

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Scientific Research Monitoring on COVID-19

31 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

- **Treatment:** an article hypothesize that anti-lipid agent (Statins) added to the list of harmful medications that contribute to the severity of covid19 in addition to antihypertensive drugs.
- **Treatment:** an updated review on the current therapeutic trials on COVID19.

*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

- [COVID-19: learning from experience](#)
- [Risk Factors Associated With Acute Respiratory Distress Syndrome and Death in Patients With Coronavirus Disease 2019 Pneumonia in Wuhan, China](#)
- [Non-steroidal anti-inflammatory drugs and covid-19](#)
- [Non-steroidal anti-inflammatory drugs and covid-19](#)
- [Covid-19 risks and response in South Asia](#)
- [Maternal health care management during the outbreak of coronavirus disease 2019 \(COVID-19\)](#)
- [Covid-19: what treatments are being investigated?](#)

WHO daily report



WHO daily report

- No new countries/territories/areas reported cases of COVID-19 in the past 24 hours.
- WHO has updated the operational planning guidelines to help countries maintain essential health services during the COVID-19 pandemic. The document includes a set of immediate actions that countries should consider at national, regional, and local level to reorganize and maintain access to high quality essential health services for all



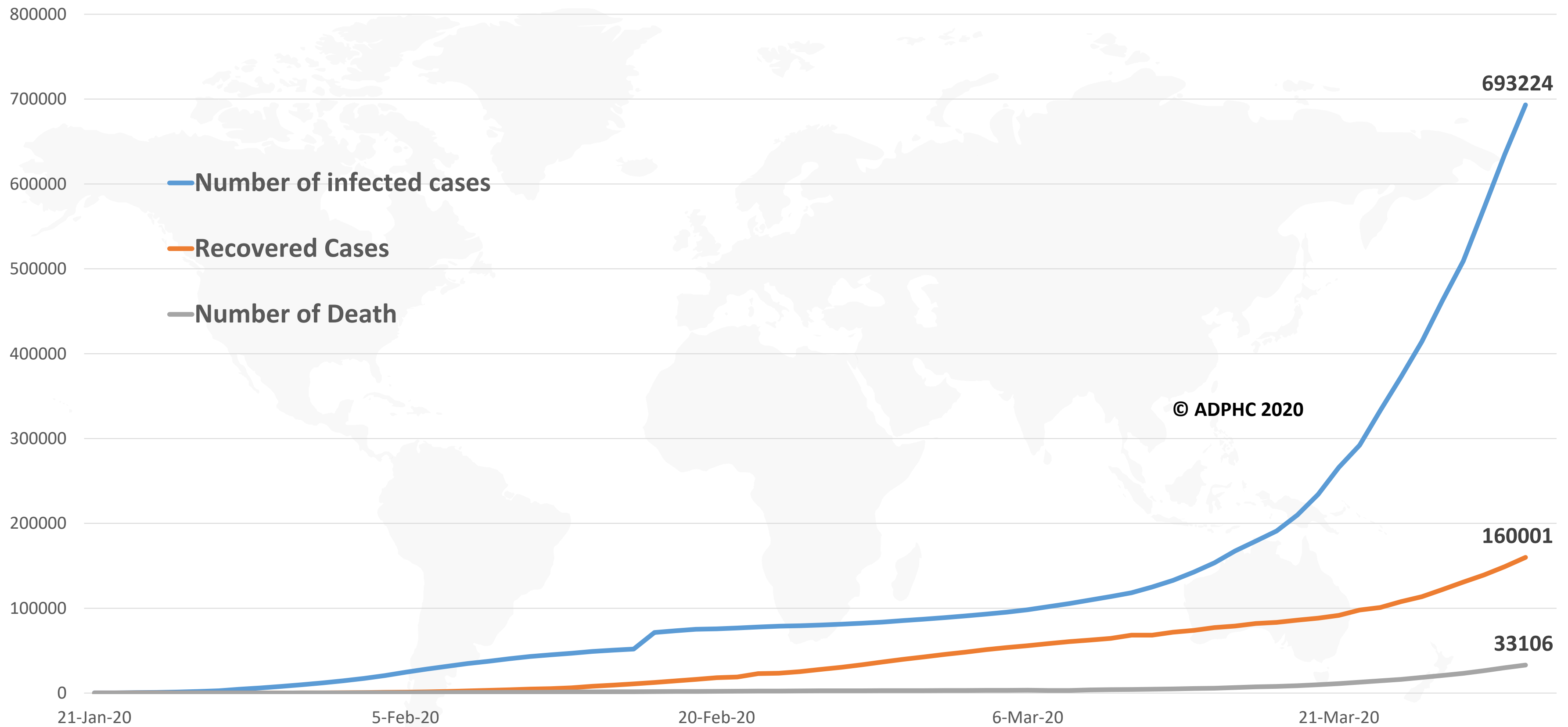
WHO Director-General's opening remarks at the media briefing on COVID-19 - 30 March 2020

- **Reminder on the continuity of the essential health in the midst of crisis:**
 - Previous outbreaks have demonstrated that when health systems are overwhelmed, deaths due to vaccine-preventable and treatable conditions increase dramatically.
 - Even though we're in the midst of a crisis, essential health services must continue.
 - Babies are still being born, vaccines must still be delivered, and people still need life-saving treatment for a range of other diseases.
 - WHO has published [guidelines to help countries](#) balance the demands of responding directly to COVID-19, while maintaining essential health services.
- **Discussed the challenges of health care system , manpower and PEE supplies:**
 - pleased by the **20 000 health workers in the UK** who have offered to return to work, and that other countries such as the **Russian Federation are involving medical students** and trainees in the response.
 - WHO has also published a detailed, practical manual on [how to set up and manage treatment centres for COVID-19](#).
 - The manual covers three major interventions: how to setup screening , community facility and treatment center in a tent using a repurposed building or a tent
 - Ensuring free movement of essential health products
- **About Implementing measures that restrict movement:**
 - It's also **important that governments keep their people informed about the intended duration of measures**, and to provide **support for older people, refugees**, and other vulnerable groups.
- Thanked **the King Salman Center for Humanitarian Relief for its contribution of 10 million US dollars**.
- The commitment of **G20 countries** to work together to improve the production and equitable supply of essential products shows that the world is coming together.

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to March 30, 2020)

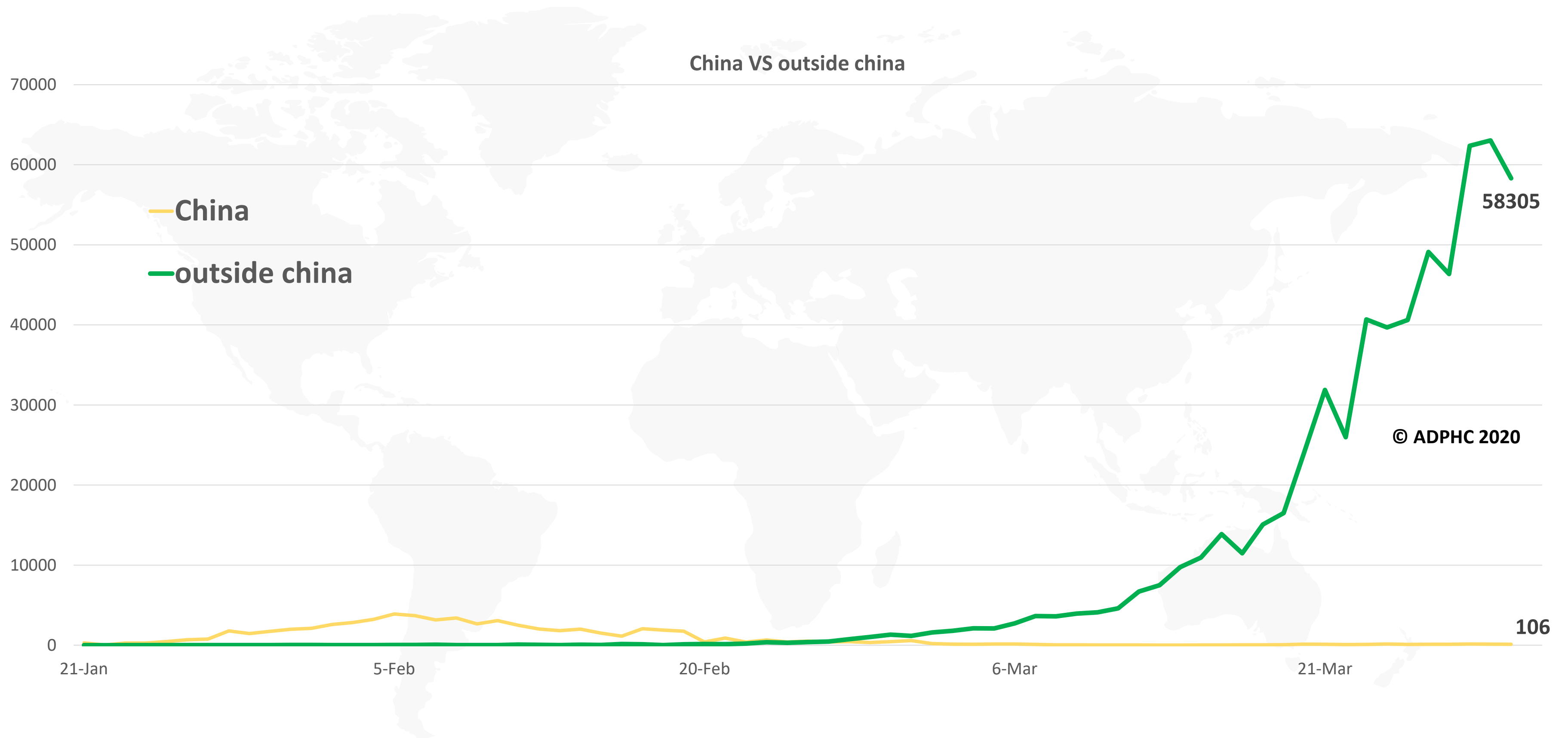


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to March 30, 2020).



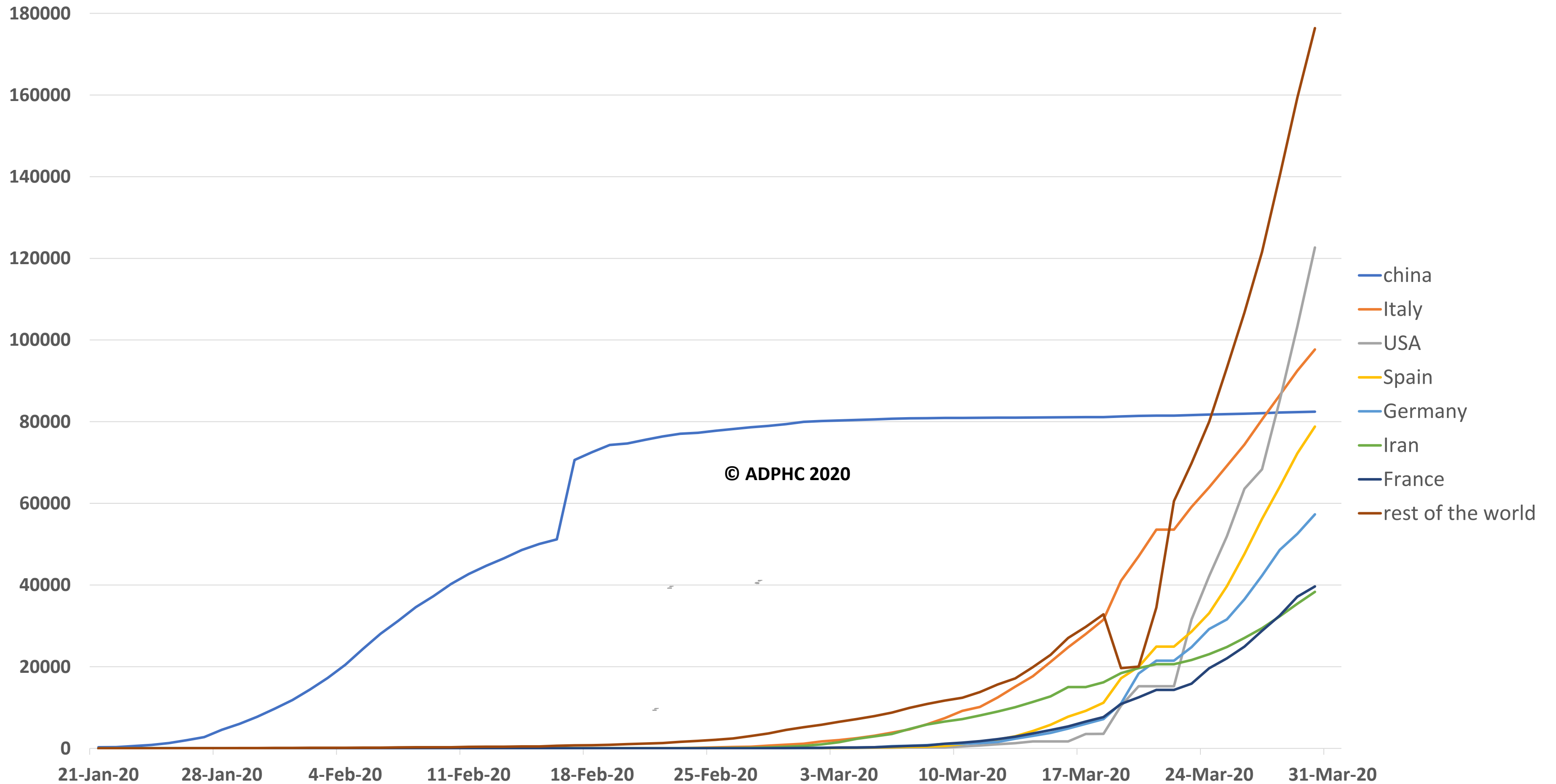
Line graph published by Abu Dhabi Public Health Center 2020.

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 March 30, 2020).



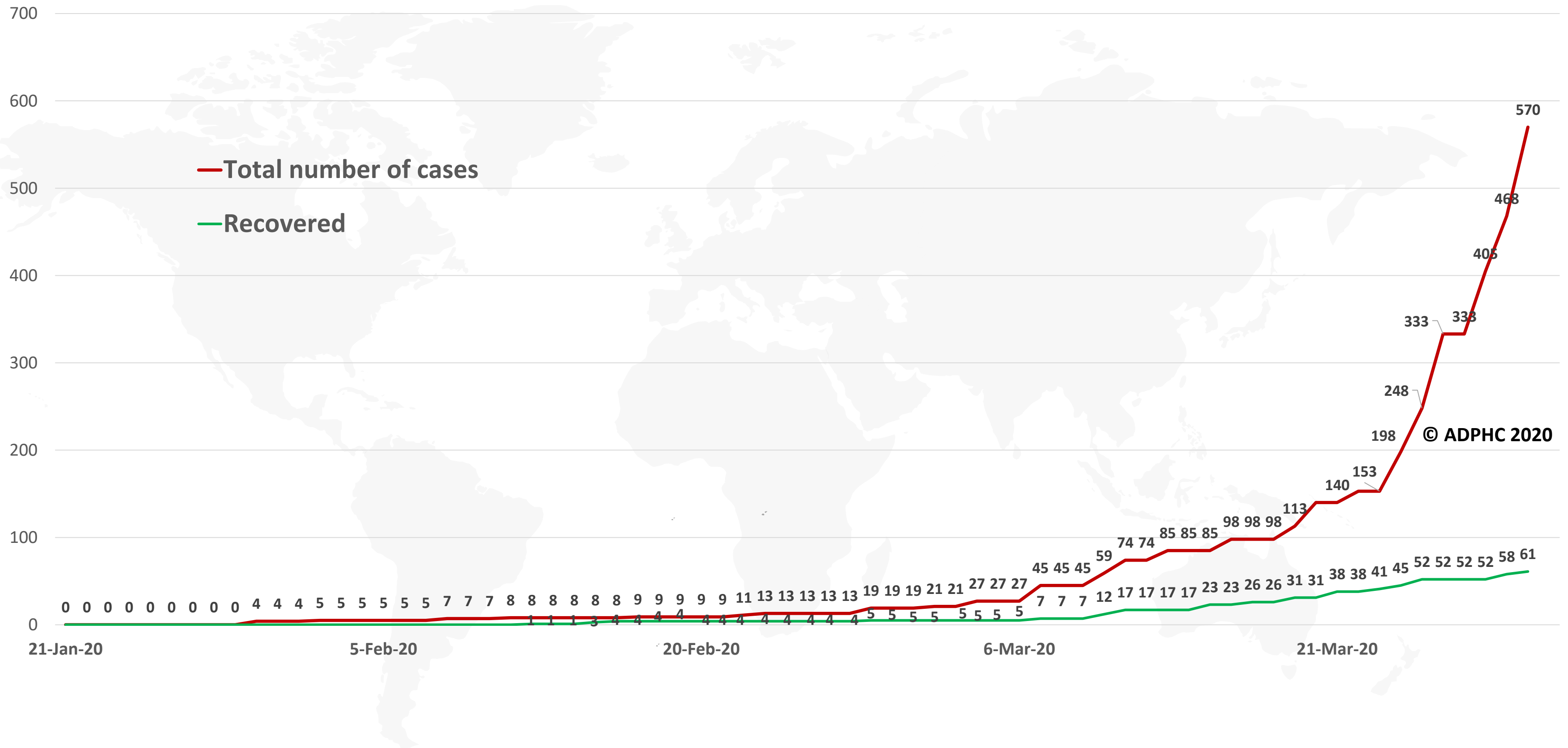
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



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

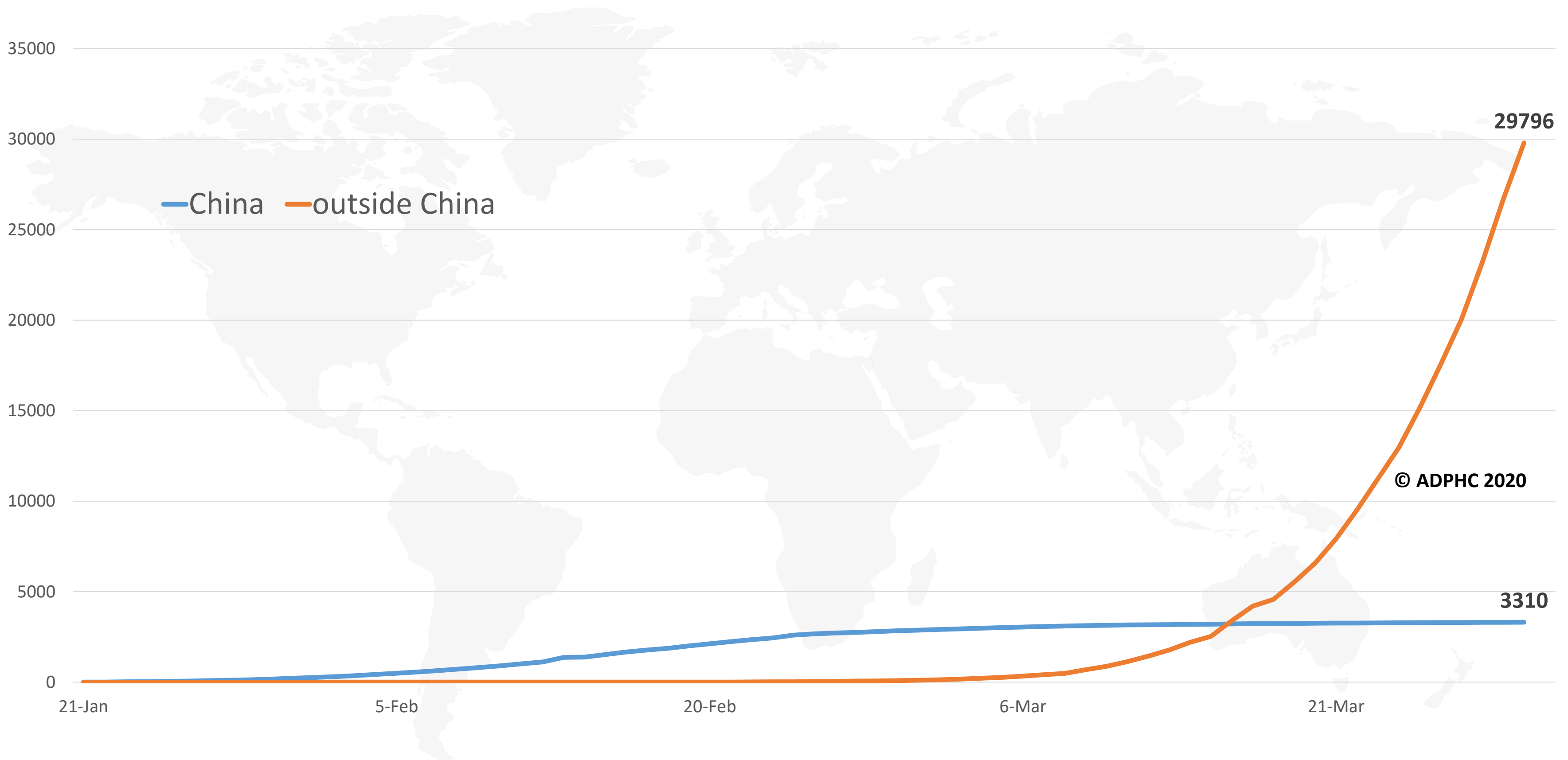


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 21 to March 30, 2020).

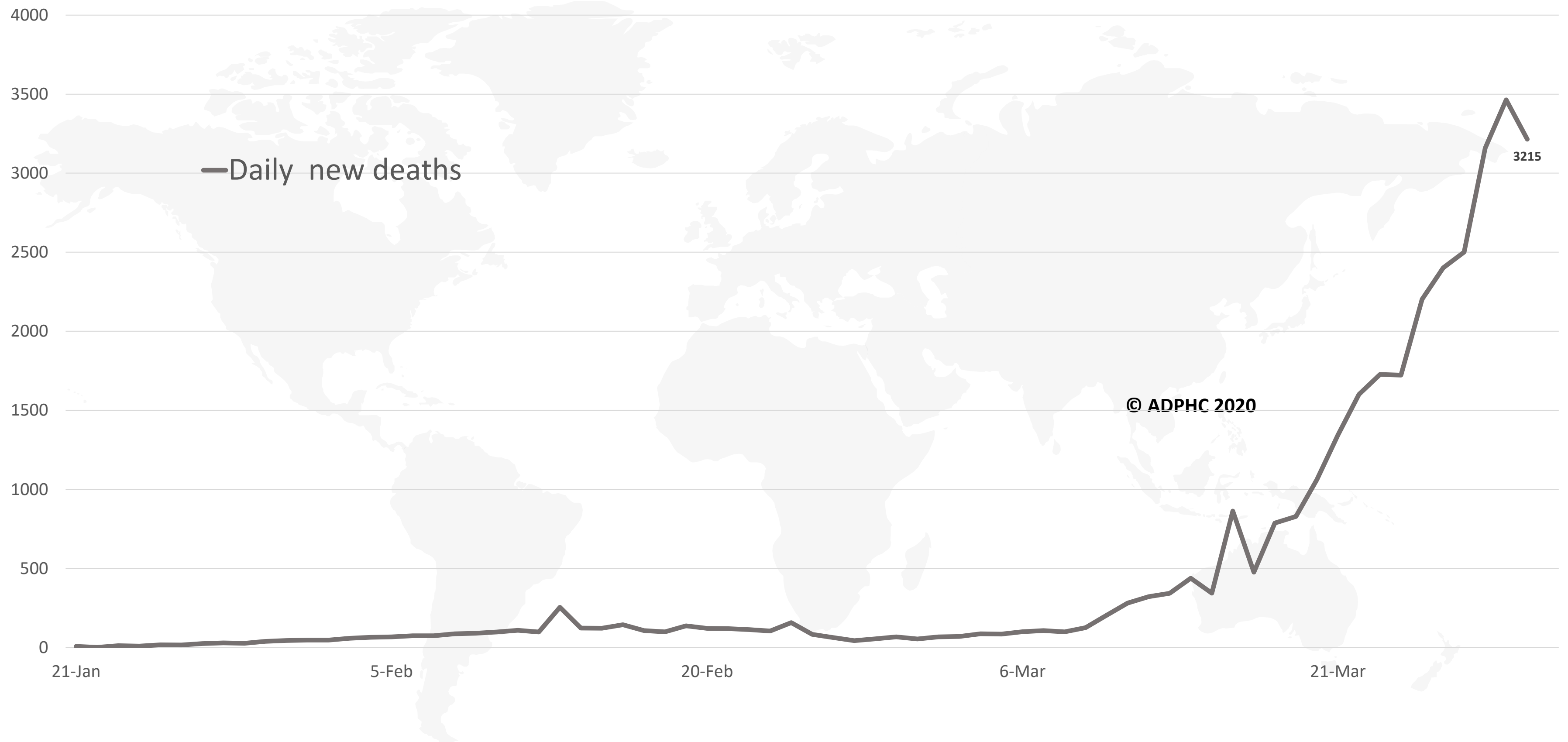


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 6: Global daily new deaths due to COVID-19 (January 21 to March 30, 2020).

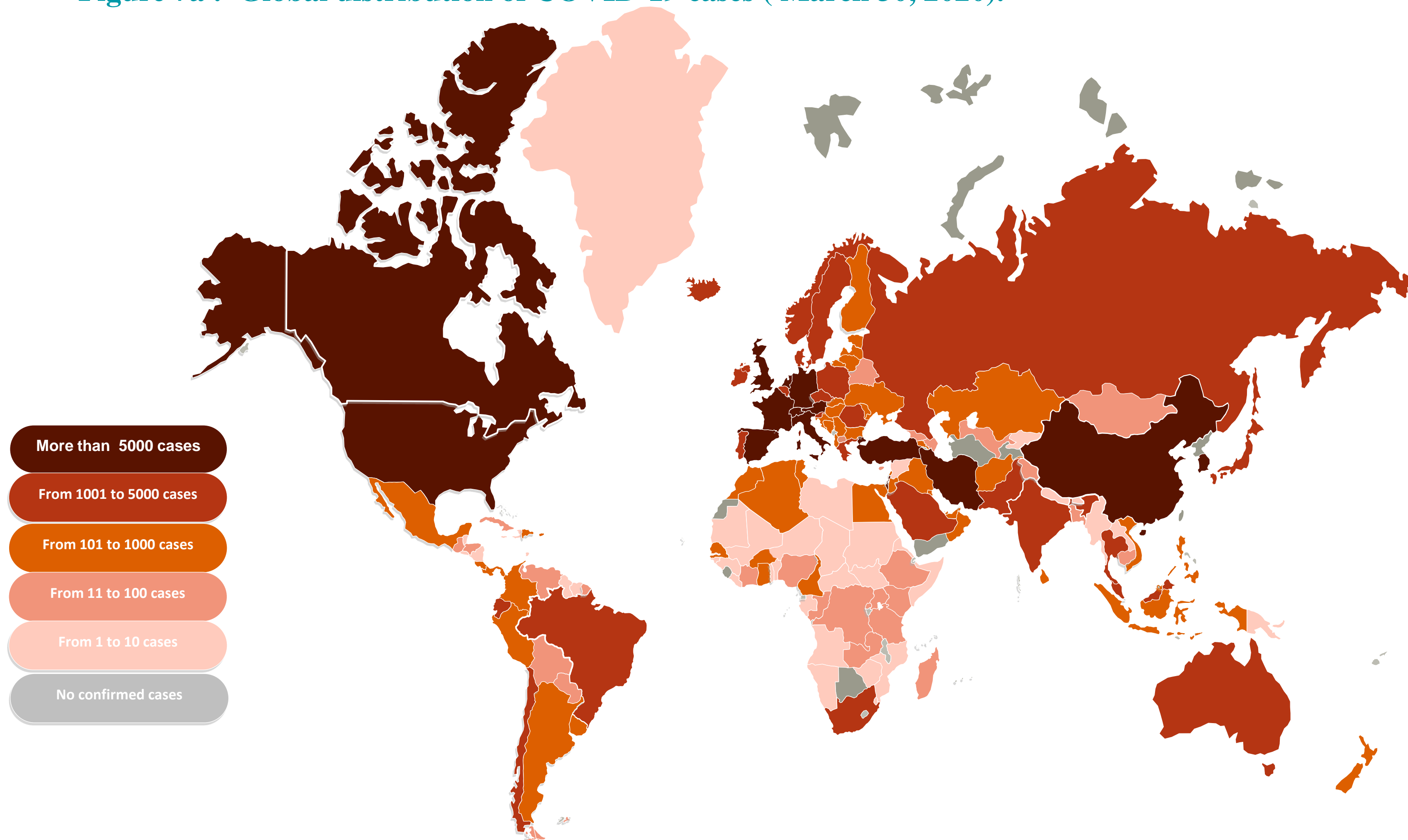


Line graph published by Abu Dhabi Public Health Center 2020.

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



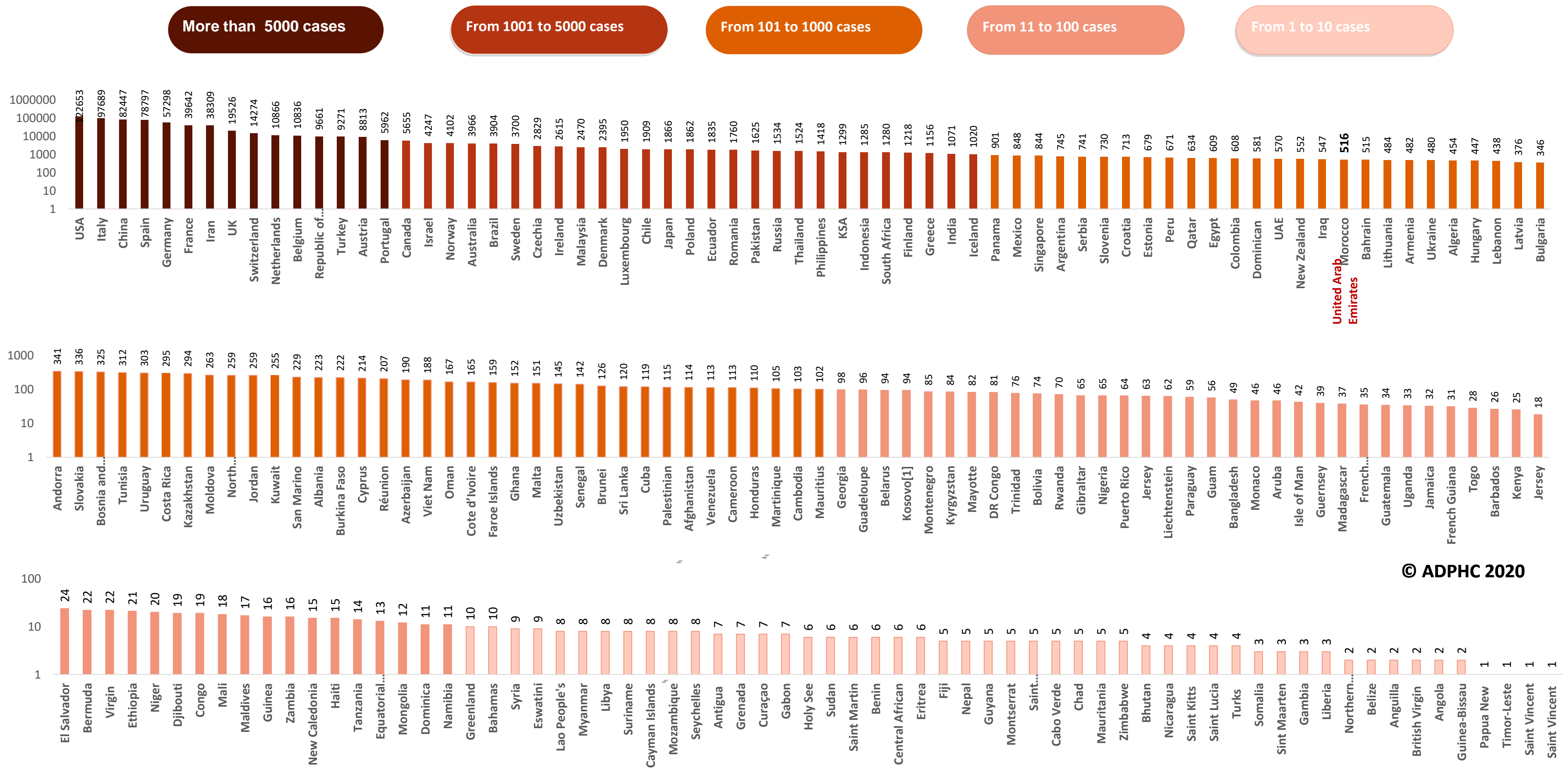
Figure 7a : Global distribution of COVID-19 cases (March 30, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases (March 30, 2020)



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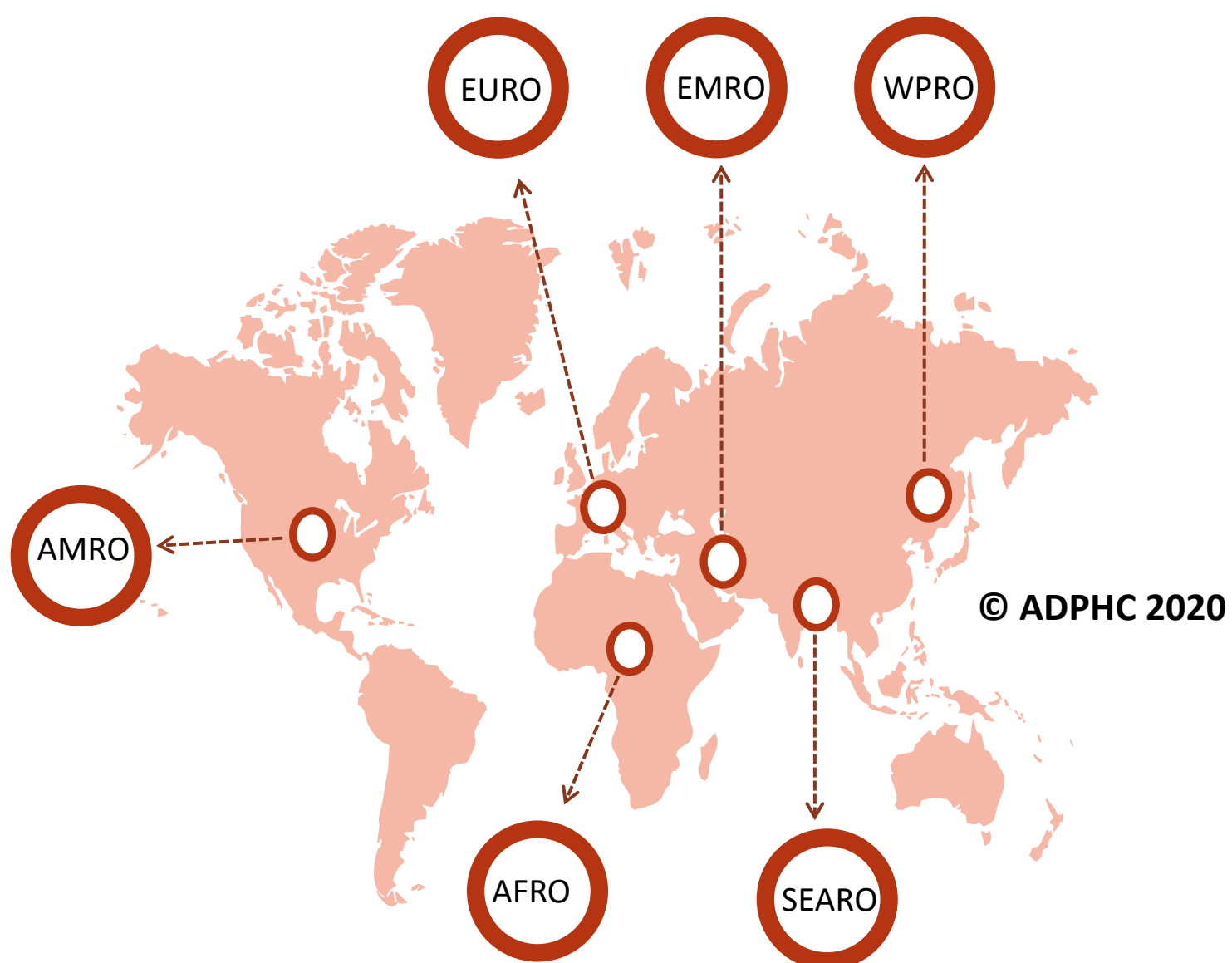
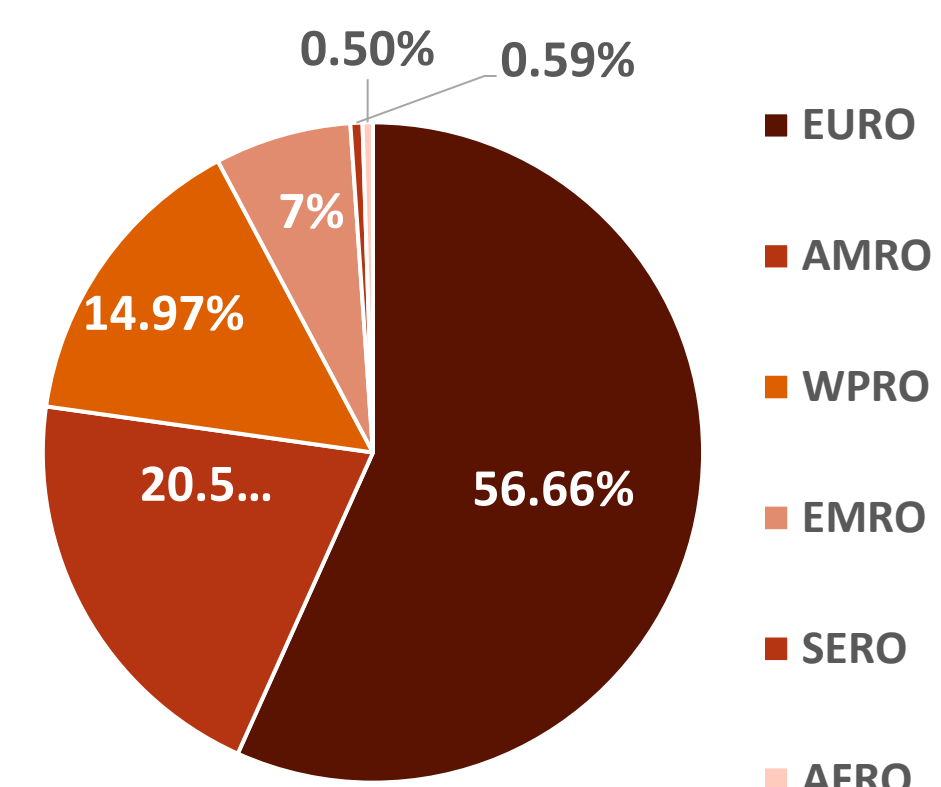
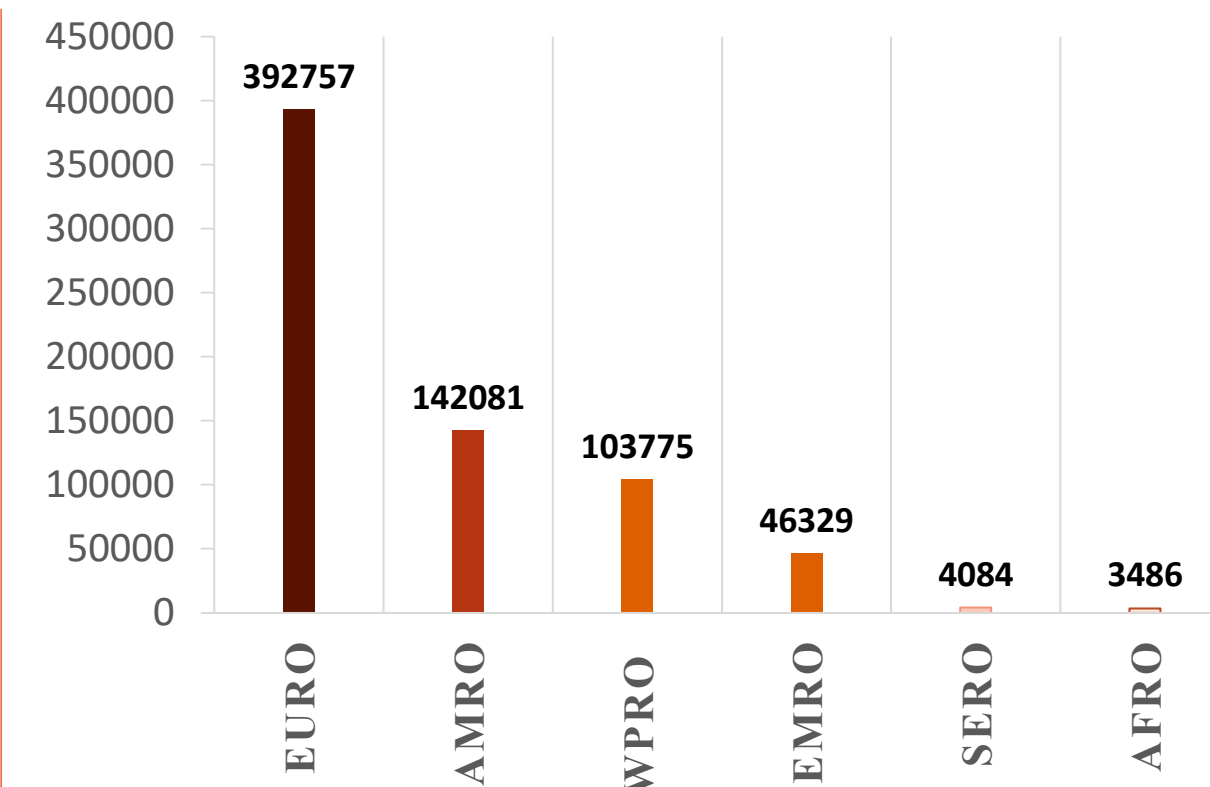
Map chart published by Abu Dhabi Public Health Center 2020.

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

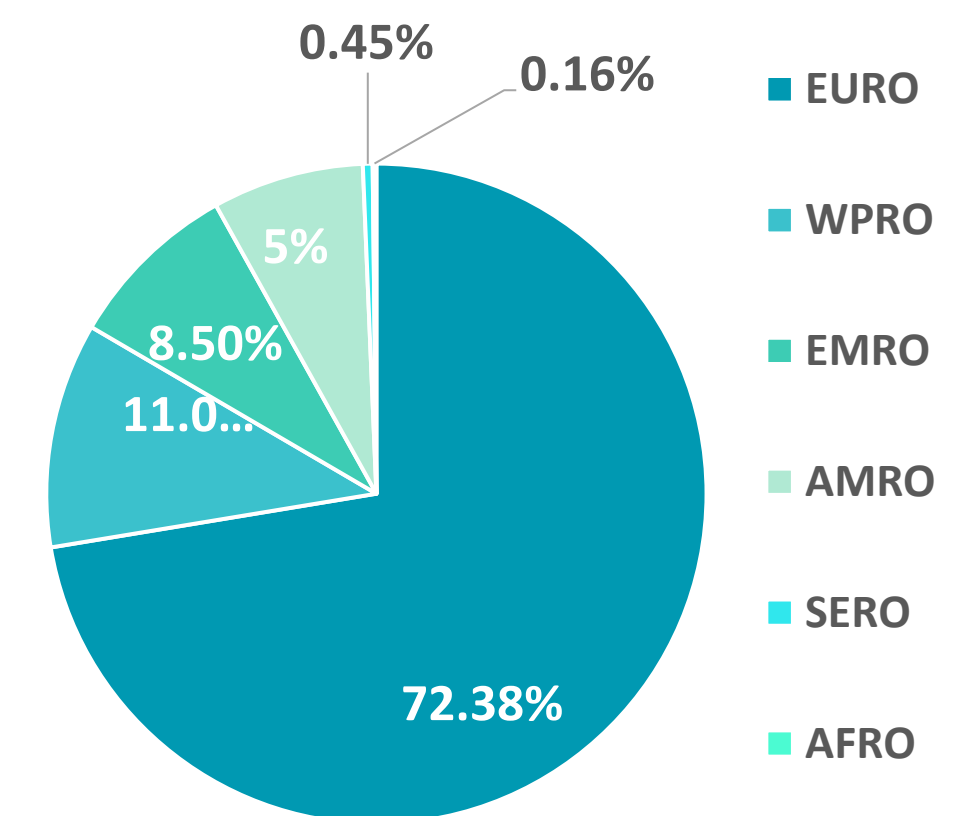
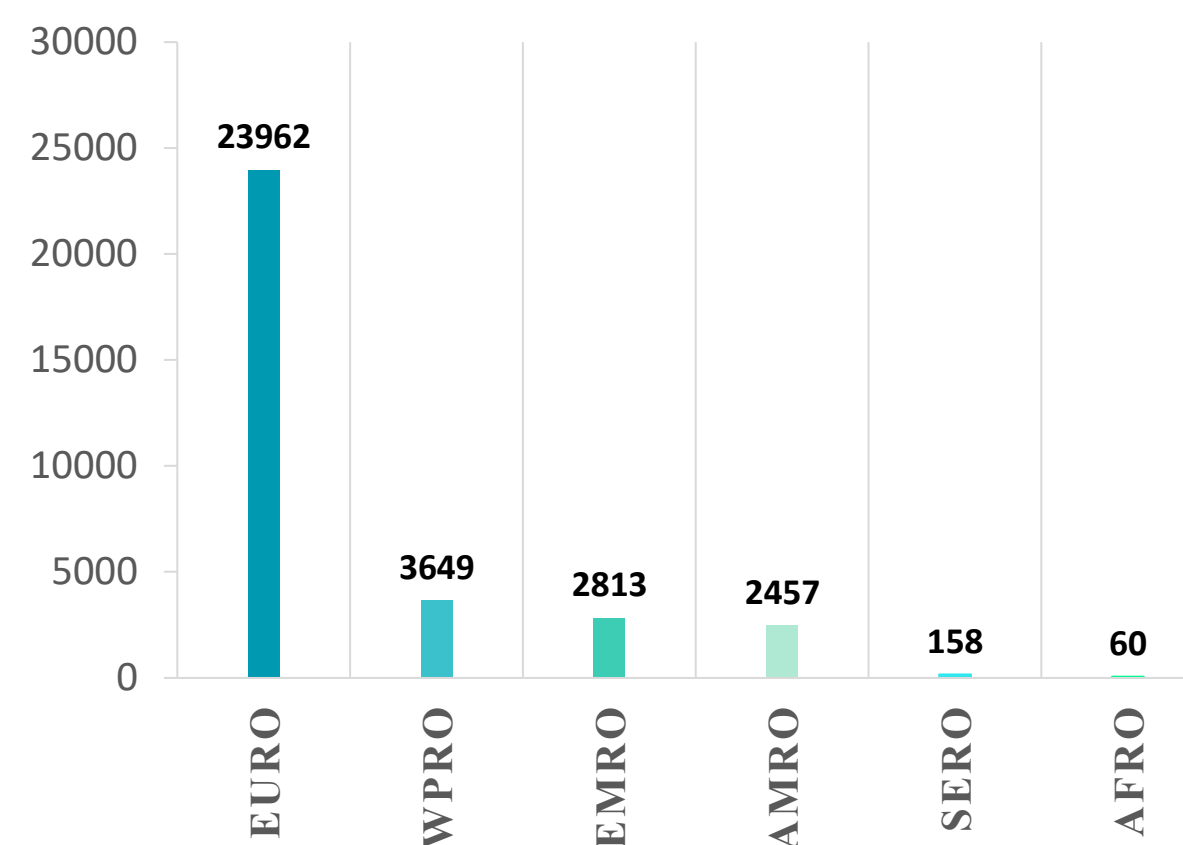


Figure 8: illustrate the Global distribution of COVID19 cases per region (March 30, 2020)

INFECTED



DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

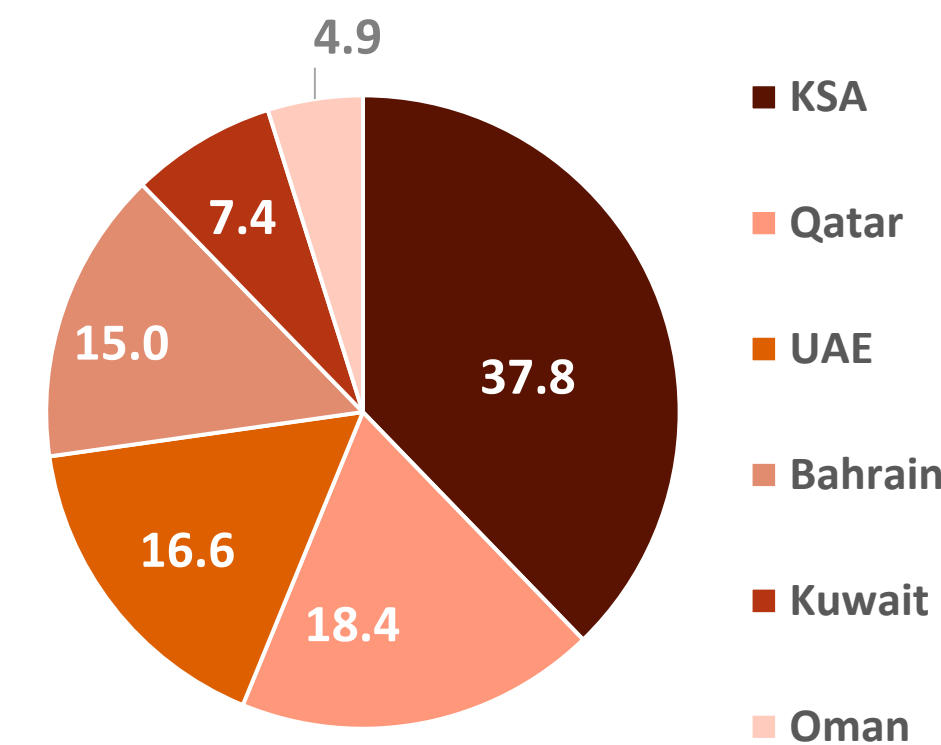
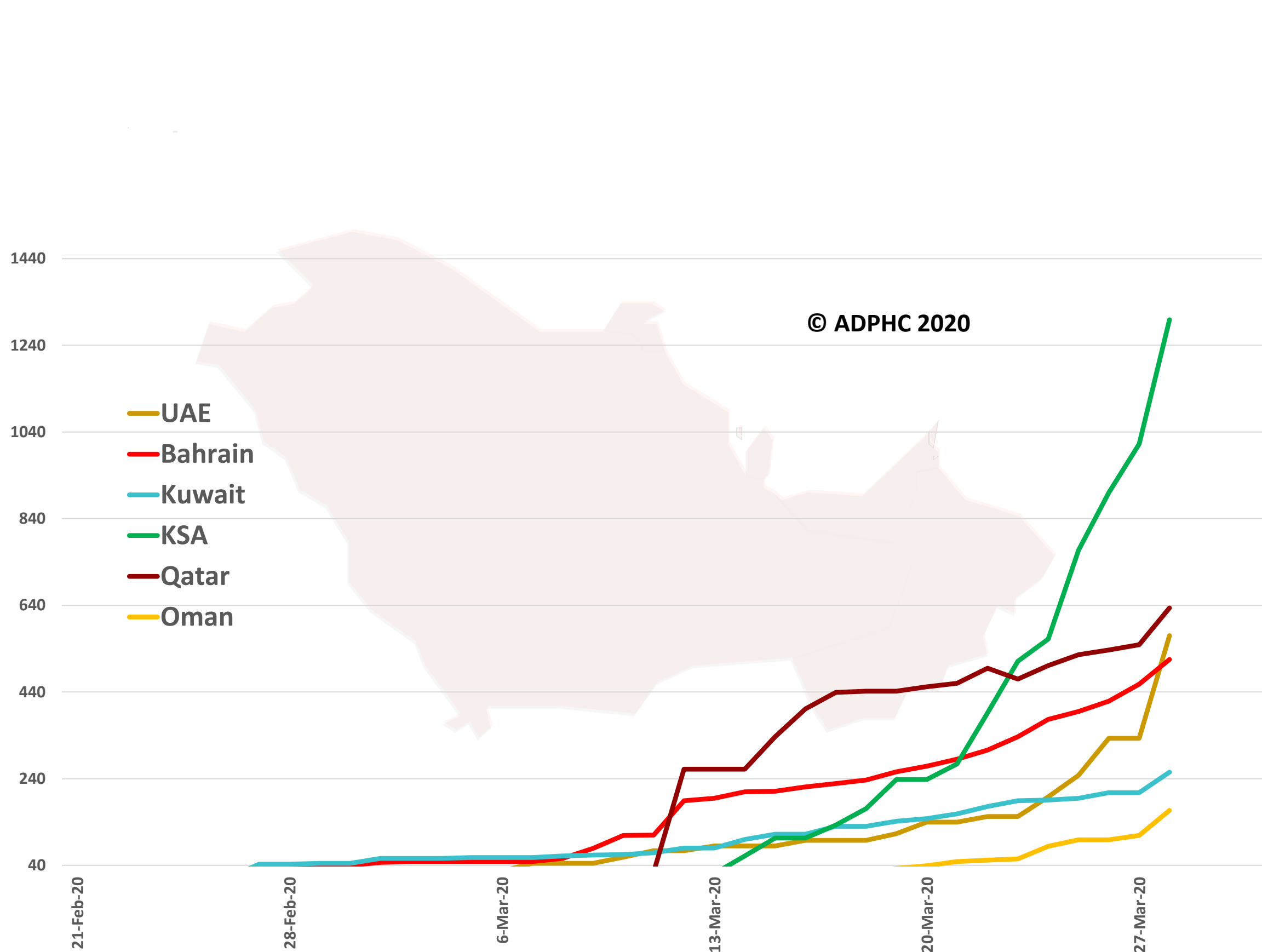
Data resources: [WHO](http://www.who.int)

Epidemiology

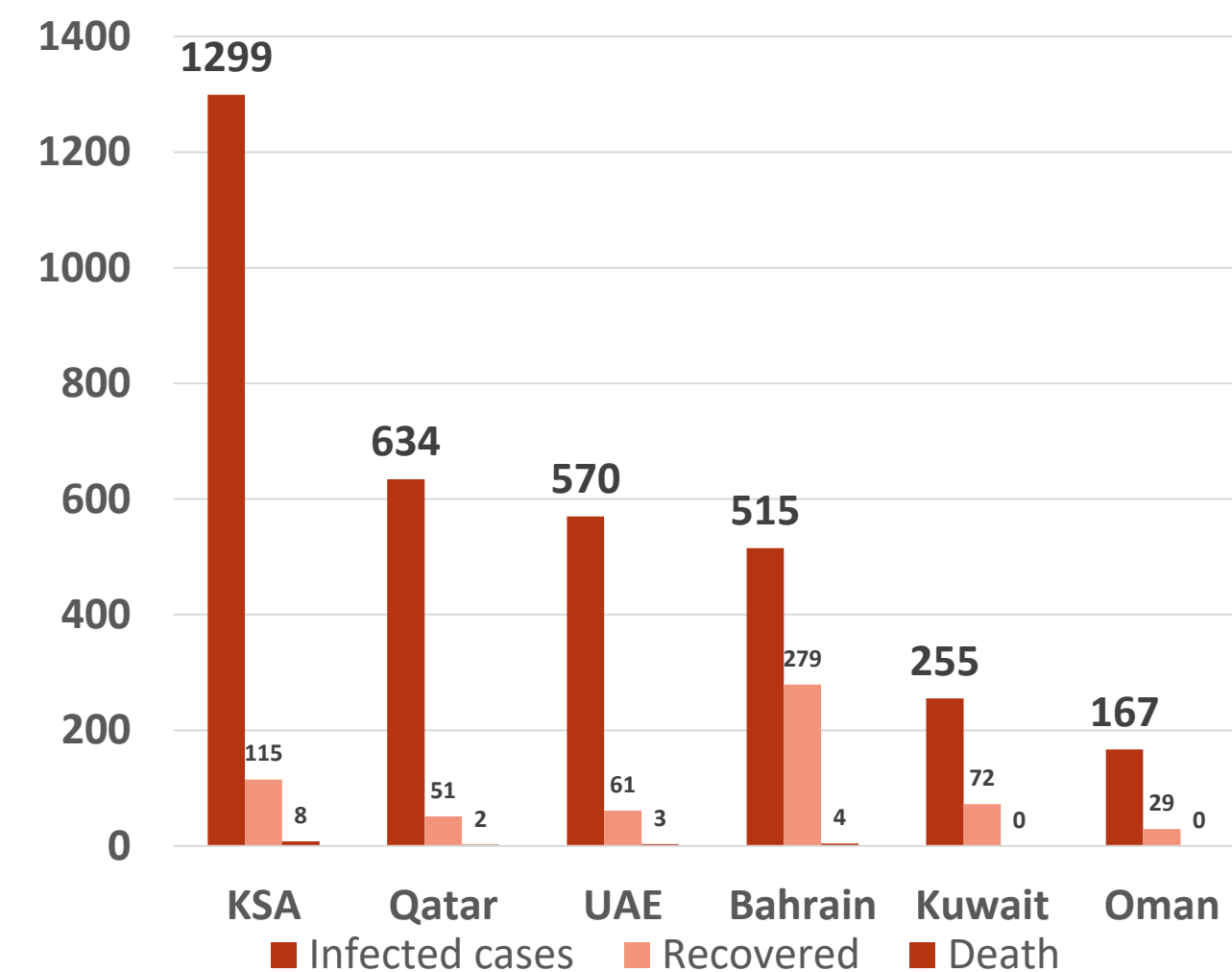


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (March 30, 2020)

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](https://www.who.int/)

Public health response



Article 1 : Are certain drugs associated with enhanced mortality in COVID-19 ?

Published: : March 27, 2020

link: [Click Here](#)

Summary:

- Both angiotensin receptor blockers (ARBs) an **antihypertensive drugs** and statins an **anti-lipid agent** are the standard treatment and commonly used for the comorbidities. Regarding their mode of action, ARBs increase viral entry into the alveolar epithelial cells and statins increase interleukin-18 (IL-18) levels (the inflammatory response) . These drugs might promote severe pneumonia, acute respiratory distress syndrome (ARDS), and death among older individuals with COVID-19 who are more likely to be taking these medicines.
- A randomized, placebo-controlled trial was conducted to test the statin (rosuvastatin) for the treatment of infection related ARDS. Participants randomized to rosuvastatin (20 mg/day for 28 day) were more likely to exhibit elevated level of IL-18 and this elevated level was significantly associated with increased mortality. However, participants those who were treated with systemic corticosteroid (methylprednisolone) therapy showed less rise in IL-18 levels that might explain why corticosteroid therapy decreased mortality in a Chinese study of 201 individuals with COVID-19 pneumonia associated ARDS. [Click here](#) for more information on the study

Treatment :



Article 2: A survey of 434 clinical trials about coronavirus disease 2019 in China

Published: March 27, 2020

Link: [Click Here](#)

Summary:

China clinical registry:

- 434 registered clinical trials about COVID-19.
- First trial registered on the efficacy and safety of **lopinavir-ritonavir and interferon-alpha 2b** in hospitalized patients with COVID-19
- Two thirds of the total records occurred from **Feb 12 to Mar 3** with a mean speed of (12 ± 4) records per day (*Figure 1*).

Table 1: registered researches in China based on the objectives

The Objectives Of Trials	No. Of Records	No. Clinical Trials	Focused Study
Cell Therapy	19		
Biological Therapy	34	16	Anti-Cytokine Storm Occurring In Severe Patients, like Recombinant Interferons Recommended By The National Health Commission Of China, Anti-Tumor Necrosis Factor-A, Anti-Interleukin-6, And Anti-Gm-Csf.
		7	Efficacy And Safety Of Anti-Sars-Cov-2 Inactivated Convalescent Plasma In The Treatment Of Patients With Covid-19
Western Medicine	71		Remdesivir
		23	Phosphoric Chloroquine
		17	Lopinavir-Ritonavir
Chinese Medicine	99	*The others were mainly about mental health of the patients, doctors, nurses, college students, the public, and the other kinds of diagnosis methods, like the lung ultrasound	
Others *	211		
Mesenchymal Stem Cells (Mscs) Were The Most Popular Seed Cells	14		
NK Cells	3		
Mononuclear Cells	2		

Treatment :



Article 2: Summary:

Table 2 : type of registered COVID19 research in China

The Study Type	No. of records	Diagnostic Method	No. of methods
Interventional	221		
Observational	121		
Diagnostic	18	Detection Of SARS-Cov-2 Nucleic Acid	4
		Plasma Immunoglobulin M/Immunoglobulin G Detecting	3
		Chest Computed Tomography Imaging	3
		Lung Ultrasound	2
		Sputum Or Throat Swab Sample Collecting	2
		Screening Of Peripheral Blood Biomarkers	2
		Screening Of Micrnas As Early Diagnostic Markers Of COVID-19 Viral Infection	1
		Magnetic Resonance Imaging For Myocardial Damage Diagnosis	1

Table 3: The sum of the samples of all clinical trials about COVID-19 in china :

No. Of Sample	Type of Sample
202,842	without COVID-19
51,793	with COVID-19

Total: 254,635

Table 4: Number of clinical trial per location

Top Four Provinces	No. of Records	Top Five Cities	No. of Records
Hubei	130	Wuhan	117
Guangdong	49	Shanghai	37
Shanghai	37	Beijing	32
Sichuan	35	Chengdu	31
		Guangzhou	29

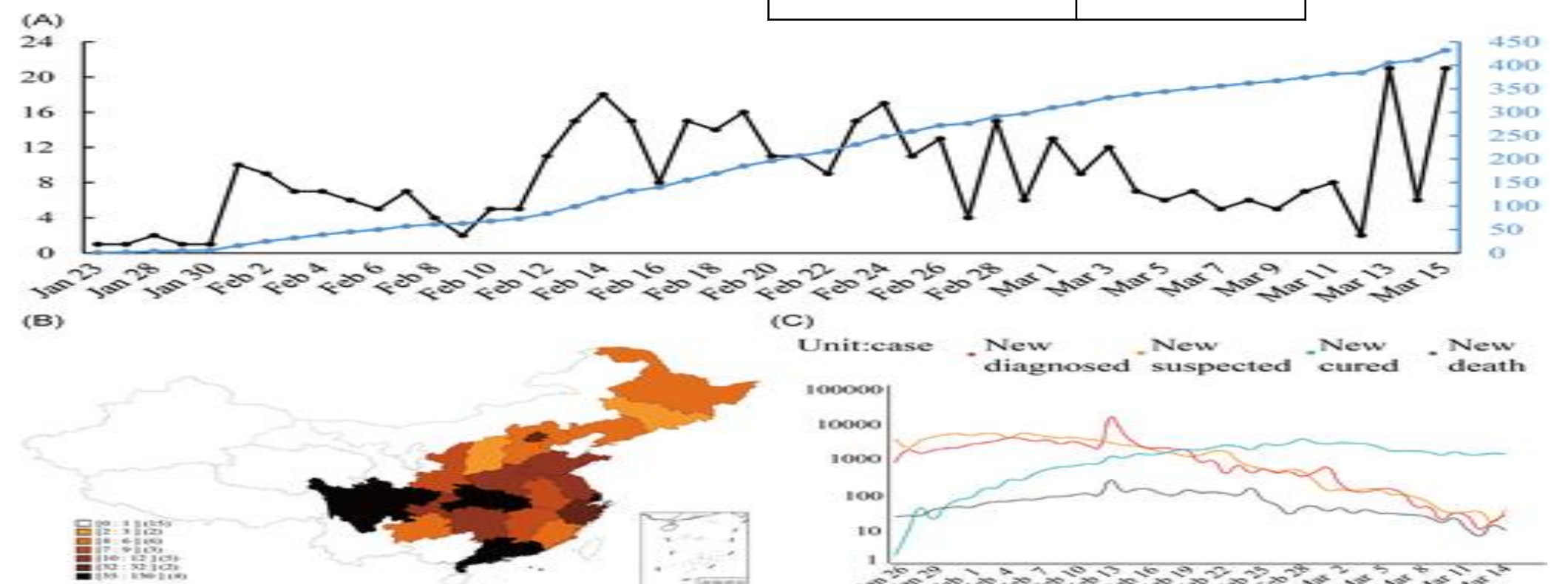


Figure 1 : Distribution of the 434 clinical trials about COVID-19 according to the date and (B) geographical distribution. C, The epidemic trend of COVID-19 in China. COVID-19, coronavirus disease 2019

Treatment :



Article 2: Summary:

Table 5: cases outside china

Records no.	Record Source
16	Total Outside Of China Mainland
5	France
3 (Namely 2 for Remdesivir, and 1 for Vaccine-Mrna-1273)	United States
3 (Namely 2 for Remdesivir and 1 for Lopinavir/Ritonavir)	South Korea
2	Hong Kong
1	Thailand
1	Italy

Table 6: Concerns

A:

Trials Problem	Finding
19 out of 221 interventional trials (8.5%) good designed	Protocol according to the standard protocol items: recommendations for interventional trial.
Compared with the trials set outside of China mainland 55.1% of the 434 trials did not claim to use the right data management system	Paper case record form and an electronic data capture

B:

209 trials	were Recruiting
201 trials	were Not Yet Recruiting
13 trials	were Suspended / Lack of Patients
11 trials	were Completed*

*None of the completed trials belonged to interventional study

The most four promising alternatives currently in the treatment of the patients with COVID-19, especially for the severe and critically severe types :

- inactivated convalescent plasma,
- ACE2 MSCs transplant
- remdesivir,
- and tocilizumab