



Scientific Research Monitoring on COVID-19

8 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

- **Clinical Feature:** A cohort study on cancer patient with covid19 showed high mortality rate reaching 13 % and risk increase in active cases , patient on HCQ with AZT, older and patient with comorbidities.
- **Vaccine:** a review and updates on different types of vaccine and the current ongoing trial

WHO daily report



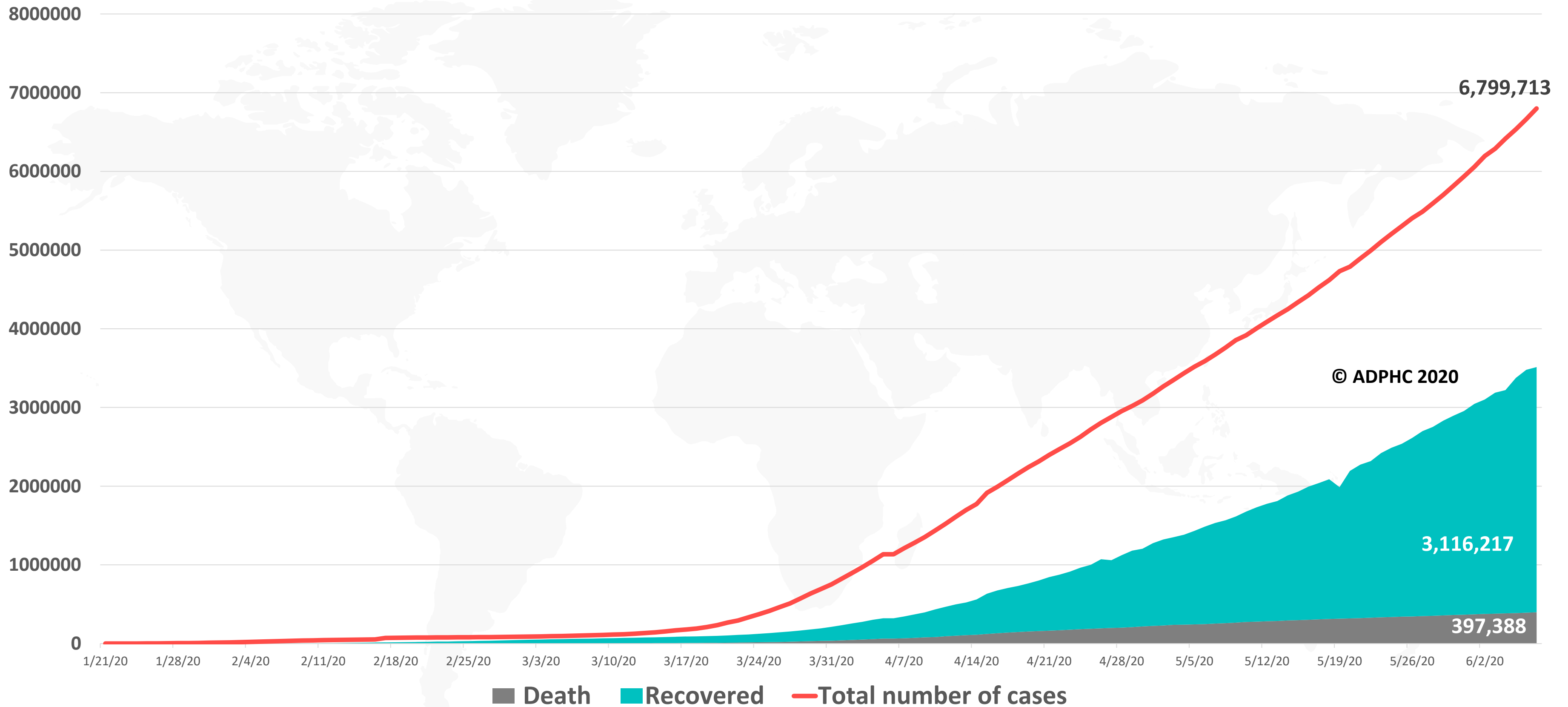
WHO Daily Report 7 June 2020

- A joint task force has been established by the WHO Regional Office for Europe and the Central European Initiative to strengthen regional coordination for the COVID-19 response and mitigate the impact of the pandemic. The task force will serve as a strategic platform for updating member states, exchanging information, and sharing experiences, best practices and training.
- This year on World Food Safety Day on 7 June, the WHO Regional Office for Europe has reminded everyone of the Five Keys to Safer Food, which are basic principles that each individual should know to prevent foodborne diseases, some of which (such as handwashing) also offer protection from COVID-19. The WHO Regional Office for the Americas stated that traditional markets, particularly those which sell live animals, may represent a risk of transmission of diseases between animals and humans (zoonotic diseases), and that appropriate regulations and inspections for the production and sale of live animals are needed to prevent the spread of emerging disease

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to Jun 7, 2020)

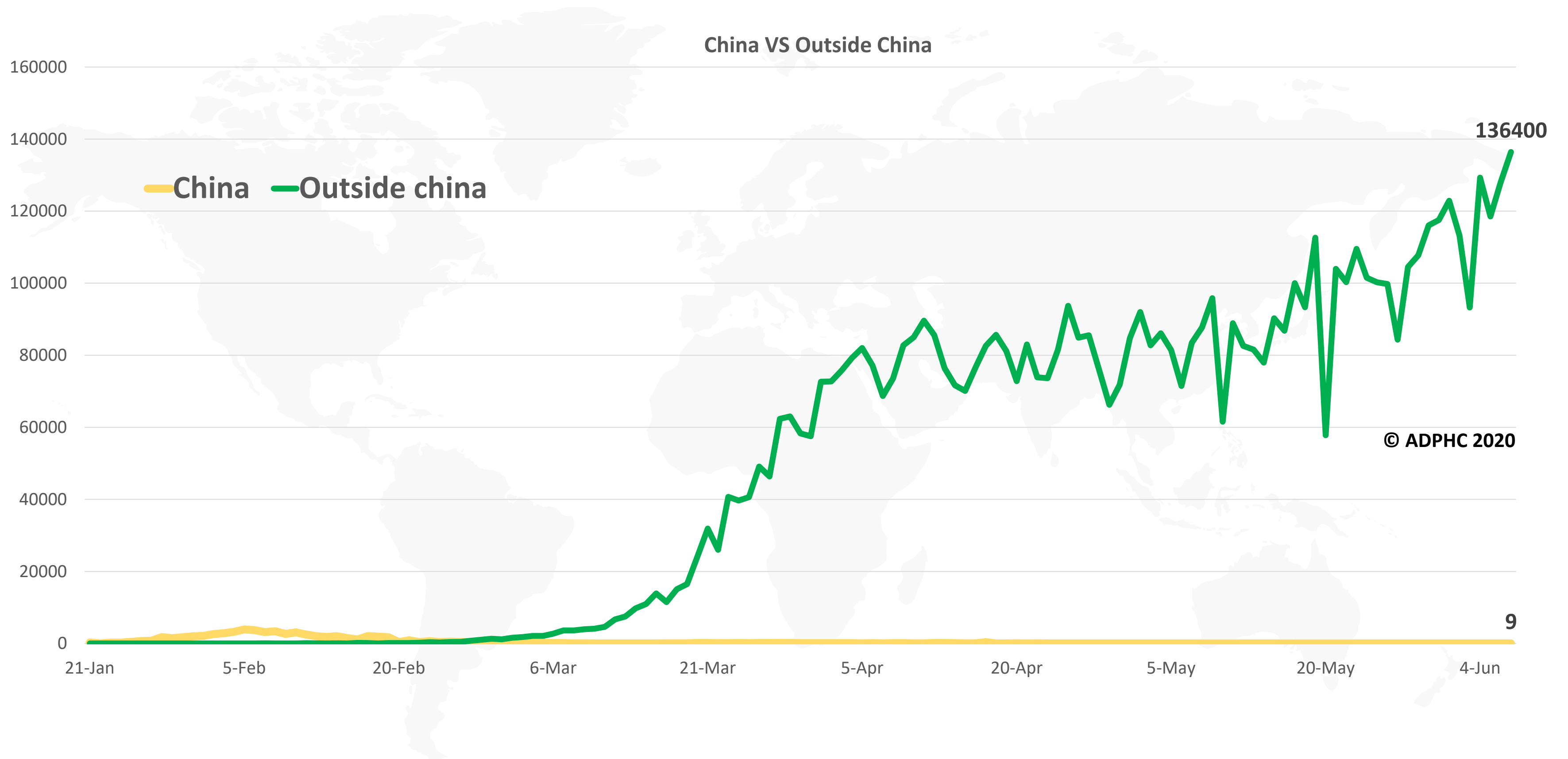


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 7, 2020).



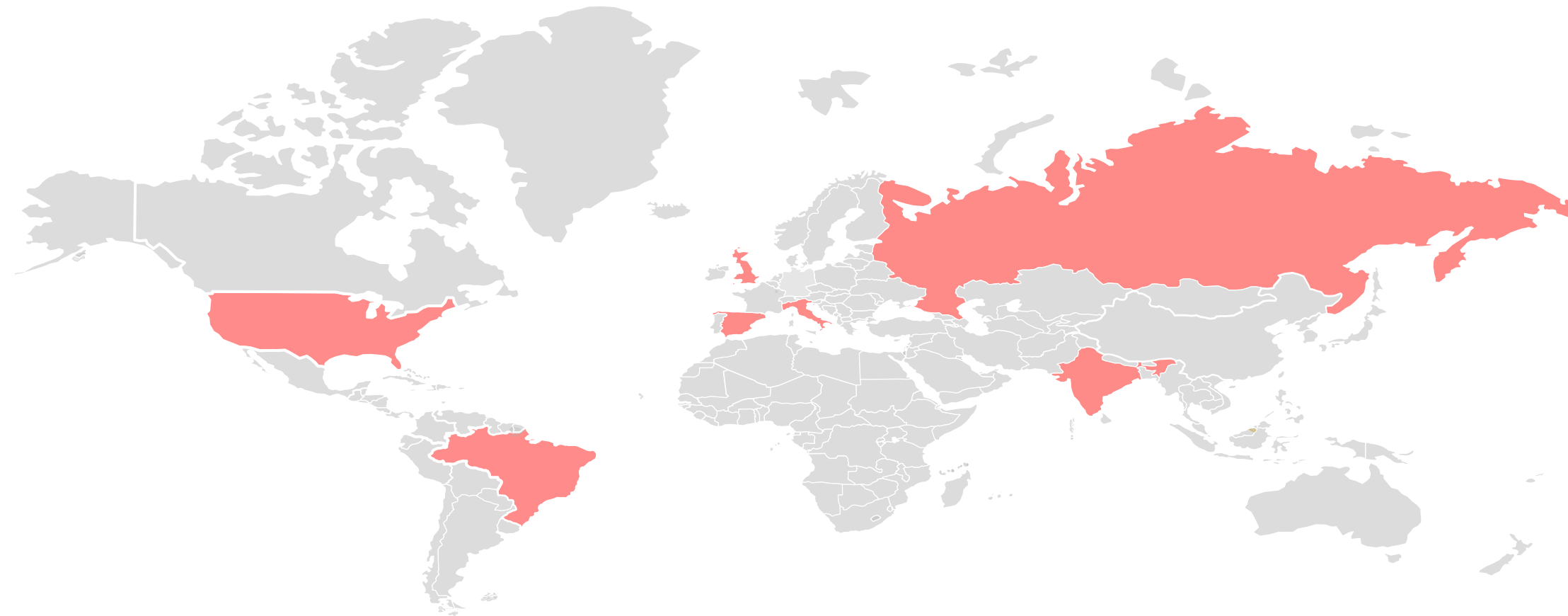
Line graph published by Abu Dhabi Public Health Center 2020.

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

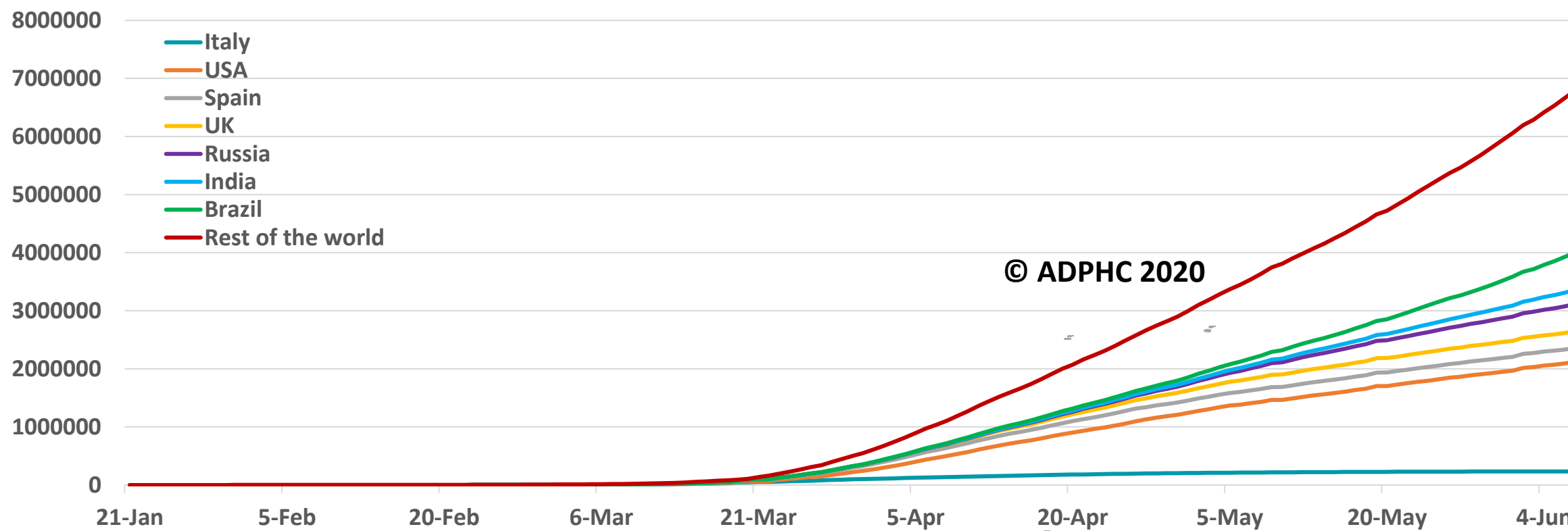
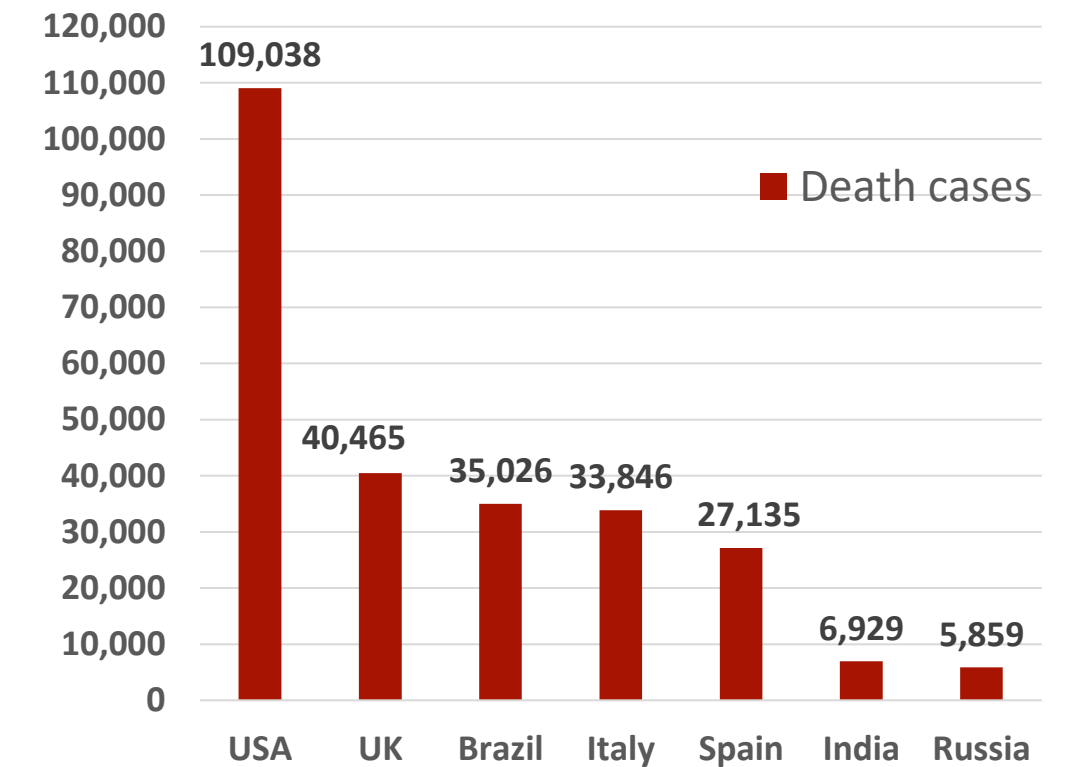
Epidemiology



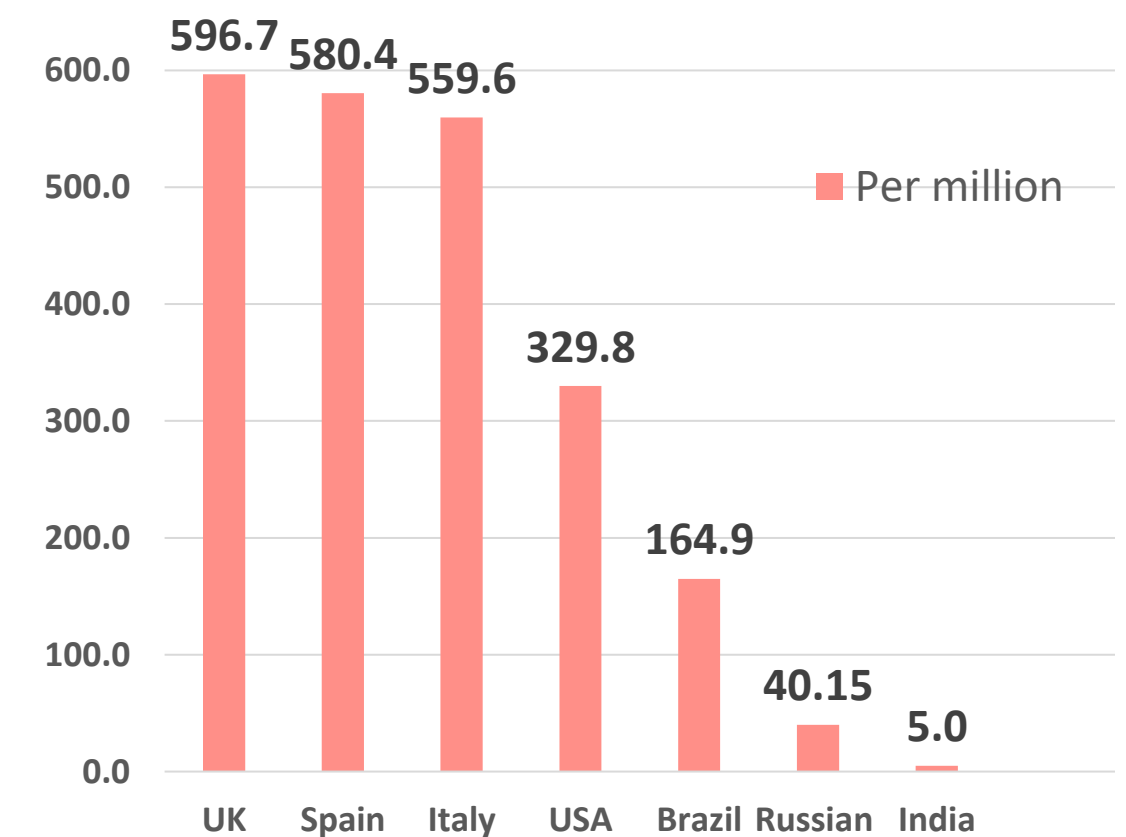
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 7, 2020).



TOTAL DEATHS



DEATHS PER MILLION

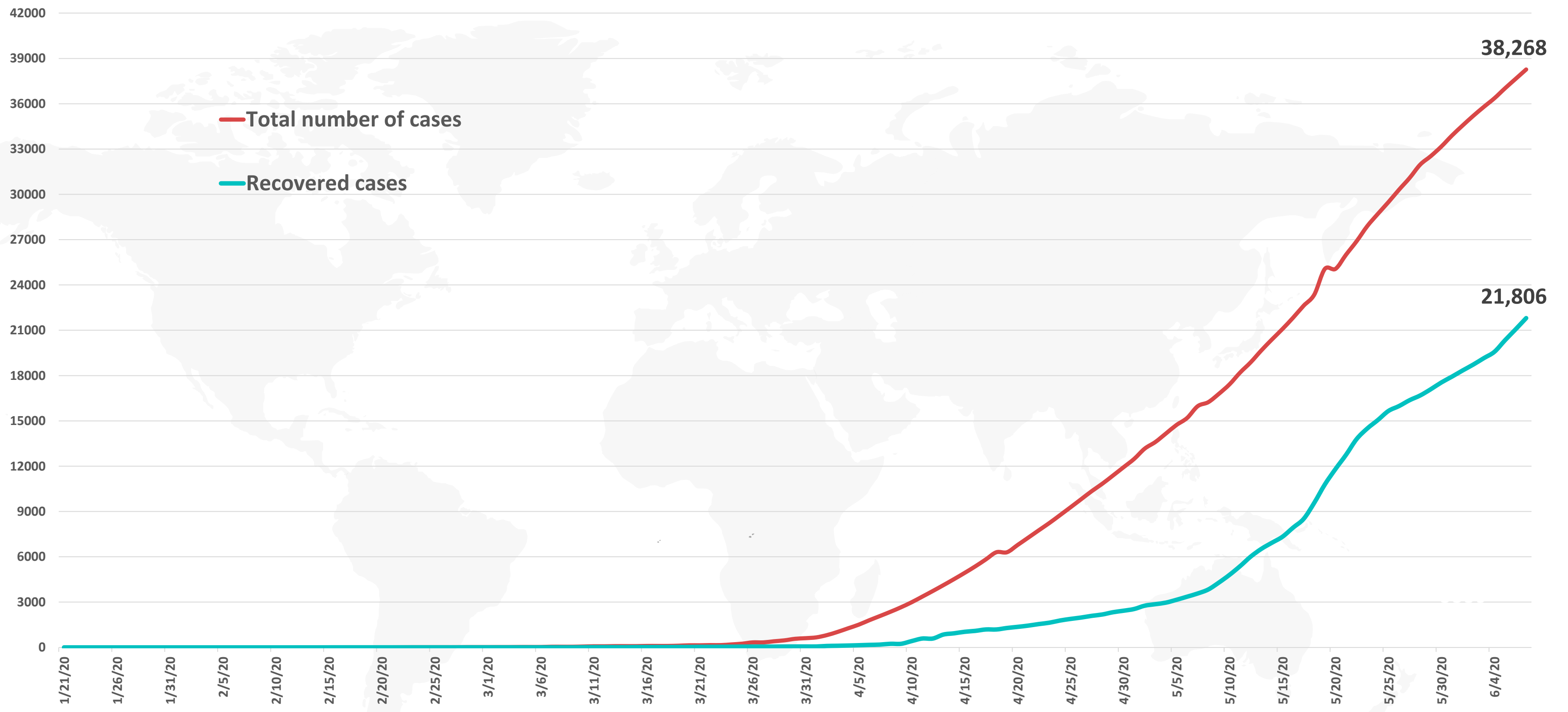


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



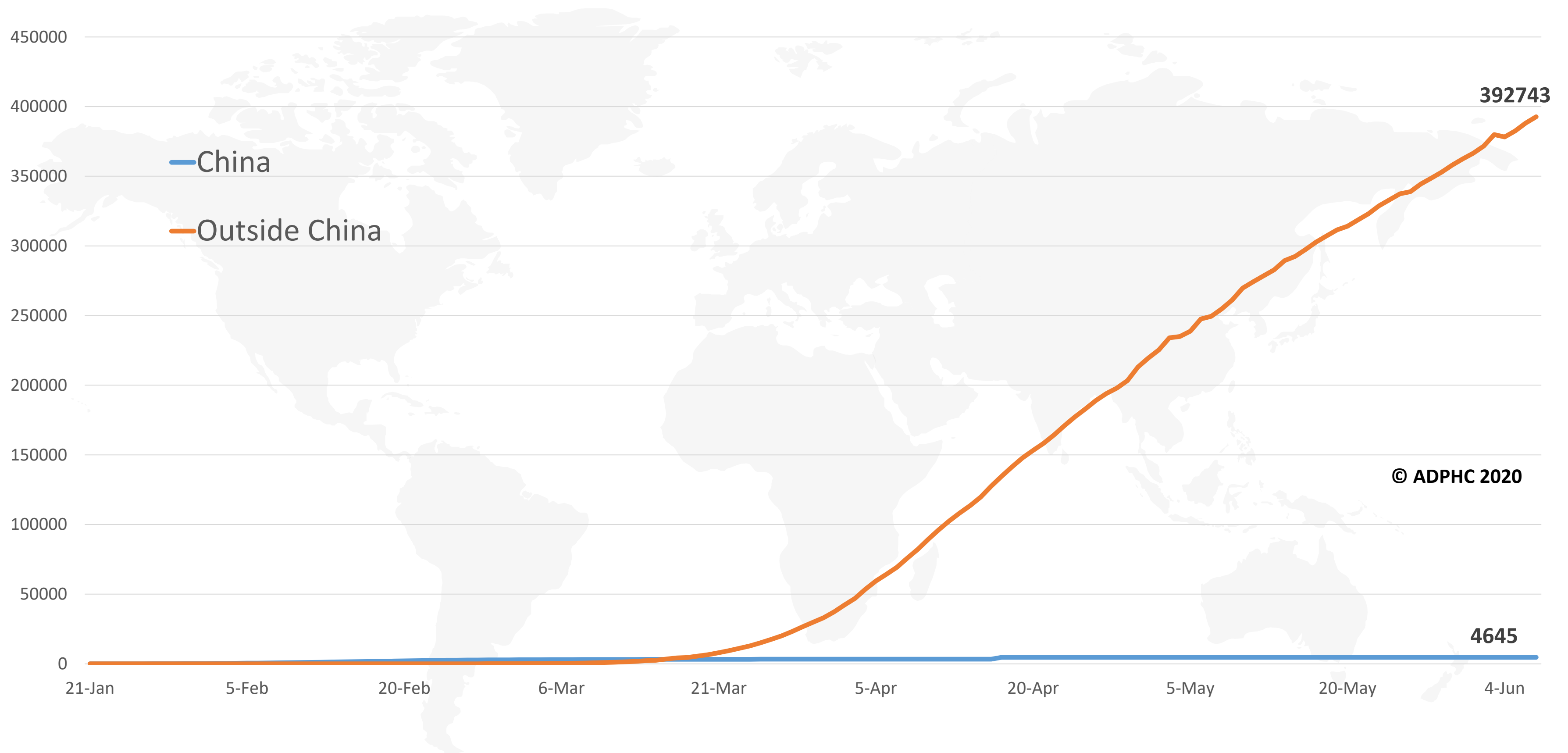
Line graph published by Abu Dhabi Public Health Center 2020.

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 Jun 7, 2020).



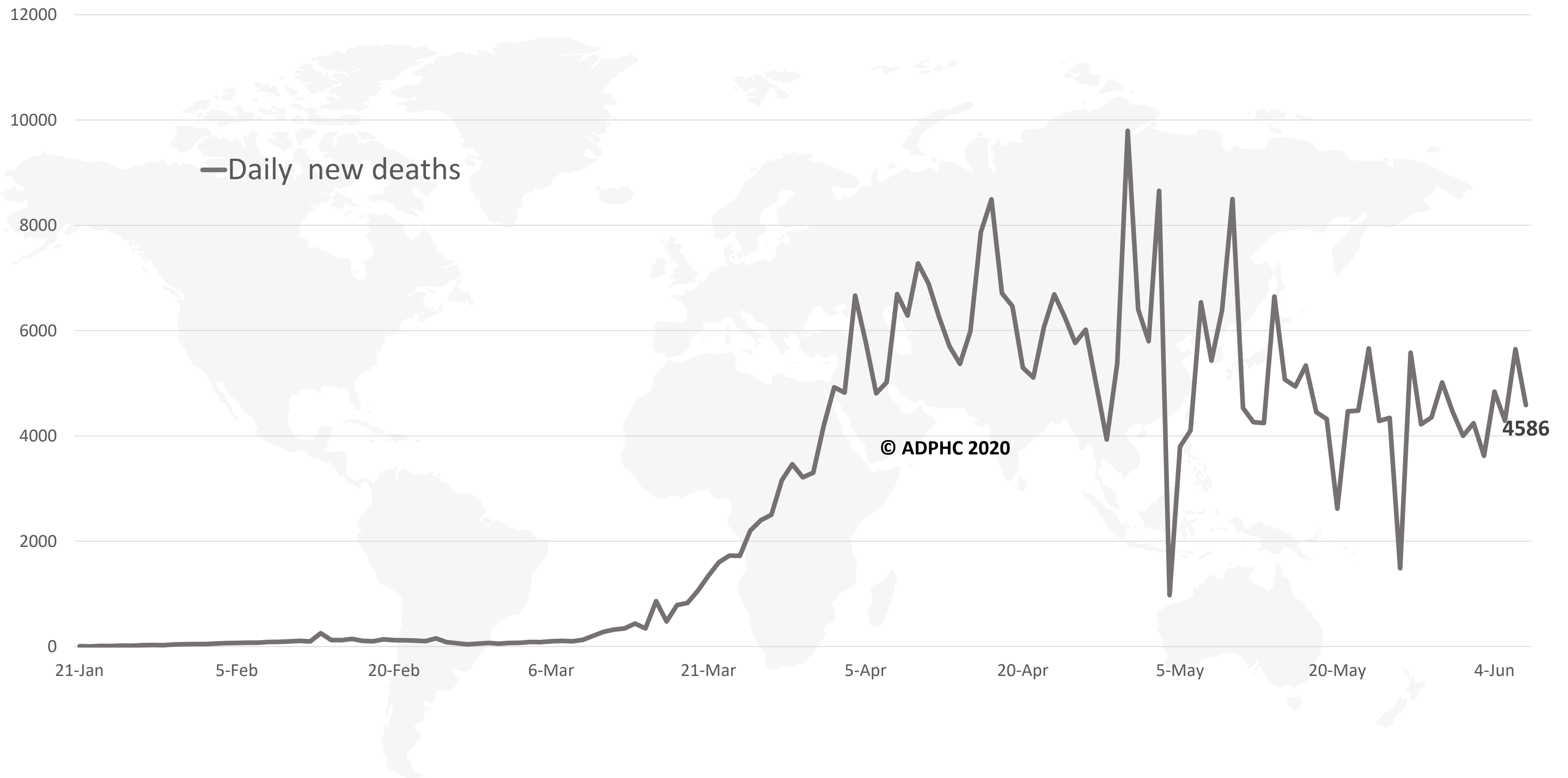
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Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 7, 2020).



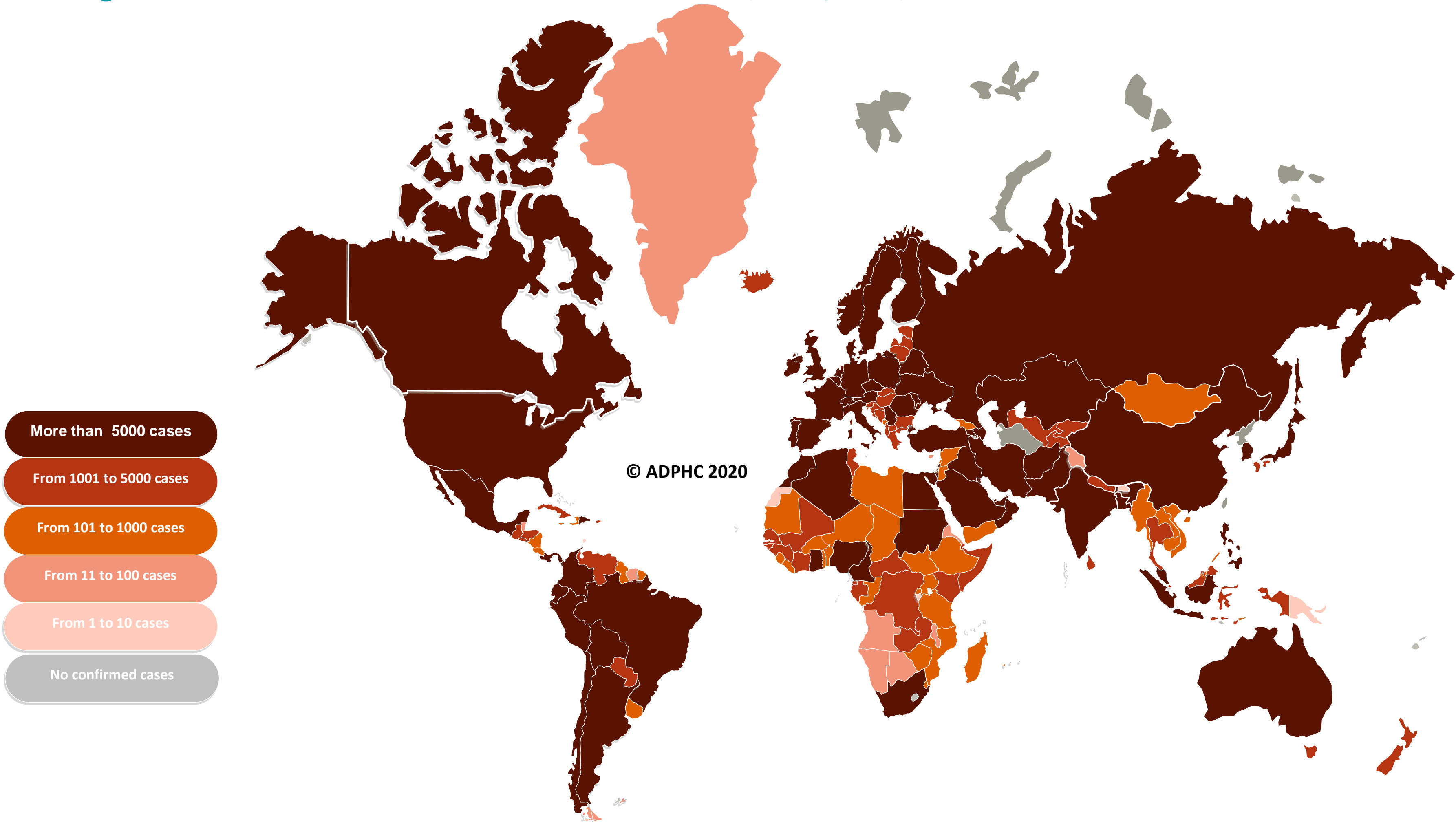
Line graph published by Abu Dhabi Public Health Center 2020.

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

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

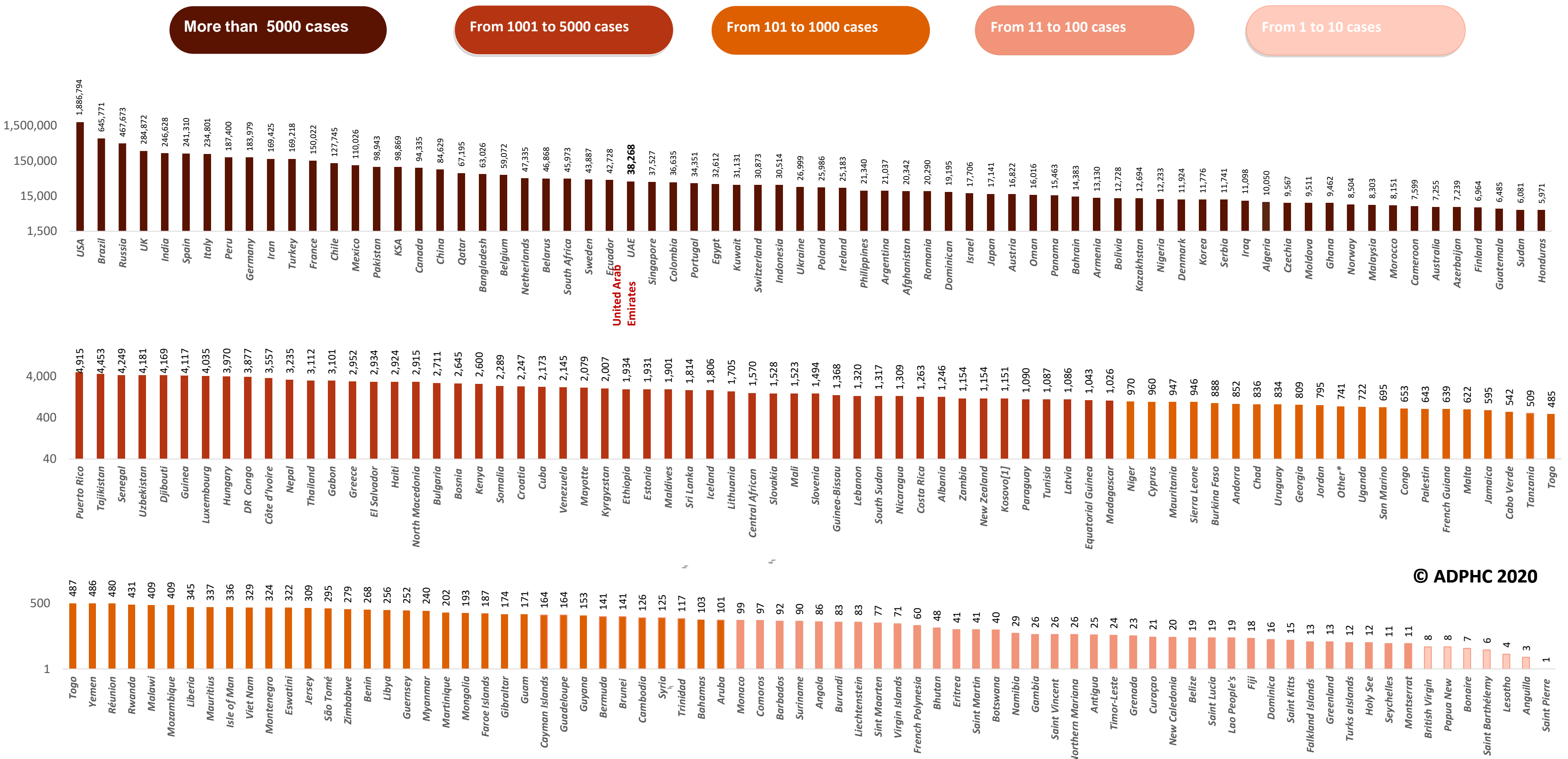


Map chart published by Abu Dhabi Public Health Center 2020.

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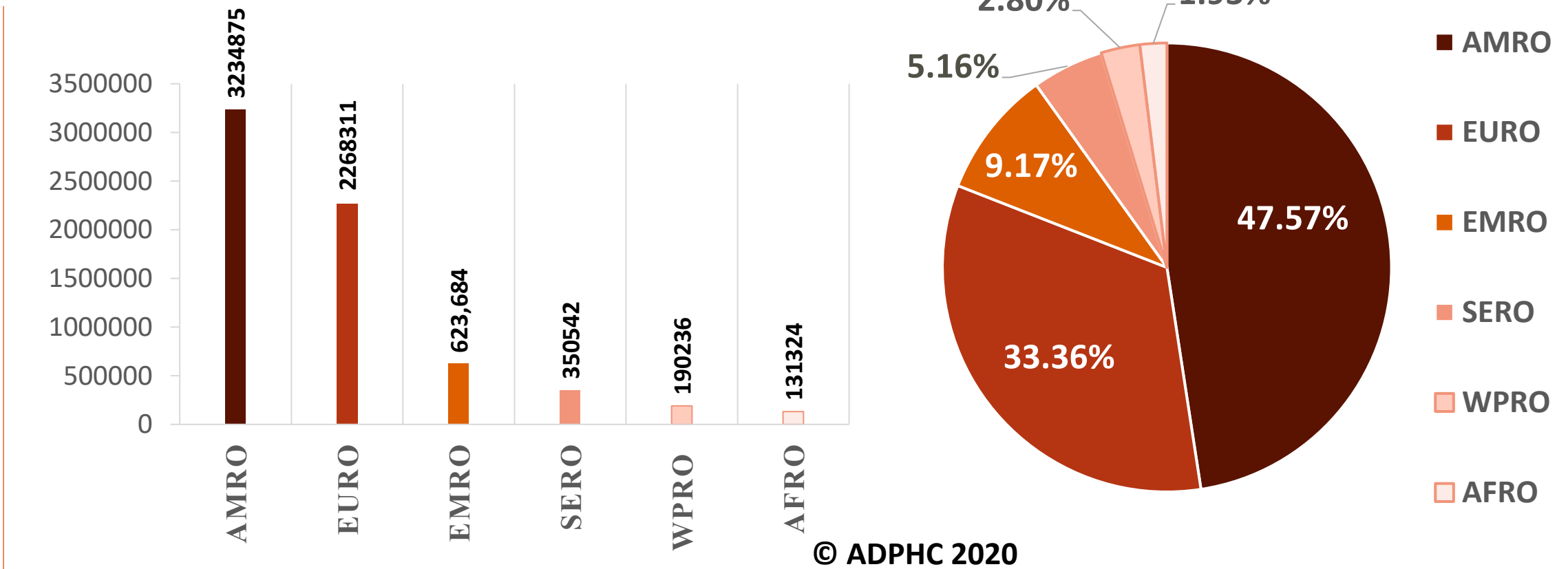
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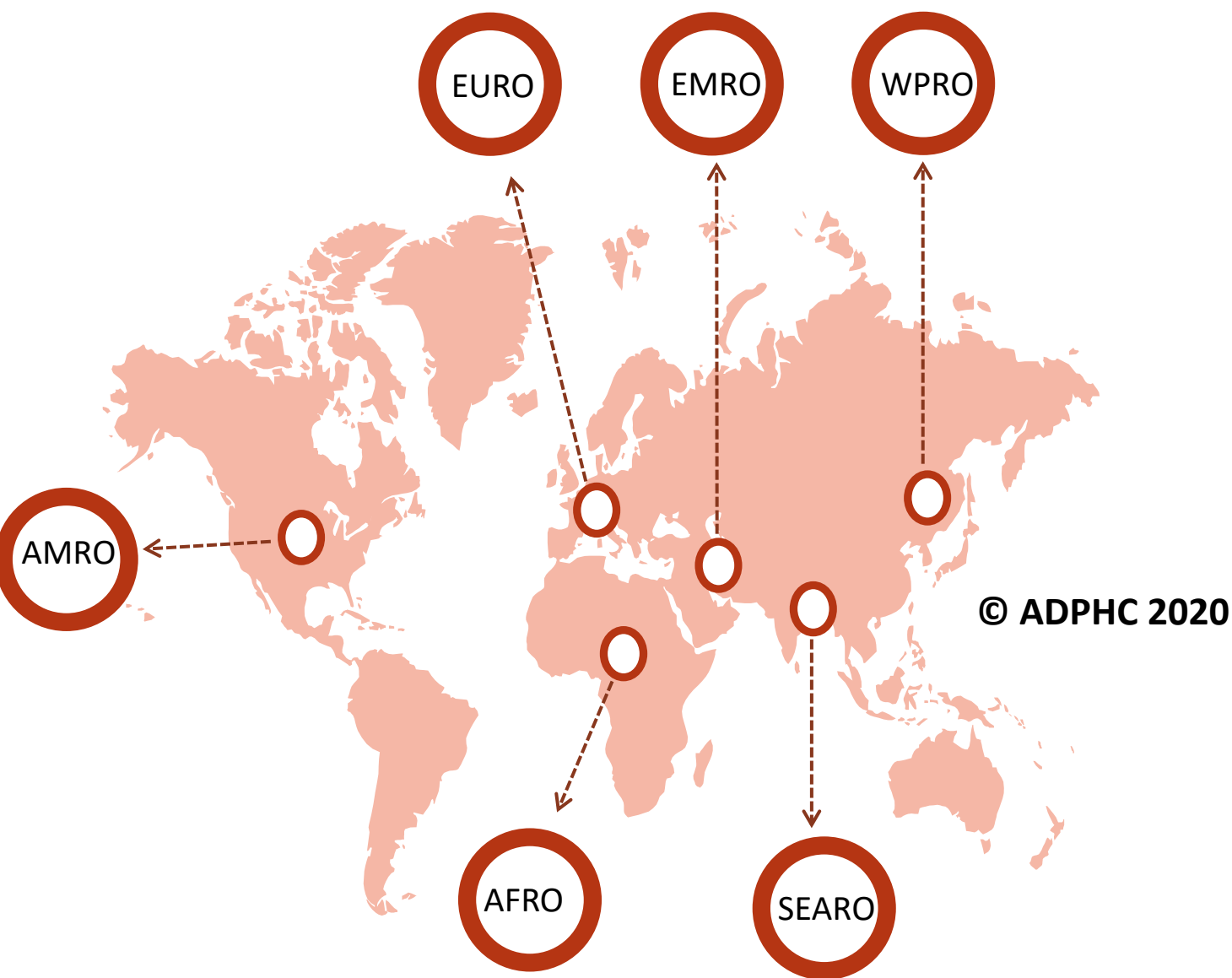
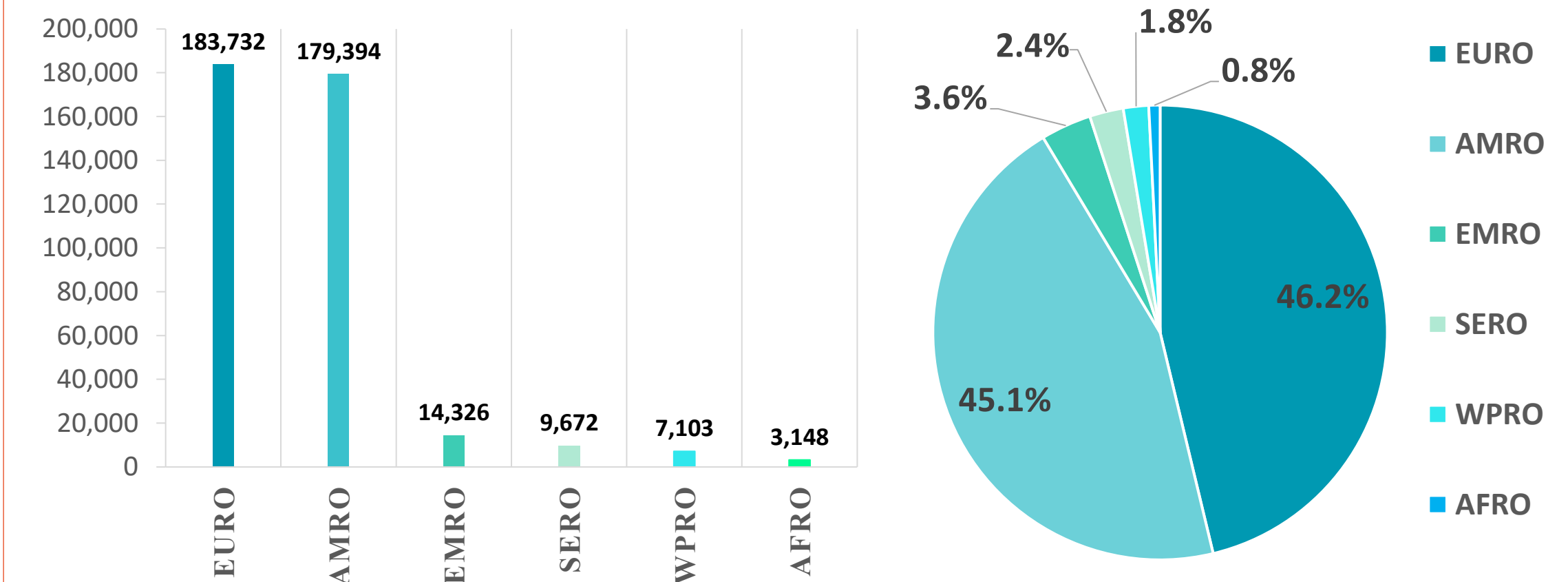


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 7, 2020)

INFECTED



DEATH



Map chart published by Abu Dhabi Public Health Center 2020.

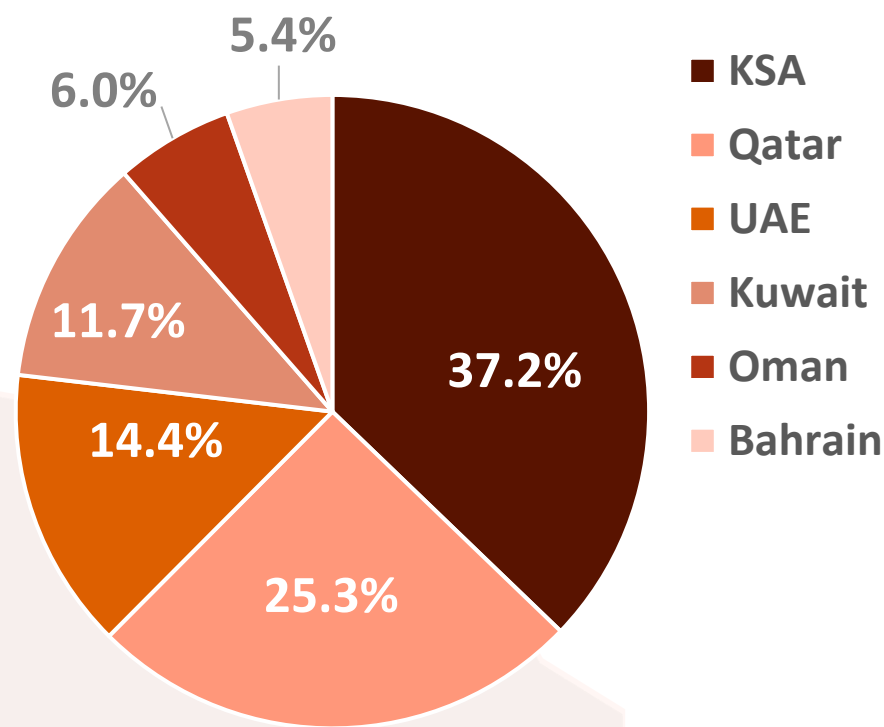
Data resources: [WHO](https://www.who.int/)

Epidemiology

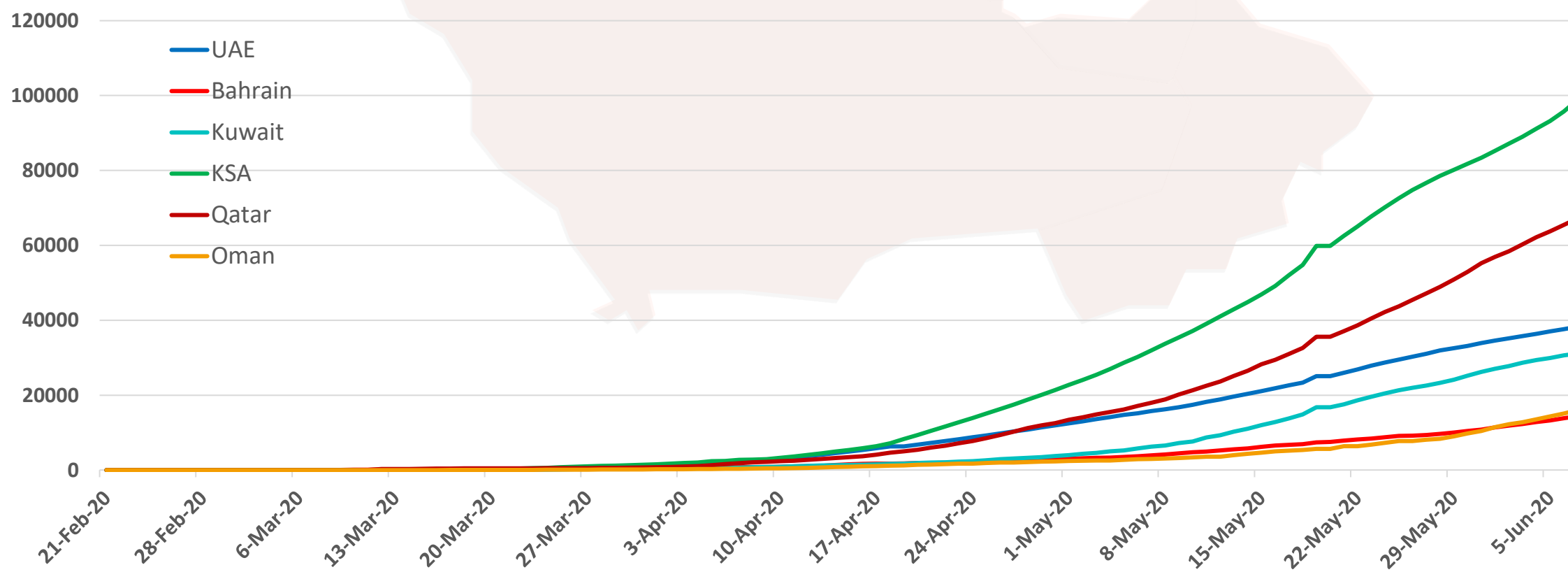


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 7, 2020)

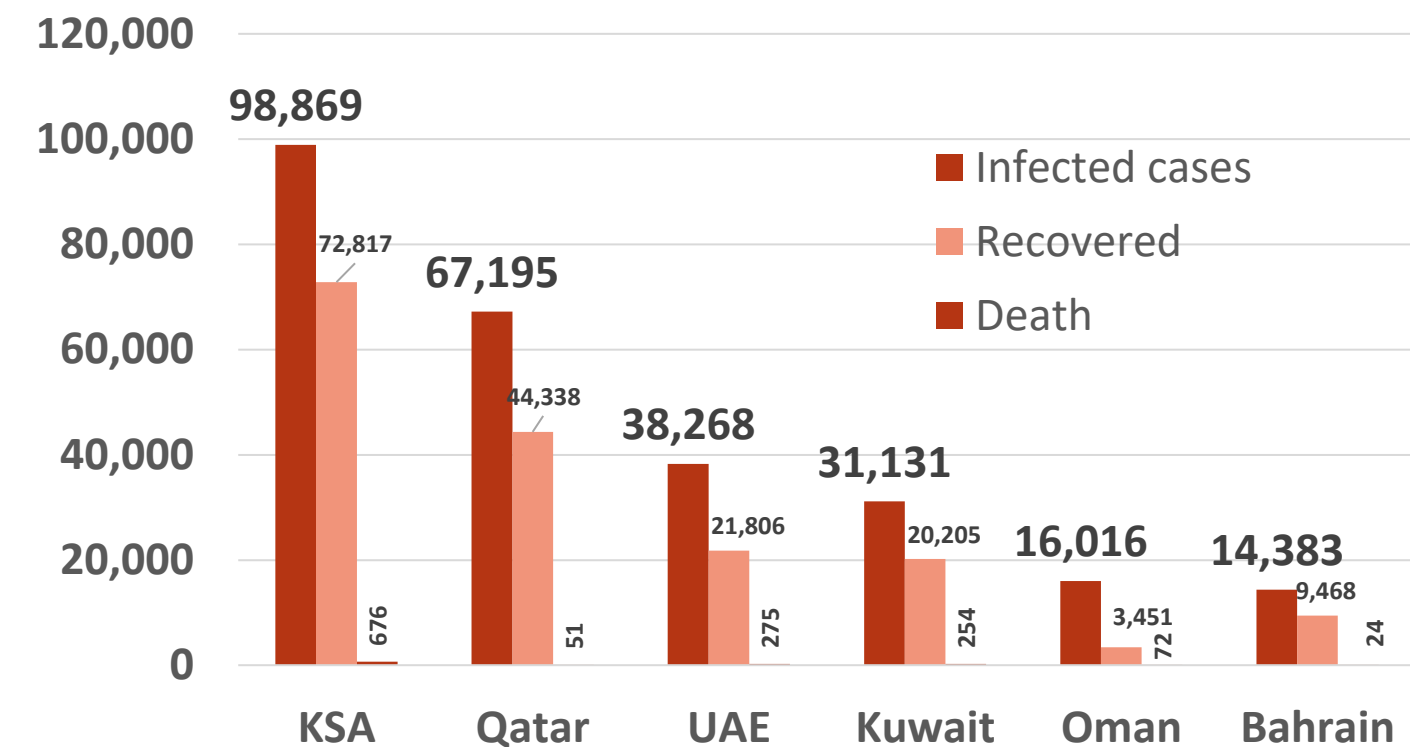
TOTAL NUMBER OF INFECTED CASES



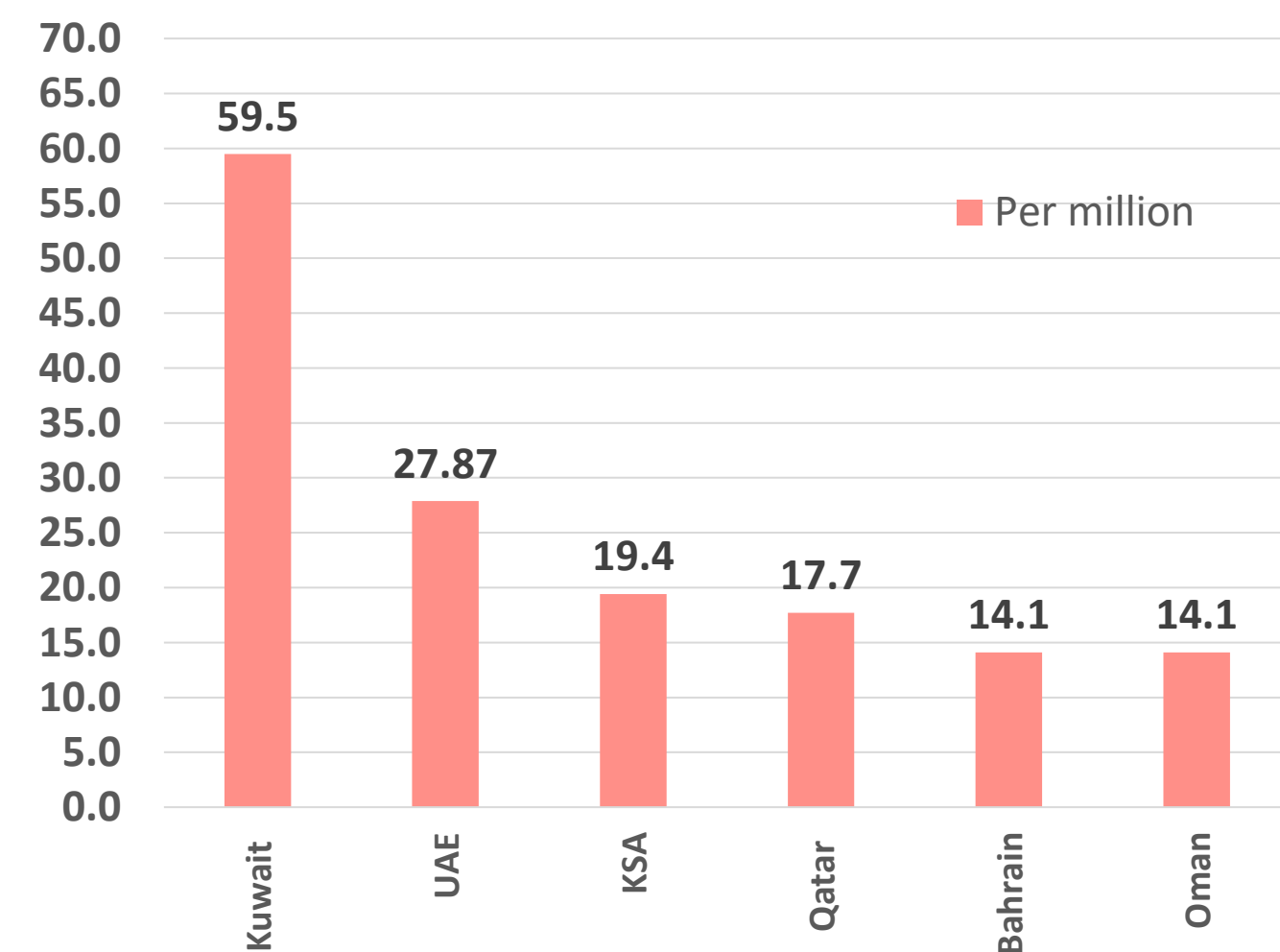
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Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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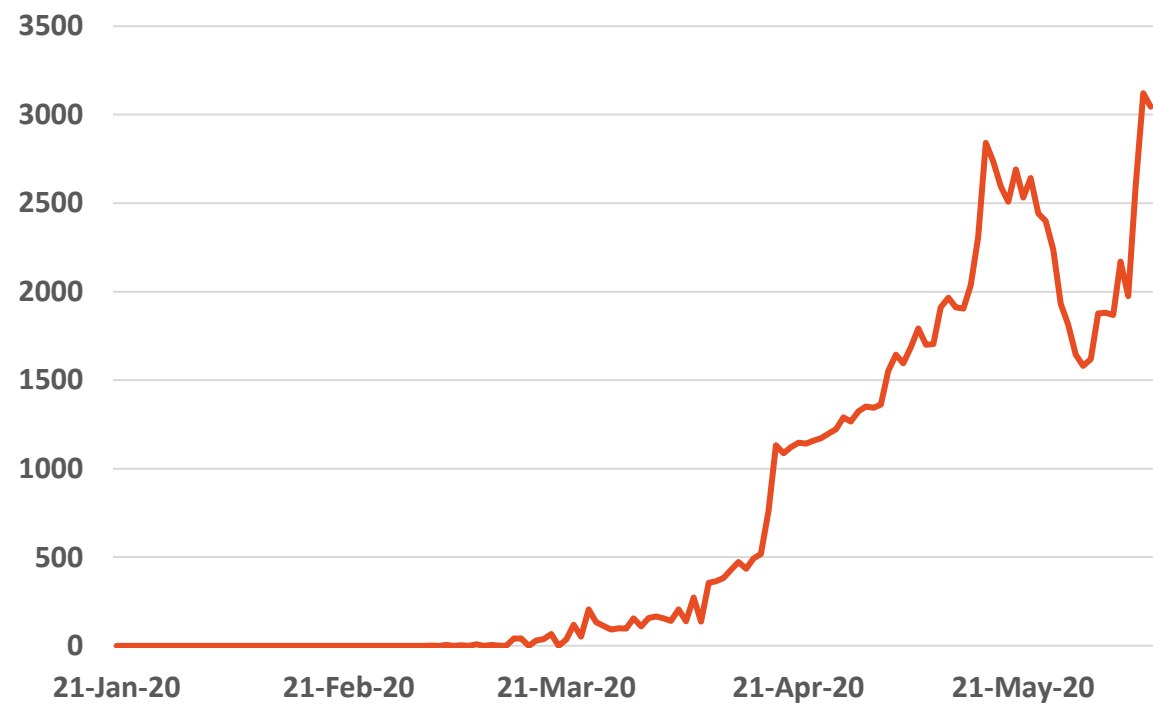
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Epidemiology



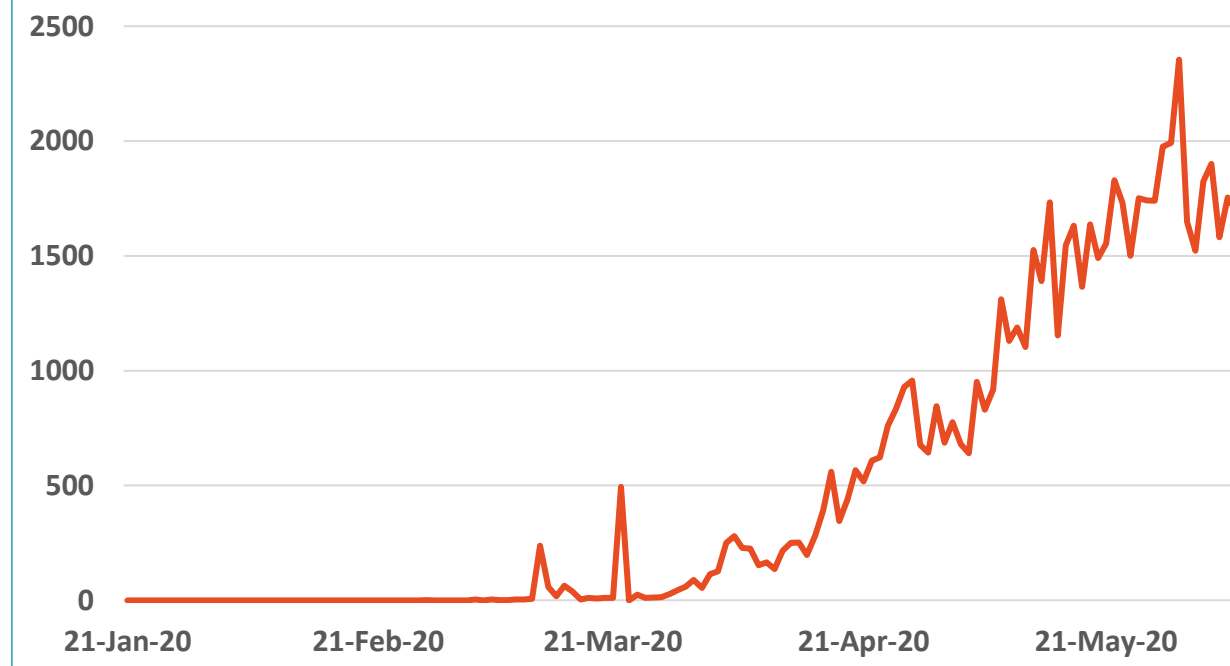
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 7, 2020)

KSA



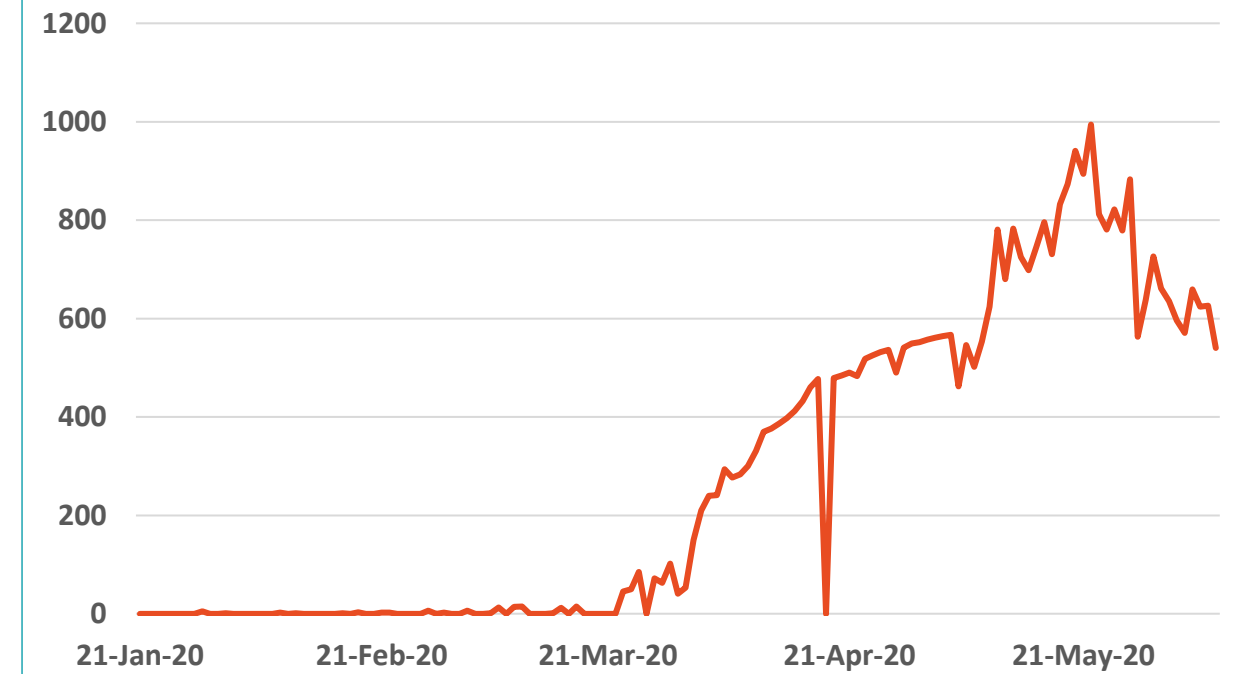
Source : KSA ministry of health & GCCStat

Qatar



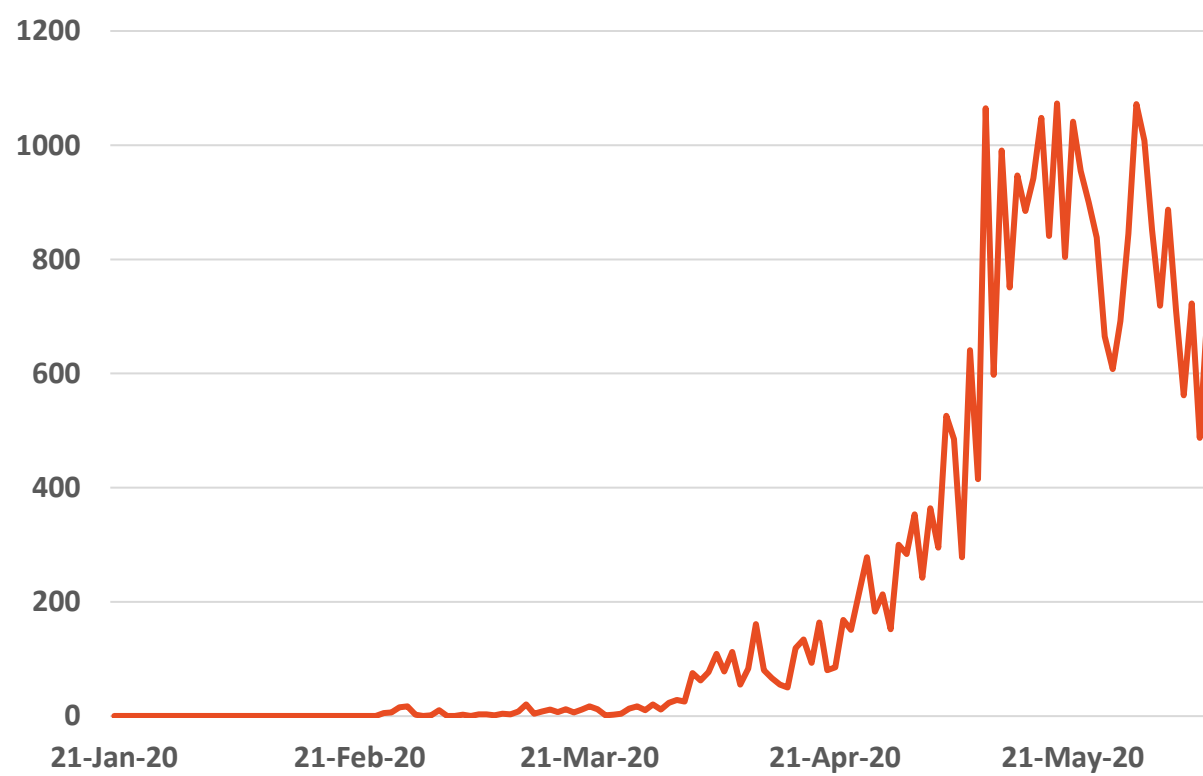
Source : Qatar ministry of health & GCCStat

UAE



Source : UAE ministry of health & GCCStat

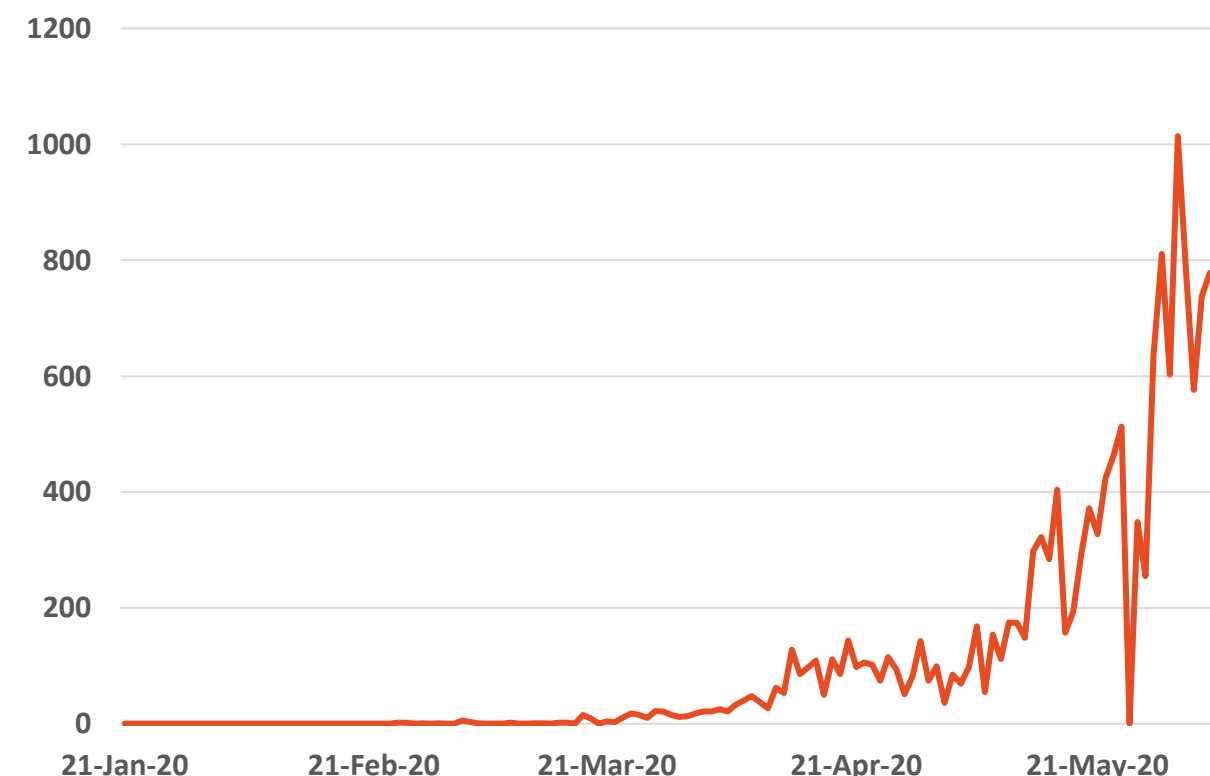
Kuwait



Source : Kuwait ministry of health & GCCStat

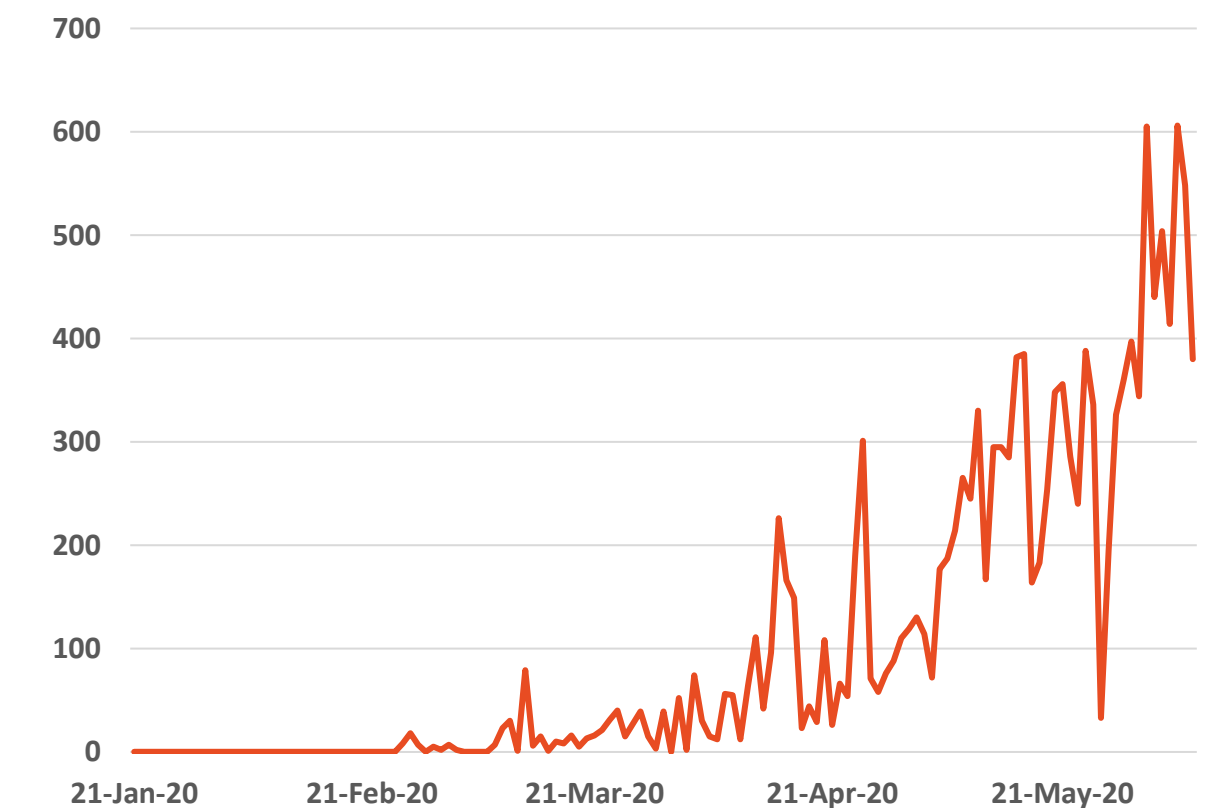
Oman

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Source : Oman ministry of health & GCCStat

Bahrain



Source : WHO & GCCStat

Epidemiology



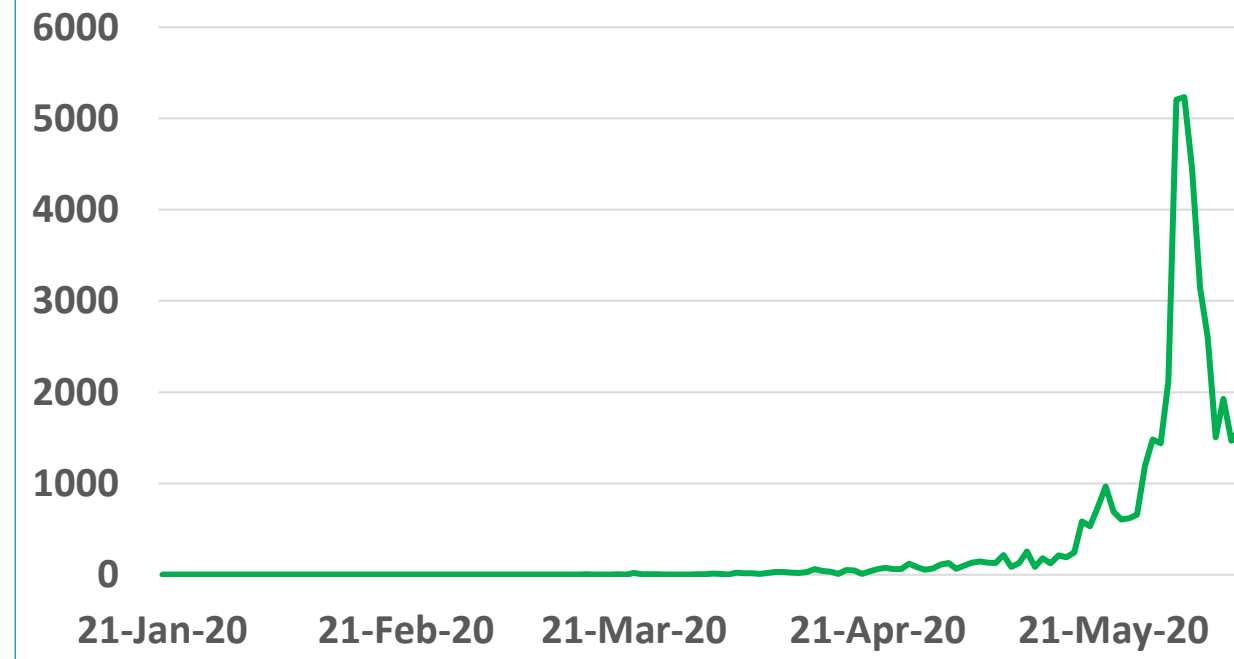
Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 7, 2020)

KSA



Source : KSA ministry of health & GCCStat

Qatar



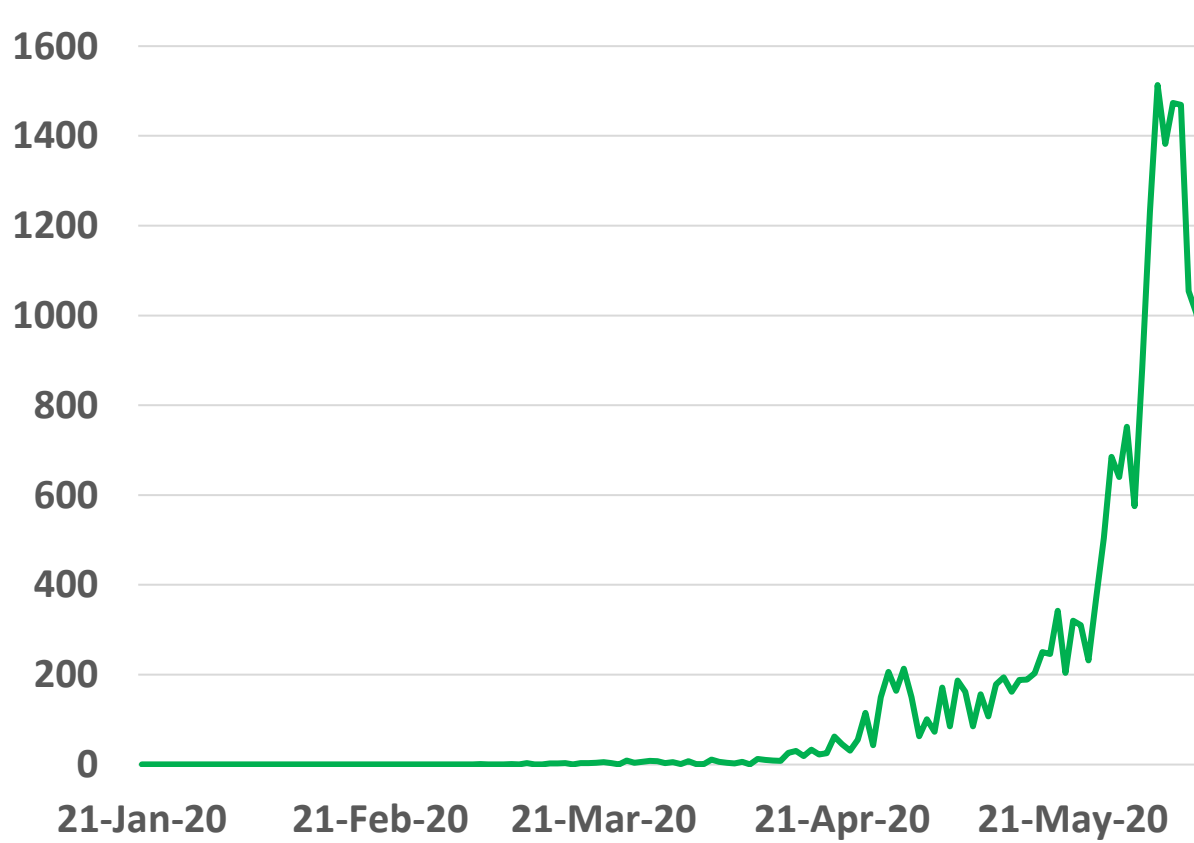
Source : Qatar ministry of health & GCCStat

UAE



Source : UAE ministry of health & GCCStat

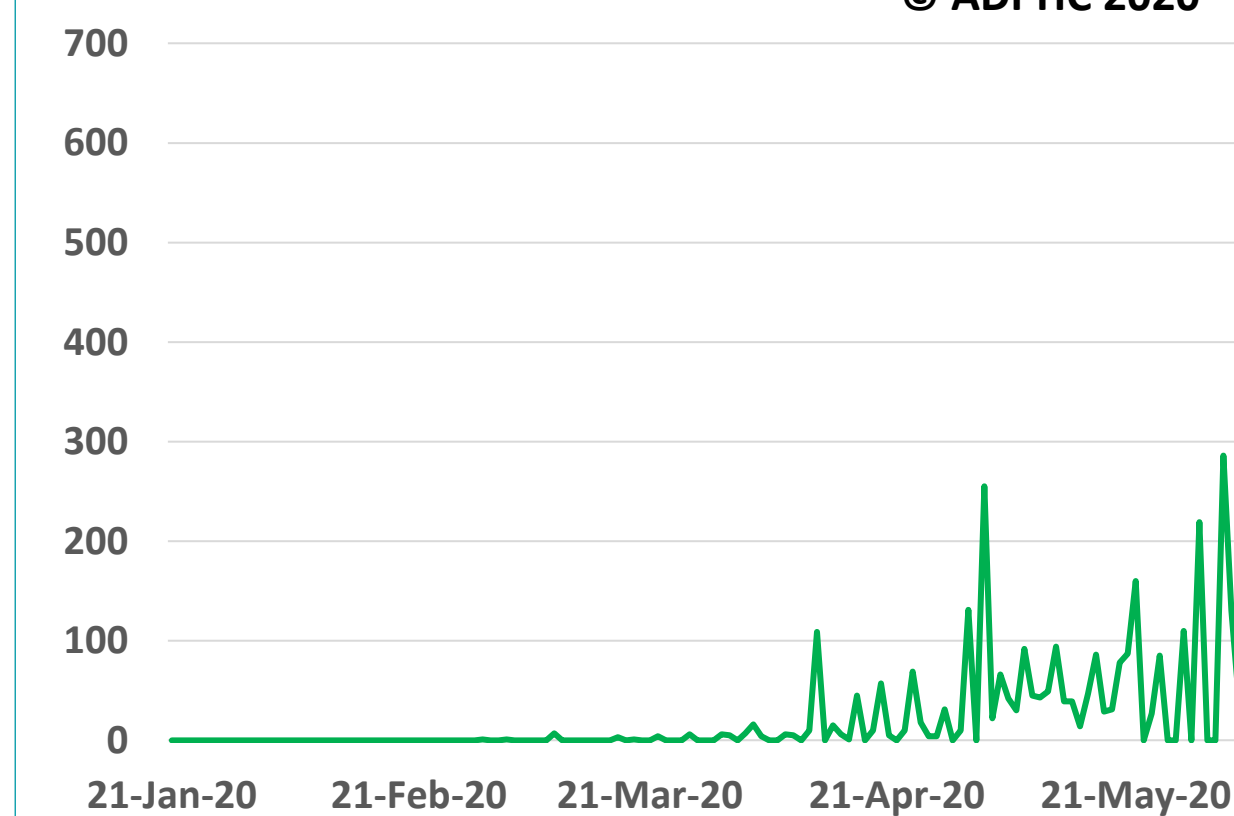
Kuwait



Source : Kuwait ministry of health & GCCStat

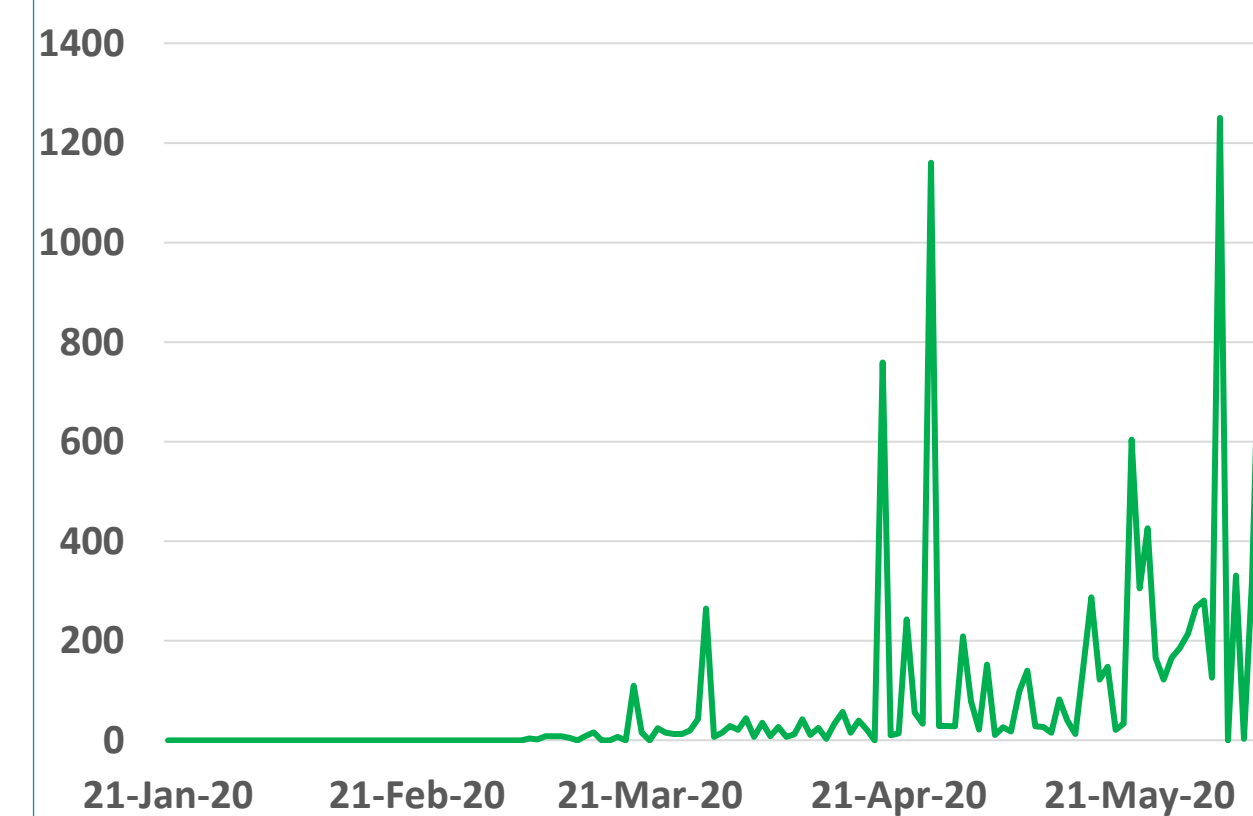
Oman

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Source : Oman ministry of health & GCCStat

Bahrain



Source : WHO & GCCStat

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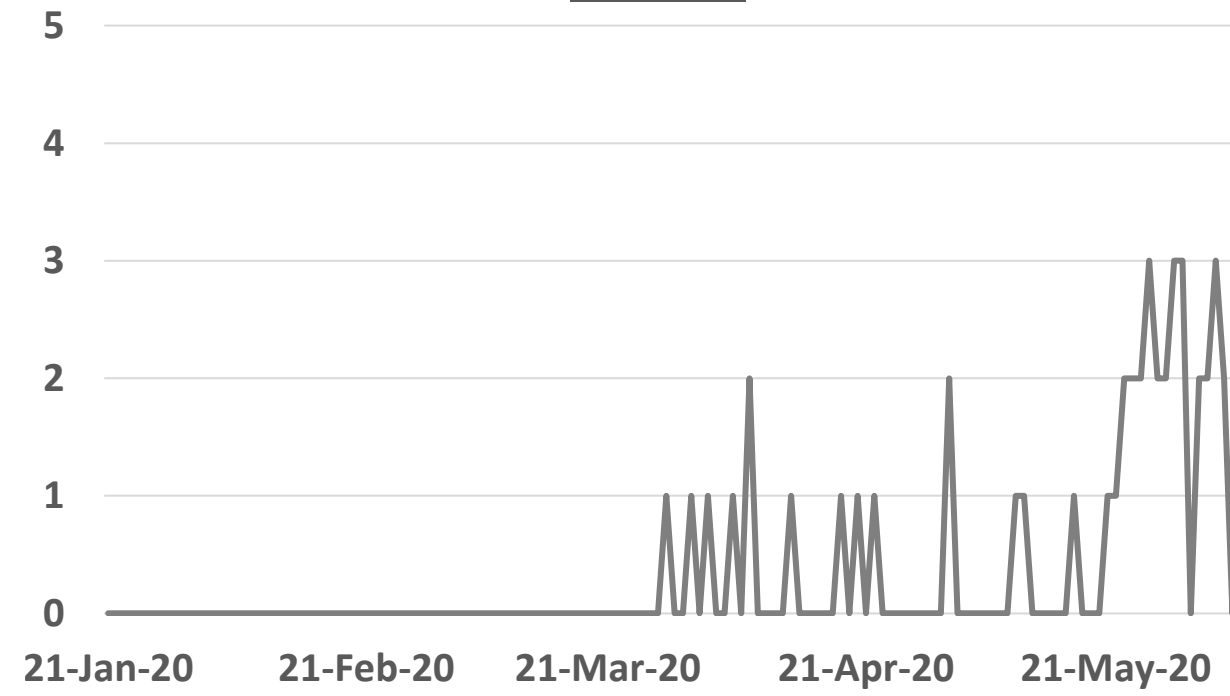
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 7, 2020)

KSA



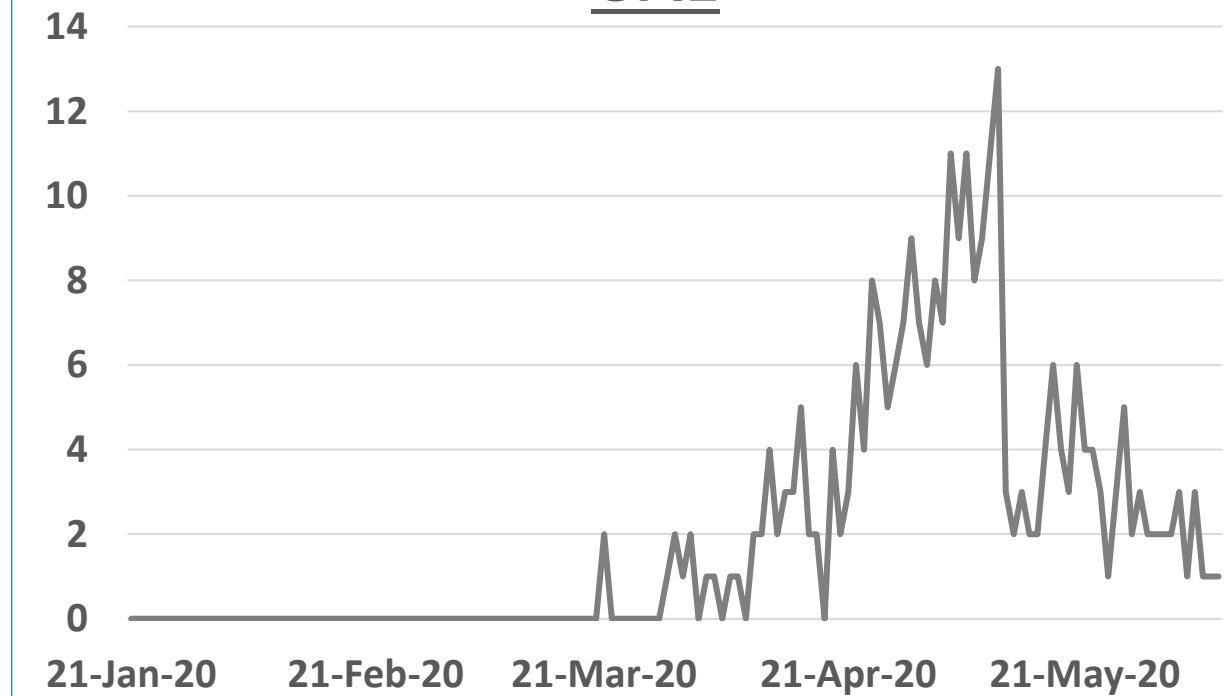
Source : KSA ministry of health & GCCStat

Qatar



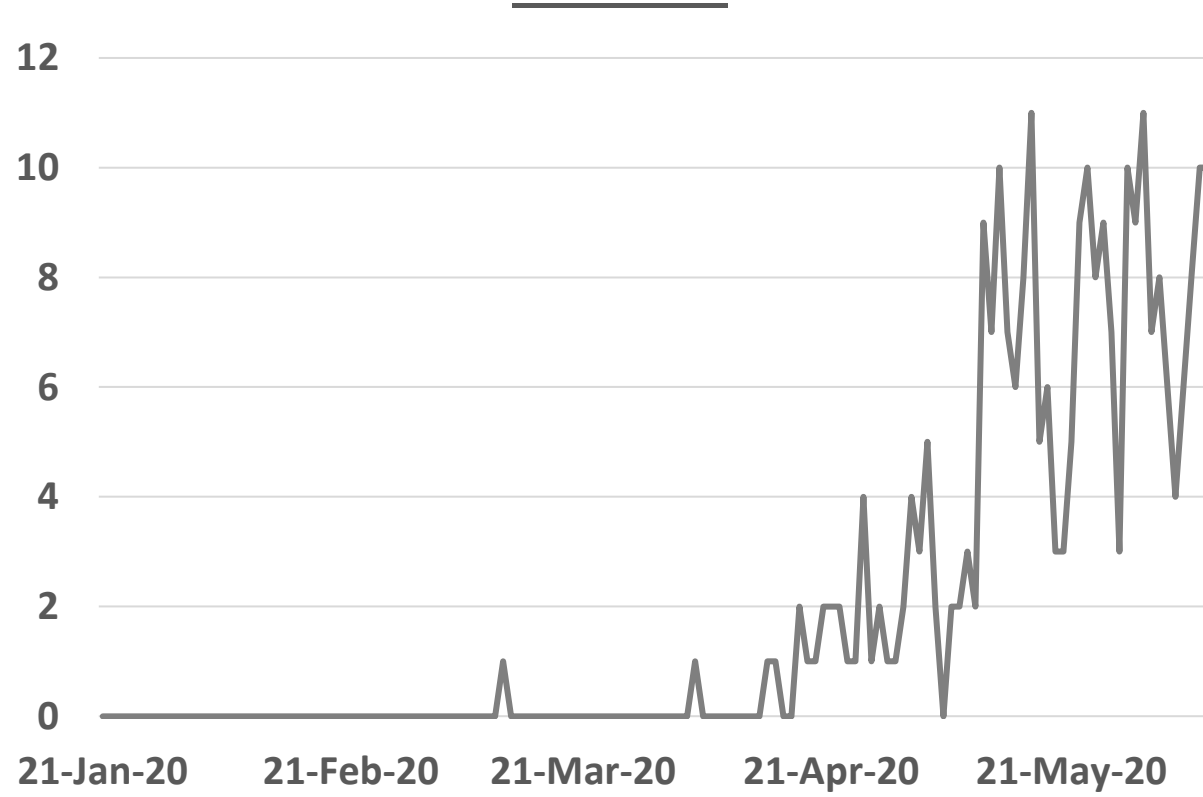
Source : Qatar ministry of health & GCCStat

UAE



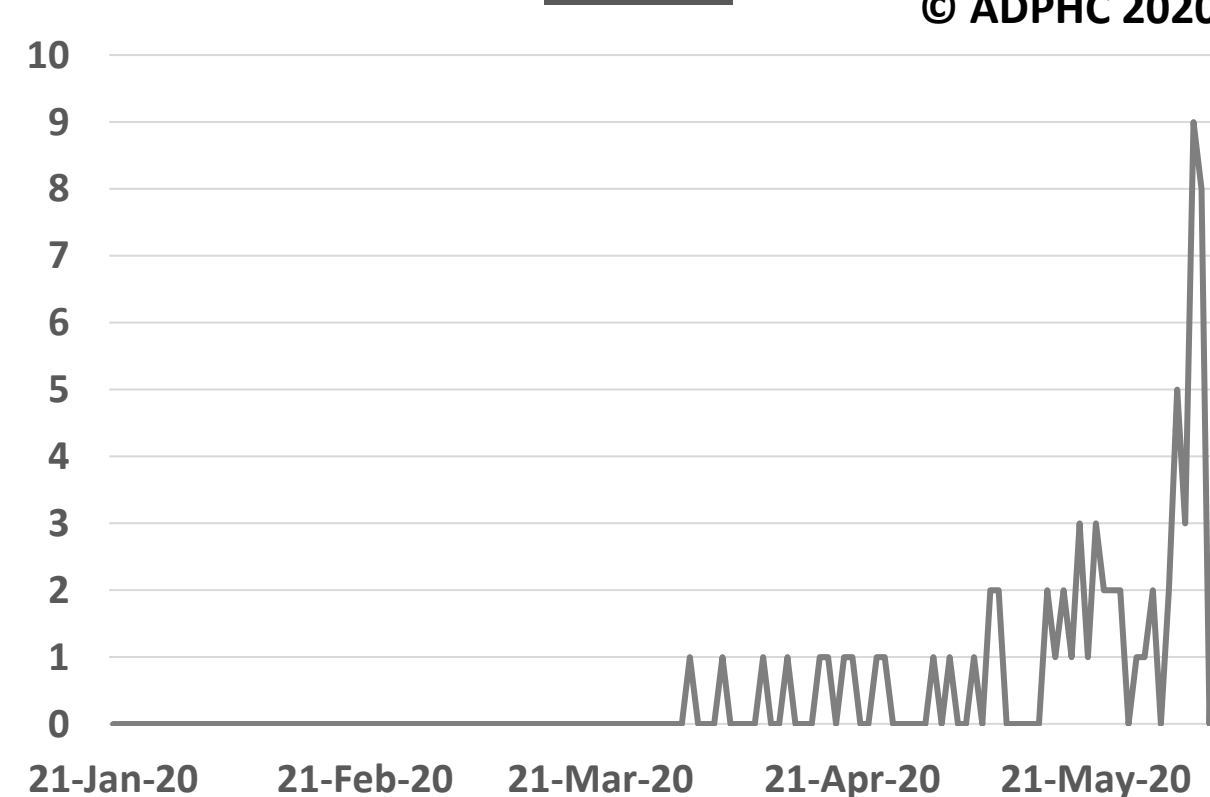
Source : UAE ministry of health & GCCStat

Kuwait



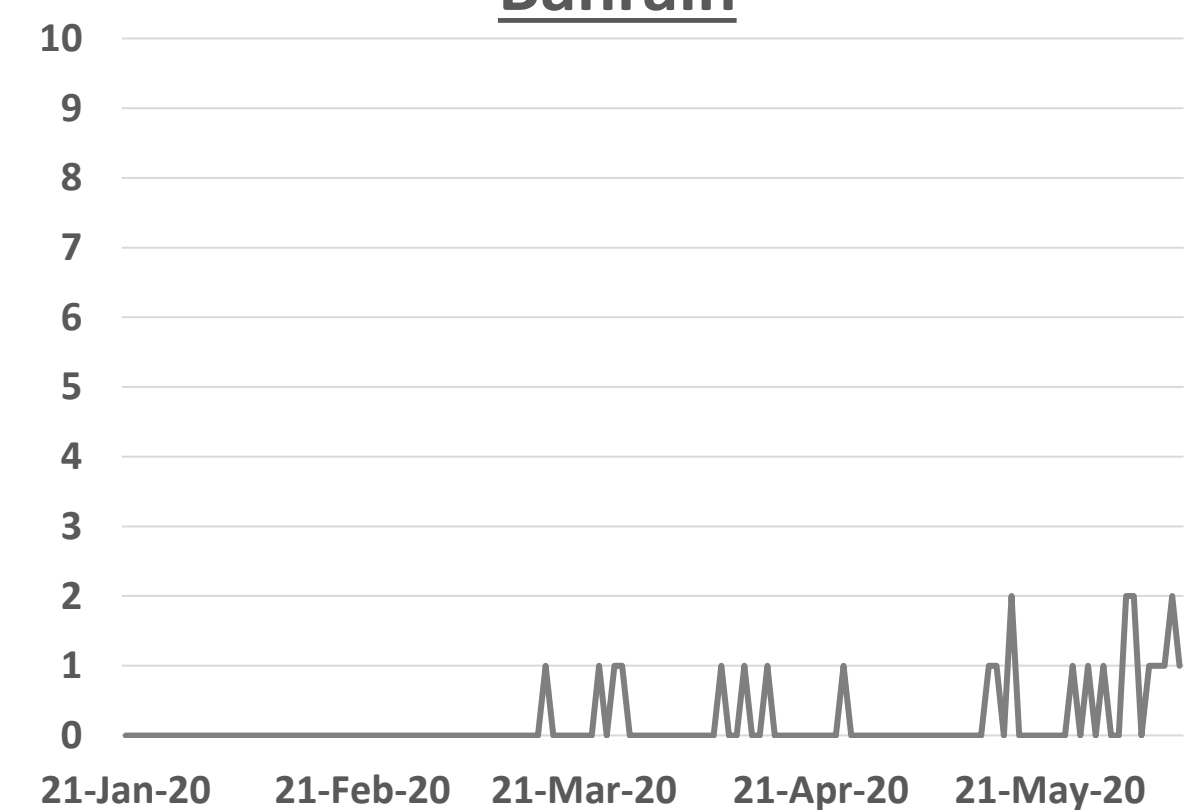
Source : Kuwait ministry of health & GCCStat

Oman



Source : Oman ministry of health & GCCStat

Bahrain



Source : WHO & GCCStat

Clinical Feature and Transmission



Article 1: Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study

Published: May 28, 2020, [the Lancet](#)

Summary

- There is a limited evidence available to describe the natural history of patients with cancer who have COVID-19. This cohort study was conducted to assess any association between demographic, clinical, underlying cancer, and COVID-19 treatment-related variables with 30-day all-cause mortality in this population.
- Data was collected from the Cancer Consortium (CCC19) registry database which was formed on March 15, 2020, to study the clinical characteristics and course of illness among patients with COVID-19 who have a current or past diagnosis of cancer from the USA, Canada and Spain. The data was collected between March 17 and April 16, 2020 on baseline clinical conditions, medications, cancer diagnosis and treatment, and COVID-19 disease course. The primary endpoint was all-cause mortality within 30 days of diagnosis of COVID-19.

Findings

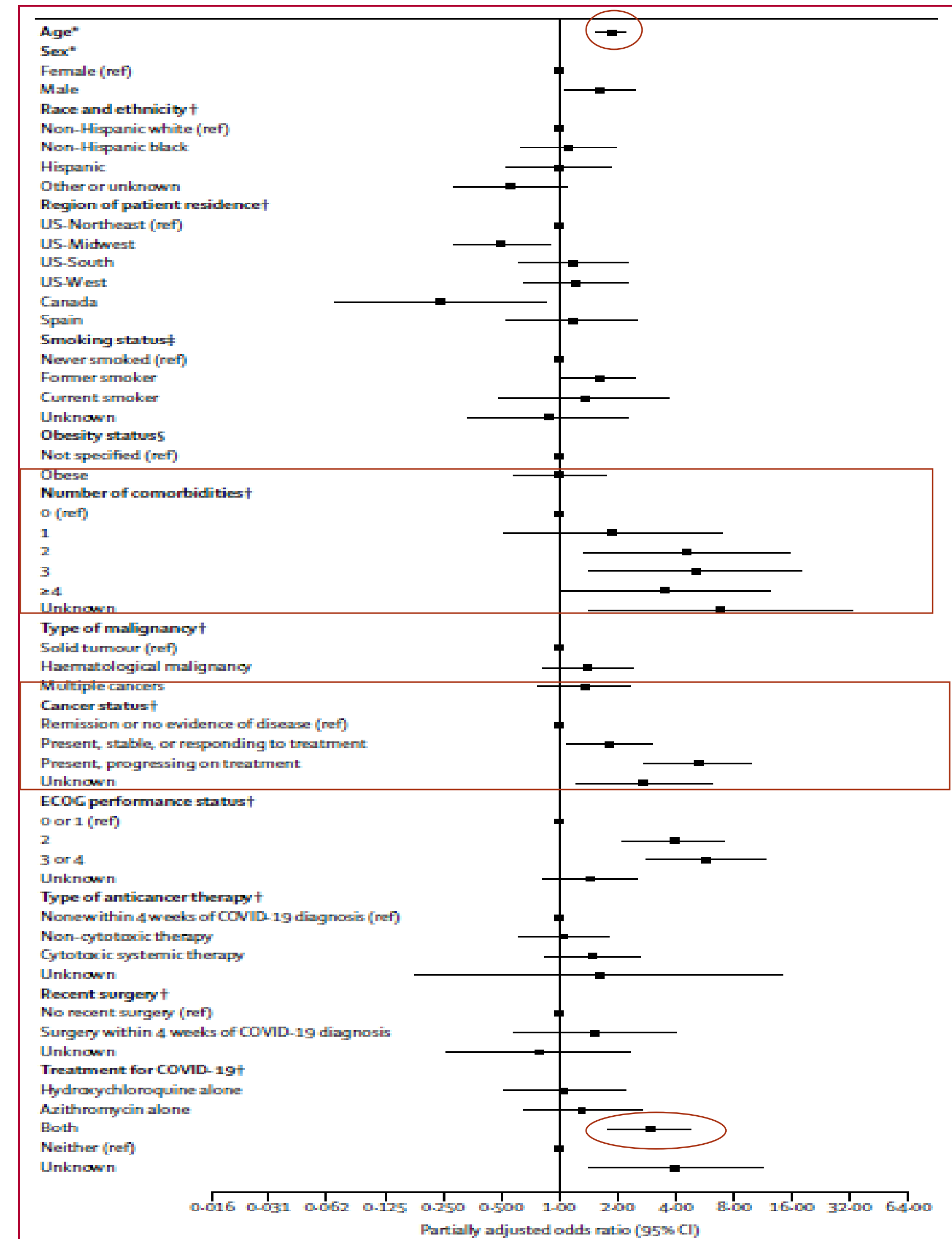
- Out of 1035 records entered into the CCC19 database during the study period, 928 patients met inclusion criteria for the analysis. Median age was 66 years, 279 (30%) were aged 75 years or older, and 468 (50%) patients were male. The most prevalent malignancies were breast (21%) and prostate (16%). 366 (39%) patients were on active anticancer treatment, and 396 (43%) had active cancer and **121 (13%) patients had died**.
- Independent factors associated with increased 30-day mortality, after partial adjustment, were: **increased age, male sex, smoking status, number of comorbidities, active cancer and receipt of azithromycin plus hydroxychloroquine**.
- **Compared with residence in the US-Northeast, residence in Canada or the US-Midwest were associated with decreased 30-day all-cause mortality. Race and ethnicity, obesity status, cancer type, type of anticancer therapy, and recent surgery were not associated with mortality.**

Clinical Feature and Transmission



Article 1: Cont., Conclusion

- Among patients with cancer and COVID-19, 30-day all-cause mortality was high (13%) compared to non-cancer population and associated with general risk factors and risk factors unique to patients with cancer.
- Taken together with our cohort from multiple institutions, these findings have important policy implications including, but not limited to, the need for increased surveillance and testing for SARS-CoV-2, minimizing health-care system exposure, and reconsideration of procedures and treatments in patients with cancer.



Vaccine (1/2)



Article 2: The Race of Coronavirus Vaccine

Published: April 30, 2020 in [Springer Nature](#)

Summary:

VIRUS VACCINE

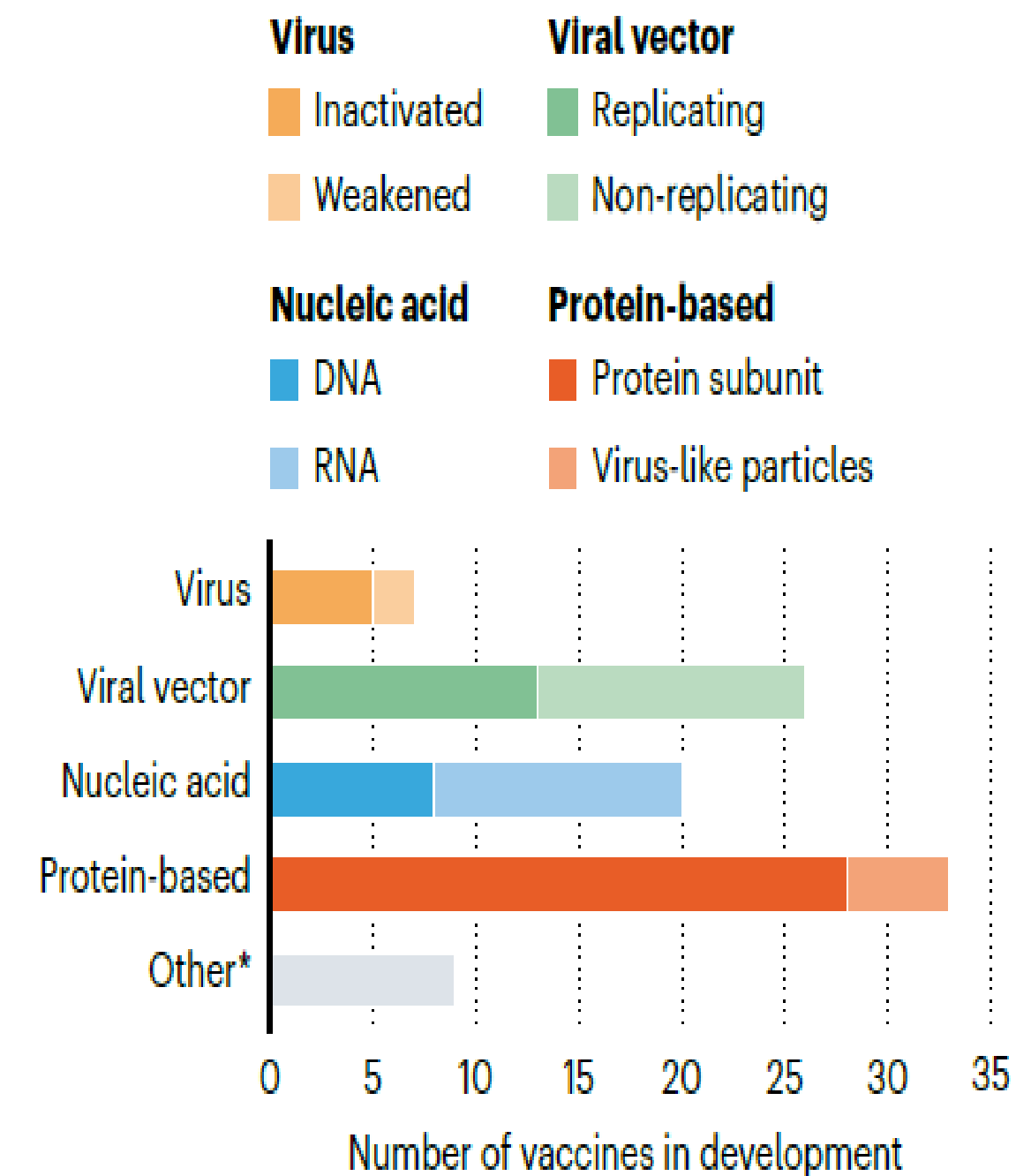
At least seven teams are developing vaccines using the virus itself, in a weakened or inactivated form. Many existing vaccines are made in this way, such as those against measles and polio, but they require extensive safety testing. Sinovac Biotech in Beijing has started to test an inactivated version of SARSCoV2 in humans.

NUCLEIC ACID VACCINES

At least 20 teams are aiming to use genetic instructions (in the form of DNA or RNA) for a coronavirus protein that prompts an immune response. RNA and DNA based vaccines are safe and easy to develop: to produce them involves making genetic material only, not the virus. But they are unproven: no licensed vaccines use this technology.

AN ARRAY OF VACCINES

All vaccines aim to expose the body to an antigen that won't cause disease, but will provoke an immune response that can block or kill the virus if a person becomes infected. There are at least eight types being tried against the coronavirus, and they rely on different viruses or viral parts.



* Other efforts include testing whether existing vaccines against poliovirus or tuberculosis could help to fight SARS-CoV-2 by eliciting a general immune response (rather than specific adaptive immunity), or whether certain immune cells could be genetically modified to target the virus.

VIRAL VECTOR VACCINES

Around 25 groups say they are working on viral vector vaccines. A virus such as measles or adenovirus is genetically engineered so that it can produce coronavirus proteins in the body. These viruses are weakened so they cannot cause disease. There are two types: those that can still replicate within cells and those that cannot because key genes have been disabled. Replicating viral vector (such as weakened measles) & Non-replicating viral vector (such as adenovirus)

PROTEIN BASED VACCINES

Many researchers want to inject coronavirus proteins directly into the body. Fragments of proteins or protein shells that mimic the coronavirus's outer coat can also be used. Protein subunits (Twenty eight teams are working on vaccines with viral protein subunits) & Virus-like particles (particle' (VLP) vaccines, which can trigger a strong immune response, but can be difficult to manufacture.

Vaccine(2/2)



Article 3: COVID19 vaccine tracker

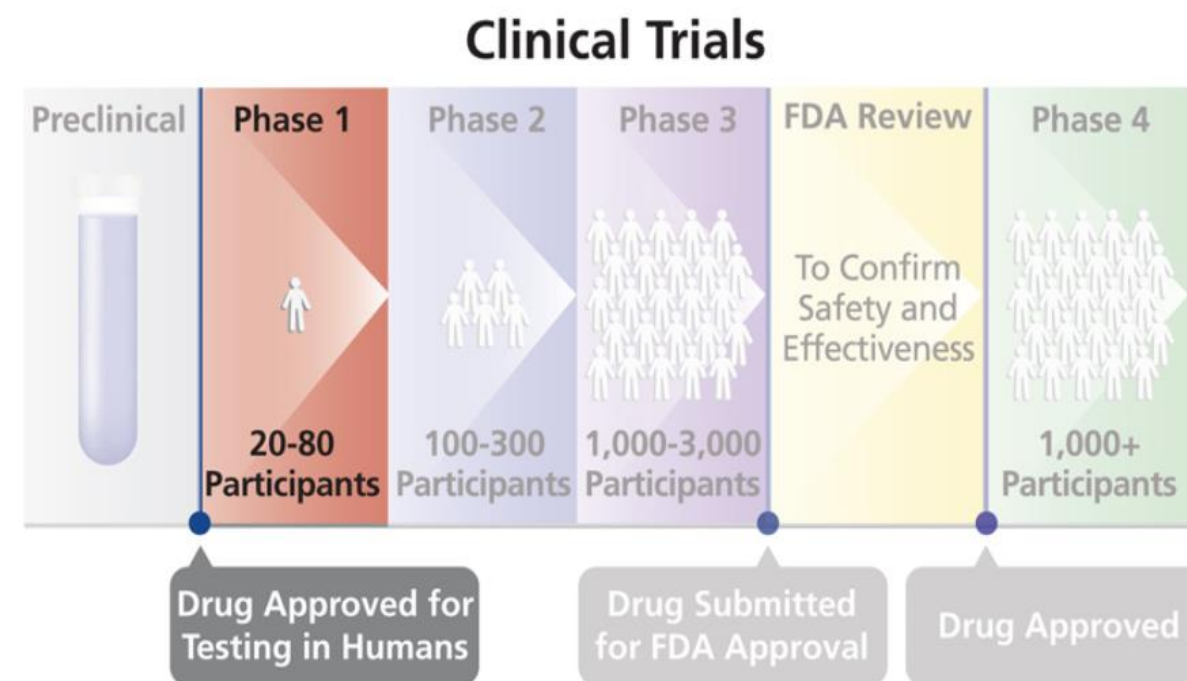
Published: last updated on June 3, 2020 in the [RAPS](#)

Summary:

The COVID19 vaccine tracker is posting updates on vaccine trials on weekly basis. Currently more than 100 vaccine trial are listed on the tracker. We have chosen the most important candidates.

mRNA-1273

Type: mRNA vaccine
Sponsor: Moderna
Trial phase : pass phase 1 and 2 , currently applying for phase 3 trial. Preclinical data is not clearly mentioned (bypassed?) generally safe and well tolerated



BNT162

Type: mRNA vaccine
Sponsor: .Pfizer and BioNtech
Trial phase : 1&2
Available in multiple study sites in Europe.
Expected development of vaccine in fall 2020

AZD1222

Type : viral vector vaccine
Sponsor : University of Oxford
Trial phasee: On 22 May, Oxford researchers announced that they had begun recruitment for a Phase 2/3 trial of approximately 10,000 healthy adult volunteers.
AstraZeneca Company announced they will begin to produce the vaccine in early September 2020.

Janssen AdVac-based vaccine

Type : viral vector vaccine.
Sponsor : Johnson & Johnson's (they are planning to use the same technology of Ebola vaccine)
Trial Phase : preclinical

Recombinant vesicular stomatitis virus (rVSV) vaccine

Type : viral vector vaccine
Sponsor: Merck and nonprofit scientific research organization IAVI .
Trial phase: pre-clinical
They are using a technology based on previously developed Ebola vaccine by the same company.