

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
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# Scientific Research Monitoring on COVID-19

27 March 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

- **Virus** : a study on early molecular epidemiological tracing suggests that SARS-CoV-2 was present in Italy weeks before the first reported cases of infection
- **Public health response**: Community health care work is part of the UK action response to ward care of vulnerable patient.
- **Treatment**: article discourage the use of Compassionate medicine and off label medicine use in treatment of COVID19 with out prober RCT.

*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.  
Listed articles may represent information that has been previously shared in the report and/or may target specific technical audience.*

## Others

1. [Combating COVID-19—The role of robotics in managing public health and infectious diseases](#)
2. [The effect of human mobility and control measures on the COVID-19 epidemic in China](#)
3. [Structural violence in the era of a new pandemic: the case of the Gaza Strip](#)
4. [Parenting in a time of COVID-1](#)
5. [Tracking COVID-19 responsibly](#)



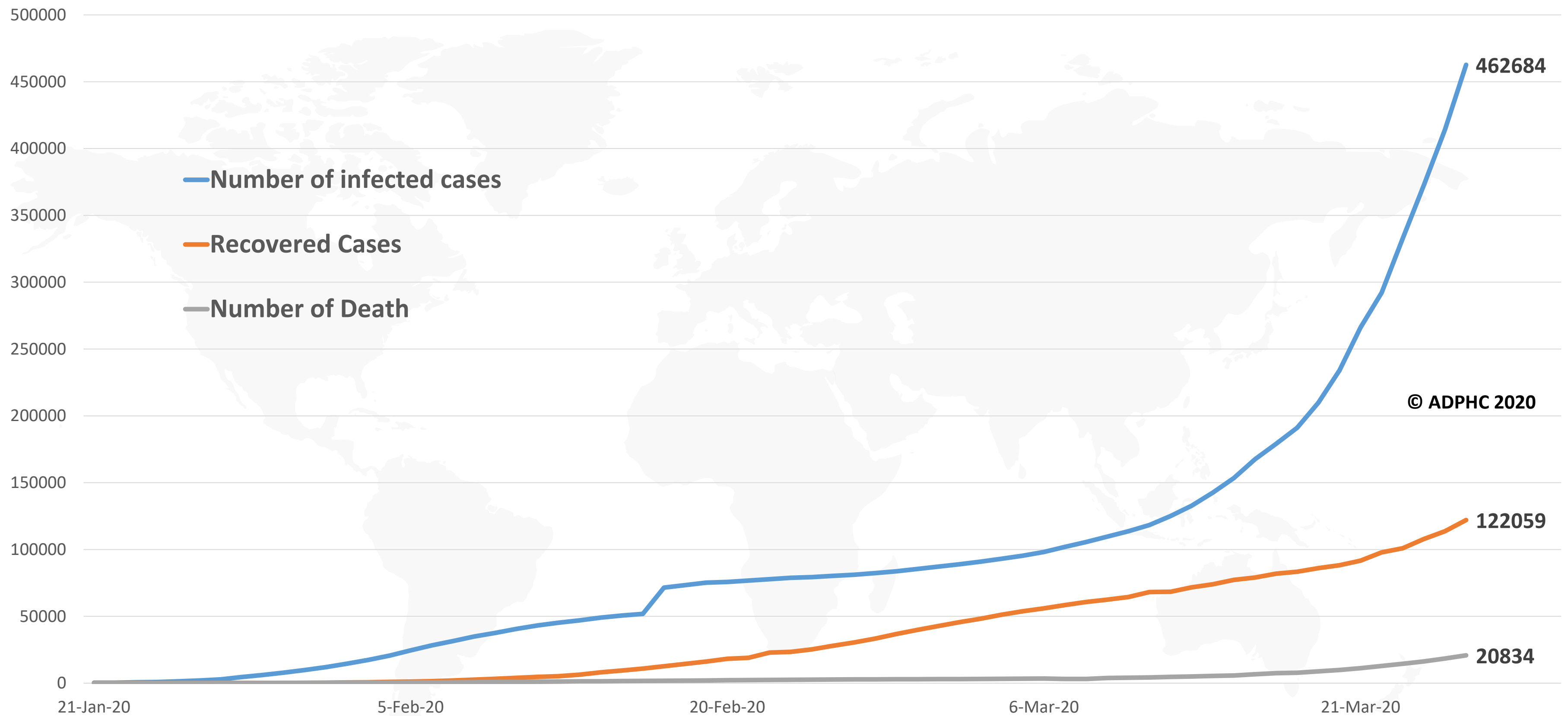
## WHO daily report

- Three new countries/territories/areas from the Region of the Americas [1], and African Region [2] have reported cases of COVID-19
- The United Nations launched a US\$2 billion COVID-19 Global Humanitarian Response Plan to support the world's most vulnerable countries.
- WHO published the *COVID-19: Operational guidance for maintaining essential health services during an outbreak* and the *Handbook for public health capacity-building at ground crossings and cross-border collaboration* on 25 March 2020.
- The WHO finally posted their recommendation after NEMJ article on the availability of Virus in surfaces as below :
  - The **findings do not bring new evidence on airborne transmission** as aerosolization with particles potentially containing the virus **was already known as a possibility during procedures generating aerosols**.
  - WHO maintains the recommendation, in the context of droplet and contact precautions for the use of medical masks for regular care of COVID-19 patients and respirators (N95, FFP2 or FFP3) for circumstances and settings where aerosol generating procedures are performed.
  - **WHO maintains the recommendation of performing hand hygiene and regularly cleaning and disinfecting surface**

# Epidemiology



**Figure 1: Total number of infected, recovered , and death cases (January 21<sup>st</sup> to March 26 , 2020)**



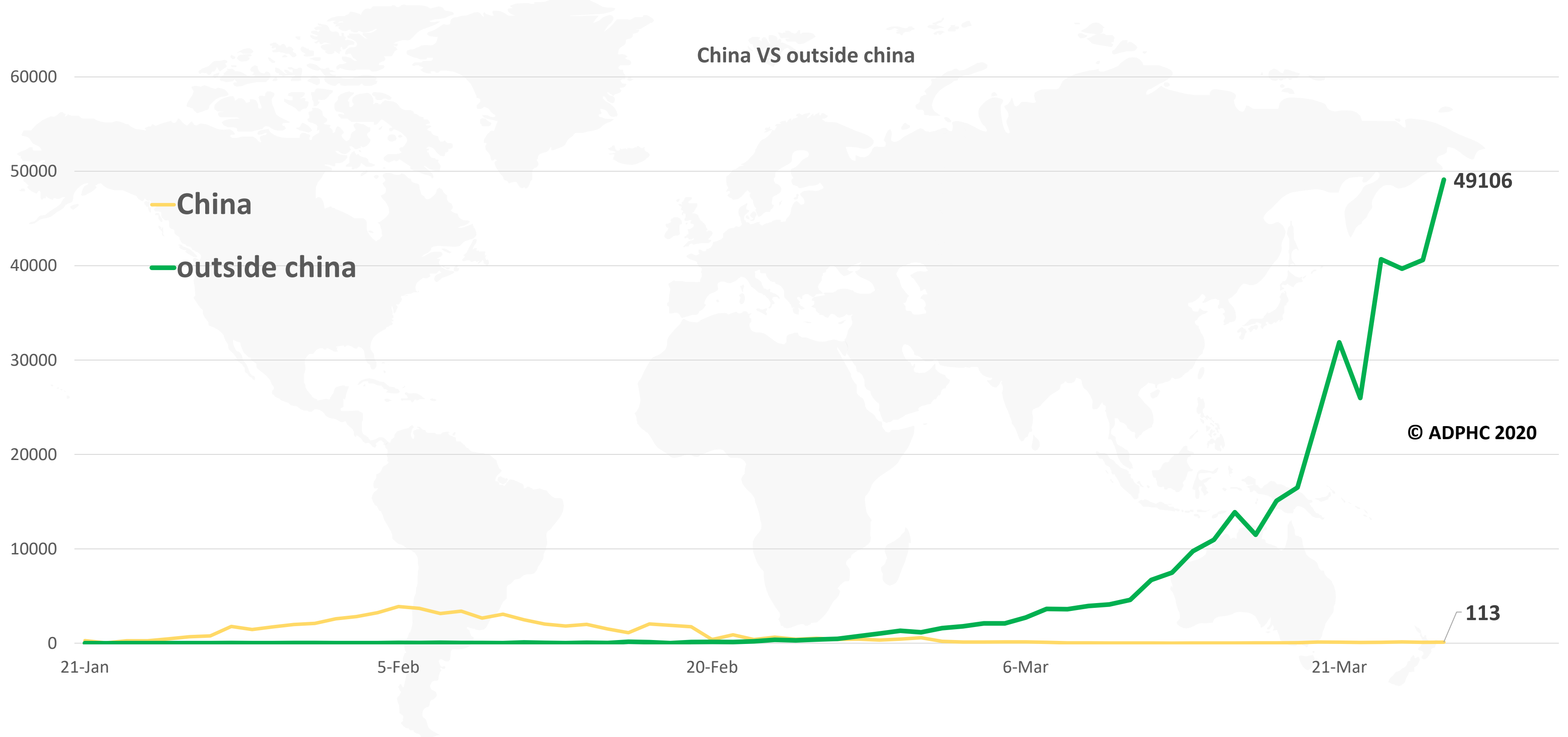
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Line graph published by Abu Dhabi Public Health Center 2020.

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



**Figure 2: Daily new infected COVID-19 cases reported by China and the rest of the world (January 21 to March 26 , 2020).**

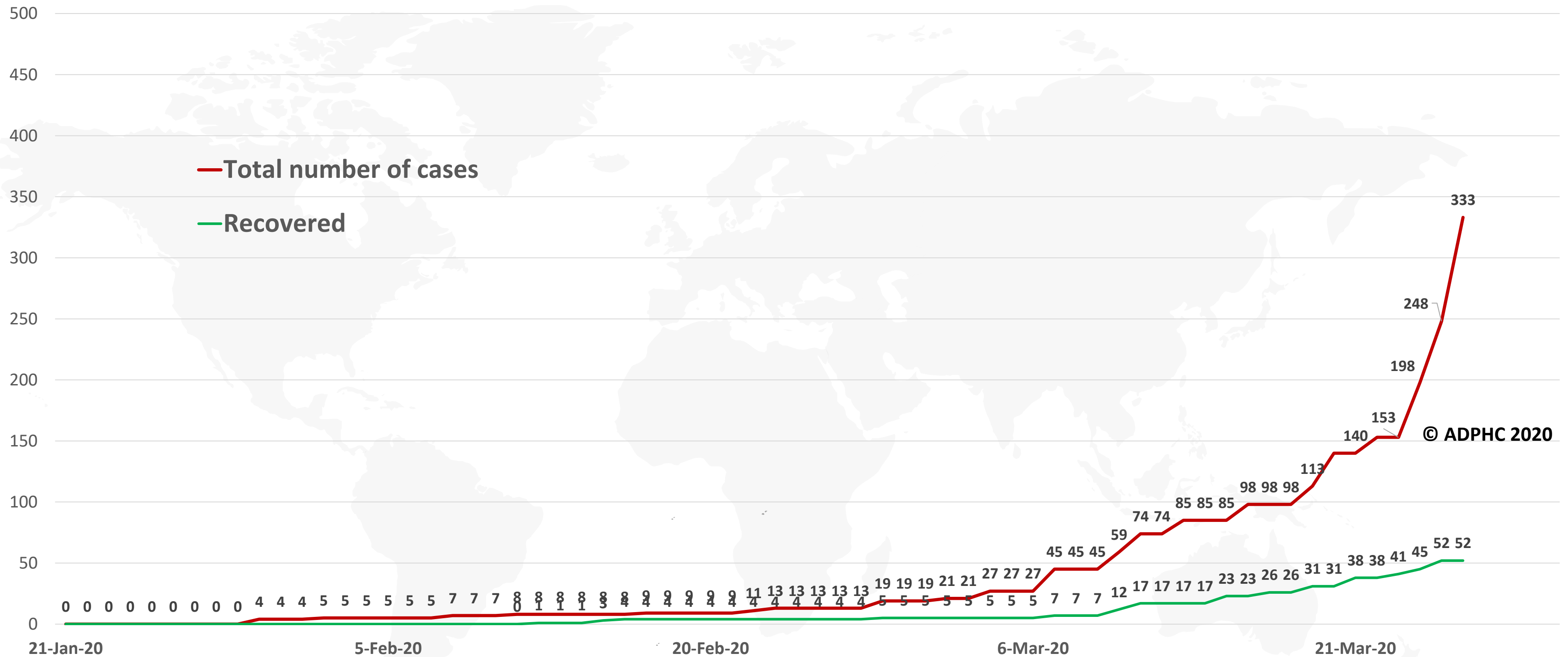


Line graph published by Abu Dhabi Public Health Center 2020.

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



**Figure 3: Total number of COVID-19 infected and recovered cases in UAE over time**



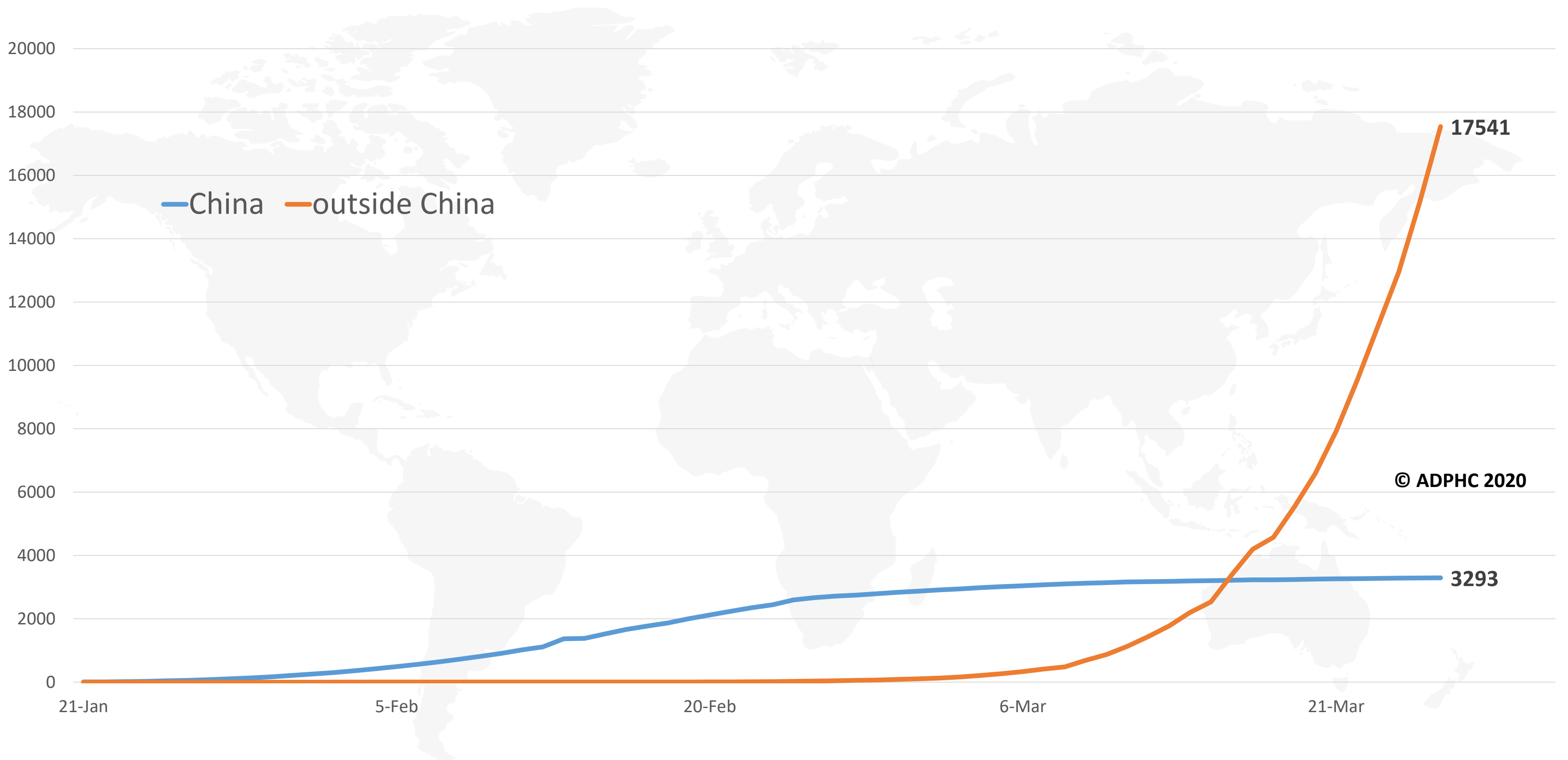
Line graph published by Abu Dhabi Public Health Center 2020.

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





**Figure 4: Total number of death due to COVID-19 reported by China and the rest of the world (January 21 to March 26, 2020).**



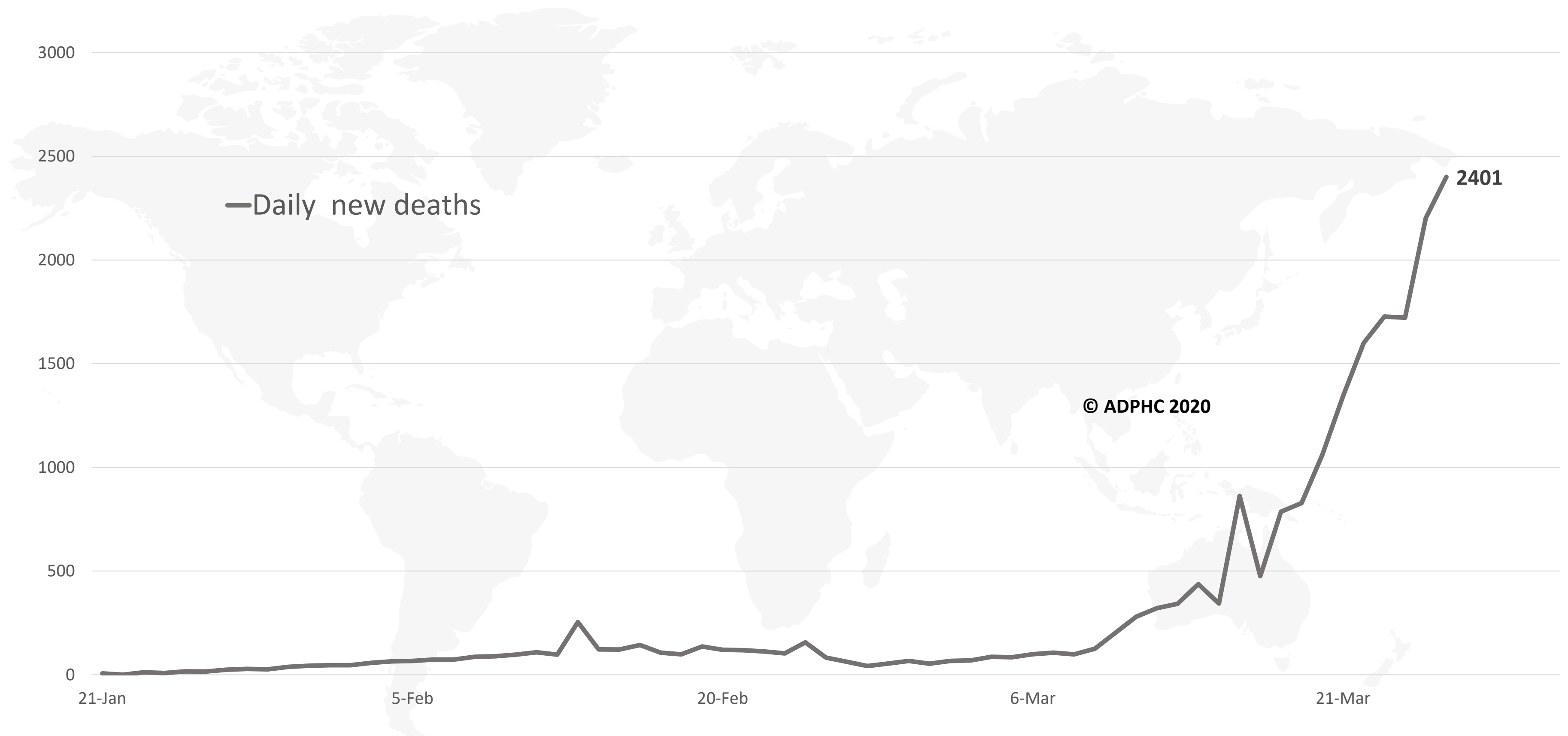
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Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



**Figure 5: Global daily new deaths due to COVID-19 (January 21 to March 25 , 2020).**



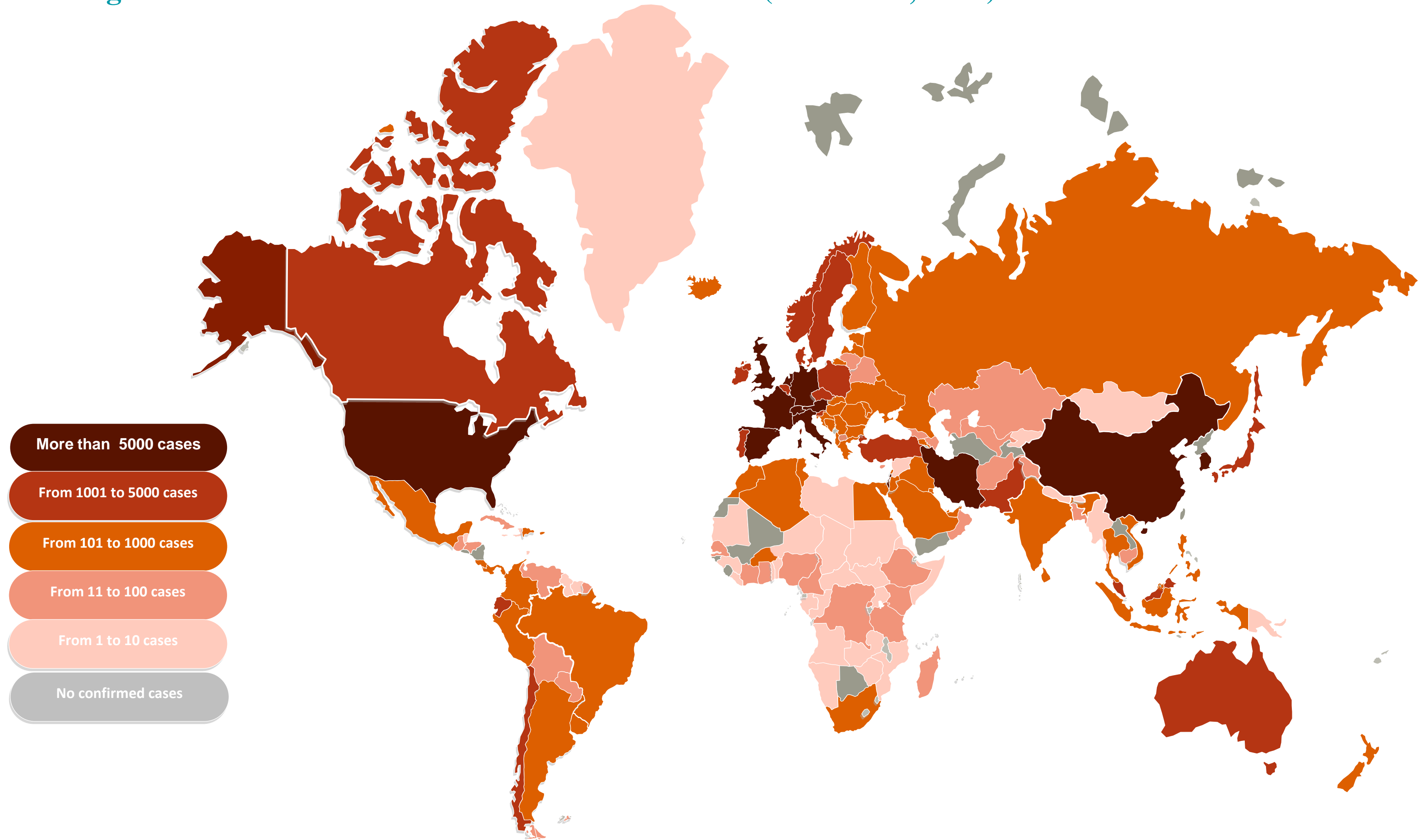
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



Figure 6A: Global distribution of COVID-19 cases ( March 25, 2020).

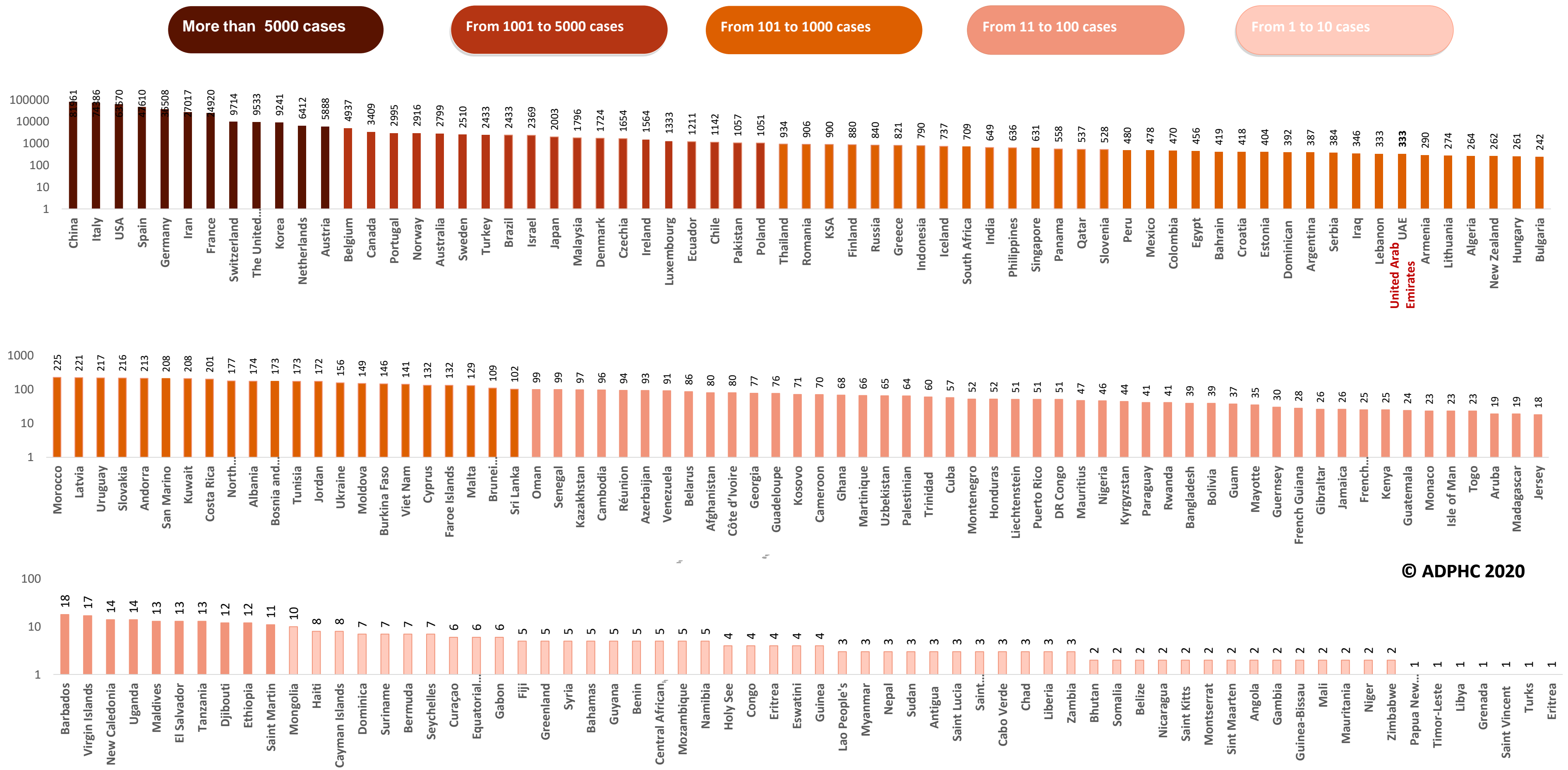


Map chart published by Abu Dhabi Public Health Center 2020.

# Epidemiology



Figure 5B: Bar chart illustrate the global distribution of COVID19 cases (March 25, 2020)



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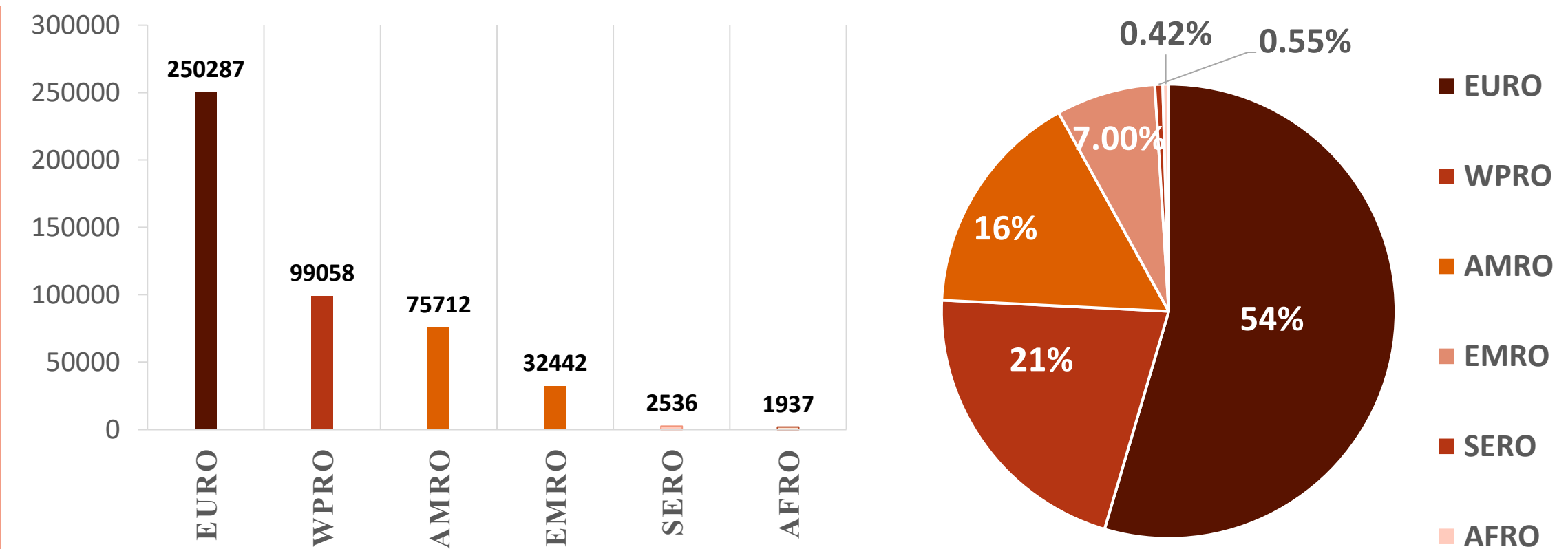
Map chart published by Abu Dhabi Public Health Center 2020.

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

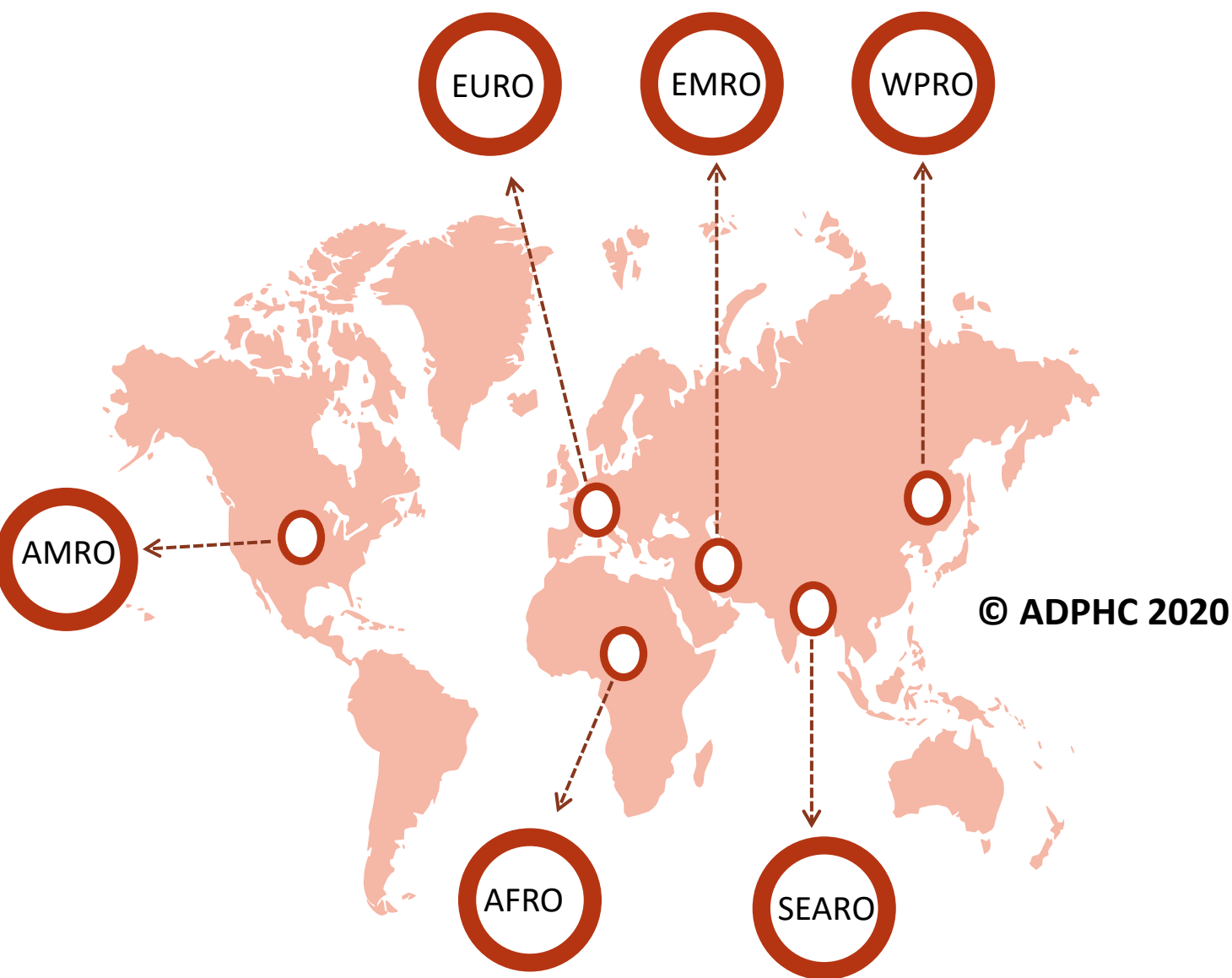
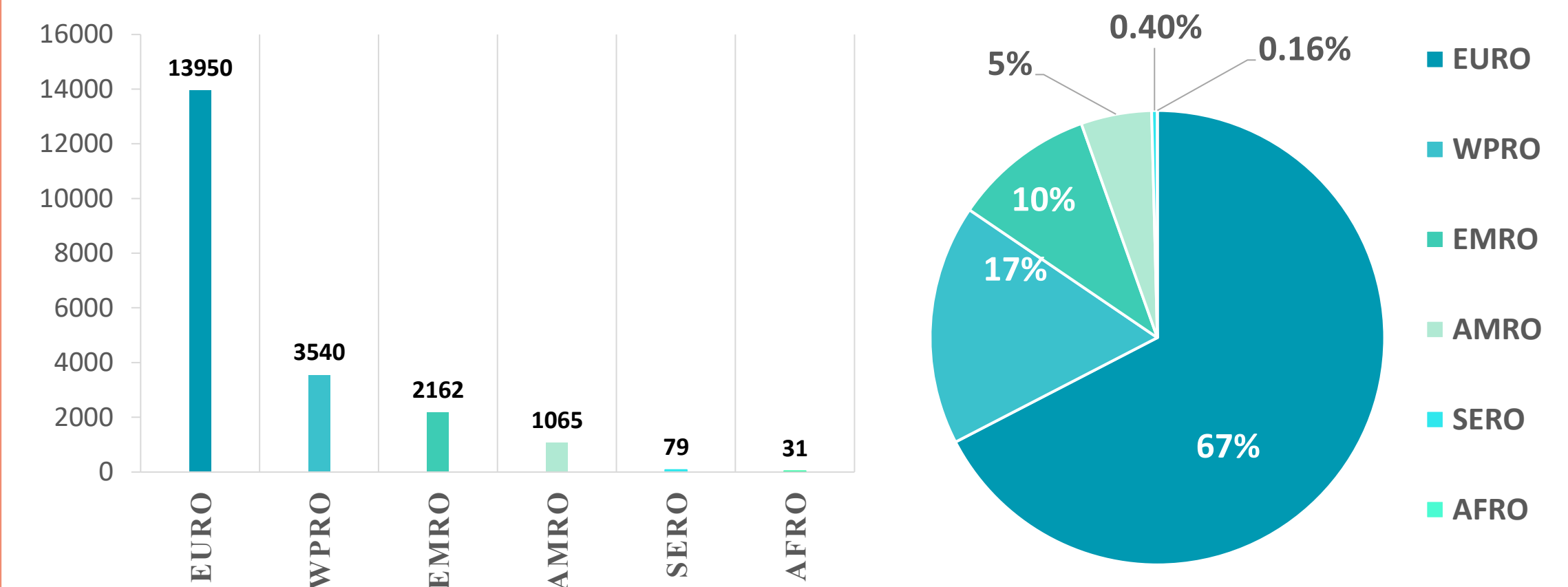


Figure 6: illustrate the Global distribution of COVID19 cases per region (March 24, 2020)

## COMPERATIVE ANALYSIS OF INFECTED CASES PER REGION



## COMPERATIVE ANYALSIS OF DEATH CASES PER REGION



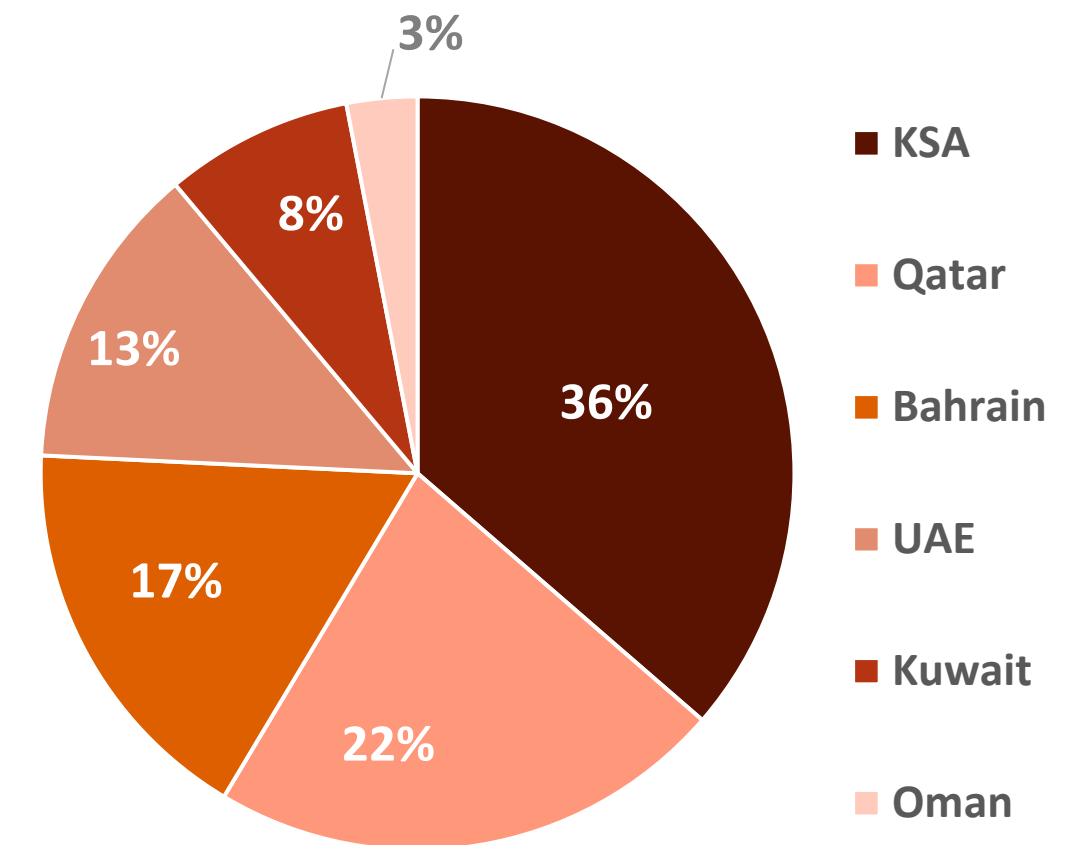
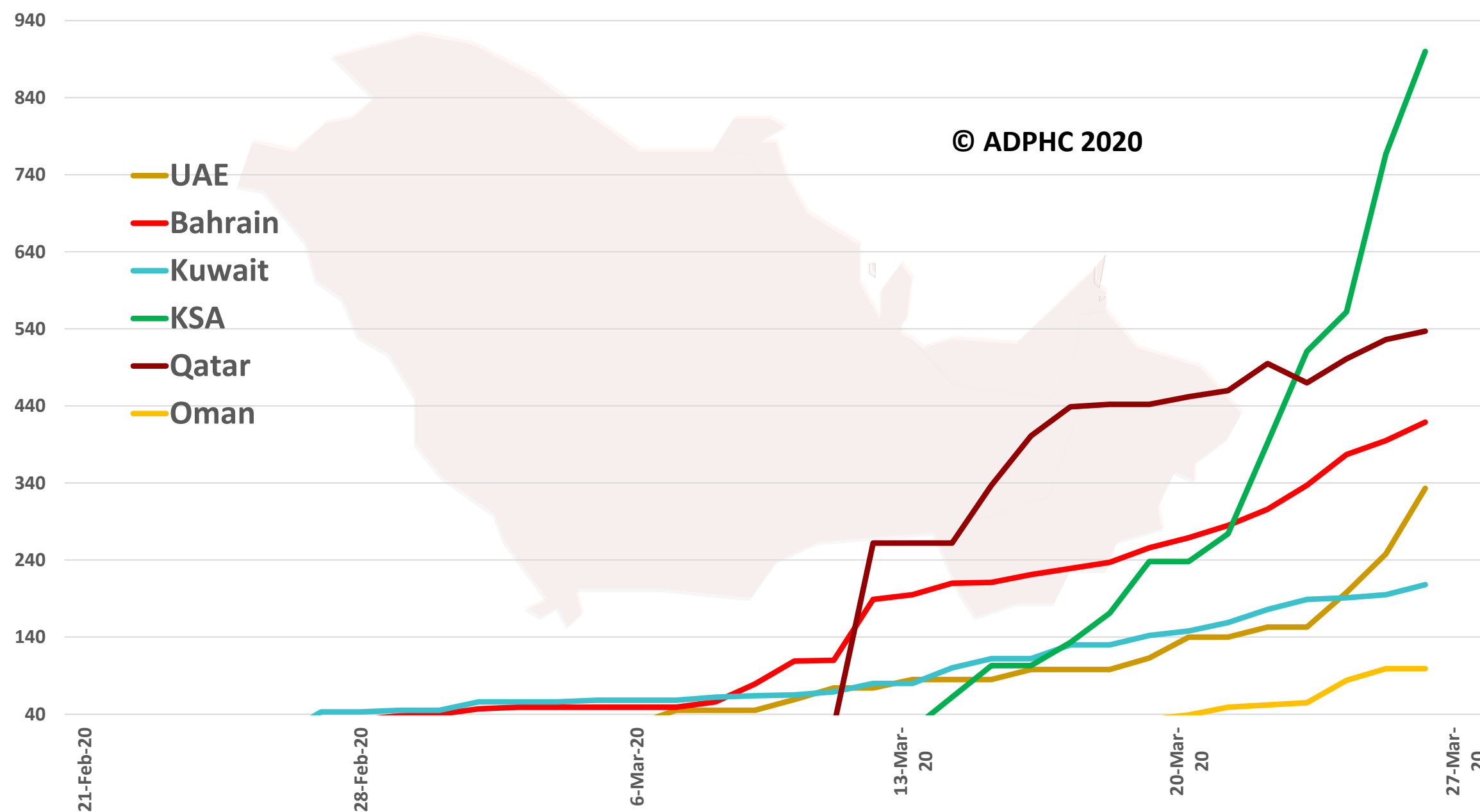
Map chart published by Abu Dhabi Public Health Center 2020.

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

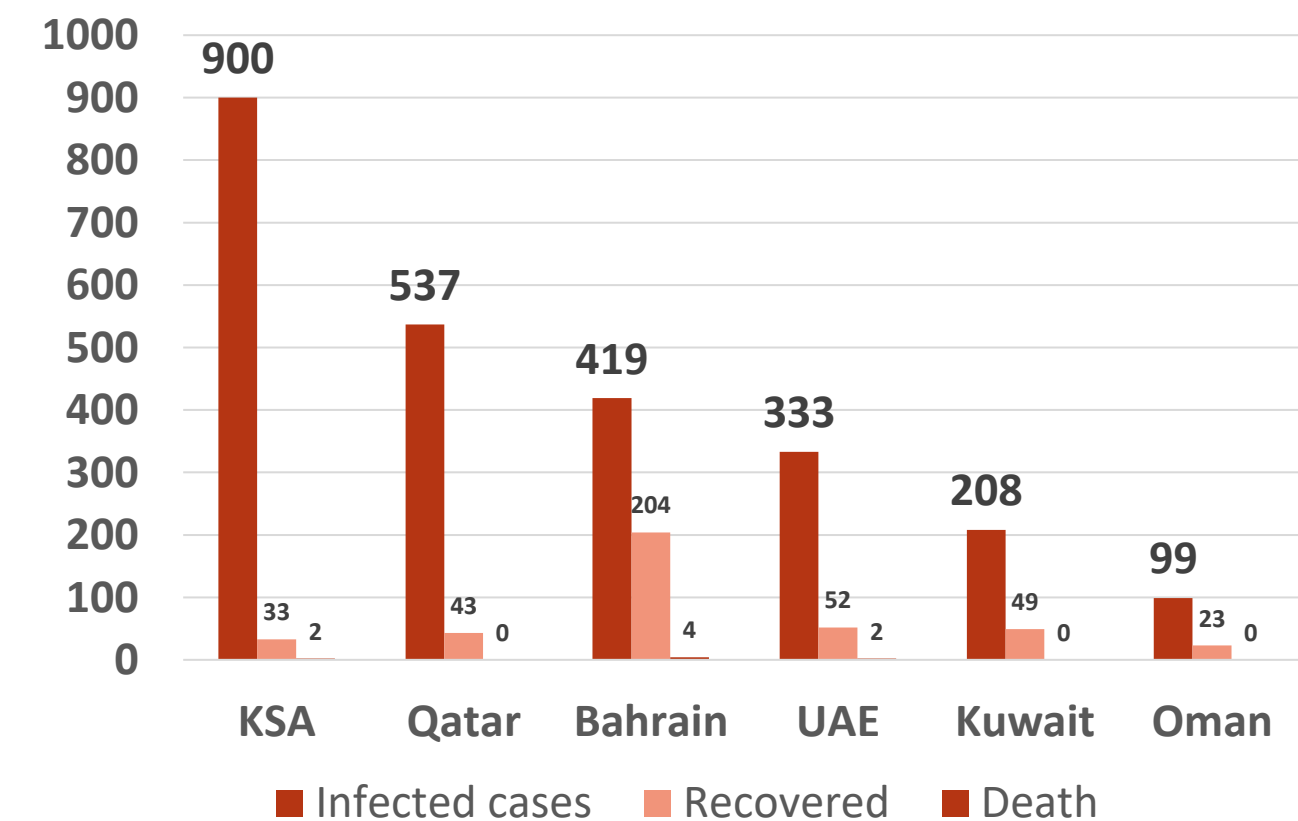


Figure 7: Comparative analysis of the distribution of COVID19 cases in GCC countries (March 25, 2020)

## TOTAL NUMBER OF INFECTED CASES



## Total number of infected, recovered and death



Map chart published by Abu Dhabi Public Health Center 2020.

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



## Article 1 : GENOMIC CHARACTERISATION AND PHYLOGENETIC ANALYSIS OF SARS-COV-2 IN ITALY

Published: 20 March 2020

link: [Click Here](#)

### Summary:

- This report describes the isolation, the molecular characterization and the phylogenetic analysis of the first **three complete genomes of SARS-CoV-2 isolated** from **three patients who died** from COVID19 .(age above 70) Those patient involved in the first outbreak of COVID-19 in Lombardy, Italy. Early molecular epidemiological **tracing suggests** that SARS-CoV-2 was present in Italy weeks before the first reported cases of infection. ( origin might be from German case )
- The genome obtained from the three Italian strain were aligned with the 157 SARS-COV2 genome obtained worldwide.
- Also there was not site identified under positive selective pressure. ( this means that there is no significant strain change in the Italian SARS-COV2 compared to the others)

# Public Health Response:



## Article 2: National UK program of community health workers for COVID-19 response

**Published:** March 24, 2020

**Link:** [Click Here](#)

### Summary:

- In the United Kingdom (UK), in order to respond to the COVID-19 pandemic, a large-scale emergency program has been proposed to train **community health workers (CHWs) to support the most vulnerable people** at their residence. The suggested CHWs would be young people **age between 18 and 30 years** in whom the likelihood of serious consequences from COVID-19 is low. Furthermore, medical and physician associate students could be involved who cannot participate in usual clinical placements as clinical attachments are being suspended.
- According to **Brazilian CHW model**, it has been suggested that a **1-2 week training program on COVID-19 and on public health surveillance could provide basic skills and knowledge**, particularly when combined with ongoing training and supervision. **Online courses are available** in some institutions on COVID-19.
- CHWs could undertake regular **review of vulnerable people** at their residence **in person or virtually according** to their need. When patients become ill, they could undertake simple assessment of the need for more advanced care and report to other members of the primary care team including COVID-19 Health Management Team.
- CHWs would need to be trained to follow protocols to **assess temperature, blood pressure, and, with the provision of portable pulse oximeters, early detection of severe illness, thus collecting data** for clinical and epidemiological purposes. Furthermore, home visits would allow them to assess if individuals have adequate supplies of food and medicines for long-term conditions, are aware of **basic hygiene precautions**, and if they have **mental health problems**.
- The proposal for CHWs would create a large cadre of people with basic epidemiological and public health concepts **who could challenge scientific misinformation and explain the rationale** for specific health policies and interventions to the general population





## Article 3: Treating COVID-19—Off-Label Drug Use, Compassionate Use, and Randomized Clinical Trials during Pandemics

Published : March 24, 2020

link: [Click Here](#)

### Summary:

- During COVID-19 pandemics, a large number of patients have **received off-label and compassionate** use therapies based on their in vitro antiviral or anti-inflammatory properties. Although many drugs have in vitro activity against different coronaviruses, however, **there is no clinical evidence that supports the efficacy and safety of any drug against SARS-CoV-2**. When a drug with unknown clinical effects is prescribed to patients with severe illness from a new disease such as COVID-19, there is no way to explore whether the patients had benefited or were harmed if they were not compared to a concurrent control group.
- The **administration of off label** and compassionate drug use during COVID-19 pandemic also could **discourage patients and clinicians from participating in randomized clinical trial (RCT)** that hampering any knowledge that could be obtained about the effects of the drug being tested.
- It is important to **discover new drugs, otherwise there will be no proven treatments for future coronavirus** pandemics. By **participating in RCT, both patients and clinicians will be benefited** from the unique opportunity **to directly contribute to the discovery of new drugs**.
- The type of **RCTs that should be prioritized** during an outbreak are the **ones with an adaptive design**, which are able **to rapidly accept or reject multiple experimental therapies** throughout the trial. The rapid and simultaneous combination of **supportive care and RCTs is the only way to find effective and safe** treatments for COVID-19 and other pandemics in near future