

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
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Scientific Research Monitoring on COVID-19

16 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

- **Diagnosis:** A study recommends universal screening FOR SARS-COV2 on women admitted for delivery
- **Public health response:** a study found Lockdowns seems effective in limiting the spread, while not yet mortality.
- **Public Health Response:** study estimated that 44% of secondary cases were infected during the index cases' pre-symptomatic stage.

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. [Chloroquine and hydroxychloroquine in covid-19](#)
2. [COVID-19: health literacy is an underestimated problem](#)
3. [Computed Tomography Imaging of an HIV-infected Patient with Coronavirus Disease 2019 \(COVID-19\)](#)



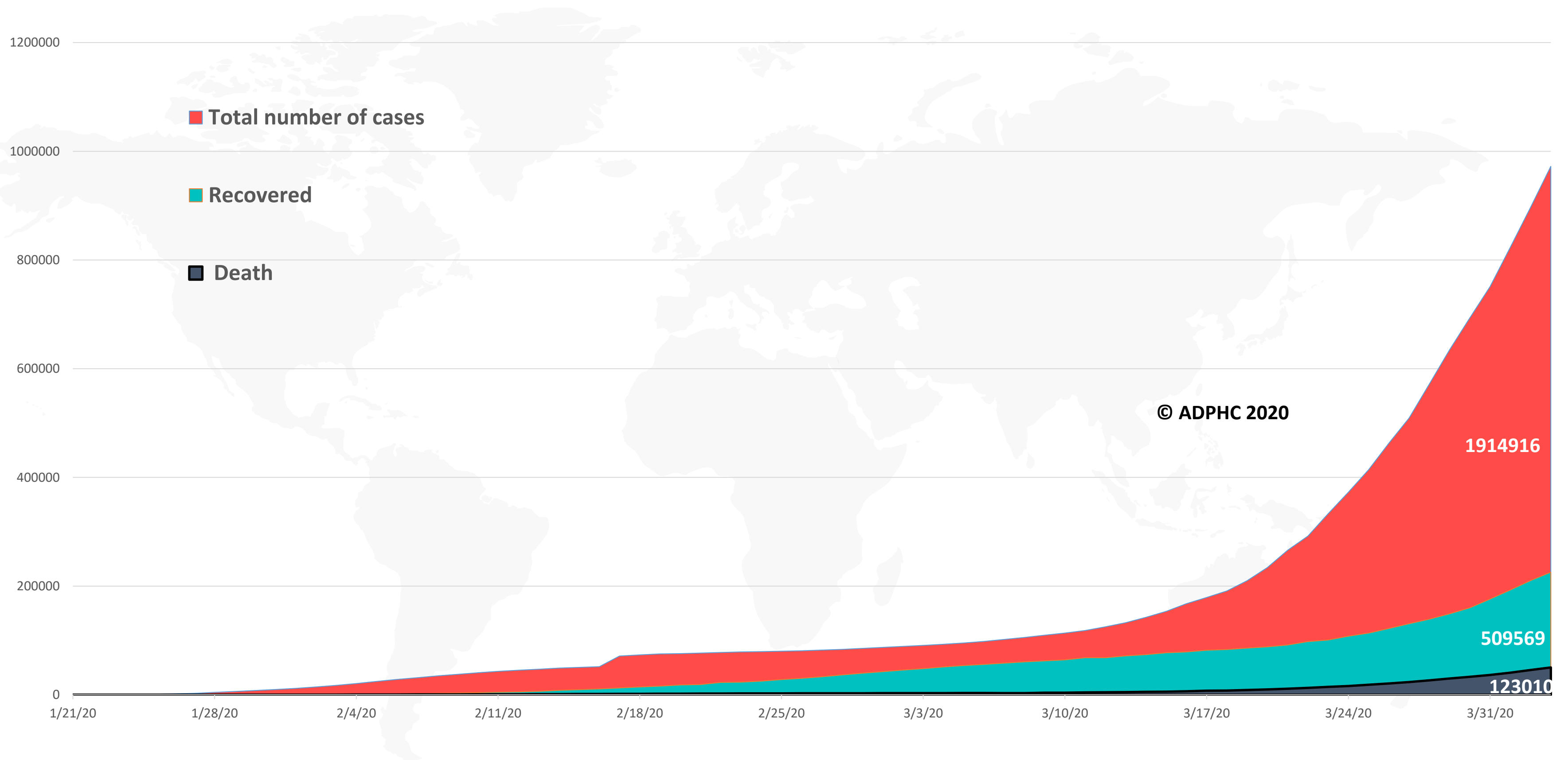
WHO daily report 15 April 2020

- No new country/territory/area reported cases of COVID-19 in the past 24 hours.
- WHO has published the updated strategy for tackling the COVID-19 pandemic. The document translates what we have learned so far about the virus into strategic action and will frame the next iteration of the Strategic Preparedness and Response Plan, due in the coming weeks.
- The first UN solidarity flight has departed Addis Ababa carrying vital COVID-19 medical supplies to African nations. WHO cargo includes one million face masks, as well as personal protective equipment, which will be enough to protect health workers and treat more than 30 000 patients, and laboratory supplies to support surveillance and detection.
- There is no evidence that oral poliovirus vaccine protects people against infection with COVID-19 virus. A clinical trial is planned in the USA, and WHO will evaluate the evidence when it is available.
- WHO continues to provide timely and accurate information, in world where we have an overabundance of information, some accurate and some not.
 - On 7 and 8 April, the WHO Information Network for Epidemics (EPI-WIN) held a two-day, global, online consultation on managing the COVID-19 infodemic. The consultation gathered ideas from an interdisciplinary group of experts and 1,375 webinar participants. Over 500 ideas were also submitted through an online interactive forum. These ideas will form the basis of a COVID-19 infodemic framework to guide actions of governments and public health institutions, and will be made available in the coming days

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to April 15th, 2020)

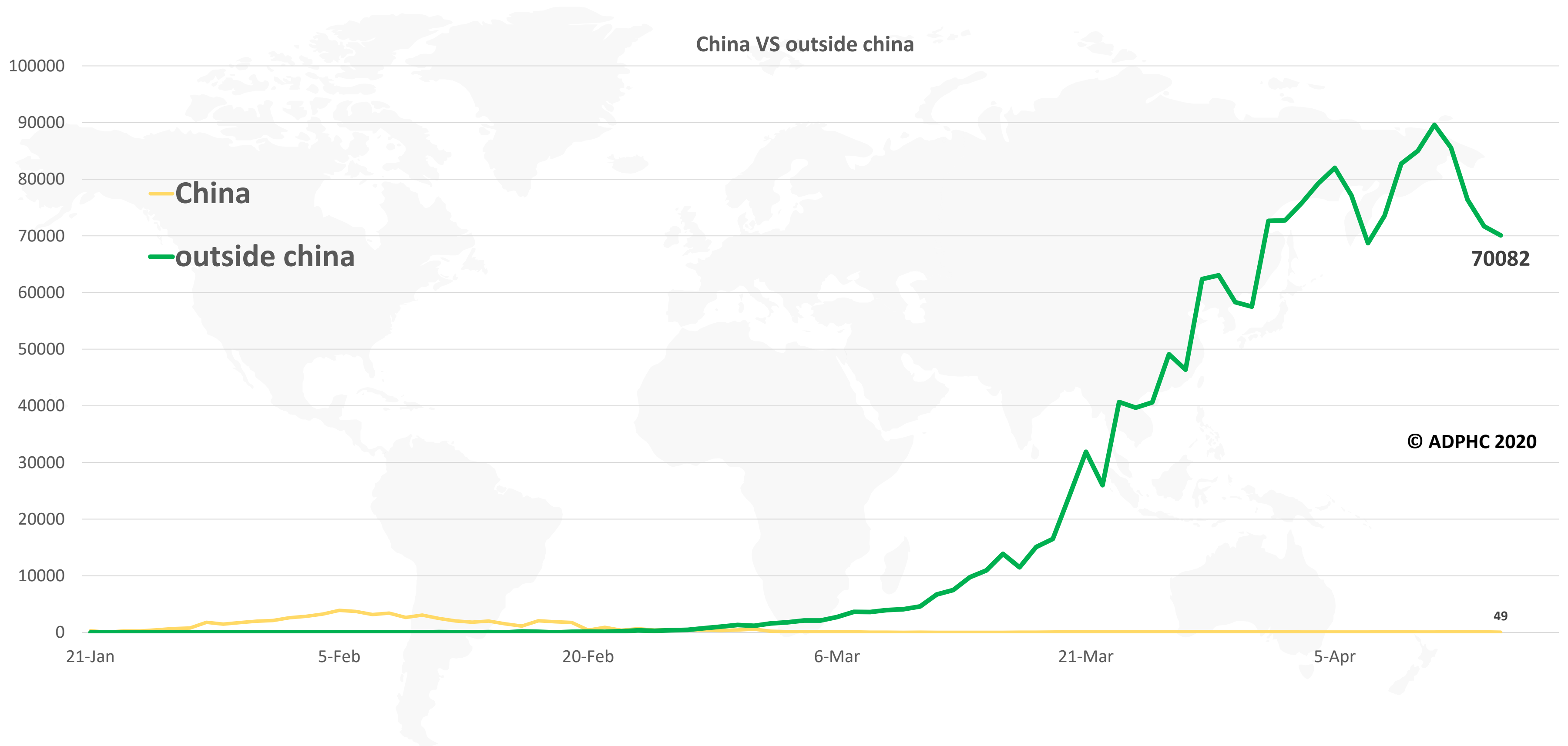


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to April 15^h, 2020).



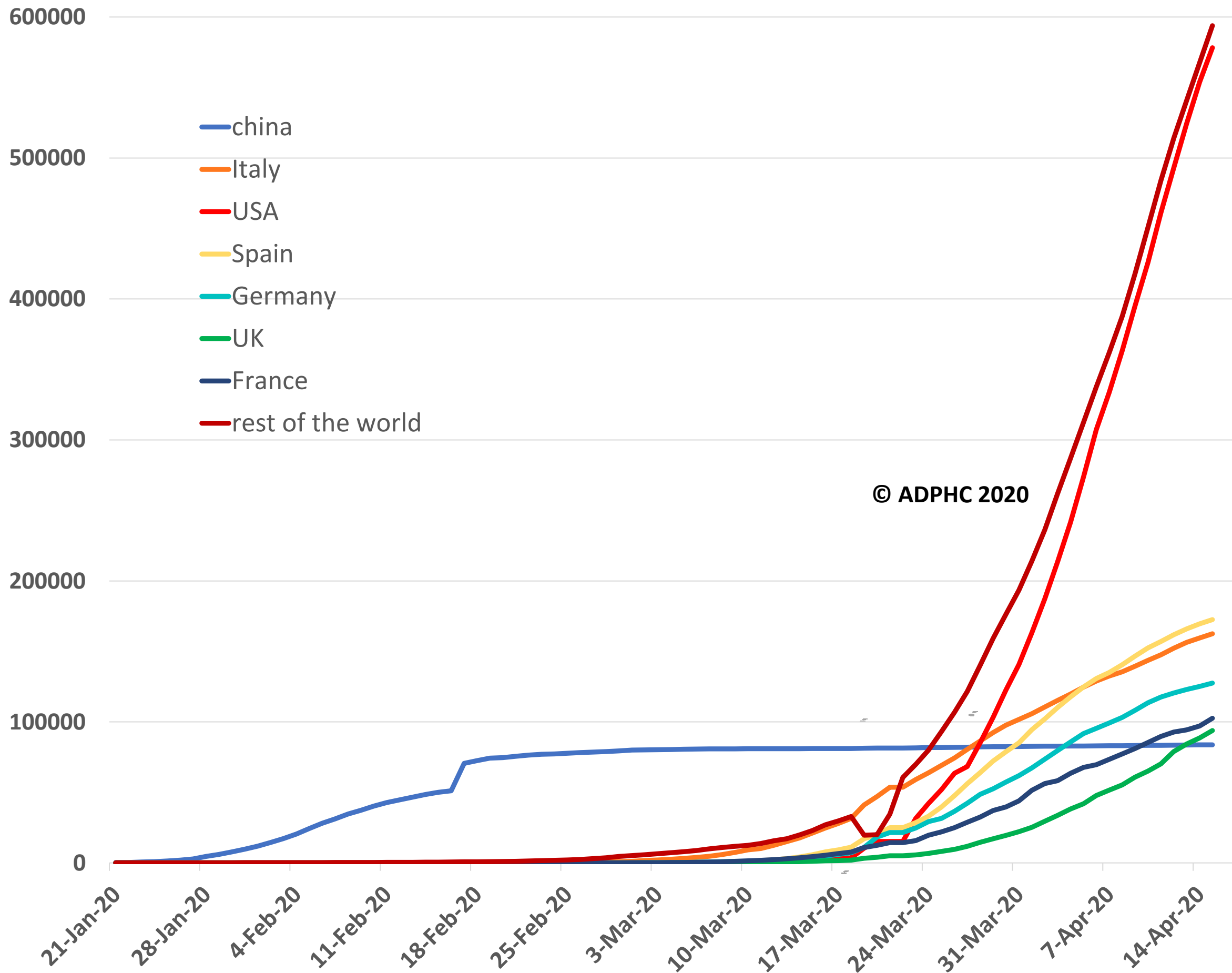
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

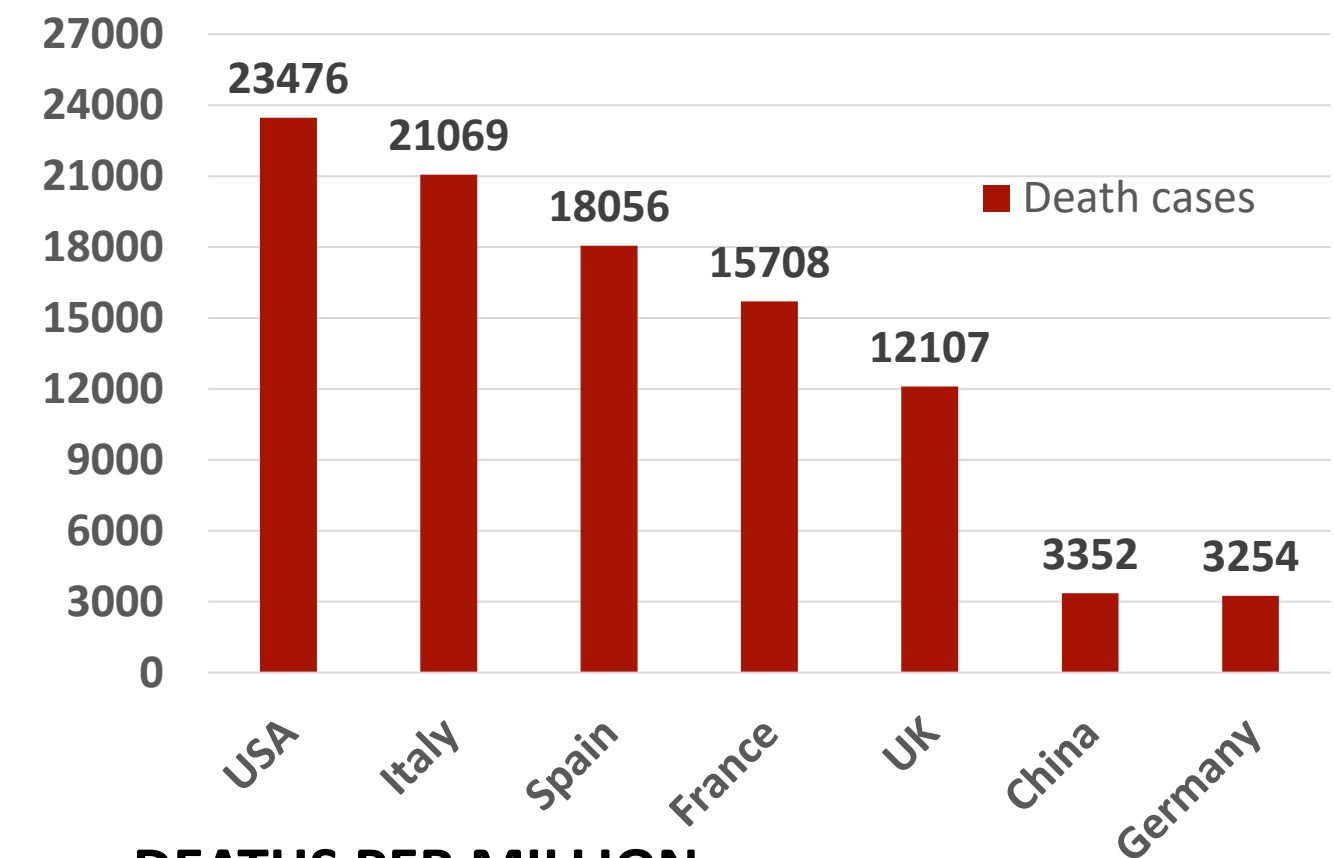
Epidemiology



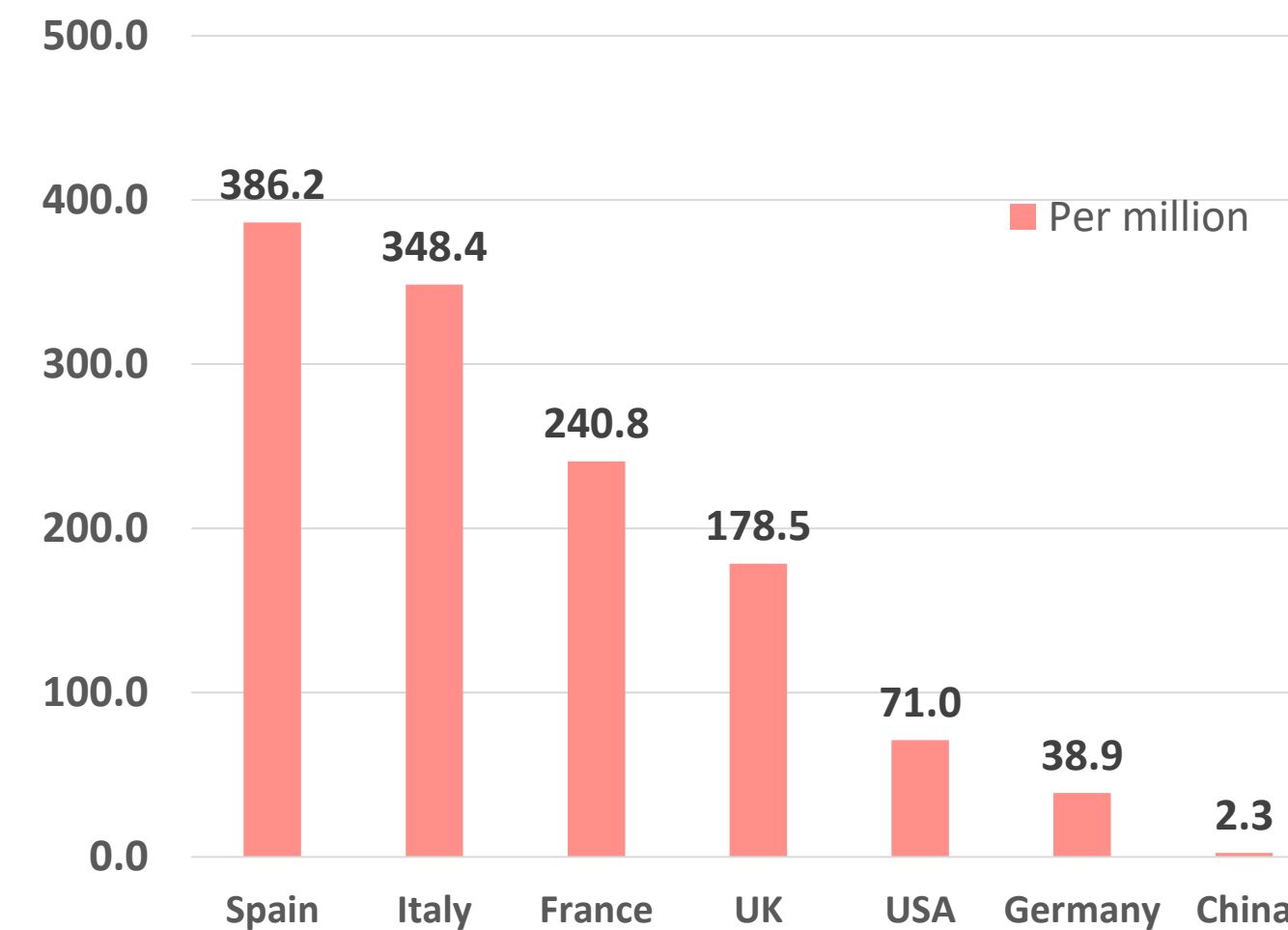
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to April 15th, 2020).



TOTAL DEATHS



DEATHS PER MILLION

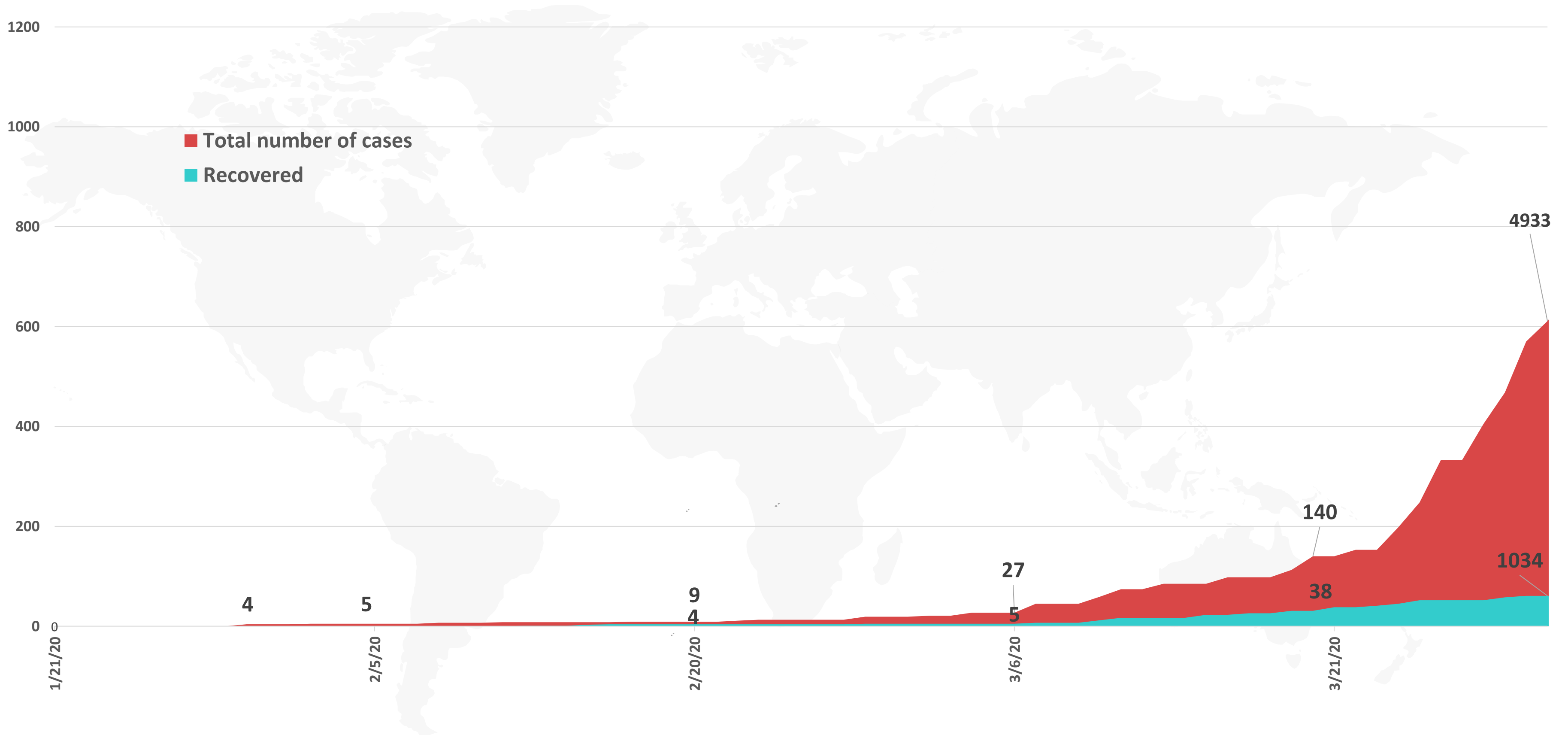


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



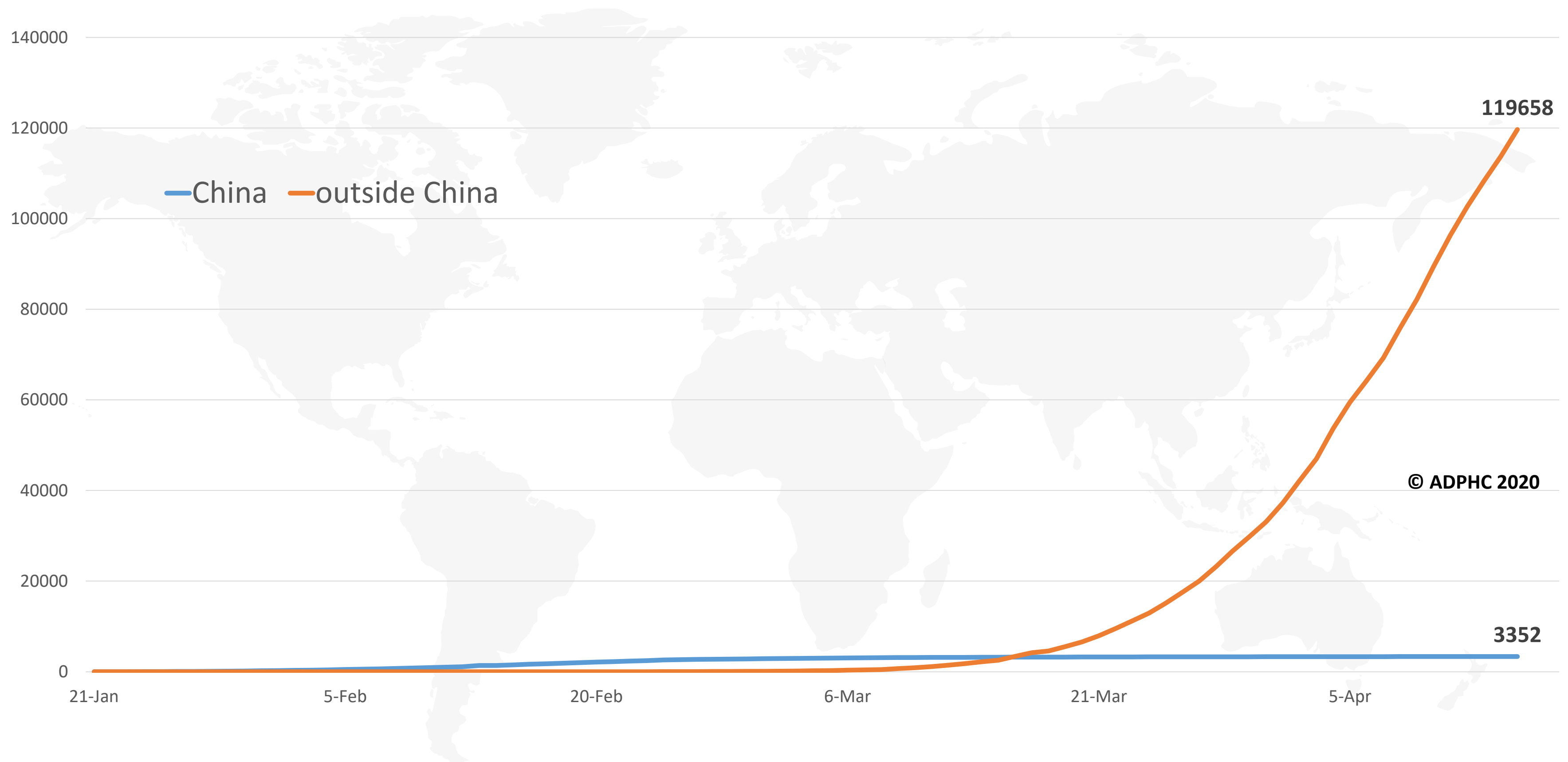
Line graph published by Abu Dhabi Public Health Center 2020.

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 April 15th, 2020).

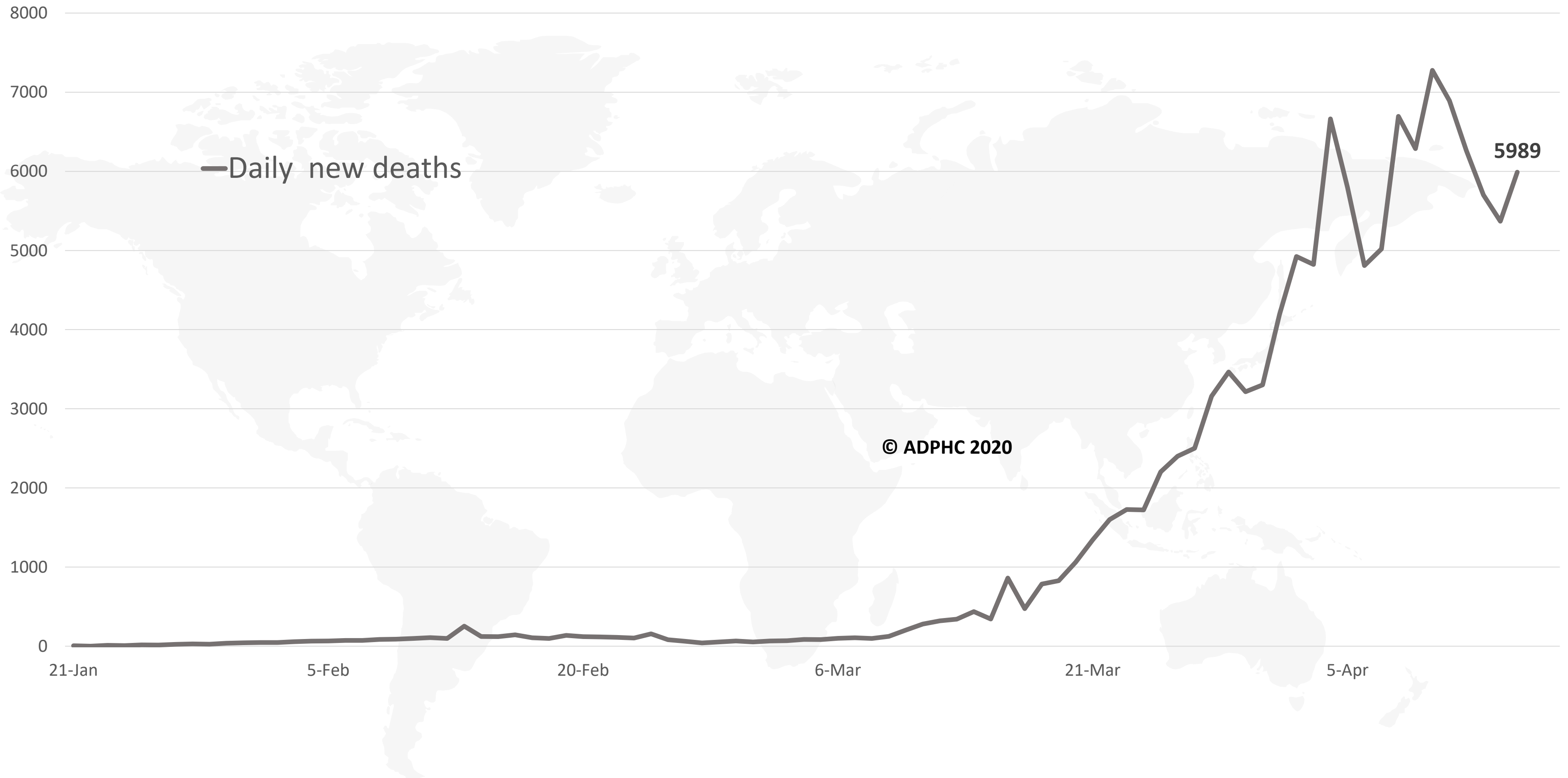


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 6: Global daily new deaths due to COVID-19 (January 21 to April 15th, 2020).



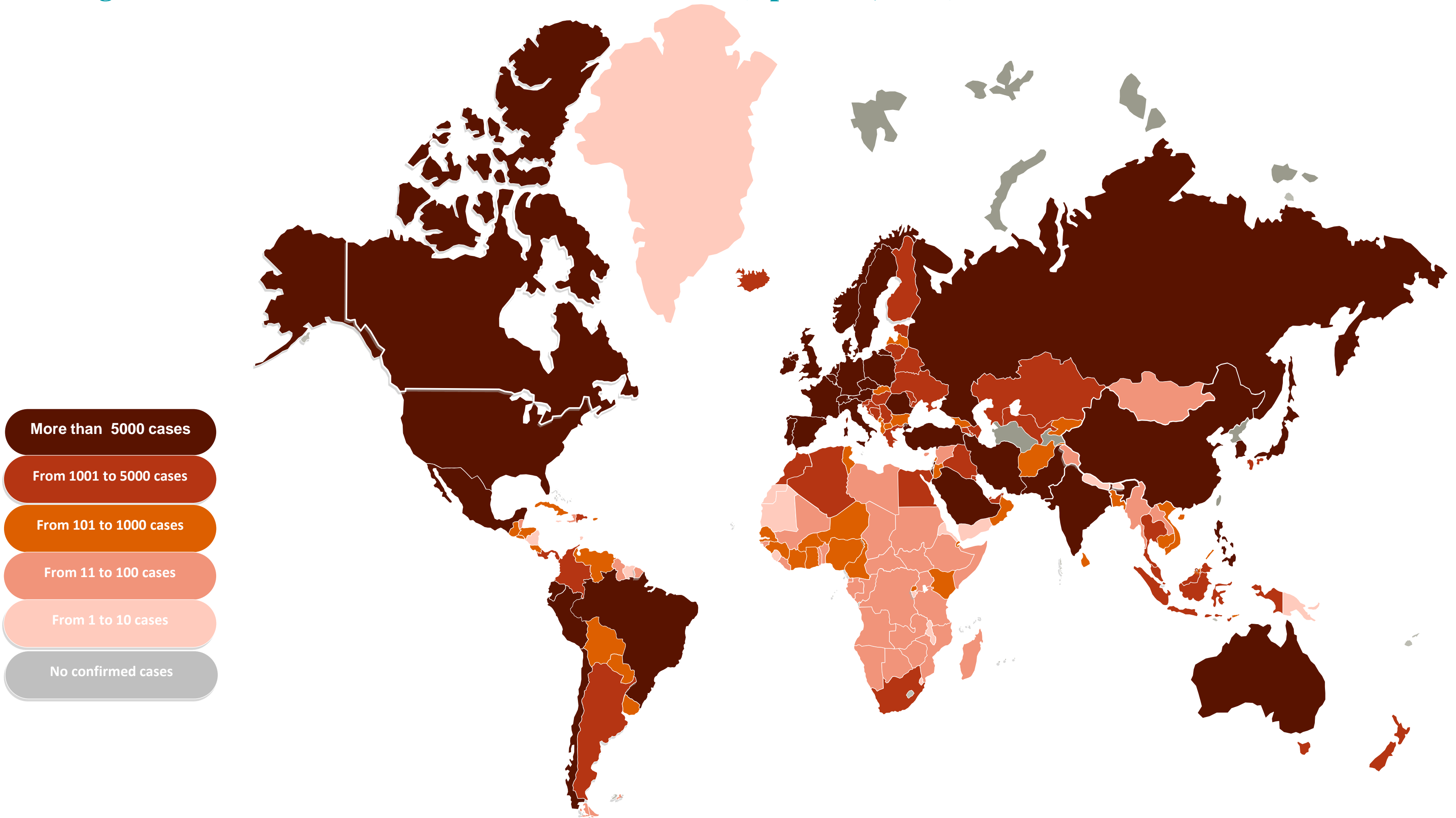
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 7a : Global distribution of COVID-19 cases (April 15th, 2020).

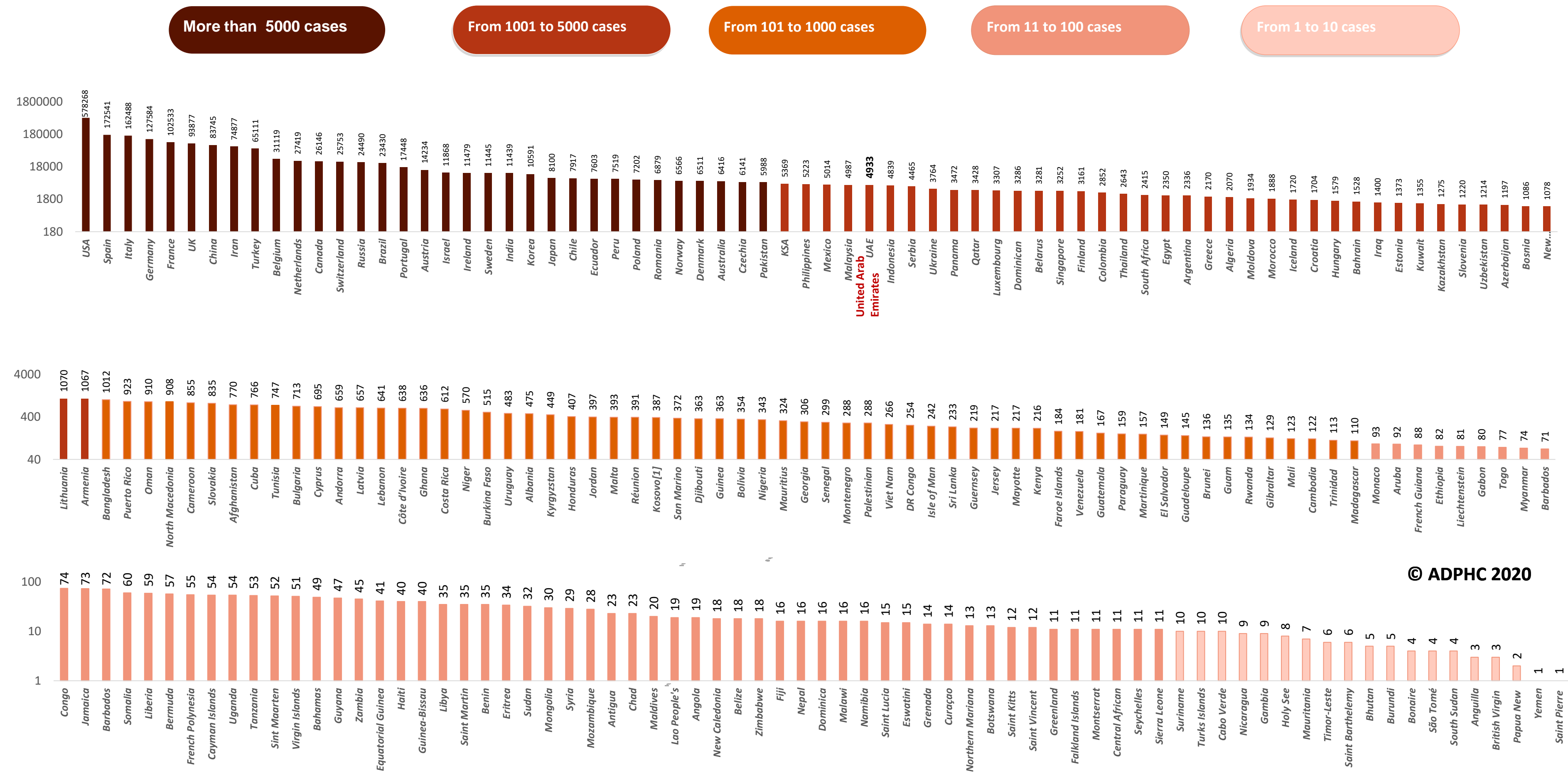


Map chart published by Abu Dhabi Public Health Center 2020.

Epidemiology



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases April 15th, 2020)



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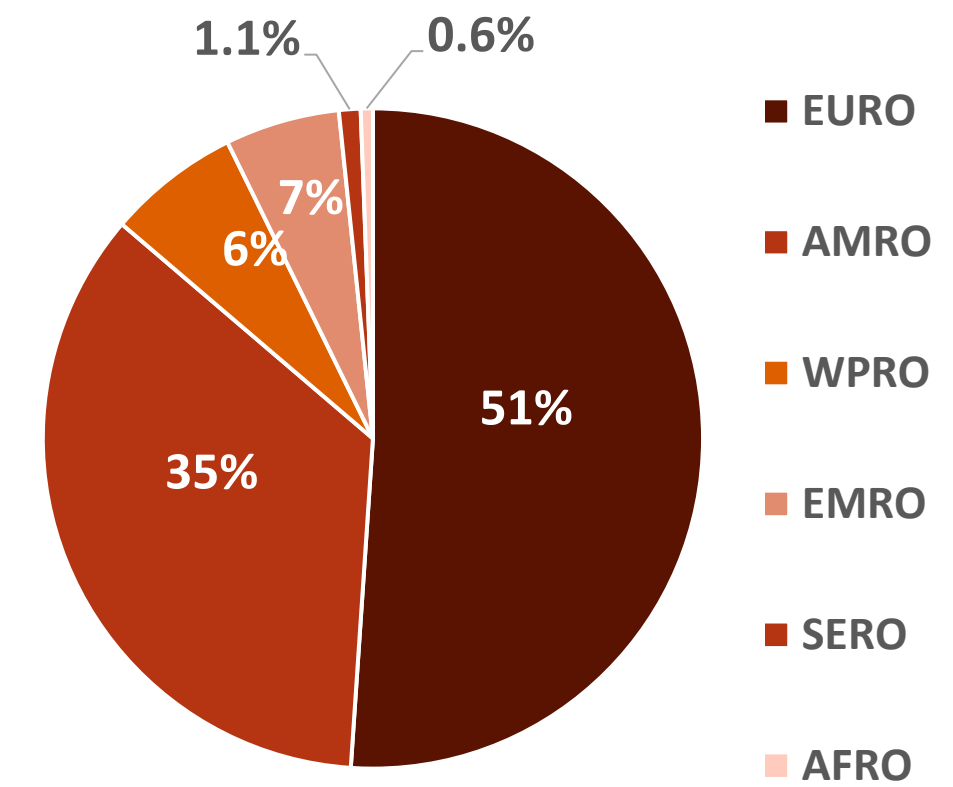
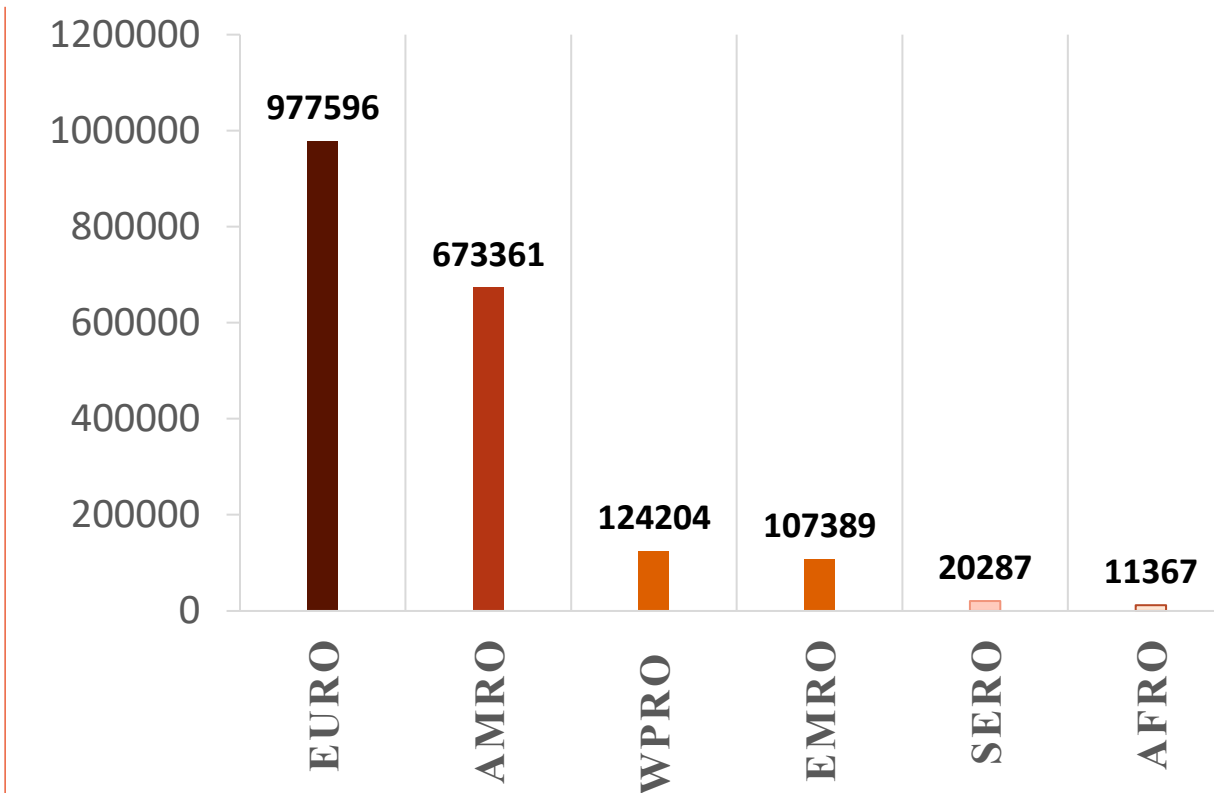
Map chart published by Abu Dhabi Public Health Center 2020.

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

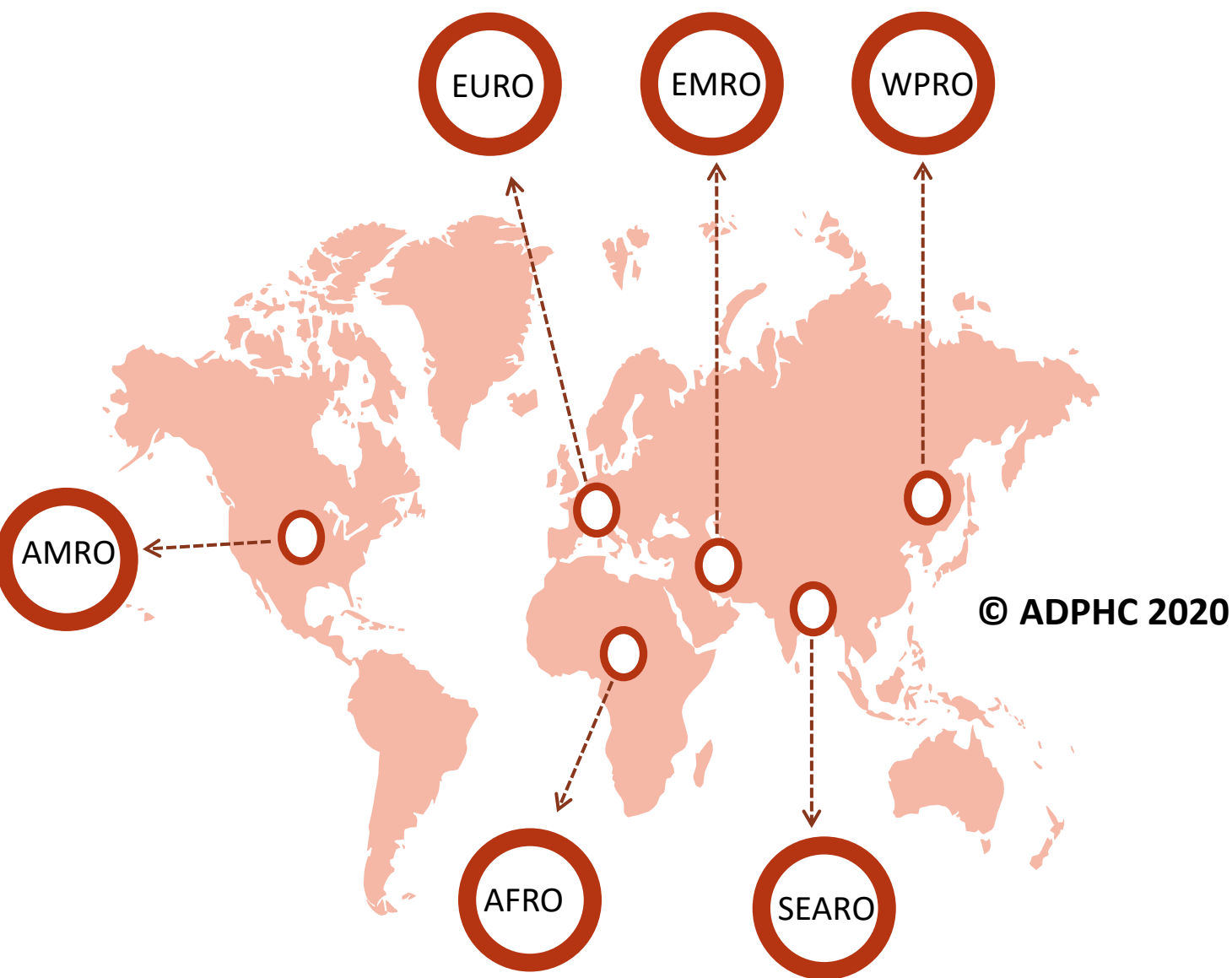
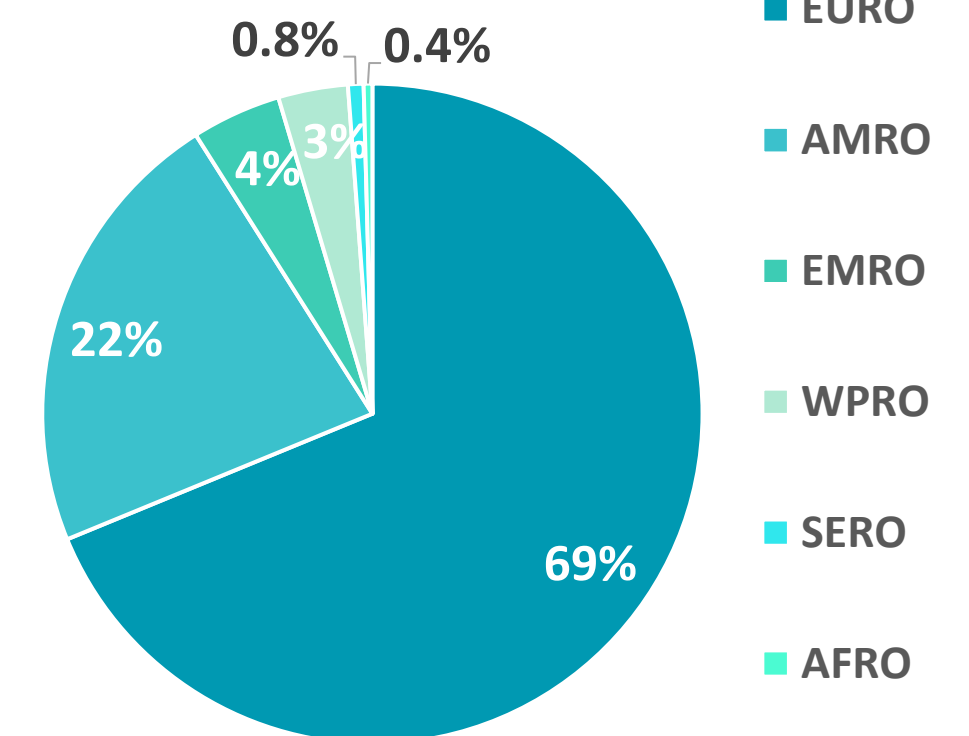
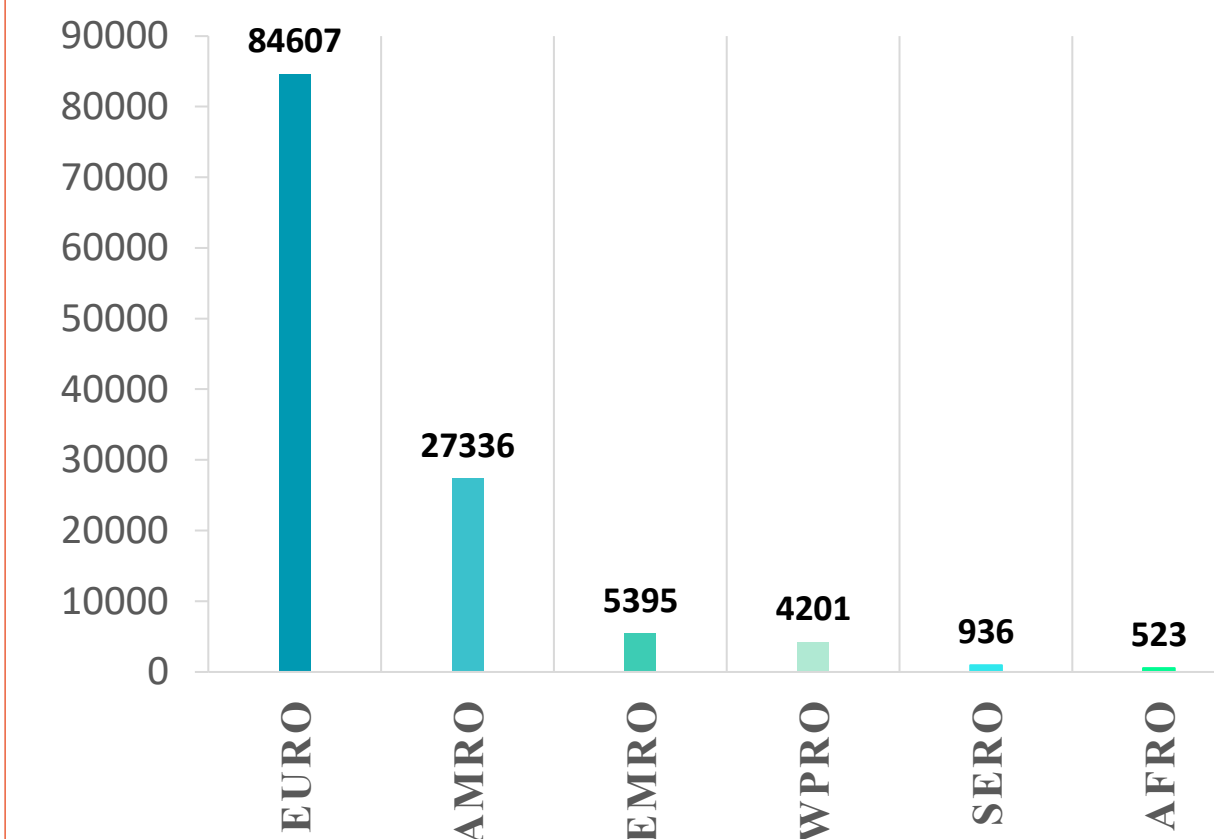


Figure 8: illustrate the Global distribution of COVID19 cases per region (April 15th, 2020)

INFECTED



DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

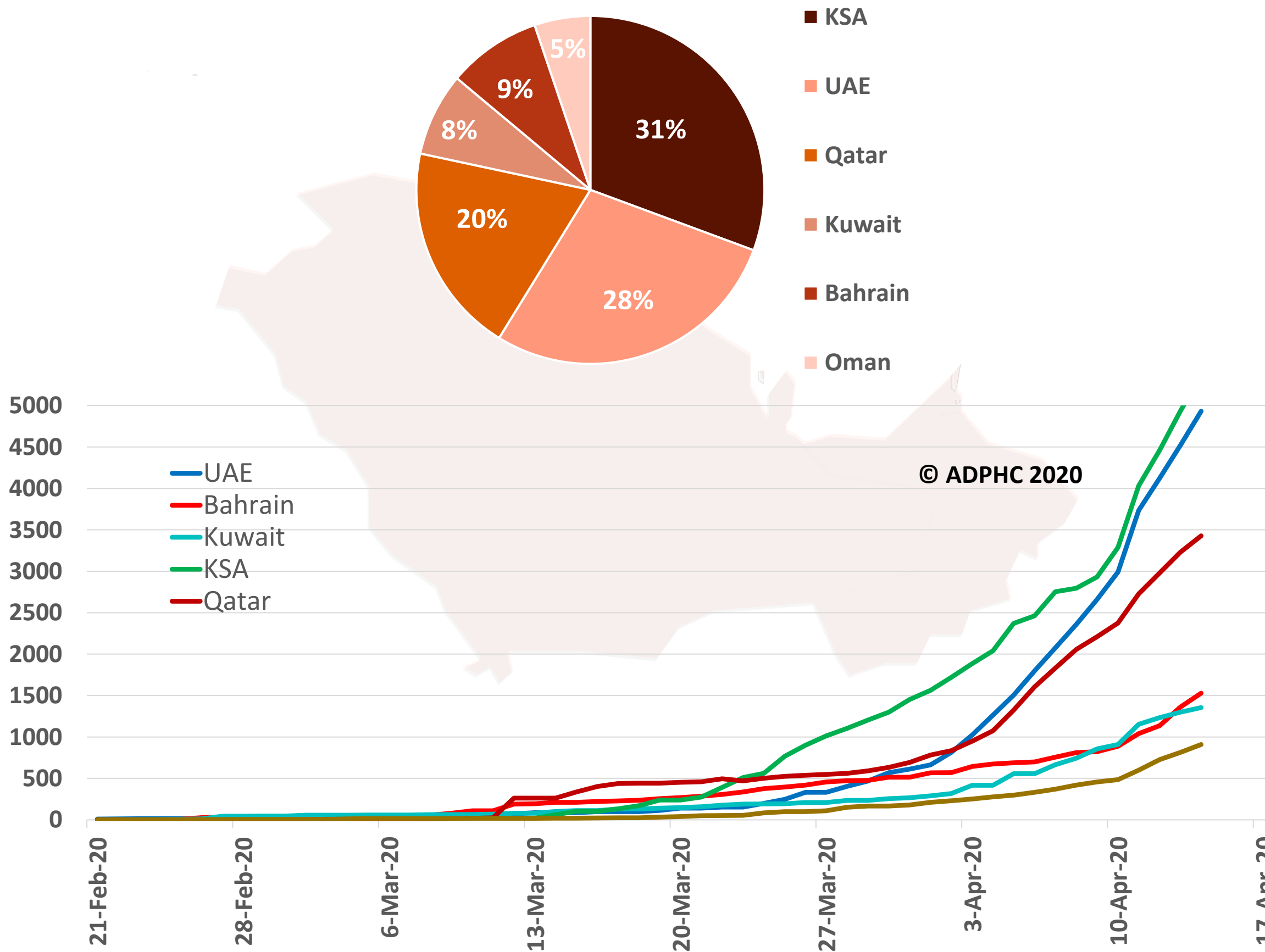
Data resources: [WHO](https://www.who.int)

Epidemiology

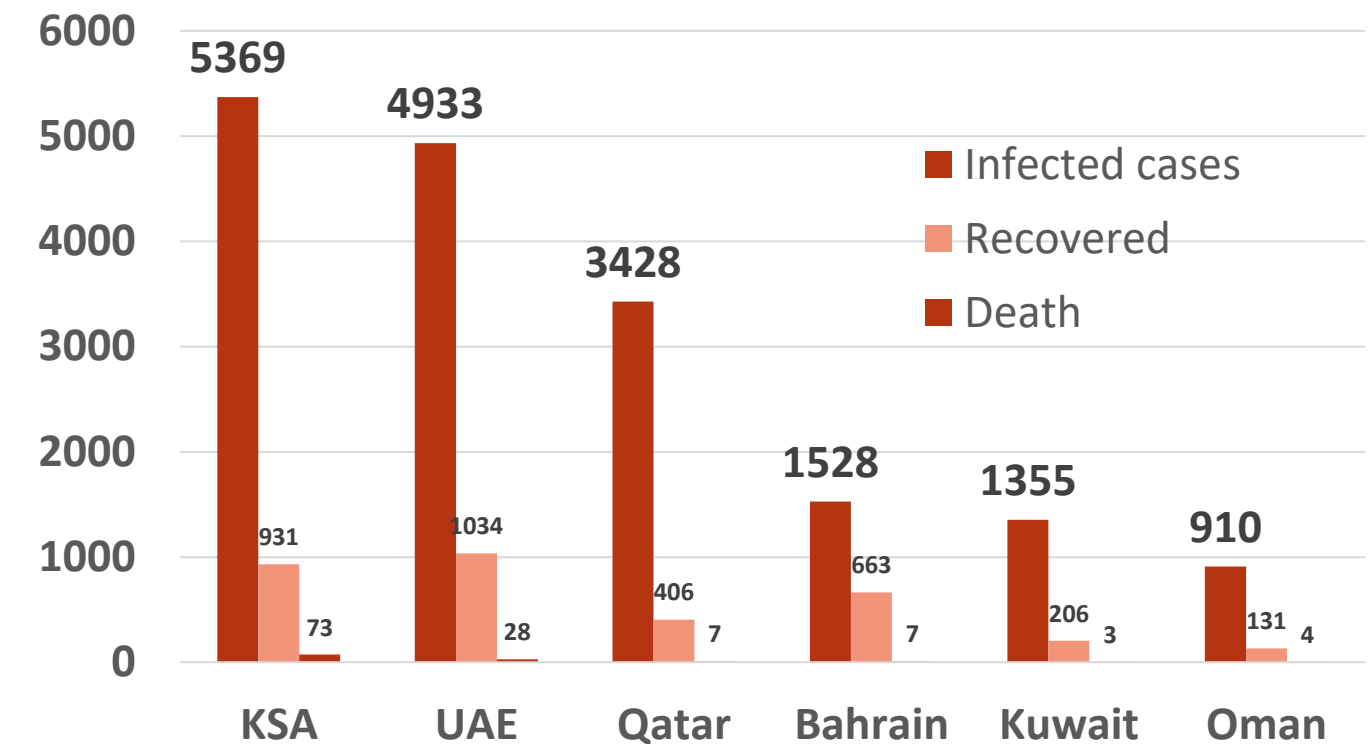


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (April 15th, 2020)

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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Clinical Features:



Article 1 : Universal Screening for SARS-CoV-2 in Women Admitted for Delivery

Published: April 13, 2020 in [NEMJ](#)

Summary:

- A total of 215 pregnant women who delivered infants at New York Presbyterian Allen Hospital and Columbia University Irving Medical Center were screened during admission for symptoms of COVID-19 between March 22 and April 4, 2020. Of those 215 pregnant women, 4 (1.9%) tested positive for SARS-CoV-2 had fever or other symptoms of COVID-19 during admission and 29 (13.5%) were positive for SARS-CoV-2 did not have any symptoms of COVID-19.
- Of those 29 women who were positive for SARS-CoV-2 and had no symptoms, fever developed in 3 (10.3%) women before postpartum discharge. Two of them received antibiotics for presumed endomyometritis and one received supportive care for presumed to be febrile due to COVID-19. One patient who was negative for SARS-CoV-2 during admission became symptomatic postpartum; repeat SARS-CoV-2 testing three days after the initial test was positive.
- The potential benefits of universal screening for SARS-CoV-2 include the ability to use COVID-19 status to determine hospital isolation practices and bed assignments, inform neonatal care, and guide use of personal protective equipment (PPE) at work. Access to these clinical data provides an important opportunity to protect mothers, babies, and health care workers during this pandemic.

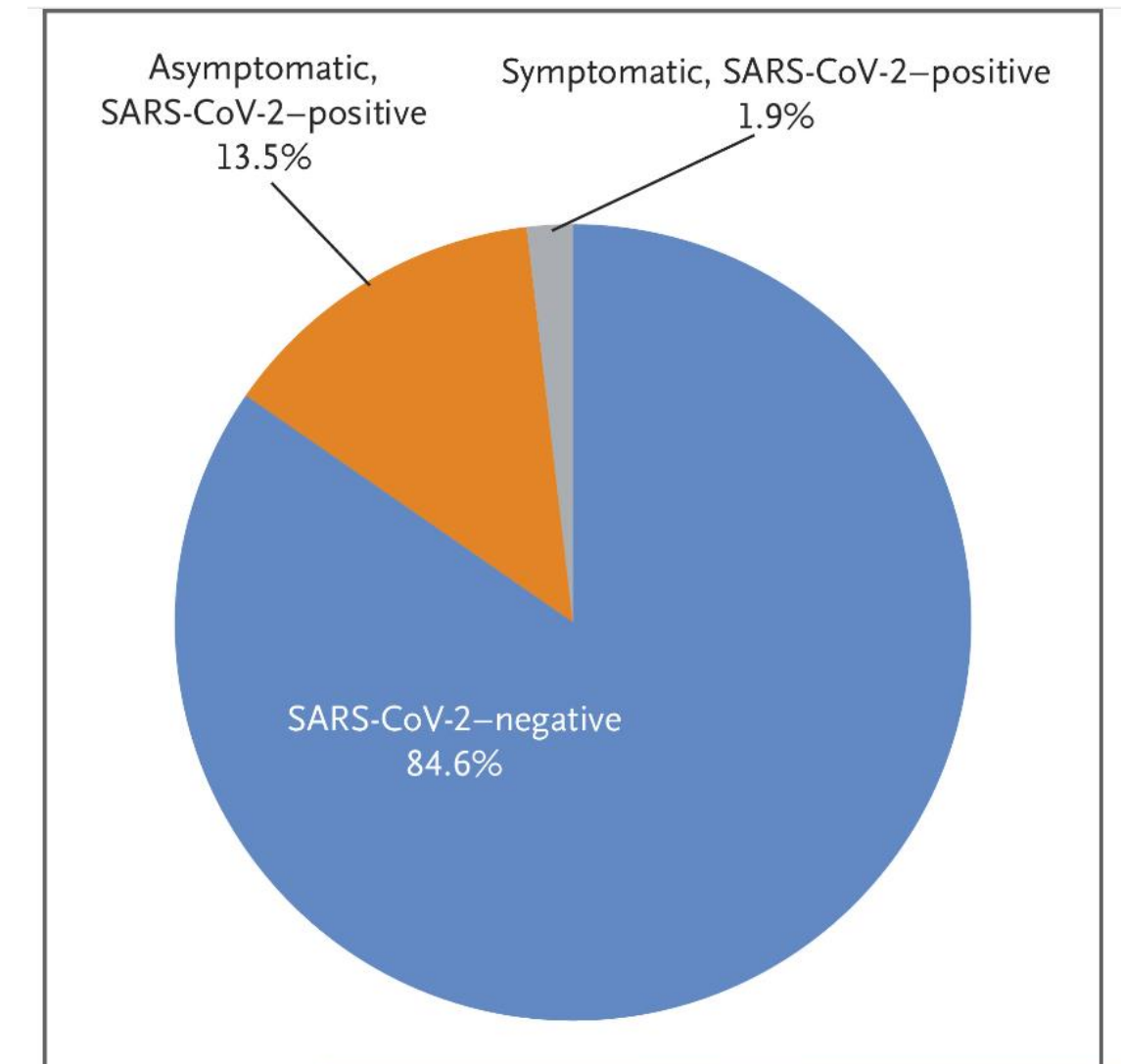


Figure 1 : Symptom Status and SARS-CoV-2 Test Results among 215 Obstetrical Patients Presenting for Delivery

Public health response



Article 2 : Understanding the heterogeneity of adverse COVID-19 outcomes: the role of poor quality of air and lockdown decisions

Published: April 10, 2020 [Social Science Research Network](#)

This article was summarized by subject expert matter

Summary:

- This is a quasi-experiment study and its preliminary findings are published. The number of cases with COVID-19 has been variable across Italian provinces and also between North and South of Italy. The study looked at role of five factors to explain the spread of this epidemic; lockdowns, demographic structure, climate (temperature), pollution and economic activity which has caused 17,127 deaths in Italy, stressed the national health system and produced a paralysis of economic activity.
- There are number of limitations of this study including its design and quality of data.
- The study found that spread and severity of COVID-19 is significantly associated to **lockdown decisions**, to factors affecting the quality of air (especially fine particular matter) and the intensity of the small business activity.
- Lockdowns **seems effective in limiting the spread, while not yet mortality.**
- **Quality of air** is strong predictor of spread and mortality (pre-existing levels of PM10 and PM2.5 are positively correlated). **Poor quality of air creates chronic exposure to adverse outcomes from respiratory disease which becomes more intense in the presence of virus circulation.**
- This study concludes the association of factors with the spread and mortality due to COVID-19. Further research is recommended to establish the causality.

Public health response



Article 3 : Temporal dynamics in viral shedding and transmissibility of COVID-19

Published: April 15, 2020 [Nature](#)

Summary:

This study is trying to address the infectiousness of COVID19 transmission using two data sets .

1- Viral swab was collected from 94 positive COVID19 cases in Chinese hospital to assess the viral load.

Finding showed that cases have peak highest viral load in throat swabs at the time of symptom onset.

2-Moldelling study to inferred the above data was done using publically available data of 77 transmission pairs within and outside mainland China to assess for serial interval (duration between symptom onsets of successive cases in a transmission chain). These cases were based on strict criteria (ensuring the infectee was only infected by the infector)

The study estimated that 44% (95% confidence interval, 25–69%) of secondary cases were infected during the index cases' pre-symptomatic stage.

Conclusion:

The authors estimated that viral shedding of patients with laboratory-confirmed COVID-19 peaked on or before symptom onset, and a substantial proportion of transmission probably occurred before first symptoms in the index case.

More inclusive criteria for contact tracing to capture potential transmission events 2 to 3 days before symptom onset should be urgently considered for effective control of the outbreak.



Article 3 : Cont.,

Summary:

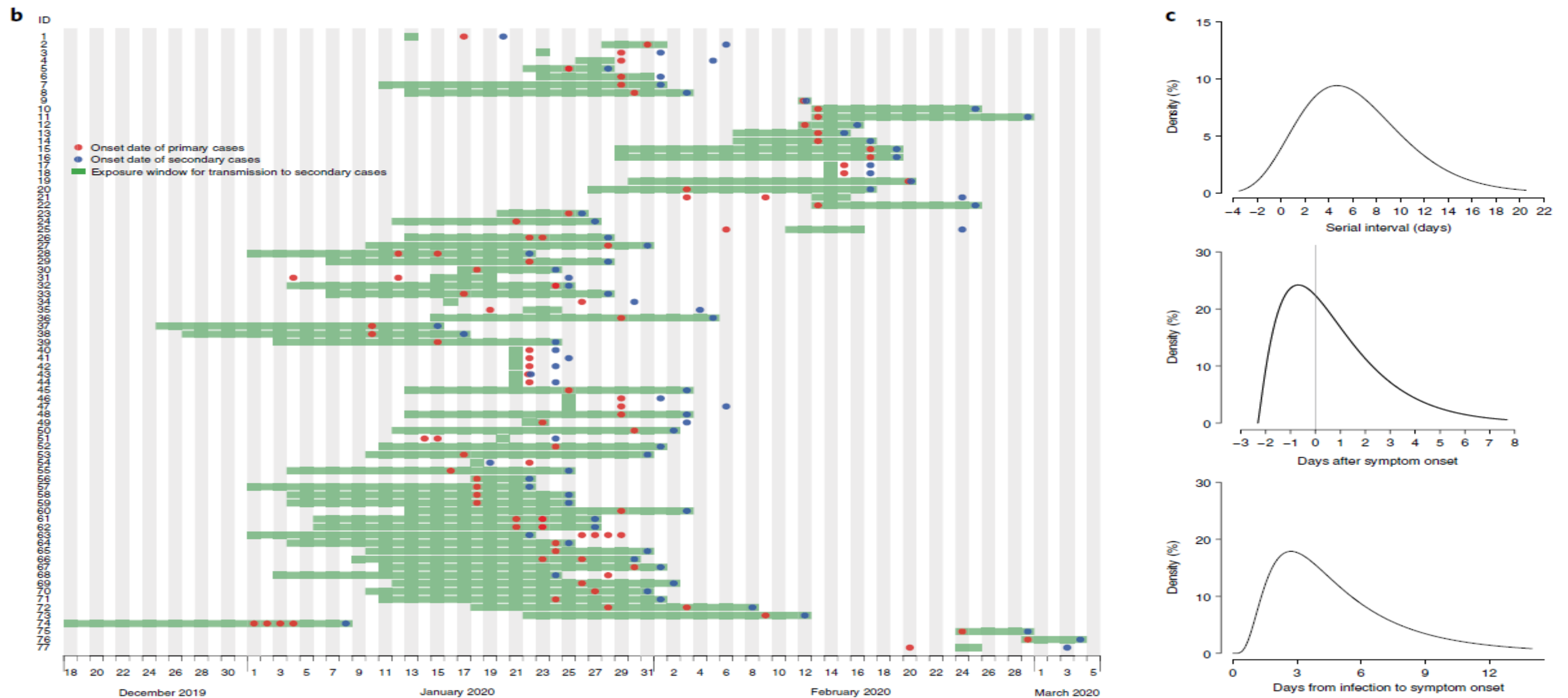


Figure: the serial interval was estimated to have a mean of 5.8 days (95% confidence interval (CI), 4.8–6.8 days) and a median of 5.2 days (95% CI, 4.1–6.4 days) based on a fitted gamma distribution, with 7.6% negative serial intervals. Assuming an incubation period distribution of mean 5.2 days from a separate study of early COVID-19 cases, we inferred that infectiousness started from 2.3 days (95% CI, 0.8–3.0 days) before symptom onset and peaked at 0.7 days (95% CI, –0.2–2.0 days) before symptom onset.