

ABU DHABI PUBLIC  
HEALTH CENTRE

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# Scientific Research Monitoring on COVID-19

28 April 2020

# 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.
- SARS-COV2 stay viable in aerosol for hours and in surface up to 3 days.
- Two strain have been identified for SARS-COV2 (L type (more aggressive ) and S type .

## 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).
- Isolation is the best measure to control transmission.

## 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. No evidence of transmission through breast milk.

## 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.
- WHO forum held 11-12 Feb 2020 to mobilize research on COVID19 vaccinations and therapies.

# 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)



# Today's 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

- **Mental Health:** A study assessing mental health of children in Wuhan have shown that nearly less than quarter of the children have depressive symptoms and 18% have anxiety. Children in Wuhan school are higher in depressive and anxiety score compared to another city in china.
- **Treatment:** an article hypothesized that Vitamin D might play a role in the treatment of COVID19.
- **Public Health response:** Comparative analysis of Countries issue compulsory use of mask

*Due to abundant COVID19 information resources and given the urgent need to keep up with the updates .Below is a cluster of other academic articles for interested reviewer.*

## Others

- [Recommendations for phototherapy during the COVID-19 pandemic](#)
- [Exposure to air pollution and COVID-19 mortality in the United States](#)
- [The Need for Global Coordination and Cooperation: Transparency and Uncertainty Amid the COVID -19 Outbreak](#)
- [Coronavirus and Urbanization: Does Pandemics Are Anti-Urban?](#)

# WHO daily report

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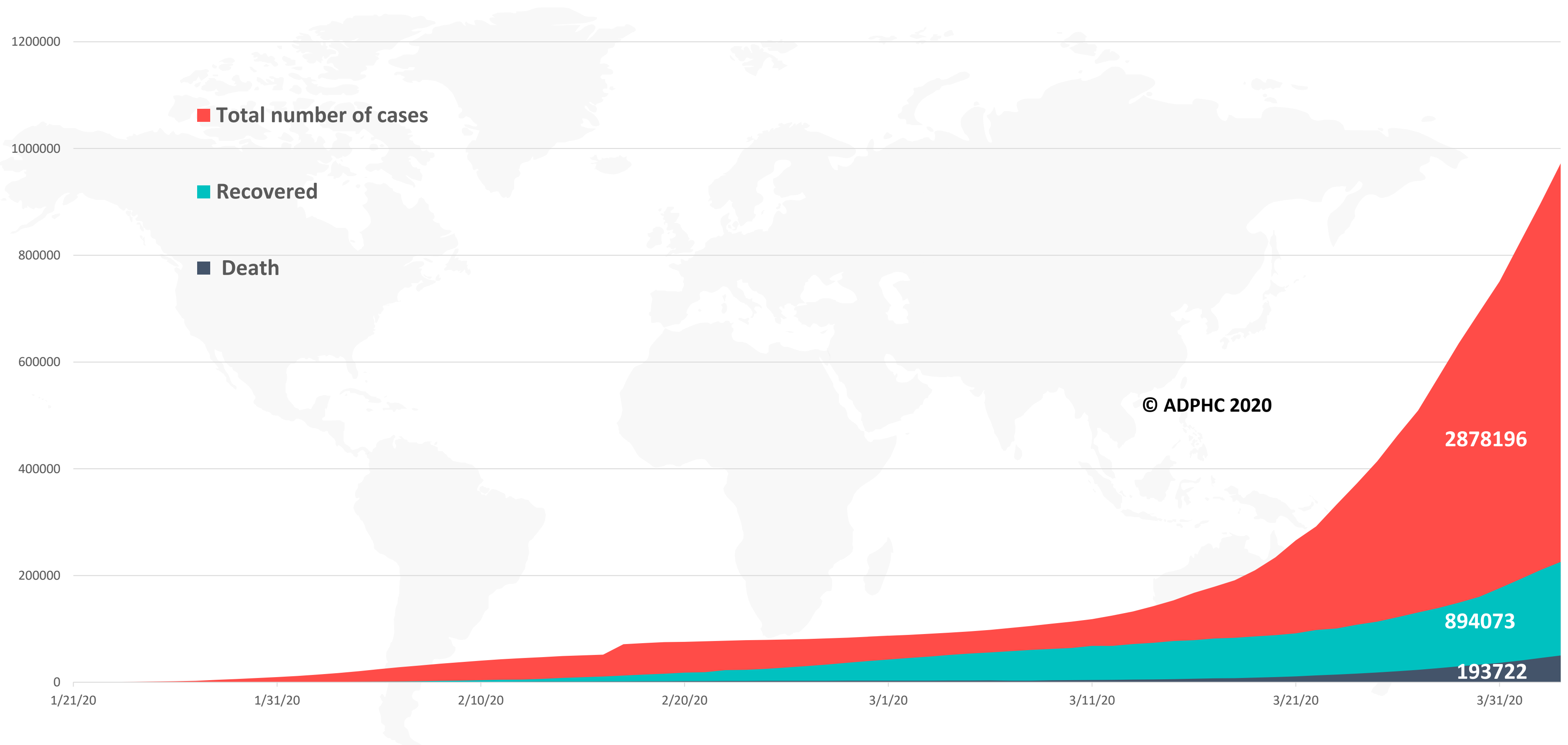
## WHO daily report 27 April 2020

- The WHO Regional Office for the Americas has published a document providing guidance regarding the operation of immunization programs in the context of the COVID-19 pandemic.
- The Ministry of Health, Consumer Affairs and Social Welfare of Spain has recently changed its criteria for reporting COVID-19 cases to include only those with positive polymerase chain reaction (PCR) test results. This has resulted in a retrospective decrease of 12,130 cases. Spain will continue to report only new PCR positive cases.
- An update on Emergency Medical Teams, the Global Health Cluster, the Global Outbreak Alert and Response Network, and Risk Communications and Community Engagement.

# Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21<sup>st</sup> to April 27, 2020)

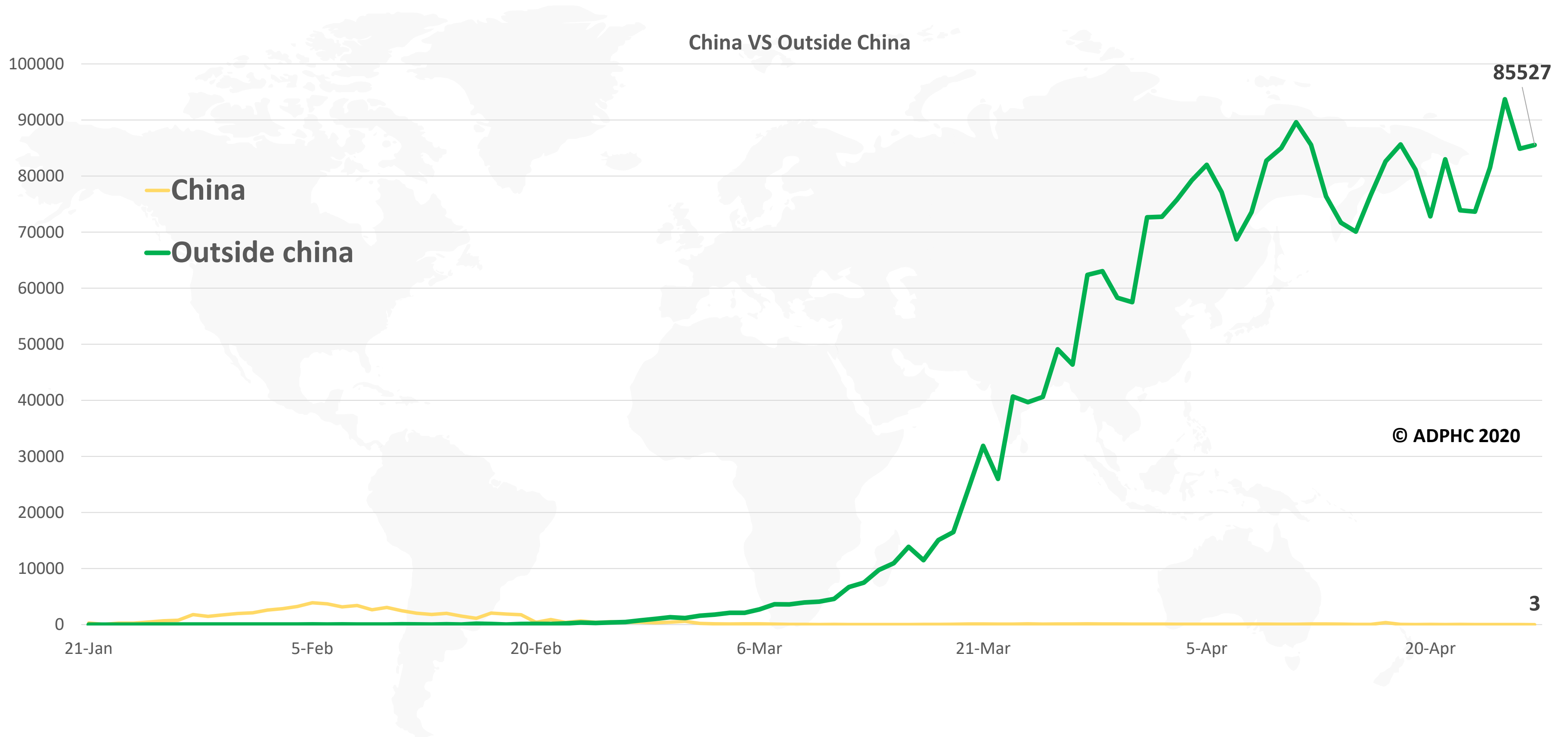


Line graph published by Abu Dhabi Public Health Center 2020.

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



**Figure 2: Daily new infected COVID-19 cases reported between (January 21 to April 27, 2020).**



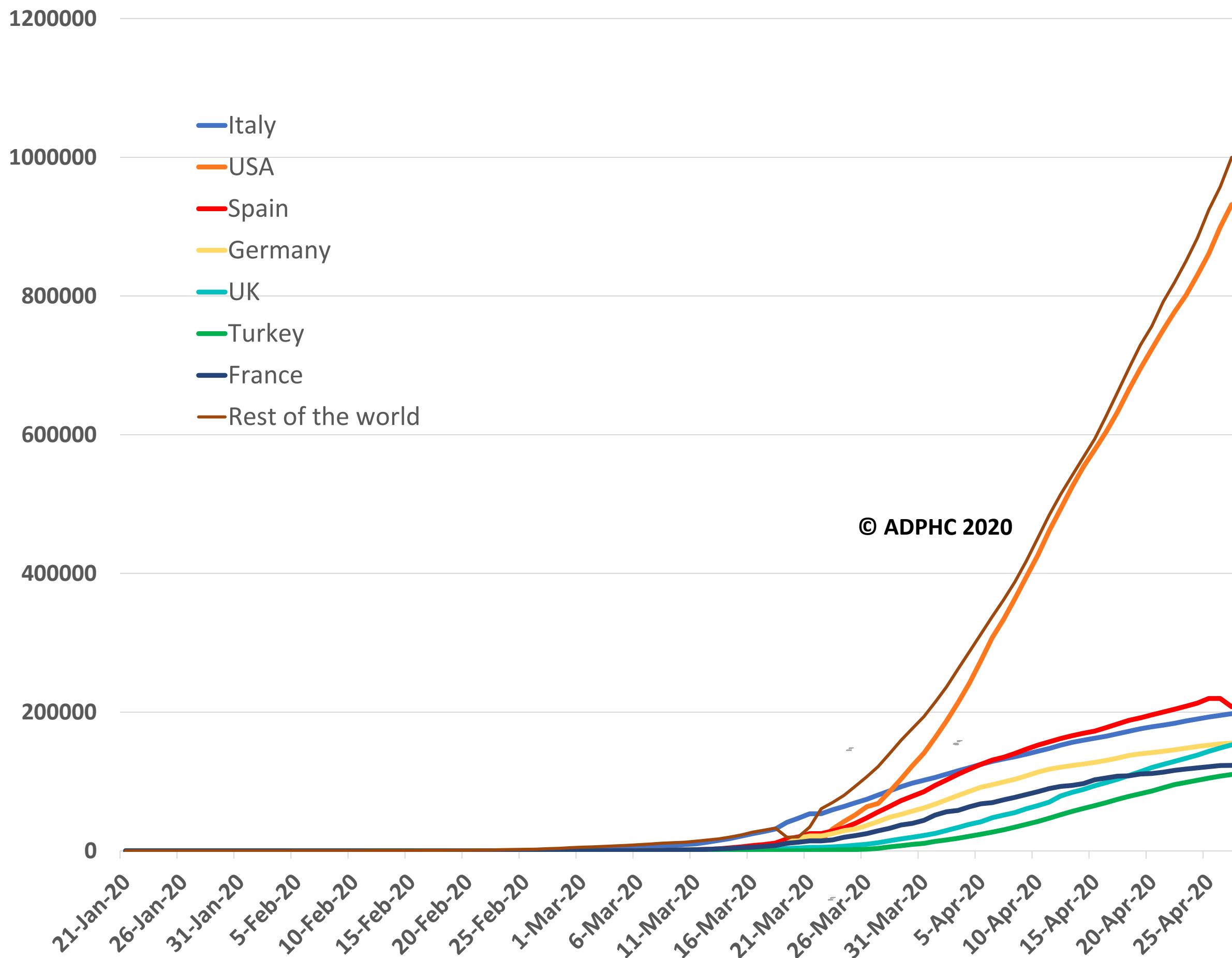
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

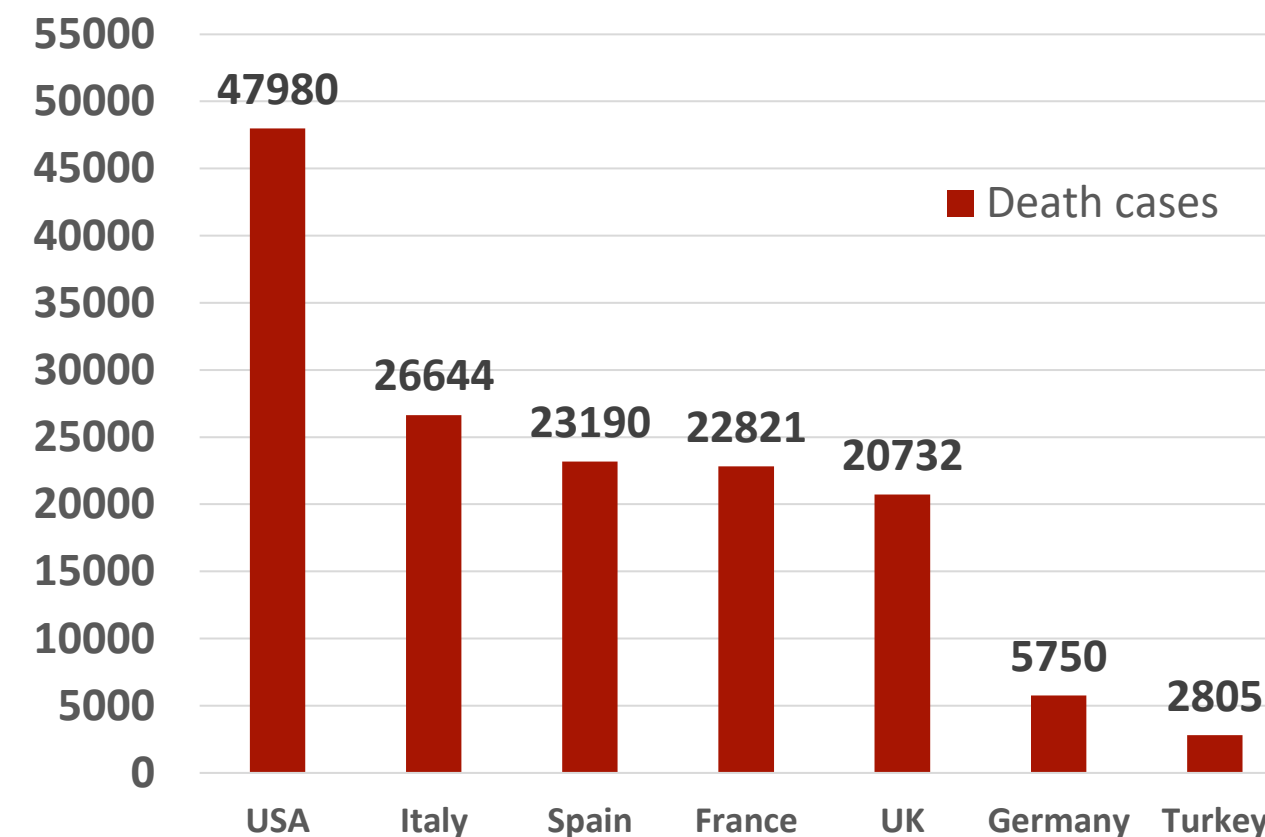
# Epidemiology



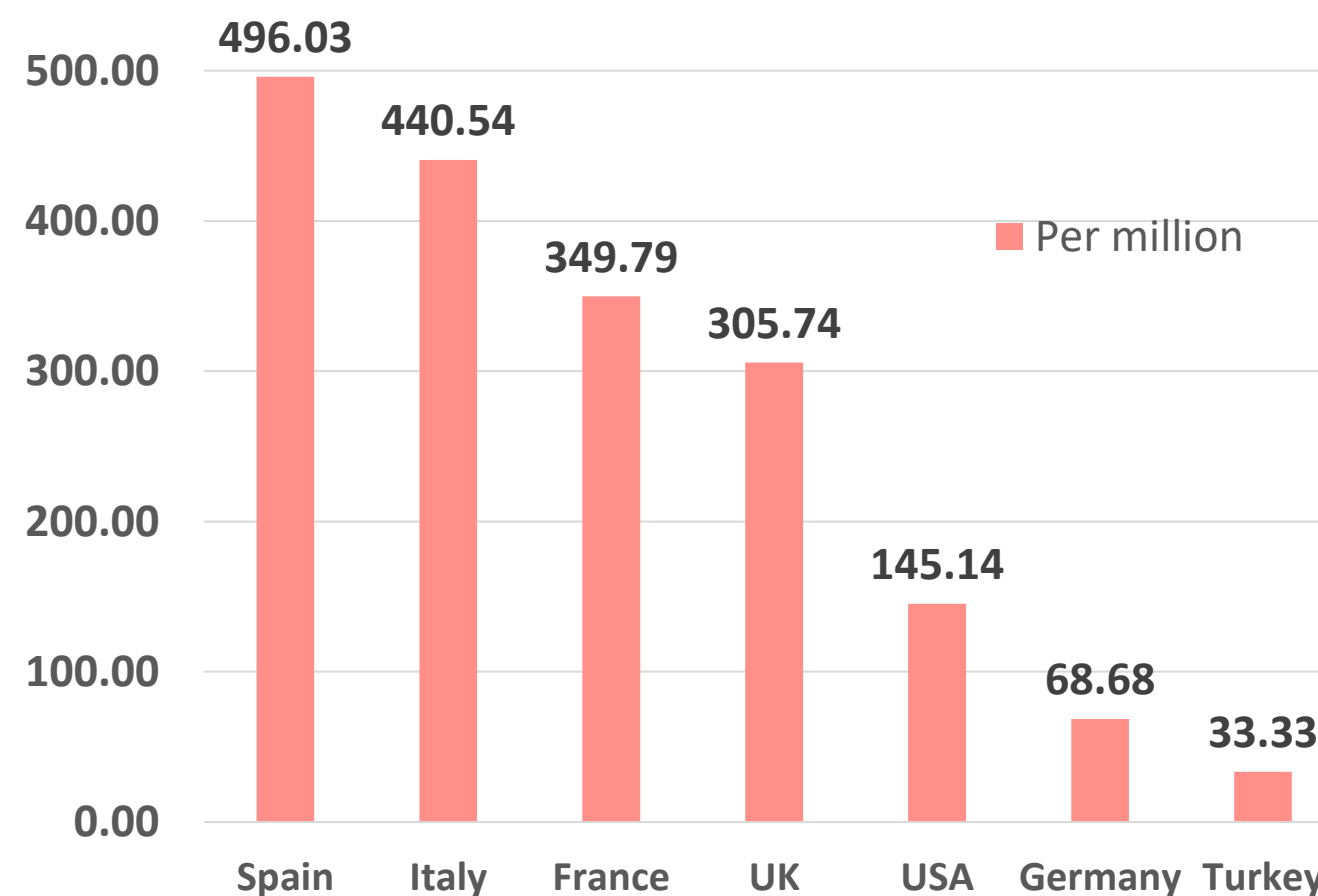
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to April 27, 2020).



## TOTAL DEATHS



## DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

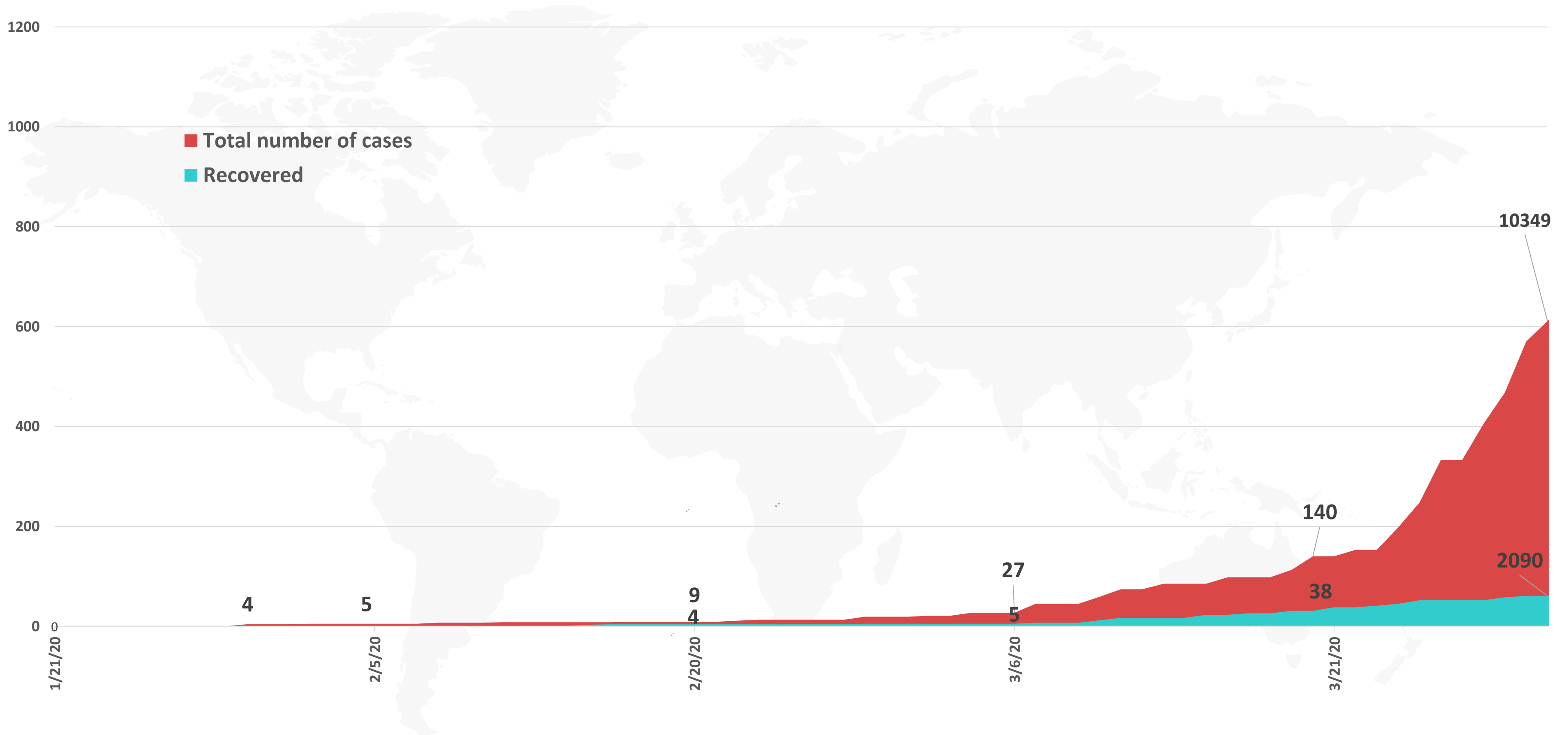
Data resources: [WHO](https://www.who.int)



# Epidemiology



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



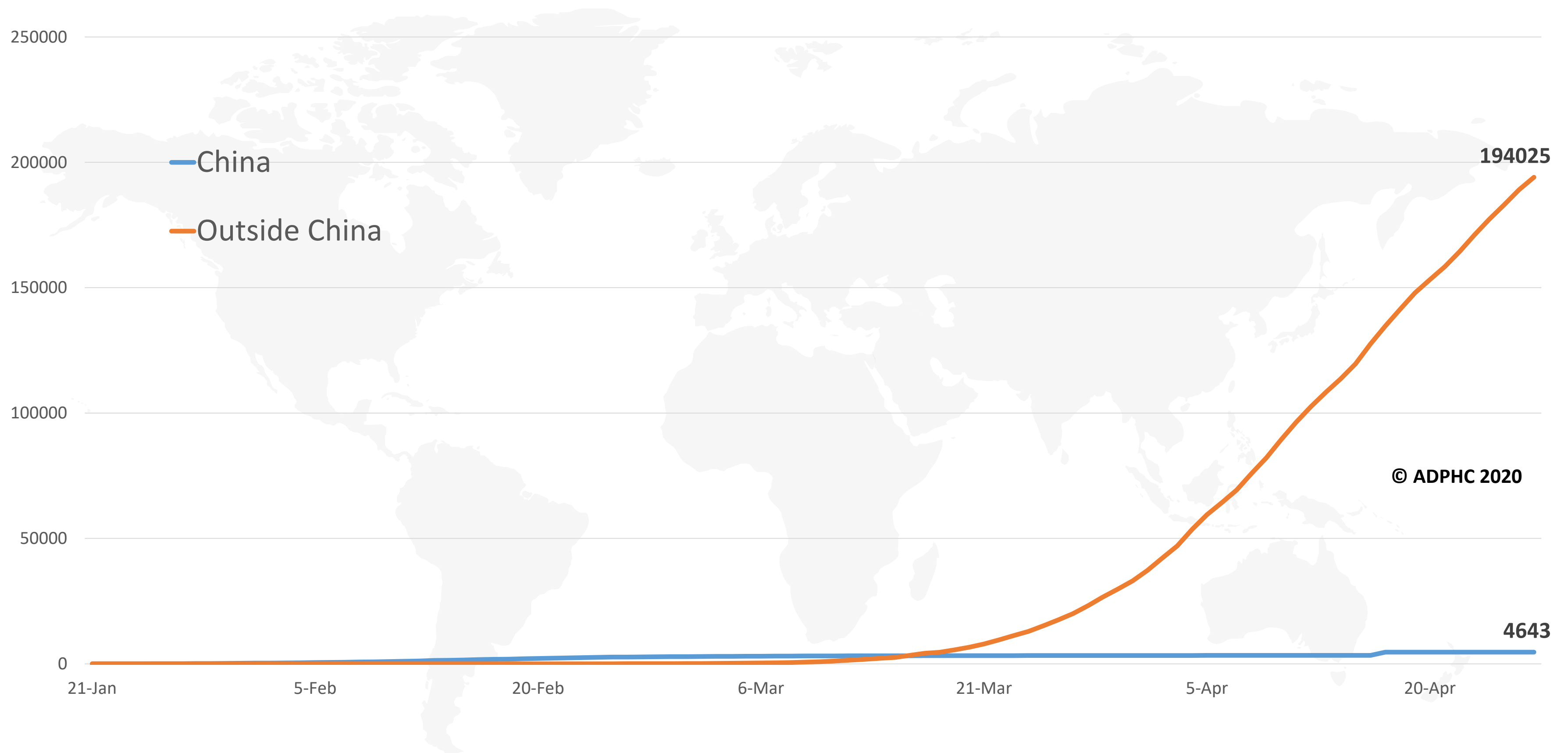
Line graph published by Abu Dhabi Public Health Center 2020.

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 April 27, 2020).**



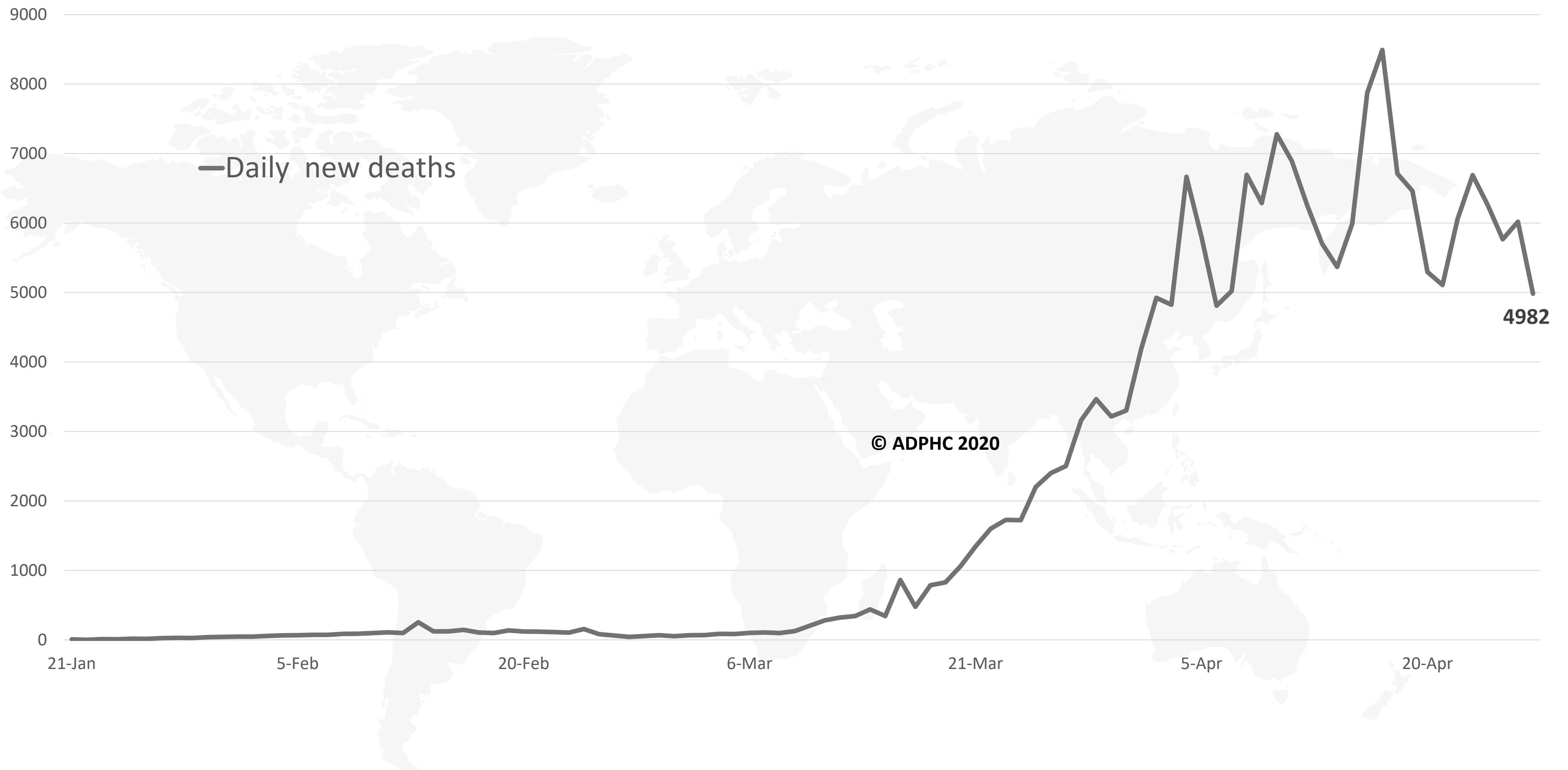
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Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



**Figure 6: Global daily new deaths due to COVID-19 (January 22 to April 27, 2020).**



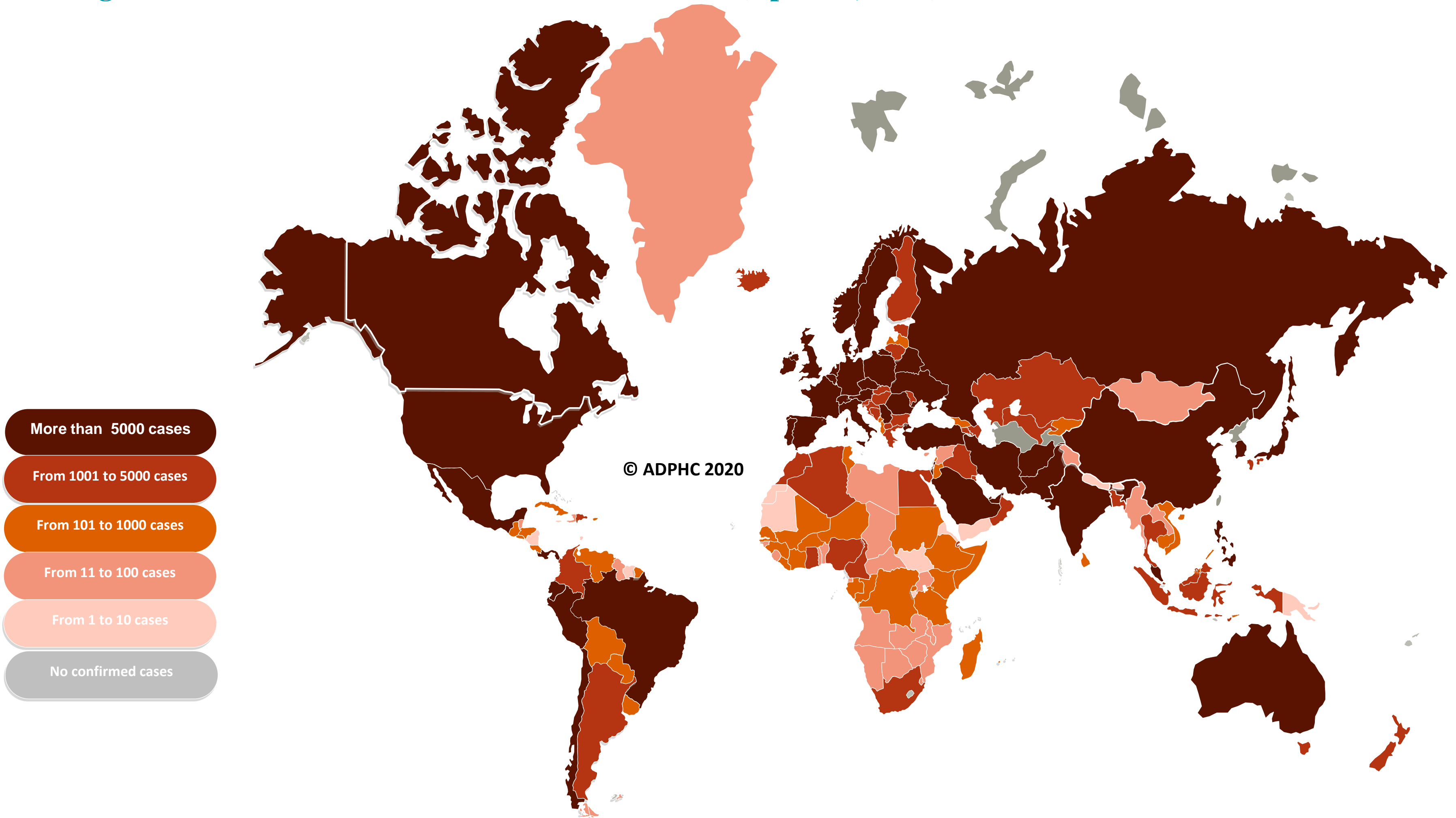
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



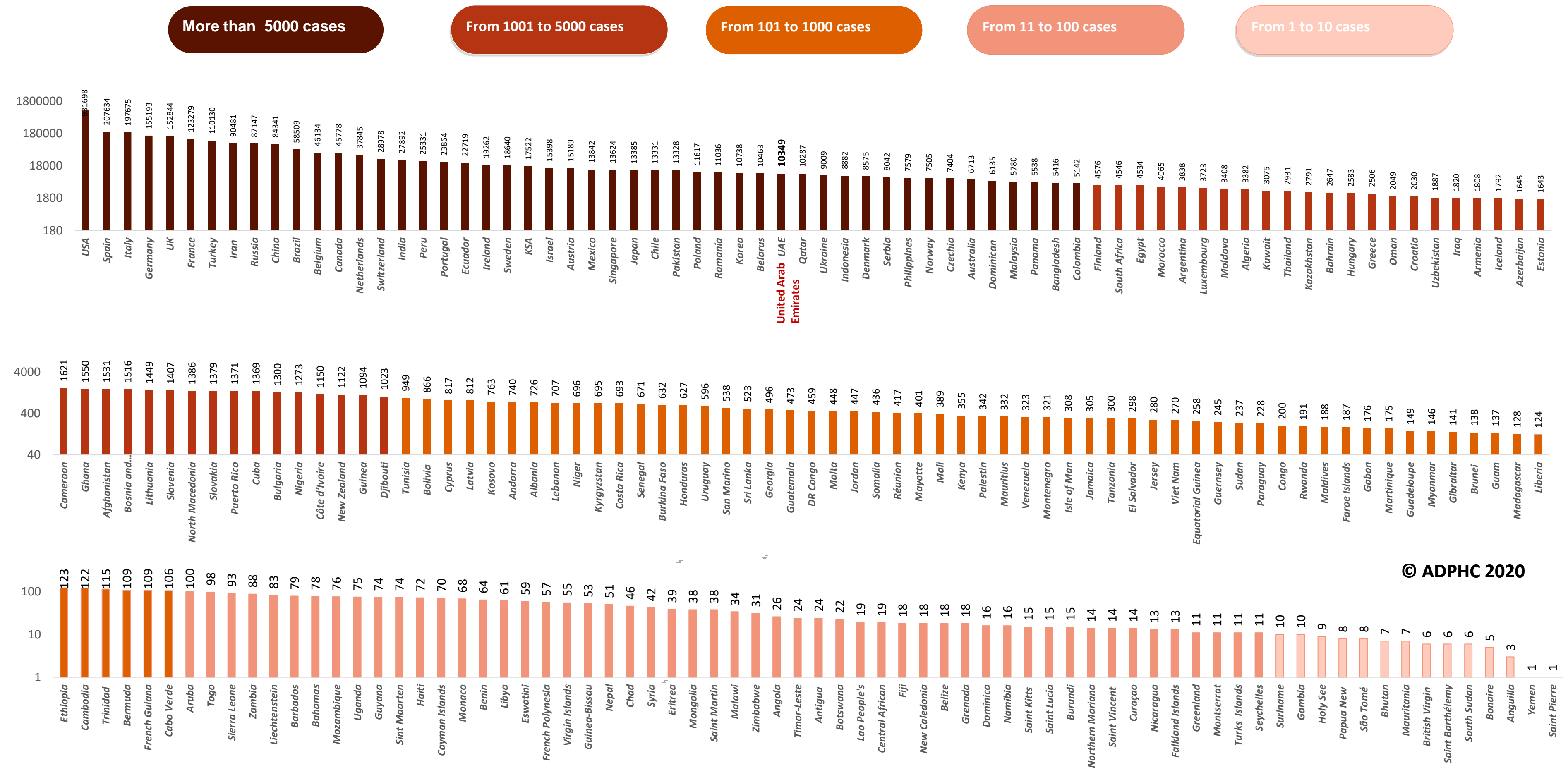
Figure 7a : Global distribution of COVID-19 cases (April 27, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases April 27, 2020)



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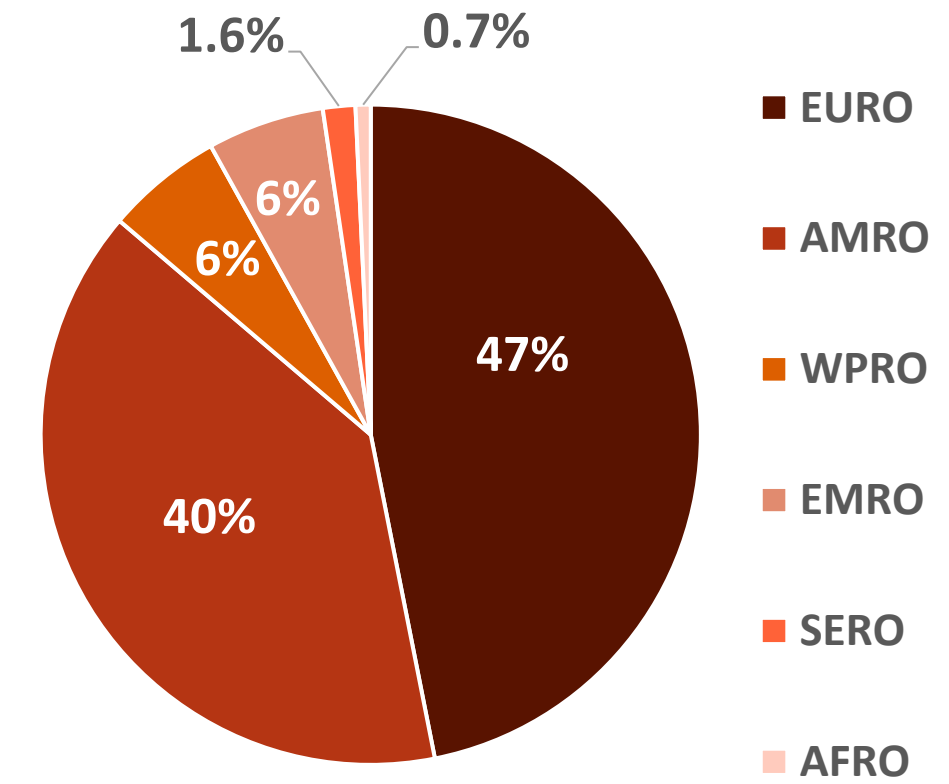
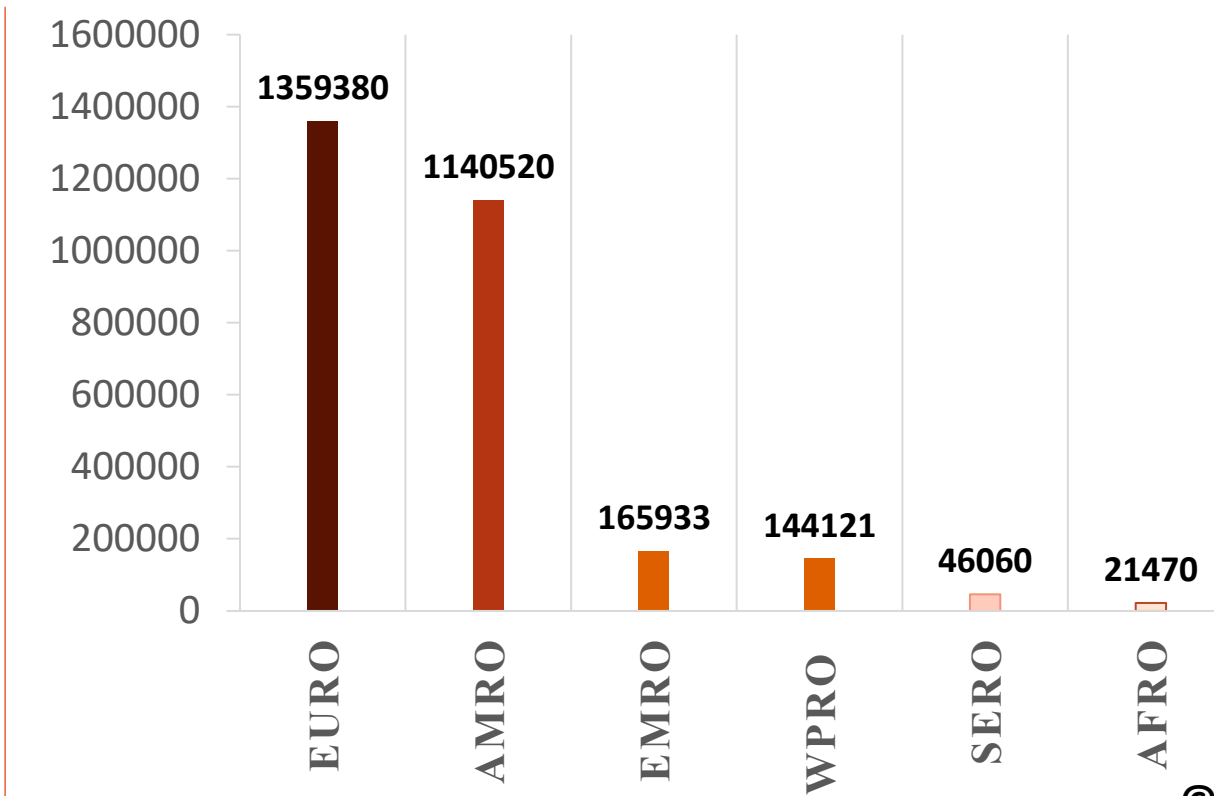
Map chart published by Abu Dhabi Public Health Center 2020.

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



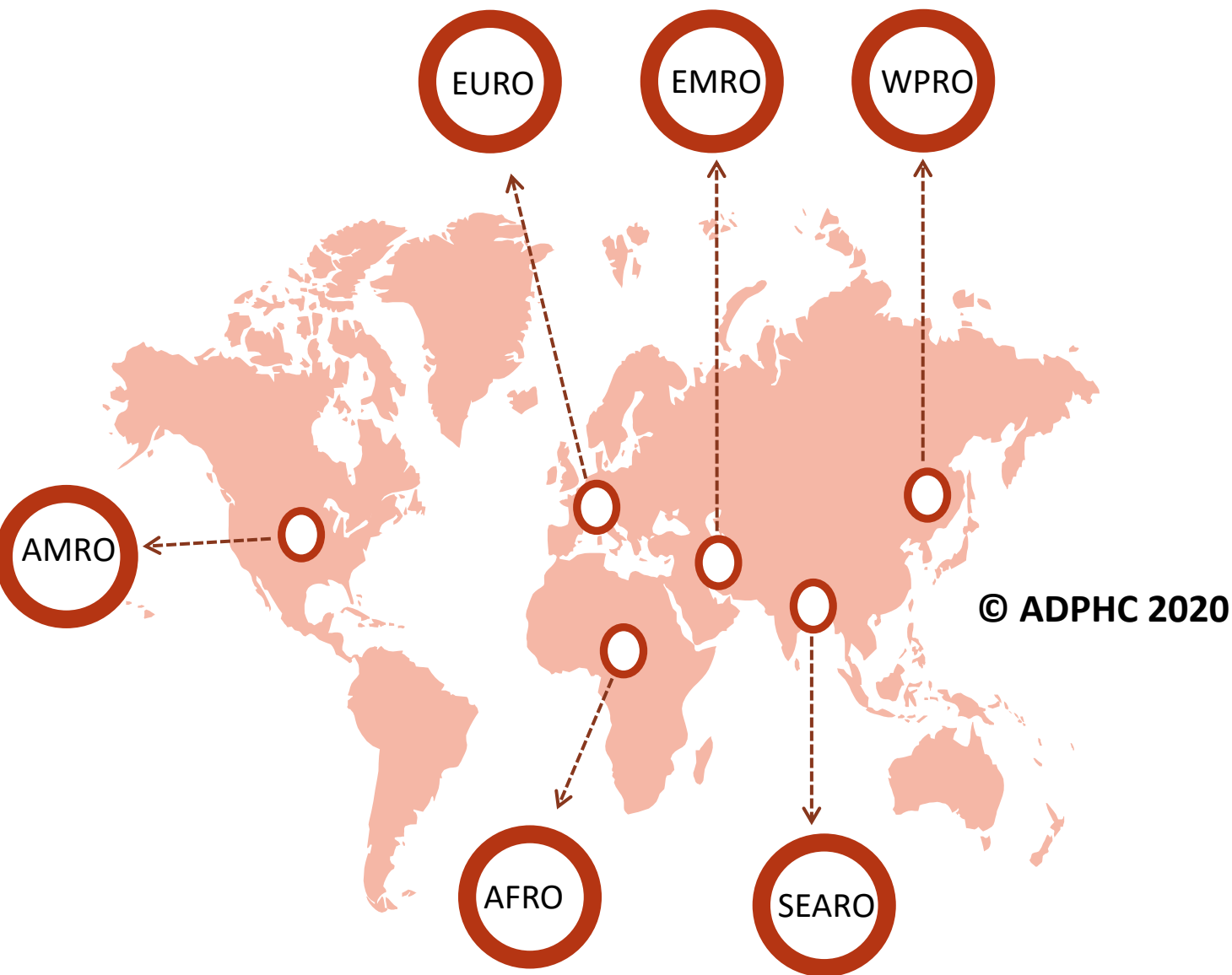
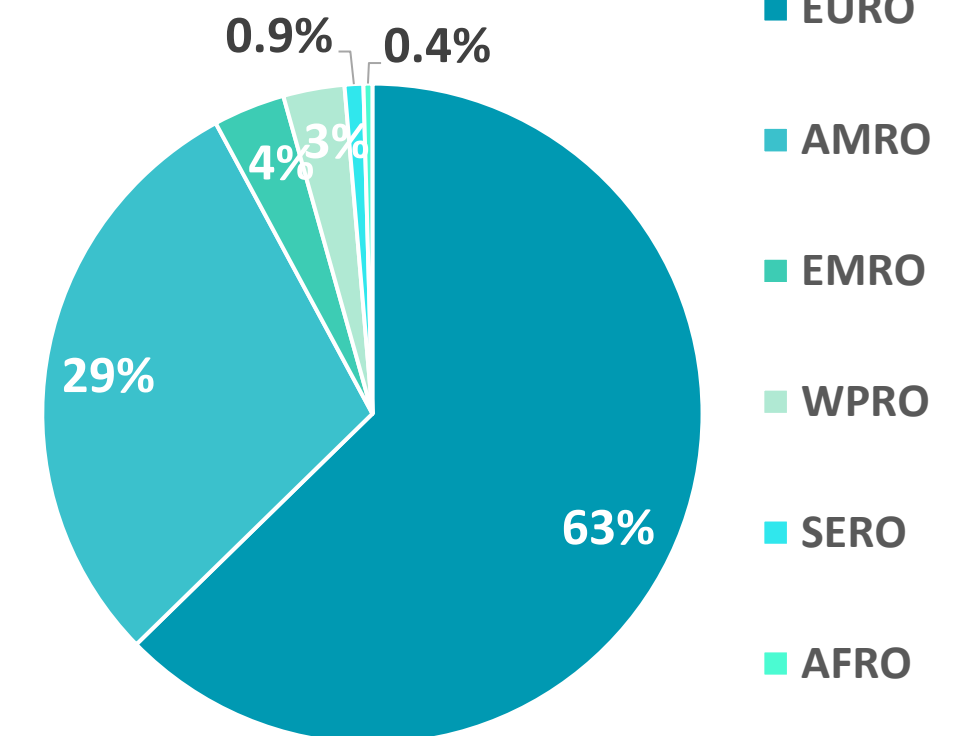
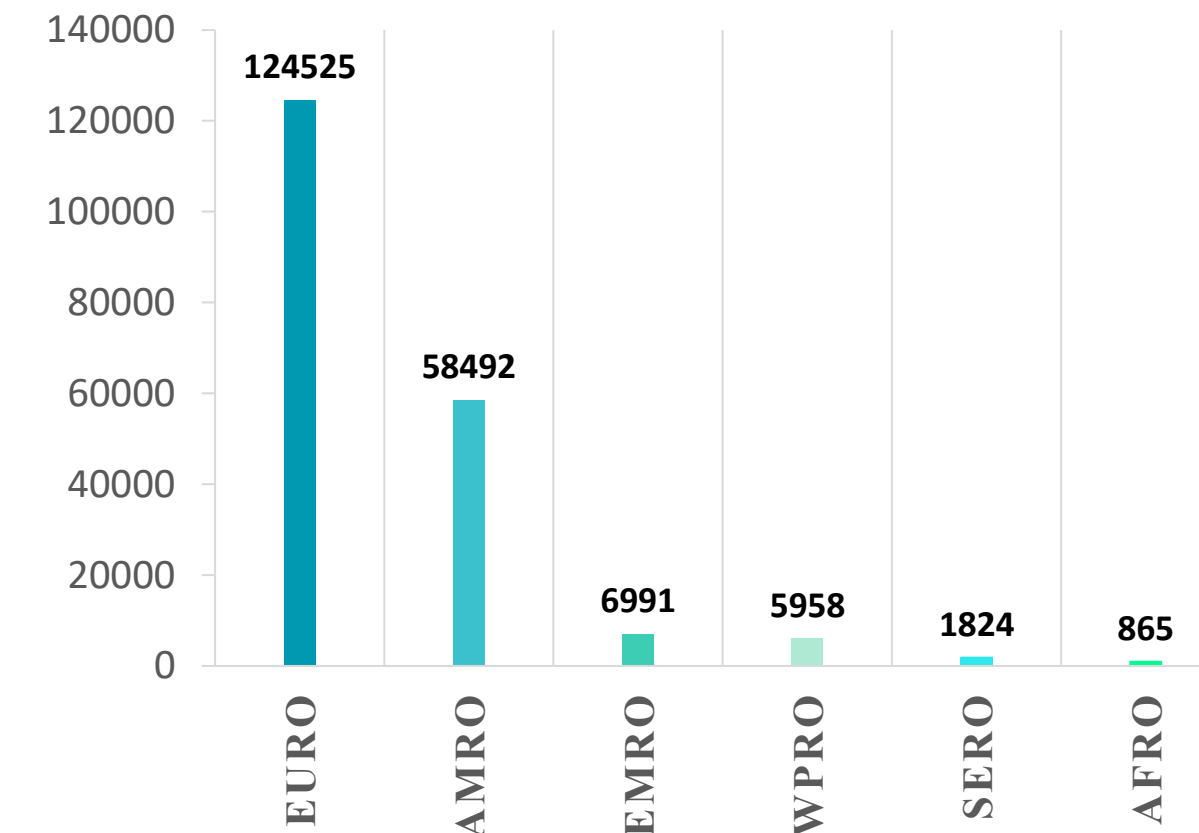
Figure 8: illustrate the Global distribution of COVID19 cases per region (April 27, 2020)

## INFECTED



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## DEATH



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Map chart published by Abu Dhabi Public Health Center 2020.

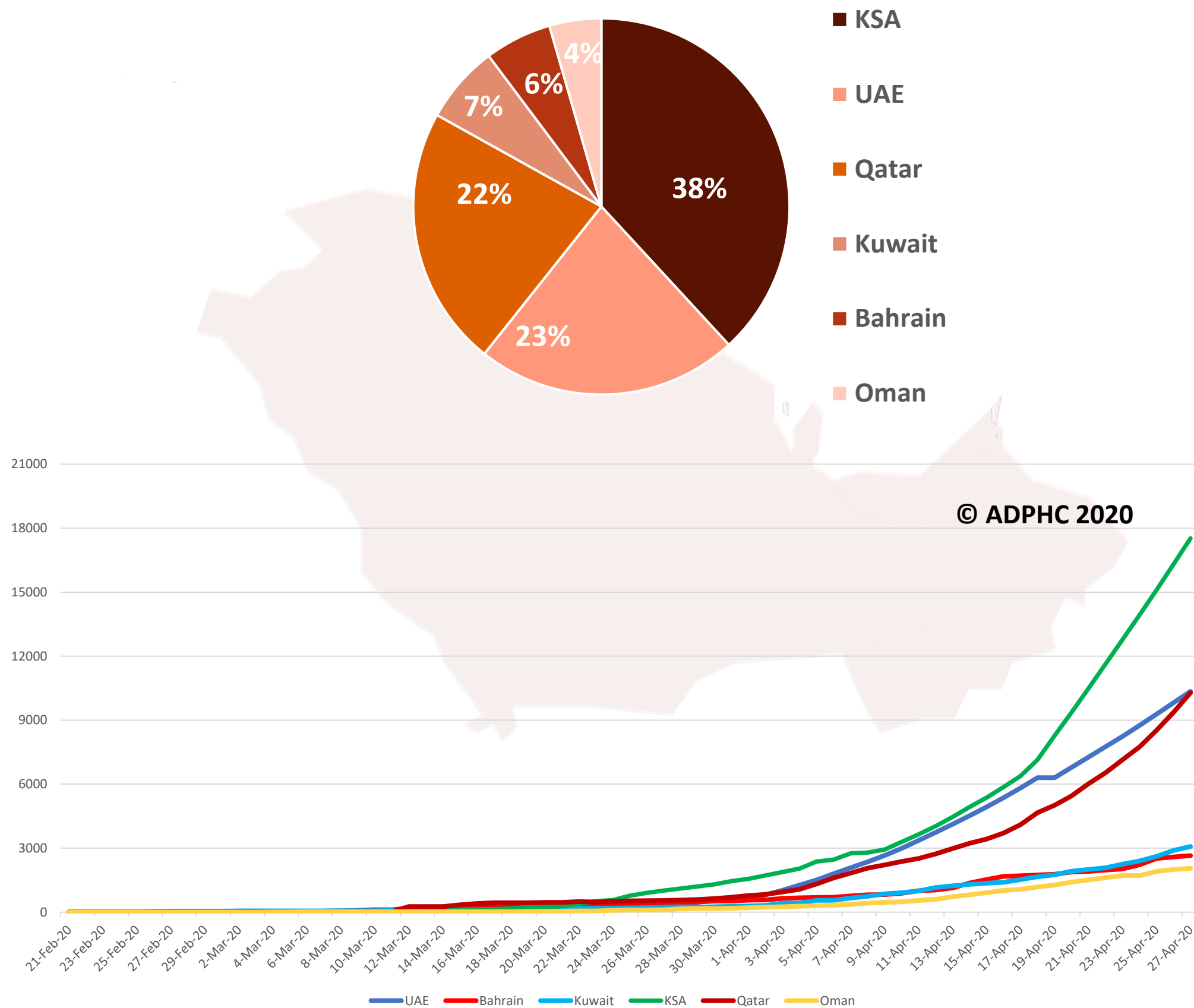
Data resources: [WHO](http://www.who.int)

# Epidemiology

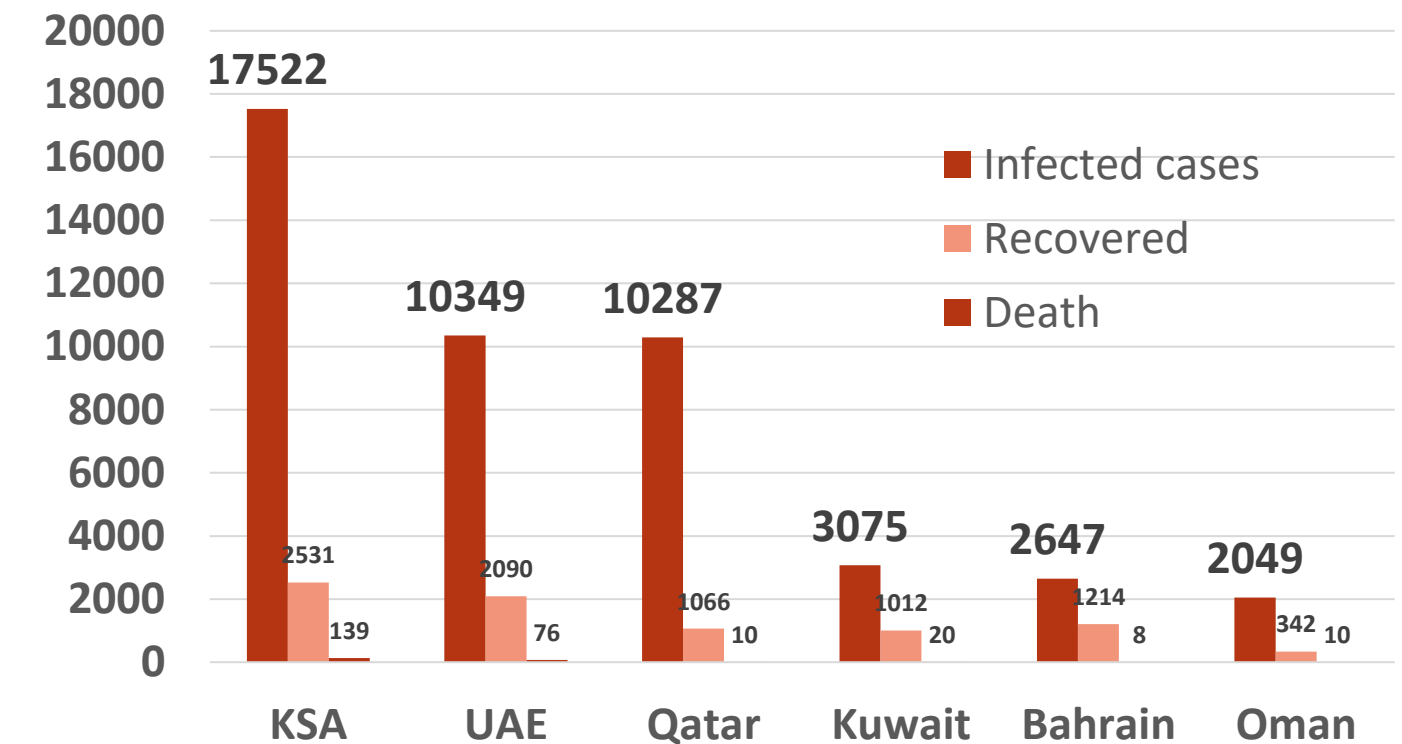


**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (April 27, 2020)**

## 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](http://www.who.int)

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# Public Health Response:



**Article 1:** Mental Health Status Among Children in Home Confinement During the Coronavirus Disease 2019 Outbreak in Hubei Province, China

**Published:** April 24, 2020 in [JAMA](#)

## Summary:

- In Hubei province, a total of 2,330 primary school students from grades 2 to 6 were invited to complete an online survey between February 28 and March 5, 2020. Data included gender, school grade, **optimism about the epidemic**, if they worried about being infected by COVID-19, and **depressive and anxiety symptoms** measured by the **Children's Depression Inventory Short Form (CDI-S)** and the Screen for **Child Anxiety Related Emotional Disorders** respectively.

## Findings:

- Less than a quarter of the students reported depression (**22.6%**) and **anxiety (18.9%)** symptoms.
- In **Wuhan**, students reported significantly **higher CDI-S scores** than those in Huangshi with a greater risk of **depressive symptoms**
- Students who reported **slightly or not worried about being infected** by COVID-19 had significantly **lower CDI-S scores** as compared to those **reported quite worried** with a **decreased risk of depressive symptoms**.
- Regarding optimism about epidemic, those who reported **not optimistic** about the epidemic had **significantly higher CDI-S scores** than those were quite optimistic with an increased risk of depressive symptoms.
- The results suggest that serious infectious diseases may affect mental health of the children. These students will **be followed-up for better understanding about how long these outcomes will exist**. An improved knowledge of how COVID-19 outbreak influence students' mental health can help guide optimize future interventions.



# Treatment:



## Article 2: Vitamin D: A simpler alternative to tocilizumab for trial in COVID-19?

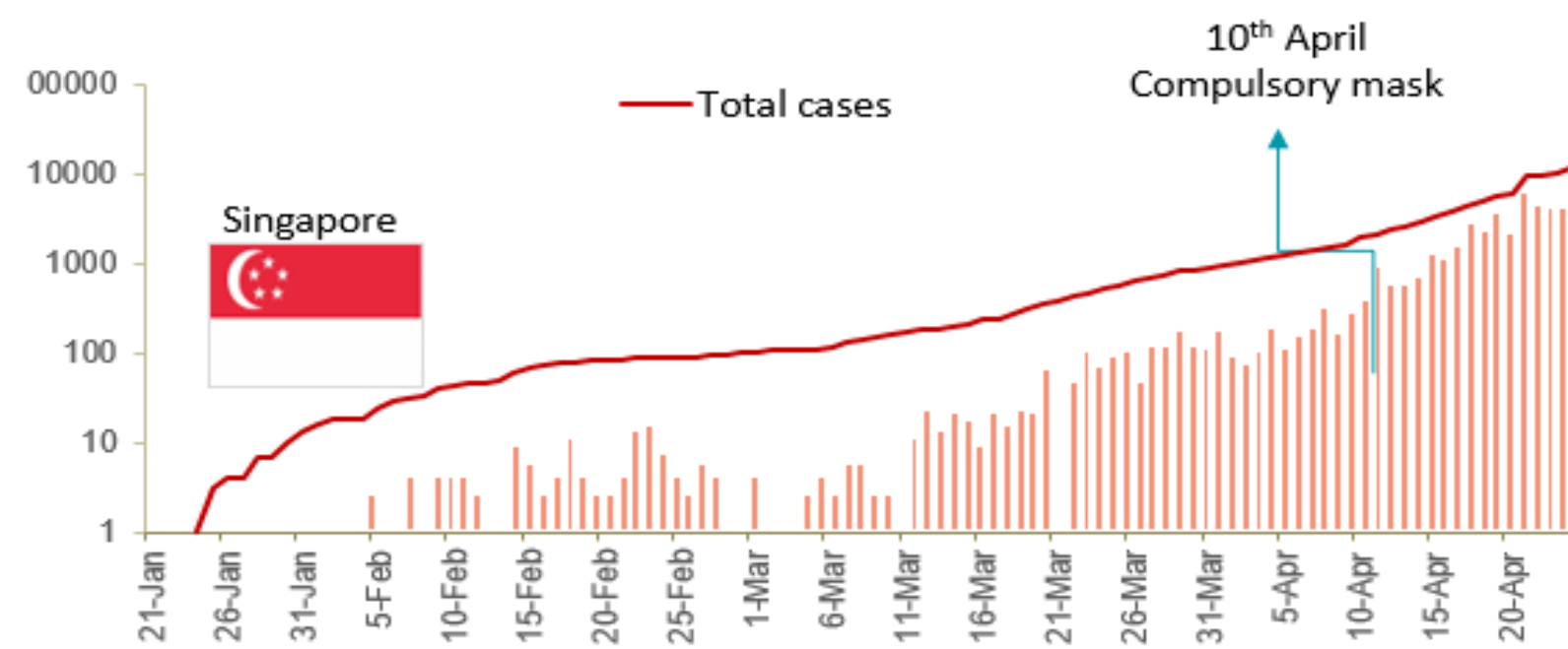
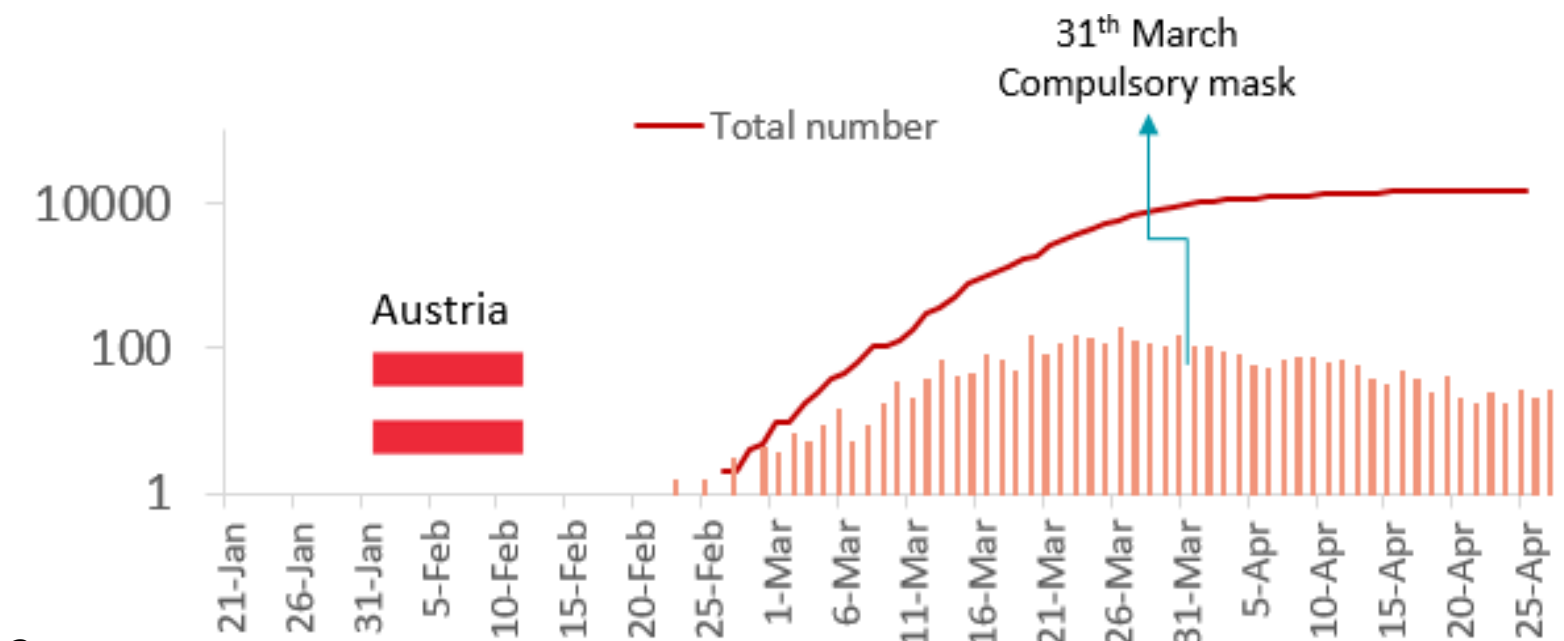
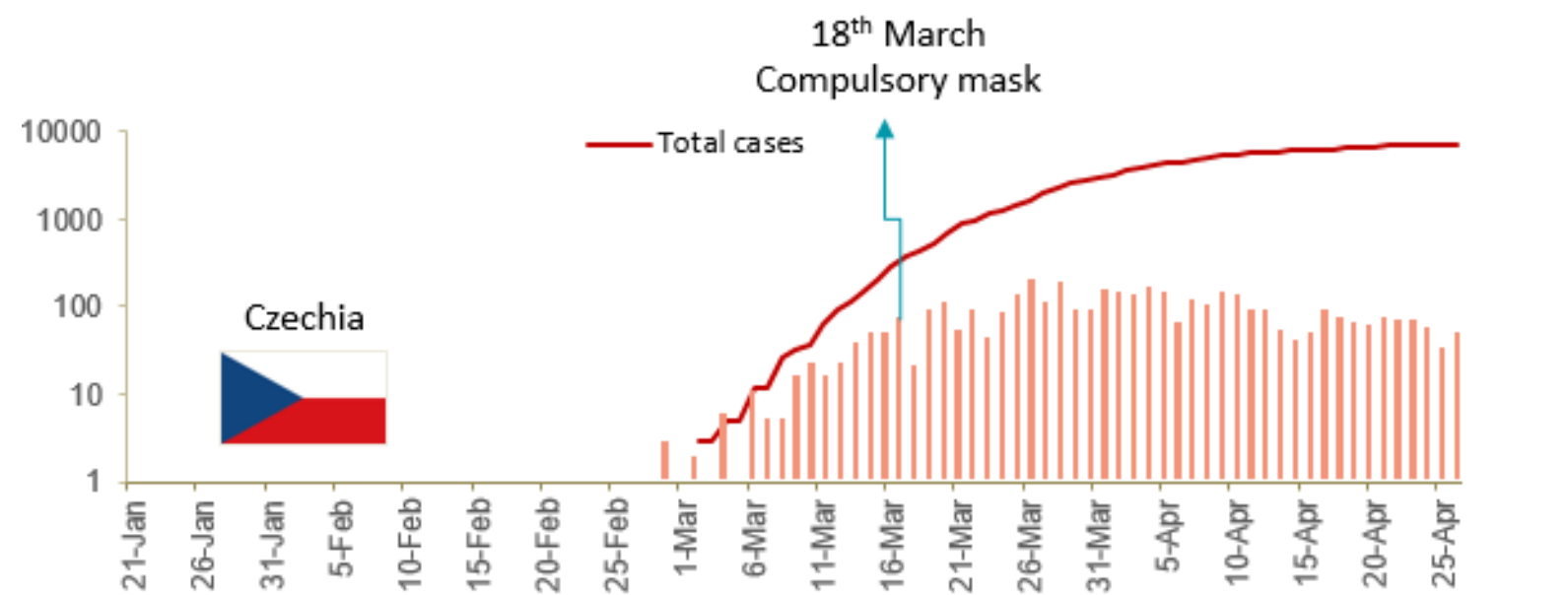
Published: 23 April 2020 in [Elsevier](#)

### Summary:

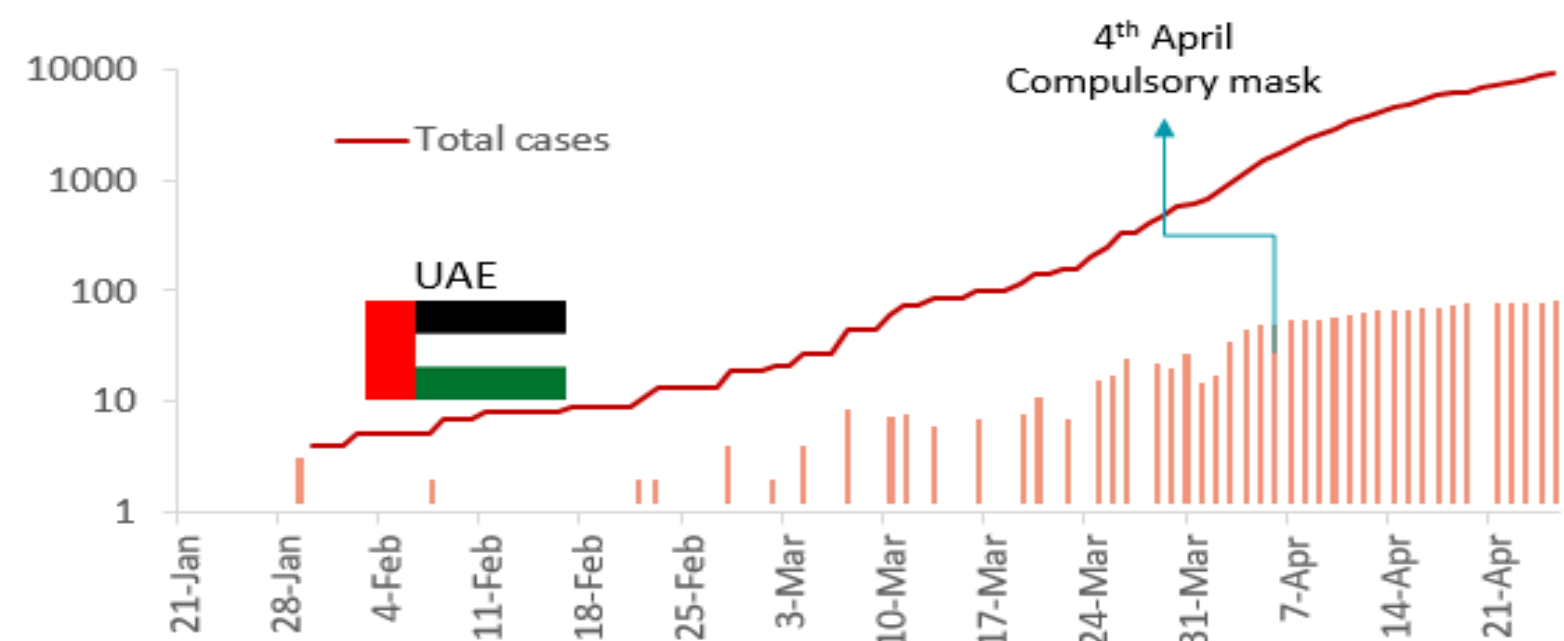
- This article hypothesis that vitamin D supplements may play a role in the treatment of COVID19 similar to tocilizumab effect in COVID19 treatment.
- Severe patient with COVID-19 experience a cytokine storm which produces a large quantities of interleukins, specifically IL-1 and IL-6, and tocilizumab is a potent blocking agent of the IL-6 receptor.
- The evidence for tocilizumab is anecdotal, this drug does offer hope for managing patients with pulmonary manifestations of COVID-19.
- **If tocilizumab does prove to be effective, it will come at a substantial cost, both economic, as it is very expensive, and therapeutic, as it can only be delivered by intravenous infusion.**
- **Is there a simpler, widely available alternative to tocilizumab that would be readily accessible and not require parenteral administration?**
  - **Trial of Vitamin D supplementation has been shown to reduce the incidence of influenza A .**
  - Vitamin D play a role in modulating the production of the interleukins, thus reducing the impact of influenza?
  - There is recent evidence that **Vitamin D deficiency** is associated with **increased** levels of IL-6 in patients with HIV infections
  - There is also evidence indicating that Vitamin D supplementation can reduce **excess IL-6 levels in diabetic mice.**
  - There is a need for retrospective **study to determine Vitamin D levels in the specimens of COVID19 patients (survivors and non-survivors) to determine the role of vitamin D in the treatment or prevention of COVID19 disease progression.**

# Public health response Compulsory use of mask

The daily and the cumulative number of COVID19 cases in countries where a compulsory use of mask have been issued



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The red line indicates the cumulative number of infected cases while the bar chart indicated the daily infected cases number in a country.

Graphs are published by Abu Dhabi Public Health Center 2020  
Resources obtained from WHO, [Czechs](#), [Singapore](#), [Austria](#)