

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
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Scientific Research Monitoring on COVID-19

22 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

Public health response : Article discuss countries' action toward mask supply. The article give also some rational of using mask .

Epidemiology: infographic showing a recent demographic characteristic of COVID19 in Italy.

Public health response: COVID19 outbreak showed a weak response system in Europe.

Clinical feature and transmission: the first descriptive study on 21 cases of crucially ill patient in the US showed poor short term outcome. Results are inconclusive.

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

[Treatment for severe acute respiratory distress syndrome from COVID-19](#)

[Planning and provision of ECMO services for severe ARDS during the COVID-19 pandemic and other outbreaks of emerging infectious diseases](#)

[COVID-19 and the liver: little cause for concern](#)

[Mass gathering events and reducing further global spread of COVID-19: a political and public health dilemma](#)



WHO Daily report

- Six new countries/territories/areas (African Region [2], European Region [1], Region of the Americas [1], South East Asia Region [1] and Western Pacific Region [1]) have reported cases of COVID-19.
- WHO has updated the case definitions. (**no change in the suspect and the confirmed cases but addition in the probable case and create a new definition contact.**)
- WHO regional directors of Europe, the Western Pacific and Africa called for **global solidarity to fight COVID-19. Ensuring international cooperation, investing in health, and engaging communities are keys to effectively tackle the pandemic.**
- Updated technical guidance on critical preparedness, readiness and response; advice on the use of masks; infection prevention and control; and laboratory testing.**
- OpenWHO** is constantly updating and adding **online open courses** for COVID- 19 as a resource for health professionals, decision-makers and the public. **As of 20 March, more than 500 000** learners have already enrolled.

WHO daily report



WHO daily report :

Suspect case

No change.

Addition of : Definition of contact :

A contact is a person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case:

- 1.Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes;
- 2.Direct physical contact with a probable or confirmed case;
- 3.Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment1;

OR

- 4.Other situations as indicated by local risk assessments.

Note: for confirmed asymptomatic cases, the period of contact is measured as the 2 days before through the 14 days *after the date on which the sample was taken* which led to confirmation.

Probable case

A. A suspect case for whom testing for the COVID-19 virus is inconclusive.

a. Inconclusive being the result of the test reported by the laboratory.

The addition of the following :

OR

B. A suspect case for whom testing could not be performed for any reason.

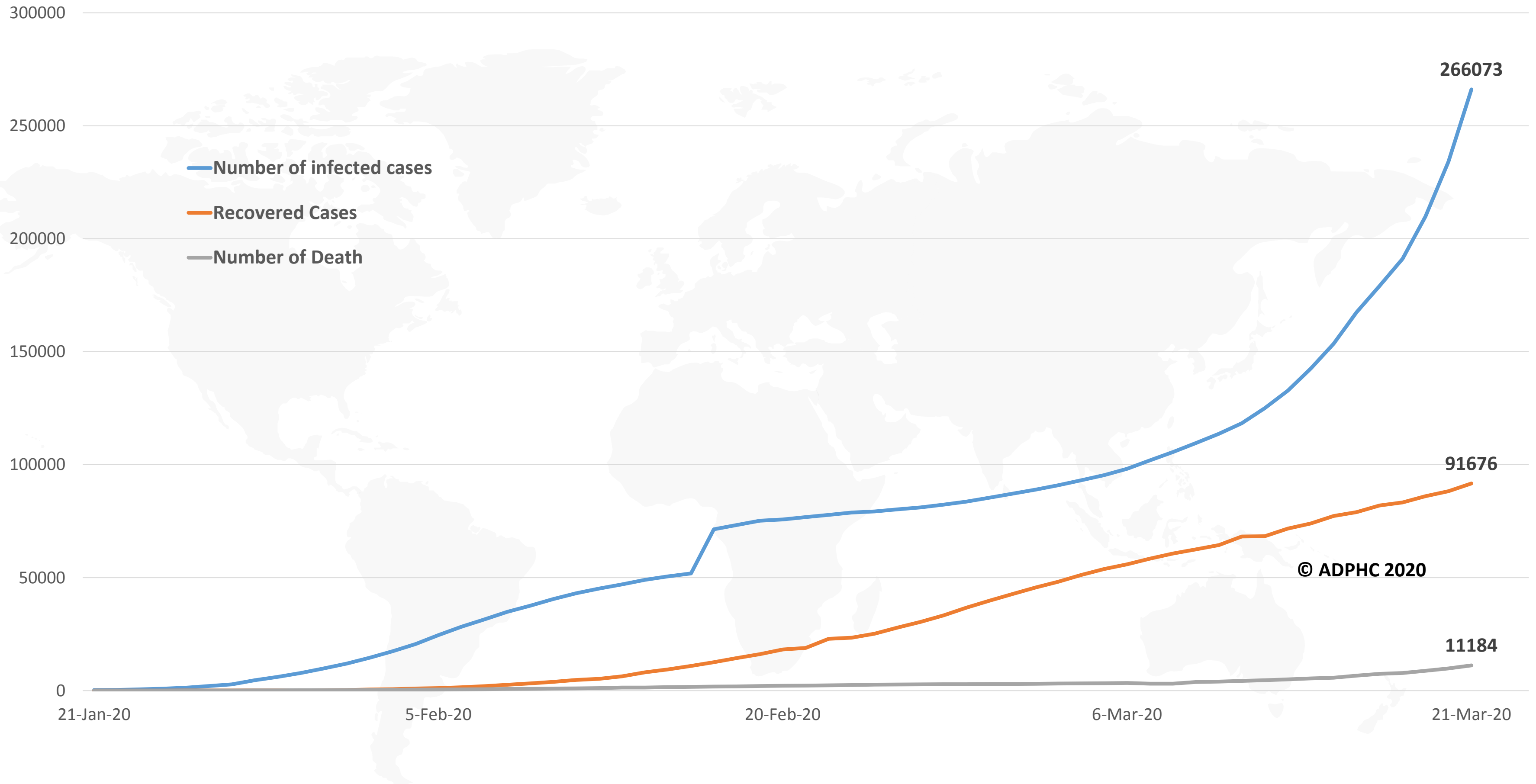
Confirmed case

No change.

Epidemiology



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

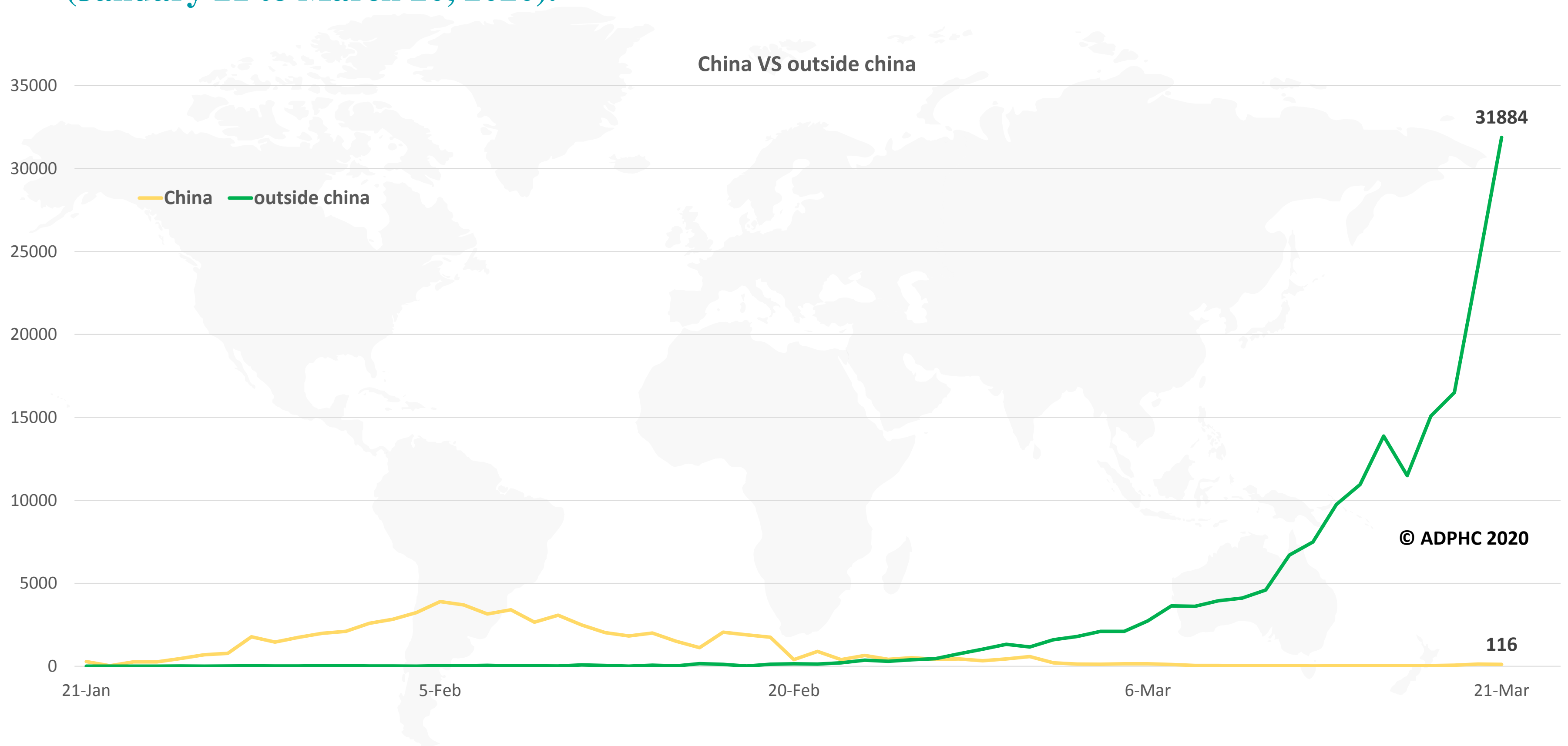


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported by China and the rest of the world (January 21 to March 20, 2020).



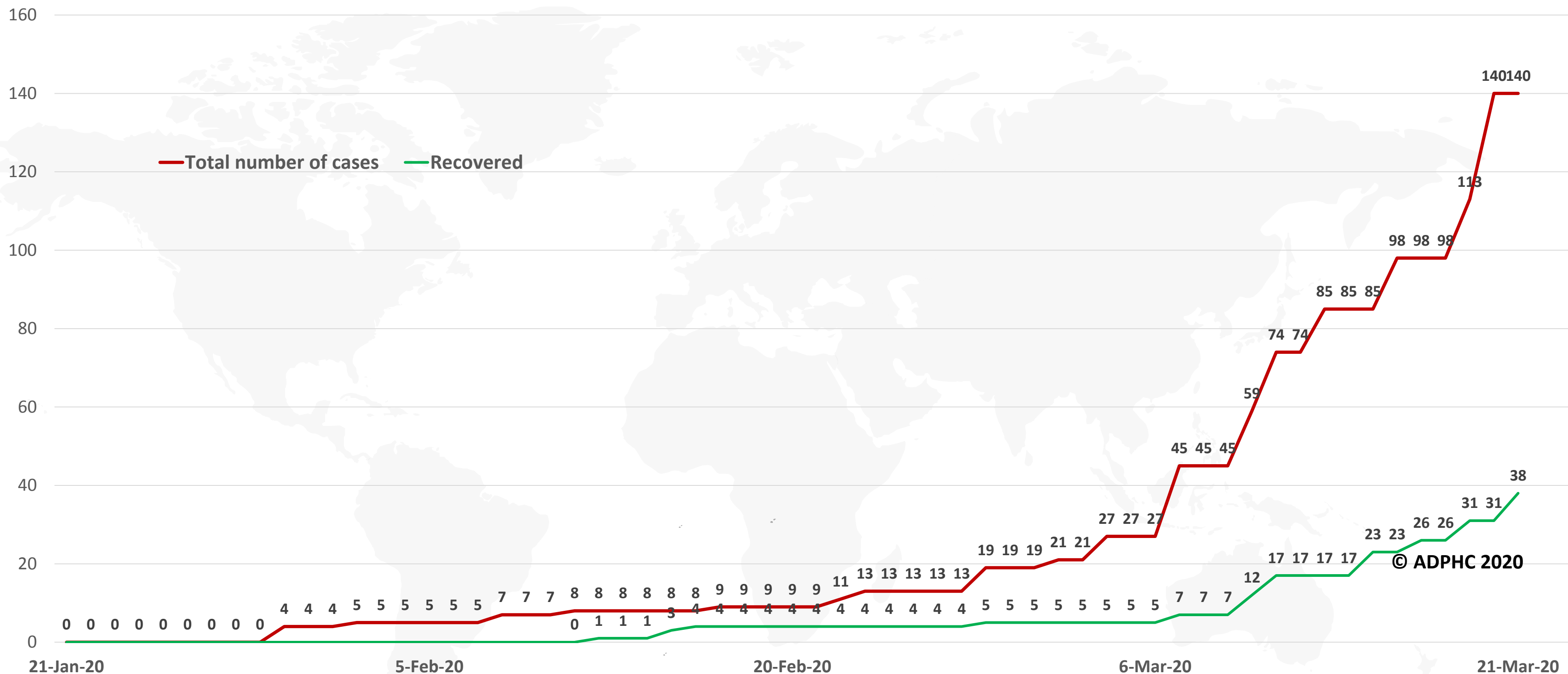
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



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

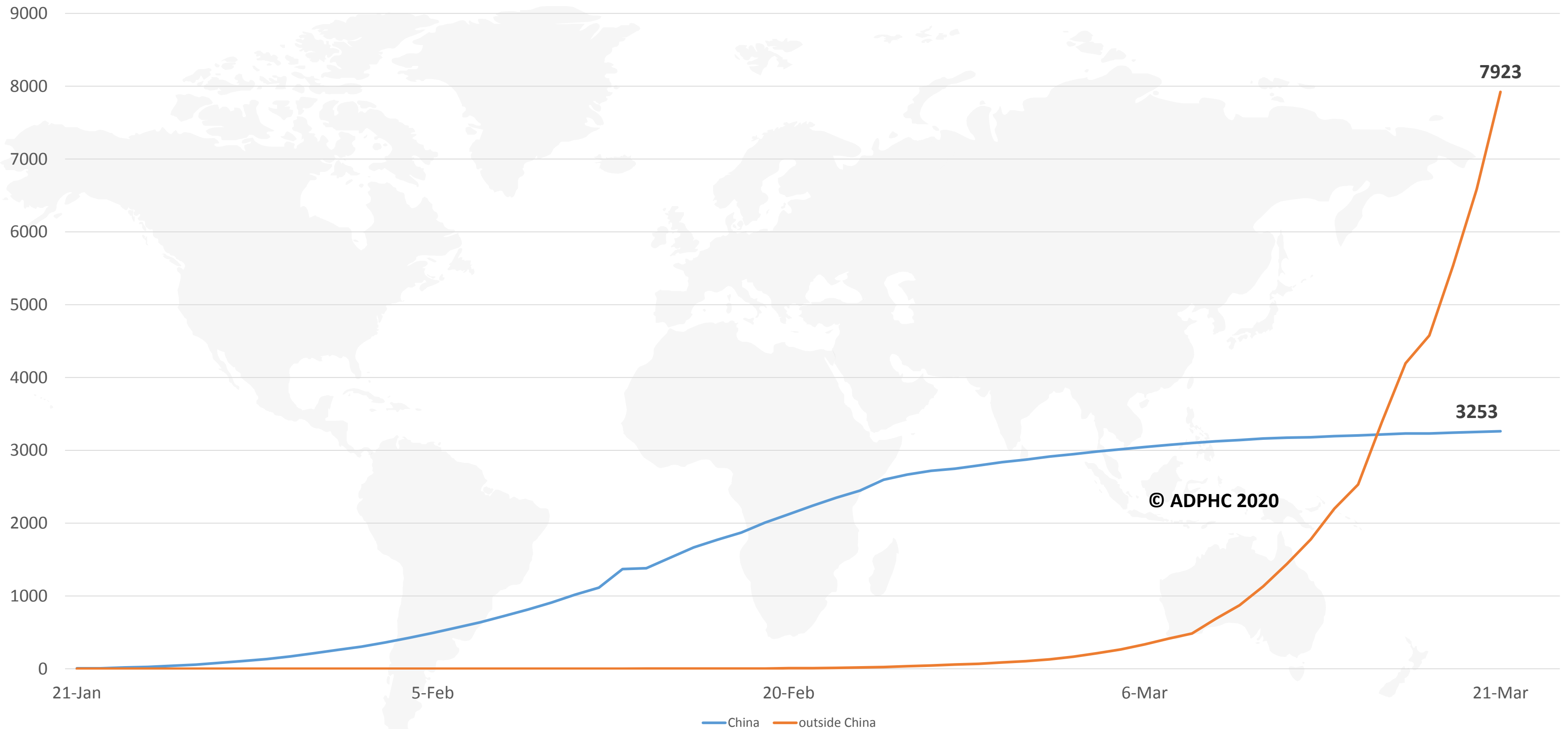


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



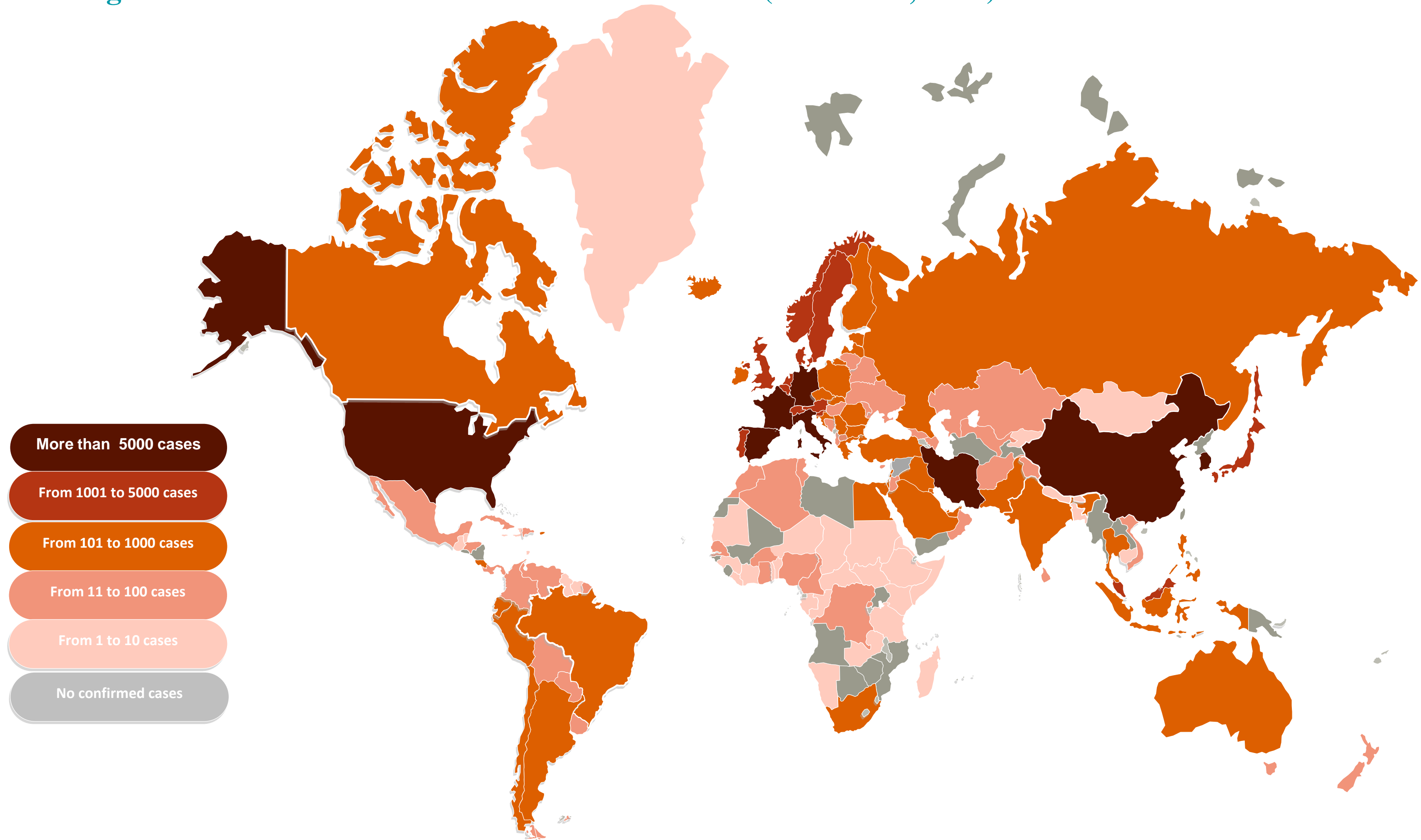
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

Epidemiology



Figure 5A: Global distribution of COVID-19 cases (March 21, 2020).

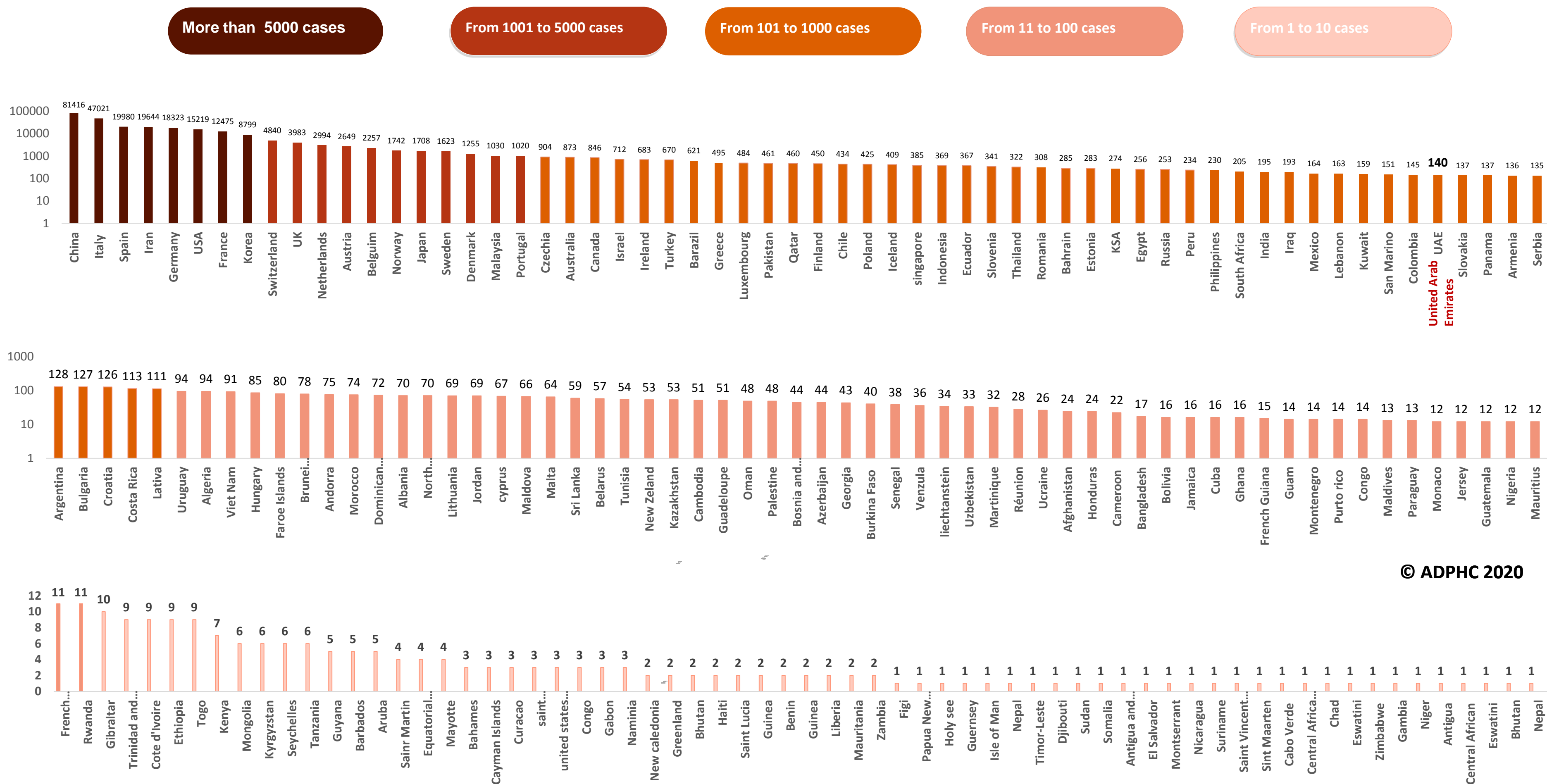


Map chart published by Abu Dhabi Public Health Center 2020.

Epidemiology



Figure 5B: Bar chart illustrate the global distribution of COVID19 cases (March 21th, 2020)



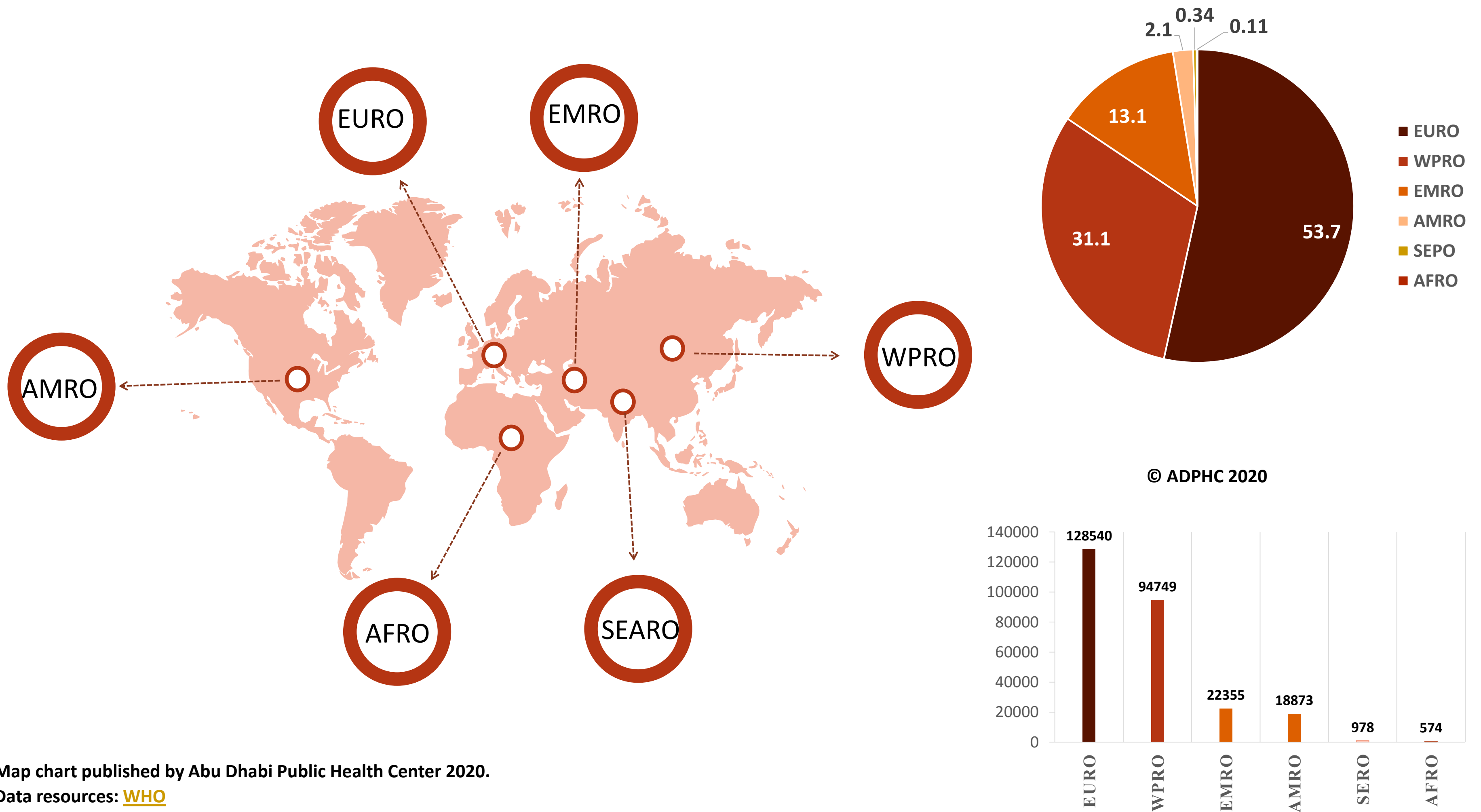
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Map chart published by Abu Dhabi Public Health Center 2020.

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



Figure 6: illustrate the distribution of COVID19 per region (March 21th, 2020)

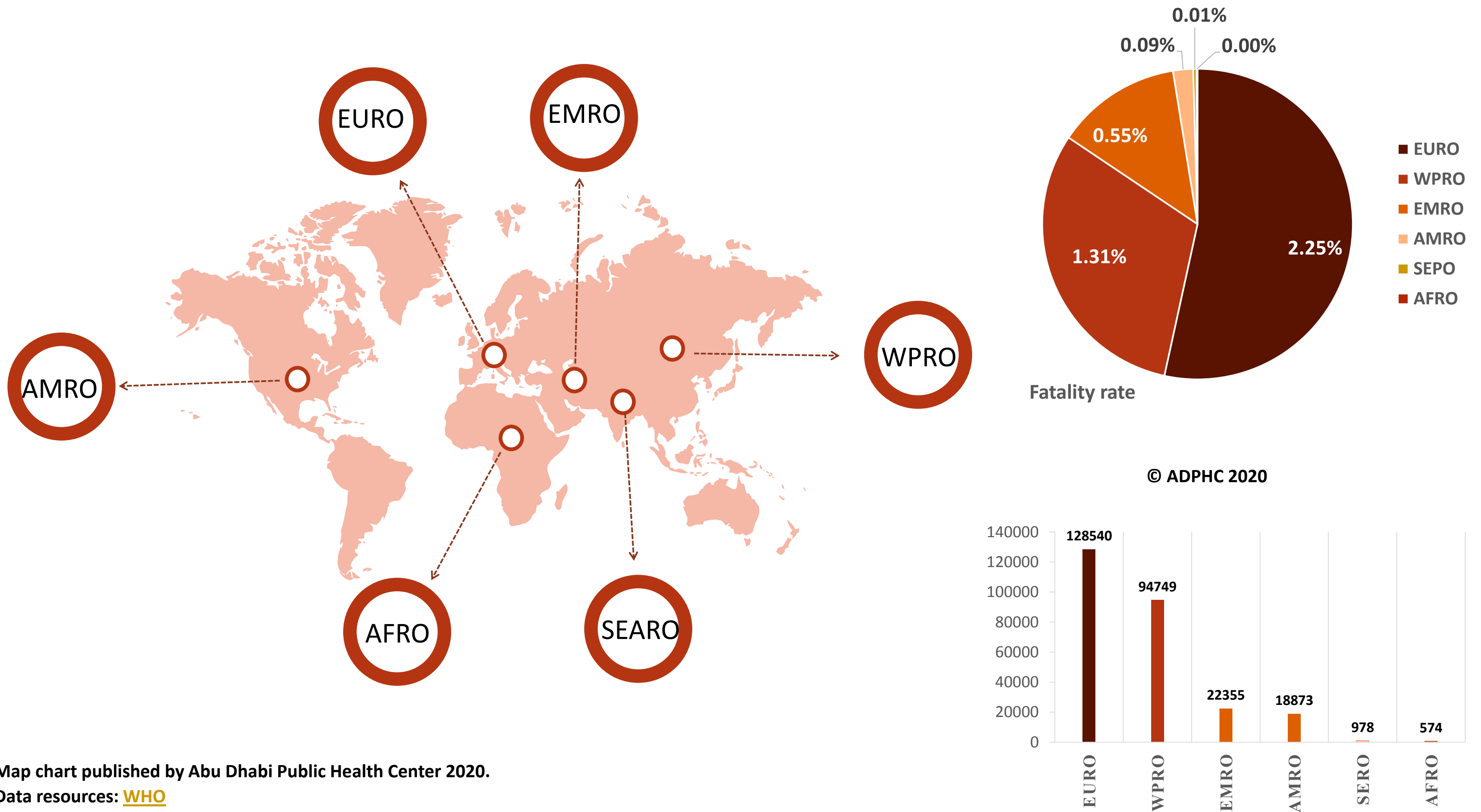


Map chart published by Abu Dhabi Public Health Center 2020.

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



Figure 6: illustrate the distribution of COVID19 per region (March 21th, 2020)



Map chart published by Abu Dhabi Public Health Center 2020.

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



Public health response

Article1: Rational use of face masks in the COVID-19 pandemic (1/2)

Published: 20 March 2020

Link: [Click Here](#)

Summary: The article discuss the guidelines and the measures done by different countries in response to the huge demands of mask supply. The author also conclude with some his / her recommendations:

A. Countries and organization action:

China :

- Some provinces and municipalities in China have **enforced compulsory face mask policies in public areas.**
- However, China guidelines recommend **risk based approach** in using masks.

US:

- US Surgeon General advised **against buying masks** for use **by healthy people.** (mainly to preserve supply for health care worker and because of the lack of evidence)

UK and Germany consider the evidence of using mask to protect against respiratory infection in the community is lacking.

Germany and South Korea banned exportation of face masks to prioritize local demand.

WHO called for a 40% increase in the production of protective equipment, including face masks

- WHO currently recommends that people should wear face masks if they **have respiratory symptoms** or if they are **caring for somebody with symptoms.**

Thailand, China, and Japan opted for repeated usage of disposable surgical masks. (*Notably, improper use of face masks, such as **not changing disposable masks**, could **jeopardize the protective effect and even increase the risk of infection.***)

Public health response



Article 1: Continued., Summary (2/2) B. Recommendations:

Article recommend use of mask:

- For elderly (particularly age above 65) and individual with underlying diseases.
- Health care worker.
- People in quarantine wear face masks if they need to leave home for any reason, to prevent potential asymptomatic or pre-symptomatic transmission.
- **Universal mask** use can be **considered if supply permit** (because of evidence suggests **COVID-19** could be transmitted before symptom onset, community transmission might be reduced if everyone, including people who have been infected but are asymptomatic and contagious, wear face masks.)

Research is needed : on the duration of protection of face masks, the measures to prolong life of disposable masks, and the invention on reusable masks should be encouraged.

Public health response



Article 2: COVID-19 exposes weaknesses in European response to outbreaks European countries must work together in the common interest

Published: 18 march 2020

Link: [Click Here](#)

Summary :

- **This paper reported COVID-19 exposes weaknesses in European response to outbreaks:**
- In spite of political commitment from European Union (EU), the spread of COVID-19 exposes **important barriers to develop a comprehensive response to the outbreaks**. In EU, member states have long guarded their national responsibility for health services. There are provisions within European agreement **for acting together on public health problems but they are limited**.
- Governments continue to **prioritize their own interests** even if this weakens the unity with other countries. For example, **France, Germany, and the Czech Republic have introduced limits on exports** of protective medical equipment such as face masks, **despite severe shortages elsewhere**.
- EU should allocate **more funds for research and development**. The **current 140 million Euro in 17 projects** is a fraction of the **25 billion Euro** that EU has committed to mitigate the economic impact of **COVID-19 on health systems; small and medium sized enterprises; and labor markets**.
- Although **European Centre for Disease Prevention and Control (ECDC)** collaborate with the World Health Organization (WHO) and neighboring countries, **it has a limited remit beyond the borders** of the European Economic Area (EEA). This capacity of the **ECDC should be expanded and given a greater mandate for surveillance, preparedness planning, scientific advice, increase funding, and responses to infectious disease outbreaks across all European countries**.

Epidemiology



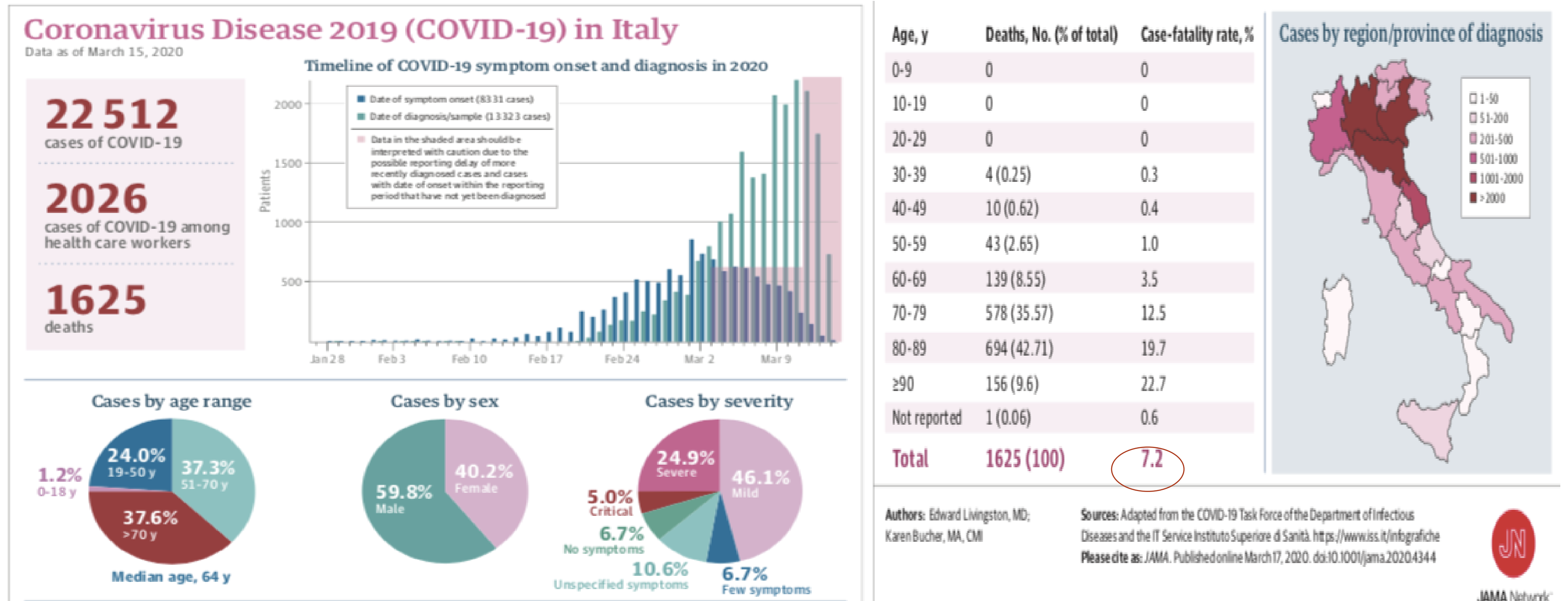
Article 3: Coronavirus Disease 2019 (COVID-19) in Italy

Published: March 17, 2020.

Summary: This Infographic shows the most recent statistics emerging from Italy regarding the country's experience with COVID-19:

Link: [Click Here](#)

JAMA Infographic





Clinical feature and transmission

Article 4: Characteristics and Outcomes of 21 Critically Ill Patients With COVID-19 in Washington State
Published: 19 March 2020 [Link: Click Here](#)

Summary: This is First description of critically ill patients infected with SARS-CoV-2 in the US . Case number 21 , most of cases came from nursing home. Admitted cases included in the study from **February 20, 2020, and March 5, 2020 .**

Table 1. Baseline Characteristics of 21 Patients With Coronavirus Disease 2019 at Presentation to the Intensive Care Unit

Baseline characteristics	No. (%) of patients ^a	Reference range
Preadmission comorbidities		
Asthma	2 (9.1)	
Chronic obstructive pulmonary disease	7 (33.3)	
Congestive heart failure	9 (42.9)	
Diabetes	7 (33.3)	
Rheumatologic disease	1 (4.8)	
Obstructive sleep apnea	6 (28.6)	
Chronic kidney disease	10 (47.6)	
End-stage kidney disease	2 (9.5)	
History of solid organ transplant	2 (9.5)	
Cirrhosis	1 (4.8)	
Immunosuppression ^b	3 (14.3)	
Total with ≥1 comorbidity	18 (85.7)	

Table 2. Clinical Measures During the Course of Illness and Outcomes of 21 Critically Ill Patients With Coronavirus Disease 2019

Clinical measures	No. (%) of patients ^a
Acute respiratory distress syndrome (ARDS)^b	
None	1 (4.8)
Mild	2 (9.5)
Moderate	6 (28.6)
Severe	12 (57.1)
Ratio of arterial oxygen concentration to the fraction of inspired oxygen (range)	
At admission to ICU	169 (69-492)
At nadir	108 (58-247)
Use of noninvasive positive pressure ventilation	4 (19.0)
Use of high-flow oxygen therapy >15 L/min	1 (4.8)
Required mechanical ventilation	15 (71.0)
Among patients requiring intubation for mechanical ventilation	
Hospital days prior to intubation, mean (range), d	1.5 (0-12)



Public Health Response

Article 4: Continued.,

Published: 19 March 2020

Summary:

Outcome :

- Cases were f/u till March 17, 2020, mortality was 67% and 24% of patients have remained critically ill and 9.5% have been discharged from the ICU.
- This case series adds insight into the presentation and early outcomes in this population and **demonstrates poor short-term outcomes** among patients requiring **mechanical ventilation**.
- The limitations of this study include **the small number** of patients from a **single center**, that the study **population** included **older residents of skilled nursing** facilities

Table2 : continued..

Evidence of co-infection ^c	
Bacterial	1 (4.8)
Viral	3 (14.3)
Acute kidney failure ^d	4 (19.1)
Cardiomyopathy ^e	7 (33.3)
Acute hepatic injury ^f	3 (14.3)
Seizures	1 (4.8)
Length of follow-up, mean (range), d	5.2 (1-10)
Outcomes	
Died	11 (52.4)
Survived to transfer out of ICU	2 (9.5)
Remains critically ill and requires mechanical ventilation	8 (38.1)
Length of follow-up for those who survived or remain critically ill, mean (range), d	7.5 (5-10)