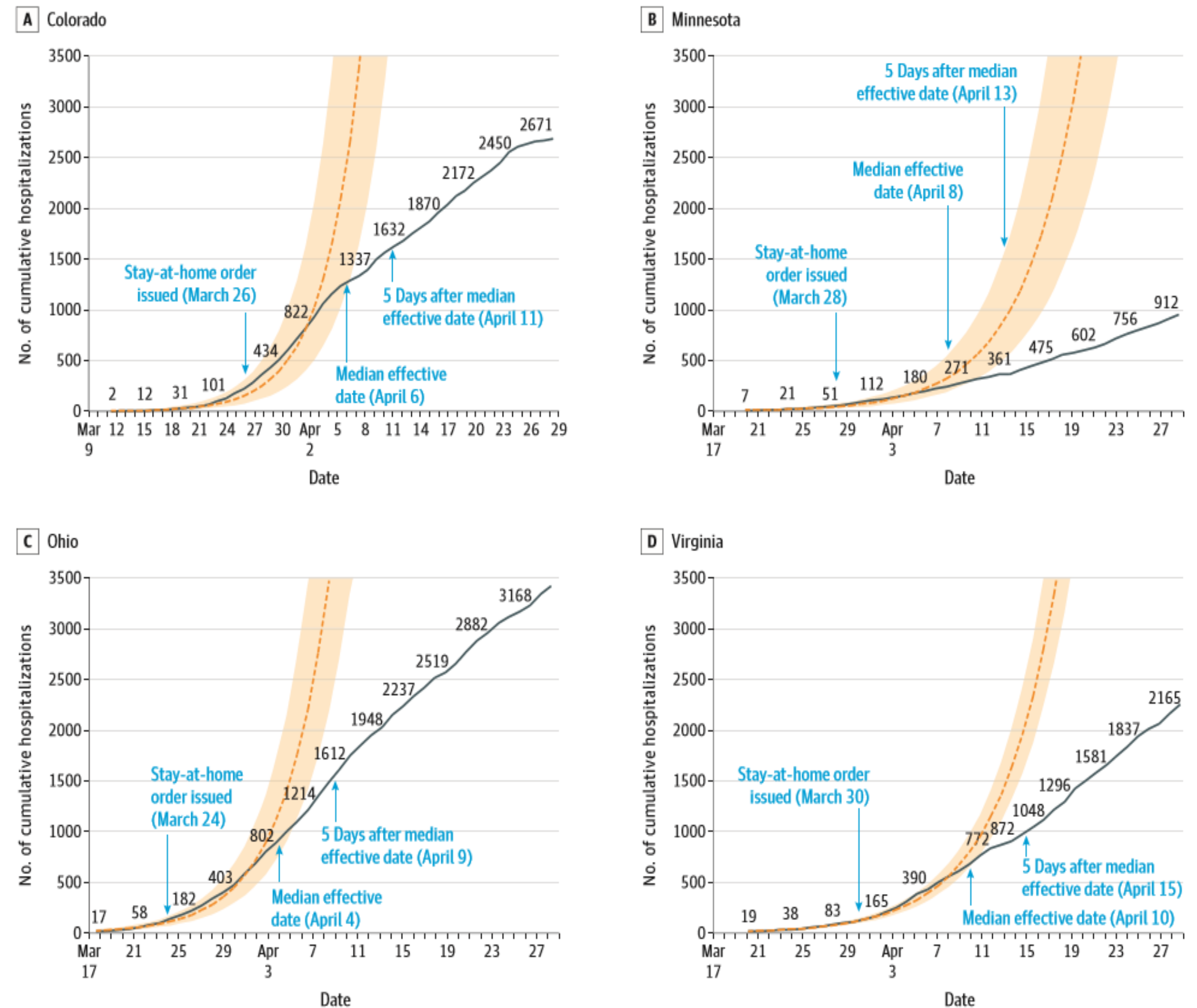
## Article 2: Cont., Summary:

In all 4 states, cumulative hospitalizations up to and including the median effective date of a stay-at-home order **show that observed hospitalizations consistently fell during this period, Figure.**

## Conclusion

- In 4 states with stay-at-home orders are linked to decrease in hospitalizations for COVID-19 during the period of study.
- Other factors like school closures, social distancing guidelines, general pandemic awareness, economic insecurity and loss of health insurance can also affect the spread virus and subsequent hospitalization but were not included in this analysis.

Figure. Projected vs Observed COVID-19 Hospitalizations Before and After Stay-at-Home Orders, March 10 Through April 28, 2020



Blue lines indicate observed cumulative hospitalizations (including those

$R^2 = 0.9798$ ;  $D: y = 15.932 \exp(0.1397t)$ ,  $R^2 = 0.99444$ ). Shaded regions



# Clinical Features

**Article 3:** Retraction—Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis

**Published: June 4, 2020 [in the lancet.](#)**

## Summary:

As many actions have been raised after the lancet journal have published a research on HCQ negative outcomes using a very large number of data in covid19 patients. The journal have received many concerns about the validity of these results. Below are the response of the lancet editors:

- On 3<sup>rd</sup> of June the Journal have issued Expression of Concern to alert readers to the fact that serious scientific questions have been brought to our attention. They will update this notice as soon as they have further information.”

- On 4<sup>th</sup> of June 2020 , the lancet have retracted the paper stating the below:

*“Today, **three of the authors of the paper, "Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis", have retracted their study.** They were unable to complete an independent audit of the data underpinning their analysis. As a result, they have concluded that they **"can no longer vouch for the veracity of the primary data sources."** The Lancet takes issues of scientific integrity extremely seriously, and there are many outstanding questions about Surgisphere and the data that were allegedly included in this study. Following guidelines from the Committee on Publication Ethics (COPE) and International Committee of Medical Journal Editors (ICMJE), institutional reviews of Surgisphere’s research collaborations are urgently needed.*

*The retraction notice is published today, June 4, 2020. The article will be updated to reflect this retraction shortly.*

For background information on the topic please read [ADPHC Scientific report on 27.5.2020.](#)