



Scientific Research Monitoring on COVID-19

3 June 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

Today's Highlights



All articles presented in this report represent the authors' views and not necessarily represent Abu Dhabi Public Health Center views or directions.

Scientific Research

Ministry of Health and Prevention Contribution:

- **Mental Health:** a community study in India found that one third of respondents had significant psychological impact.
- **Clinical feature:** a multicentre study in China describe the clinical feature of severe cases of COVID19 found that they are more likely to be older, have more comorbidities, less likely to use ARB or ACE and have more lung involvements.
- **Public Health response:** article discuss the Italian experience in response to epidemic.
- **Treatment:** a study on chloroquine in Brazil showed the drug if used in high doses is not safe
- **Public health response:** summary of the newly published Mortality surveillance tool for COVID19 by the WHO.
- **Diagnosis:** article gave information on the current available testing for COVID19.
- **Pathogenesis :** an article gave information on the pathophysiology of COVID19.
- **Clinical Feature:** article on why older patients are much susceptible for severe SARS-COV2 infection.

WHO daily report



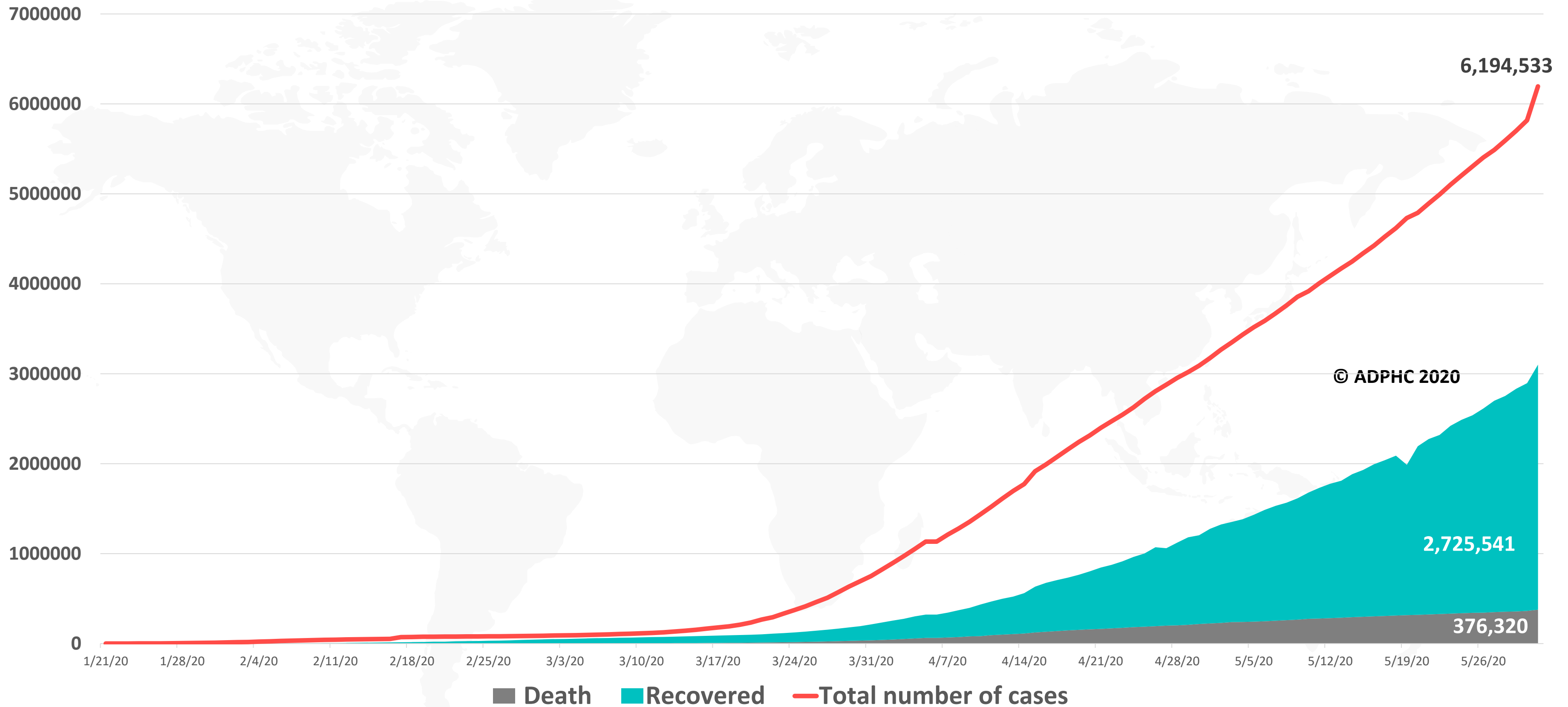
WHO Daily Report 2 June 2020

- During the 1 June media briefing, WHO Director-General Dr Tedros highlighted that the COVID-19 pandemic has led to disruptions in services for treatment of non-communicable diseases in many countries. The COVID-19 response must be inclusive of the healthcare needs of people living with these diseases.
- WHO has published a new operational guidance on maintaining essential health services, which provides recommendations for practical actions that countries can take at national, sub-regional and local levels to reorganize and safely maintain access to high-quality, essential health services during the pandemic.
- Transporting COVID-19 medical supplies to those in need requires timely decision-making and troubleshooting skills. The Regional Office for the Eastern Mediterranean document a week in the life of logistics expert coordinating massive shipments of medical supplies to Yemen.

Epidemiology



Figure 1: Total number of infected, recovered , and death cases (January 21st to June 2, 2020)

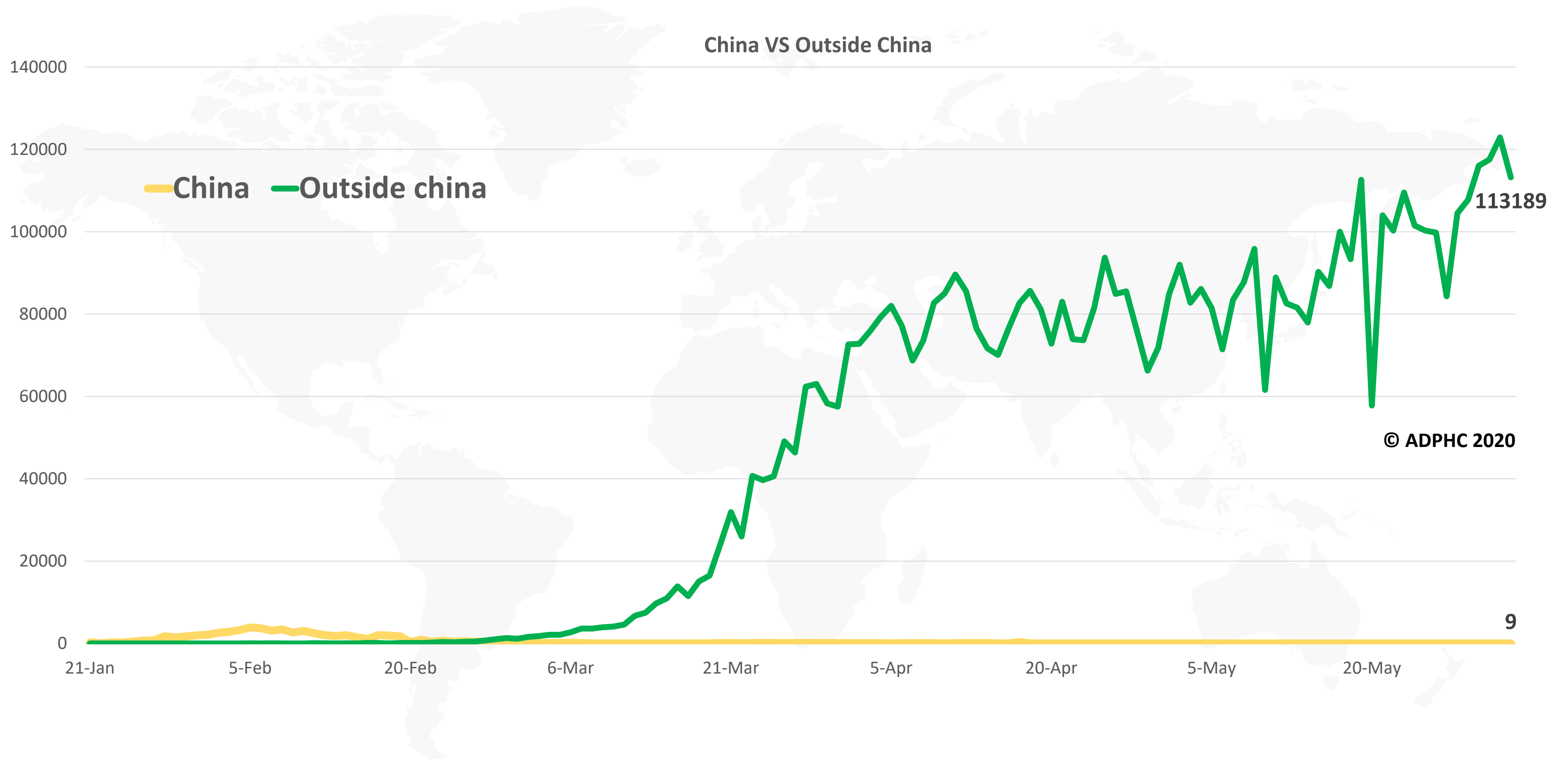


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



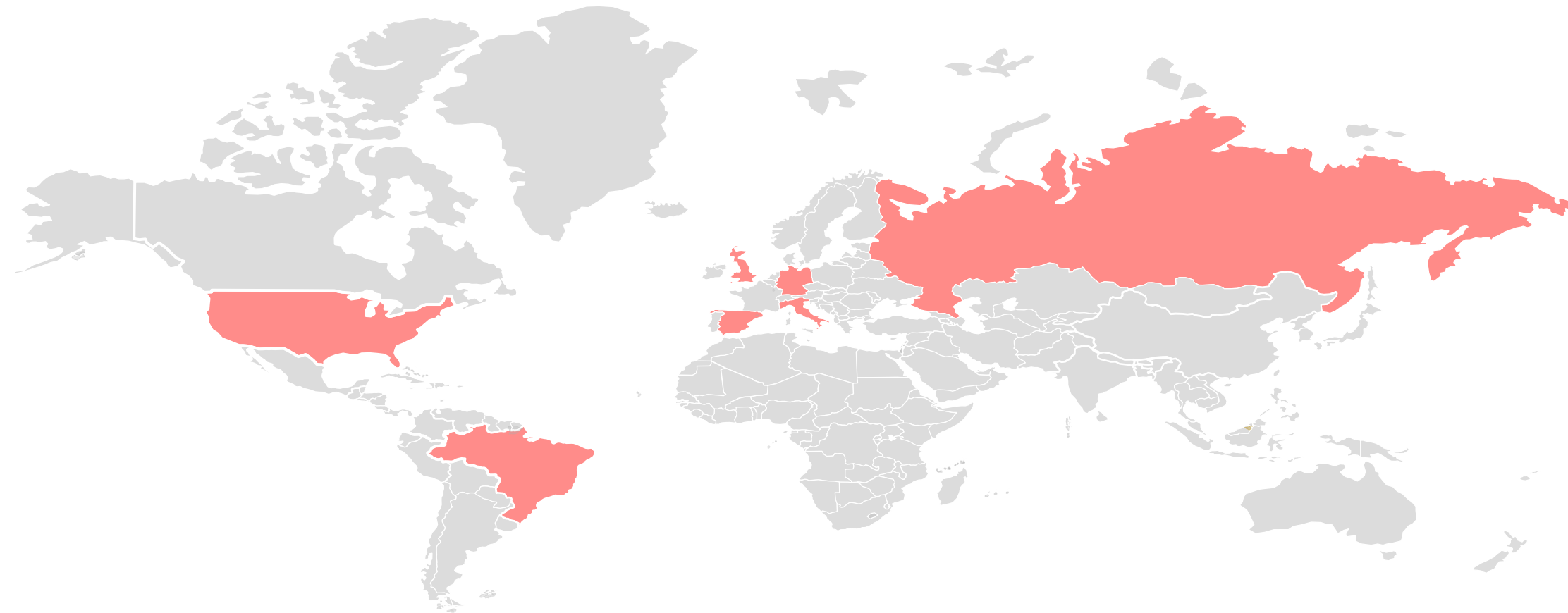
Line graph published by Abu Dhabi Public Health Center 2020.

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

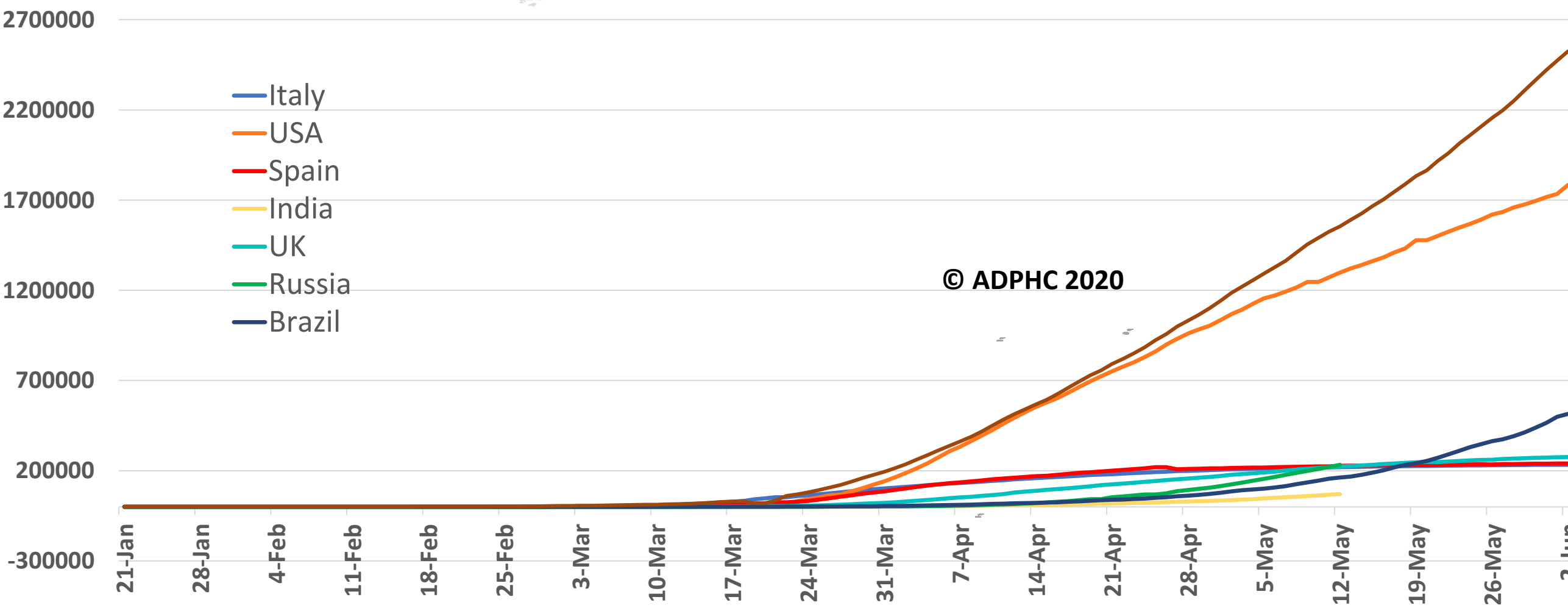
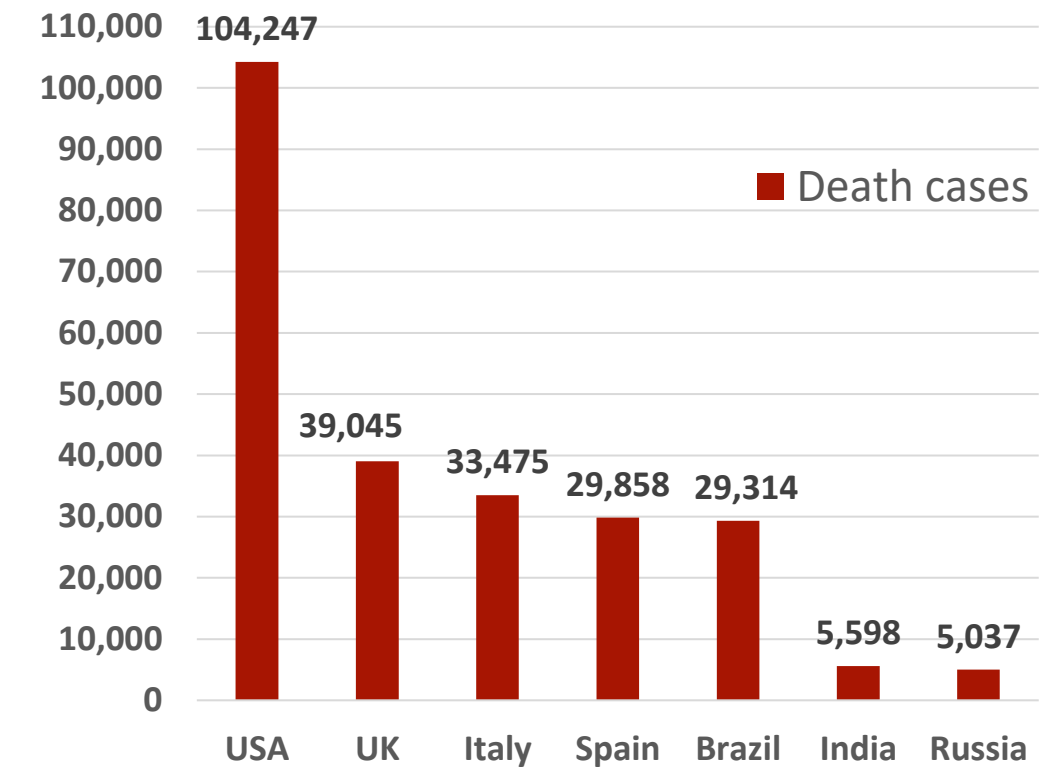
Epidemiology



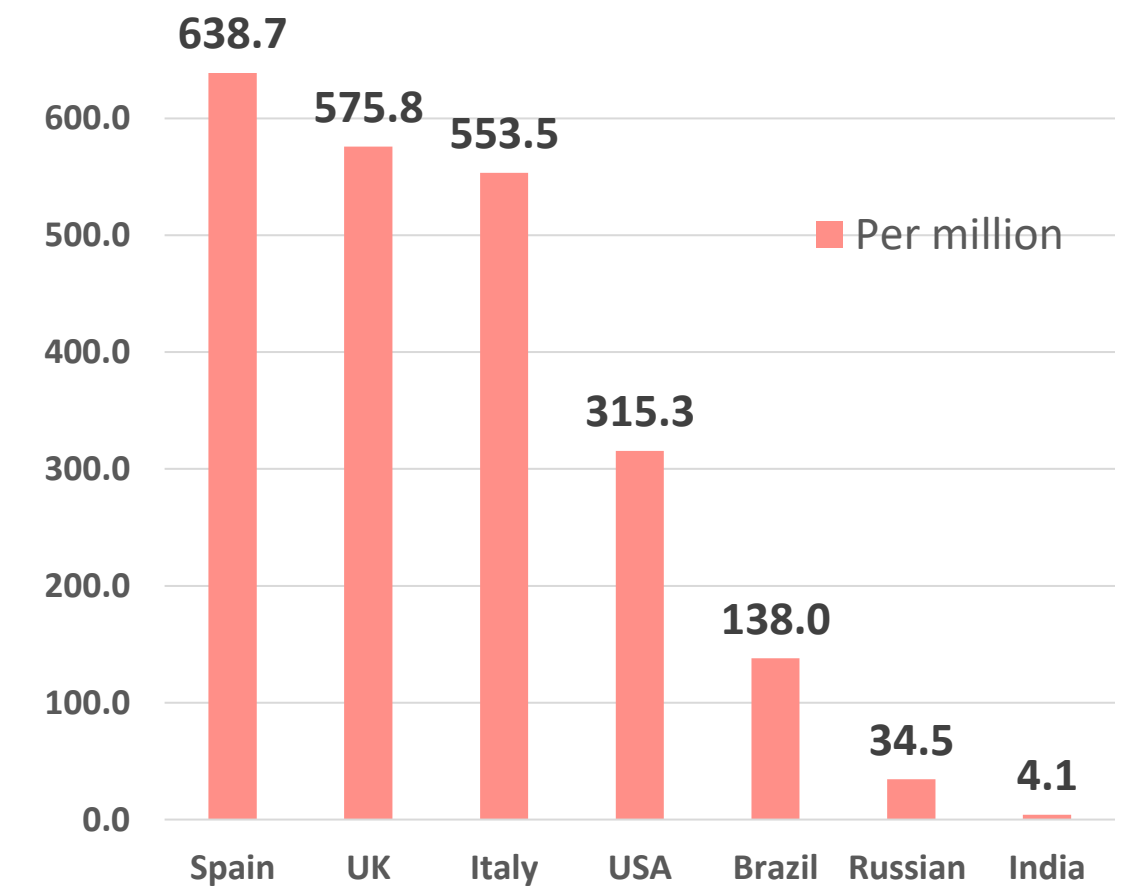
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to June 2, 2020).



TOTAL DEATHS



DEATHS PER MILLION



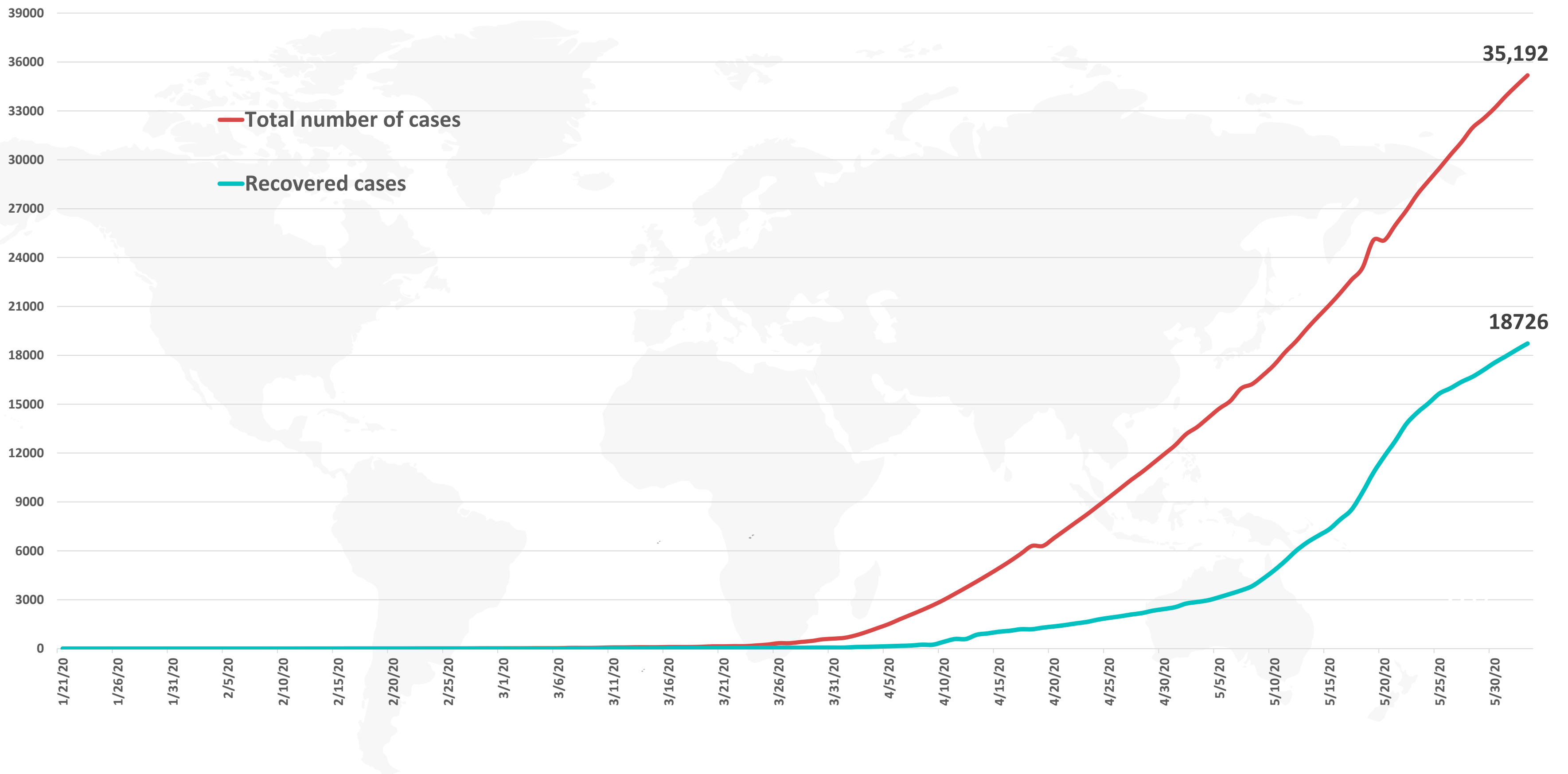
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



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



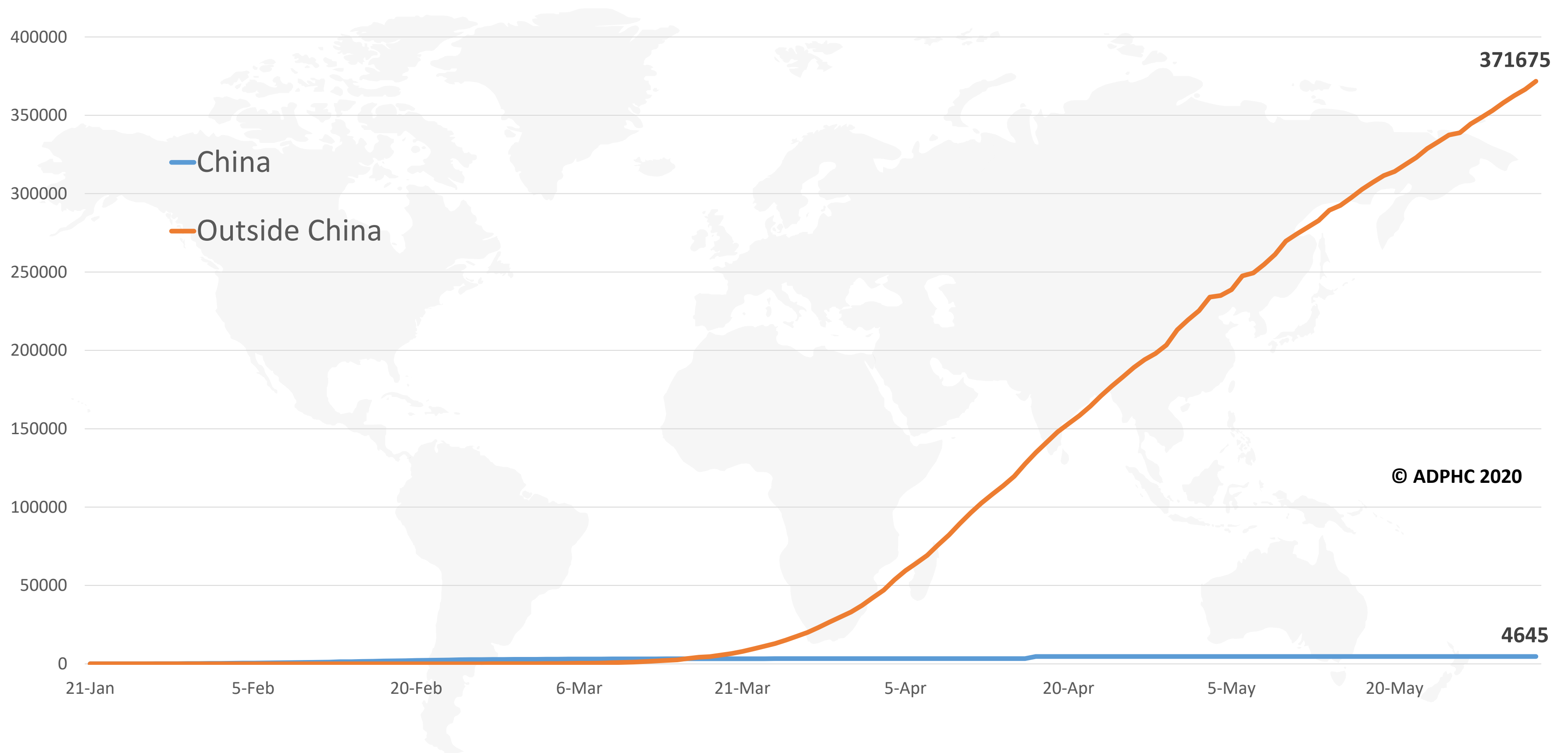
Line graph published by Abu Dhabi Public Health Center 2020.

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

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Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to June 2, 2020).



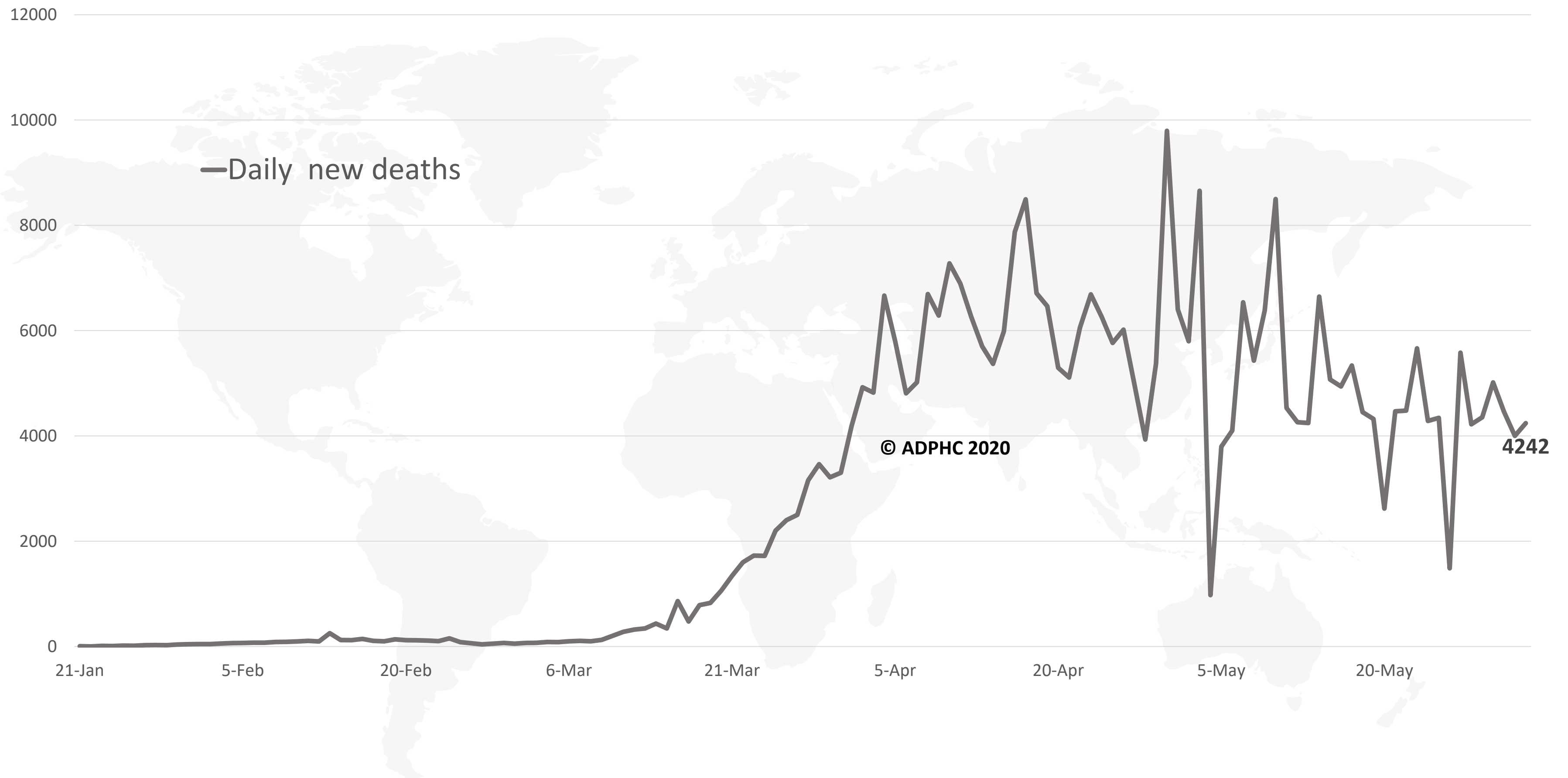
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Data resources: [WHO](https://www.who.int/)



Figure 6: Global daily new deaths due to COVID-19 (January 22 to June 1st, 2020).



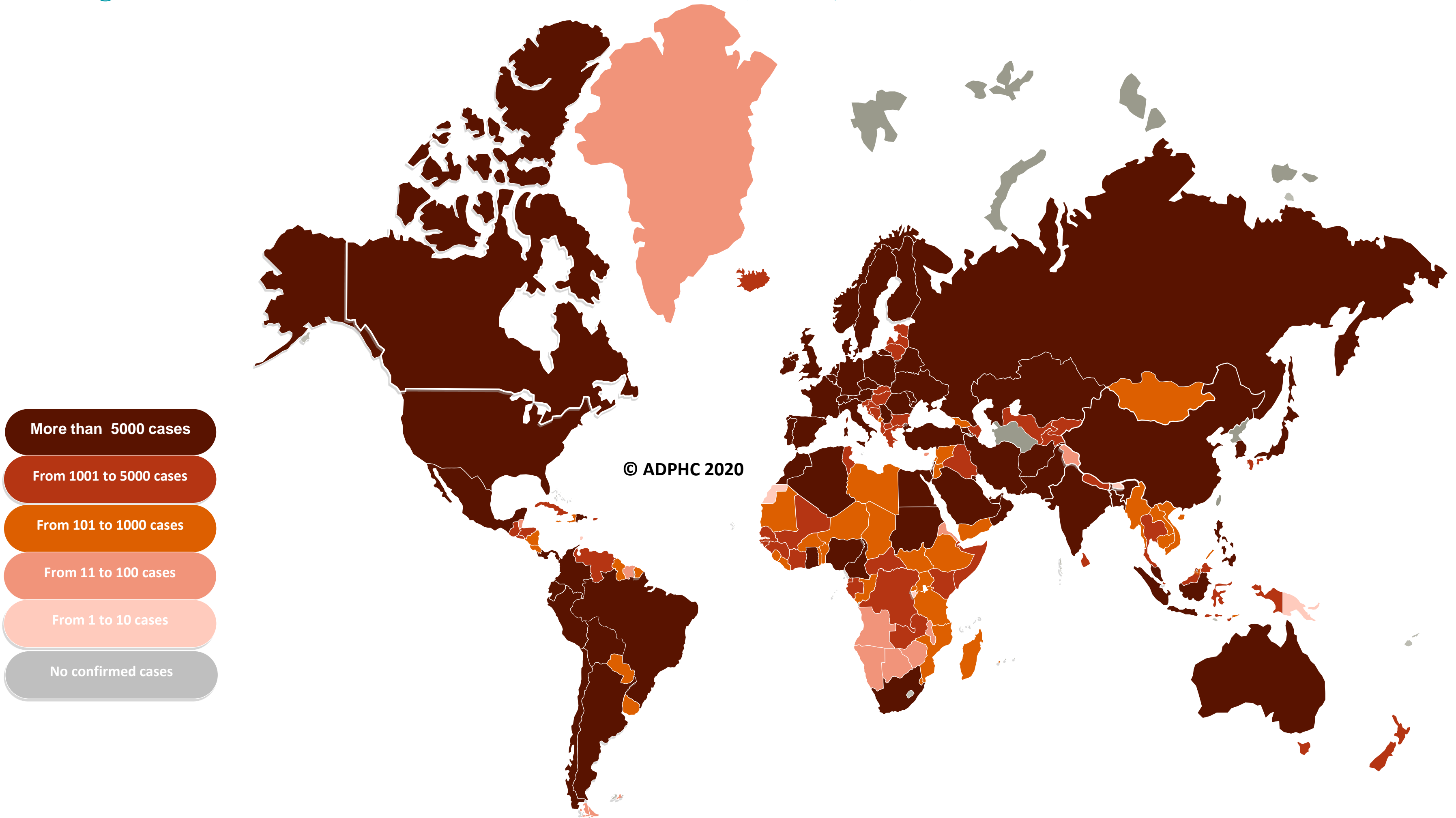
Line graph published by Abu Dhabi Public Health Center 2020.

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

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Figure 7a : Global distribution of COVID-19 cases (June 2, 2020).

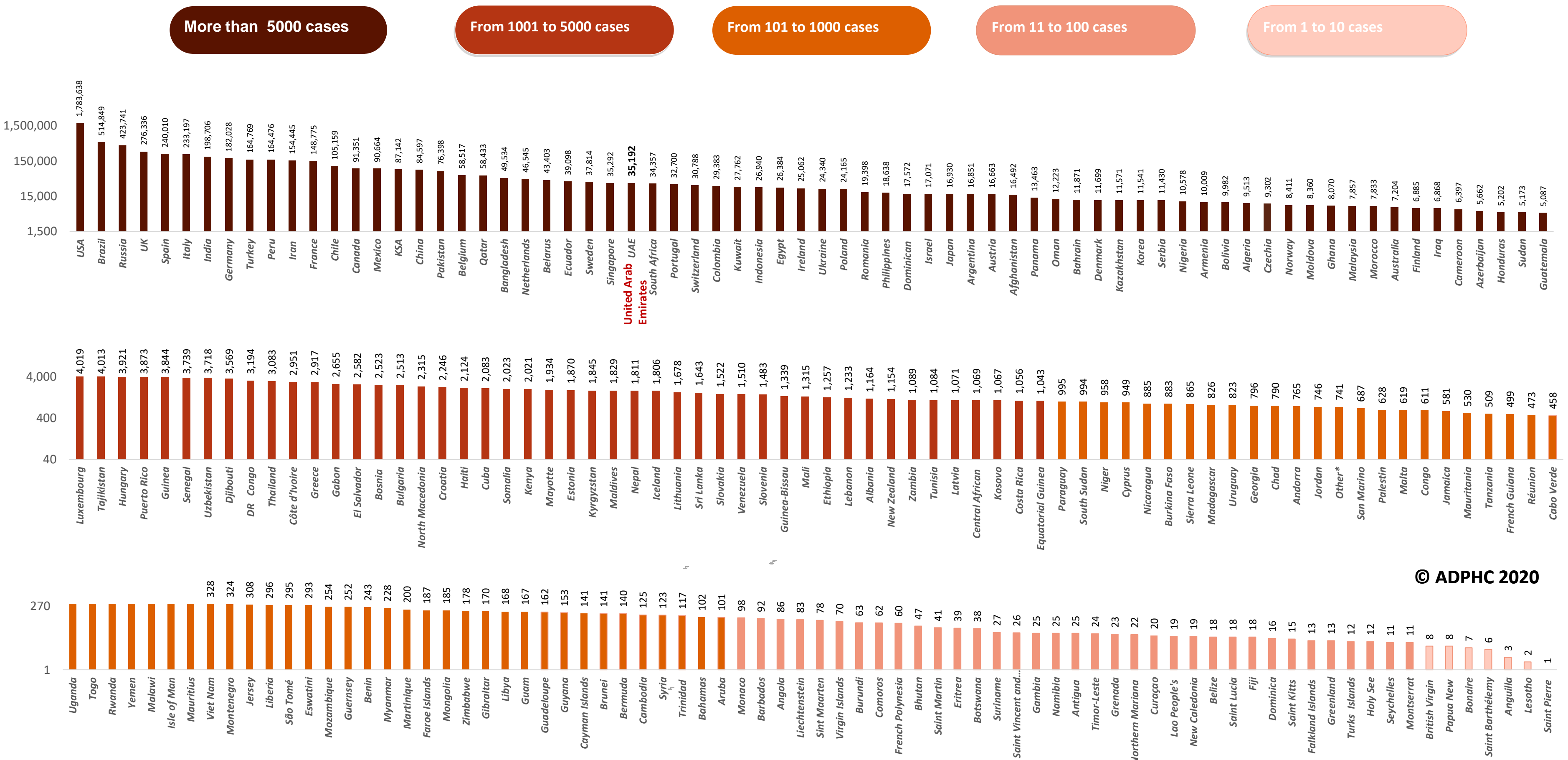


Map chart published by Abu Dhabi Public Health Center 2020.

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Figure 7B: Bar chart illustrate the global distribution of COVID19 cases June 2, 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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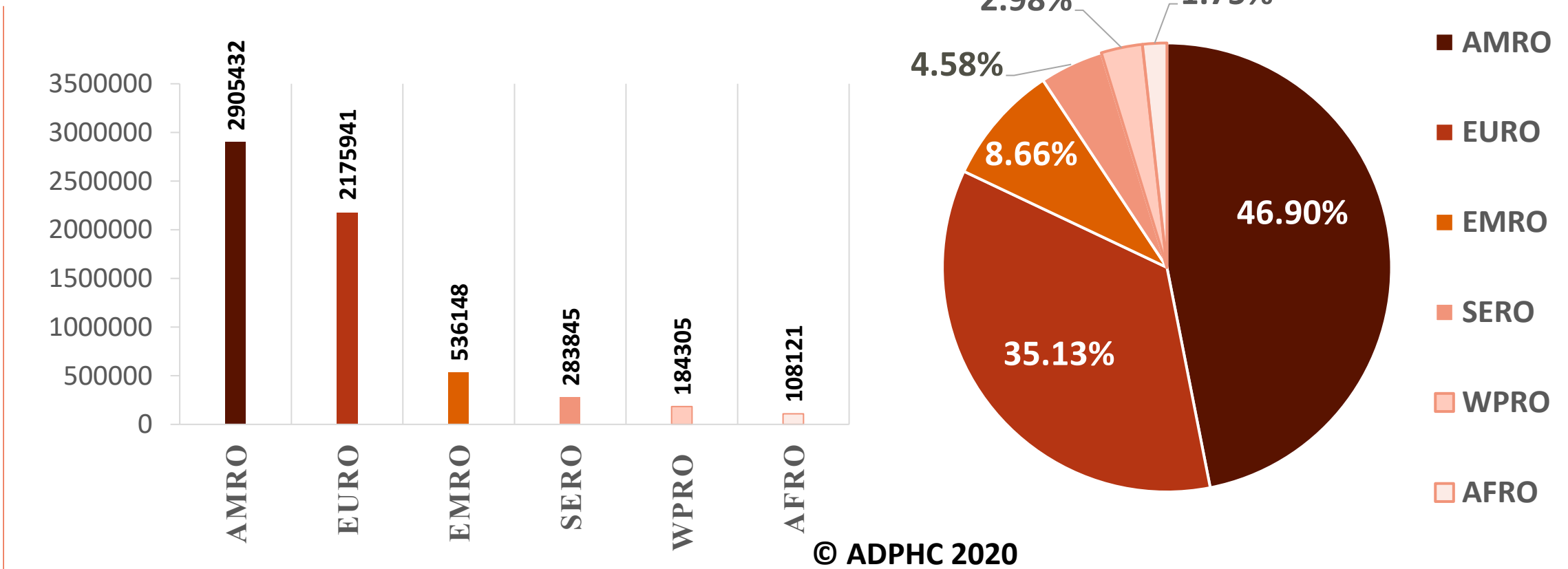
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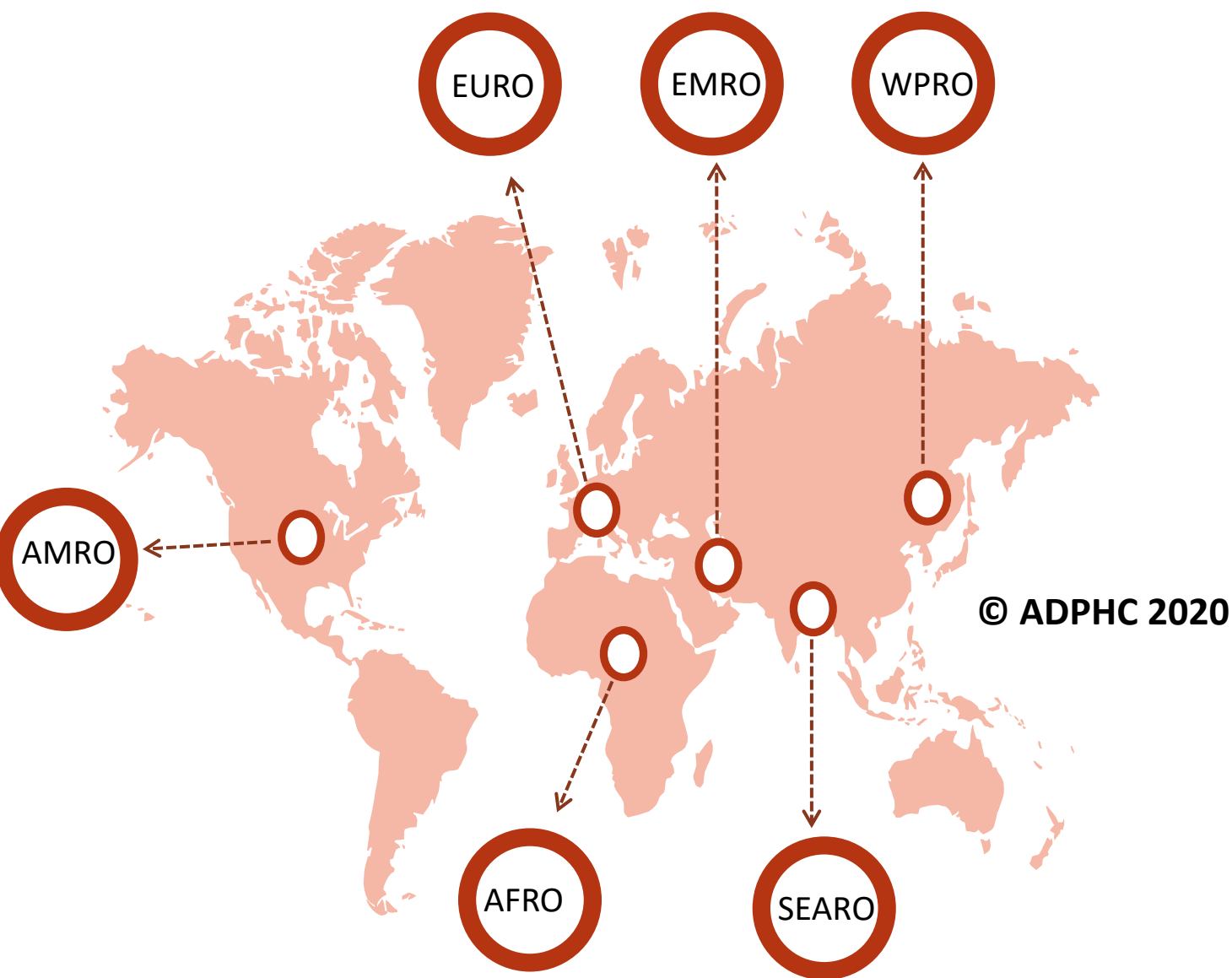
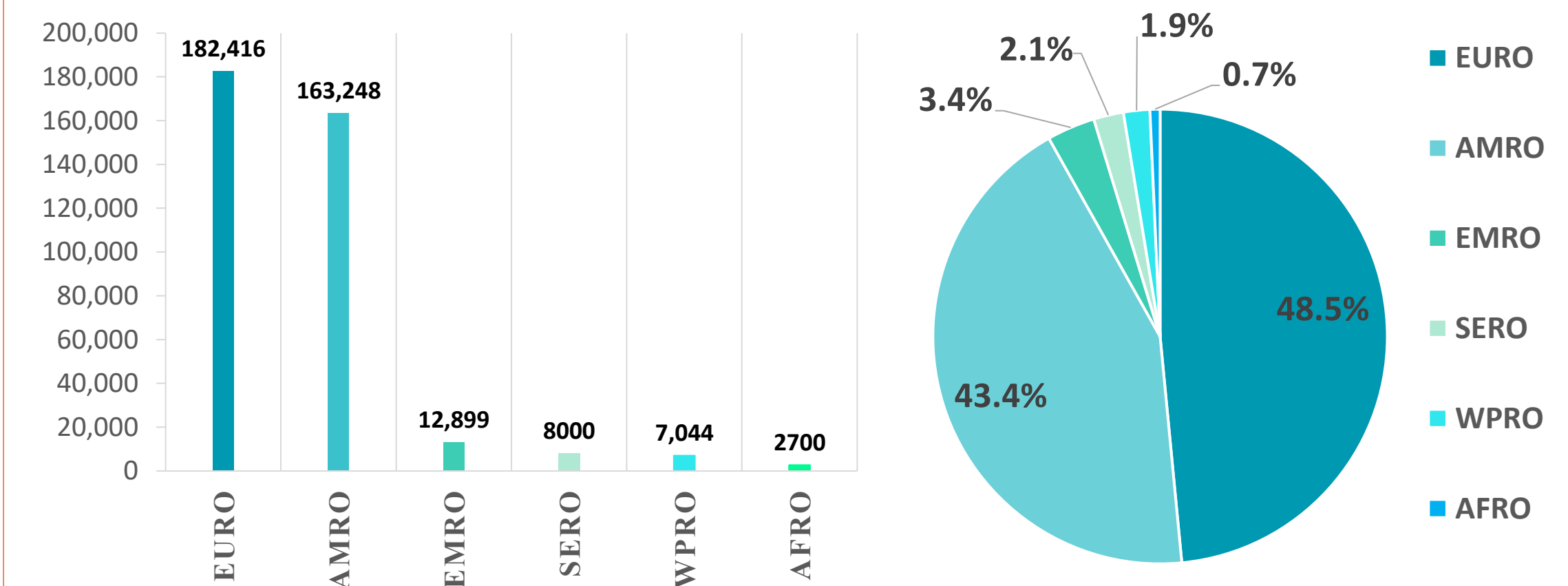


Figure 8: illustrate the Global distribution of COVID19 cases per region (June 2, 2020)

INFECTED



DEATH



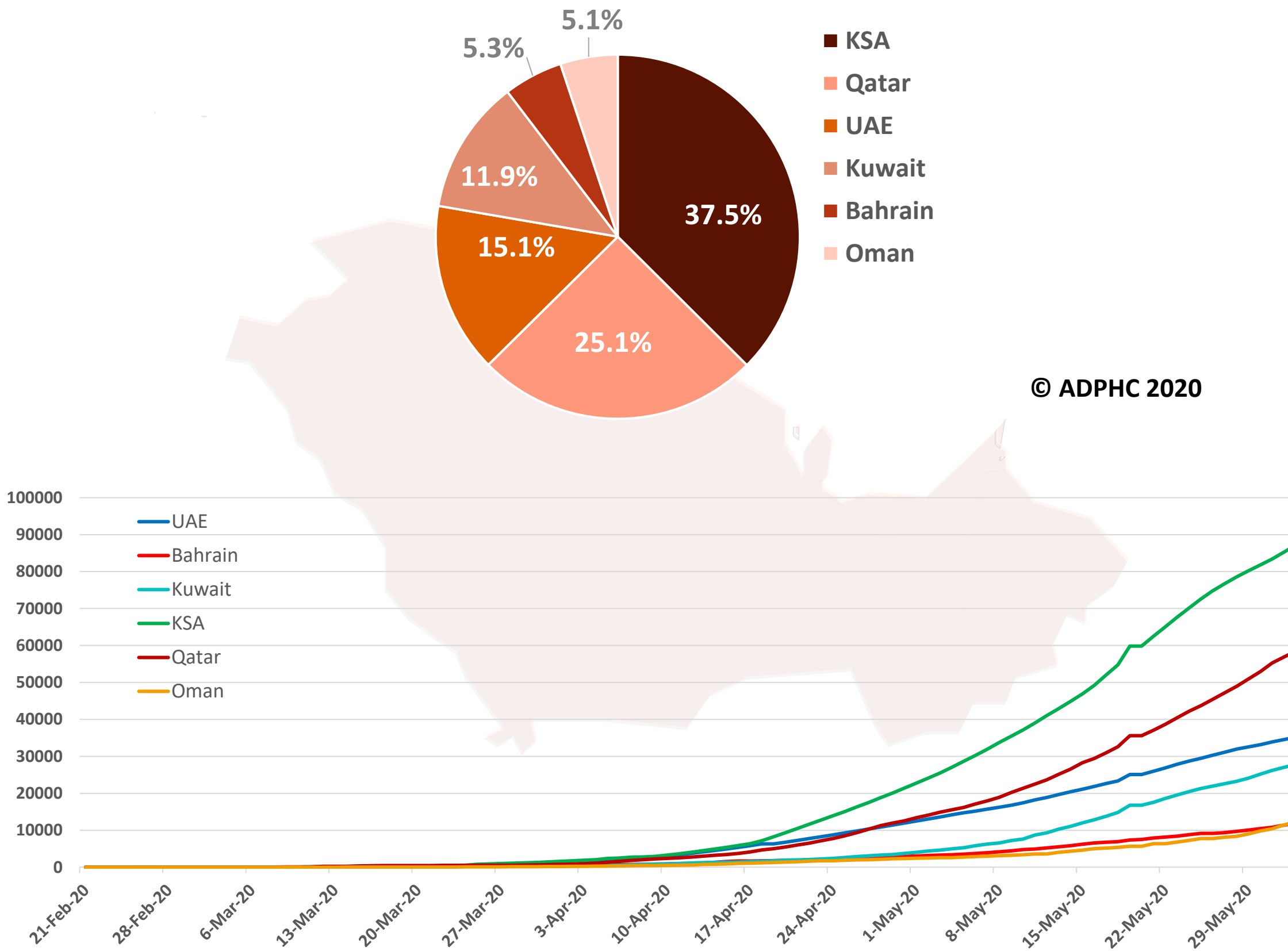
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Data resources: [WHO](https://www.who.int/)

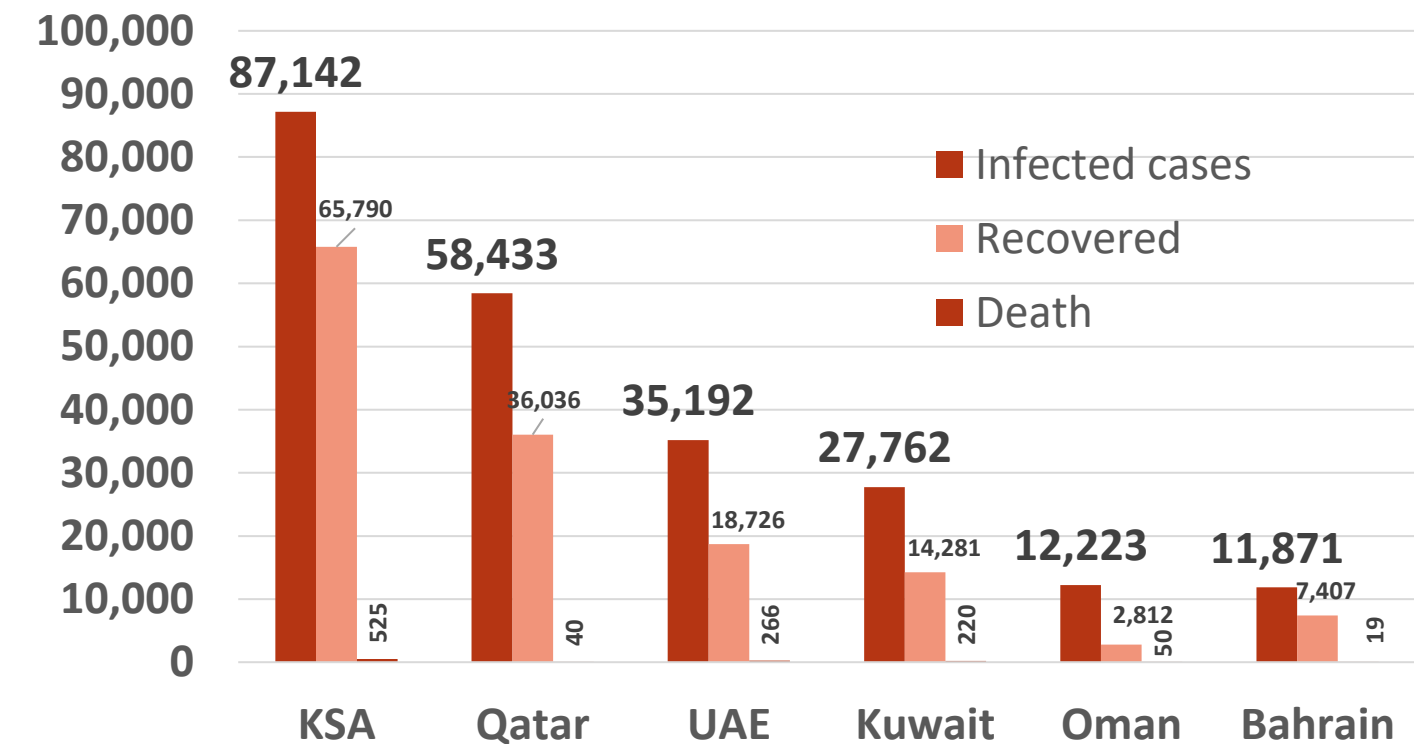


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (June 2, 2020)

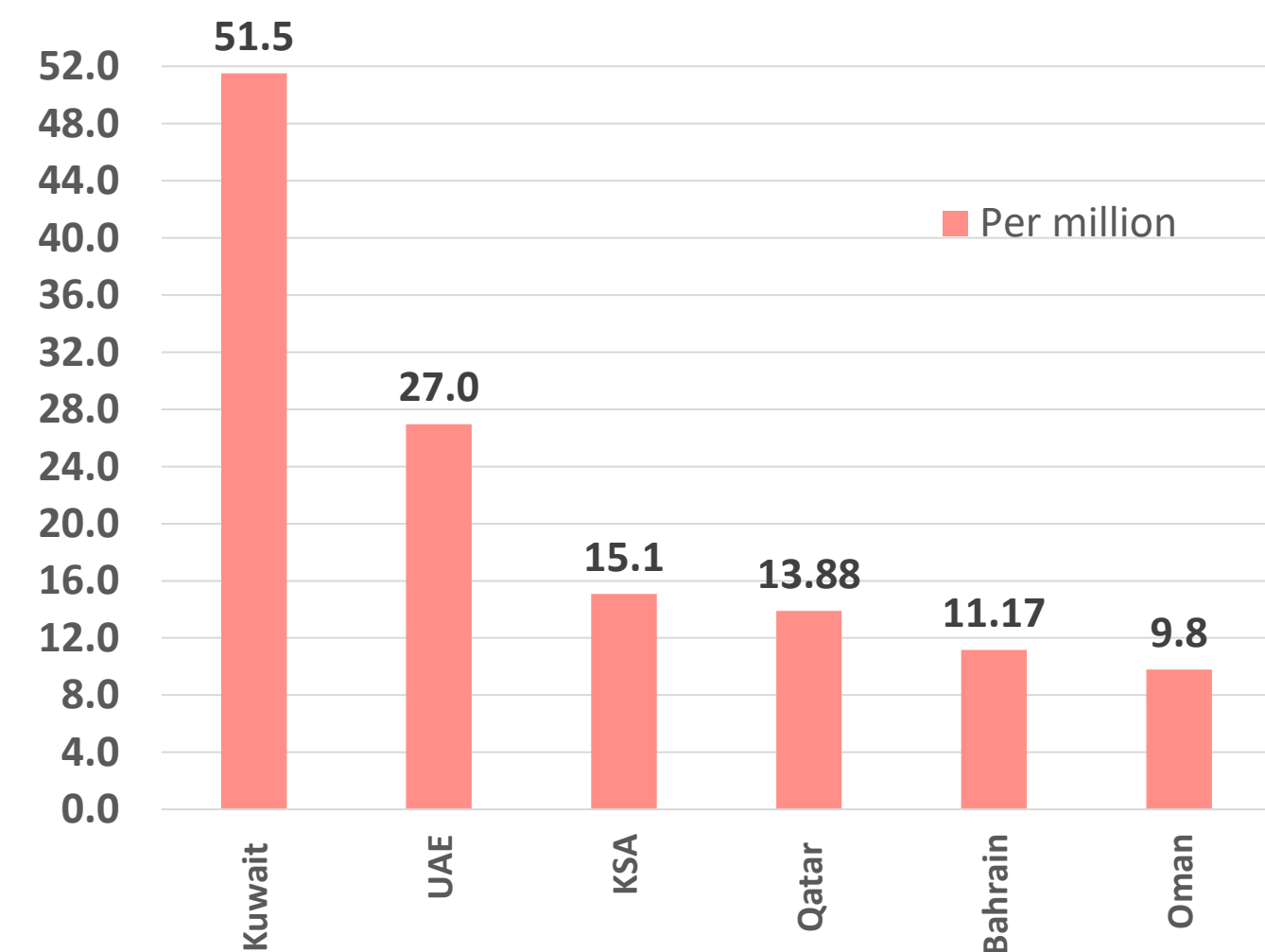
TOTAL NUMBER OF INFECTED CASES



Total number of infected, recovered and Deaths



Death per million



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

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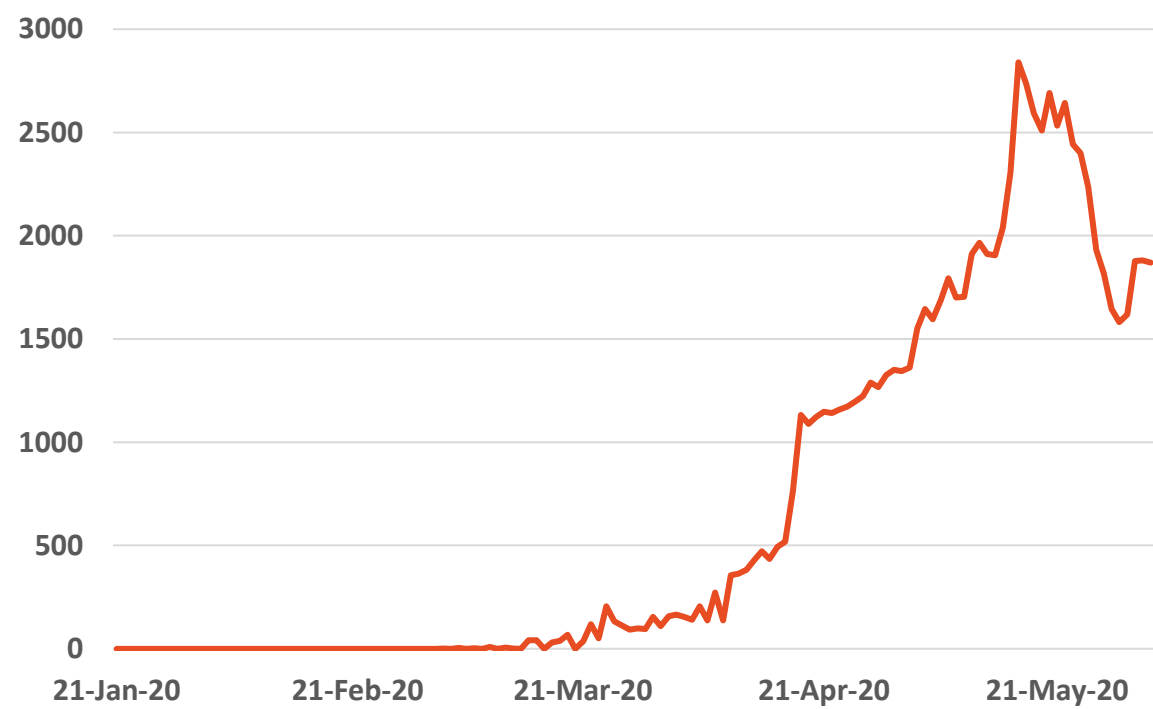
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Epidemiology



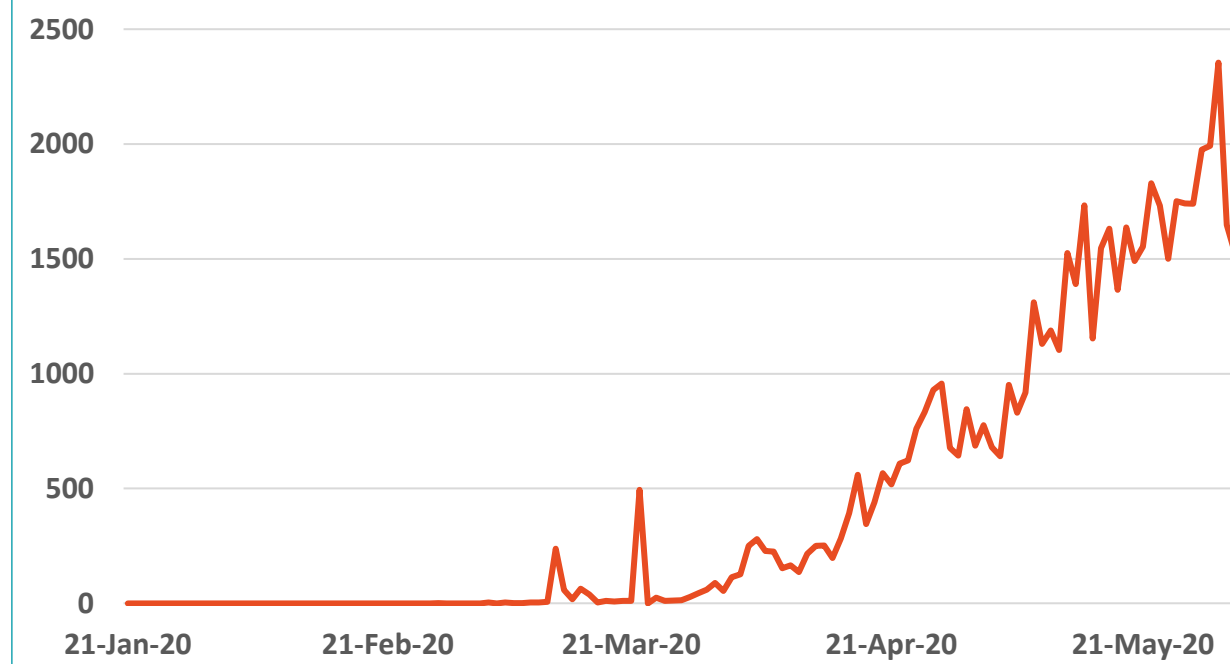
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 2, 2020)

KSA



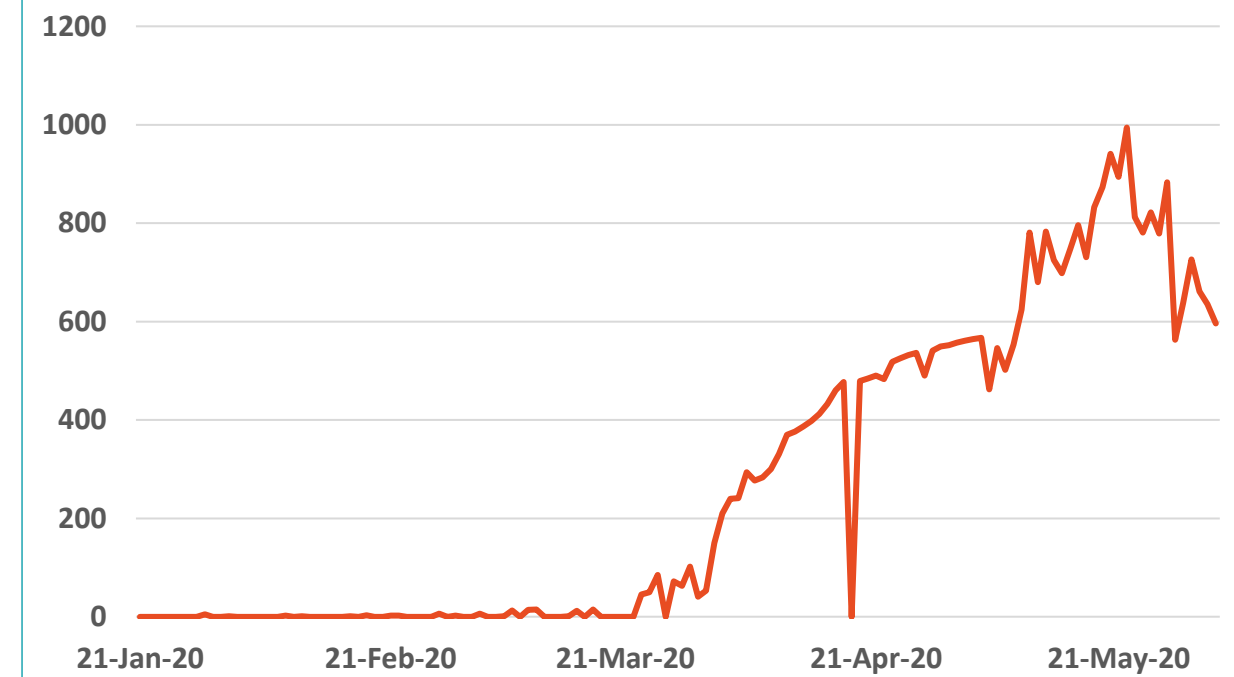
Source : KSA ministry of health

Qatar



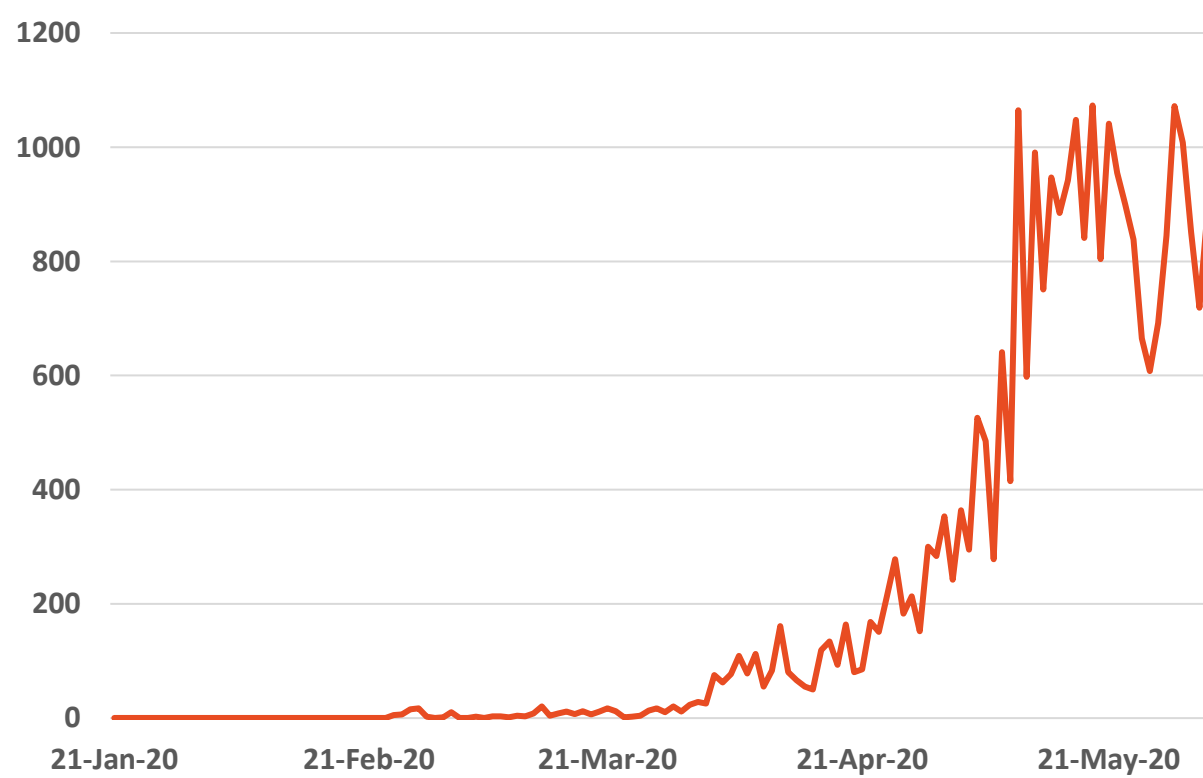
Source : Qatar ministry of health

UAE



Source : UAE ministry of health

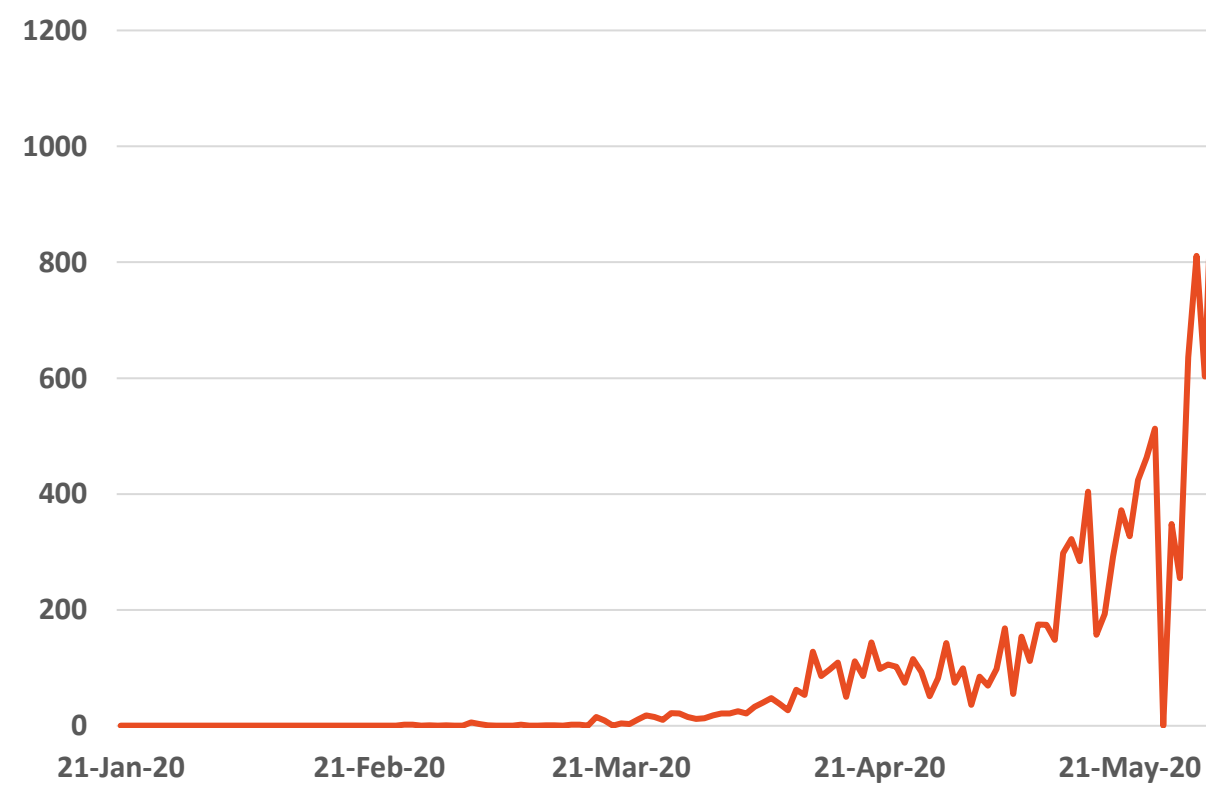
Kuwait



Source : Kuwait ministry of health

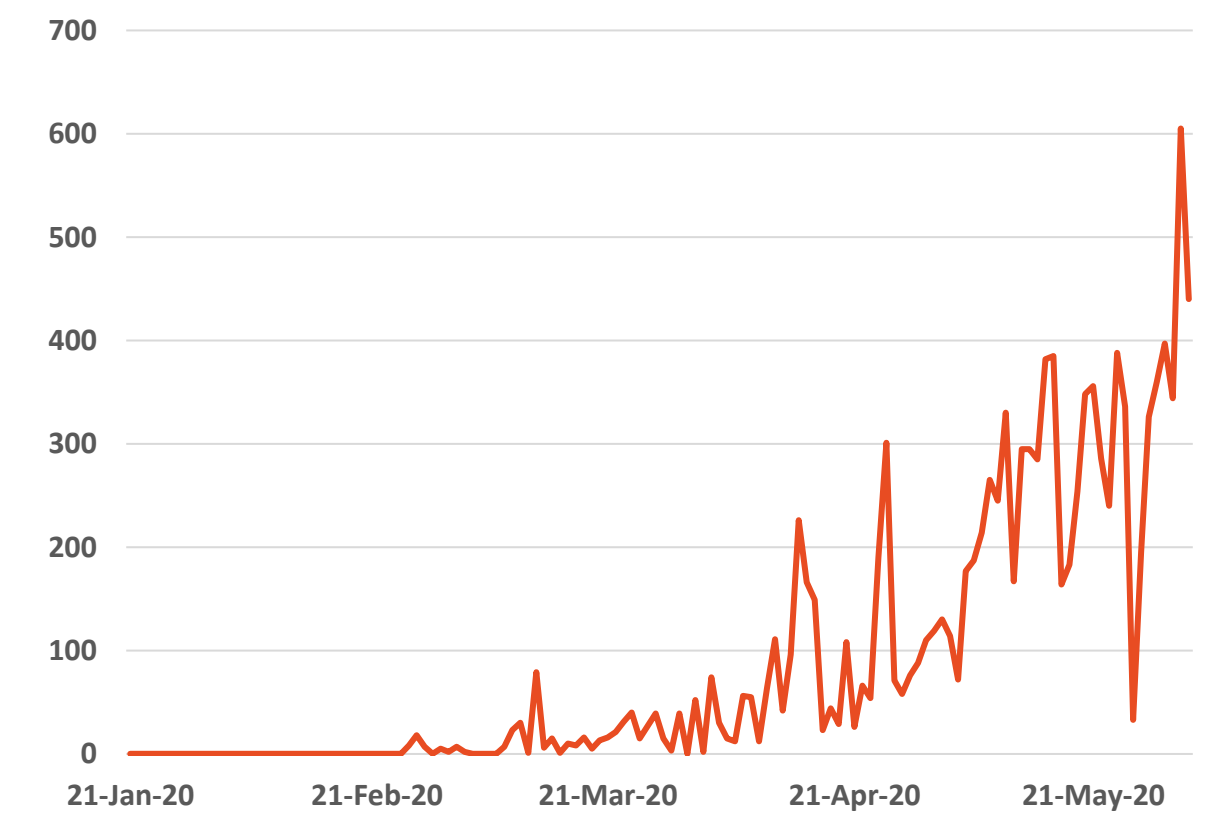
Oman

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Source : Oman ministry of health

Bahrain



Source : WHO

Epidemiology



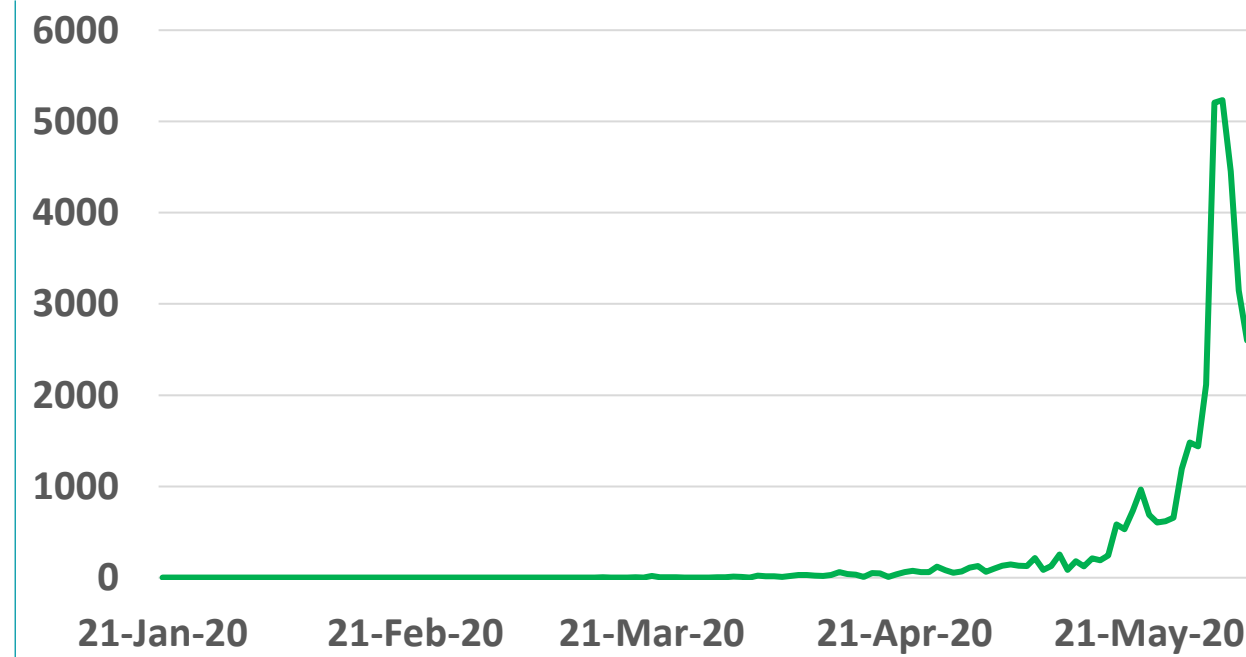
Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 2, 2020)

KSA



Source : KSA ministry of health

Qatar



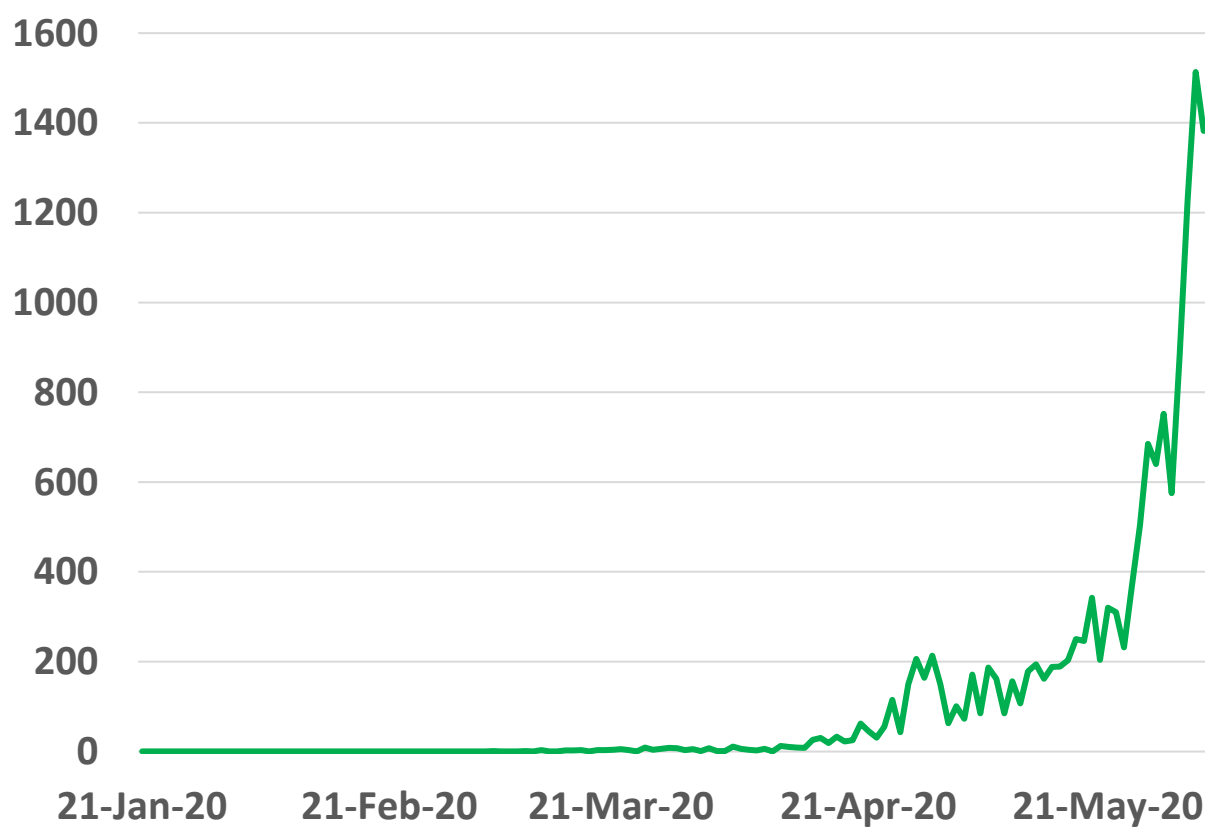
Source : Qatar ministry of health

UAE



Source : UAE ministry of health

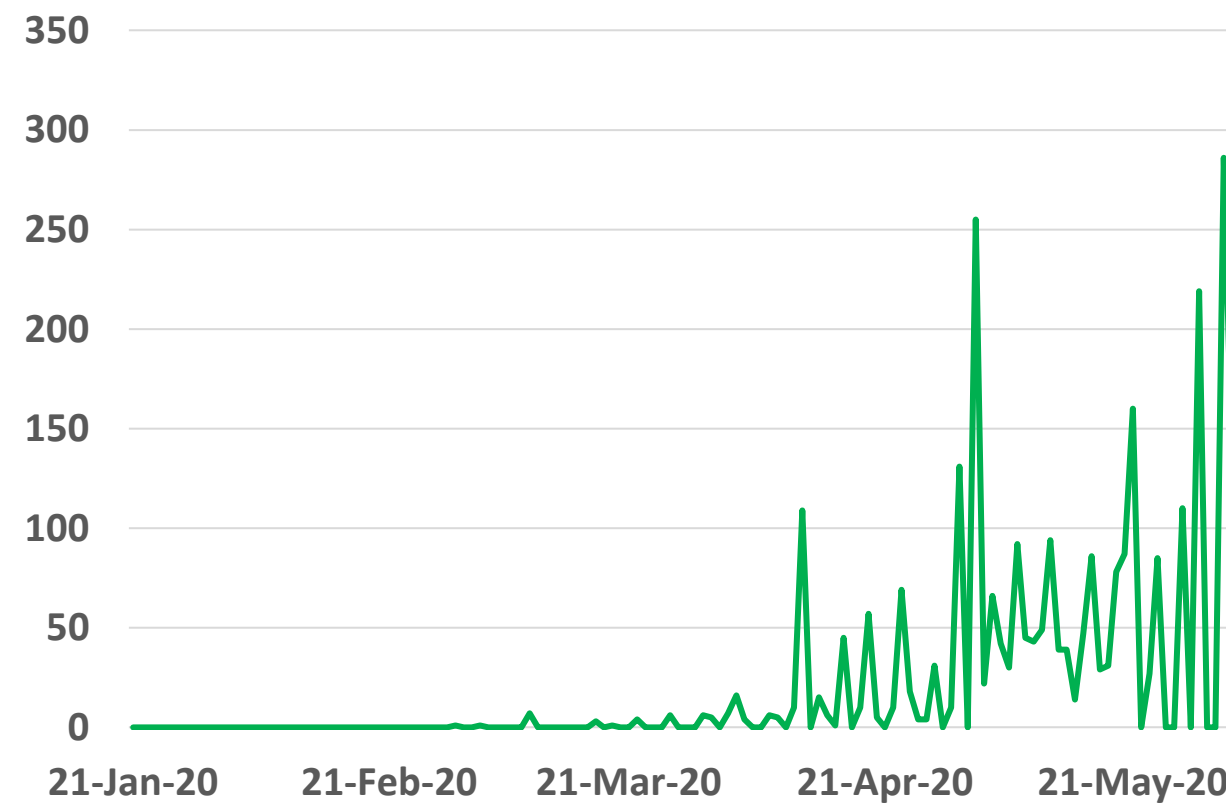
Kuwait



Source : Kuwait ministry of health

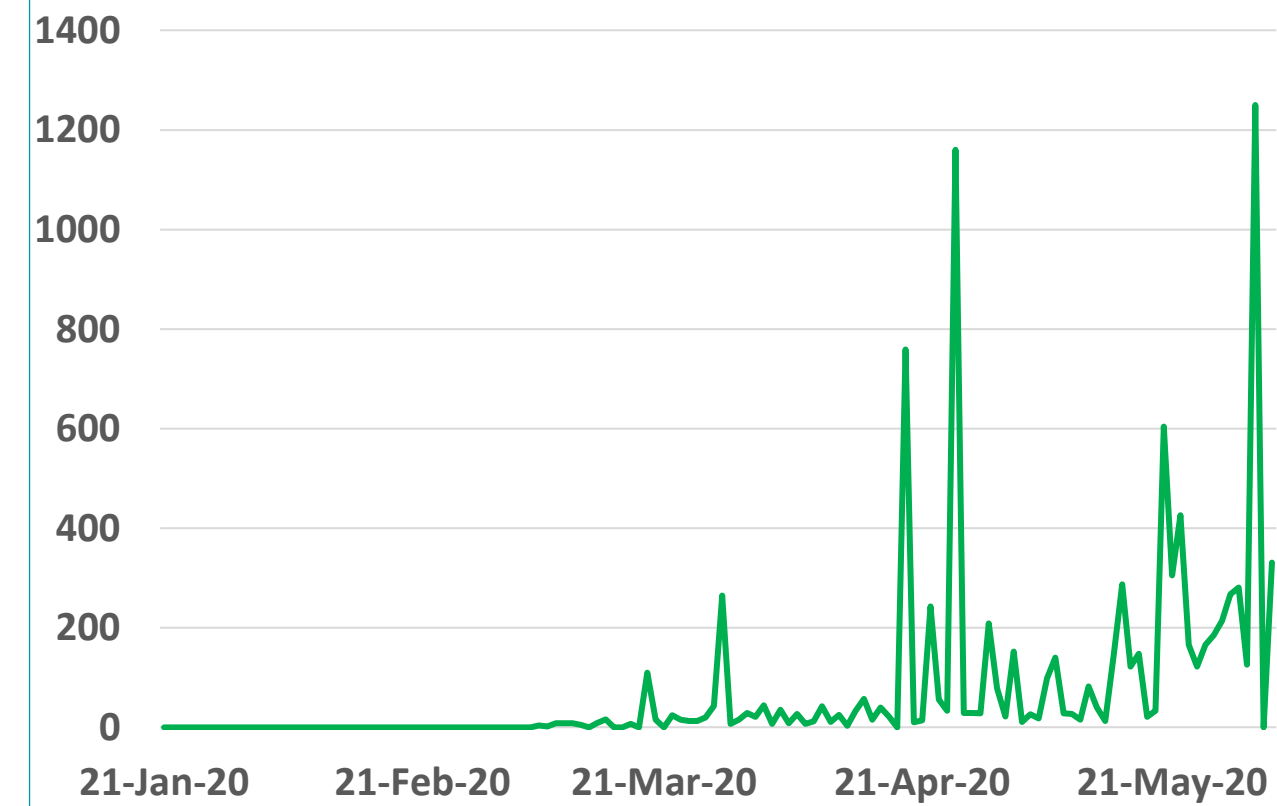
Oman

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Source : Oman ministry of health

Bahrain



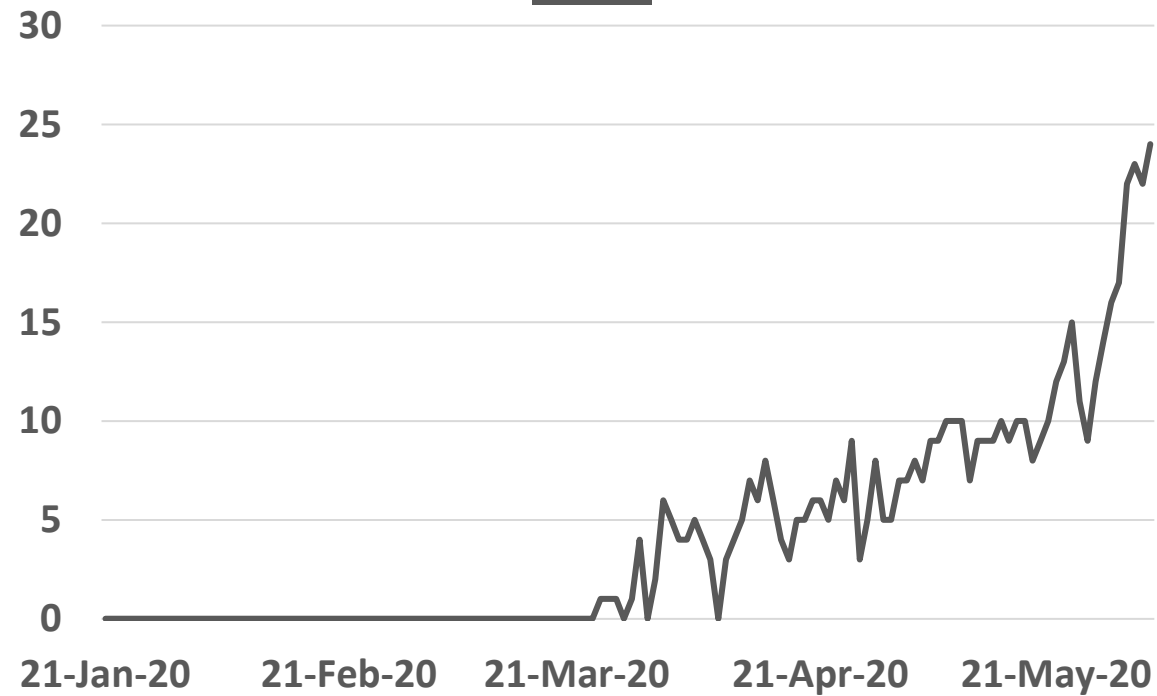
Source : WHO

Epidemiology



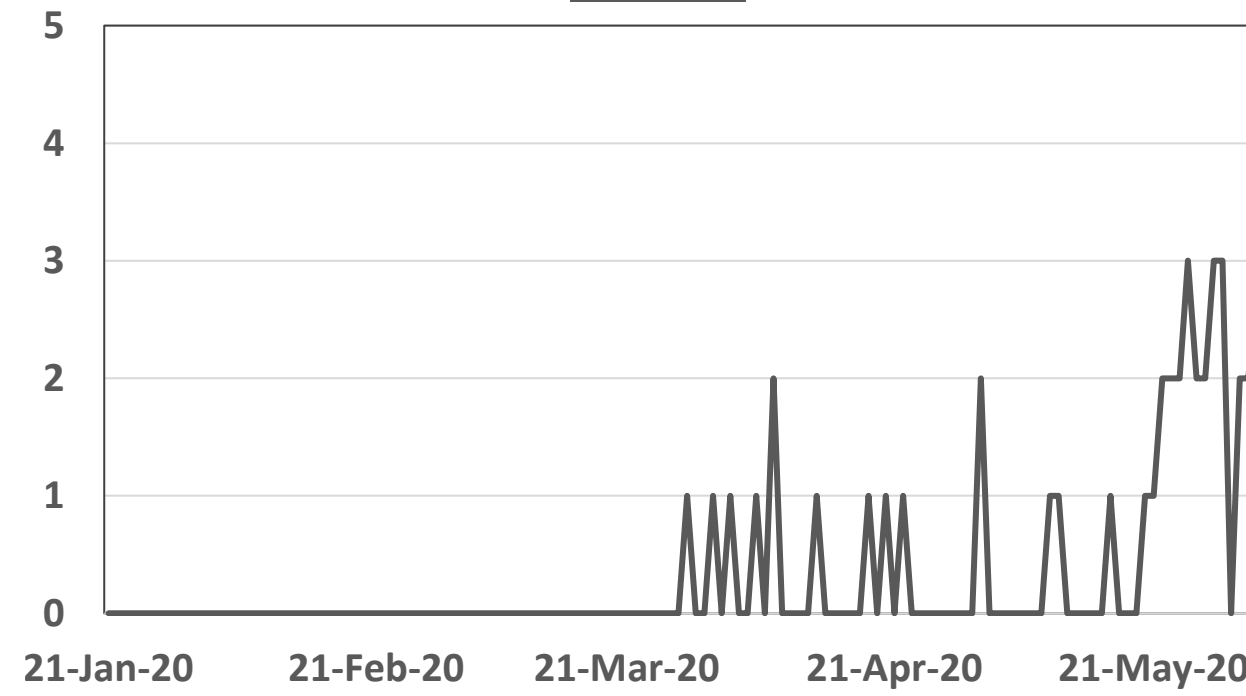
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 2, 2020)

KSA



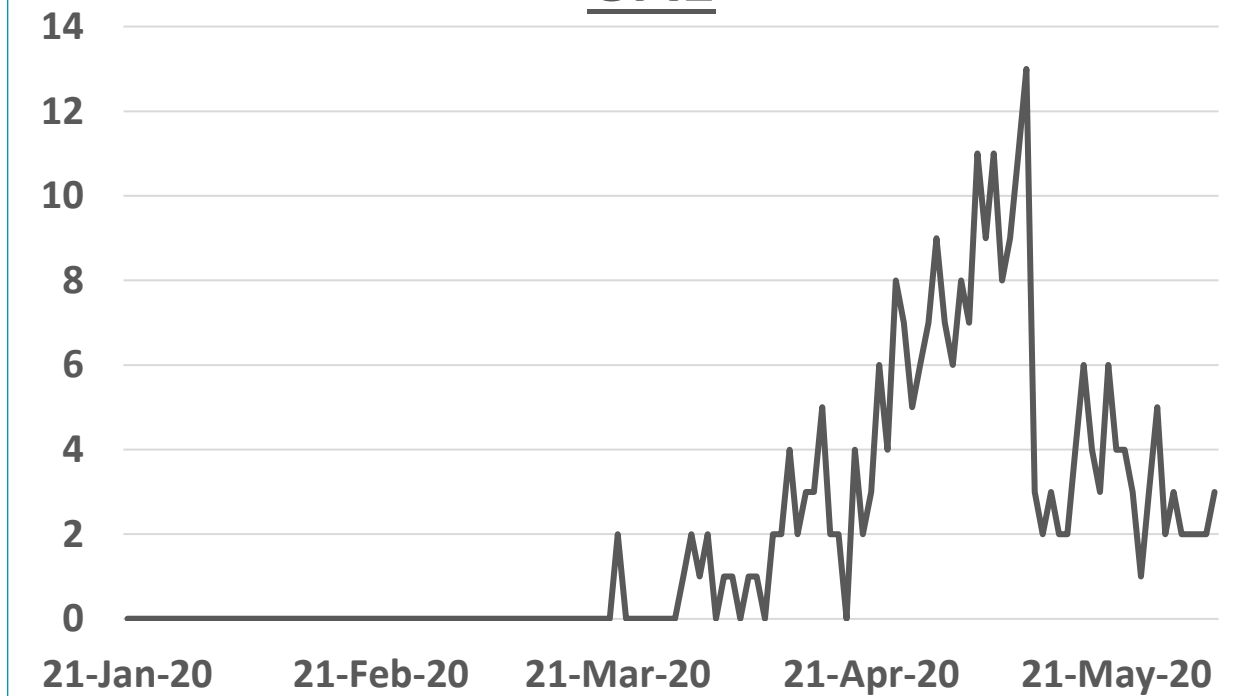
Source : KSA ministry of health

Qatar



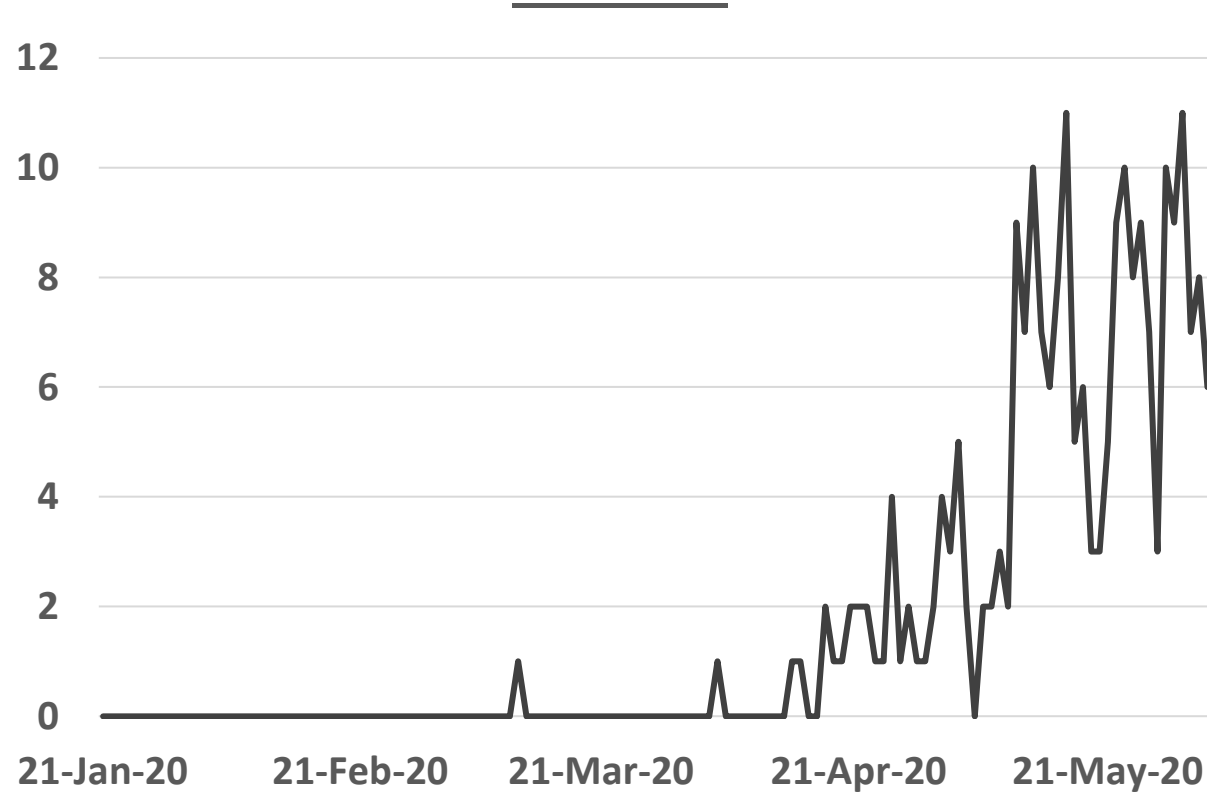
Source : Qatar ministry of health

UAE



Source : UAE ministry of health

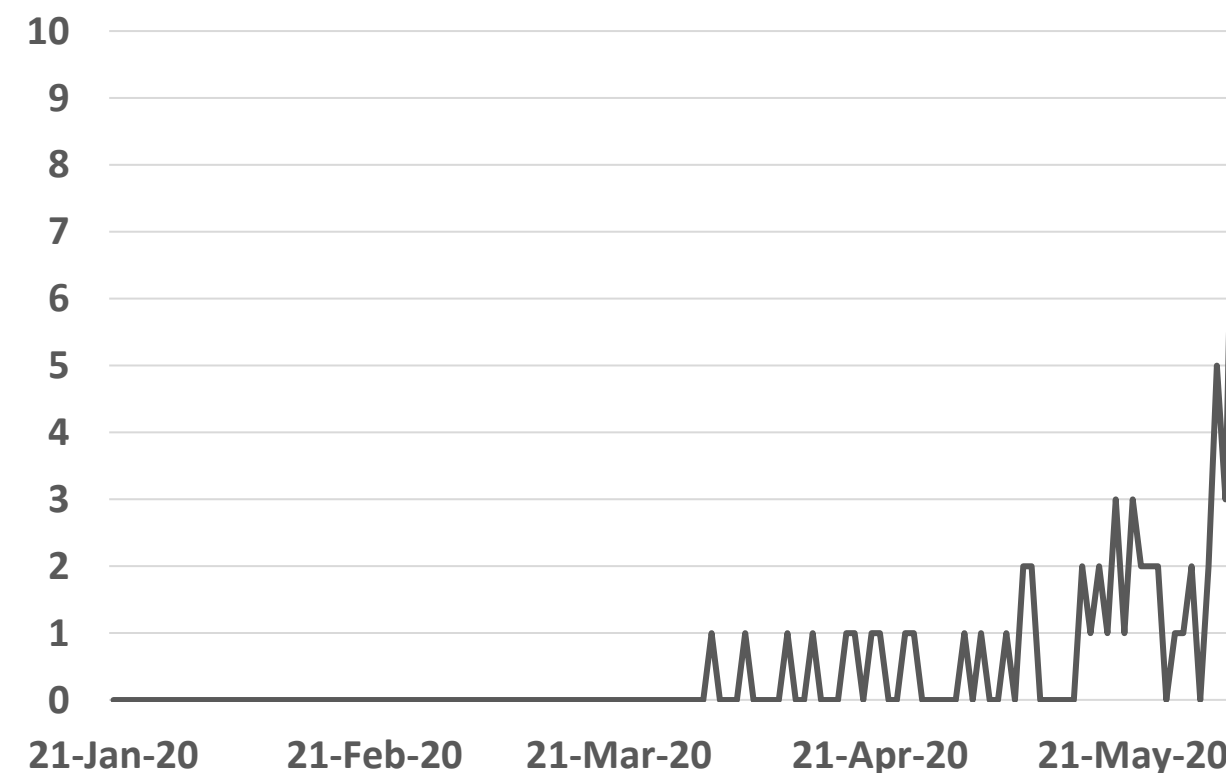
Kuwait



Source : Kuwait ministry of health

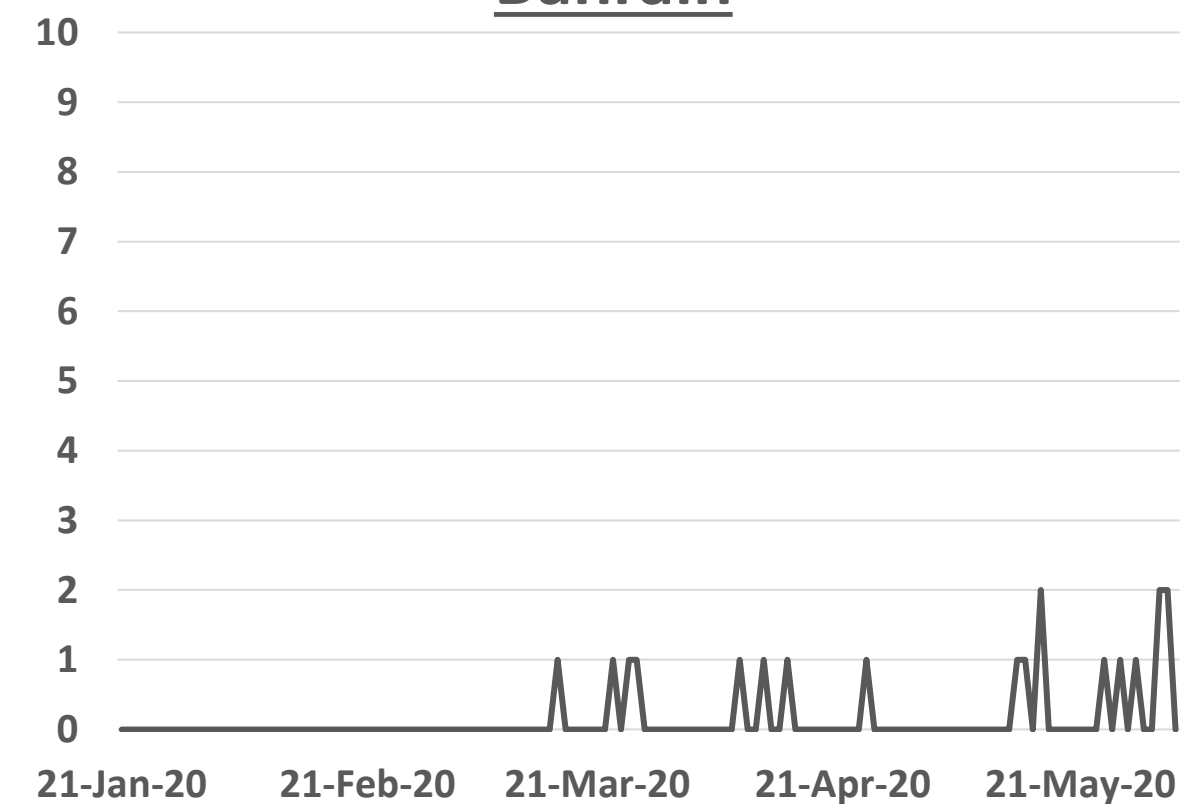
Oman

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Source :Oman ministry of health

Bahrain



Source : WHO

Clinical Features



Article 1: Initial psychological impact of COVID-19 and its correlates in Indian Community: An online (FEEL-COVID) survey

Published: May 29, 2020 in the [PLOS ONE](#)

Summary:

This cross-sectional study used an online survey (FEEL-COVID) in India to determine the initial psychological impact of COVID-19 among the general public; as well as understand its association with physical symptoms. Principles of snowballing method was used, and invitations were sent through text messages for participation. Around, 1106 responses were received. The mean age of the respondents was around 41 years with a male female ratio of 3:1 and around 22% respondents were health care professionals. **Approximately one third of respondents had significant psychological impact (IES-R score > 24).** Higher psychological impact was predicted with **female gender, younger age, and comorbid physical illness**. Presence of physical symptoms and contact history predicted higher psychological impact, but did not reach statistical significance. This study therefore guided the policy makers in formulating comprehensive interventions.

Clinical Features



Article2: COVID-19 With Different Severities: A Multicentre Study of Clinical Features Published: June 1, 2020 in

Summary:

This study compared the computed tomography images, laboratory examinations, clinical characteristics, and treatments of COVID-19 patients from three different cities in China such as, Wuhan, Shanghai, and Anhui. The researchers recruited 476 patients from January 1, 2020, to February 15, 2020 from three different hospitals. The patients were divided into four groups according to age and into three groups (moderate, severe, and critical) based on the fifth edition of the Guidelines on the Diagnosis and Treatment of COVID-19 issued by the National Health Commission of China. **The results of the study suggested that the incidence of comorbidities was high in critical (67.1%) and severe (46.3%) groups compared to the moderate group (37.8%).** The study further indicated that, **patients >75 years old had a significantly lower survival rate** compared to the younger patients. Majority of the patients took **angiotensin-converting enzyme inhibitors/angiotensin II receptor blockers** in the **moderate group than in the severe and critical groups**. More patients had multiple lung lobe involvement and pleural effusion in the critical group than in the moderate group. The results demonstrated that impaired immune function and multiple organ dysfunction were found to be typical patients characteristics with severe or critical illness. Multiple lung lobes involvement and pleural effusion were significantly associated with COVID-19 severity. Advanced age (≥ 75 yr.) was a risk factor for mortality.

Public Health Response:



Article 3: The COVID-19 Infection: Lessons from the Italian Experience
Published: May 29, 2020, [Journal of Public Health Policy](#).

Summary:

This case study analysed the evolution of the epidemic in Italy showing that testing both symptomatic and asymptomatic cases is an effective strategy to mitigate the epidemic impact. The study strongly recommended that decision-makers shall ensure early isolation of symptomatic patients along with rapidly identifying the contacts; maximize testing, particularly among individuals with multiple daily contacts with infected populations, high exposure to the public in essential services; rapidly increase diagnostic capacity by mobilizing trained personnel capable of performing rRT-PCR on respiratory samples; as well as equip the population with protective masks.

Article 4: Death threats after a trial on chloroquine for COVID-19
Published: June, 2020 in [the lancet](#)

Summary:

Estella Ektorpe in this news desk reported un-favourable results from a chloroquine clinical trial that led to death threats and animosity towards researchers in Brazil. This drug if used in high doses is not safe. A study conducted in the city of Manaus was summarized which evaluated two different chloroquine diphosphate (CQ) doses. There were two patient groups. One group comprising of 41 patients received a high dose of 600 mg of CQ twice daily for 10 days, whereas, the other group of 40 patients received a lower dose of 450 mg daily for 10 days. Patients in both the groups received 500 mg of azithromycin on daily basis for 5 days. On 5th day, the high-dose arm of the study had to be interrupted due to the death of 11 patients, against four in the low-dose groups.

Public Health Response:



Article 5: Revealing the toll of COVID-19; A technical package for rapid mortality surveillance and epidemic response

Published: May21, 2020 in [the WHO website](#)

Summary:

WHO launched a new technical package “Revealing the Toll of COVID-19: A Technical Package for Rapid Mortality Surveillance and Epidemic Response” to support national governments with surveillance and response planning. Compared with only using COVID-19 confirmed deaths as a measure of impact, rapid mortality surveillance helps to generate daily or weekly counts of mortality data by age, sex, date of death, place of death and place of usual residence. This provides a more complete picture of impact, specifically for deaths that may be indirectly related to COVID-19. **This also addresses the indirect impact caused by disruptions in healthcare access and supply chains.** When policy-makers can compare estimated weekly number of excess deaths related to COVID-19 compared with pre-pandemic levels, they have a powerful tool to inform their national response and recovery planning.

Article 6 : Testing for COVID-19

Published: May29, 2020 in [the lancet](#)

Summary:

The article discuss some the currently used testing such as PCR(saliva AND Nasal) , Antibody , rapid testing Rapid testing should be used on a routine basis to identify COVID-19 cases; that opens up the possibility of doing screening at the airports, workplaces, and other hubs.

A testing regimen on weekly basis should be conducted **at the workplace**, with a **turnaround time of 15 minutes**, that would help in early detection of the virus. This will further **help in early initiation of contact tracing**. Three components working in tandem such as testing, a strong system for contact tracing, and people complying with the regulations will help in controlling the virus.

Also in this article: **On May 21, 2020, UK Health and Social Care Secretary, revealed that an antibody surveillance study led by the Office for National Statistics had found that around 17% of people in London and 5% of people elsewhere in the UK had tested positive for anti-SARS-CoV-2 antibodies.**

Clinical Features



Article 7: COVID-19 pathophysiology: A review

Published: April 20, 2020 in [the ELSEVIER](#)

Summary:

This study reviewed the current knowledge about SARS-CoV-2 and considered the potential explanation of the different symptomatology between adults and children. Understanding the potential difference in paediatric and adult responses to this virus may guide in direct immune based therapeutics. Epidemiological studies reviewed demonstrated that **Infants and young children are typically at high risk for admission to hospitals due to respiratory tract infection with viruses as respiratory syncytial virus and influenza virus.** In contrast, paediatric COVID-19 patients showed relatively milder symptoms in general compared to the elderly population.

Article 8: Why Does COVID-19 Disproportionately Affect Older People?

Published: May 29, 2020 in [Pub med](#)

Summary:

This study reviewed the molecular differences between middle-aged, young, and older people to explain why COVID-19 is a mild illness in some but life-threatening in others. This study concluded that it is still not known why SARS-CoV-2 infections are more severe and fatal in the aged, however, viable hypotheses are still emerging that include modifications in the immune cell repertoire, the epigenome, NAD⁺ levels, inflammasome activity, biological clocks, and covalent modifications of human and viral proteins. **Hence, while designing a vaccine against SARS-CoV-2, it will be essential to consider that older people may not respond well to vaccines as compared to the young people.** The most potentially impactful and exciting technologies to combat COVID-19 and other viral pandemics **are those that activate the body's defences against aging.** Hence, with advances in the field, it may even be possible to reverse the age of cells and tissues so that high-risk older individuals can respond to viral infections as if they were young.