ABU DHABI PUBLIC HEALTH CENTRE | مركز أبوظبي للصحة العامة

# Scientific Research Monitoring on COVID-19

**30 March 2020**

# Summary on COVID19

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## 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

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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 continuation of hydroxychloroquine and azithromycin study showing more number of patients with promising results**.**
- **Public Health response** : Article address the challenges and opportunities in urban preparedness in epidemics.

***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

**Offline: COVID-19 and the NHS—"a national scandal"**

**WHO launches crowdfund for COVID-19 response**

**Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease**

**2019 patients with coagulopathy**

**Quantitative Detection and Viral Load Analysis of SARS-CoV-2 in Infected Patients**

## WHO daily report

- One new country/territory/area reported cases of COVID-19 in the past 24 hours: The Commonwealth of the Northern Mariana Islands.
- The COVID-19 Solidarity Fund has now received donations of more than US$ 108 million, from 203,000 individuals and organizations..
- WHO, together with national authorities, is monitoring the impact of the COVID-19 pandemic on people's mental health and providing information and guidance to governments and the public. On 27 March, WHO European Region published an article on mental health and psychological resilience during the COVID-19 pandemic; highlighting the potential mental health impacts on children and the elderly.

# Epidemiology

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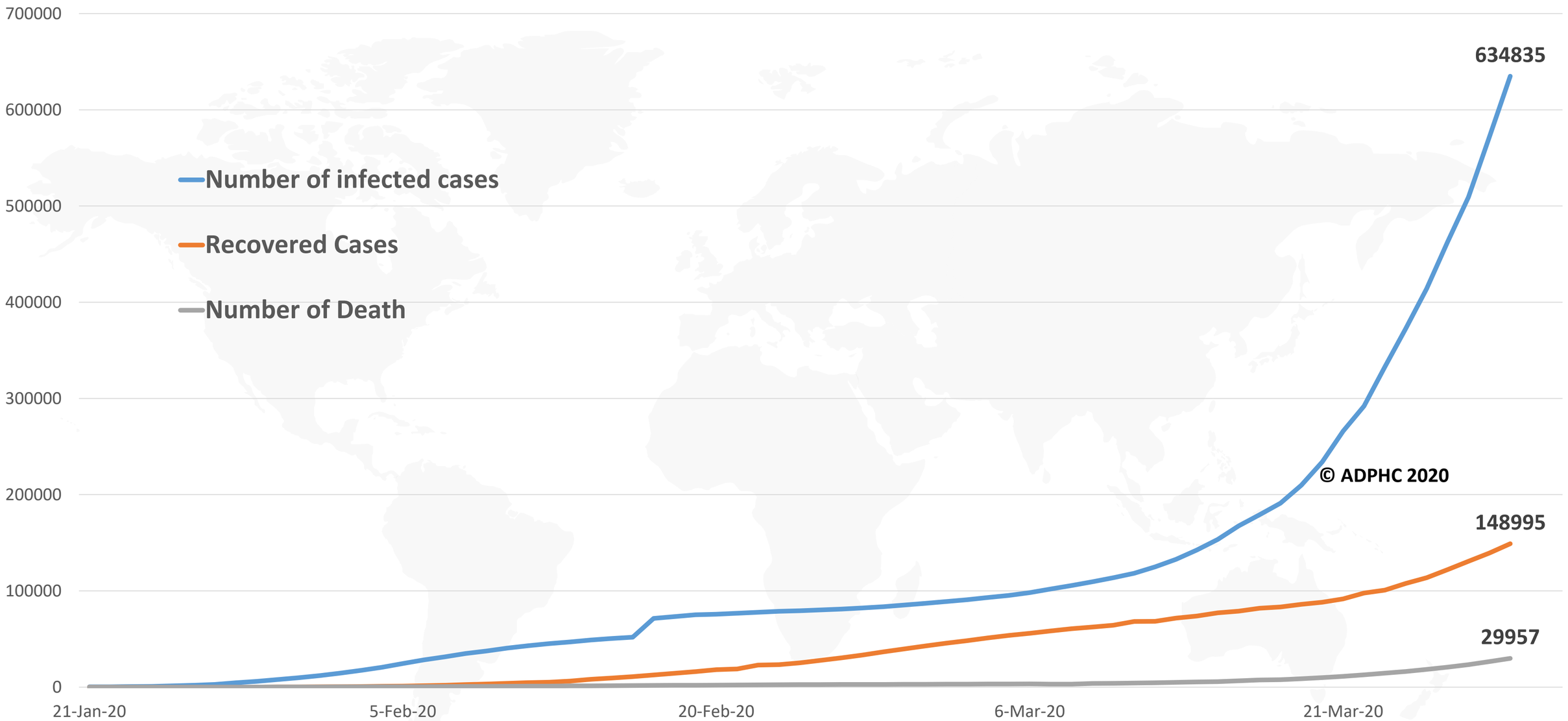
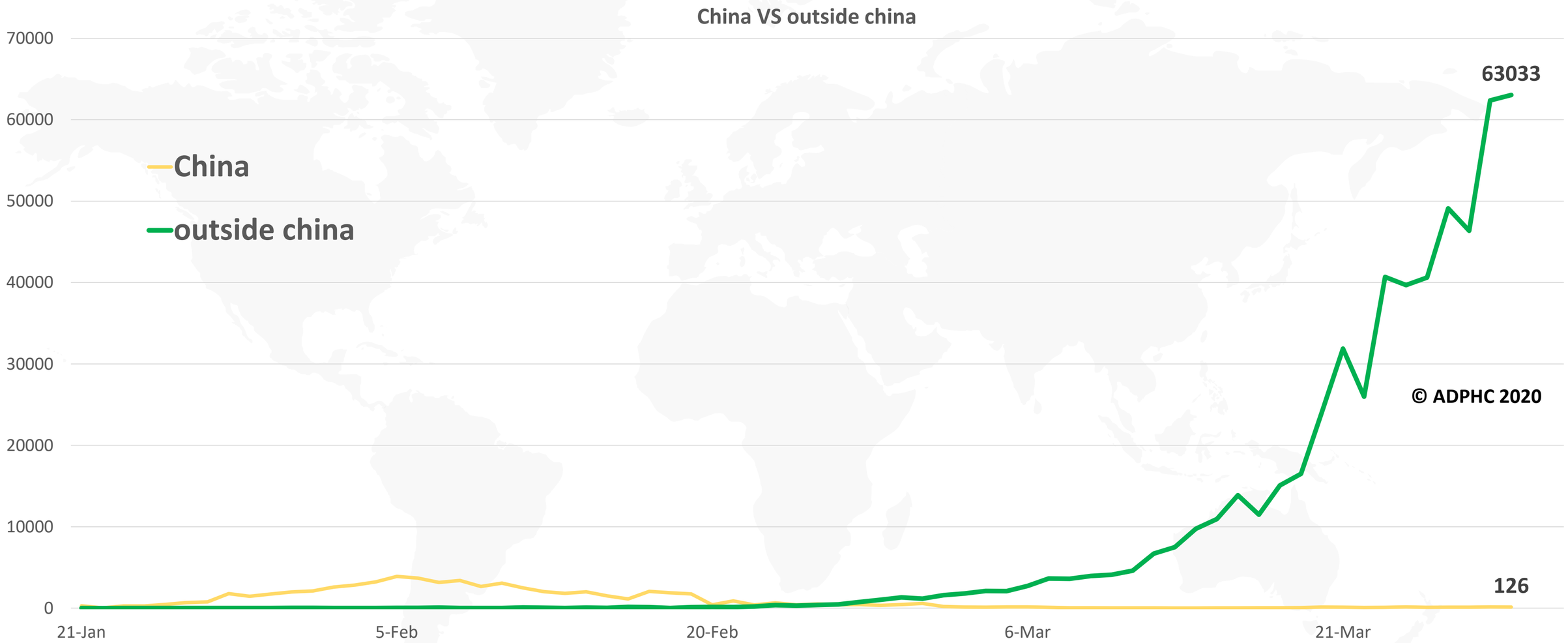
## Figure 1: Total number of infected, recovered , and death cases (January 21st to March 29, 2020)




**Line graph published by Abu Dhabi Public Health Center 2020.**
**Data resources: WHO, : John Hopkins University**

# Epidemiology

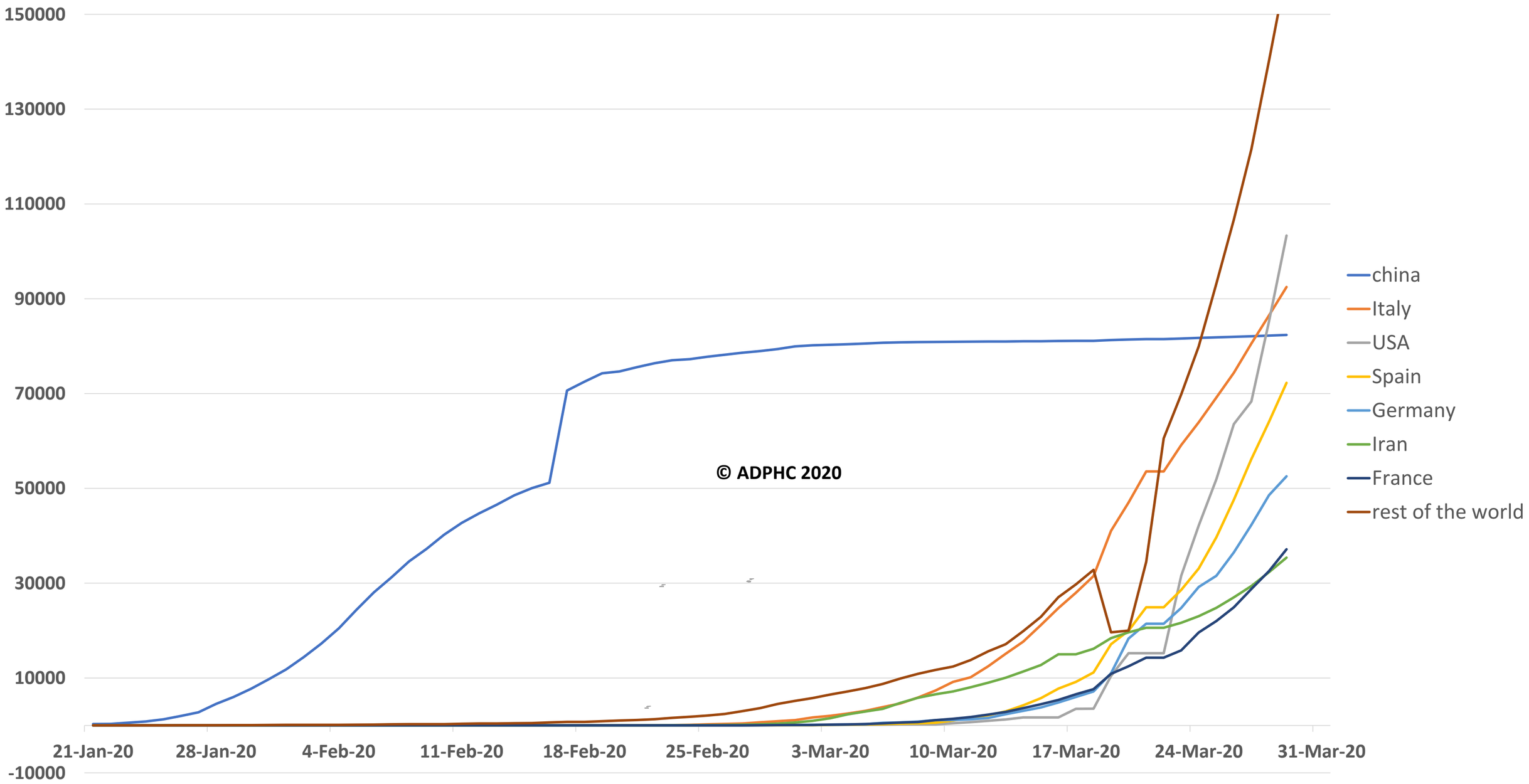
## Figure 2: Daily new infected COVID-19 cases reported between (January 21 to March 29, 2020).




**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 March 29, 2020).

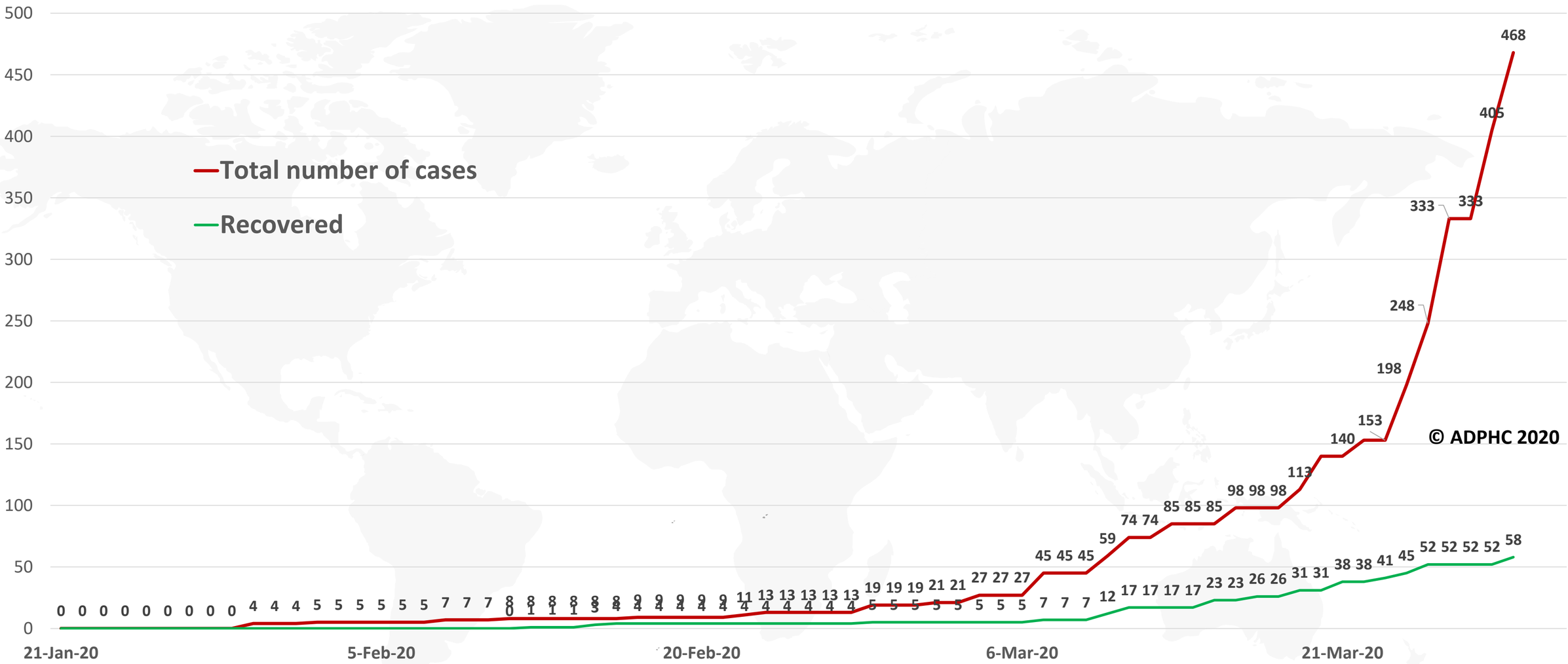



**Line graph published by Abu Dhabi Public Health Center 2020.**

**Data resources: WHO**

# Epidemiology

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

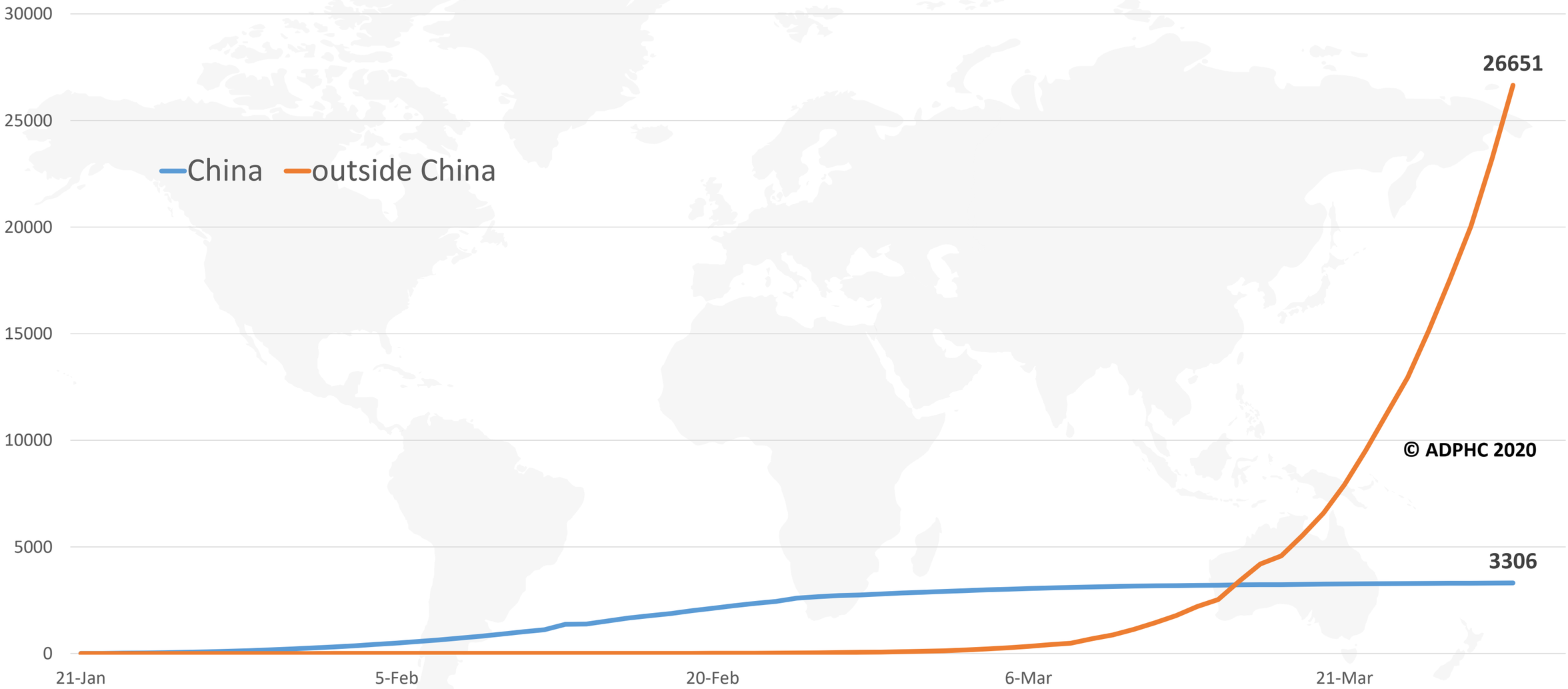



**Line graph published by Abu Dhabi Public Health Center 2020.**

**Data resources: WHO, : John Hopkins University**

# Epidemiology

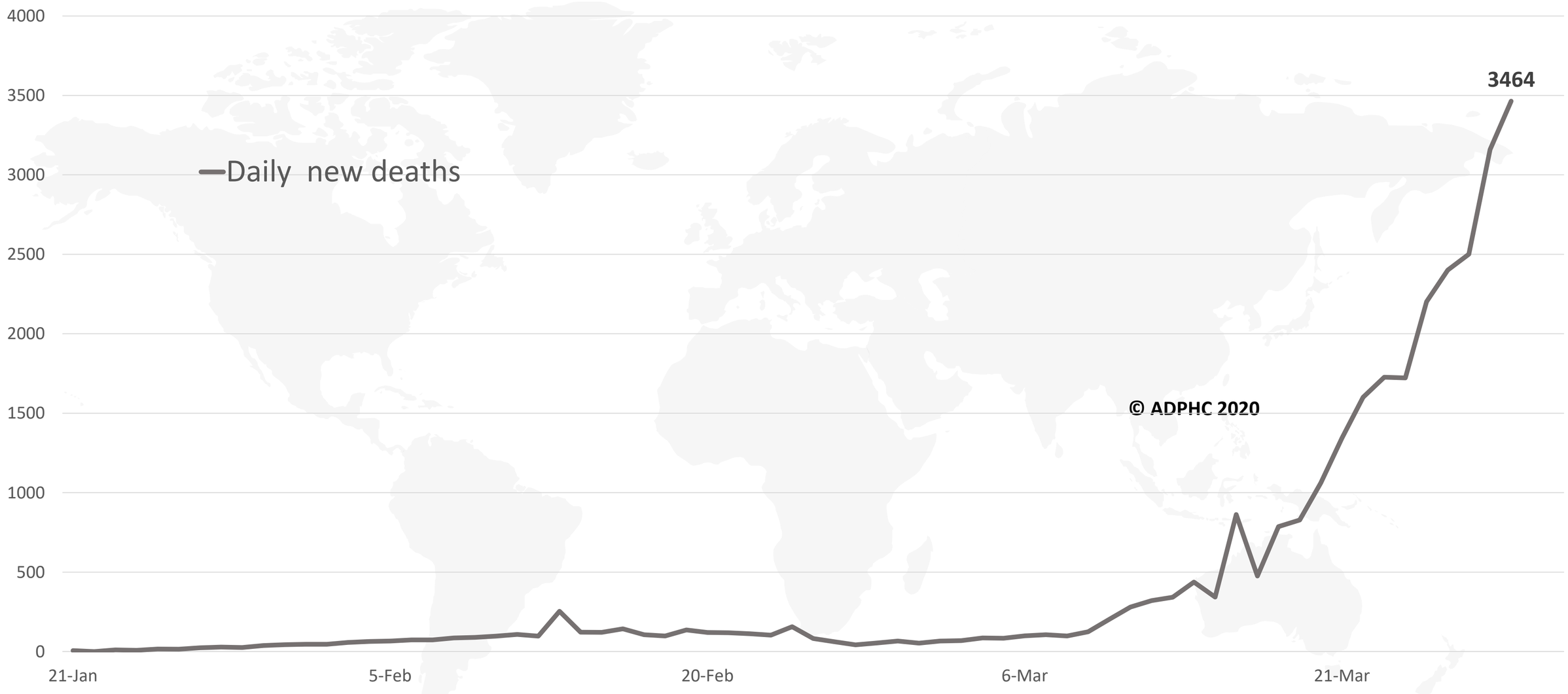
**Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 21 to March 29, 2020).**




**Line graph published by Abu Dhabi Public Health Center 2020.**
**Data resources: WHO**

# Epidemiology

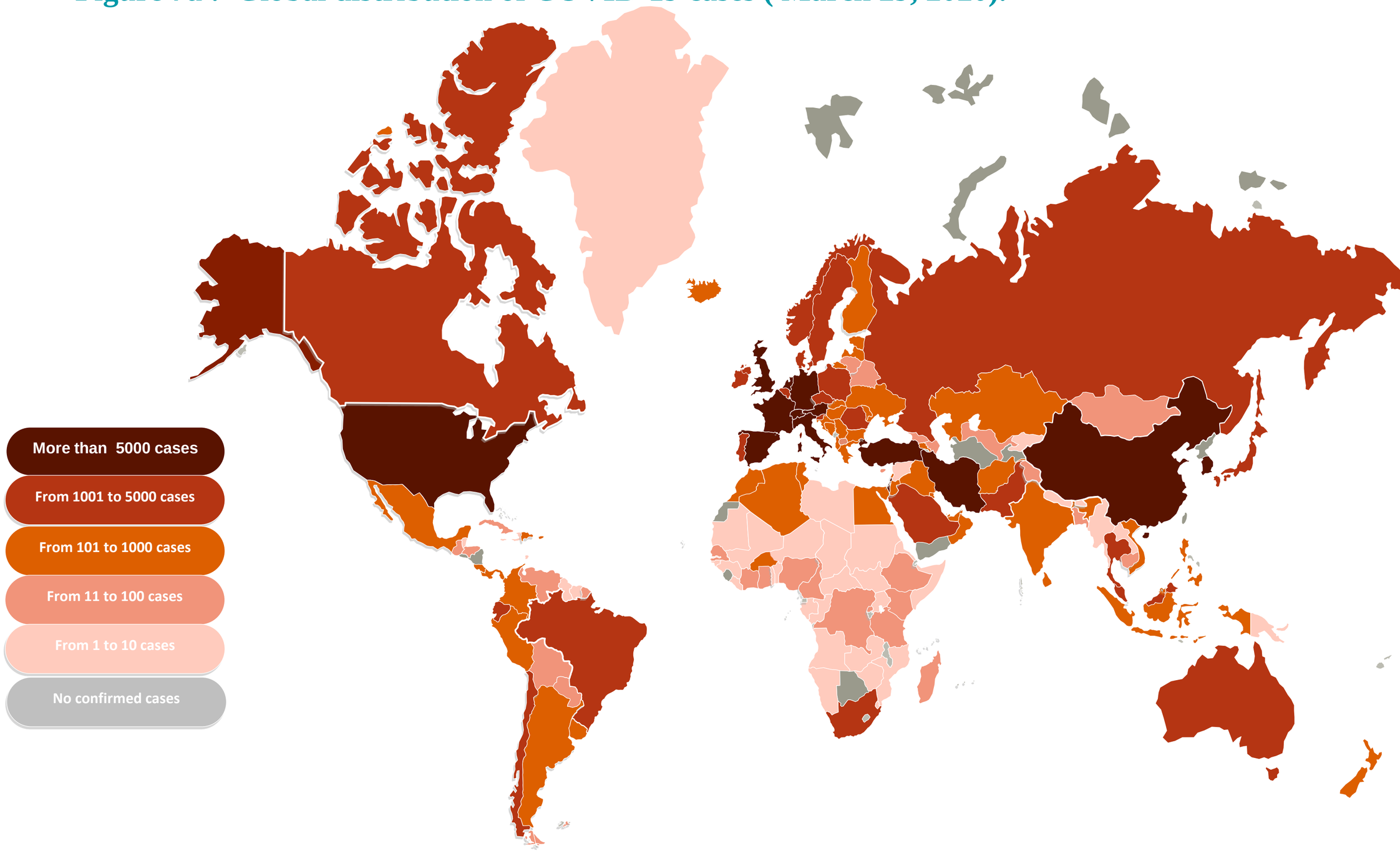
**Figure 6: Global daily new deaths due to COVID-19 (January 21 to March 29, 2020).**




**Line graph published by Abu Dhabi Public Health Center 2020.**
**Data resources: WHO**

# Epidemiology

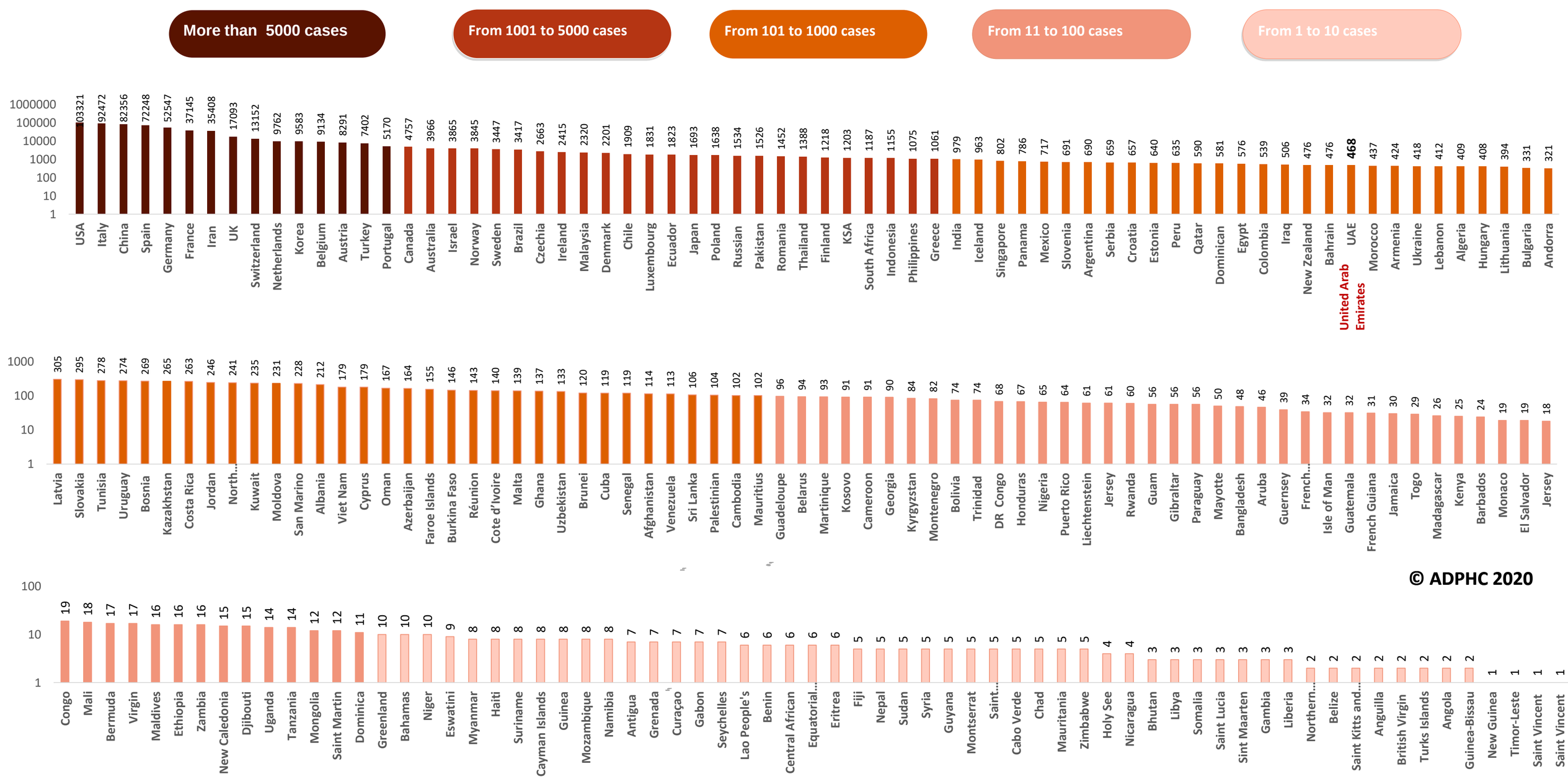
**Figure 7a : Global distribution of COVID-19 cases ( March 29, 2020).**




**Map chart published by Abu Dhabi Public Health Center 2020.**

# Epidemiology

## Figure 7B: Bar chart illustrate the global distribution of COVID19 cases (March 29, 2020)

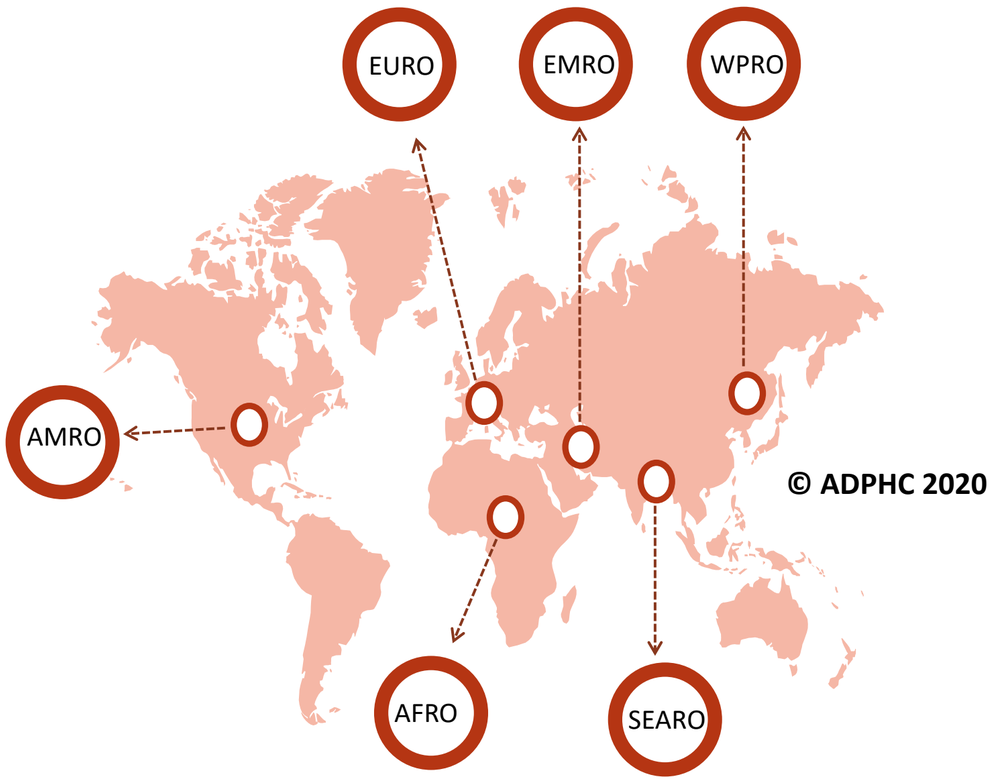


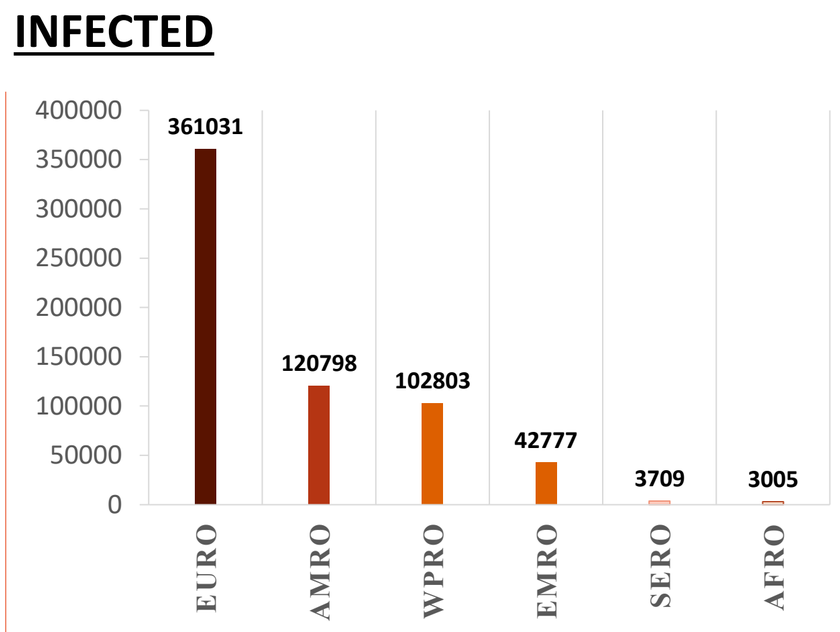

**Map chart published by Abu Dhabi Public Health Center 2020.**

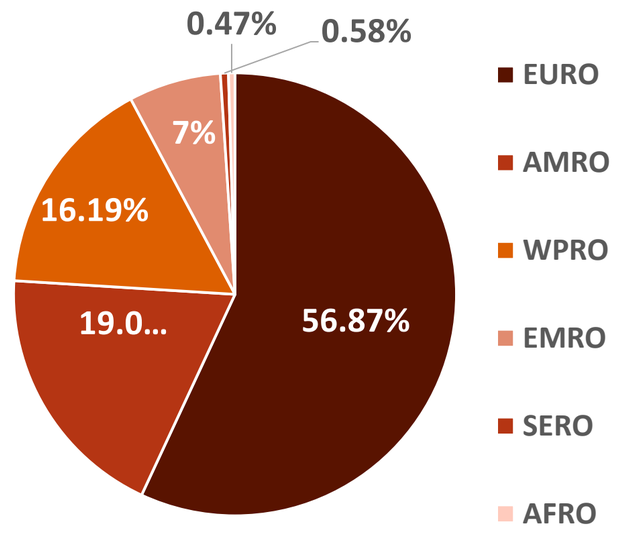
**Data resources: WHO**

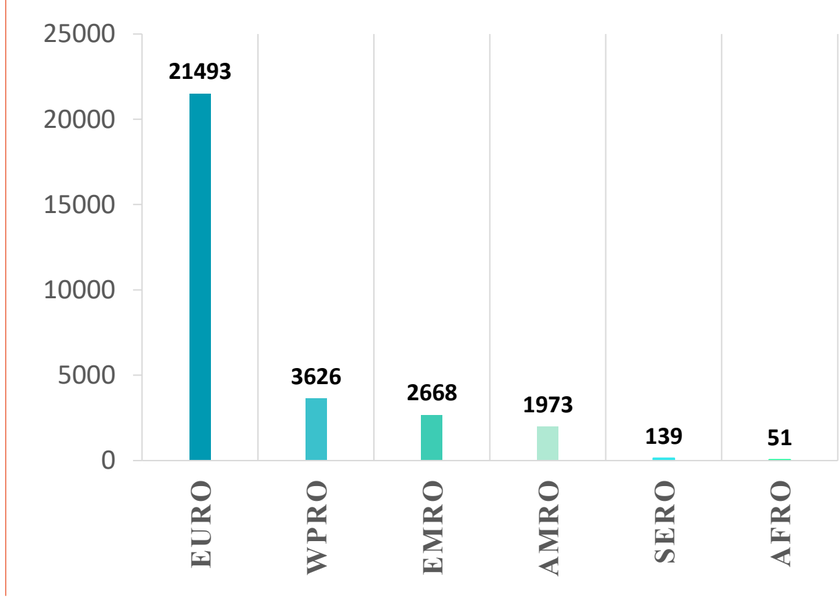
# Epidemiology

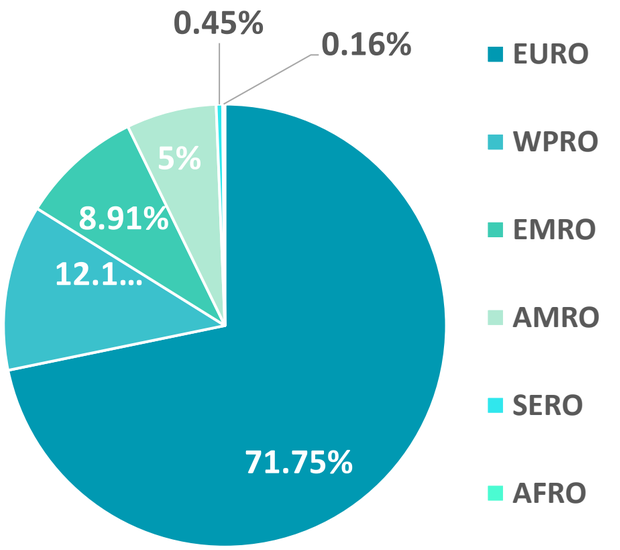
## Figure 8: illustrate the Global distribution of COVID19 cases per region (March 29, 2020)



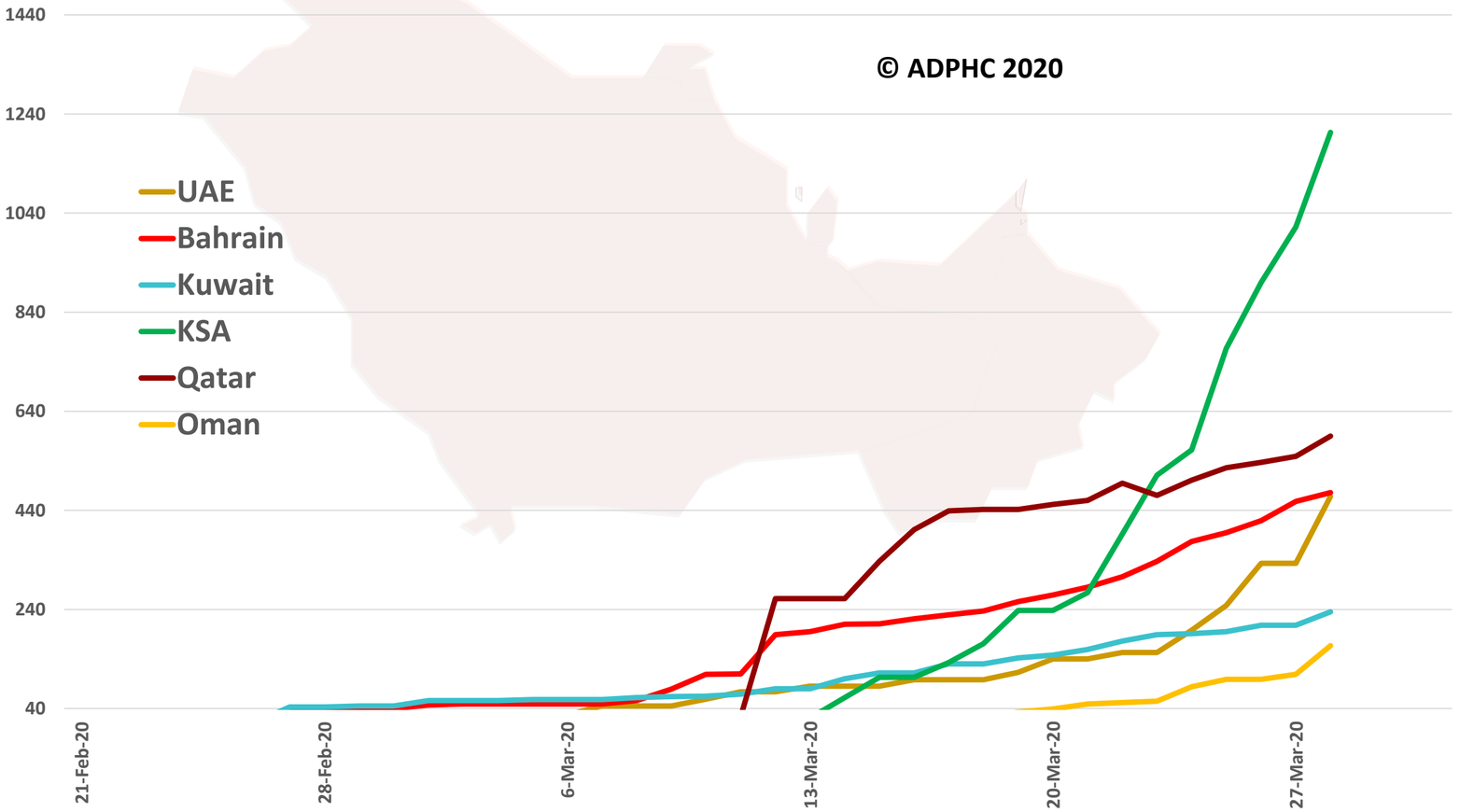



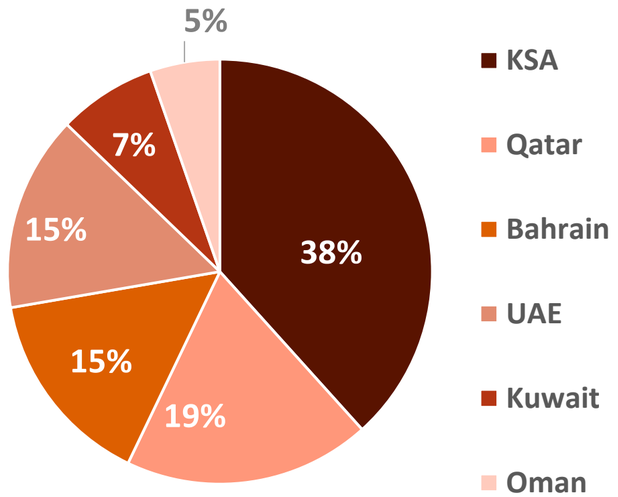

**Map chart published by Abu Dhabi Public Health Center 2020.**
**Data resources: WHO**

# Epidemiology

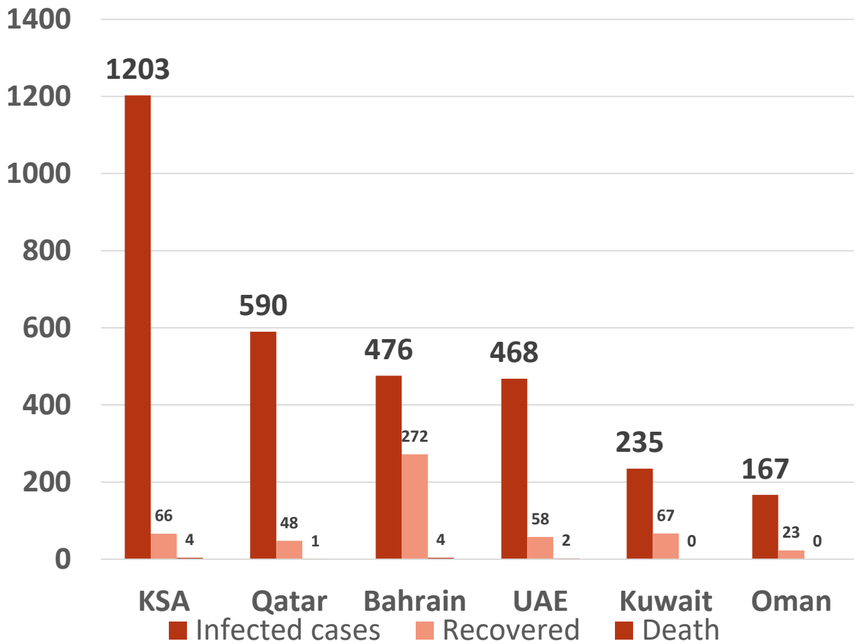
## Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (March 29 , 2020)

**TOTAL NUMBER OF INFECTED CASES**




**Total number of infected, recovered and Deaths**




**Map chart published by Abu Dhabi Public Health Center 2020.**

**Data resources: WHO**

# Public health response

## Article 1 :Epidemic preparedness in urban settings: new challenges and opportunities

**Published: : March 27, 2020** **link: Click Here**

**Summary:**

| | Challenges | Opportunity |
|---|---|---|
| High population density and high volume of public transportation | • A **larger population to be managed**<br>• Difficulties in **contact tracing**<br>• Inequalities resulting in **poor housing environments** that might hinder control efforts<br>• Encounters with **wildlife via food markets** | • Urban planners **can consider epidemic preparedness in their designs and implementation**<br>• transport networks can be used to **rapidly move supplies** to outbreak epicenters<br>• Use of technologies for more **effective contact tracing** |
| Interface between animals and humans | • Areas **of poor sanitation** with rodents and other animal vectors; or wild animal market. | • Improved **sanitation and rodent control around** humans<br>• **vaccination** of domestic animals<br>• precautions at slaughter to prevent contact with blood<br>• regulating live animal markets |
| Governance by local authorities | • Limited budget<br>• Delay of response measure because of insufficient authority<br>• insufficient epidemic preparedness<br>• Difficulties in accessing national capacities | • Leaders in cities would develop and implement effective and contextually appropriate solutions.<br>• Local surveillance data can improve sense-making at the national level.<br>• Local leaders engaged in investing in the local systems. |
| Heterogeneous subpopulations | • Differences in modes of **social interactions** and acceptable control measures<br>• some subpopulations might be difficult to reach | • Community leaders can be mobilized for targeted approaches to preparedness and response.<br>• Innovative solutions can be shared and adapted across cultures. |
| High connectivity to other urban centers (domestic and international) | • High likelihood of **multiple importation events;**<br>• fear might lead to restrictions on travel and trade | • Evidence-based points of **entry measures and exit screening** measures can be implemented |
| Centres of commerce | • Greater disruption to economic activity, stability, and growth | • Businesses and corporations can be engaged in business continuity plans |
| Unconventional communications and interactions | • Multiple information sources leading to misinformation; false information might spread quickly | • Unconventional but reliable information channels and social media can be used for risk communication |

# Treatment :

**Article 2: Clinical and microbiological effect of a combination of hydroxychloroquine and azithromycin in 80 COVID-19 patients with at least a six-day follow up - observational study**

**Published: March 27, 2020**

**Link: Click Here**


**Summary:**

In uncontrolled study of 80 in-patients receiving a combination of hydroxychloroquine and azithromycin.

- ECG screening initated twice before and during treatment to monitor drug cardiac complications

**Findings:**

clinical improvement in all except one 86 year-old patient who died, and one 74 year old patient still in ICU.

A PCR was negative in 83% at **Day7**, and 93% at Day8.

**Virus cultures from patient respiratory samples were negative in 97.5%** patients at **Day5.**

Mean length of stay of five days.


| | n | % |
|---|---|---|
| Time between onset of symptoms and hospitalisation | | |
| Mean ± SD | 4.8 ± 5,6 | |
| Min - Max | 1 | 17 |
| Clinical classification | | |
| Asymptomatic | 4 | 5.0 |
| Upper respiratory tract infection symptoms | 33 | 41.2 |
| Lower respiratory tract infection symptoms | 43 | 53.8 |
| Fever | 12 | 15.0 |
| Temperature in febrile patients | | |
| Mean ± SD | 38.6 ± 0.12 | |
| Min - Max | 38.5 | 38.8 |
| Cough | 47 | 58.8 |
| Rhinitis | 13 | 16.3 |
| [1] NEWS score (N = 75, 5 missing data) | | |
| 0 – 4 (low) | 69 | 92.0 |
| 5 – 6 (medium) | 4 | 5.3 |
| ≥ 7 (high) | 2 | 2.7 |

**Note the study is a continuation of a previous study on the same drugs :https://www.ncbi.nlm.nih.gov/pubmed/32205204**
**The study is poorly written, does not have a proper correlation between data in graphs and the text. Therefore , it should be interpreted with caution,**

# Treatment :

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**Article 2: cont.,**

**Summary:**

**Results:**

- Authors Conclusion: this association can play a role in controlling the disease epidemic by limiting the duration of virus shedding, which can last for several weeks in the absence of specific treatment
- In the Institute where the study conducted, which contains 75 individual rooms for treating highly contagious patients, they had a turnover rate of 1/3 which allows them to receive a large number of these contagious patients with early discharge.

Table 3: Treatment and outcome

| | n | % |
|---|---|---|
| Oxygen therapy | 12 | 15.0 |
| Transfer to intensive care unit | 3 | 3.8 |
| Death | 1 | 1.2 |
| Discharged | 65 | 81.2 |
| Currently hospitalised | | |
| ICU | 1 | 1.2 |
| Infectious disease ward | 13 | 16.2 |
| Time from treatment initiation to discharge (n = 65) | | |
| Mean ± SD | 4.1 ± 2.2 | |
| Min - Max | 1 | 10 |