

ABU DHABI PUBLIC  
HEALTH CENTRE

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# Scientific Research Monitoring on COVID-19

23 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)



# 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

**Treatment :** a randomized controlled trial on HCQ showed no changes compared to standards of care in 150 patients. (China)

**Public health response:** article state the most important questions that shall be answered by experts to enable decision and policy making in regards to COVID19.

**Public Health response:** summary of WHO recommendations of safe Ramadan practices.

*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

1. [COVID-19 disrupts vaccine delivery - The Lancet Infectious Diseases](#)

Article illustrating how the COVID19 pandemic have affected the well child vaccination campaigns especially in countries with limited resource.

1. [Assessment of Specimen Pooling to Conserve SARS CoV-2 Testing Resources](#)

The study results indicated that pooling is an effective approach to expand the impact of limited test resources and reagents during specific stages of a disease outbreak.

1. [ST-Segment Elevation in Patients with Covid-19 - A Case Series](#)

Data of 18 patient with COVID19 in the US , either presented with MI or during hospital stay showed elevation. Majority of the patient have normal EF. The reason for cardiac injury in COVID19 patient is still unknown.



## WHO daily report 22 April 2020

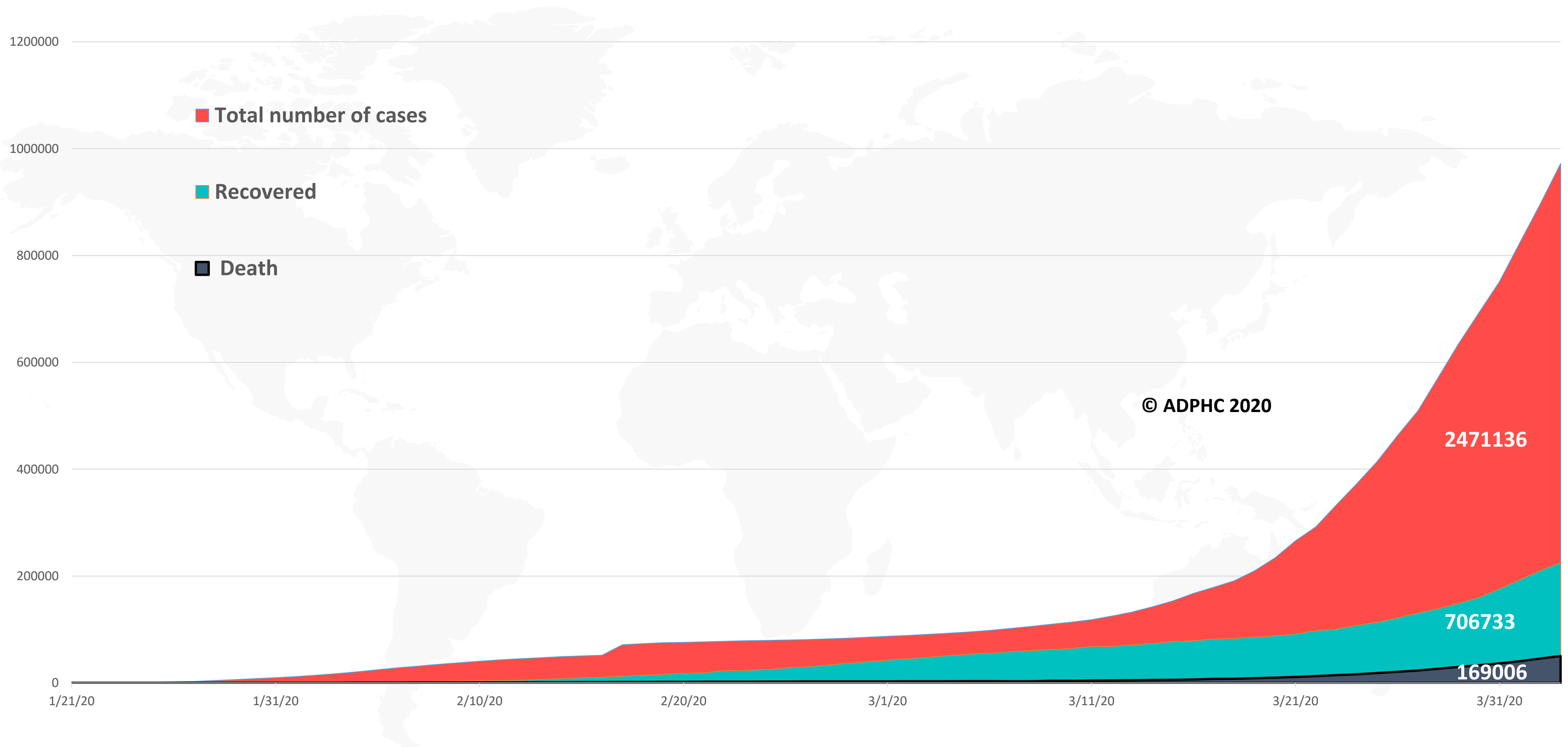
- WHO is deeply saddened at the death of a member of personnel during a security incident in Rakhine district of Myanmar, who was transporting COVID-19 surveillance samples in support of the Ministry of Health and Sports. WHO condemns targeting of health workers involved in the COVID-19 response.
- A WHO mission to Belarus has recommended the introduction of community-wide steps to increase physical distancing.
- OpenWHO has launched a new online course on *Standard precautions: Hand hygiene*. The module has been prepared to help summarize the WHO guidelines on hand hygiene, associated tools and ideas for effective implementation. To date, there has been more than 1.5 million enrolments in the platform's courses to support the COVID-19 response.
- The WHO Information Network for Epidemics (EPI-WIN) was launched at the beginning of the COVID-19 outbreak, specifically for infodemic management.
- WHO issued guidance on *Safe Ramadan practices in the context of COVID-19*, which is available in Arabic, English, French, Russian and Spanish.\*

\* Summarized in today's report

# Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21<sup>st</sup> to April 22, 2020)

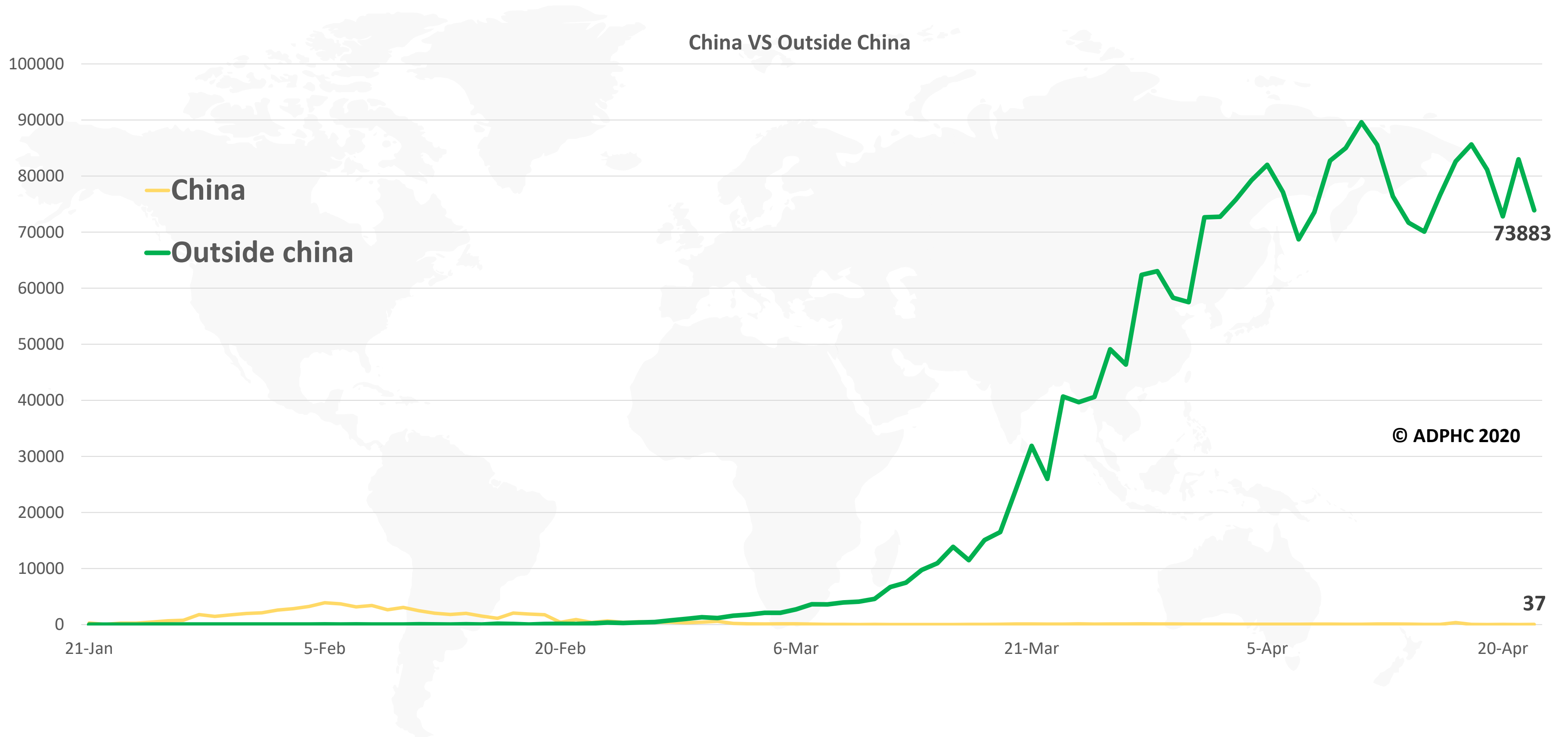


Line graph published by Abu Dhabi Public Health Center 2020.

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



**Figure 2: Daily new infected COVID-19 cases reported between (January 21 to April 22, 2020).**



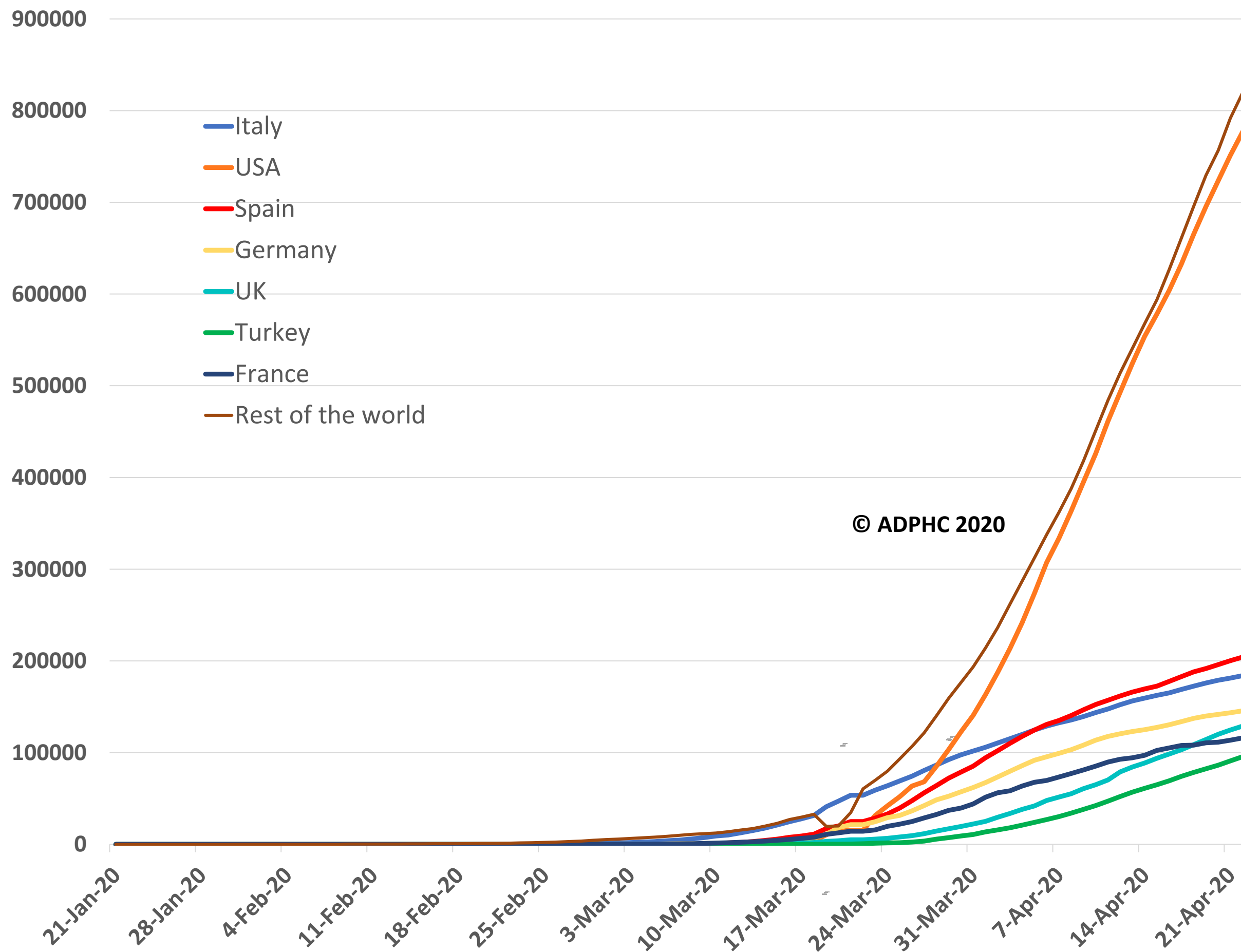
Line graph published by Abu Dhabi Public Health Center 2020.

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

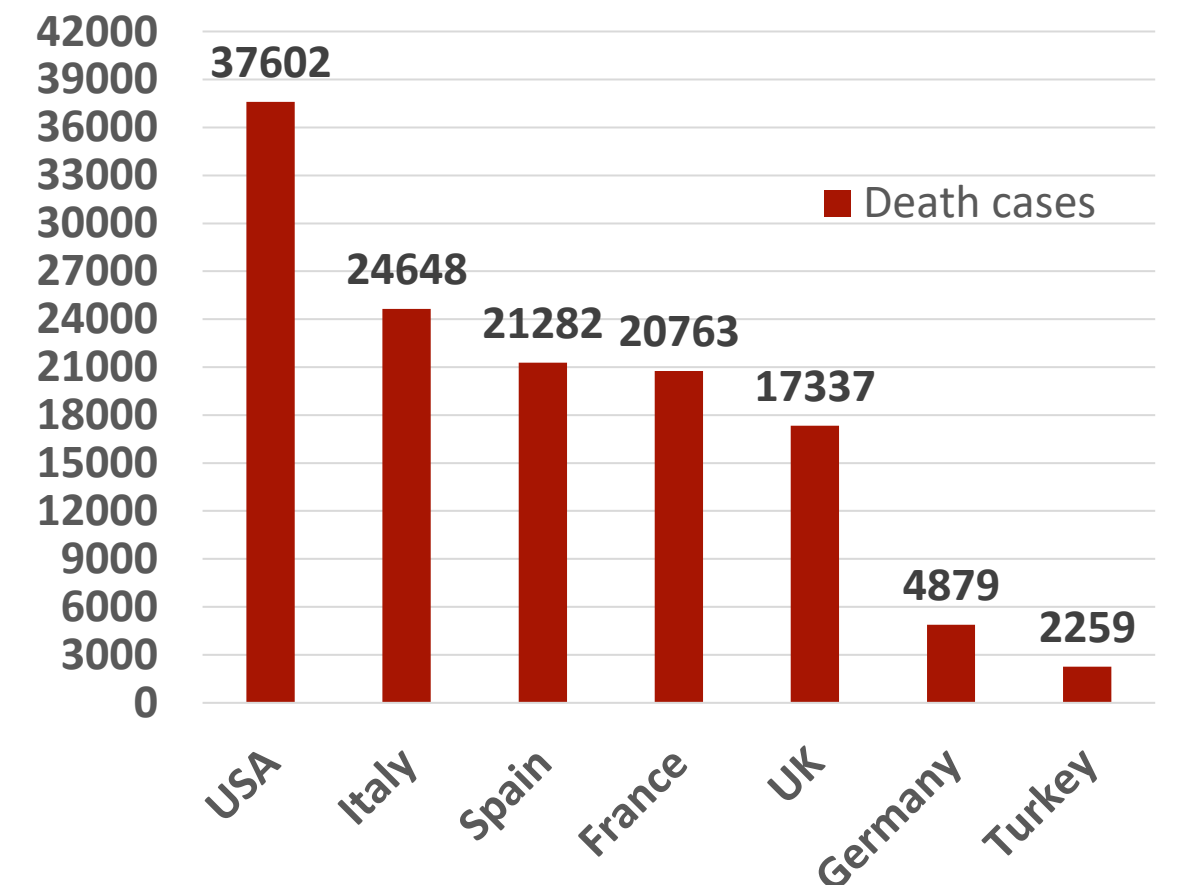
# Epidemiology



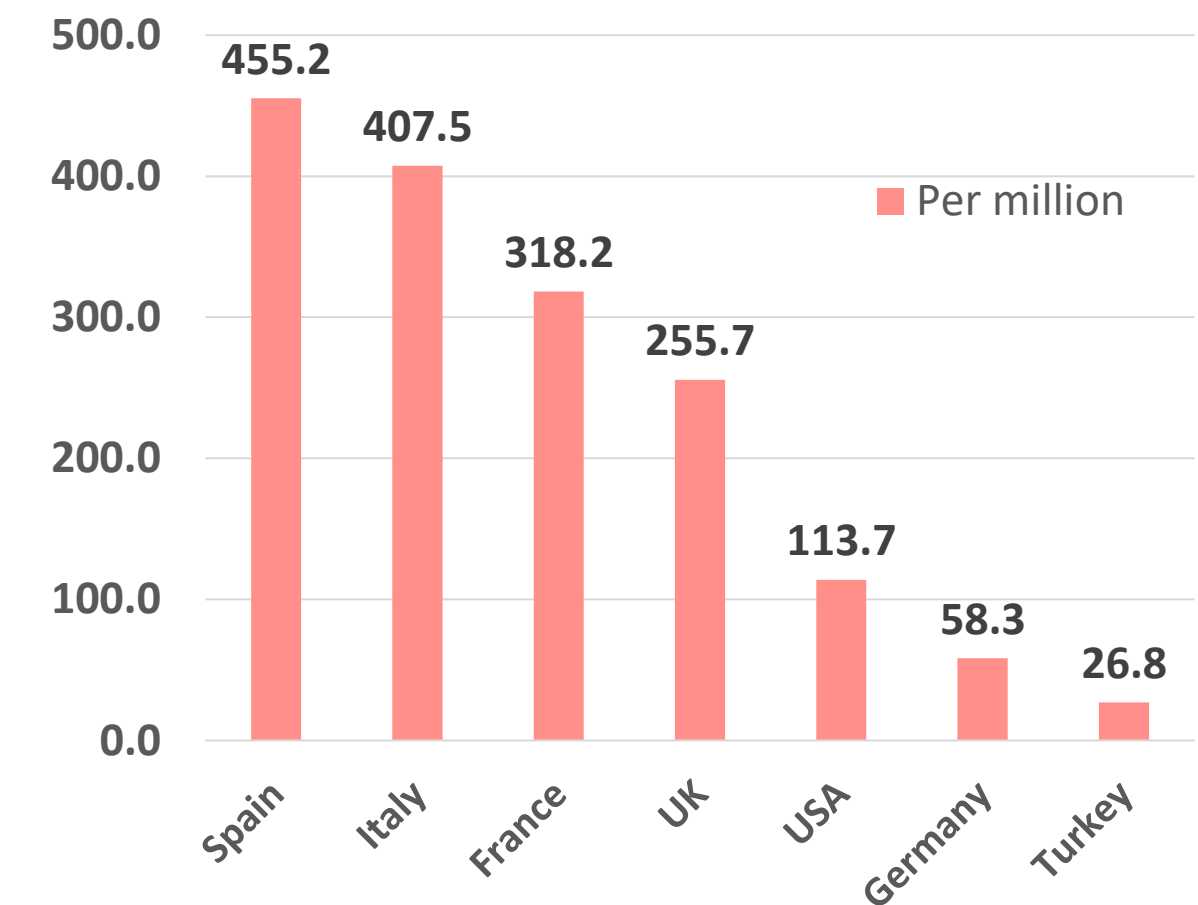
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to April 22 , 2020).



## TOTAL DEATHS



## DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

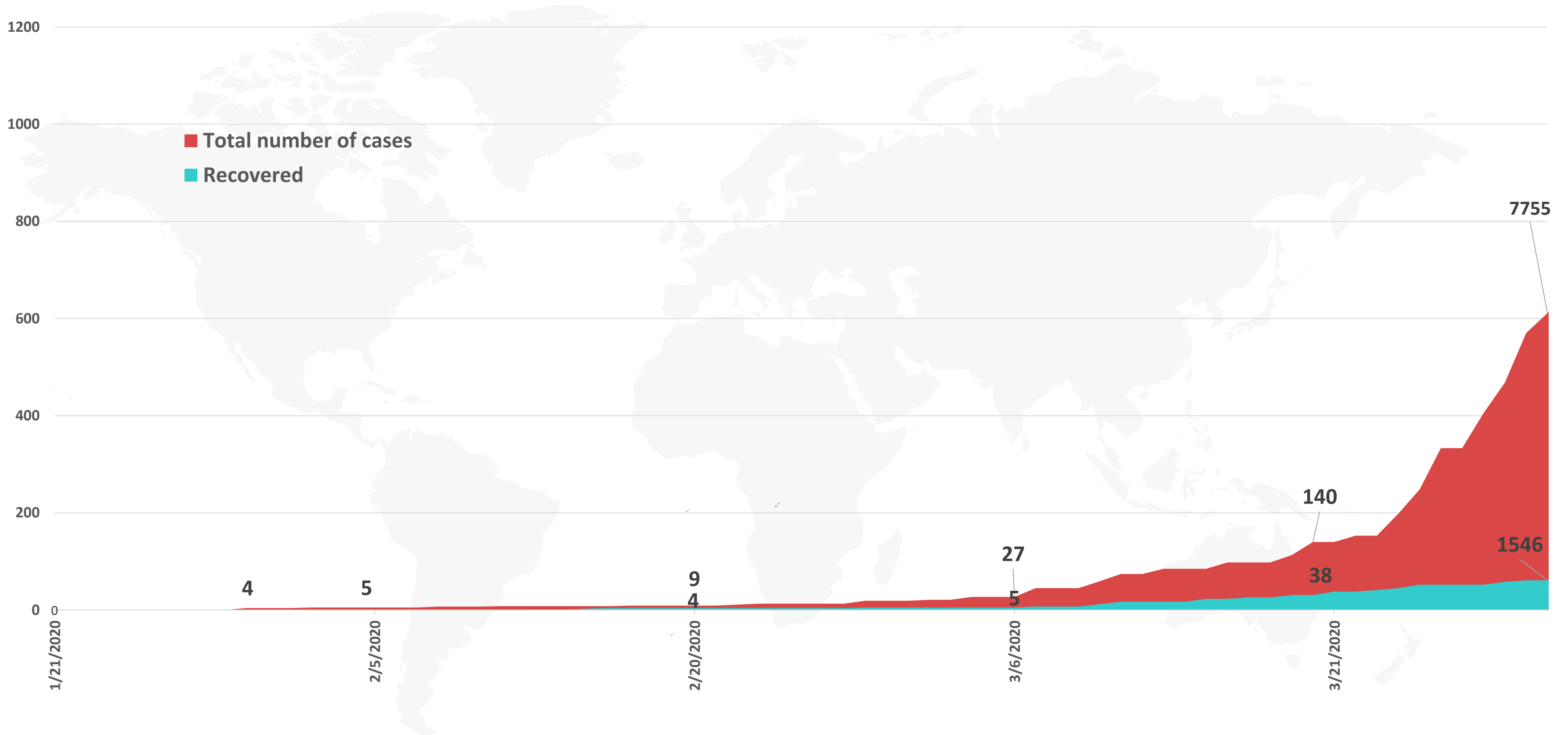
Data resources: [WHO](https://www.who.int)



# Epidemiology



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



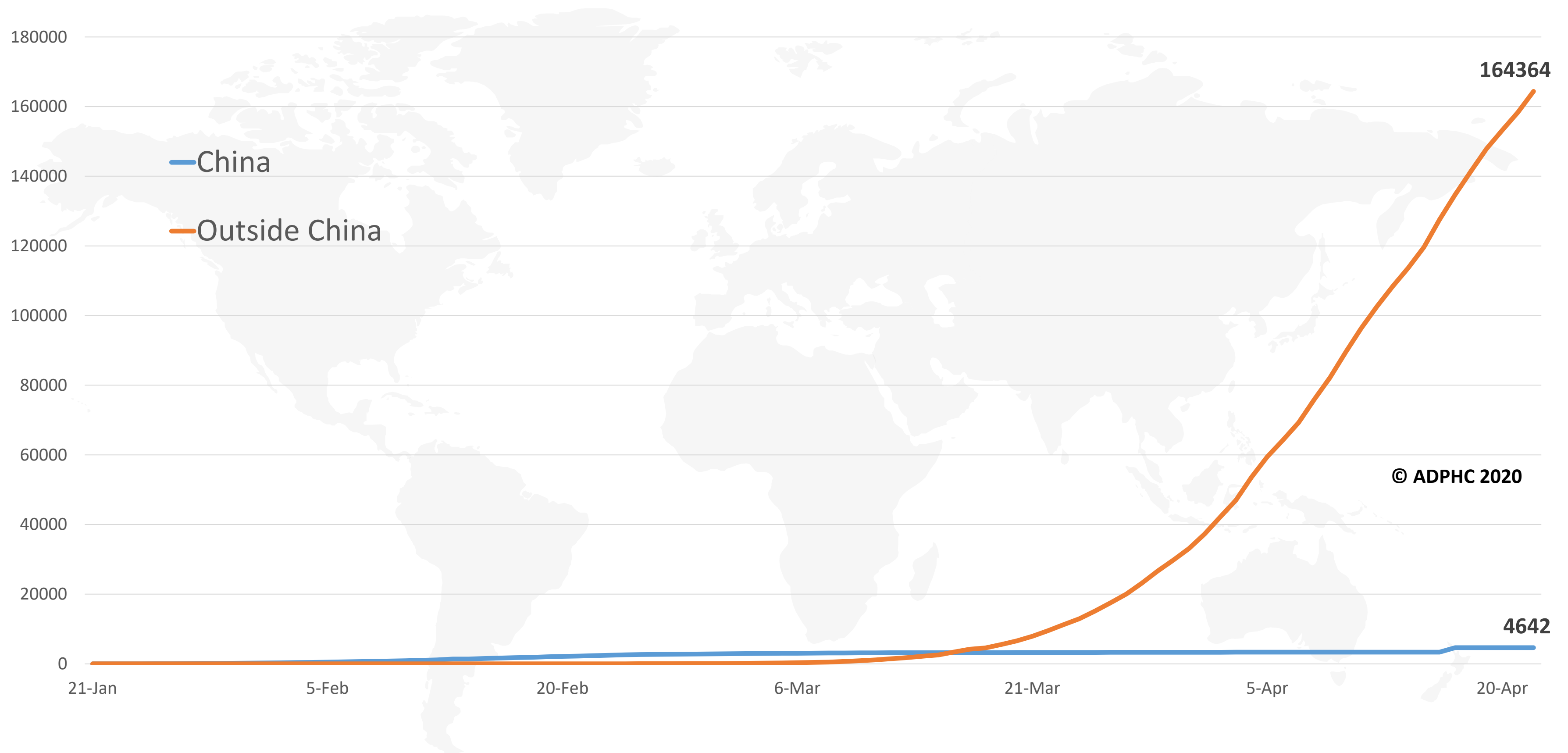
Line graph published by Abu Dhabi Public Health Center 2020.

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 22, 2020).**



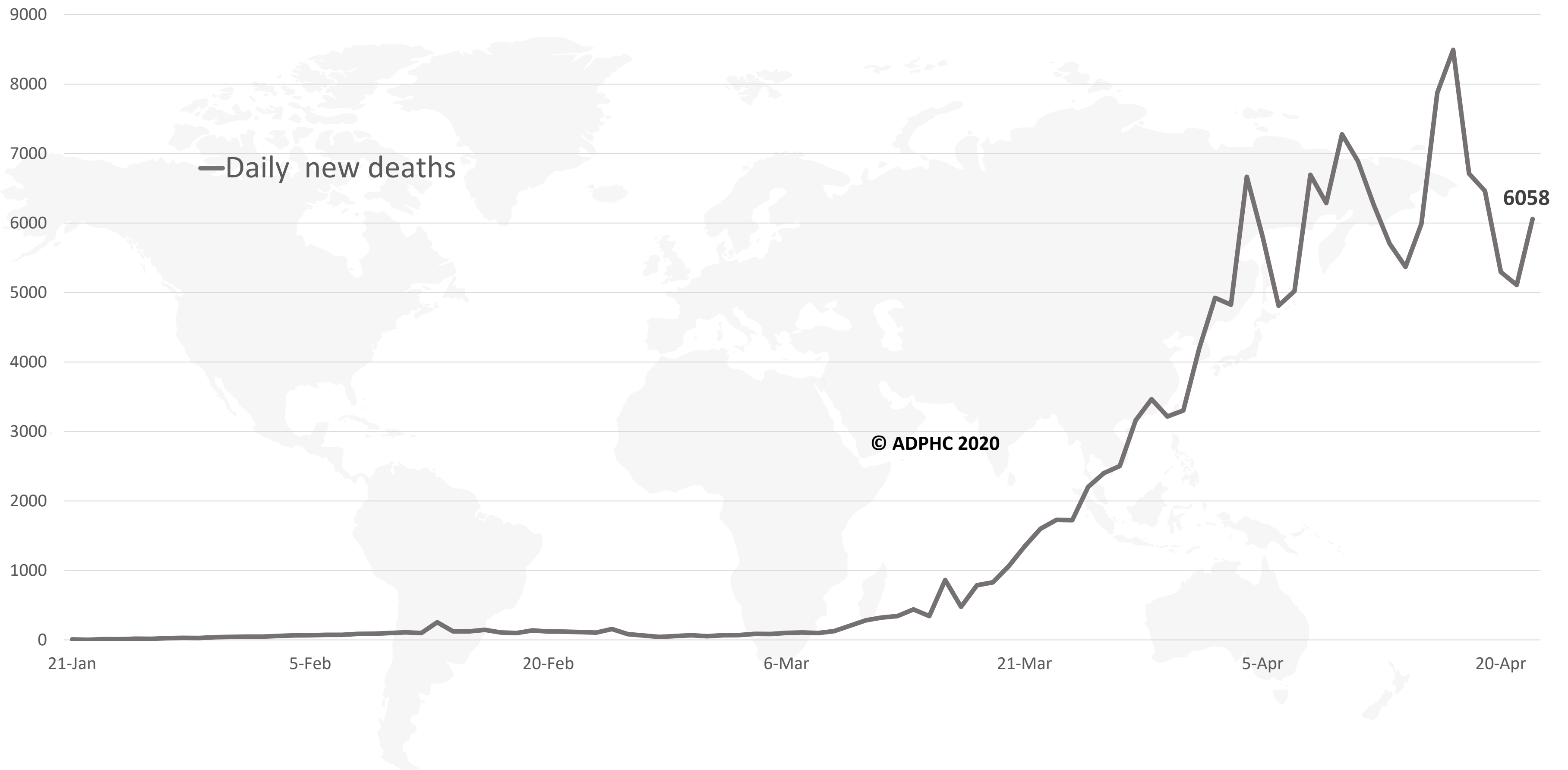
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Line graph published by Abu Dhabi Public Health Center 2020.

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



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



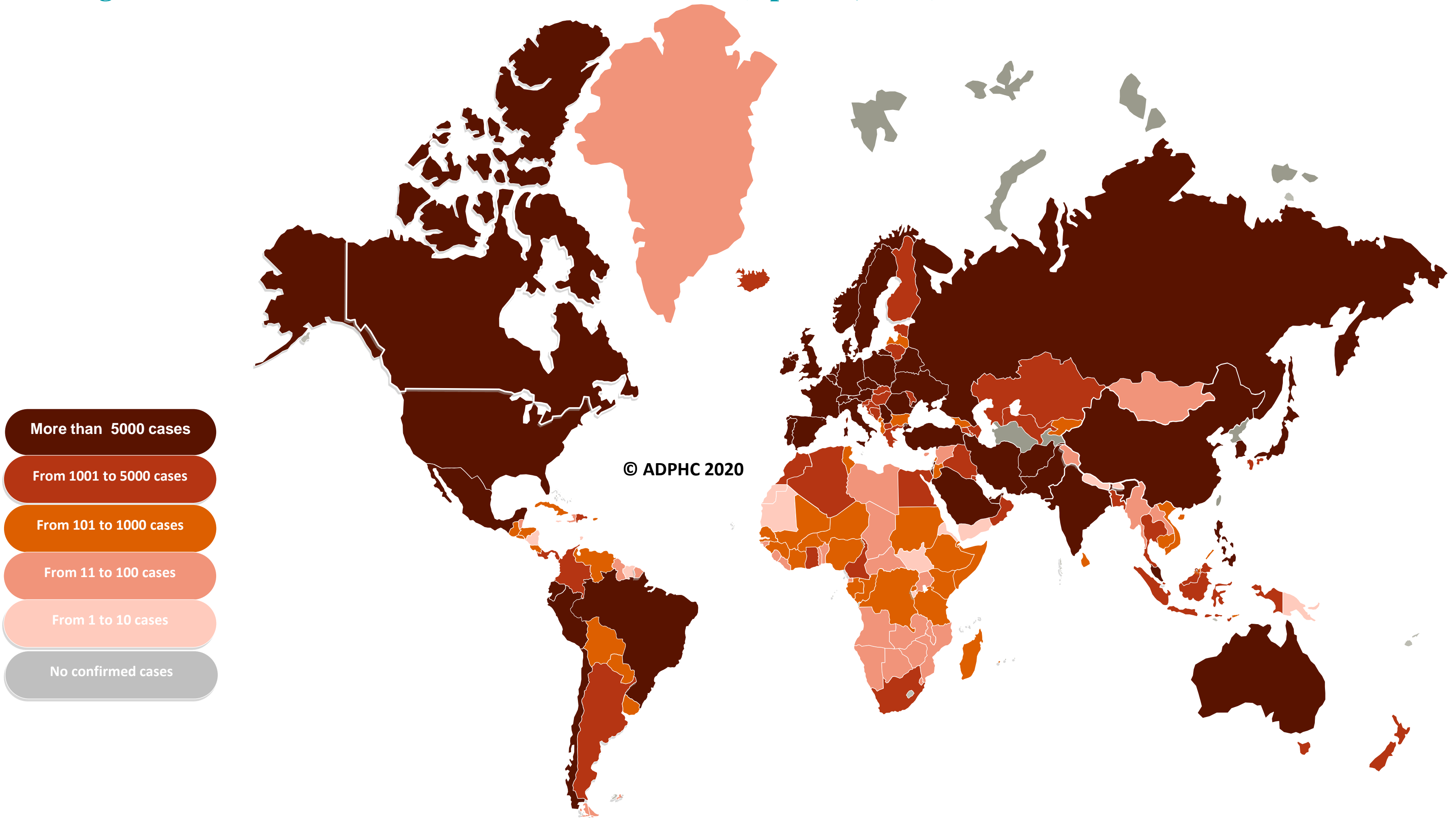
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



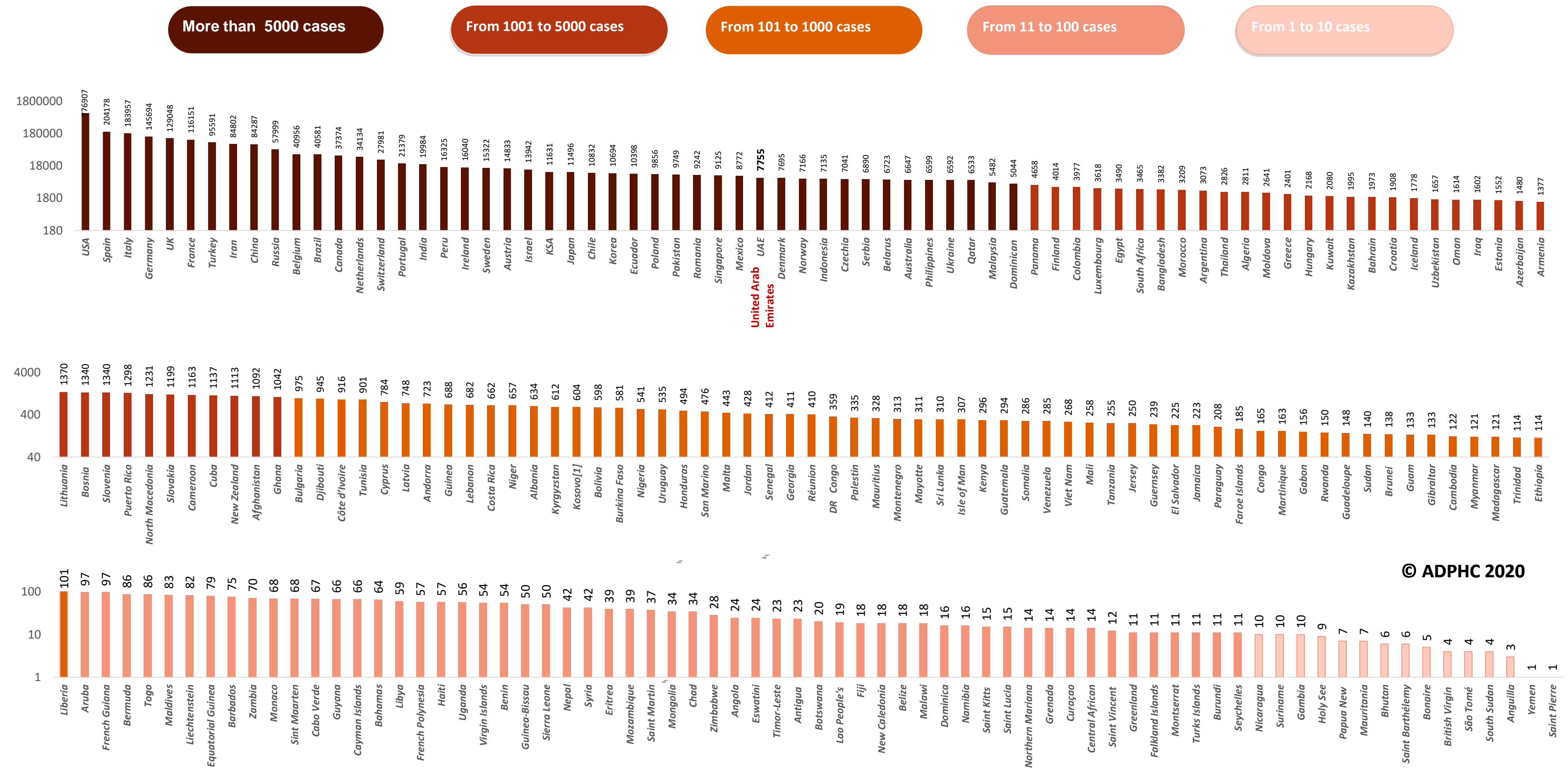
Figure 7a : Global distribution of COVID-19 cases (April 22, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases April 22, 2020)



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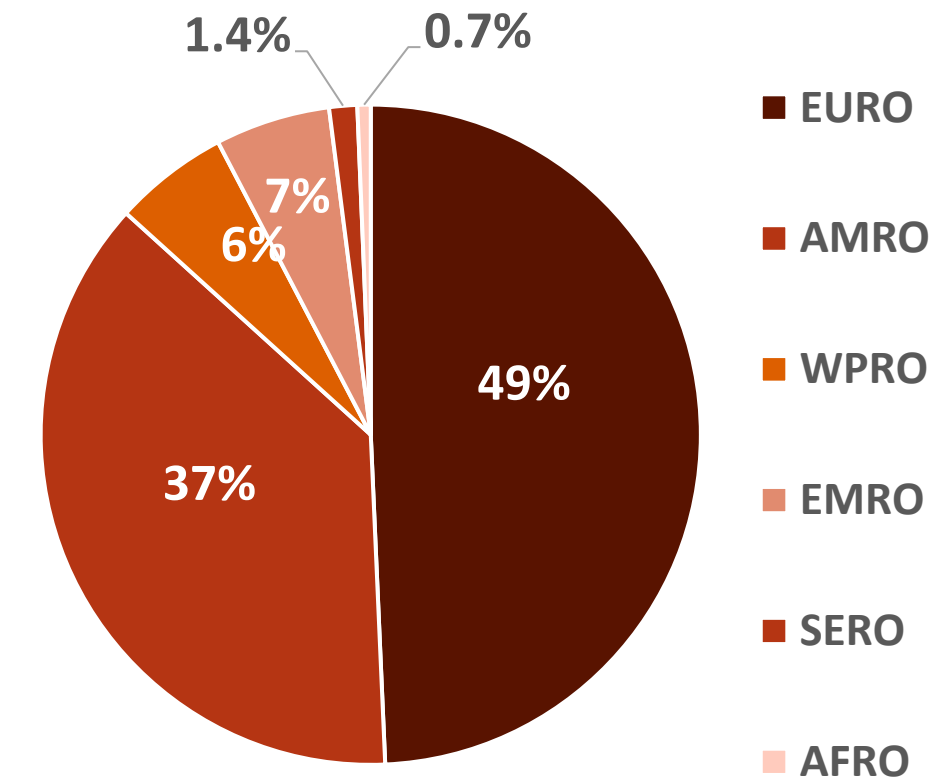
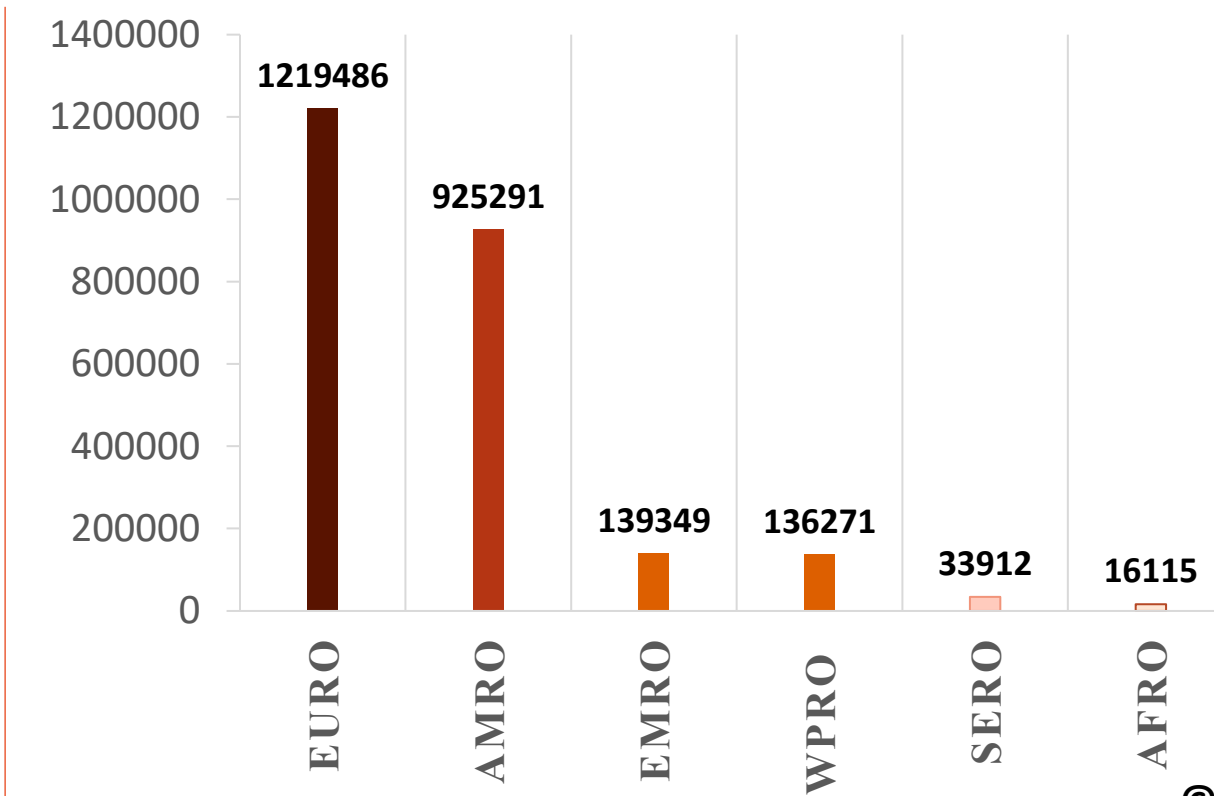
Map chart published by Abu Dhabi Public Health Center 2020.

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



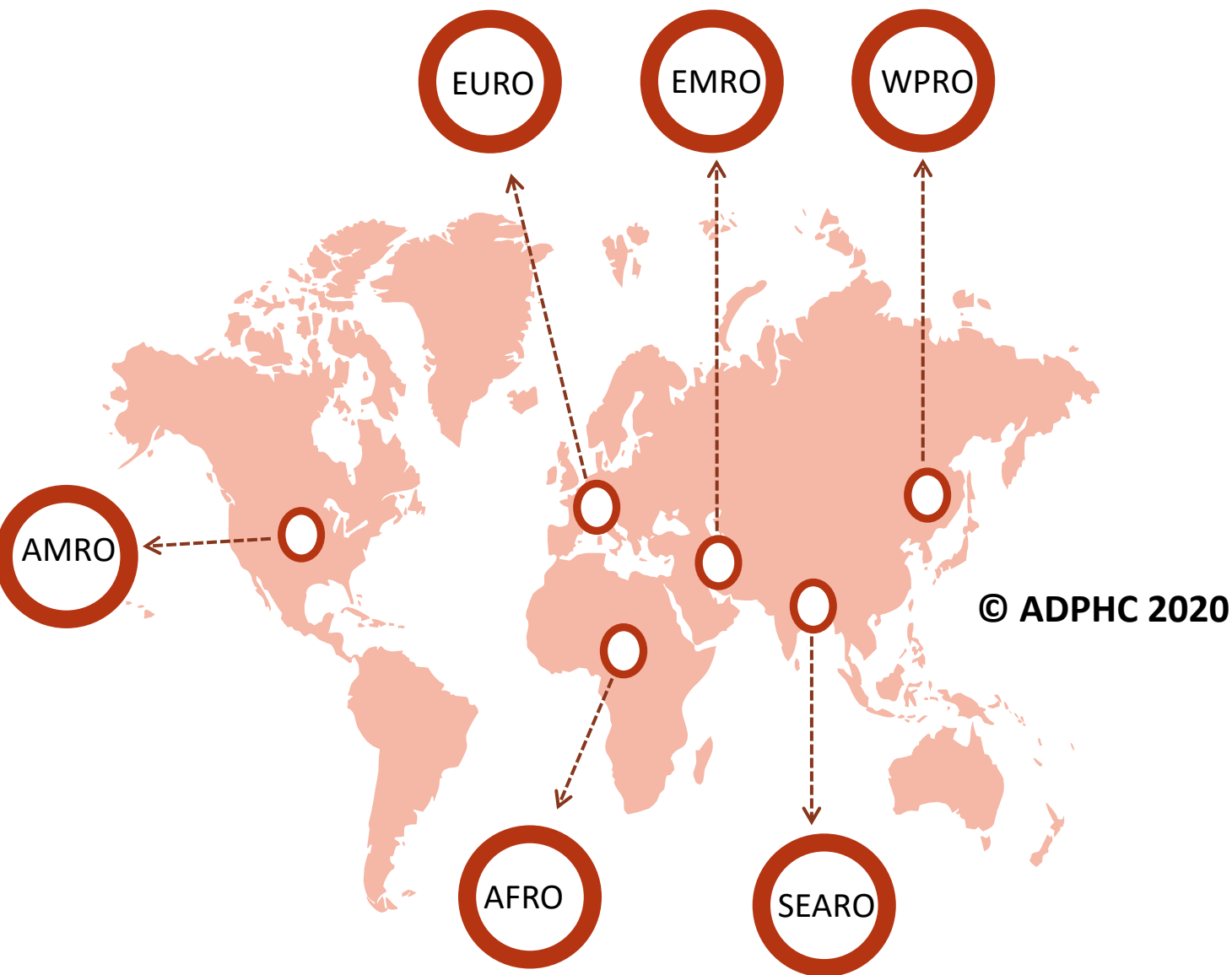
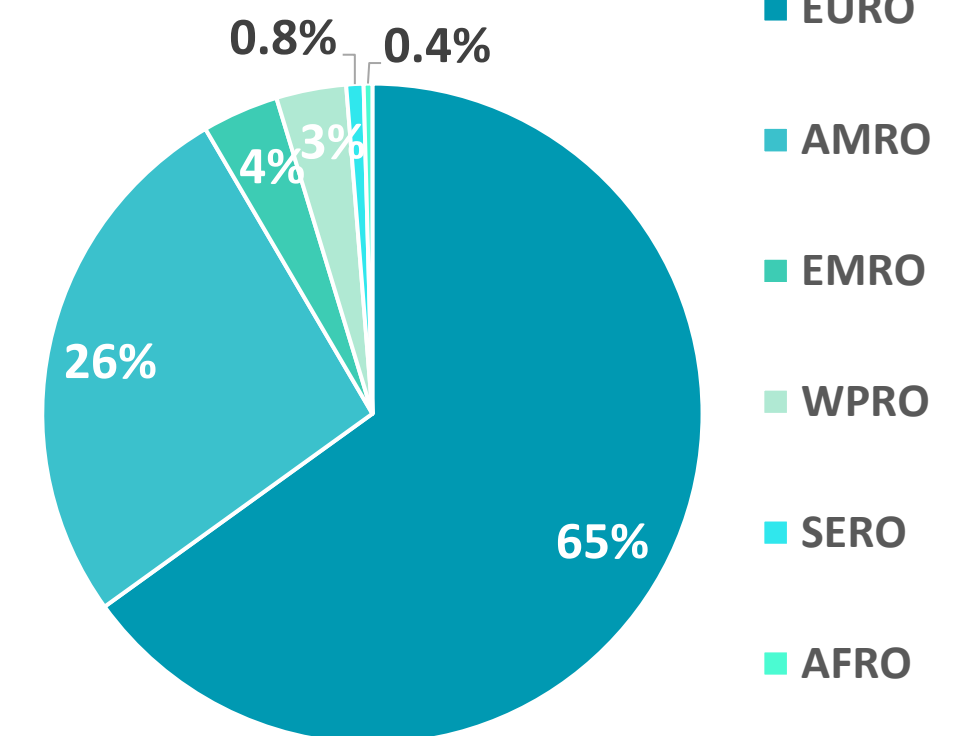
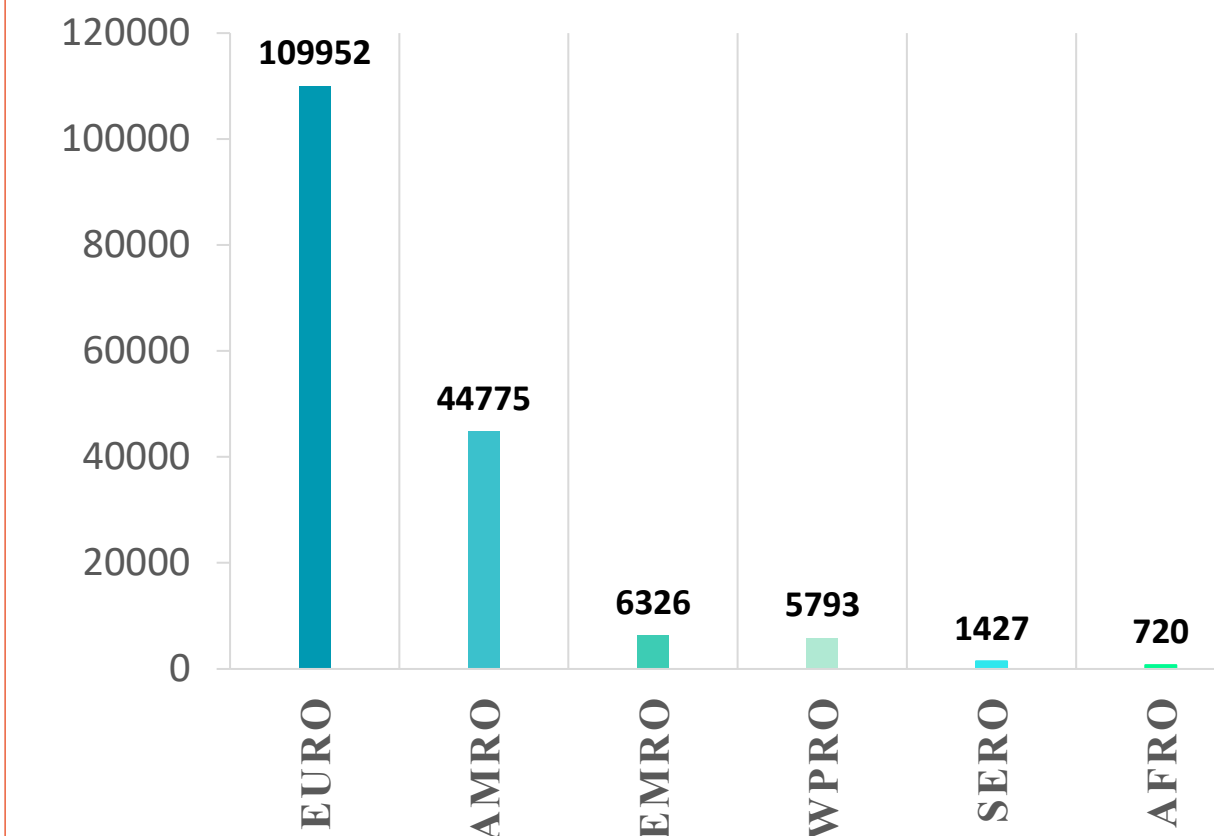
Figure 8: illustrate the Global distribution of COVID19 cases per region (April 22, 2020)

## INFECTED



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## DEATH



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Map chart published by Abu Dhabi Public Health Center 2020.

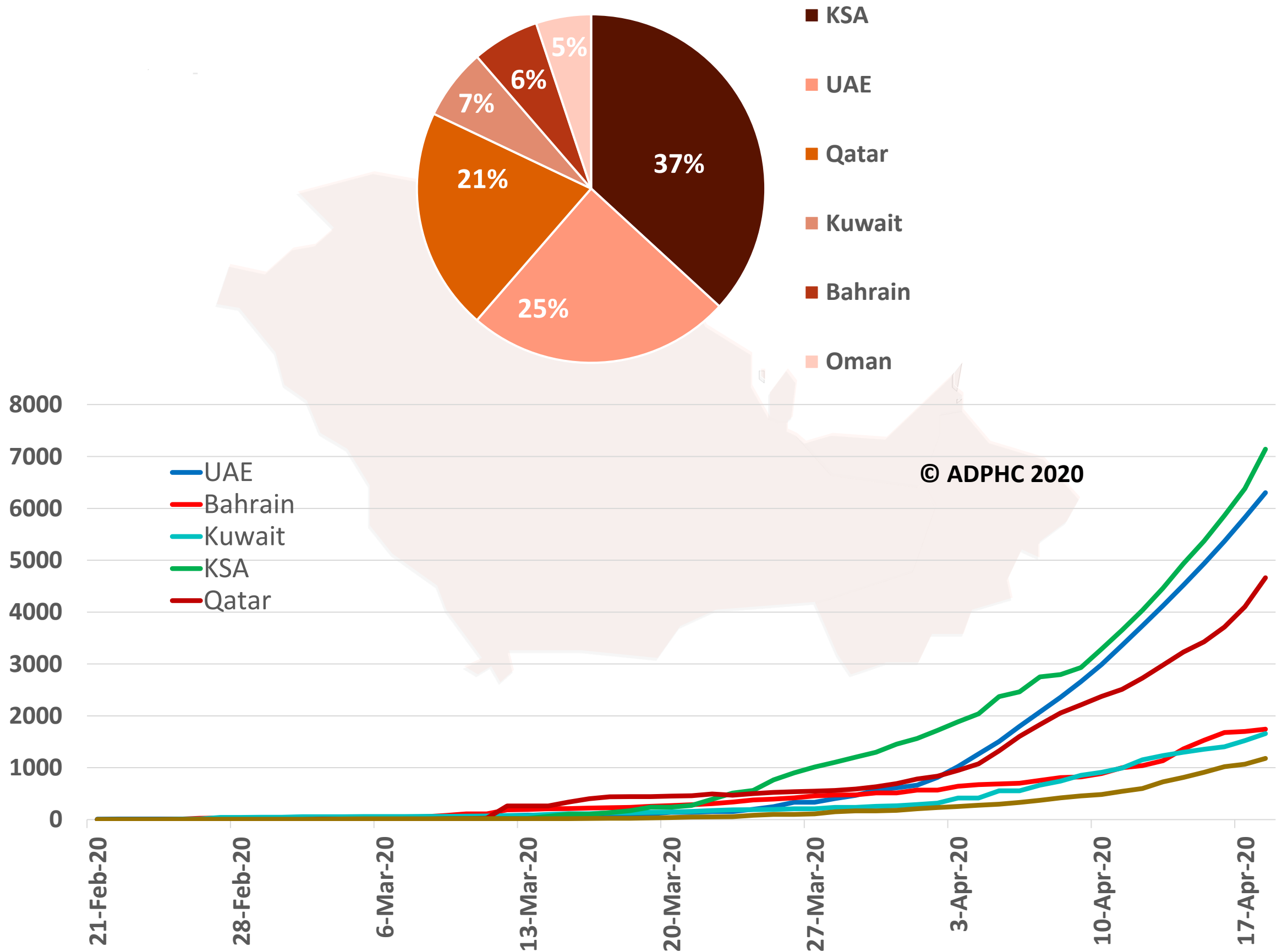
Data resources: [WHO](https://www.who.int/)

# Epidemiology

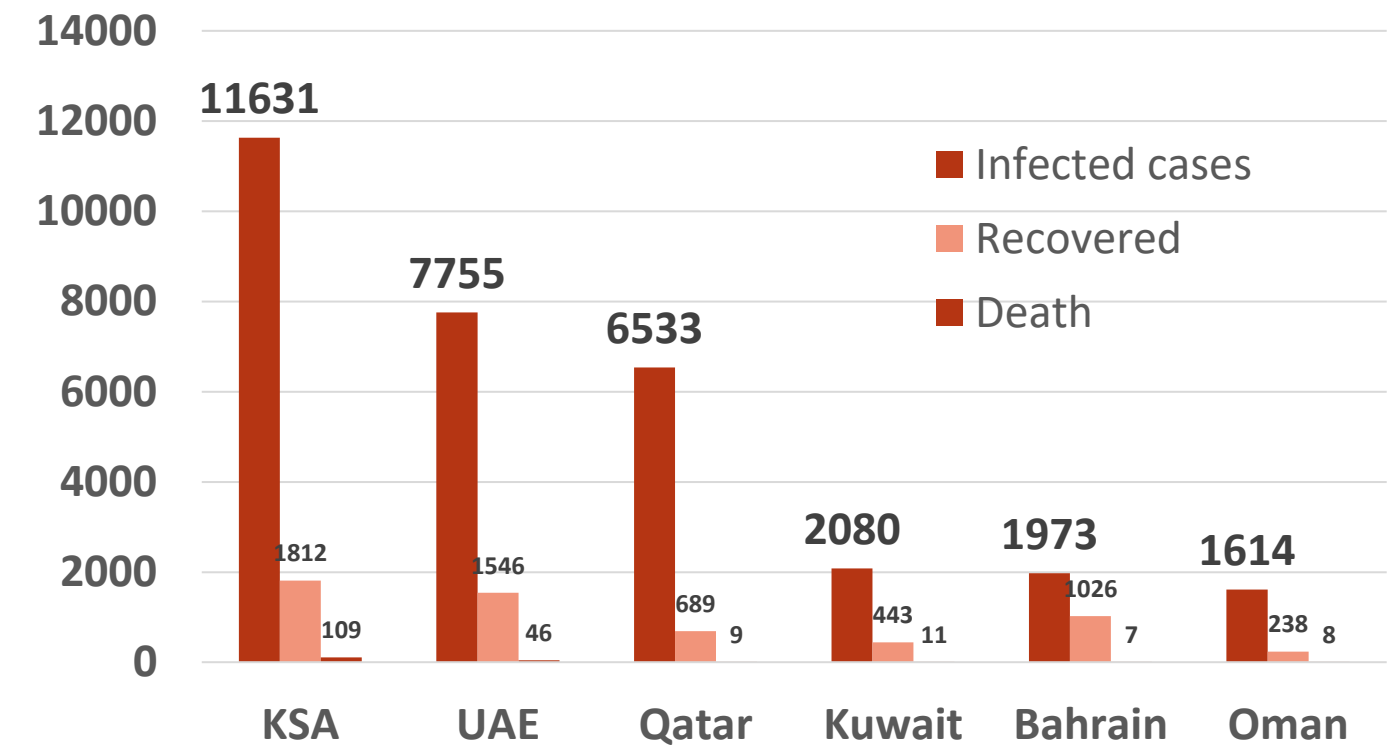


**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (April 22, 2020)**

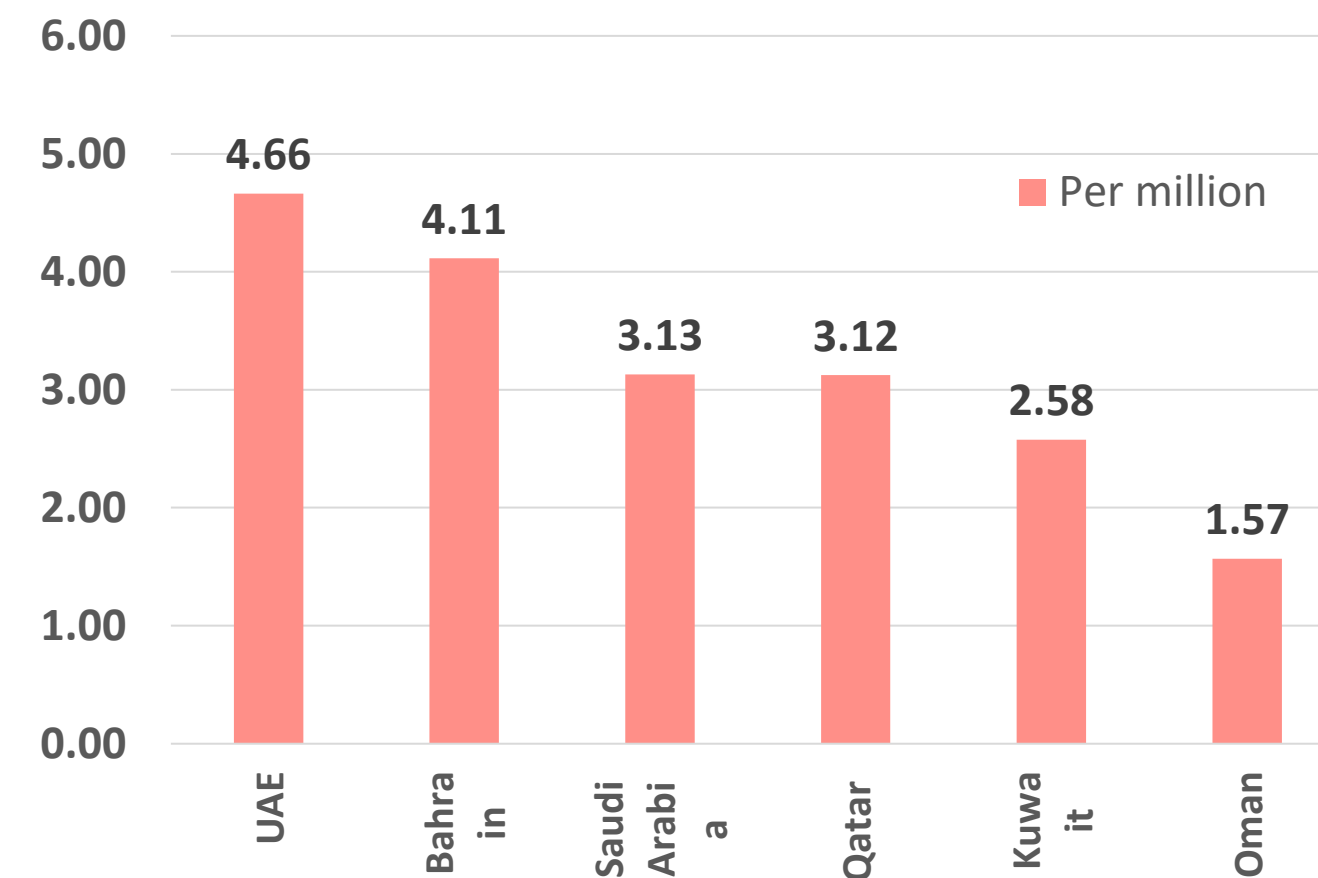
## TOTAL NUMBER OF INFECTED CASES



## Total number of infected, recovered and Deaths



## Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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# Treatment



## Article 1: Hydroxychloroquine in patients with COVID-19: an open-label, randomized, controlled trial

Published: April 14, 2020 in [MEDRXIV](#)

### Summary:

Randomized controlled trial in 150 patient with COVID19 received hydroxychloroquine (HCQ) plus standard-of care (SOC) compared with SOC alone in adult patients with COVID-19.

### Patient Baseline Characteristics

- The mean age of the patients was 46 years and 55% were male.
- The mean day from disease onset to randomization was **16.6** and 89% of the patients had concomitant medication before randomization.
- The majority of the patients had mild to moderate COVID-19 (99%), only 2 patients (1%) were severe upon screening

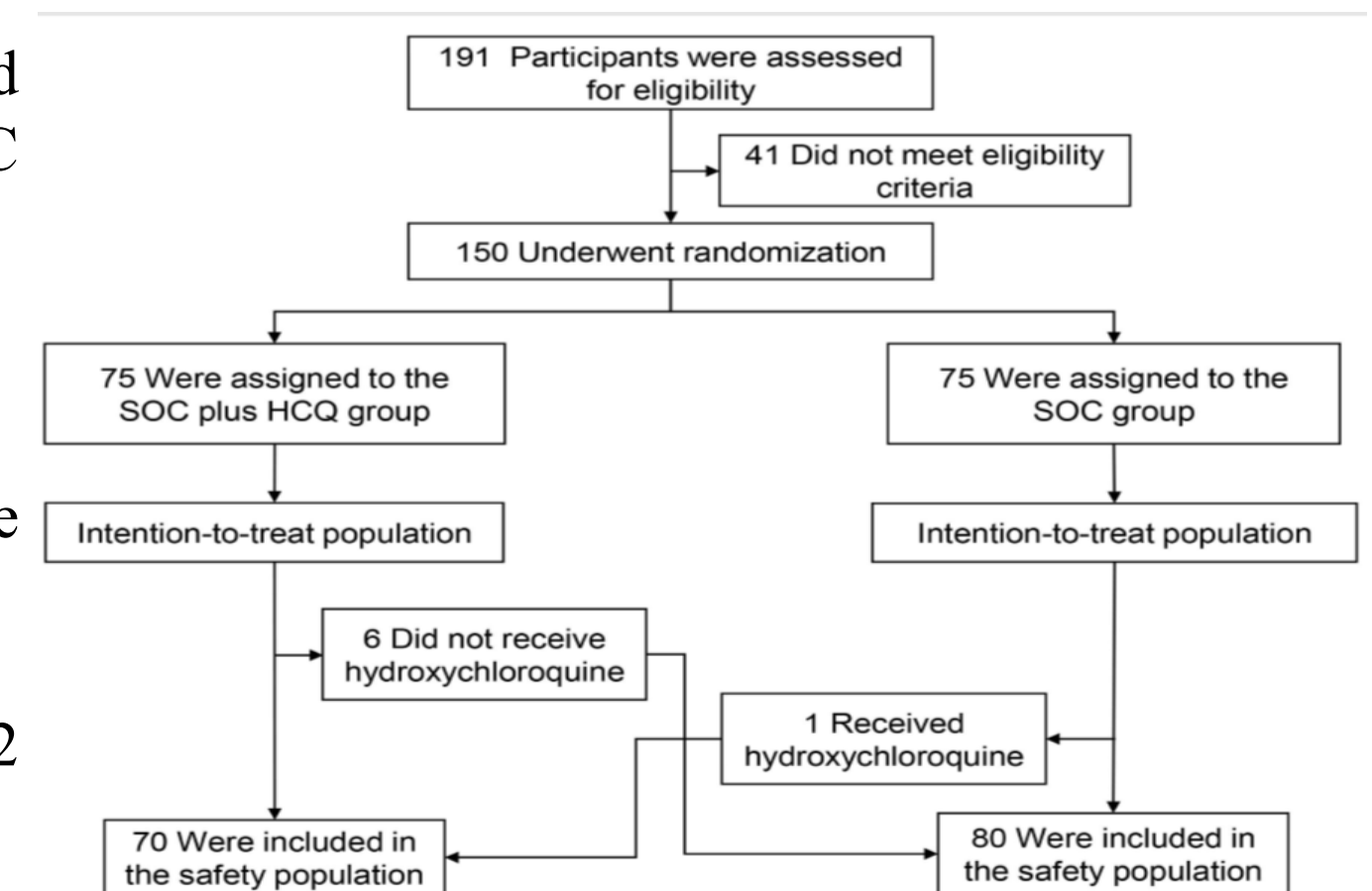
### Findings :

The overall 28-day negative conversion rate was not different between SOC plus HCQ and SOC group.

No different 28-day symptoms alleviation rate was observed between the two groups.

A significant efficacy of HCQ on alleviating symptoms was observed when the confounding effects of anti-viral agents were removed in the post-hoc analysis (Hazard ratio, 8.83, 95%CI, 1.09 to 71.3). With also improvement of inflammatory markers.

Adverse events were found in 8.8% of SOC and 30% of HCQ recipients with two serious adverse events. The most common adverse event in the HCQ recipients was **diarrhea (10%)**.



### Conclusion:

The administration of HCQ did not result in a higher negative conversion rate but more alleviation of clinical symptoms than SOC alone in patients hospitalized with COVID-19 without receiving antiviral treatment, possibly through anti-inflammatory effects.

Limitation : delay in receiving the intervention





# Public Health Response :

## Article 2: Answering the right questions for policymakers on COVID-19

**Published:** April 20, 2020 in [the lancet](#)

**Summary:** Effectively translating science into both operational and policy action is a nearly universal challenge; therefore this article stated most of the questions that need to be answered by experts to enable decision making:

### 1. Clinical presentation and testing

How is the disease transmitted in different settings? How many cases are asymptomatic? How many cases are subclinical? How detectable is COVID-19 in syndromic surveillance data? What is the most effective use of diagnostic and serological testing, given low detection? How long does natural immunity last for those who have recovered? How does disease progression differ for different types of comorbidities? What explains differences in case fatality rate by country?

### 2. Treatment: supplies, hospital beds, workforce

How many ventilators will each hospital need and when? Are the ventilators the limiting factor or is it the sedatives, beds, or the ability to staff those beds? Where in the hospital and for which tasks are different levels of personal protective equipment sufficient? What specific types of health-care specialties are most needed in regions with different types of comorbidities? What treatments are most successful for different types of patients and how can those be applied in practice?

### 3. Non-pharmaceutical interventions: adherence and mobility

What is the effectiveness of different types of non-pharmaceutical interventions and what makes them successful (e.g., population density, percentage of people who comply, or degree to which they comply)? To what degree does spread appear to be driven by air travel versus other types of travel? What percentage of a community do we need to test to be able to shift back to contact tracing and to lift non-pharmaceutical interventions? What percentage of a hospital needs to be tested to shift back to isolation rooms and reduce personal protective equipment requirements

### 4. Public health response: ability to contact trace and identify exposures

How do we use the asymptomatic rate to inform when and how we deploy vaccines? At what level of herd immunity can we safely reopen schools? Can digital data accelerate contact tracing to a similar efficacy level to outbreaks that were contained early (e.g., South Korea)? What legal or safety challenges do we need to address to be able to collect and use that data?

### 5. Compound hazards and concurrent hazard planning

How do we structure emergency housing or evacuation for hurricanes or other natural disasters over the coming year without relying on mass care that might further spread COVID-19? How do we support homeless populations that are displaced? Do we evacuate hospitals with large numbers of contagious patients? How do we prioritize generators and fuel when every hospital is at capacity?

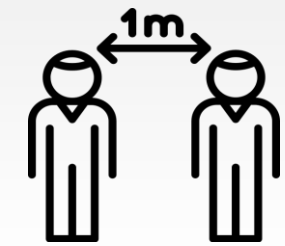


# Public Health response

## WHO Safe Ramadan practices in the context of the COVID-19 if Ramadan gathering is allowed:

### Overarching considerations

- Practice **physical distancing** at least 1 meter (3 feet) between people.
- Use culturally and religiously sanctioned greeting to avoid physical contact.
- Urge people who are feeling **unwell** with symptoms, **urge older** people and anyone with **pre-existing medical conditions** to not attend any gathering.



### Mitigation measures for physical gatherings

- In regards to venues, consider holding the event **outdoors** if possible
- The length of the event should be **shorter** with **fewer attendees** and must adhere to physical distancing measures including praying, performing wudu (ablutions).



### Charity

- To avoid the crowded gathering (iftar feasts), consider using individual **pre-packaged boxes/servings** of food organized by centralized entities that should adhere to physical distancing throughout the whole cycle.



### Well-being

- Physical activity:** always practice physical distancing and proper hand hygiene even during any exercise activity.
- Diet:** Eat a variety of fresh and unprocessed foods every day and drink plenty of water.
- Smoking:** Smokers are at more risk of serious COVID-19 illness.

