



Scientific Research Monitoring on COVID-19

12 May 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:** self-pronation improved patients' oxygenation at 5 minutes, but the duration of its effect is unclear.
- **Treatment:** in an open label RCT in china, adding triple combination of interferon beta + LPNV/TNV + ribavirin improved viral clearance, time to clinical improvement and length of stay compared to LPNV/TNV alone
- **Public health response:** experience from New Zealand on how they reach zero cases.

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.

Others

[Organ procurement and transplantaion during the COVID-19 pandemic](#)

[COVID-19 testing and patients in mental health facilities](#)

[COVID-19 Epidemic Peer Support and Crisis Intervention Via Social Media. Community Mental Health Journal.](#)

[Accepted: 29 April 2020](#)



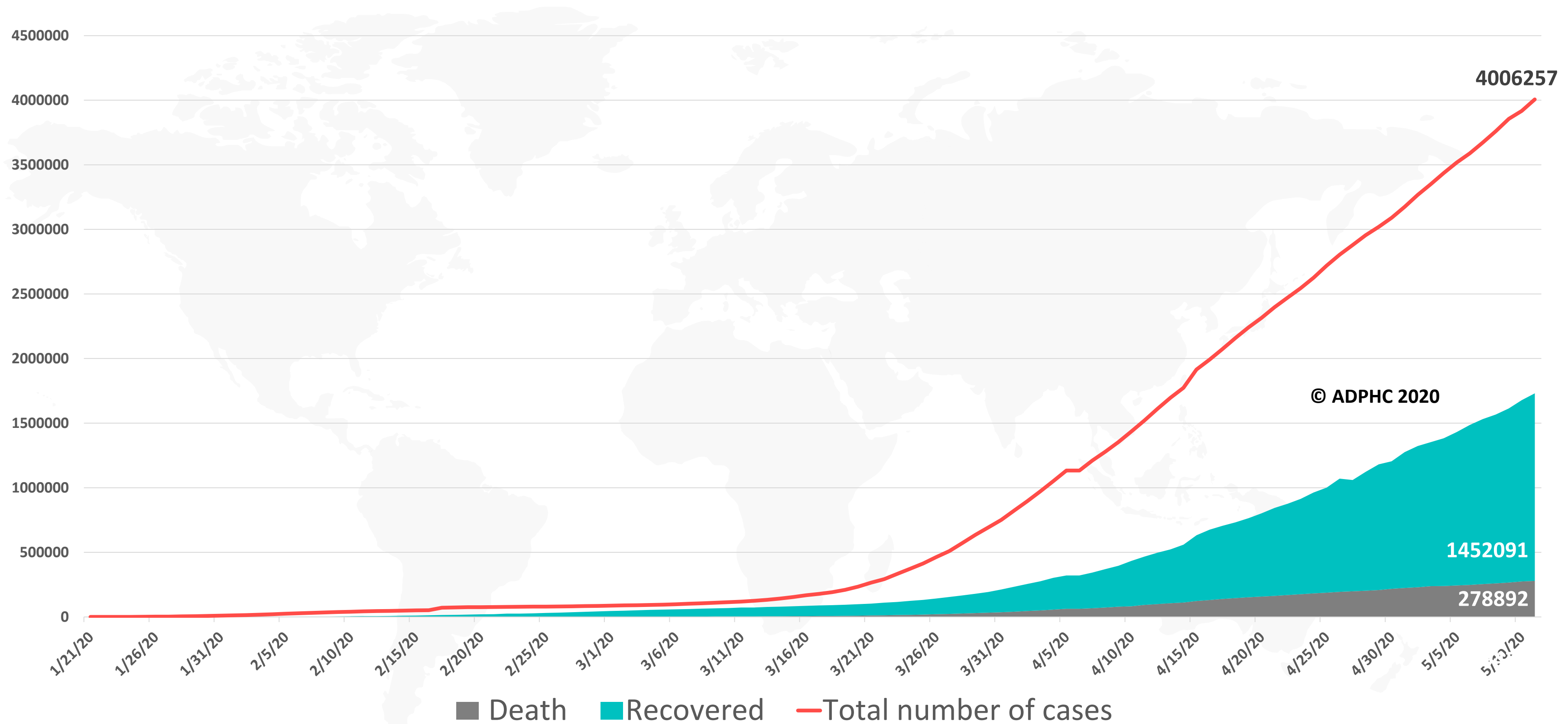
WHO daily report 11 May 2020

- WHO has published new guidance on Surveillance strategies for COVID-19 human infection. The document provides an overview of surveillance strategies that Member States should consider as part of comprehensive national surveillance for COVID-19. It also emphasize the need to adapt and reinforce existing national systems where appropriate and to scale-up surveillance capacities as needed.
- WHO has published new guidance on Contact tracing in the context of COVID-19. When systematically applied, the guidance will help break the chains of transmission of COVID-19 and other infectious disease and is thus an essential public health tool for controlling infectious disease outbreaks.
- WHO provides an update on the work of the **Emergency Medical Teams**, To date, a total of 20 EMTs have been internationally deployed to provide support to 16 countries
- **The Global Outbreak Alert and Response Network:** WHO, GOARN partners, and stakeholders continue to collaborate on the roll-out and implementation of Go.Data. [Go.Data](#) is a field platform for collecting and analyzing key data for case investigations; for contact tracing and follow-up; and for generating chains of transmission..
- **Risk Communication and Community Engagement:** UNESCO, UNICEF, the World Bank and WFP have published a [Framework for Reopening Schools](#), addressing the impact of school-closure on children, specifically the marginalized.

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to May 11, 2020)

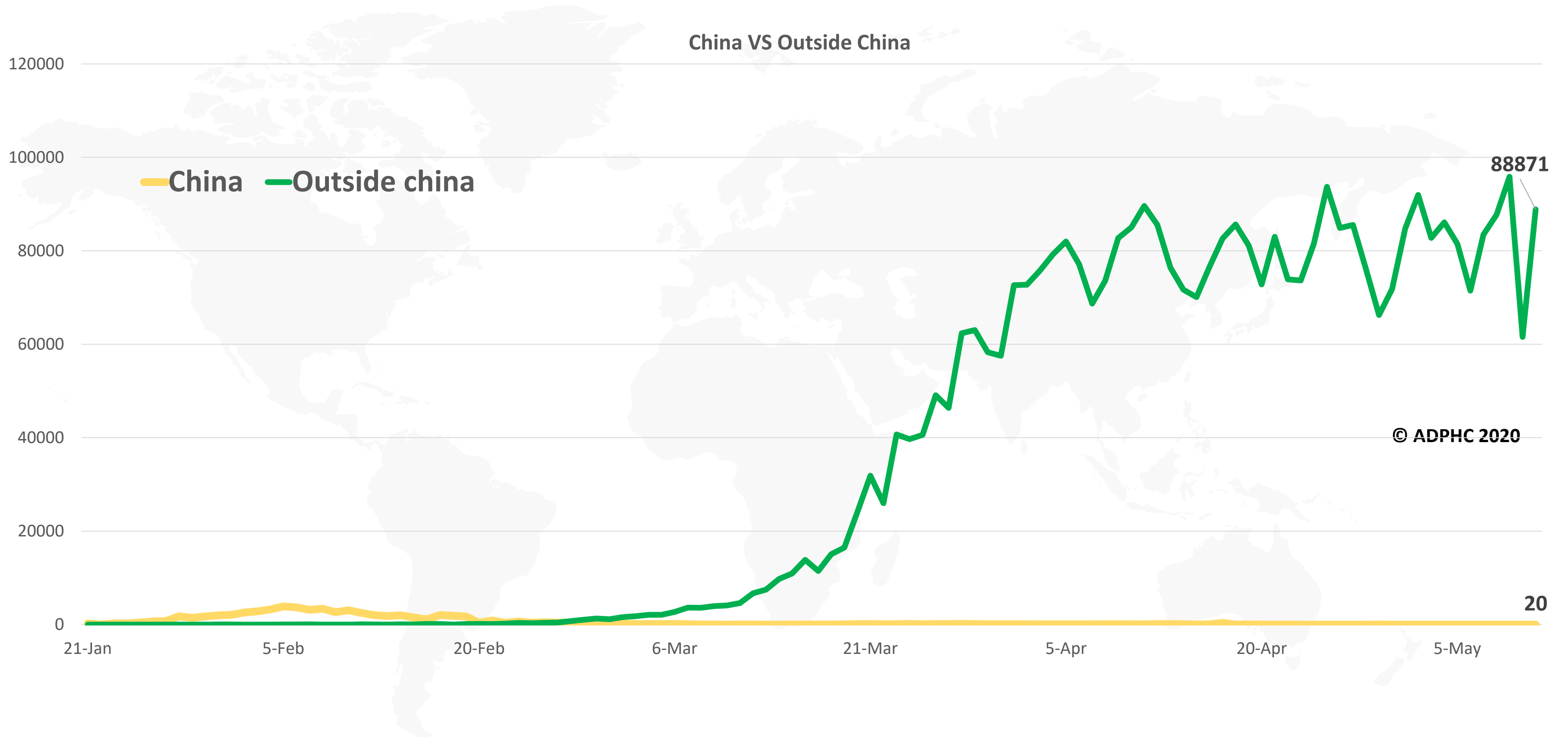


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to May 11, 2020).



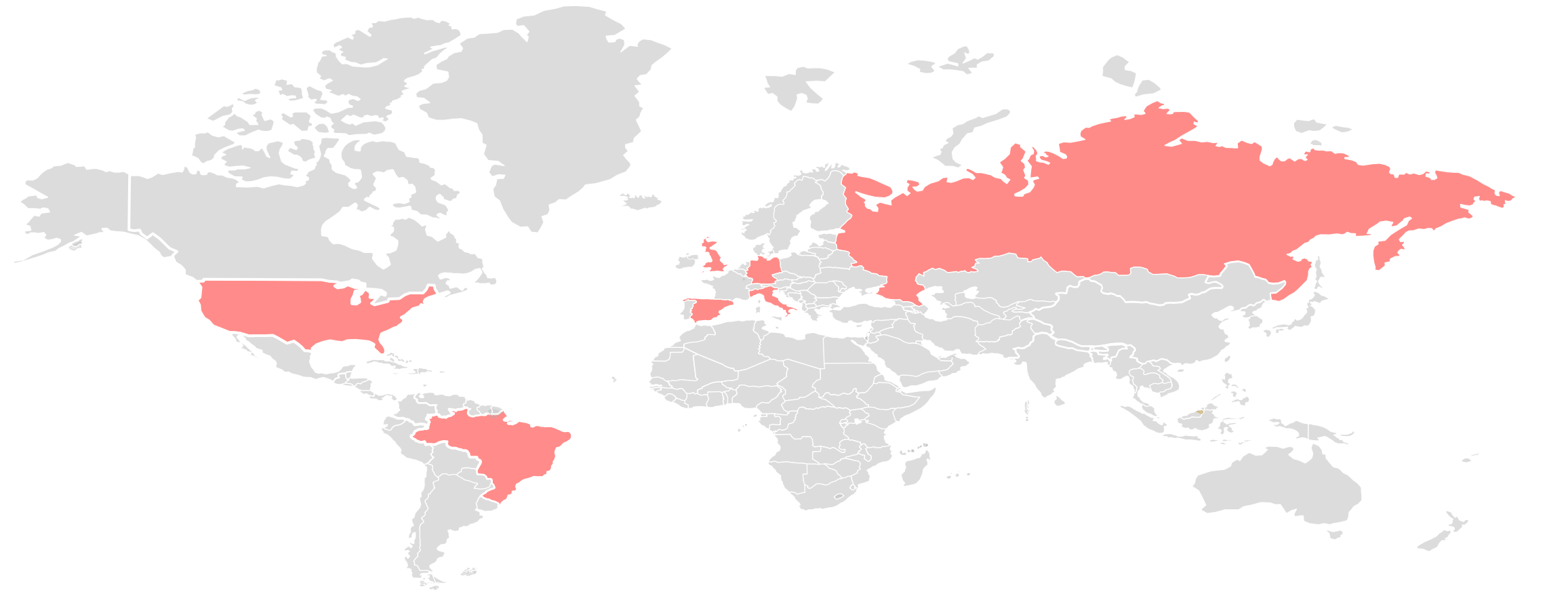
Line graph published by Abu Dhabi Public Health Center 2020.

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

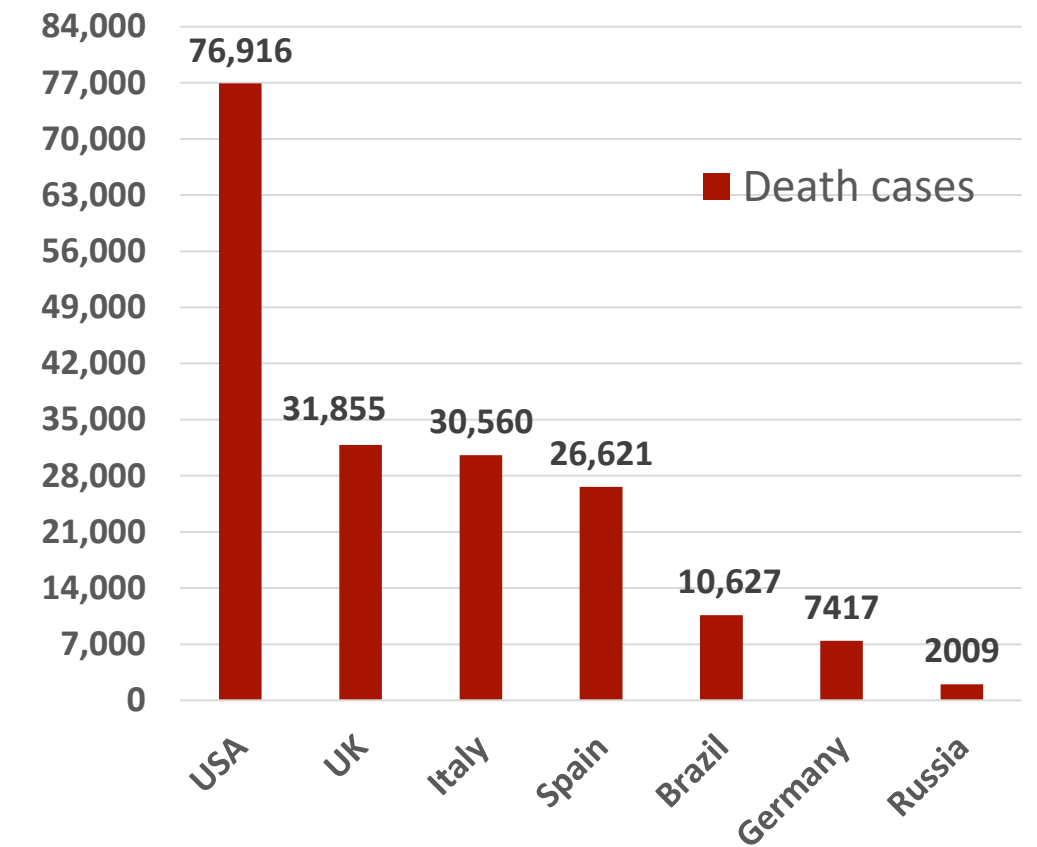
Epidemiology



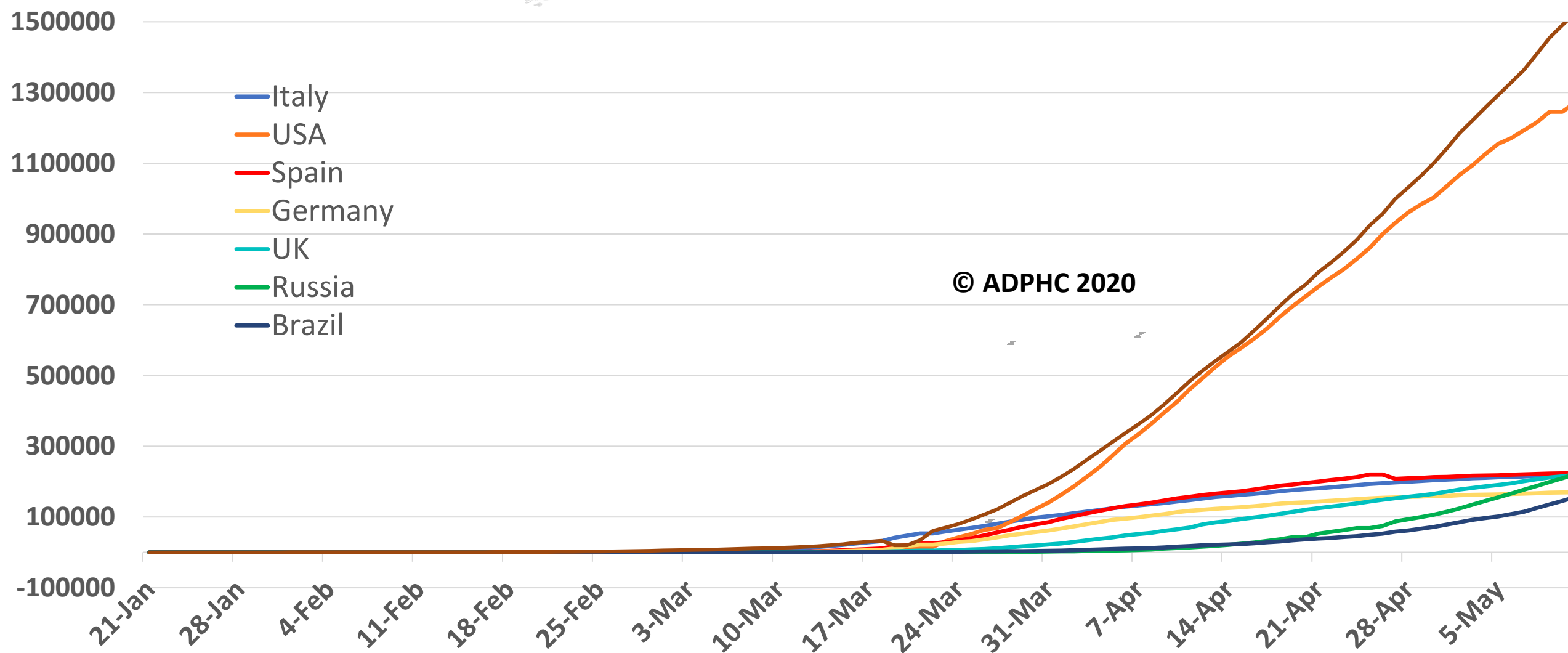
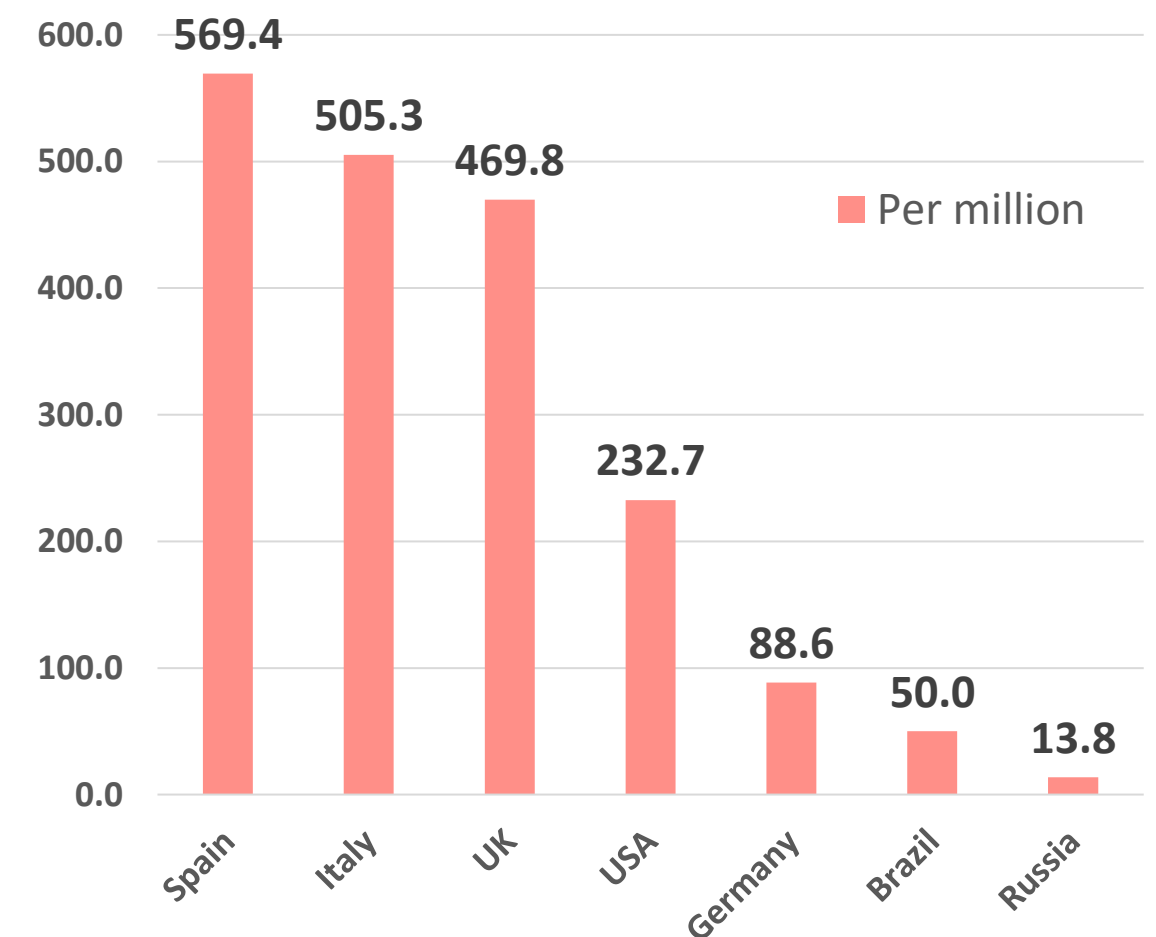
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to May 11, 2020).



TOTAL DEATHS



DEATHS PER MILLION

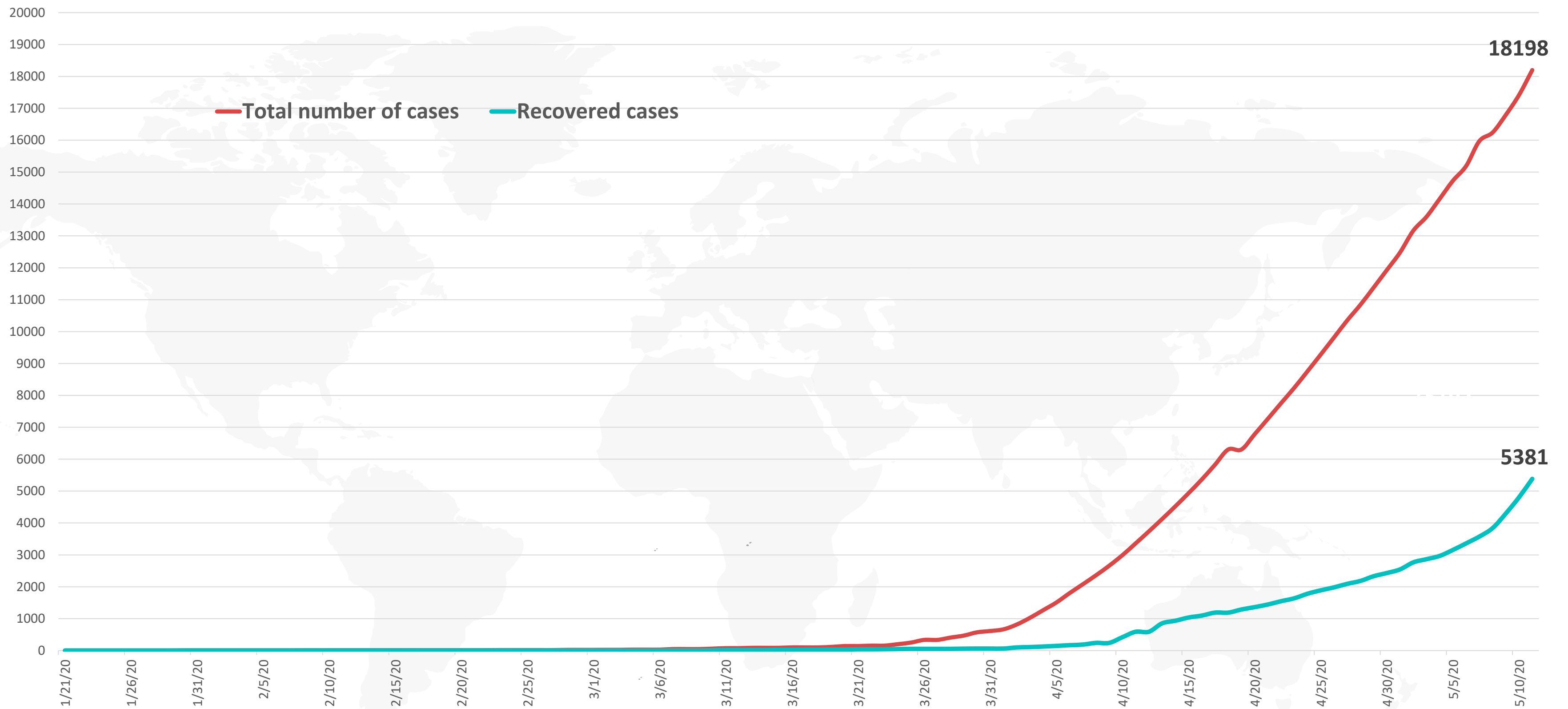


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



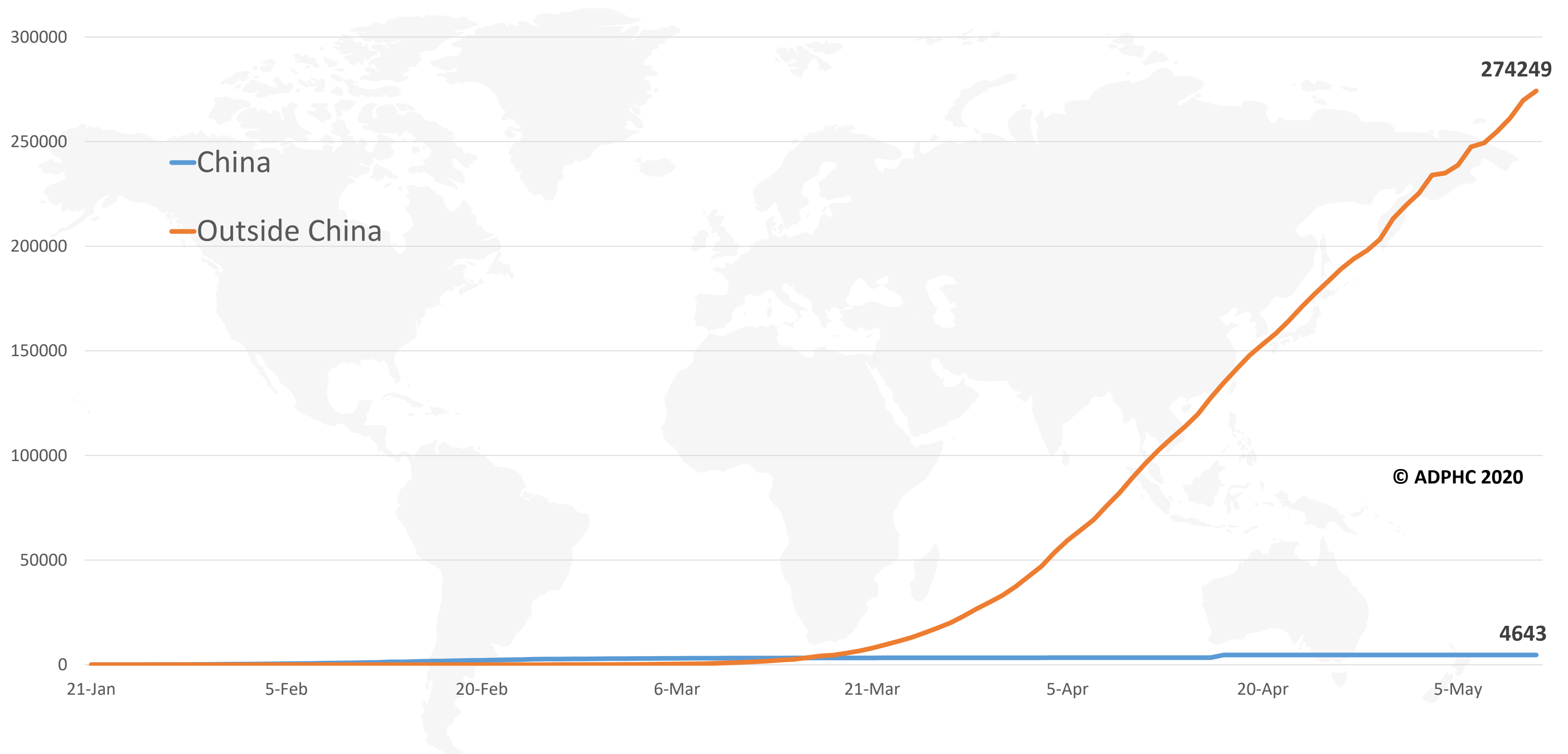
Line graph published by Abu Dhabi Public Health Center 2020.

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 22 to May 11, 2020).



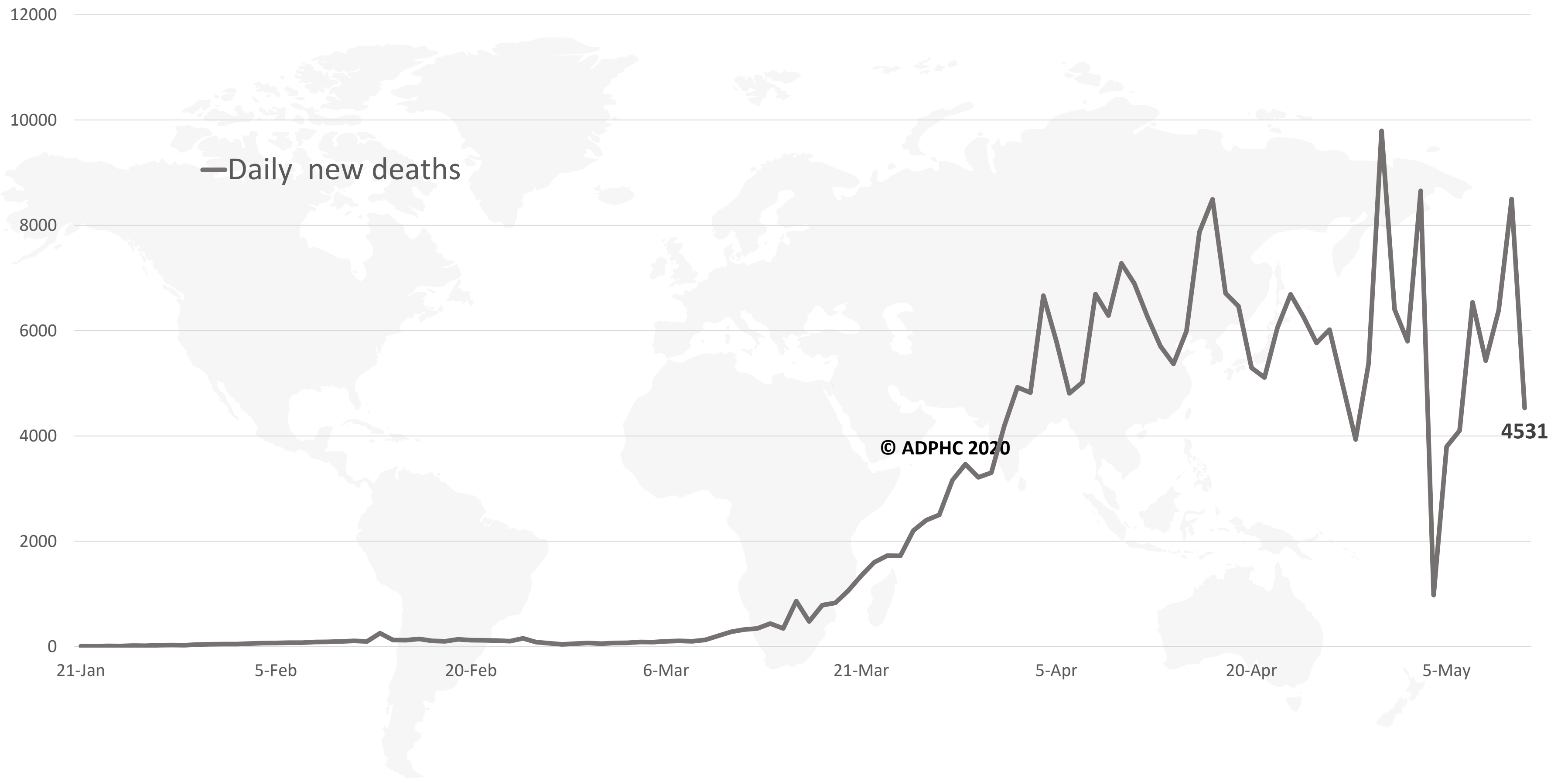
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Data resources: [WHO](#)



Figure 6: Global daily new deaths due to COVID-19 (January 22 to May 11, 2020).



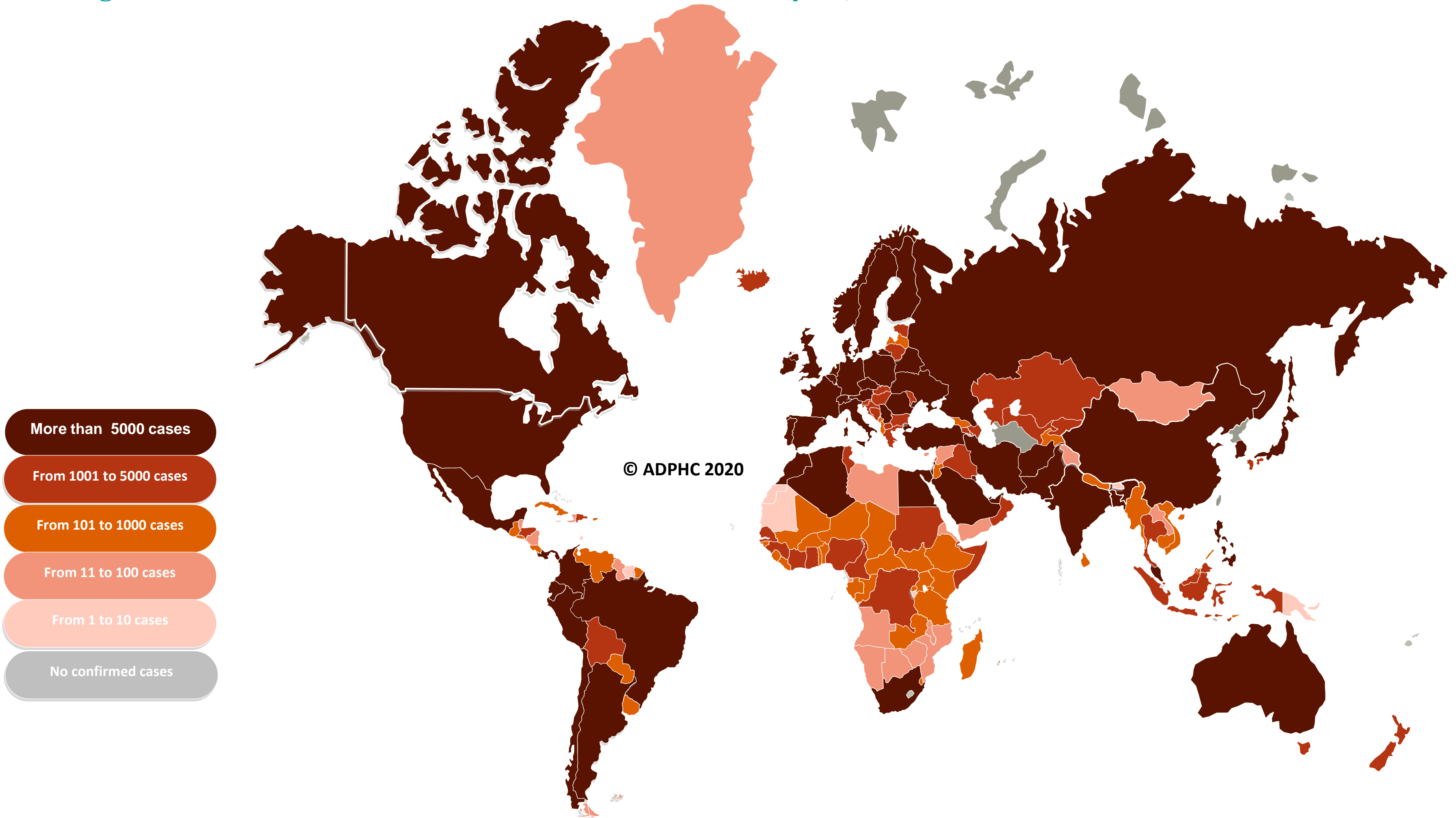
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 7a : Global distribution of COVID-19 cases (May 10, 2020).

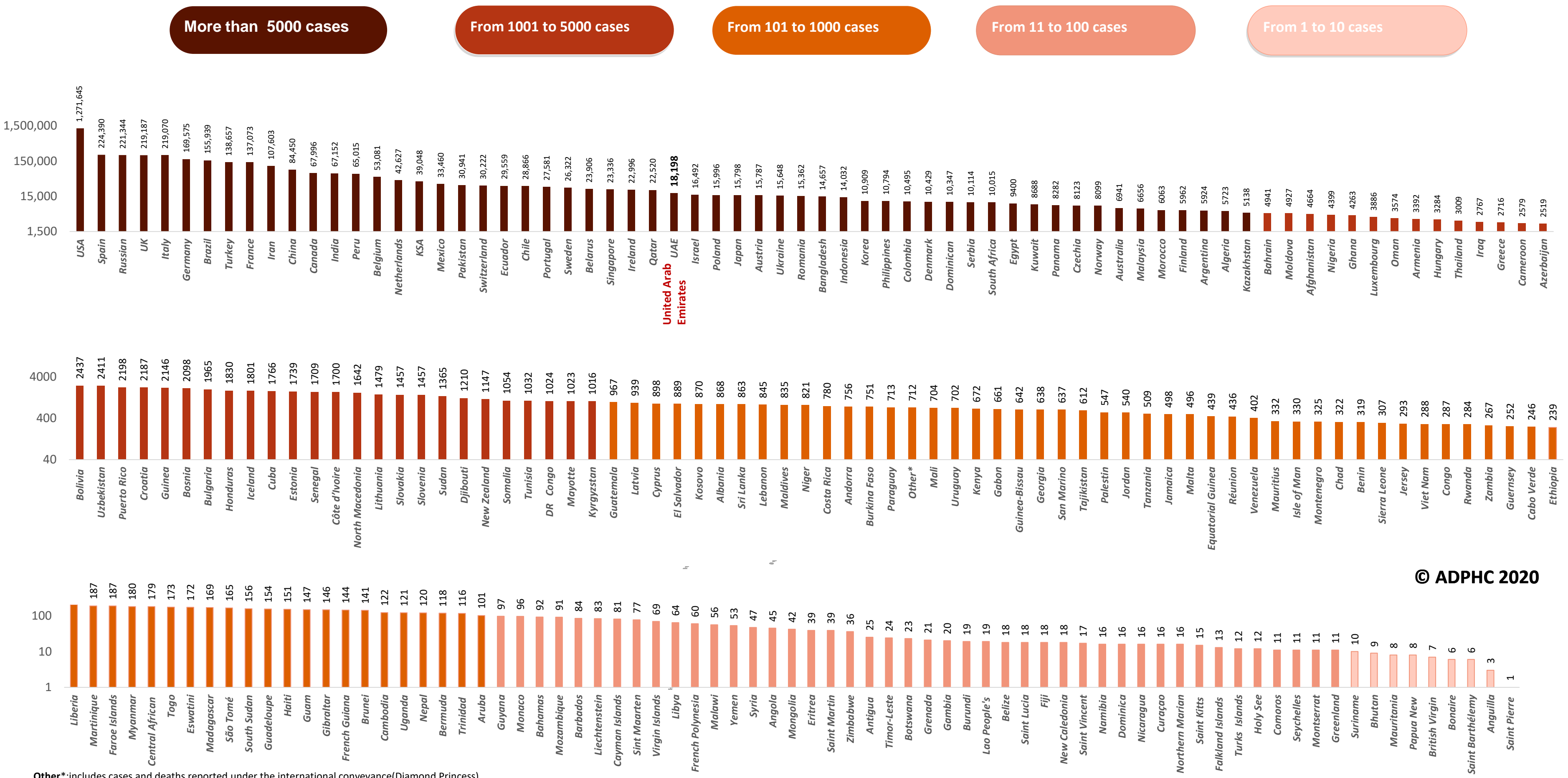


Map chart published by Abu Dhabi Public Health Center 2020.

Epidemiology



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases May 11, 2020)



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

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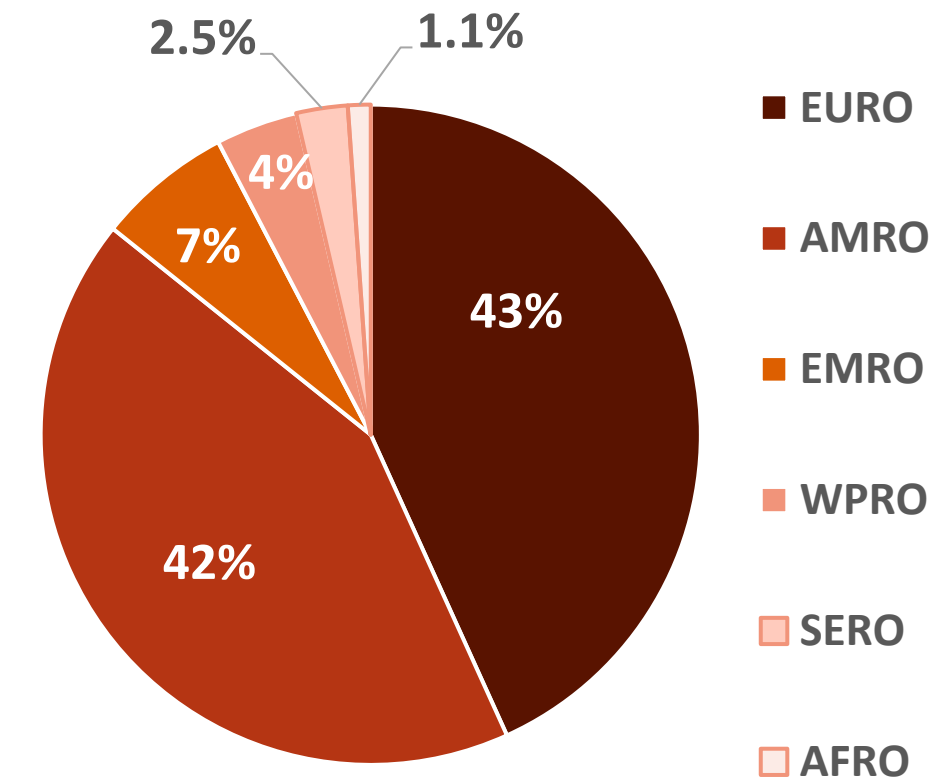
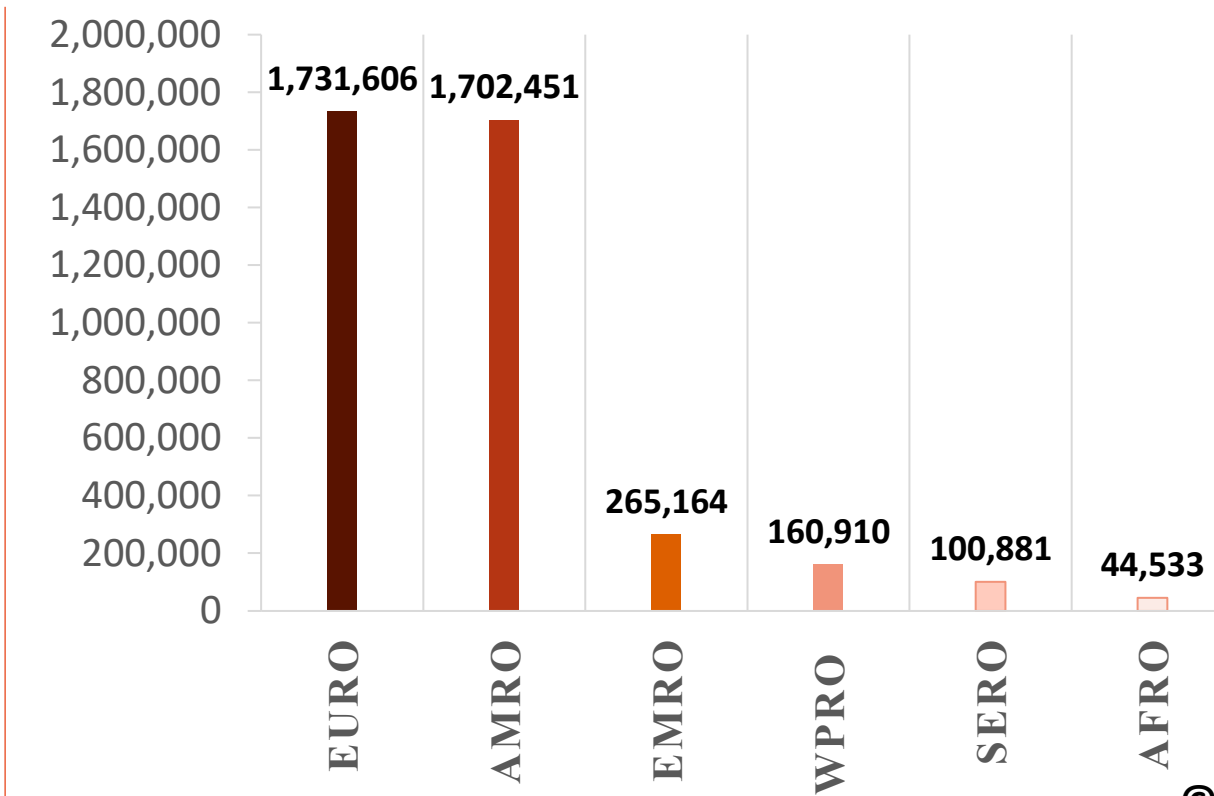
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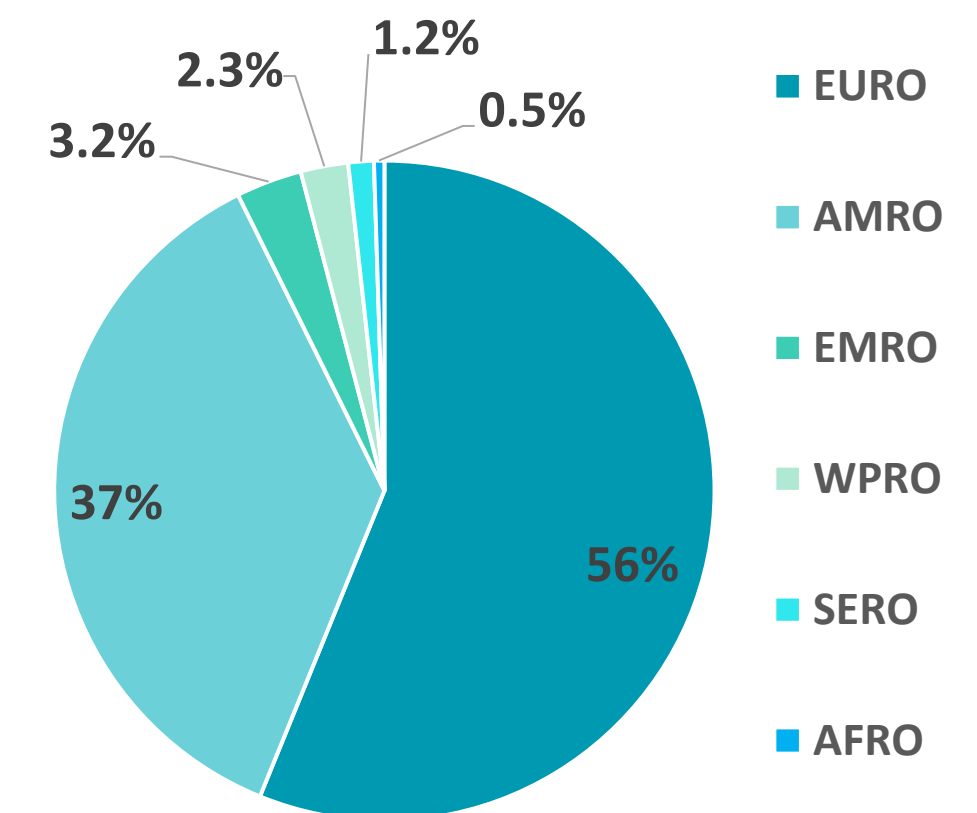
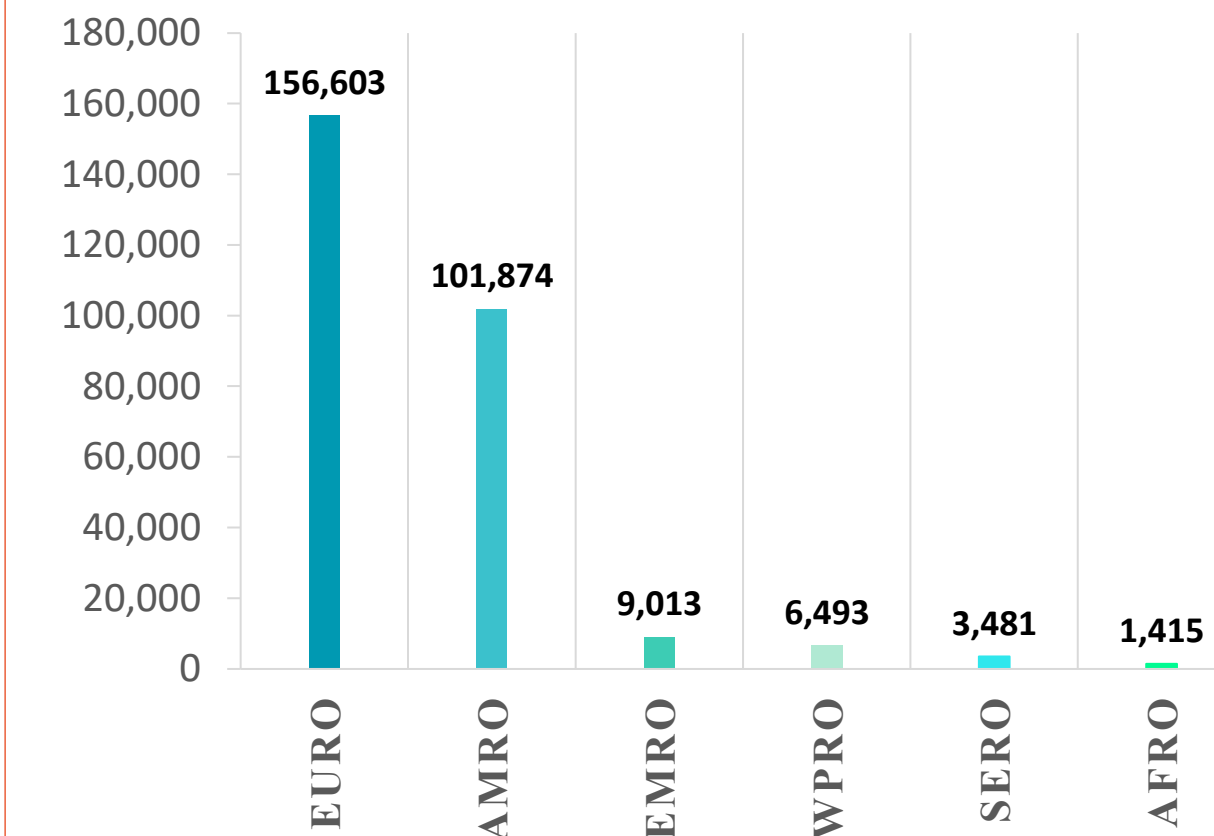
Figure 8: illustrate the Global distribution of COVID19 cases per region (May 11, 2020)

INFECTED



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DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

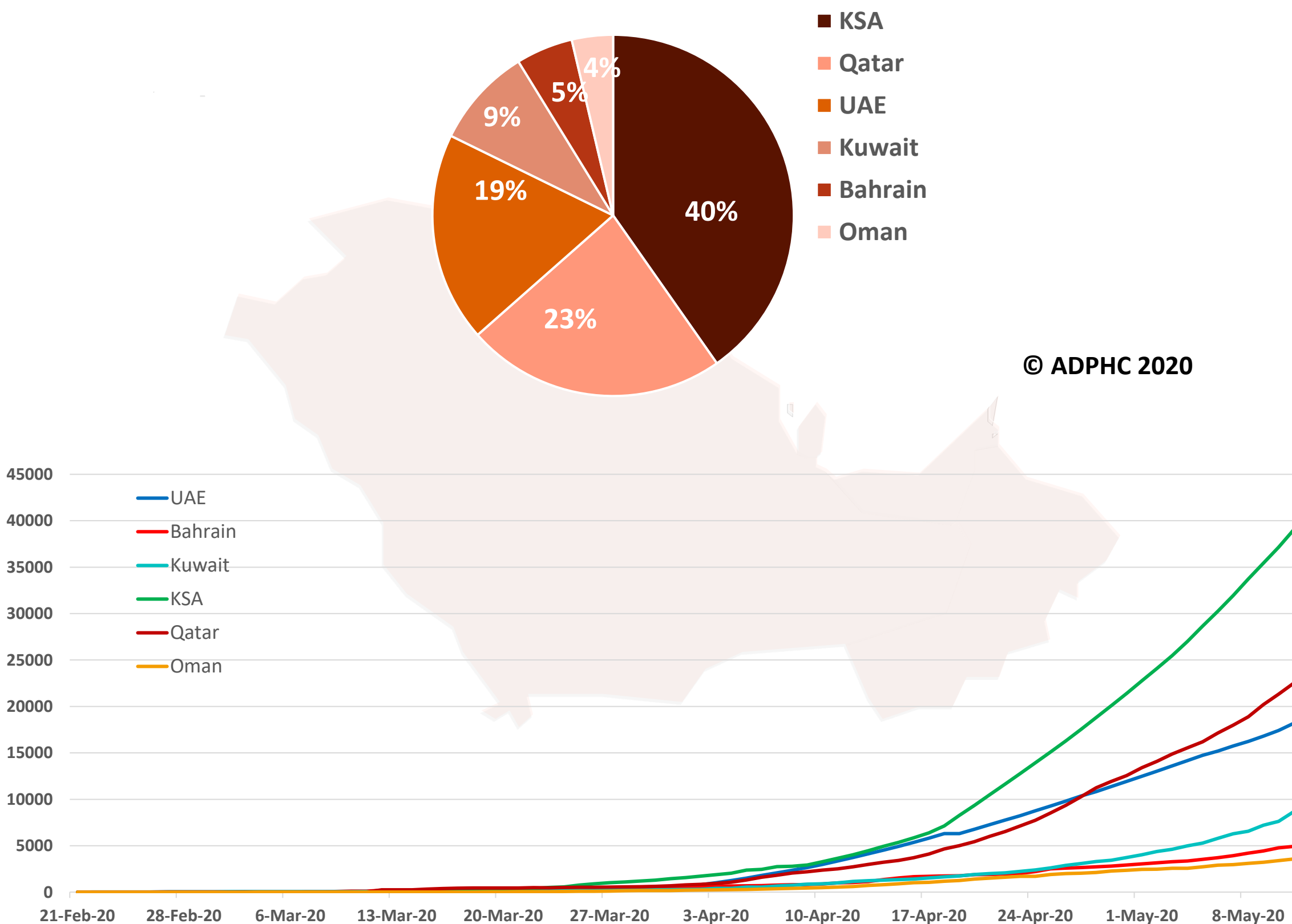
Data resources: [WHO](http://www.who.int)

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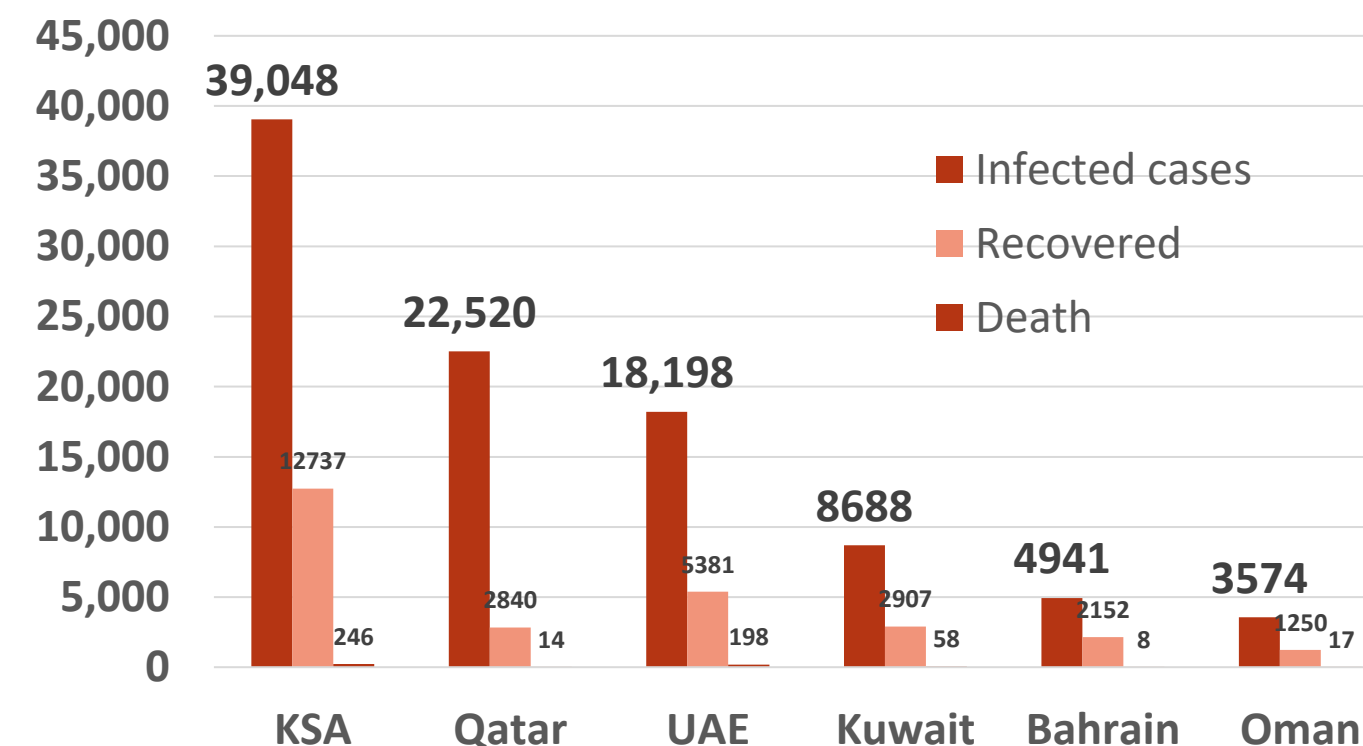
Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (May 11, 2020)

TOTAL NUMBER OF INFECTED CASES

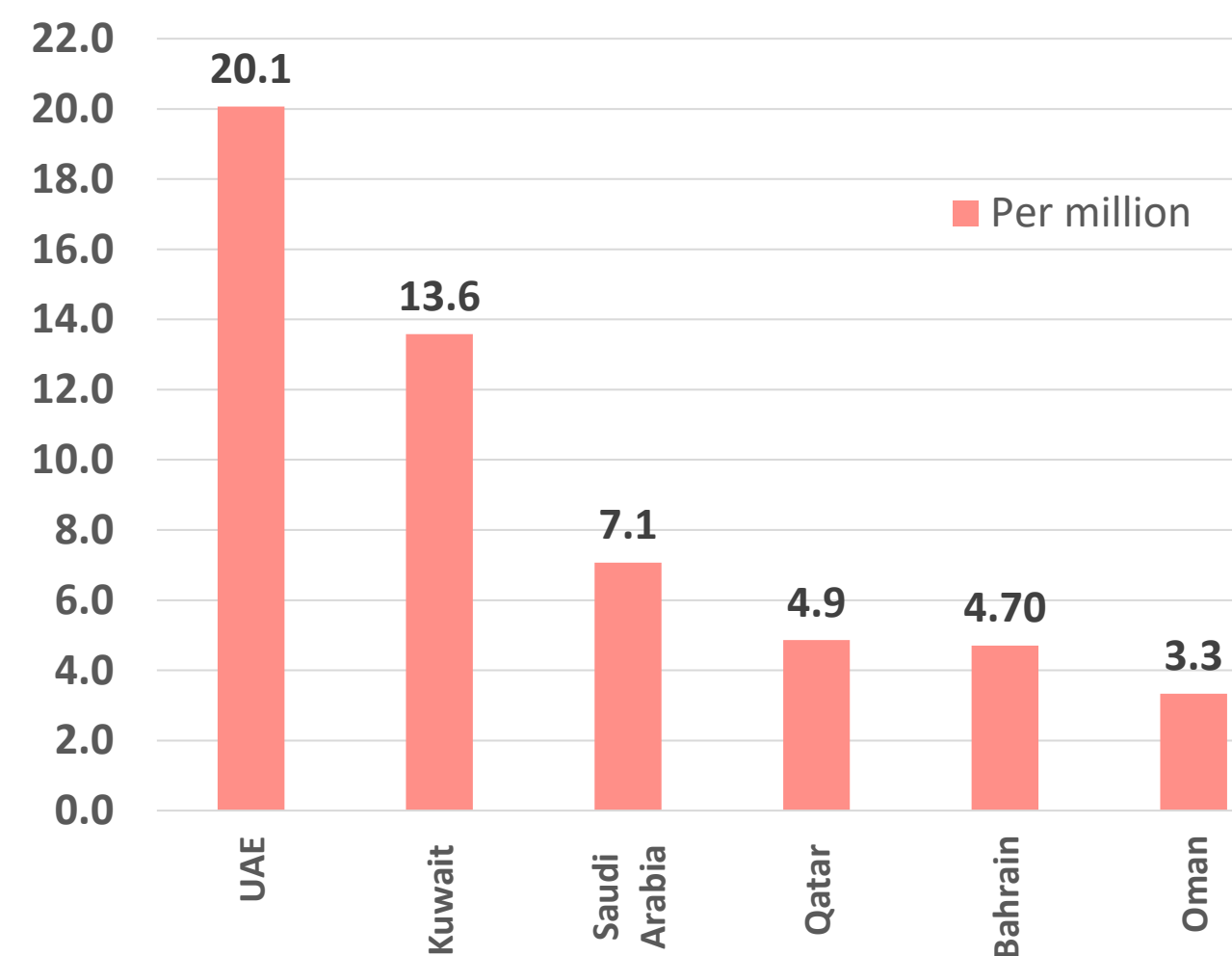


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Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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Article 1: Self-Proneing in COVID-19

Published: : May 1, 2020 [NEJM](#)

Summary:

- Researchers in a New York City emergency department measured the change in oxygen saturation 5 minutes after self-proneing in 50 covid-19 patients with hypoxia, without respiratory distress. Median oxygen saturation was 80% on arrival and increased to 84% after patients were placed on supplemental oxygen. After 5 minutes of proneing, median oxygen saturation increased to 94%. Ultimately, 36% of patients were intubated within 72 hours and, of these, 38% (7) were intubated within the first hour
- **Conclusion:** In this small study, self-proneing improved patients' oxygenation at 5 minutes, but the duration of its effect is unclear. Notably, intubation was avoided in nearly two thirds of patients. However, some of these patients will still require intubation during their hospital course, and so all of them should be monitored closely

Treatment



Article2 : Interferon beta-1b for COVID-19

Published: May 8, 2020 [in the lancet](#)

Summary:

Triple combination of interferon beta-1b, lopinavir–ritonavir, and ribavirin in the treatment of patients admitted to hospital with COVID-19: an [open-label, randomised, phase 2 trial](#).

[Lancet. 2020; \(published online May 8.\)](#)

Examined the effect of a triple combination regimen of **interferon, lopinavir plus ritonavir and ribavirin compared with lopinavir plus ritonavir every 12 h alone**.

127 patients with COVID-19 admitted to six hospitals in **Hong Kong**. Median age of patients was **52 years**.

Studied population had **mild or moderate disease** at the time of enrolment. 86 were assigned to the combination group (sub grouped into 52 enrolled with $Sx < 7$ days and 34 >7 days) and 41 to the control group (sub grouped into 24 enrolled with $Sx < 7$ days and 17 >7 days). Treatment duration was 14 days. Interferon beta-1b was given in the combination group only to patients who were enrolled less than 7 days after onset of symptoms, for a maximum of three doses by the end of the first week of symptoms. **The primary endpoint** was time to negative NP swab for SARS-CoV-2 & secondary endpoints were time to symptom resolution.

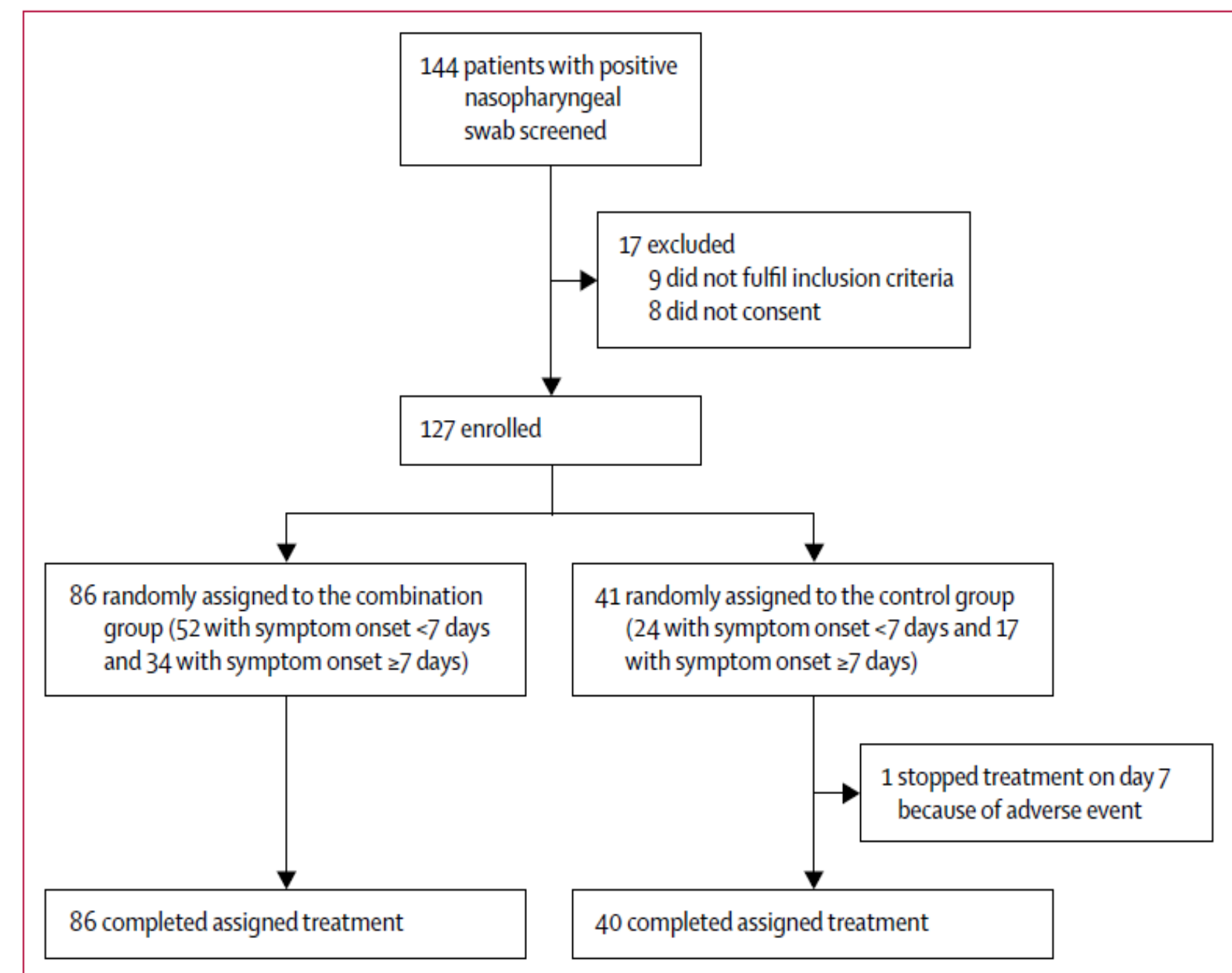


Figure 1: Trial profile



Treatment

Article 2: Cont.,

Findings:

Triple therapy was associated with a significant **reduction in**

- **The duration of viral shedding** (time to negative nasopharyngeal swab **7 days** in the combination group *vs* **12 days** in the control group.
- **symptom alleviation time of 4 days vs 8 days,**
- **Duration of hospital stay 9.0 days vs 14.5 days.**

This significant difference was sustained in a subgroup in patients who were enrolled within **less than 7 days of symptom onset** but not in the subgroup of patients **enrolled later than 7 days from symptom onset** (34 patients in the combination group, who only received lopinavir–ritonavir and ribavirin, *vs* 17 in the control group.

There was no mortality in either group

Conclusion: Despite the relatively small number of patients in **the interferon beta-1b subgroup,** significant differences in outcomes were demonstrated.

	Started treatment <7 days from symptom onset			Started treatment ≥7 days from symptom onset		
	Combination group (with interferon beta-1b; n=52)	Control group (n=24)	p value	Combination group (without interferon beta-1b; n=34)	Control group (n=17)	p value
Duration of hospital stay, days	8 (6-12.5)	15 (9-16)	0.0030	13 (8-15)	13.5 (12.3-21.8)	0.090
30-day mortality	0 (0)	0 (0)	1.00	0 (0)	0 (0)	1.00
Time to negative viral load, days						
Nasopharyngeal swab	6.5 (4.0-8.0)	12.5 (8.0-14.8)	<0.0001	10.5 (8.0-12.3)	12.0 (8.0-17.0)	0.10
Posterior oropharyngeal saliva	6.0 (2.0-7.0)	8.5 (5.3-11.8)	<0.0001	8.0 (6.0-9.0)	8.0 (5.3-9.0)	0.79
Throat swab	4.0 (1.0-6.0)	8.0 (3.3-12.8)	0.0010	5.0 (1.5-8.0)	4.5 (2.0-9.0)	0.52
Stool	4.5 (2.0-5.0)	6.0 (3.0-7.0)	0.070	5.0 (2.0-10.0)	7.0 (5.5-8.5)	0.14
All specimens	7.0 (4.0-9.0)	13.0 (8.0-14.0)	<0.0001	12.0 (7.8-14.0)	12.0 (12.0-19.0)	0.080



Public Health Response

Article 3: New Zealand eliminates COVID-19

Publication: May 9, 2020 in [the lancet](#)

Summary:

- New Zealand recorded its first day of zero cases of COVID-19 early this week, more than a month after its strict lockdown began. As a result of the strict national lockdown when it only had 102 cases and zero deaths. Implementing full lockdown enabled the country to consider elimination. Where the benefit of pursuing an elimination strategy is that you have few cases and few deaths and you can get business back up and running. Also, full lockdown passed the country to get the key system up and to manage borders effectively, and do contact tracing, testing, and surveillance.
- The **testing has focused on specific communities** who are **at higher risk**, such as those in aged residential care and health-care workers. Testing samples from sewerage is also being considered to monitor control and elimination.
- One of the country's key successes has been how COVID-19 was framed to the general population. While in other countries, people have been talking about war and battle, which puts people in a negative and fearful frame of mind. Also, **the Prime Minister Jacinda Ardern has regularly appeared on social media, smiling and sharing parts of her personal life under lockdown** without underplaying the seriousness of the situation, which has helped to build public trust.*
- It has agreed that New Zealand will still see cases, but only cases in people who have arrived from overseas. Therefore, travelers will be quarantined as part of efforts to prevent transmission in New Zealand. Only a small number of countries in the region will reach an agreement to enable travel with specific control measures.

* To watch one of the New Zealand prime minister videos. Click [here](#)