



Scientific Research Monitoring on COVID-19

29 May 2020

For accessing the full series of published scientific reports please visit the following link:
<https://www.doh.gov.ae/ar/covid-19/Healthcare-Professionals/Scientific-Publication>

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.
- Two strain have been identified for SARS-COV2 (L type (more aggressive) and S type .and 3 cluster groups.

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).

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.

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.
- Also more therapies are currently under investigation including immunomodulatory, antimalarial and others.
- Vaccination are under clinical trial stage in many countries around the world.

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) data from china



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

Ministry of Health and Prevention Contribution

- **Clinical Feature And Transmission:** a study describes the clinical feature of 225 cases admitted to hospital in Wuhan.
- **Treatment:** a strategy adopted in Zhejiang helped in effectively increasing cure rate and reduced mortality.
- **Treatment:** a case report found that early utilization of appropriate doses of corticosteroids in COVID-19 critically ill patient can rapidly alleviate inflammatory response and improve clinical symptoms, however, it may reduce the number of T cells, and therefore, dose adjustment is important.



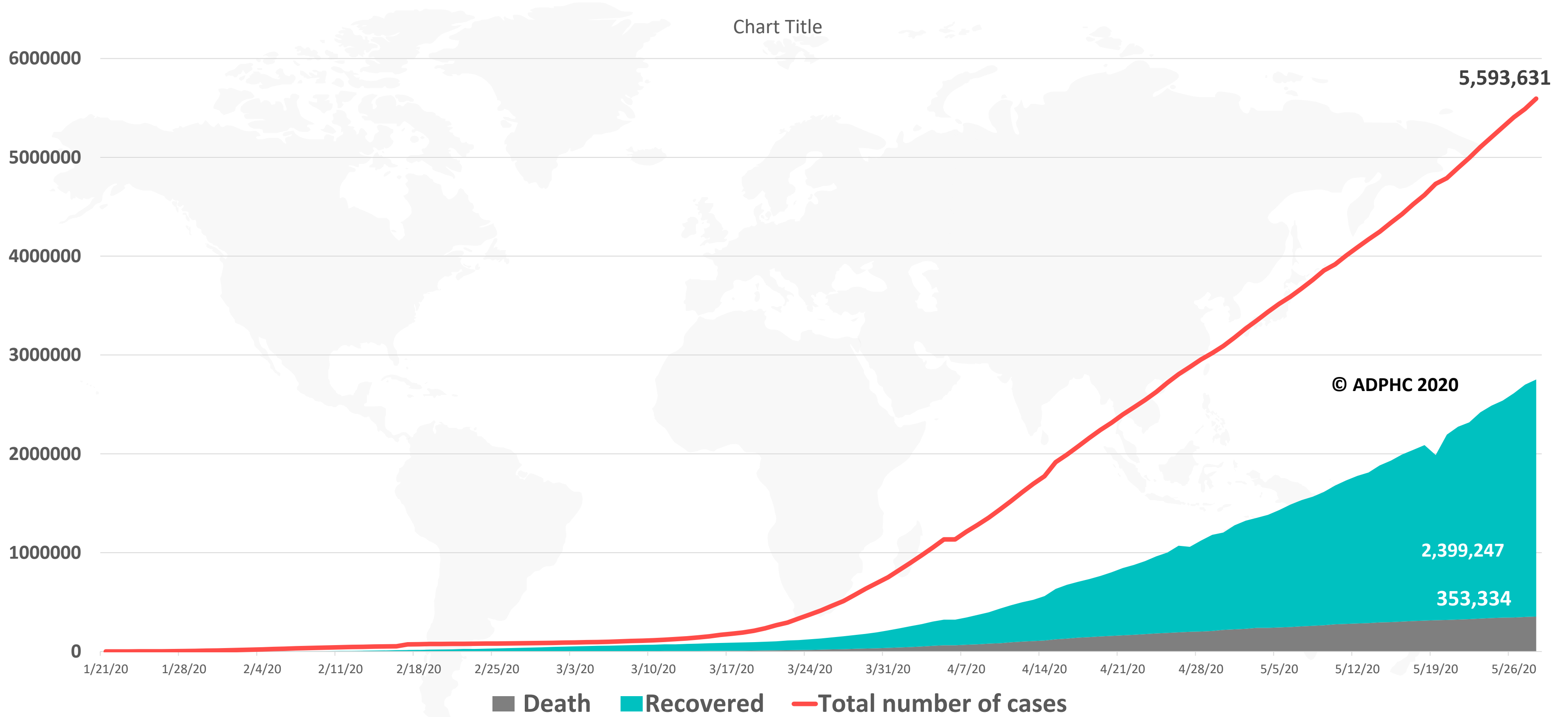
WHO Daily Report 29 May 2020

- WHO has published an interim guidance on the clinical management of COVID-19. This guidance document is intended for clinicians caring for COVID-19 patients during all phases of their disease.
 - WHO recommends that the listed drugs including antivirals, immunomodulators and other adjunctive **therapies should not be administered** as treatment or prophylaxis for COVID-19, **outside the context of clinical trials**.
 - WHO recommends **against the routine use of systemic corticosteroids** for treatment of **viral pneumonia**.
 - Anticoagulant such as enoxaparin should be used as a **prophylaxis to prevent complication** based on the local guidelines. Use alternatives in case of contraindication.
 - De-isolation criteria : WHO recommend discontinue transmission-based precautions (including isolation) and release from the COVID-19 care pathway **for symptomatic patients 10 days after symptom onset + three days without symptoms (without fever and respiratory symptoms)**.
 - Treatment of acute co-infections: the use of antibiotic shall not be used for COVID-19 patient unless there is suspicion of a bacterial infection.
- WHO has published an interim guidance on [ethical considerations to guide the use of digital proximity tracking technologies](#) for COVID-19 contact tracing. This document provides guidance to policy-makers and other stakeholders about the ethical and appropriate use of digital proximity tracking technologies for COVID-19.
- WHO Regional Director for the Americas, Dr Carissa F. Etienne said the response to the COVID-19 pandemic in the Region of the Americas must include chronic disease care, **as 1 in 4 people are at increased risk of poor outcomes from COVID-19 due to underlying non-communicable diseases**.

Epidemiology



Figure 1: Total number of infected, recovered , and death cases (January 21st to May 28, 2020)

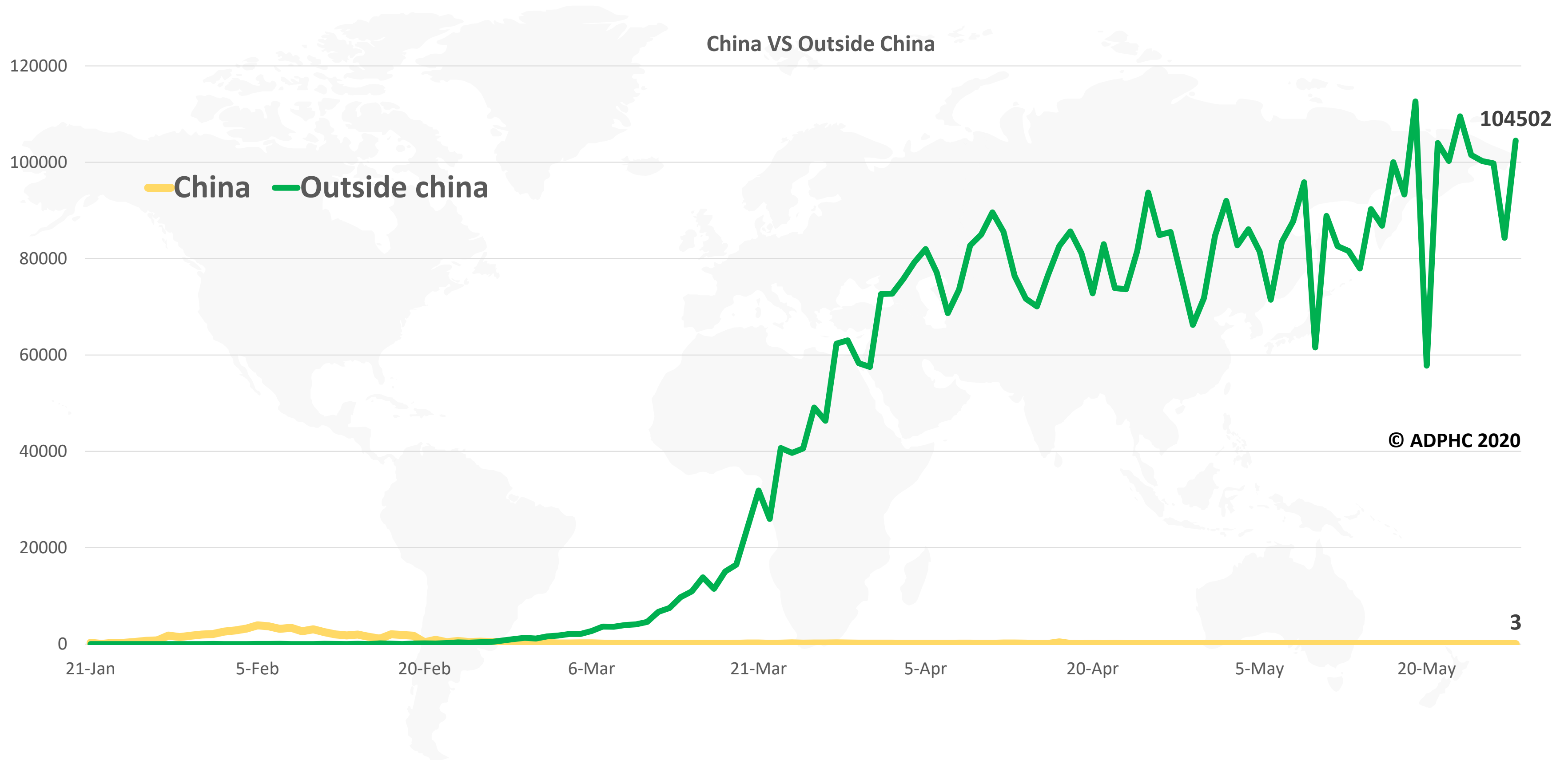


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to May 28, 2020).



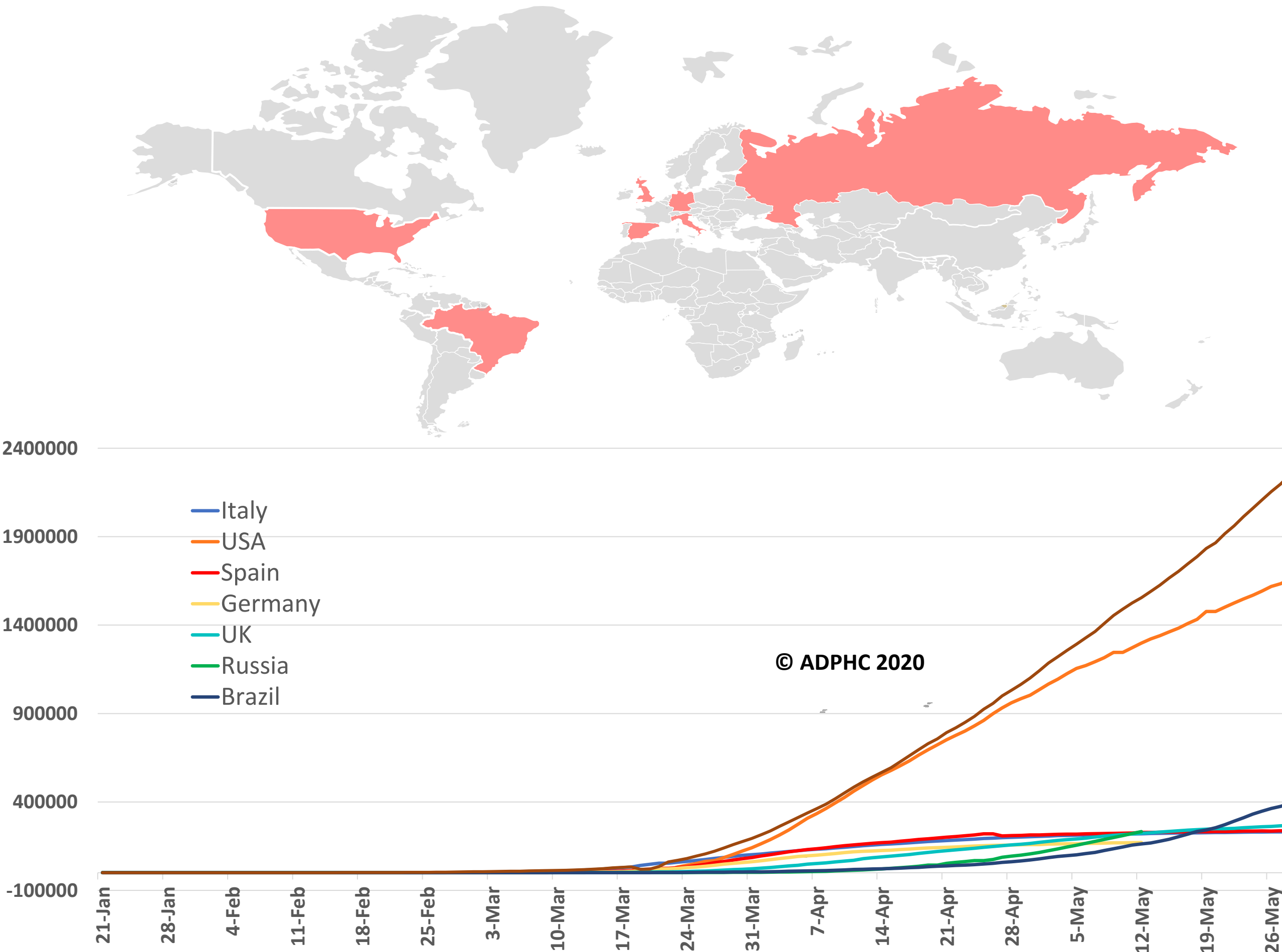
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

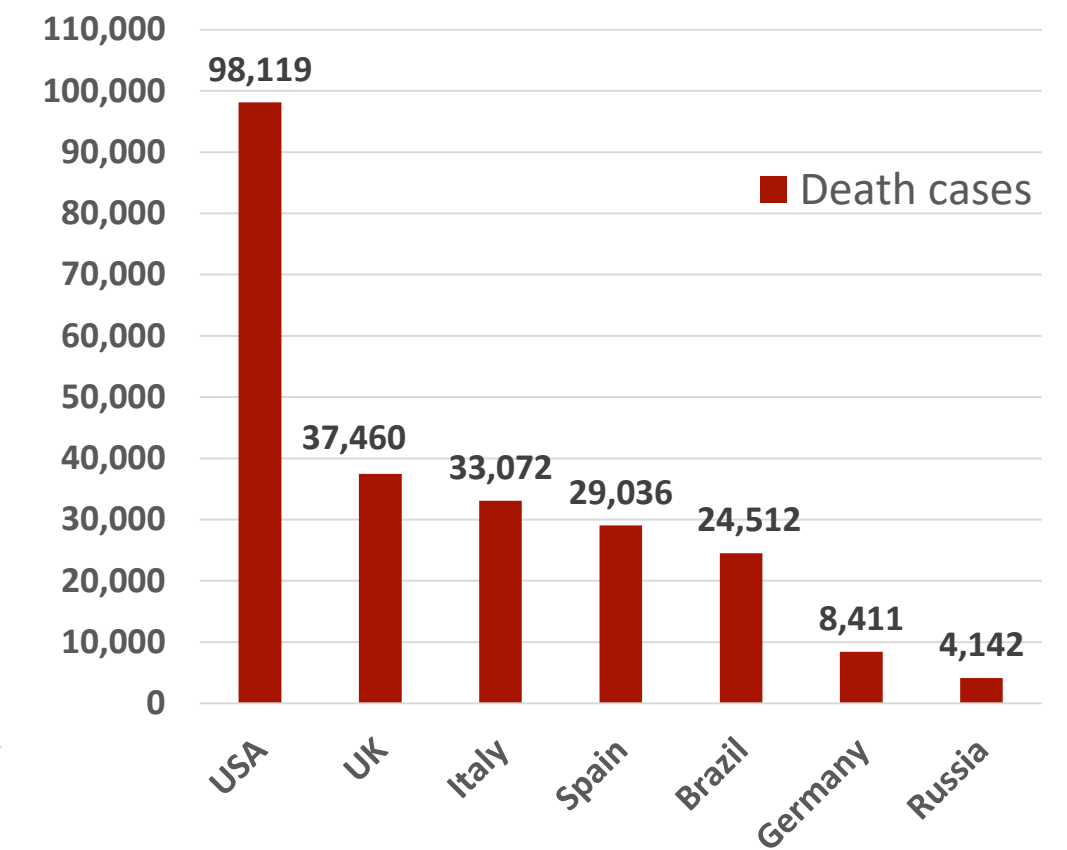
Epidemiology



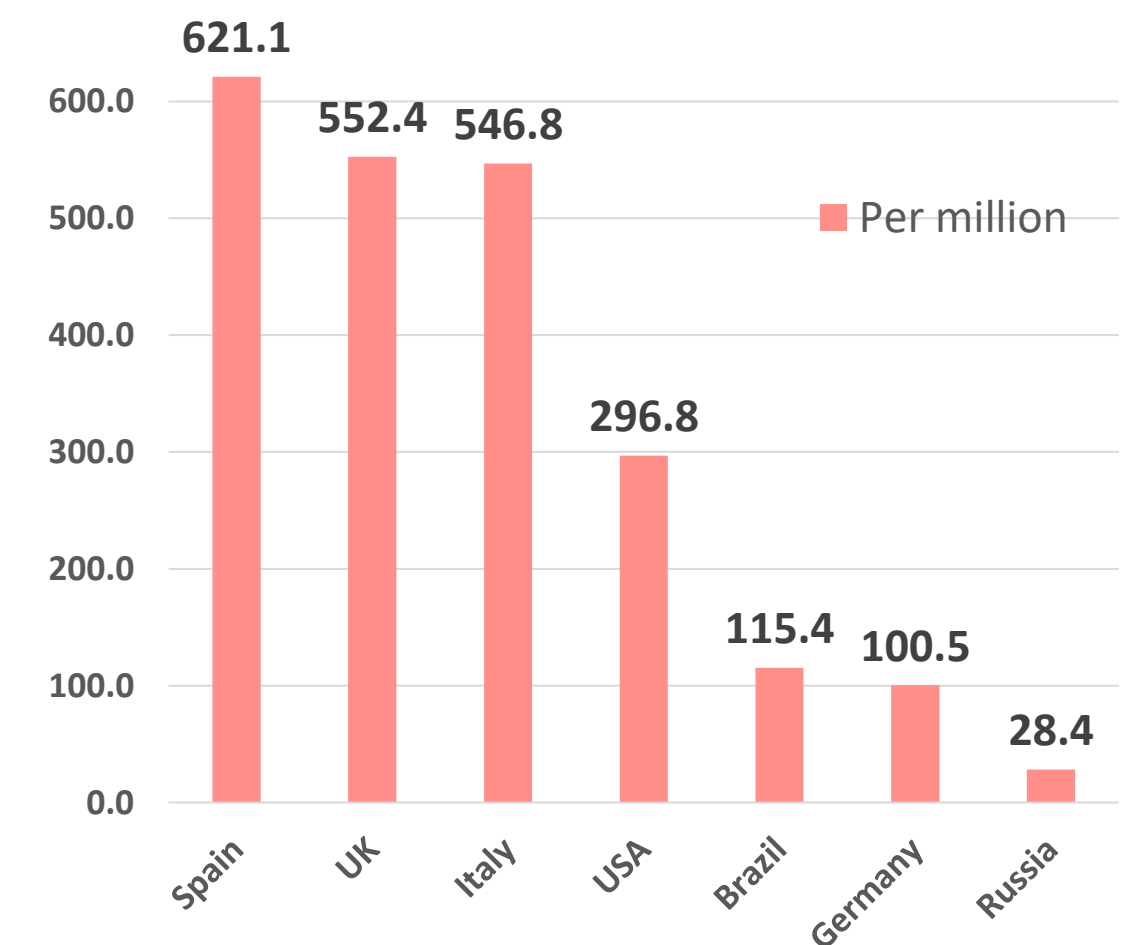
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to May 28, 2020).



TOTAL DEATHS



DEATHS PER MILLION

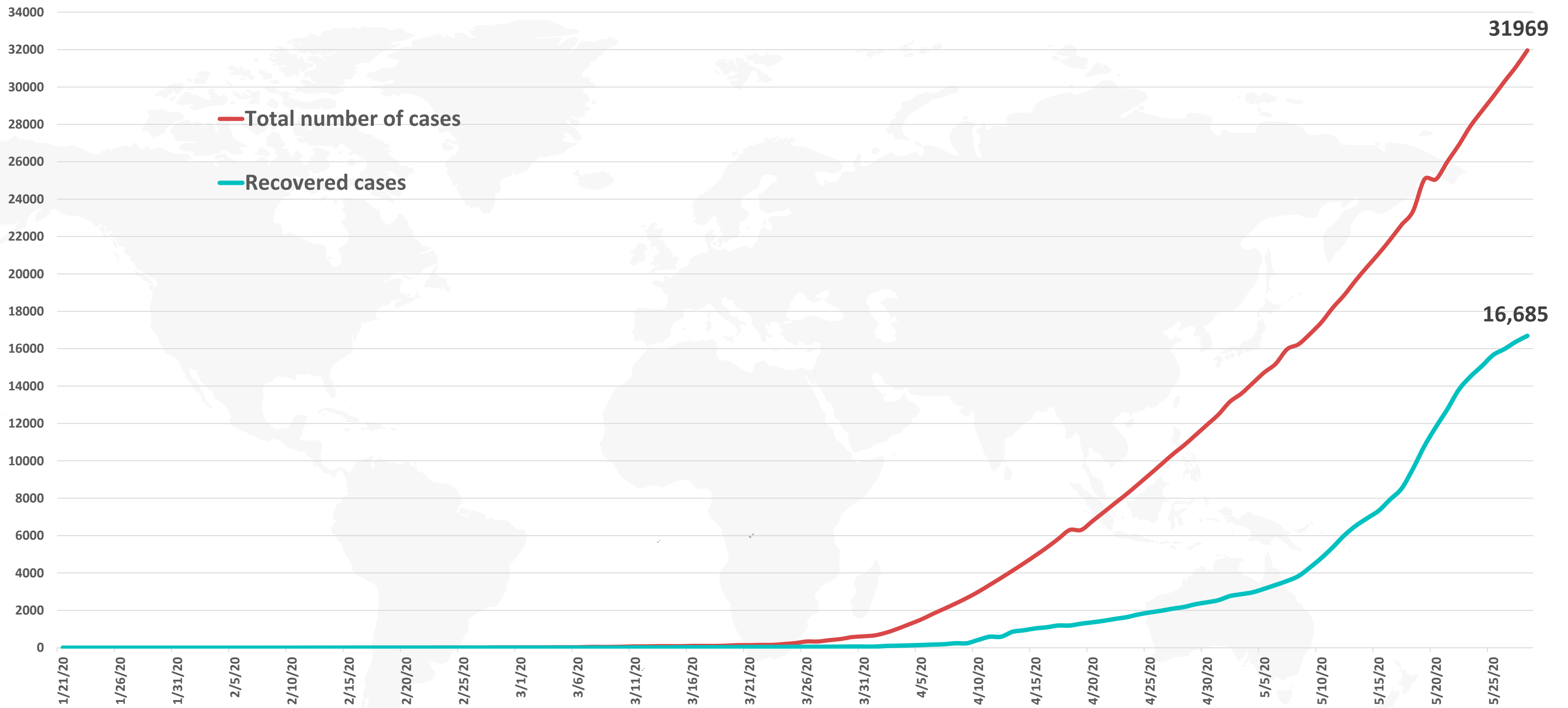


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



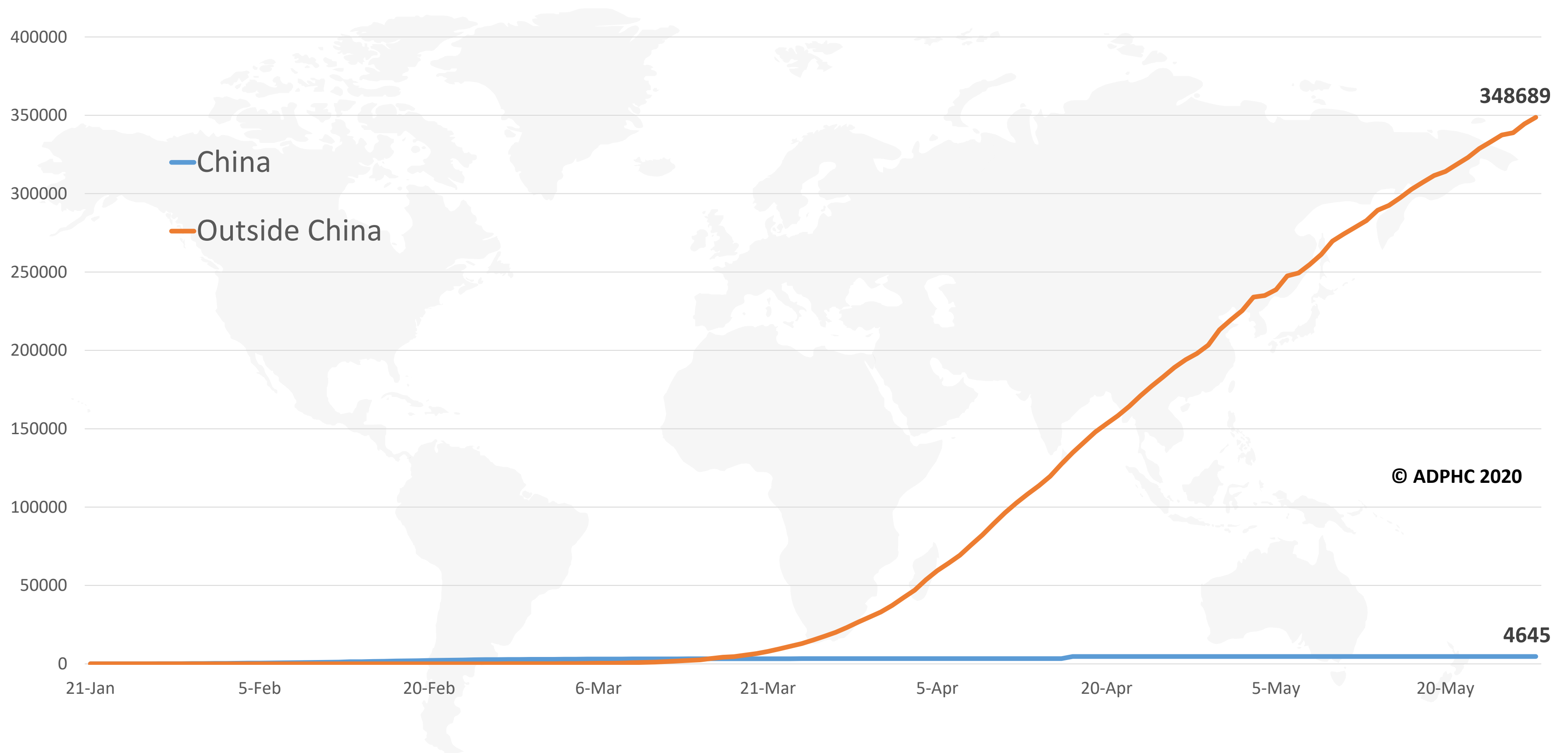
Line graph published by Abu Dhabi Public Health Center 2020.

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 28, 2020).



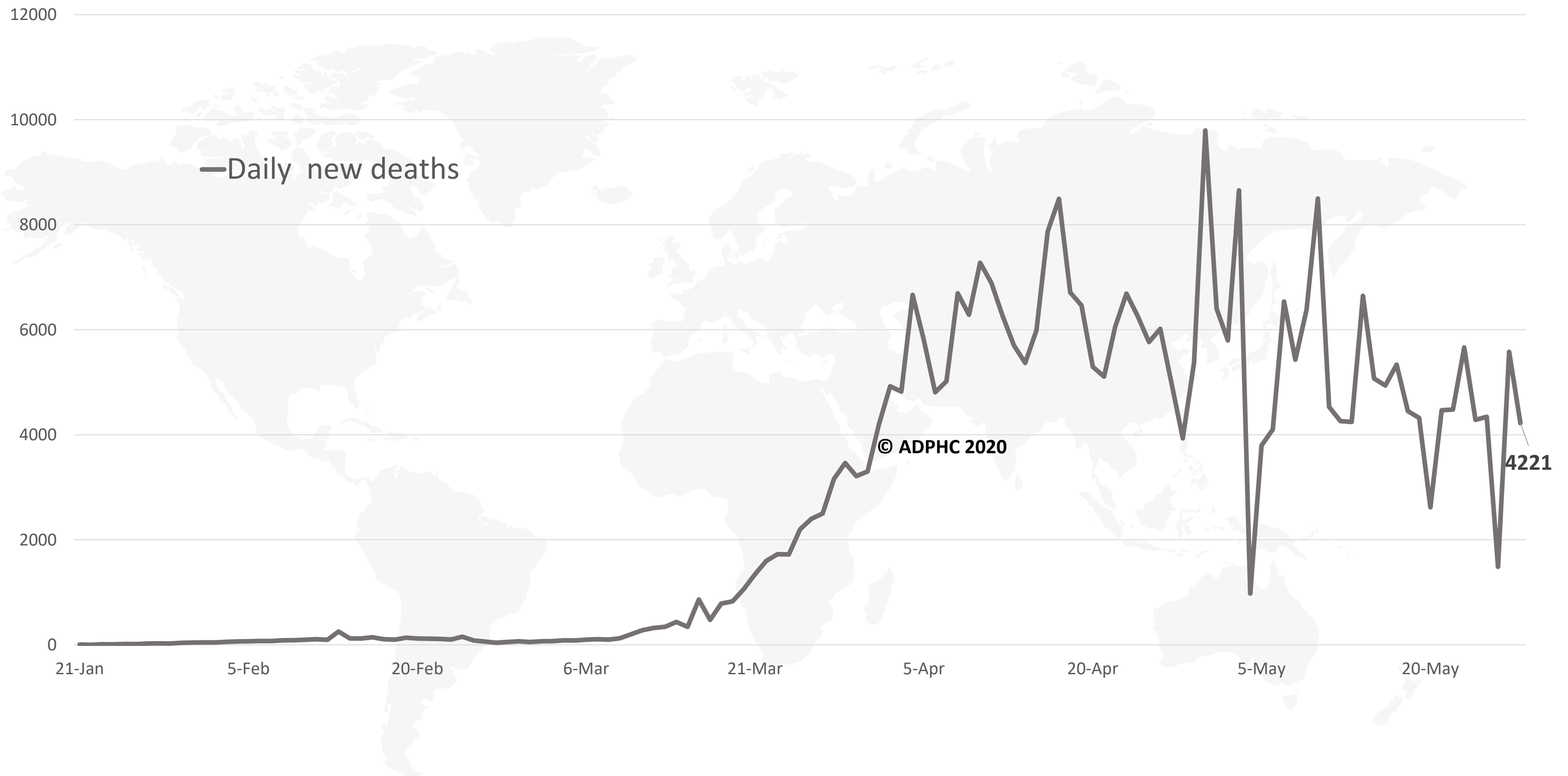
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Data resources: [WHO](https://www.who.int/)



Figure 6: Global daily new deaths due to COVID-19 (January 22 to May 28, 2020).



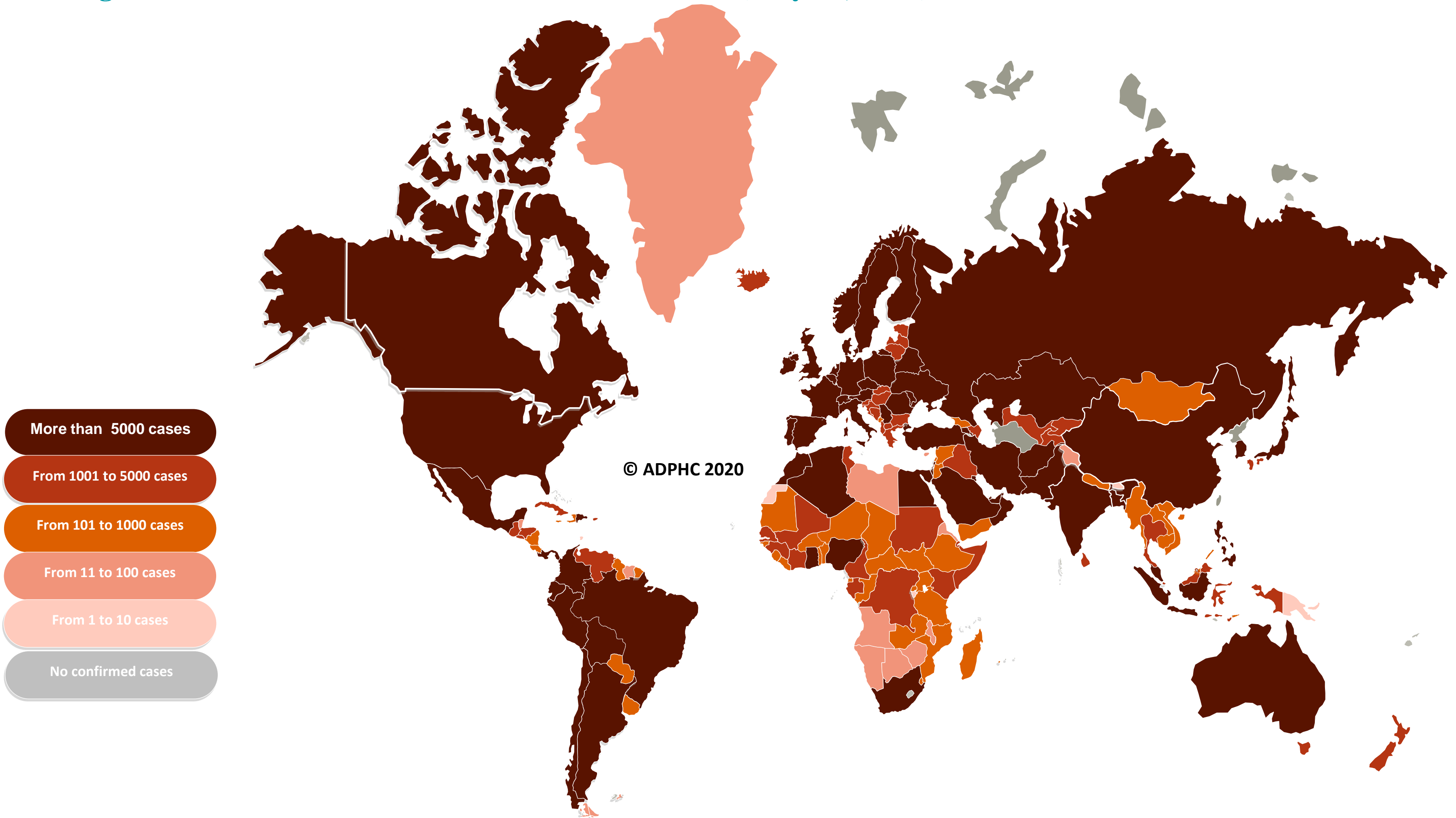
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Data resources: [WHO](https://www.who.int/)

Epidemiology



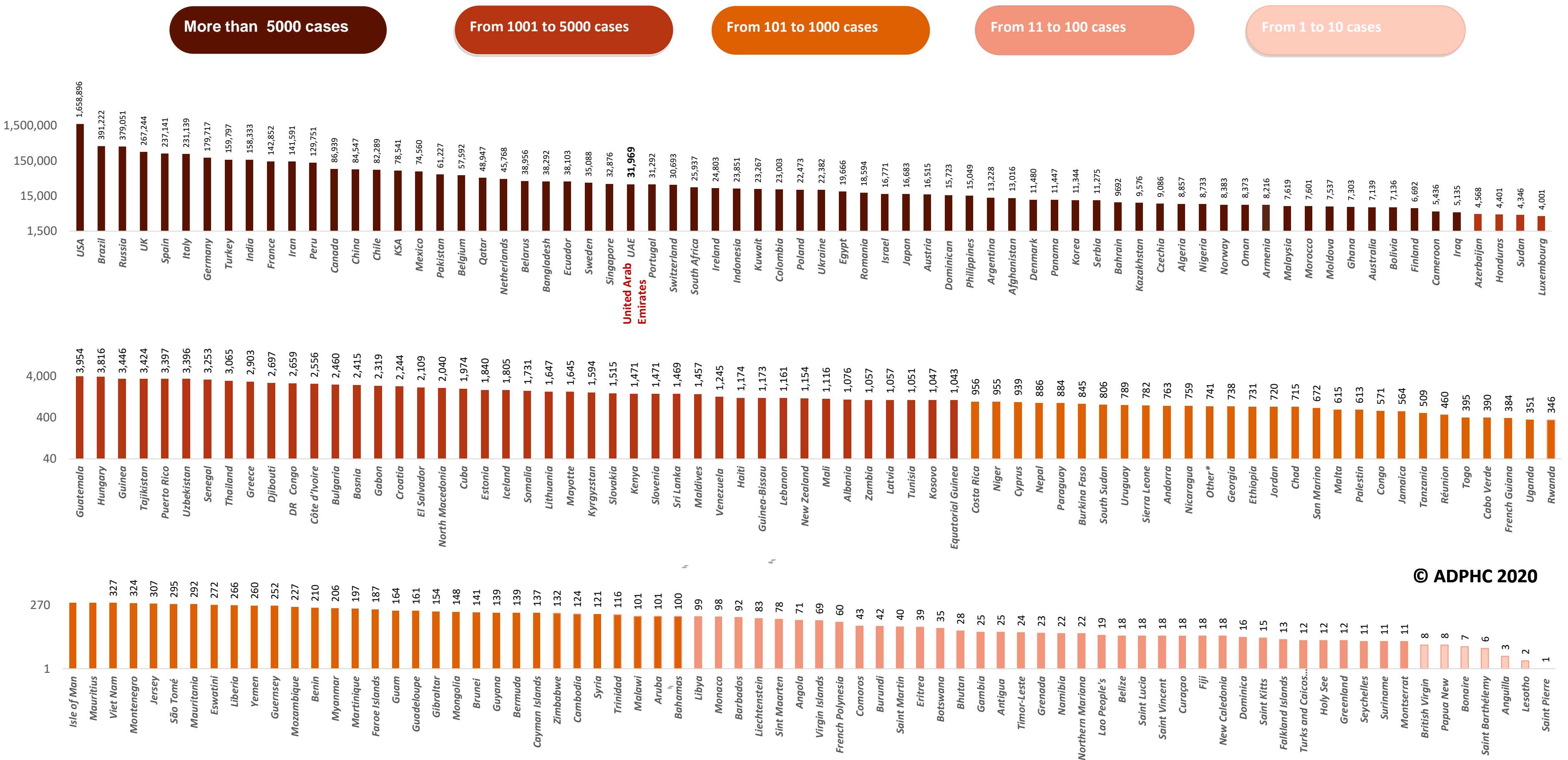
Figure 7a : Global distribution of COVID-19 cases (May 26, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases May 28, 2020)



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Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

Map chart published by Abu Dhabi Public Health Center 2020.

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

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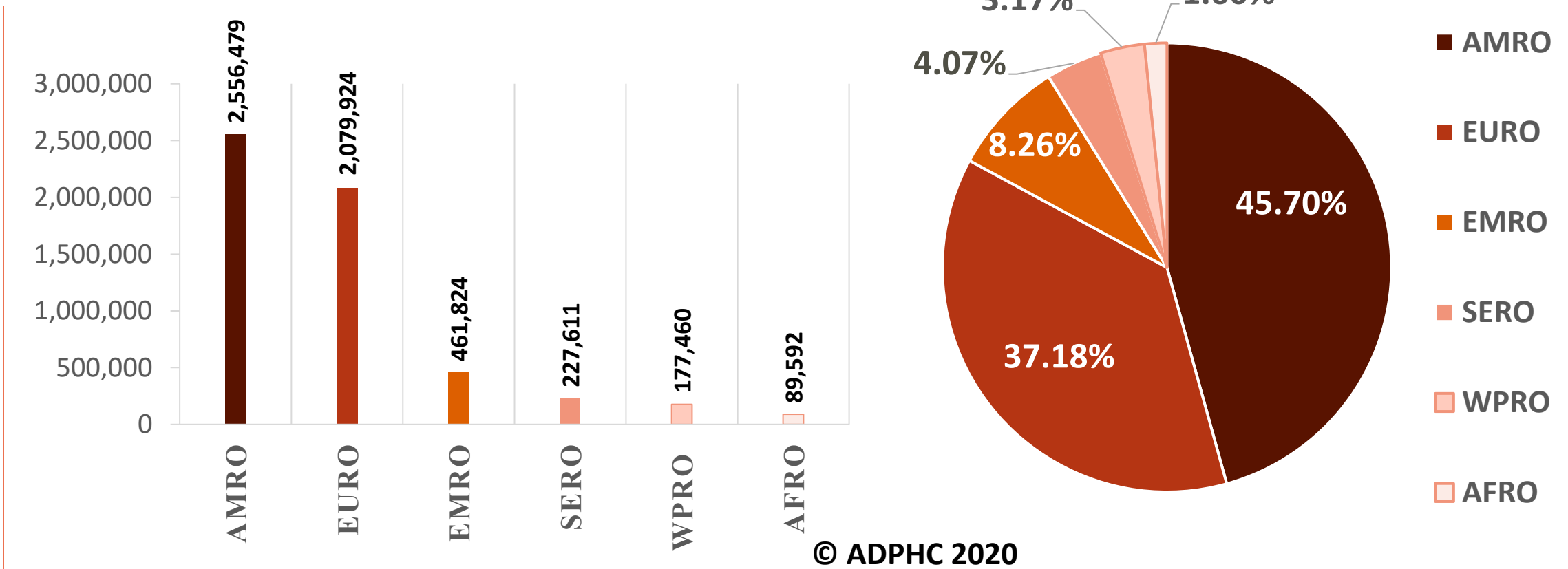
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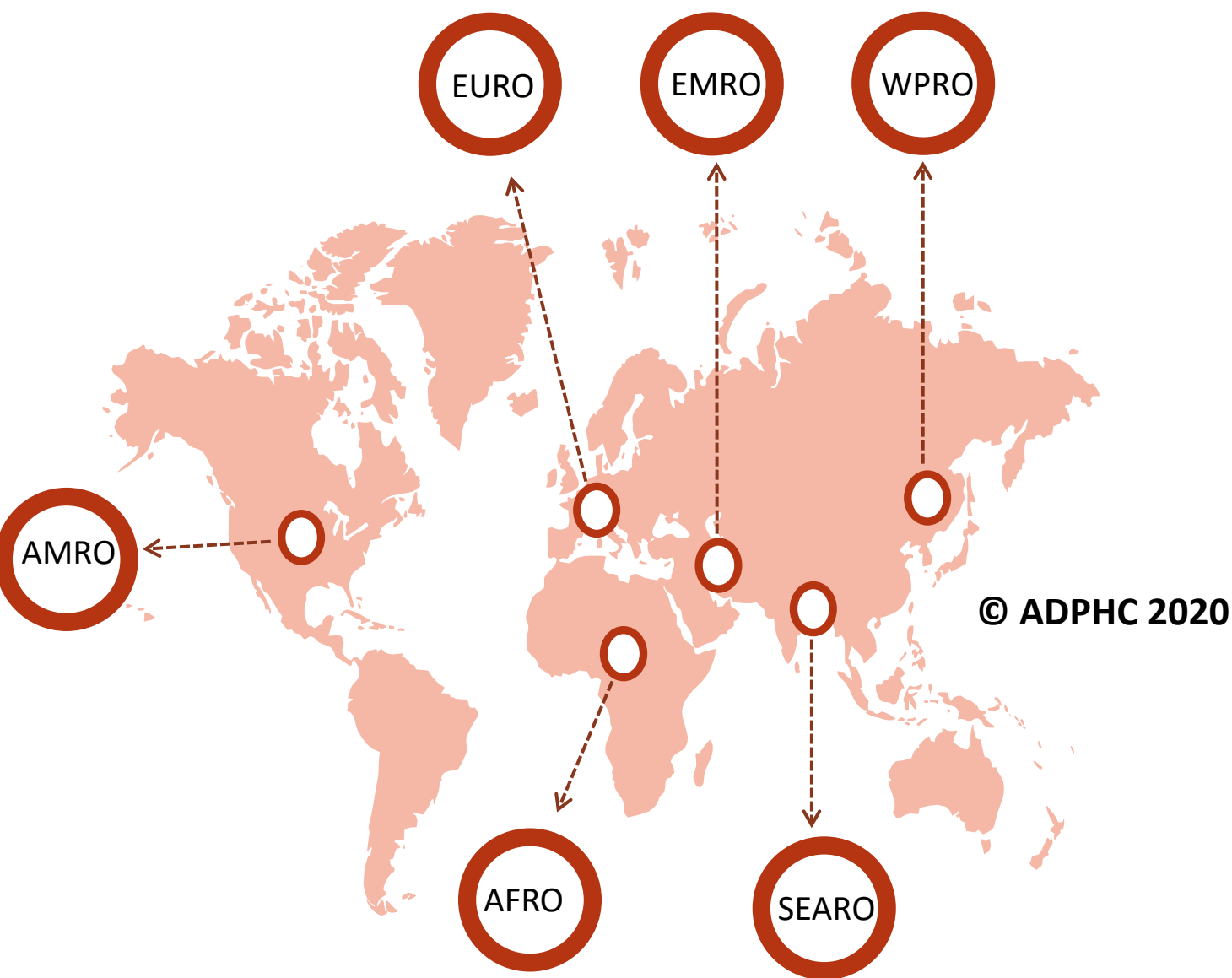
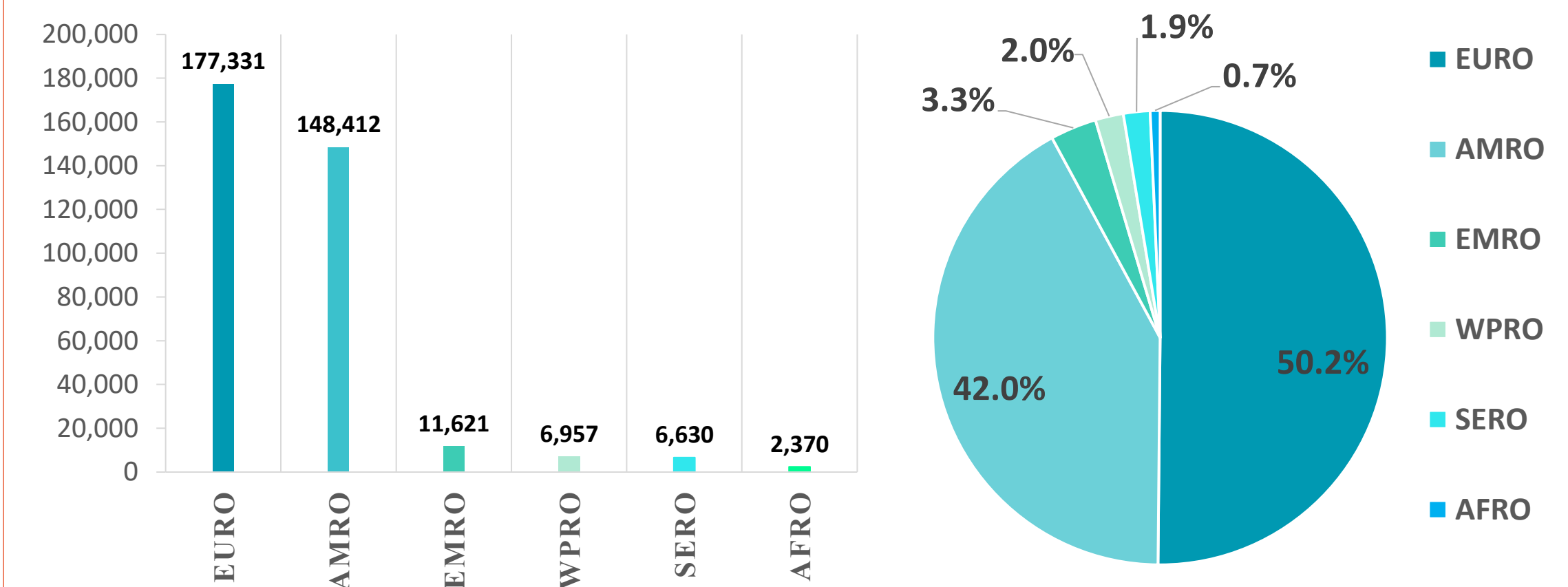


Figure 8: illustrate the Global distribution of COVID19 cases per region (May 28, 2020)

INFECTED



DEATH



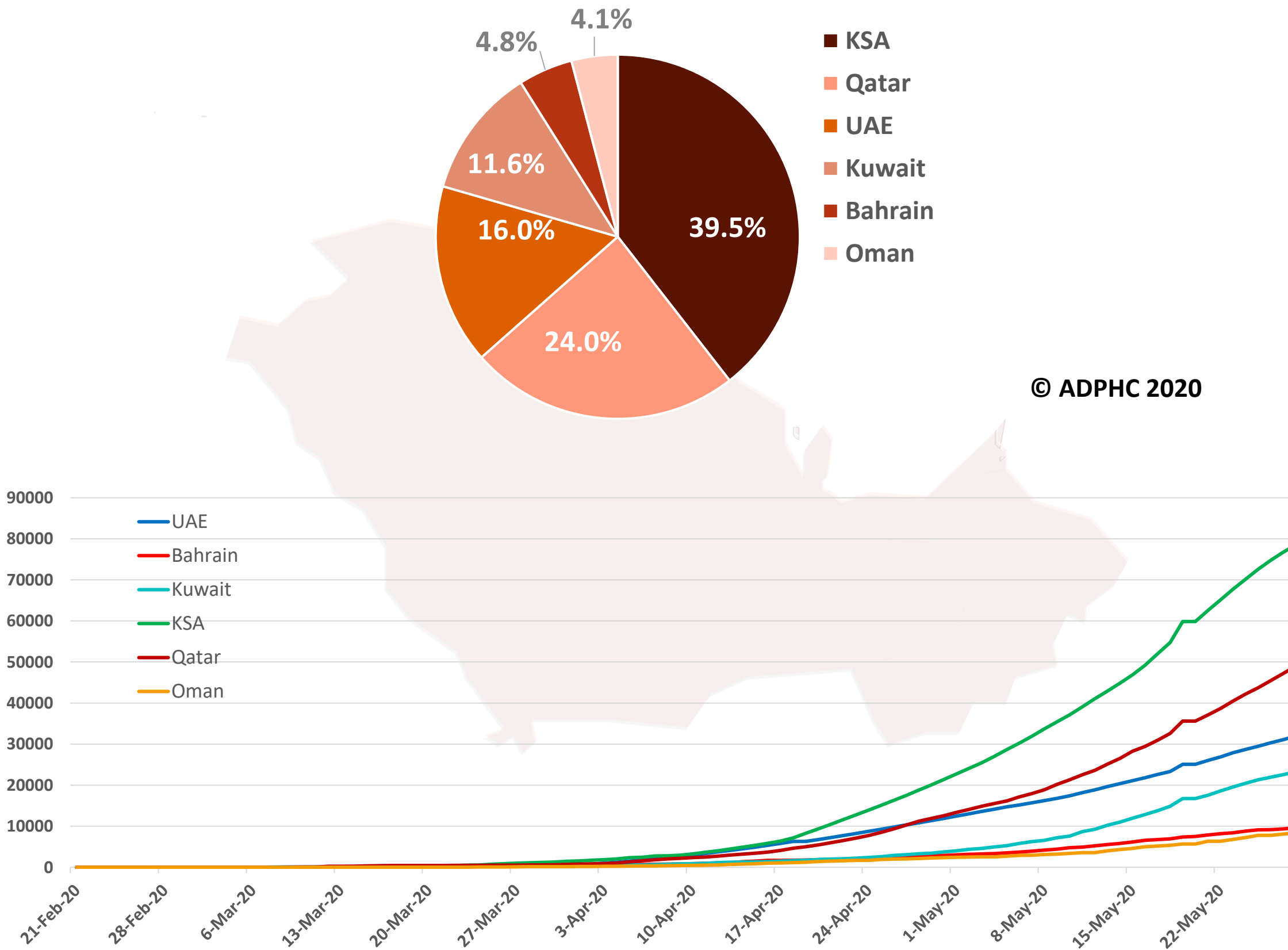
Map chart published by Abu Dhabi Public Health Center 2020.

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

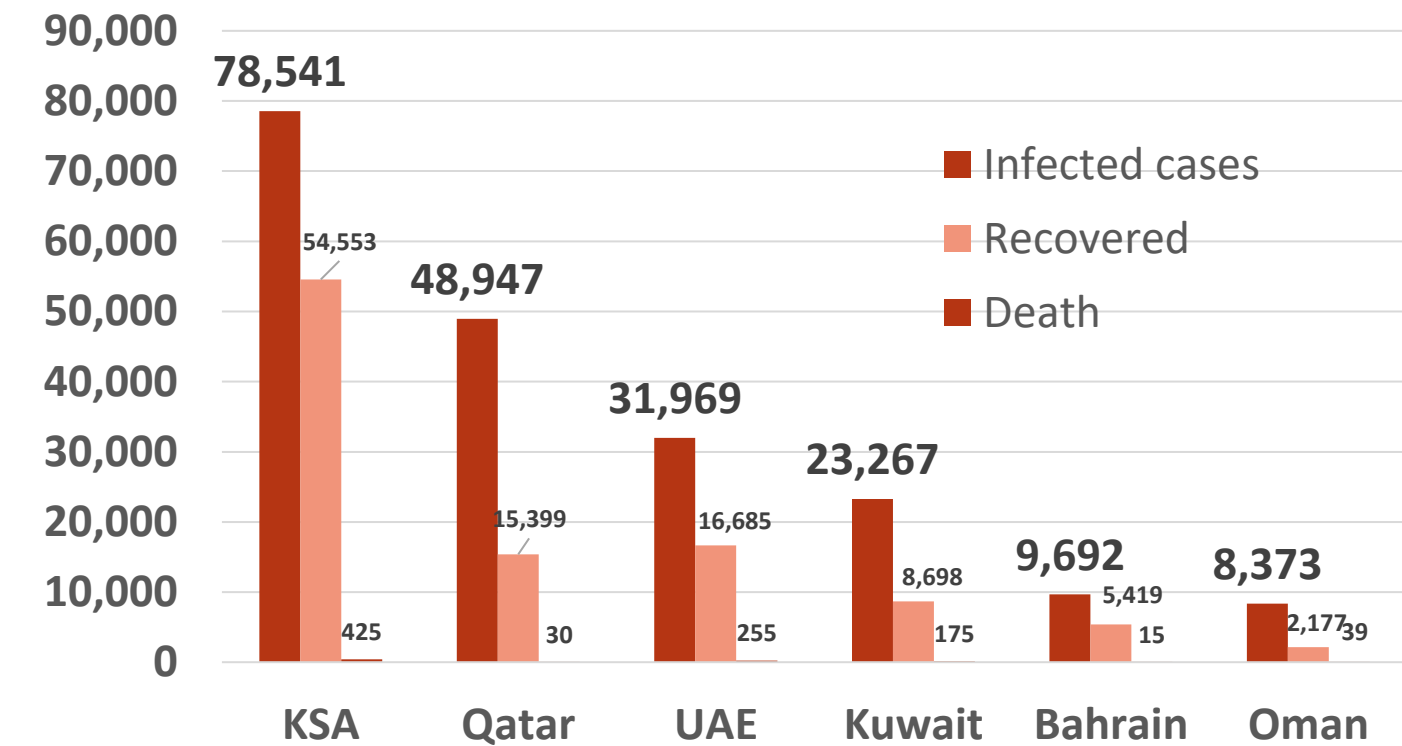


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (May 28, 2020)

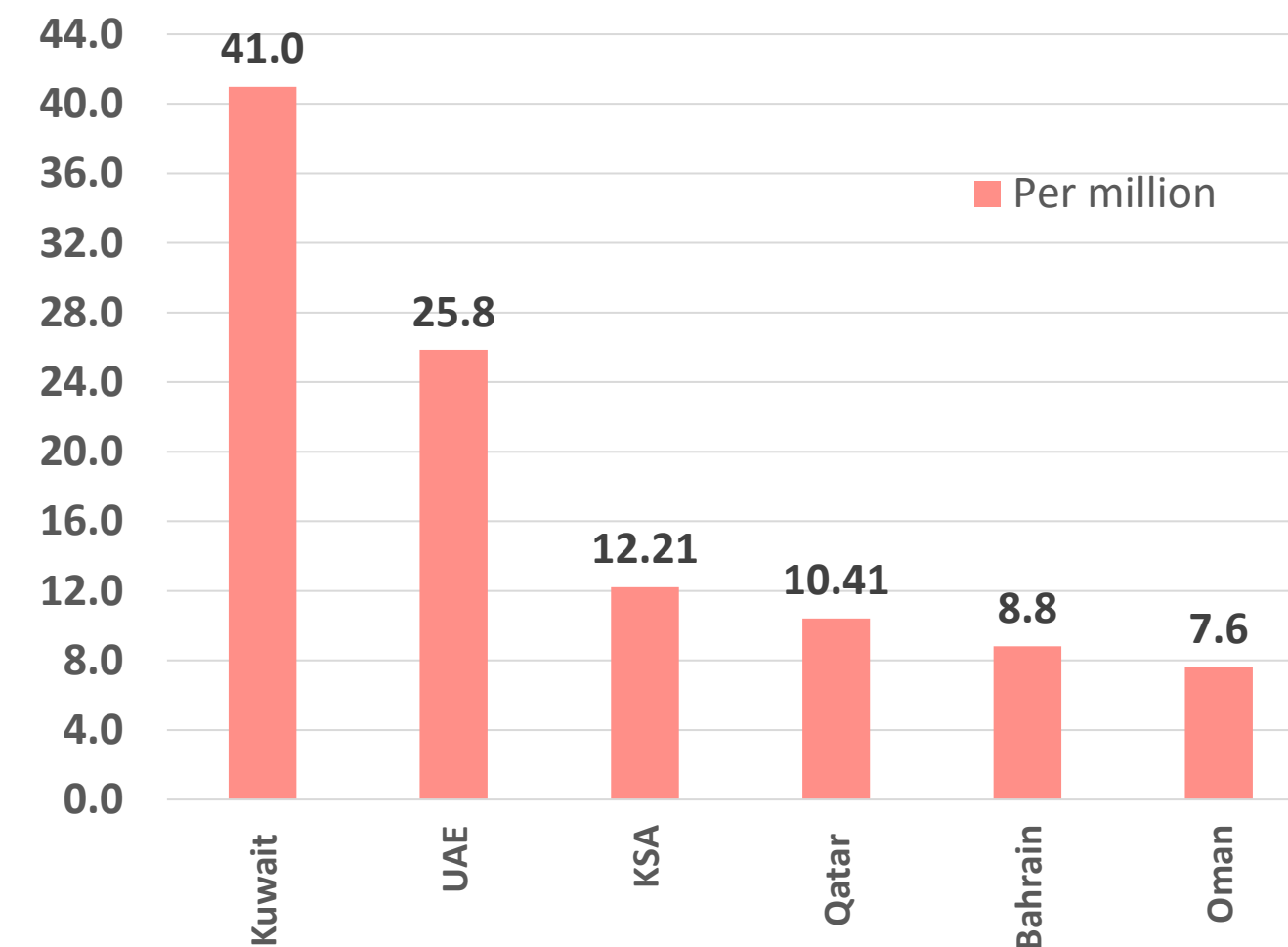
TOTAL NUMBER OF INFECTED CASES



Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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Article 1: Clinical Characteristics of 225 Patients With COVID-19 in a Tertiary Hospital Near Wuhan, China

Published: April 5, 2020 in [ELSEVIER](#)

Summary :

- This study determined clinical features of patients with COVID-19 in a tertiary hospital near Wuhan. Overall, 225 COVID-19 patients (120 male and 105 females) were recruited in the study. General information, clinical manifestations, laboratory data, and computed tomography (CT) data were collected between January 20 and February 14, 2020. The results of the study indicated some of the major clinical symptoms including dyspnea (4.00% of patients), cough (56.44% of patients), and fever (84.44% of patients). Whereas, 3.56%-22.67% of subjects suffered from expectoration, fatigue, chills, headache, chest pain, and pharyngalgia. Hypertension was present in 20.89% of patients.
- The counts of white blood cells (WBCs) and lymphocytes were normal or decreased in 86.67% and 99.11% of patients. CRP was increased in 86.22% of patients, PCT in 10.67%, and ESR in 90.22%. CT showed that 86.22% of patients had multiple patchy glassy shadows in both lungs, particularly in the peripheral area. Thirty-seven (16.44%) patients were diagnosed with severe COVID-19. Methylprednisolone was administered in 44.44% of the cases. The mortality among the patients was 0.89%. This study confirmed that hypertension was a high-risk factor of the disease.

Treatment



Article 2 : Management of COVID-19: The Zhejiang Experience

Published: May 25 2020, [Zhejiang University Press](#)

Summary:

- The team in the primary medical care centre for COVID-19 in Zhejiang province summarized and established an effective treatment strategy namely "**Four-Anti and Two-Balance**" strategy for clinical practice. This strategy included **antivirus, anti-shock, anti-hypoxemia, anti-secondary infection**, and maintaining of water, electrolyte and acid base balance and micro-ecological balance. While, to improve therapeutic effect, an integrated multidisciplinary personalized treatment was recommended. The study also **isolated alive viral strains from faeces, indicating potential infectiousness of the faeces. The strategy helped in effectively increasing cure rate and reduced mortality.** Patients with oxygenation index below 200 mmHg were instructed to be transferred to intensive medical centre.
- Conservative oxygen therapy was preferred and non-invasive ventilation was not recommended. Patients with mechanical ventilation should be strictly supervised with cluster ventilator-associated pneumonia prevention strategies. Antimicrobial prophylaxis was not recommended except for patients with long course of disease, repeated fever and elevated procalcitonin (PCT). As COVID-19 is a newly emerging disease, more work is warranted in future to improve strategies of prevention, diagnosis and treatment for COVID-19.

Public Health response



Article 3: Dynamic Inflammatory Response in a Critically Ill COVID-19 Patient Treated with Corticosteroids

Published: May 25, 2020 in the

Summary:

This case report investigated the effect of corticosteroids therapy on the inflammatory response in a 55-year old female critically ill COVID-19 patient in Taizhou Hospital on January 19, 2020. The patient was treated with methylprednisolone 80 mg on the second day after admission in the hospital. After adjusting the dose in a timely manner, this therapy lasted for 13 days. The peripheral lymphocyte subsets (CD3+T, CD4+ T, CD8+ T, NK cells, B cells), as well as serum levels of lymphocyte factors (IL-2, IL-4, IL-6, IL-10, TNF- α , IFN- γ) were being monitored dynamically. The findings suggest that during the absence of effective antiviral drugs, early utilization of appropriate doses of corticosteroids in COVID-19 critically ill patient can rapidly alleviate inflammatory response and improve clinical symptoms, however, it may reduce the number of T cells, and therefore, dose adjustment is important.

Article 4: Safe Handling of Bodies of Deceased Persons with Suspected or Confirmed COVID-19

Link : http://www.bccdc.ca/Health-Professionals-Site/Documents/COVID19_SafeHandlingBodies.pdf

Summary:

This document provides provincial guidance to protect the safety of workers handling COVID-19 suspected or positive decedents, inform standardized operating procedures and address specific COVID-19 considerations with respect to the care of the COVID-19 patient's body after death.