

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Scientific Research Monitoring on COVID-19

26 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>



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.





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





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

Scientific Research

- **Treatment** : The recovery trial have posted the full details of the preliminary data on dexamethasone.
- **Public Health Response**: an example of how effective community containment measures done in one town in china.
- **Transmission**: article discuss the risk Use of aerosolised medications at home and the risk of transmission. The article advise to use mesh nebulizers or use inhaler substitute if available.





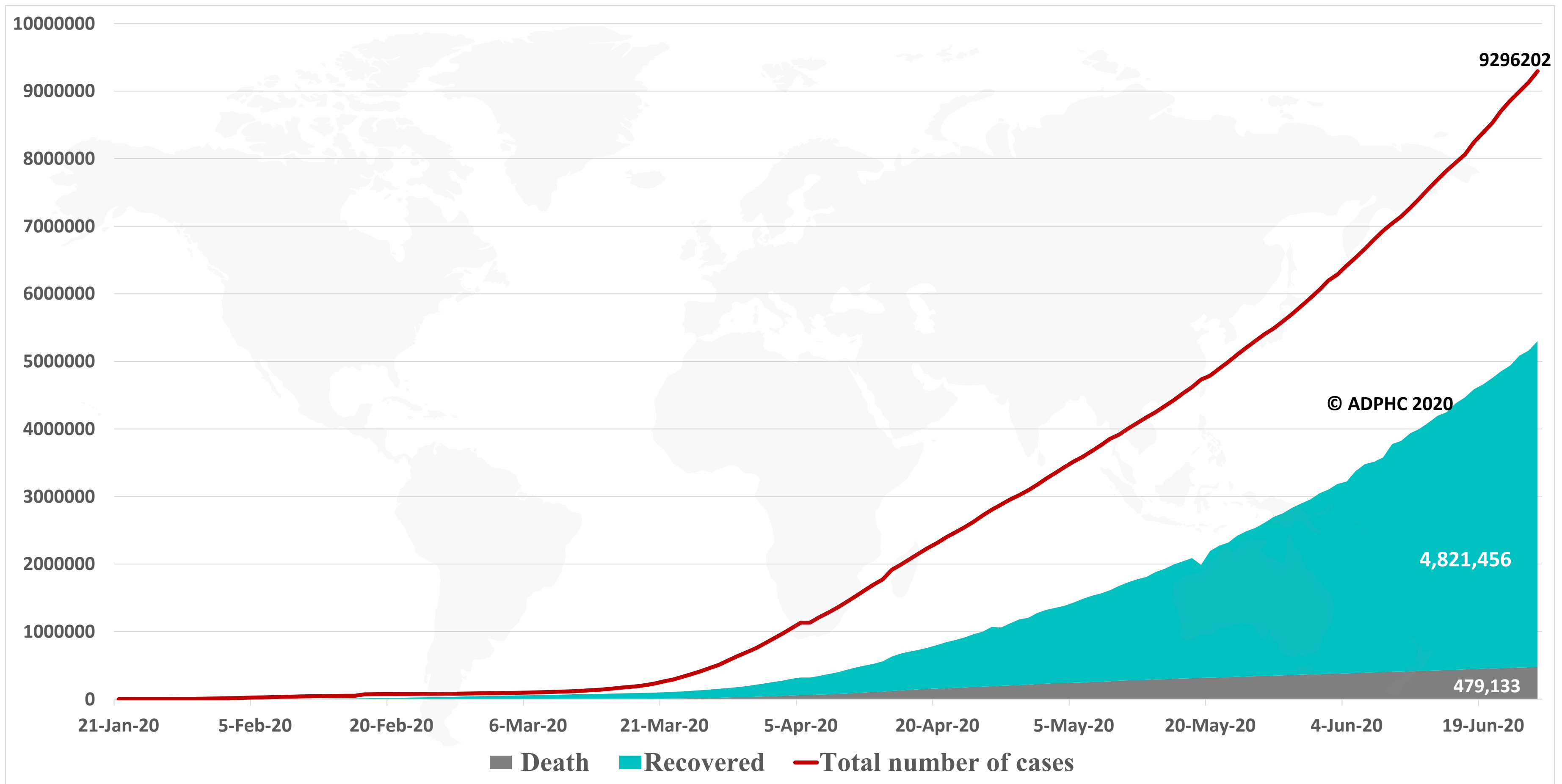
25 June 2020 Report

- the Director-General highlighted work by WHO and UN partners to **ensure global supplies of oxygen for treating patients.**
- The government of the Democratic Republic of the Congo today declared the end of the country's 10th outbreak of Ebola virus disease.
- As cases of COVID-19 in the **Americas remain high**, WHO's Regional Director for the Americas, Dr Carissa F. Etienne cautioned that **"We must be realistic about the future: all of us must adjust to a new way of life and redefine our sense of normal."** She reiterated **"though we rejoice when one country successfully flattens its COVID-19 epidemic curve, the risk of re-emergence will always remain unless we flatten the curve regionally and globally."**
- WHO updated on their interim guidance on **Critical preparedness, readiness and response actions for COVID-19.** main updates are
 - WHO has defined four transmission scenarios for COVID 19:
 1. No cases: Countries/ territories/ areas with no cases;
 2. Sporadic cases: Countries/ territories/ areas with one or more cases, imported or locally detected;
 3. Clusters of cases: Countries/ territories/ areas experiencing cases, clustered in time, geographic location, and/or by common exposure;
 4. Community transmission: Countries/ territories/areas experiencing larger outbreaks of local transmission, defined through an assessment of factors including, but not limited to:
 - Large numbers of cases which cannot be linked to transmission chains
 - Large numbers of cases from sentinel lab surveillance or increasing positive tests through sentinel samples (routine systematic testing of respiratory samples from established laboratories)
 - Multiple unrelated clusters in several areas of the country/territory/area.





Figure 1: Total number of infected, recovered, and death cases (January 21st to Jun 25, 2020)



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

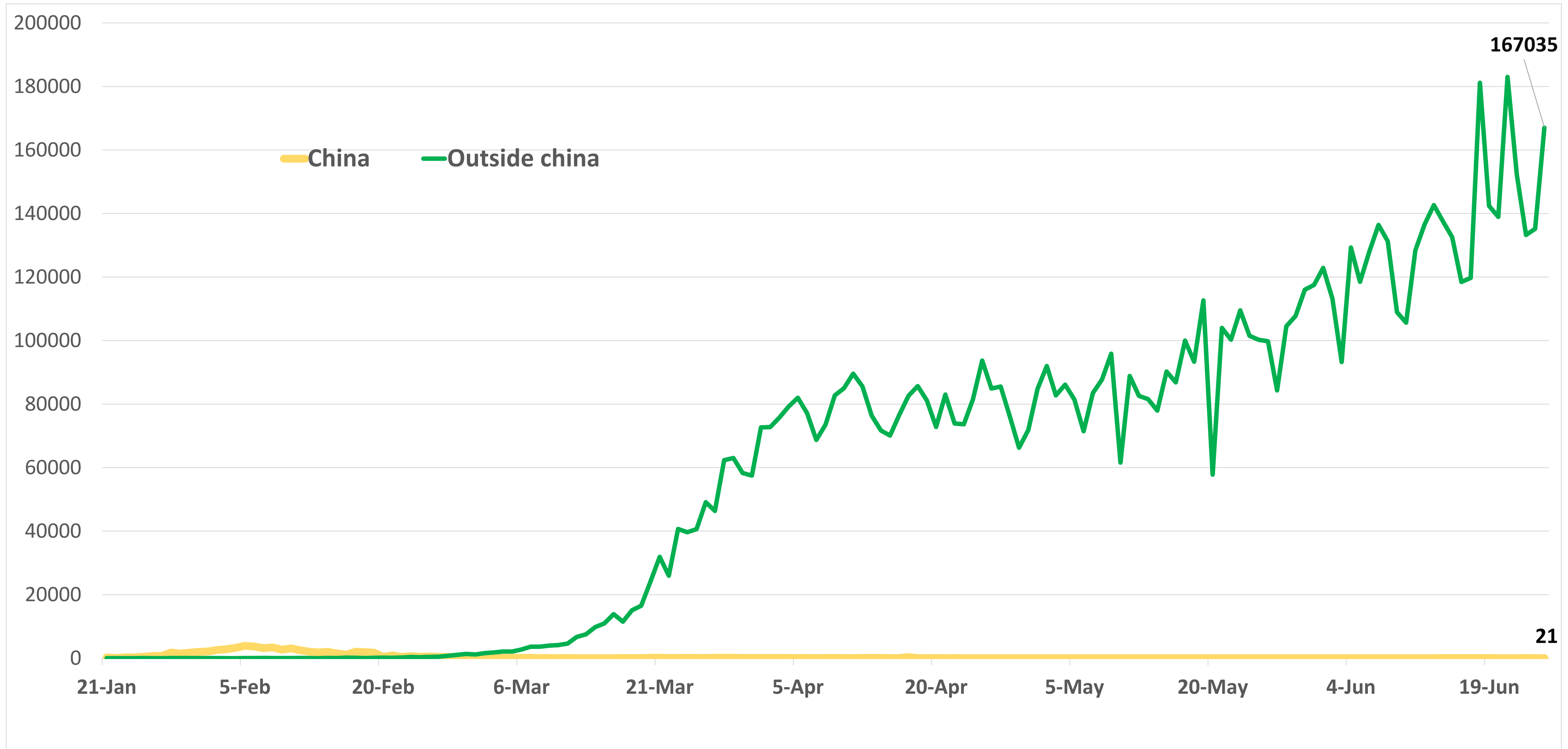
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Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 25, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

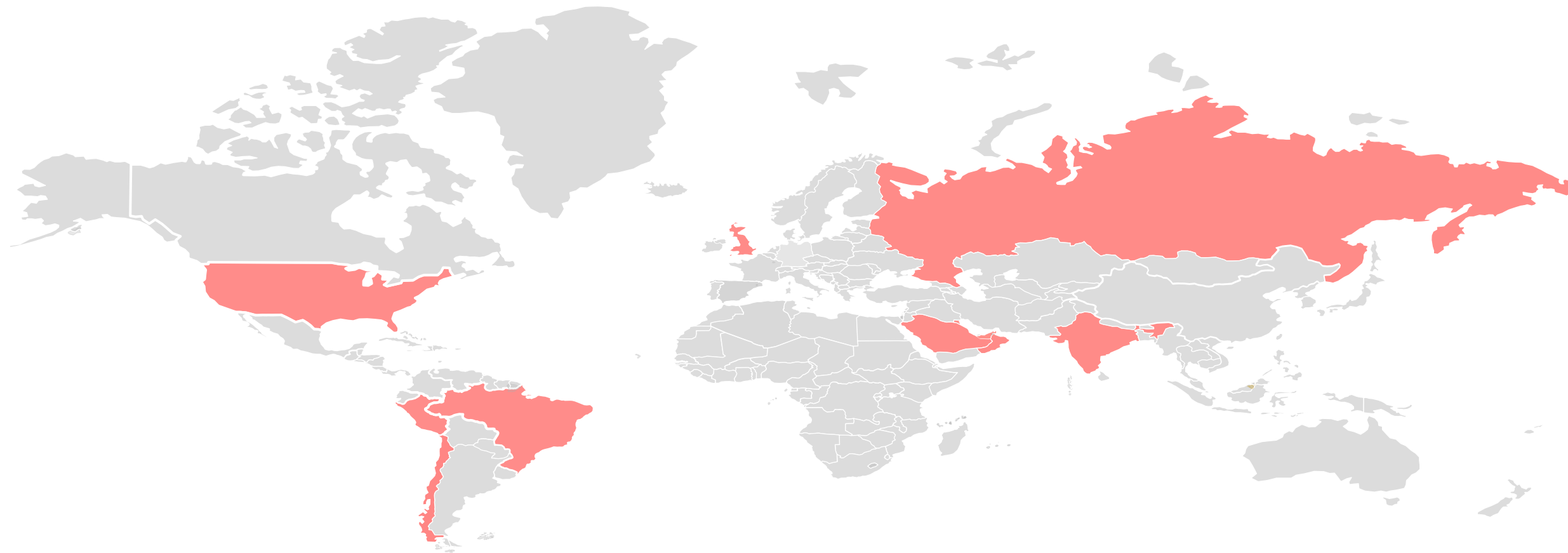
Data resources: [WHO](#)

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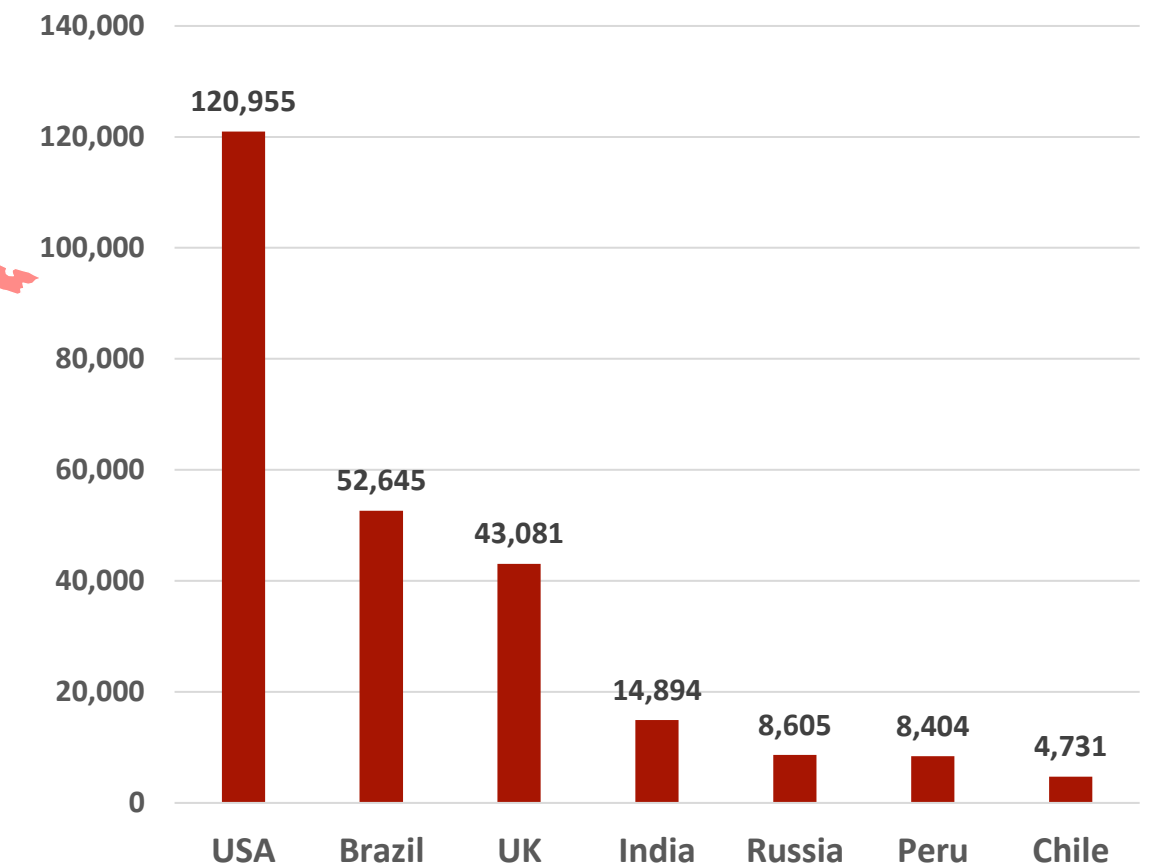
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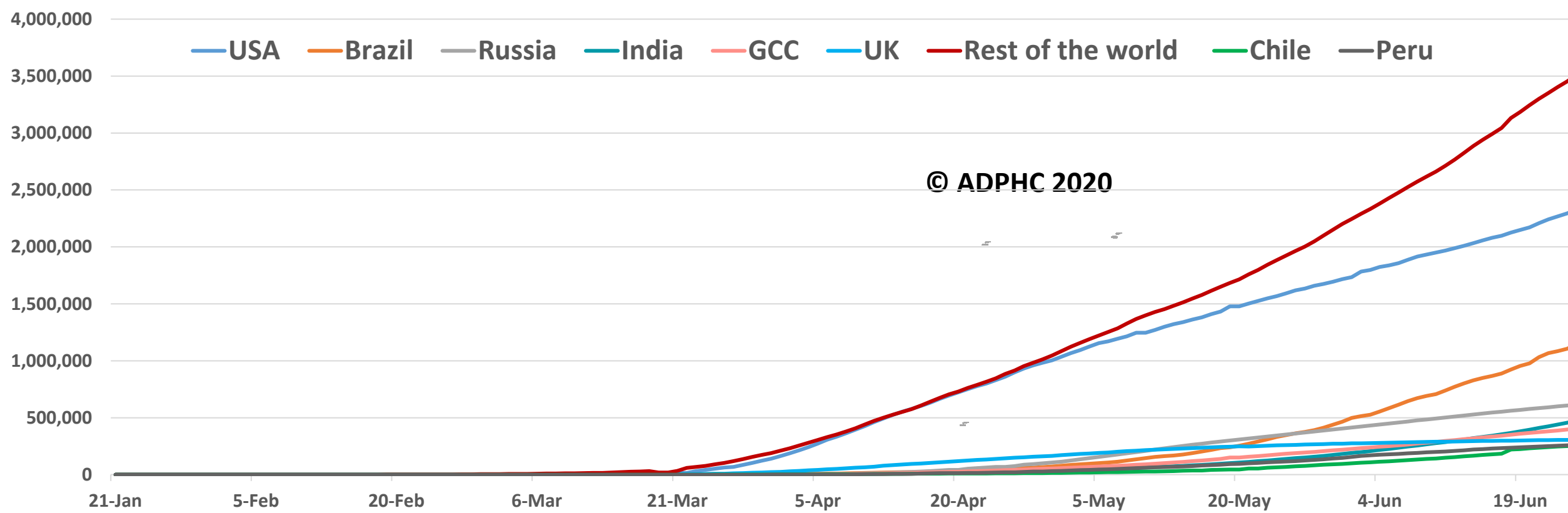
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 25, 2020).



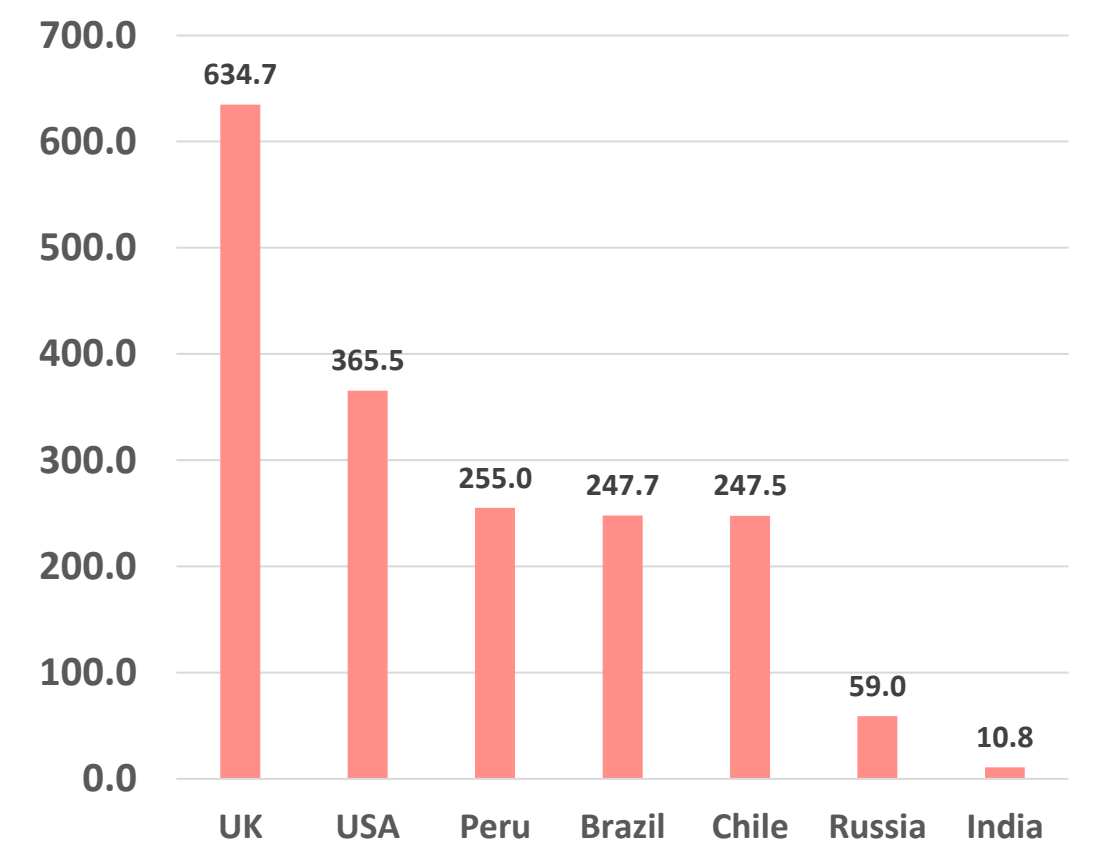
TOTAL DEATHS



TOTAL INFECTED CASES



DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

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

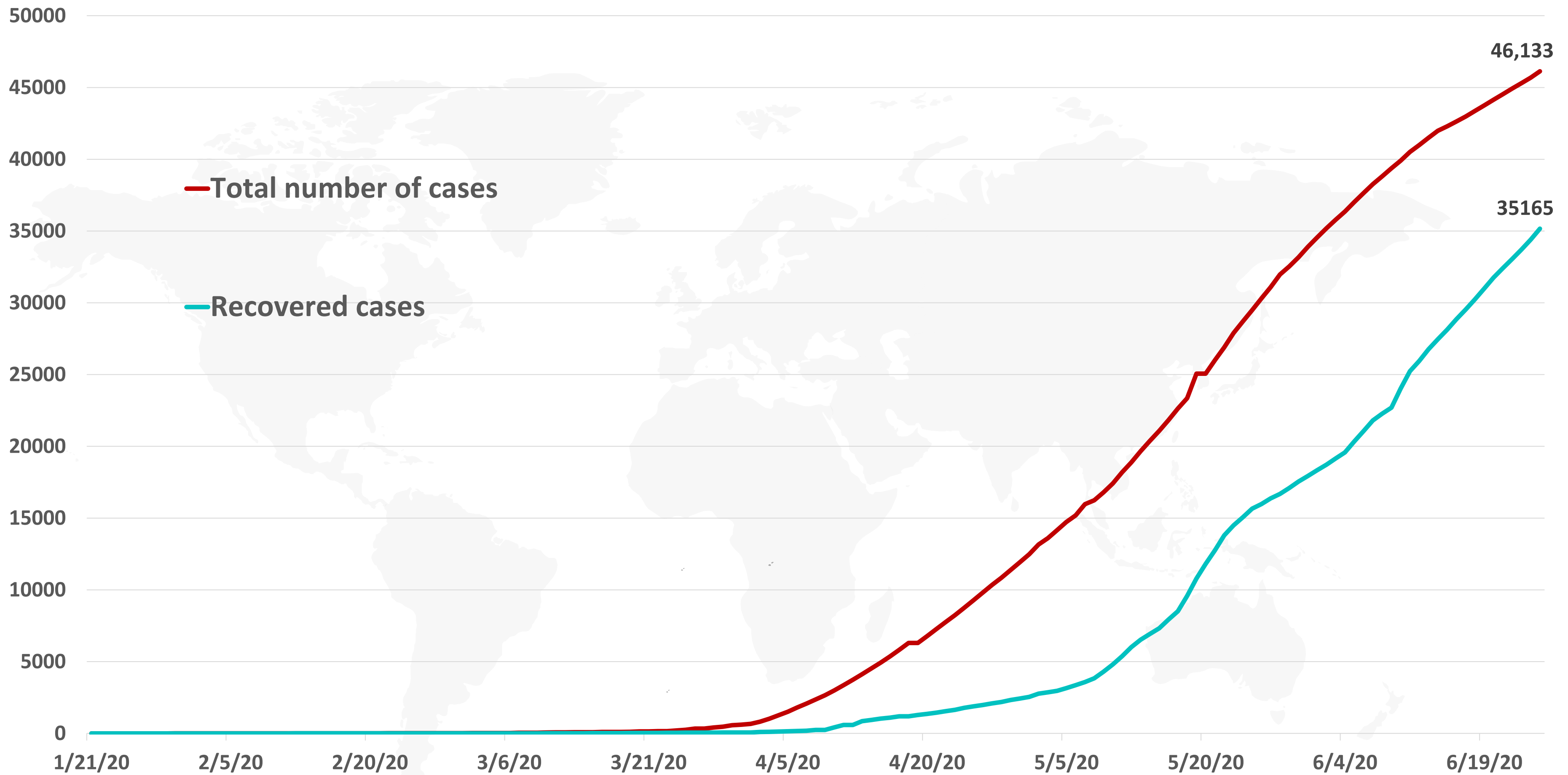
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Figure 4: Total number of COVID-19 infected and recovered cases in UAE over time



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

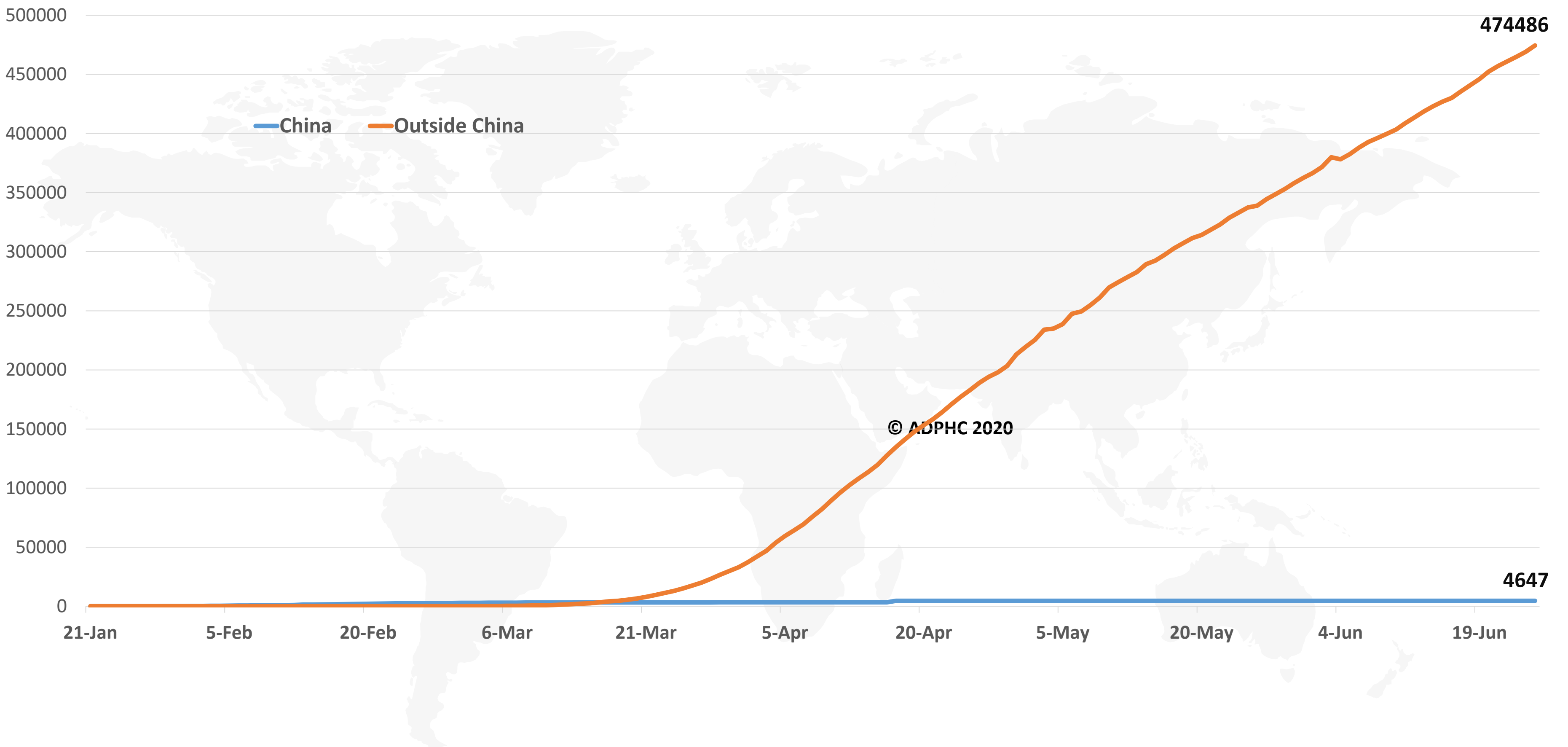
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Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to Jun 25, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

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

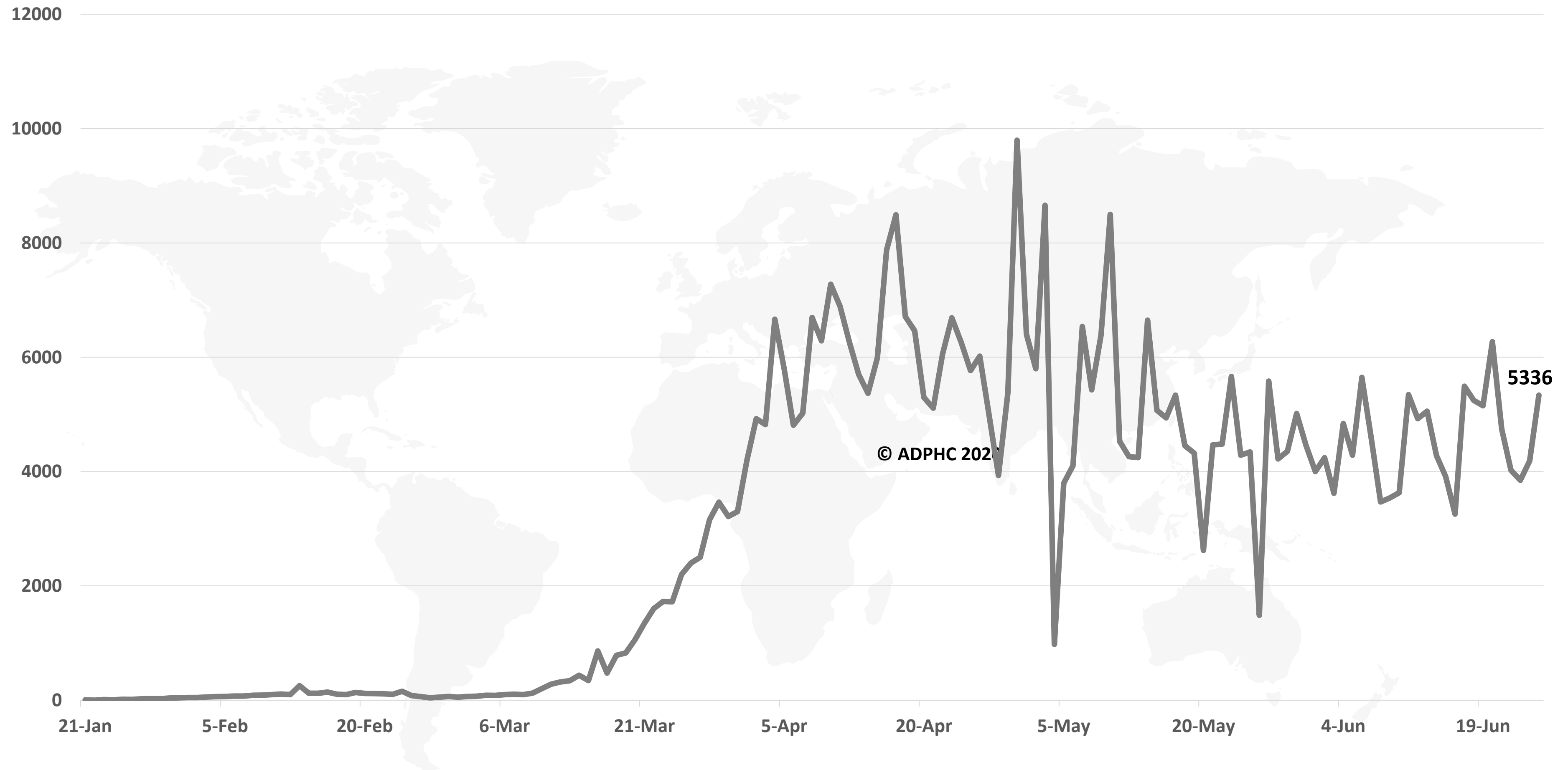
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Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 25, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

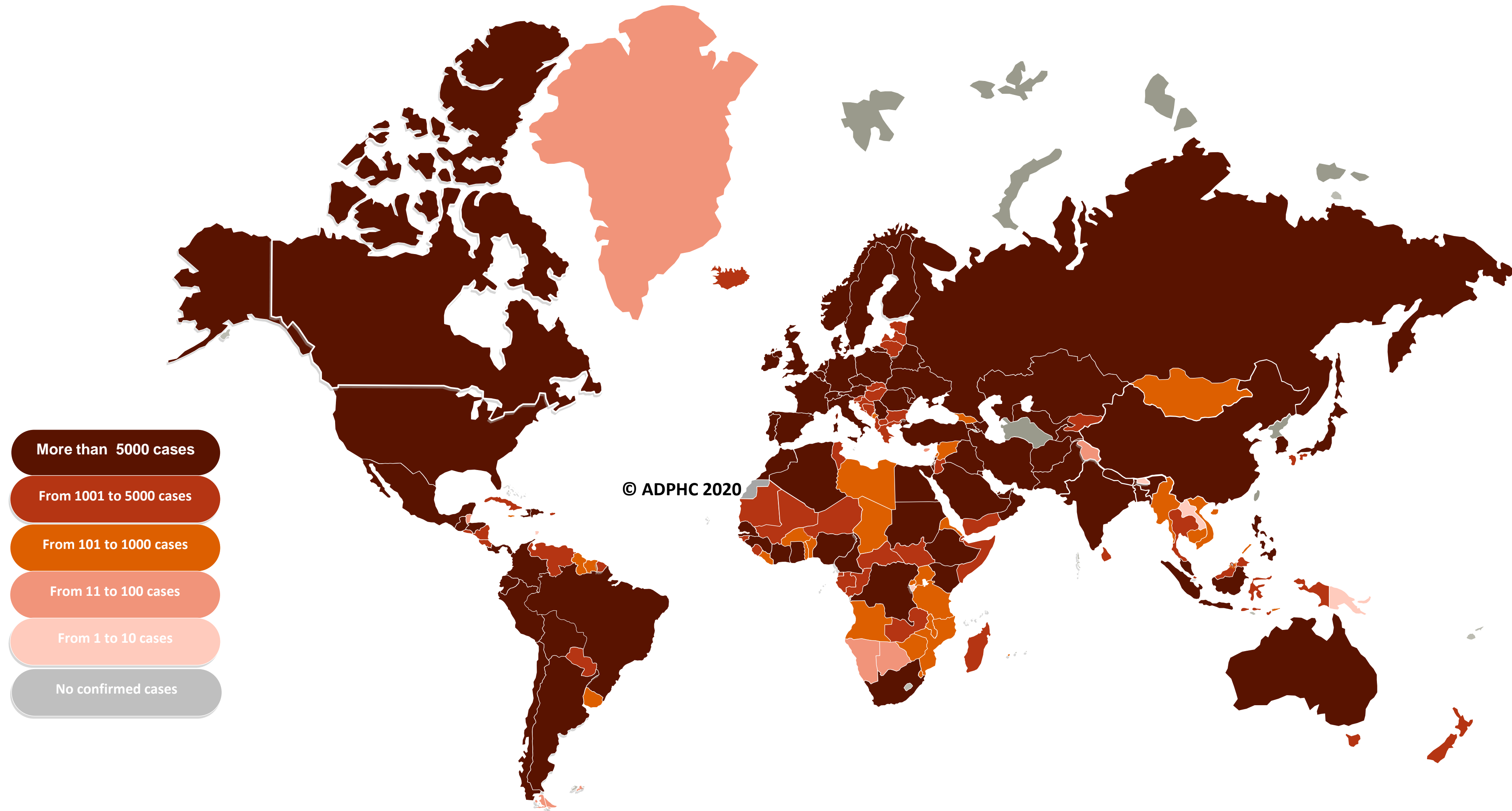
Data resources: [WHO](https://www.who.int/)

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Figure 7a : Global distribution of COVID-19 cases (Jun 25, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

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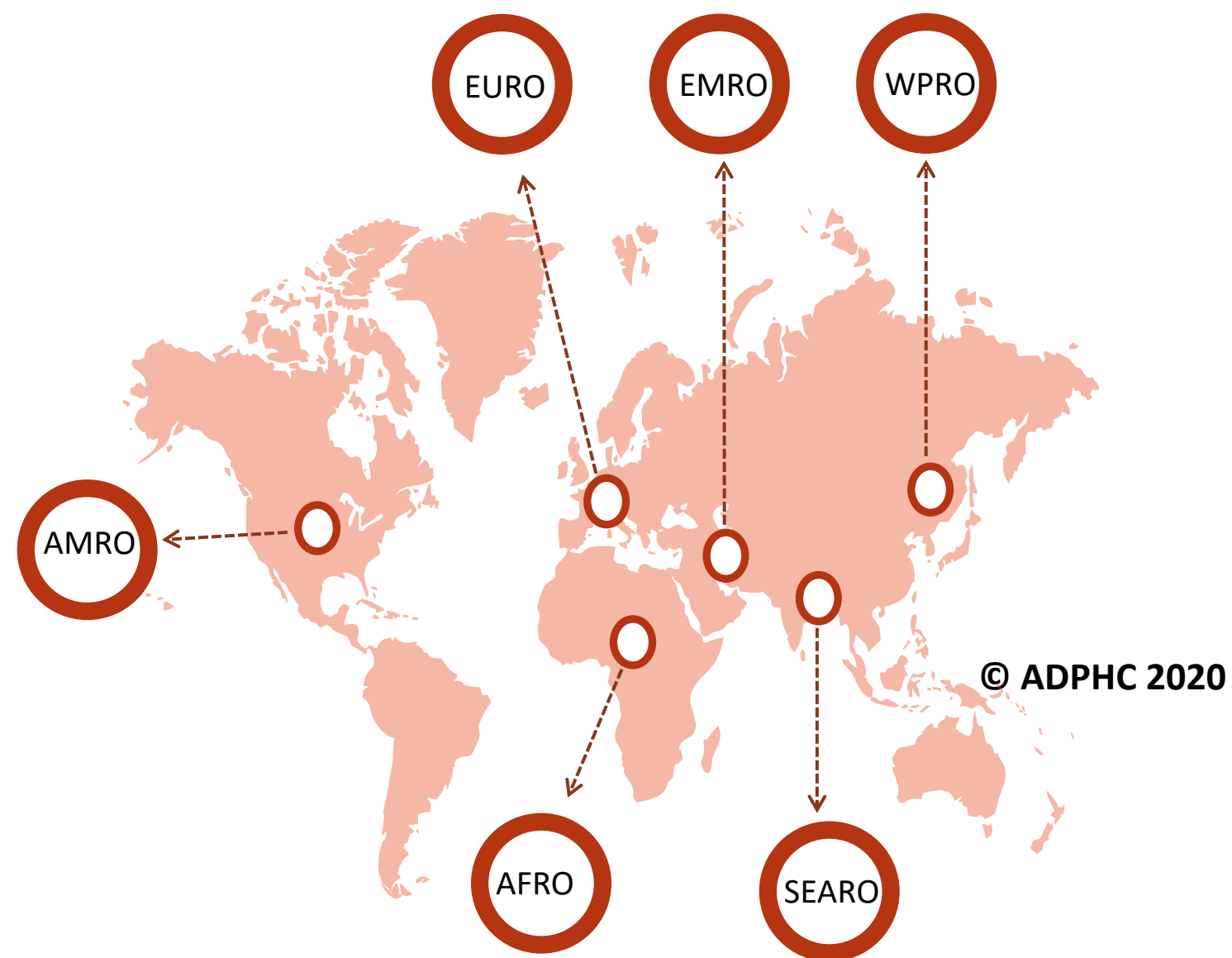
Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 25, 2020)



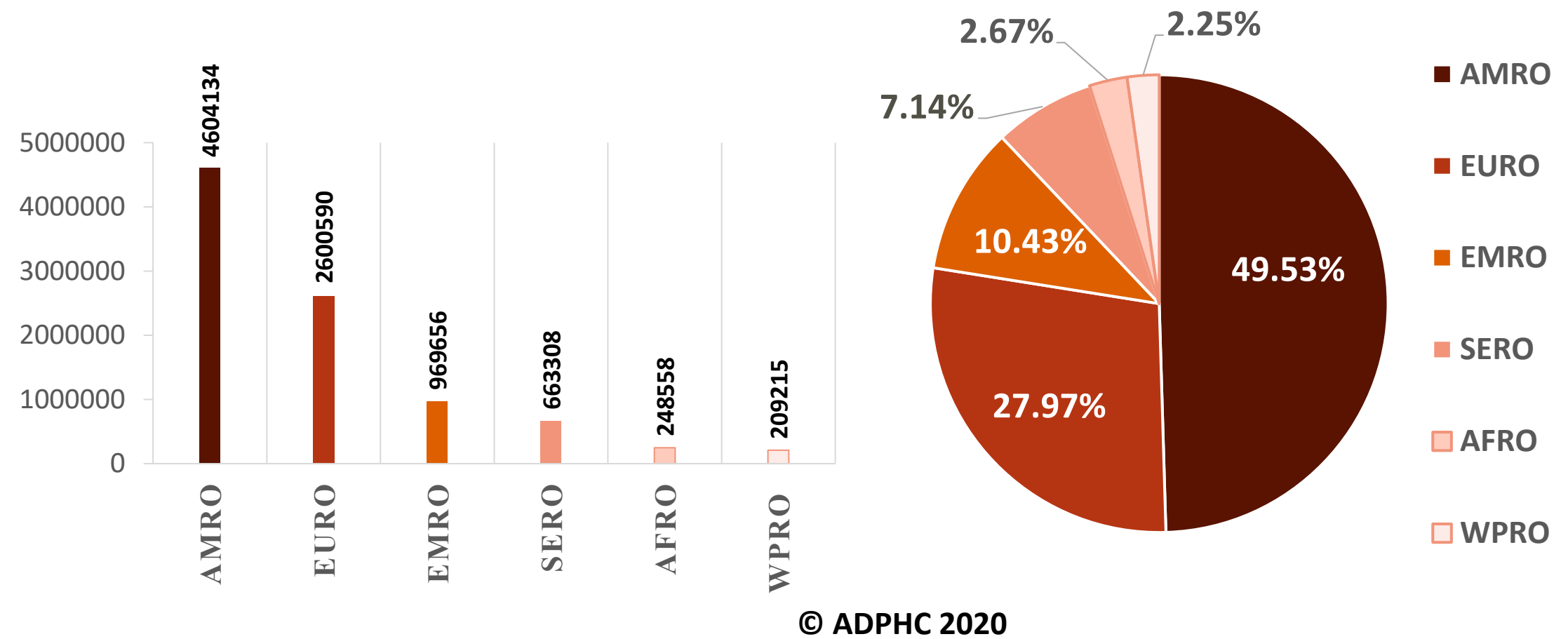
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Other*: includes cases and deaths reported under the international conveyance(Diamond Princess)

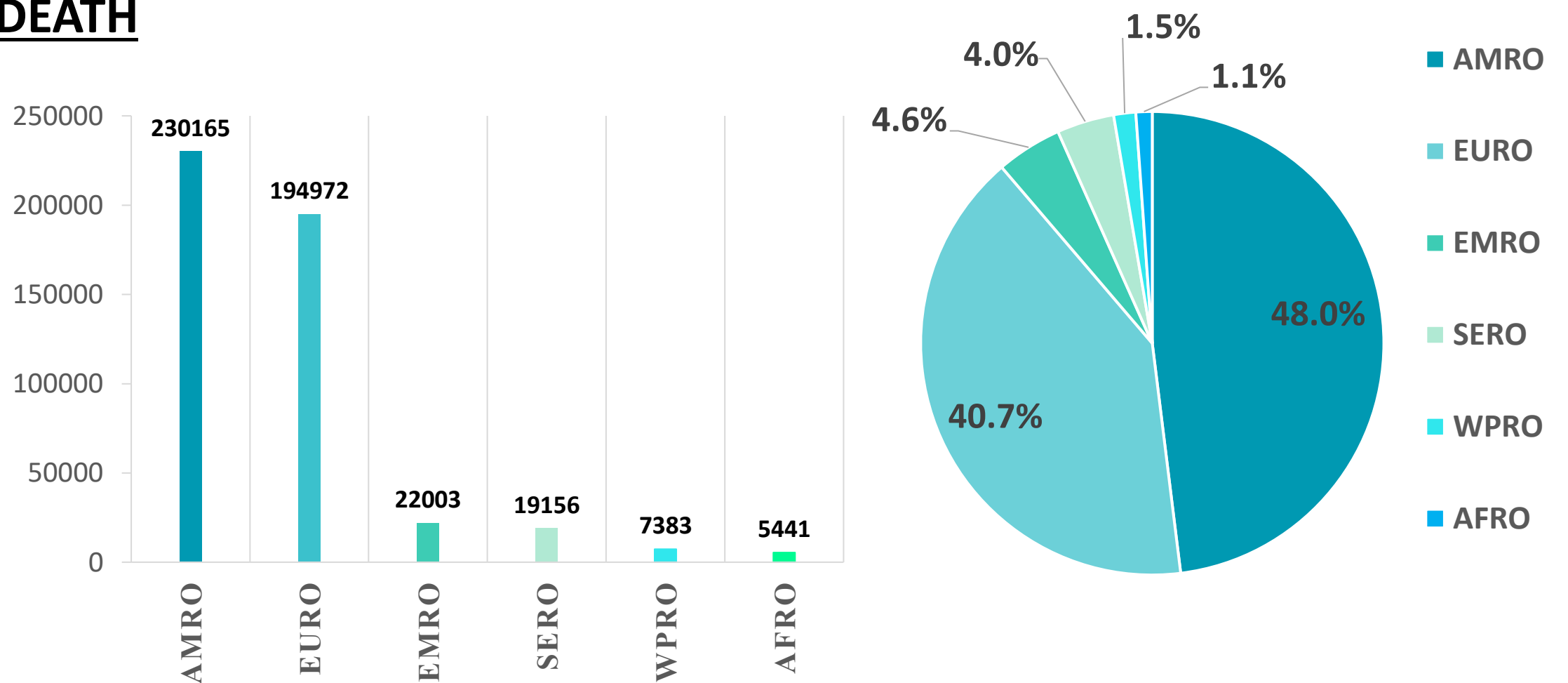
Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 25, 2020)



INFECTED



DEATH



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

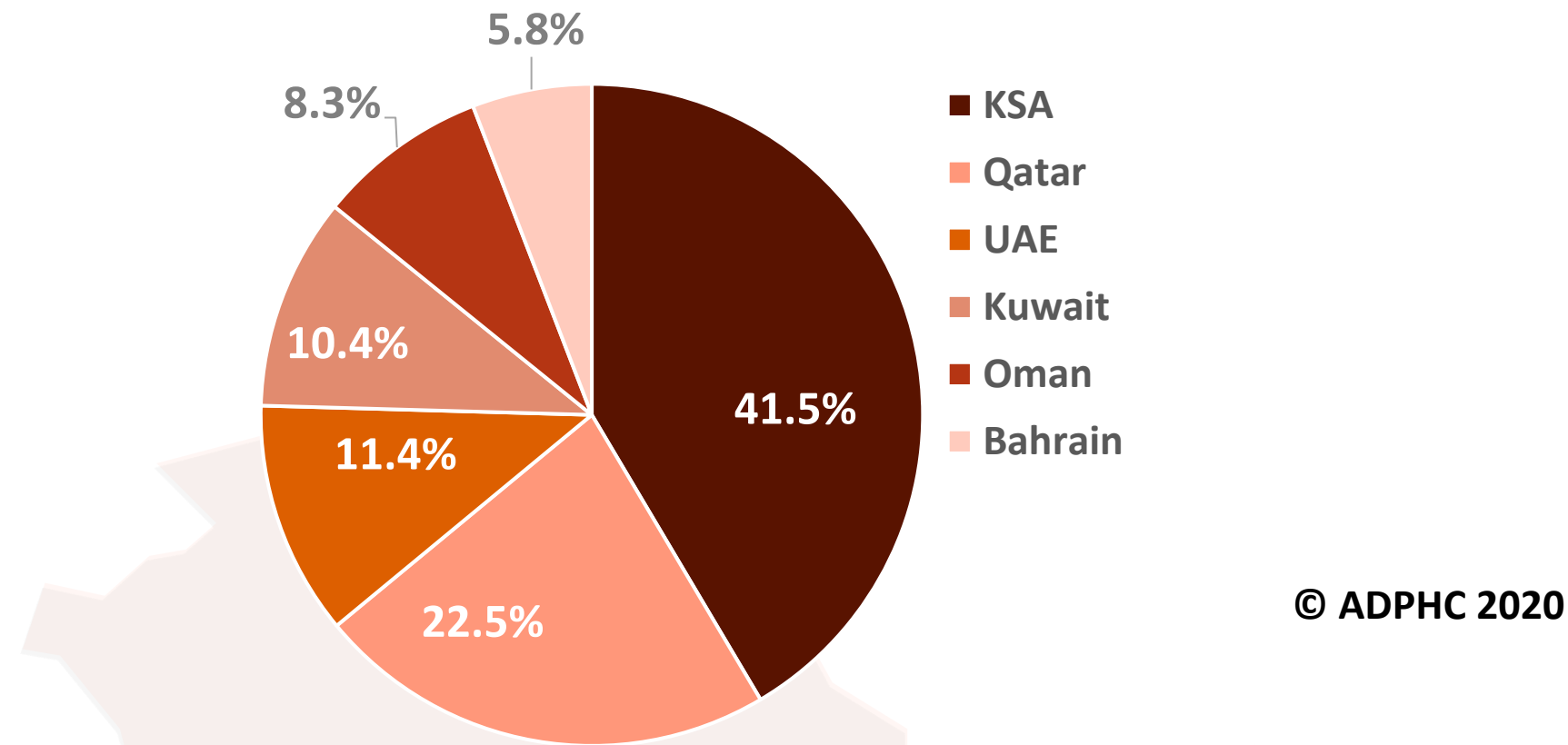
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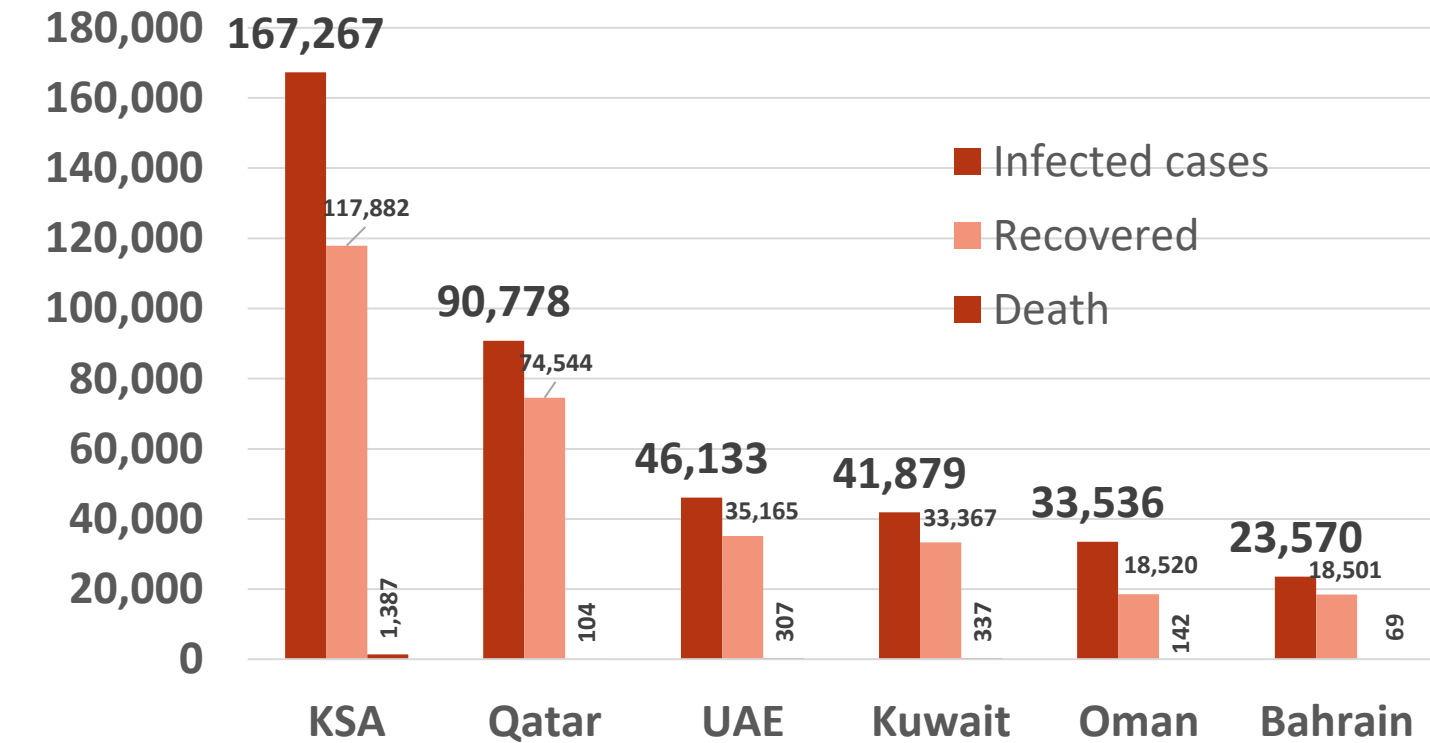
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Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 25, 2020)

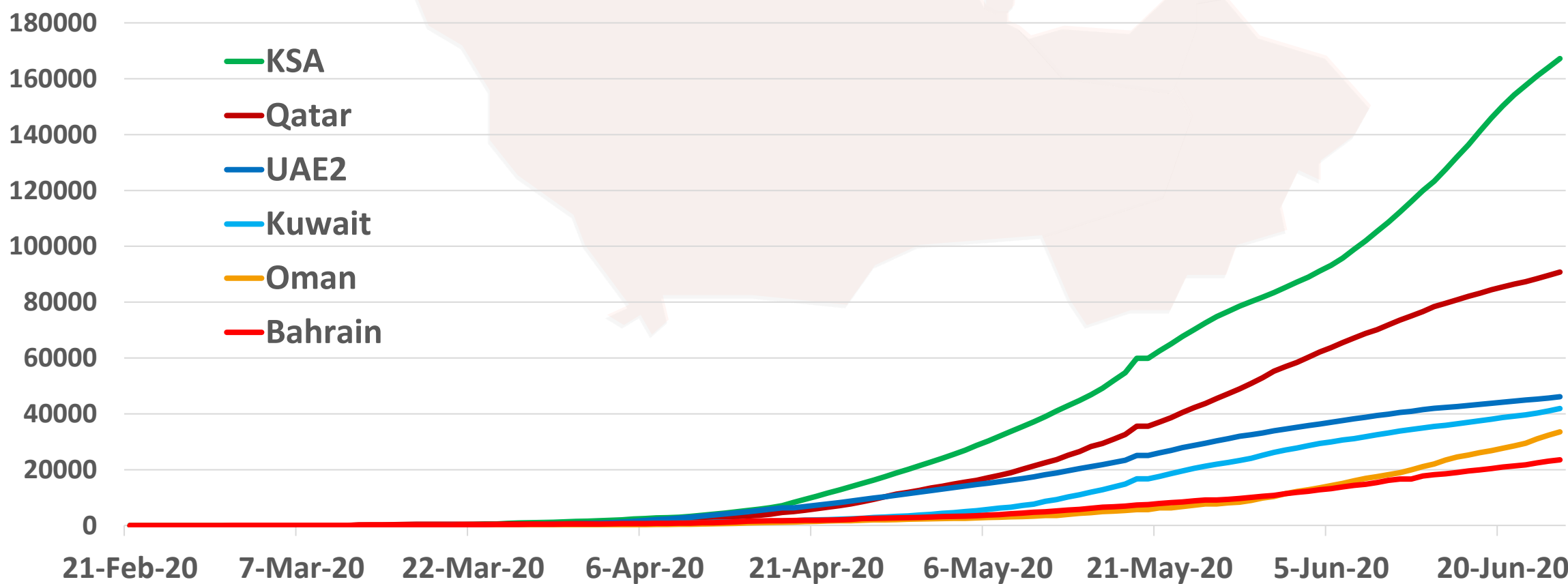
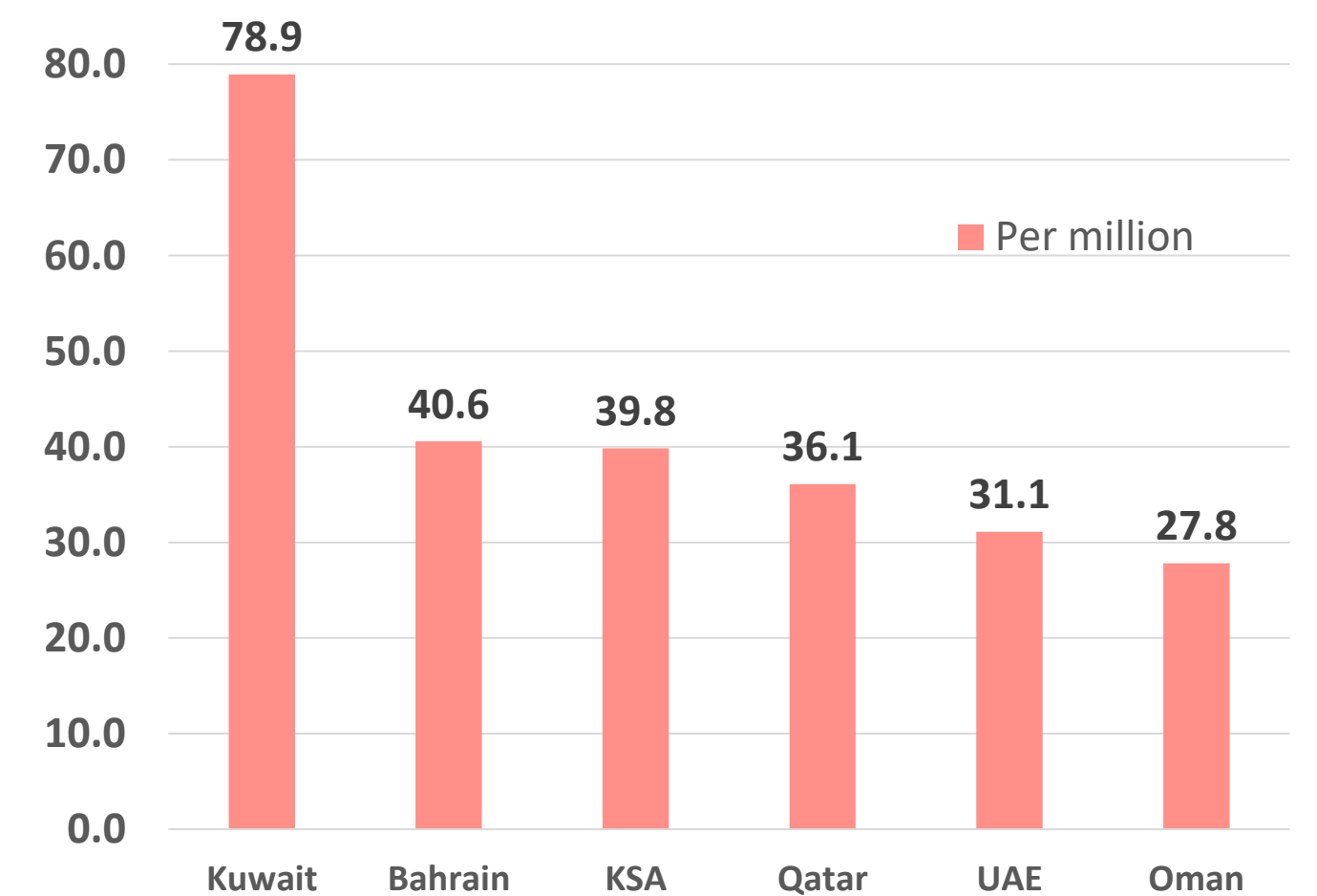
TOTAL NUMBER OF INFECTED CASES



Total number of infected, recovered and Deaths



Death per million



Graphs published by Abu Dhabi Public Health Center 2020.

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

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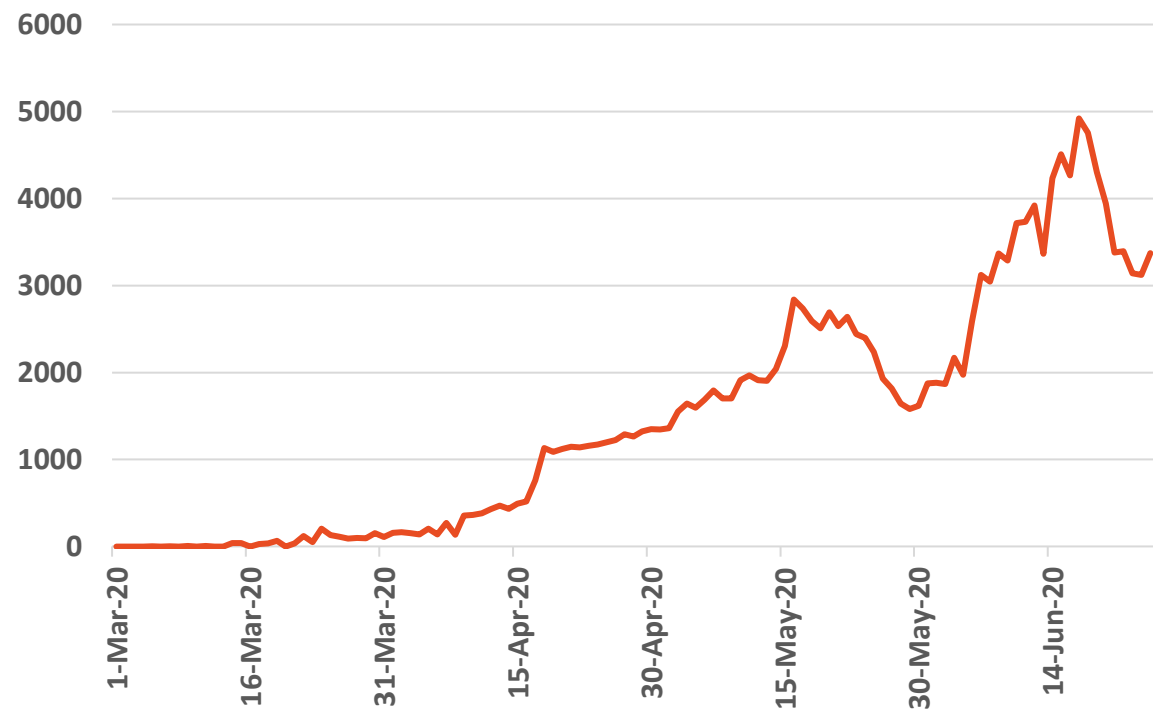
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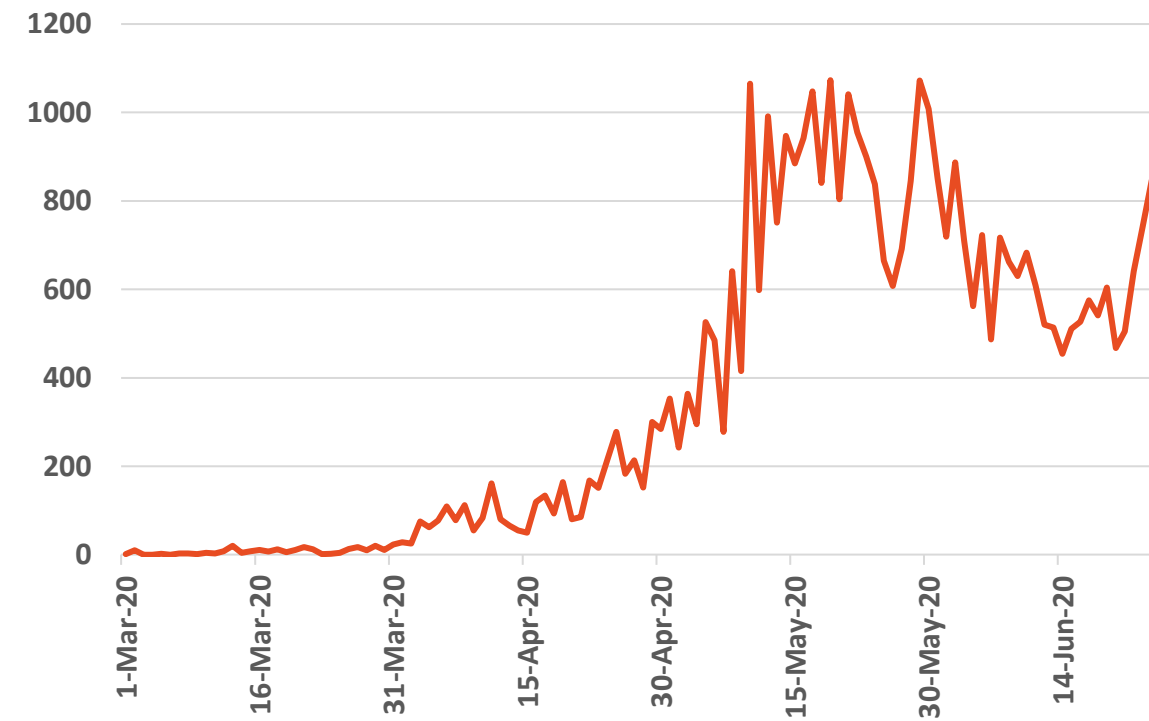
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 25, 2020)

KSA



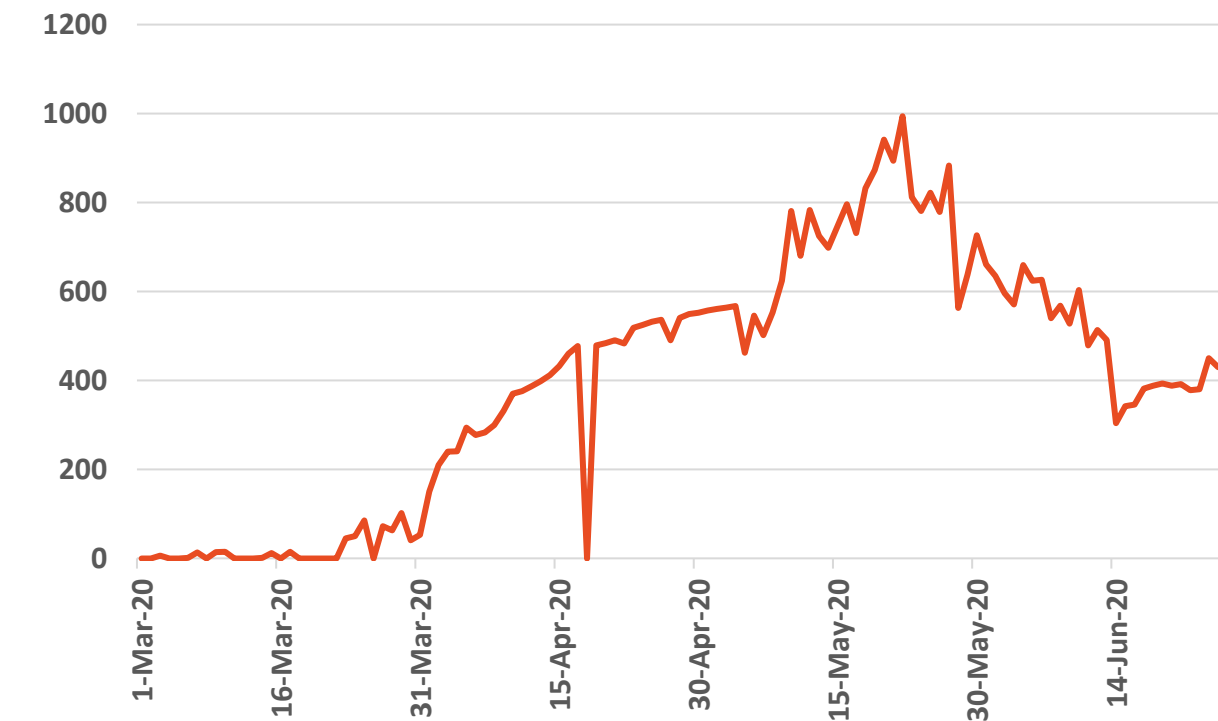
Source : KSA ministry of health

Kuwait



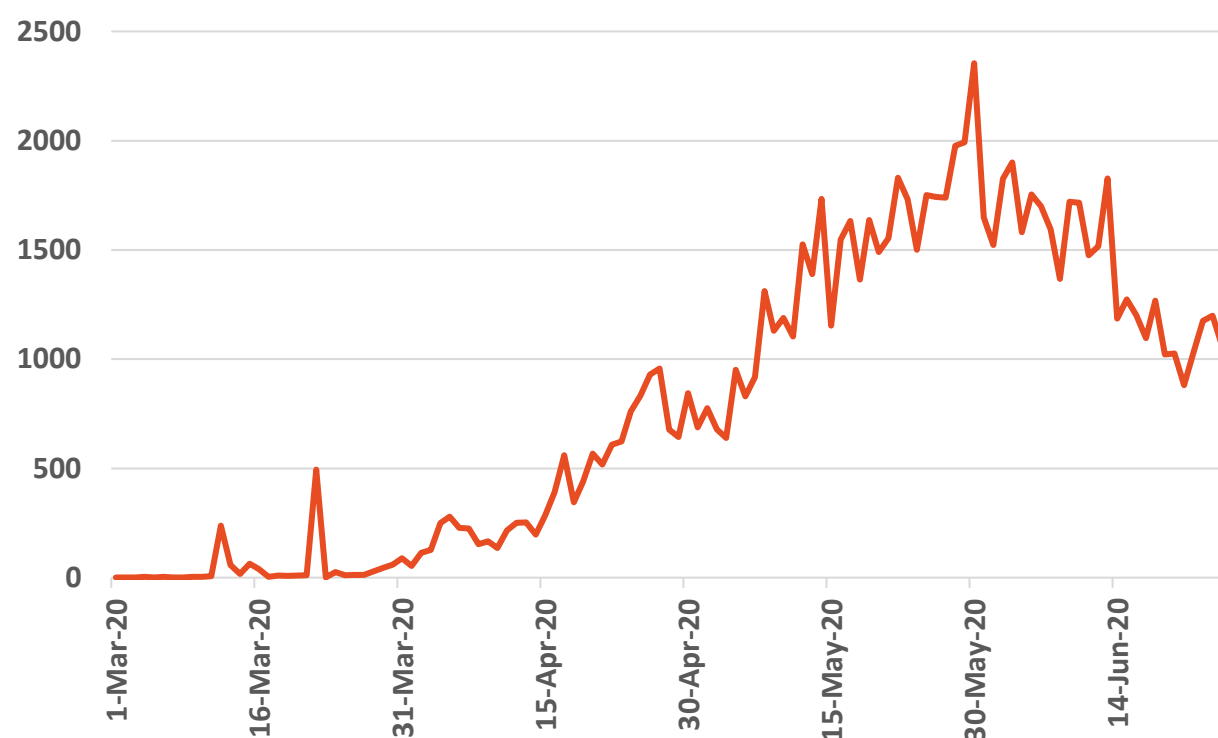
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

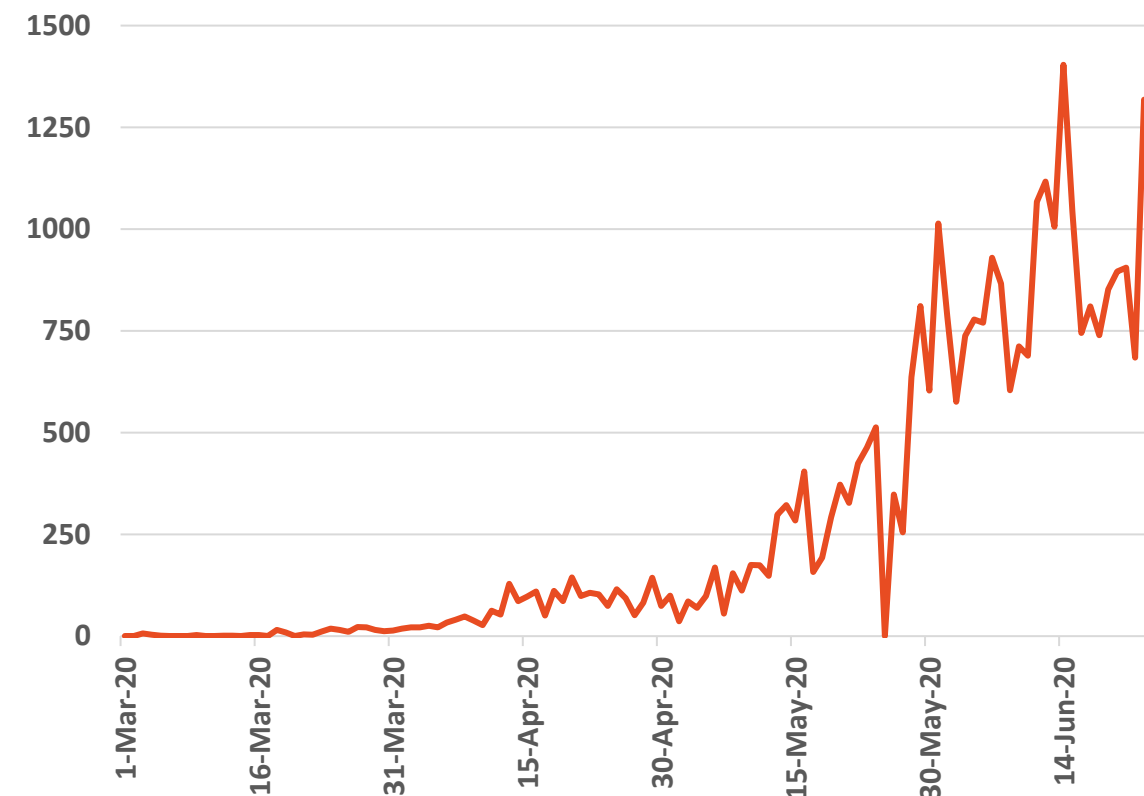
Qatar



Source : Kuwait ministry of health

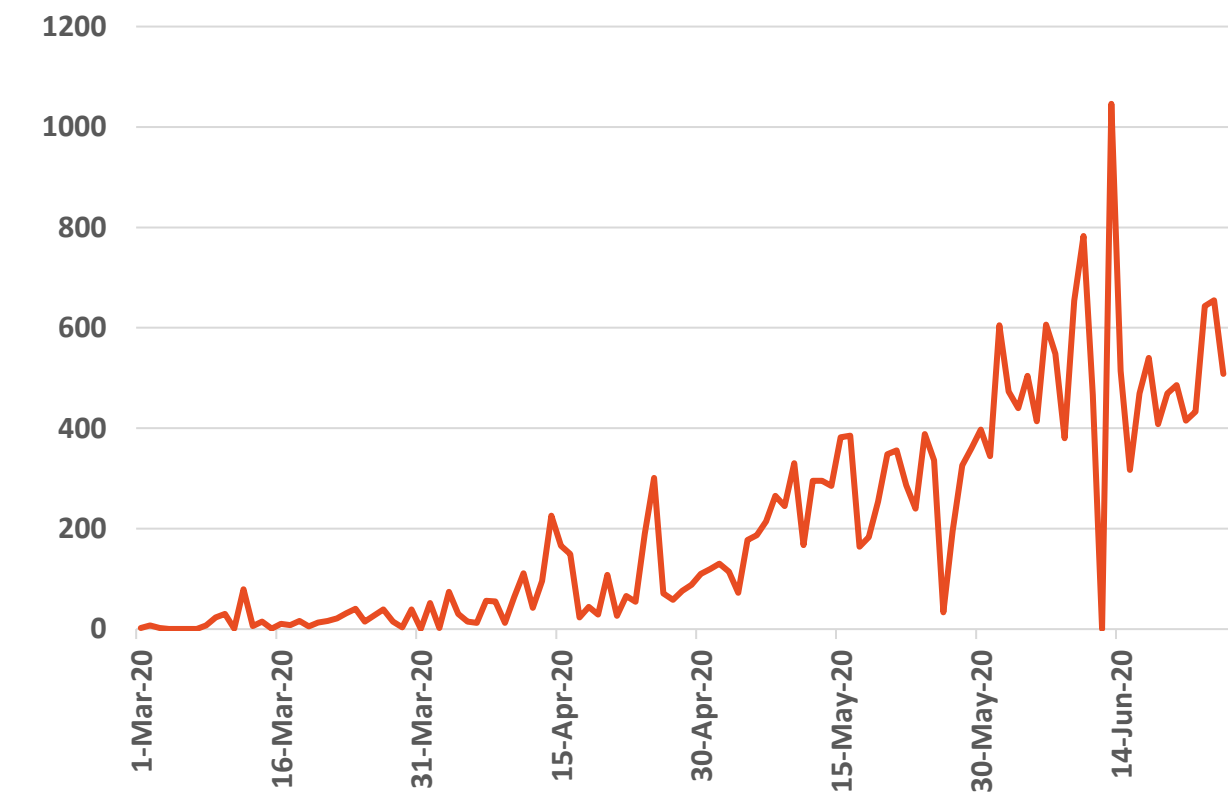
Oman

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Source :Oman ministry of health

Bahrain



Source :WHO

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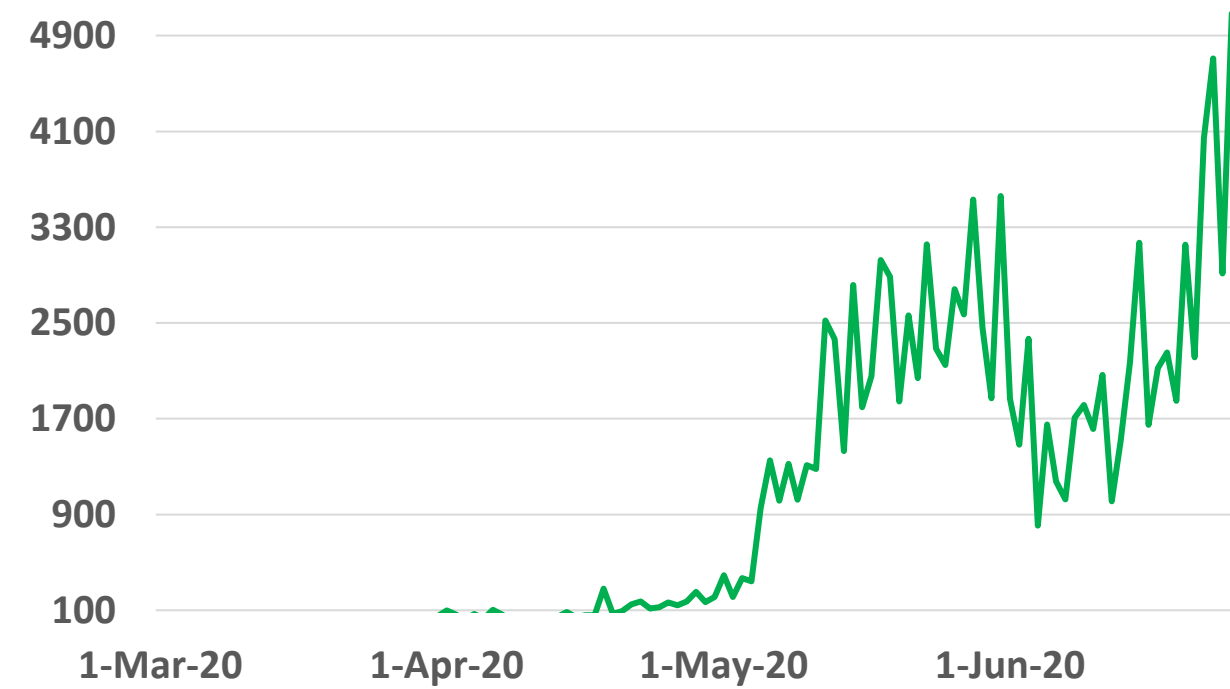
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Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 25, 2020)

KSA



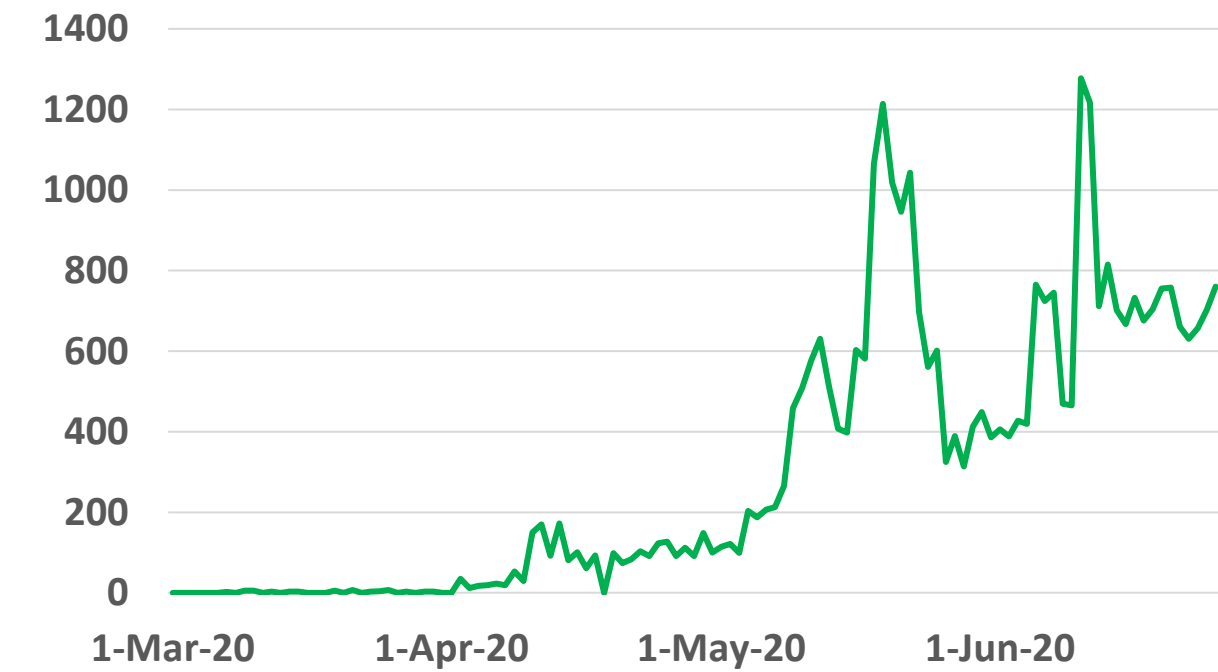
Source : [KSA ministry of health](#)

Qatar



Source : [Qatar ministry of health](#)

UAE



Source : [National Emergency Crisis and Disaster Management Authority](#)

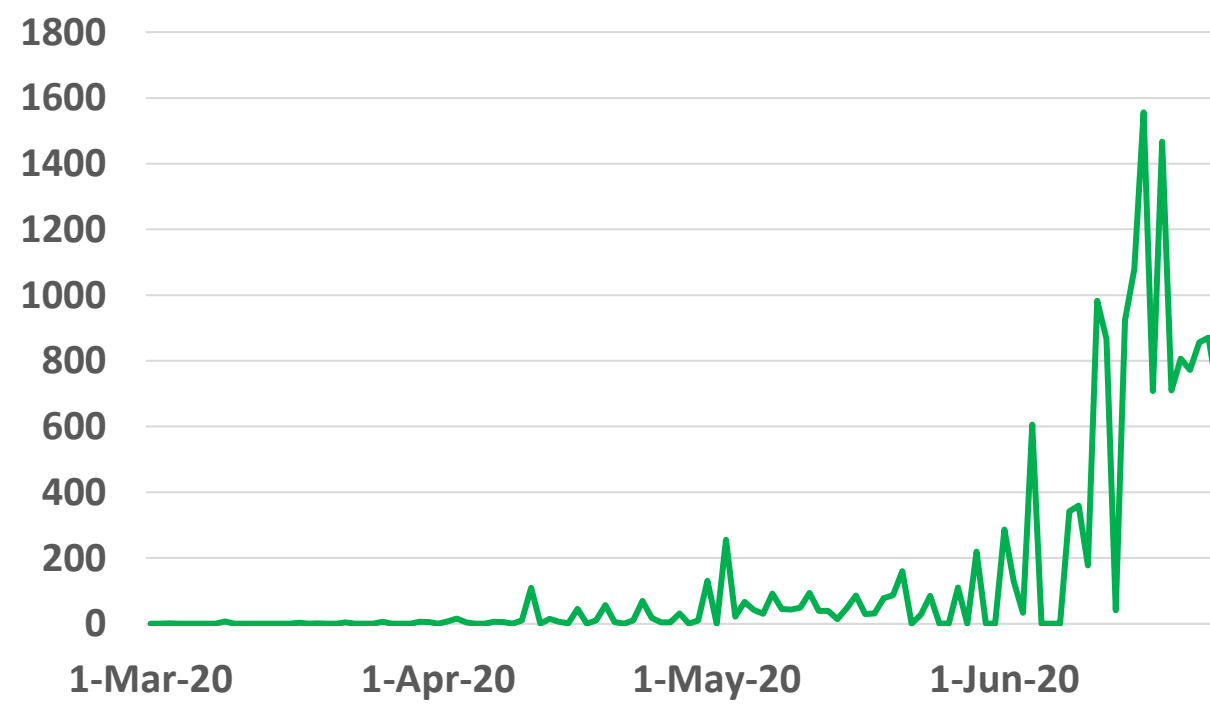
Kuwait



Source : [Kuwait ministry of health](#)

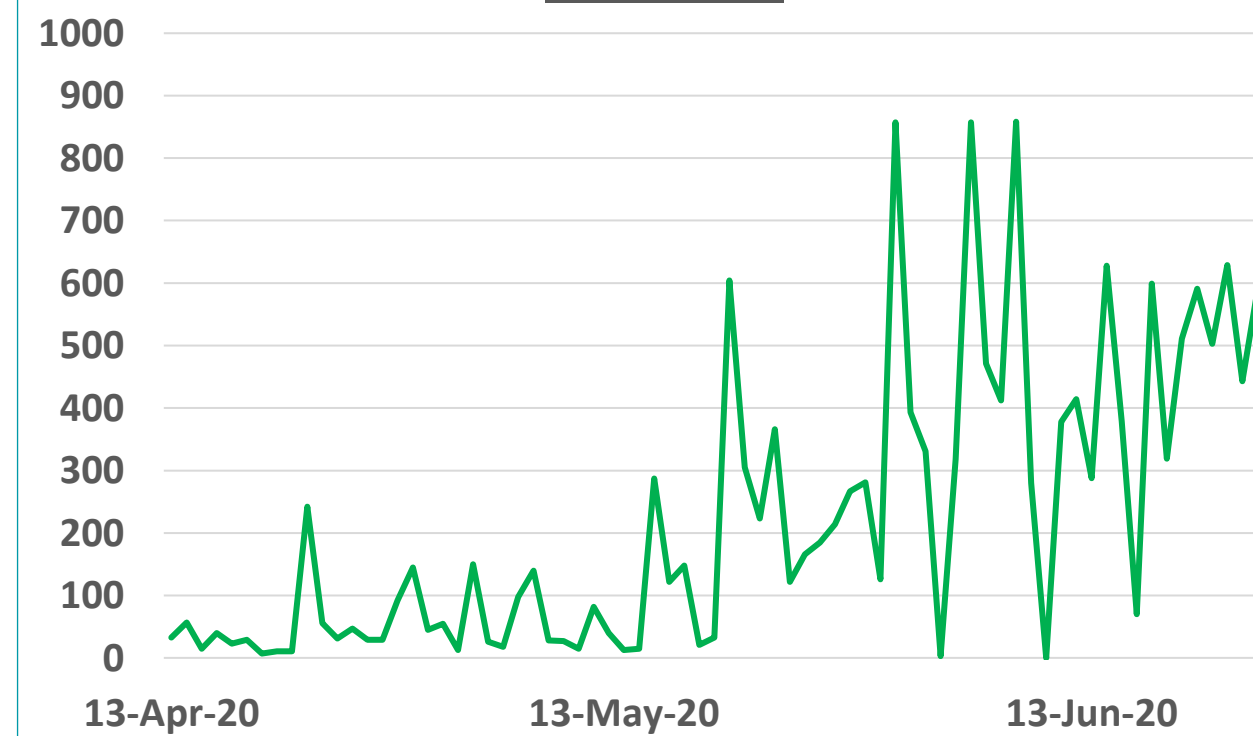
Oman

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Source : [Oman ministry of health](#)

Bahrain



Source : [GCCStat](#)

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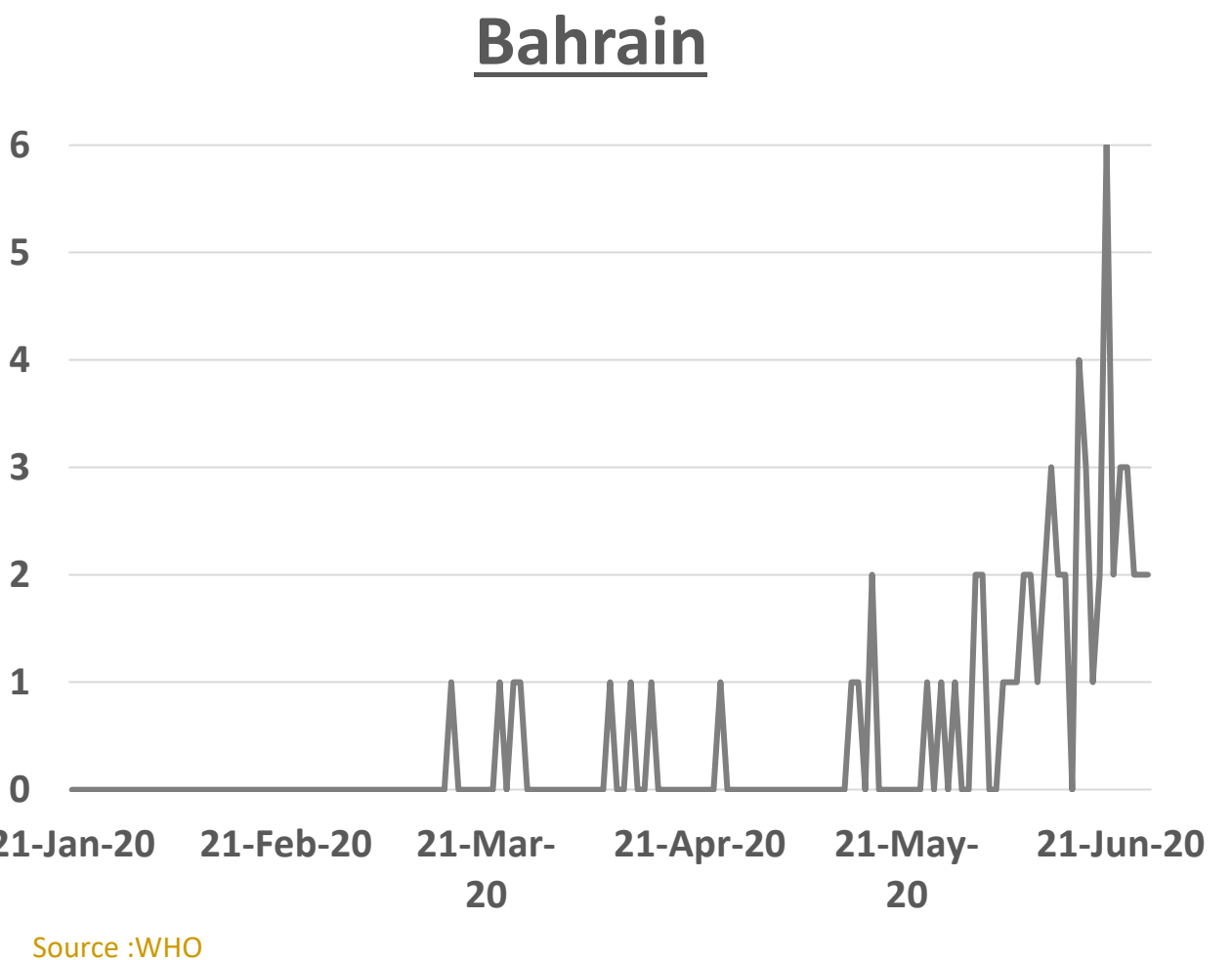
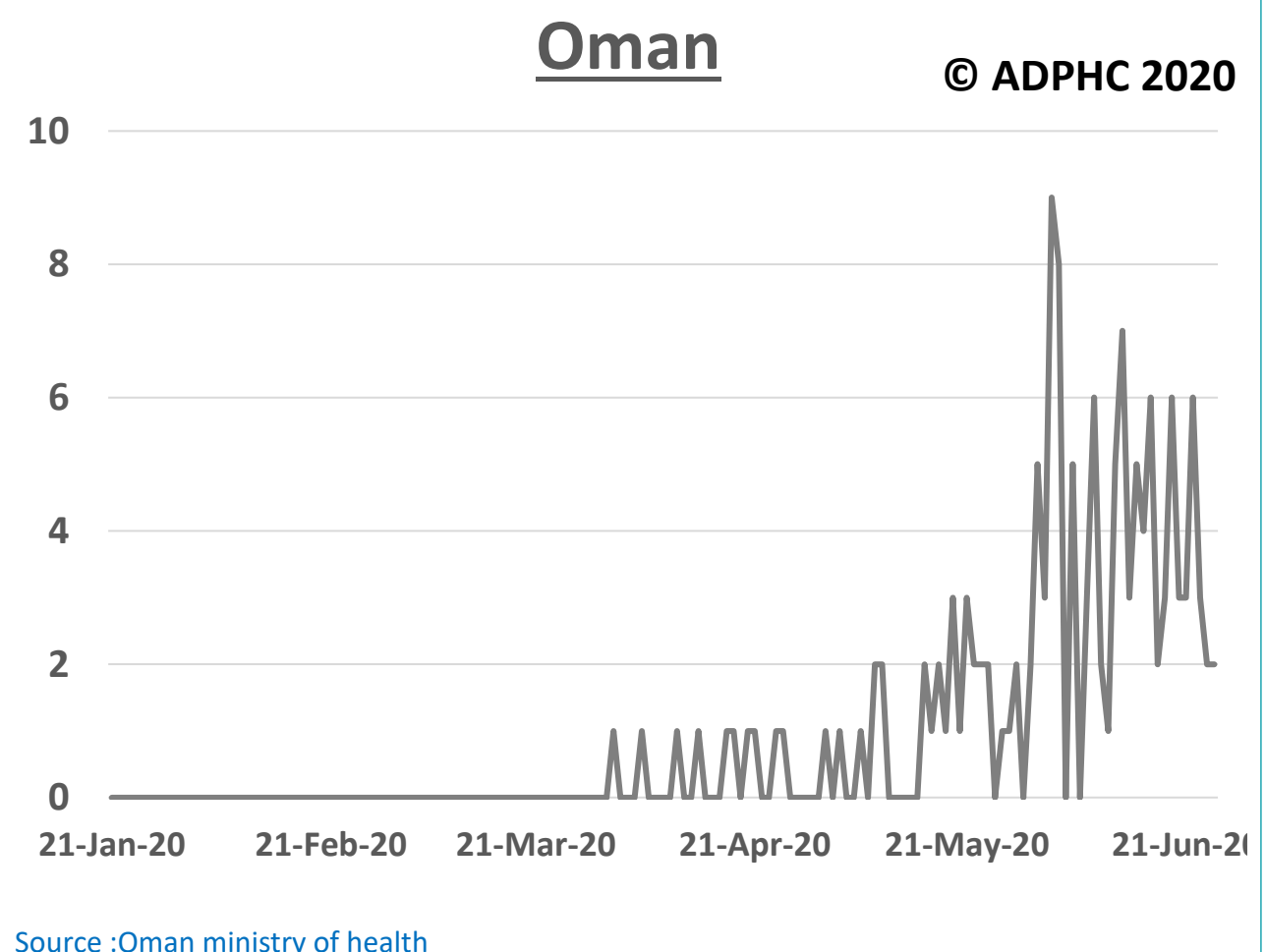
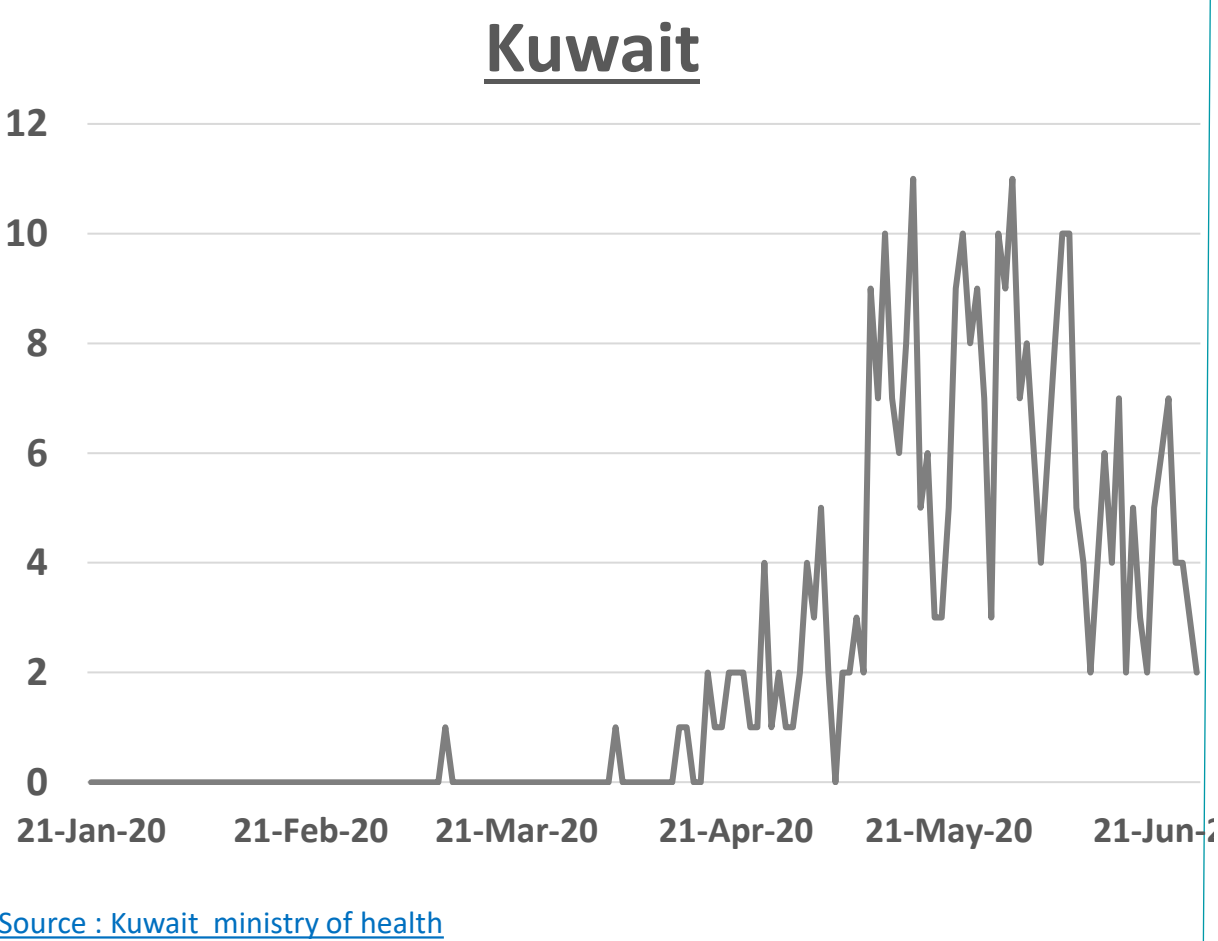
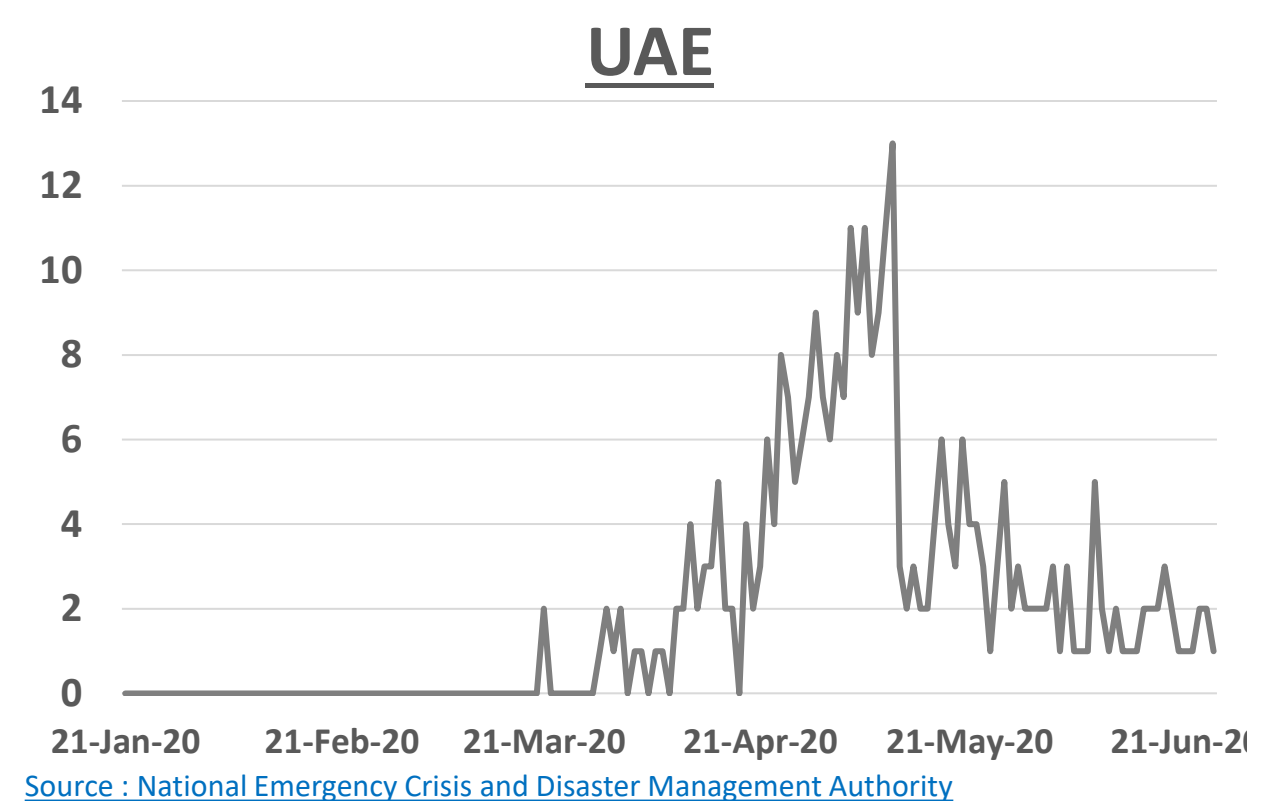
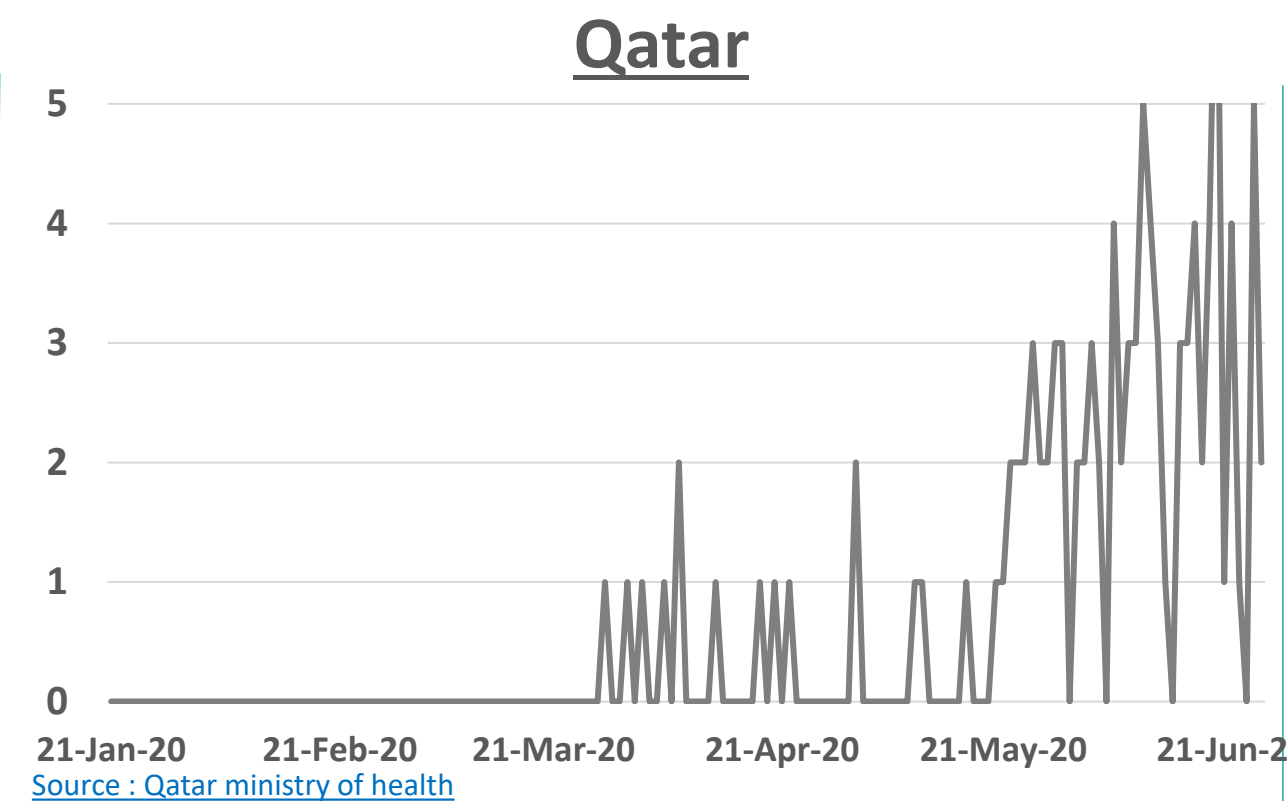
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Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 25, 2020)



Article 1 : Effect of Dexamethasone in Hospitalized Patients with COVID-19: Preliminary Report

Published: June 22, 2020 in [medRxiv](#)

Summary

- The (RECOVERY) trial which is a randomized, controlled, open-label, adaptive, platform trial comparing a range of possible treatments with usual care in patients hospitalized with COVID-19. The trial was conducted at 176 National Health Service (NHS) hospital organizations in the United Kingdom.
- This paper have report the preliminary results for the comparison of **dexamethasone 6 mg given once daily for up to ten days** vs. usual care alone.
- The primary outcome was 28-day mortality.
- A **2104 patients** were randomized to **dexamethasone** and **4321** were randomized to usual care
- Mean age of study participants in this comparison was 66.1 years and 36% patients were female.
- At randomization, 16% were receiving invasive mechanical ventilation or extracorporeal membrane oxygenation, 60% were receiving oxygen only (with or without non-invasive ventilation), and 24% were receiving neither.

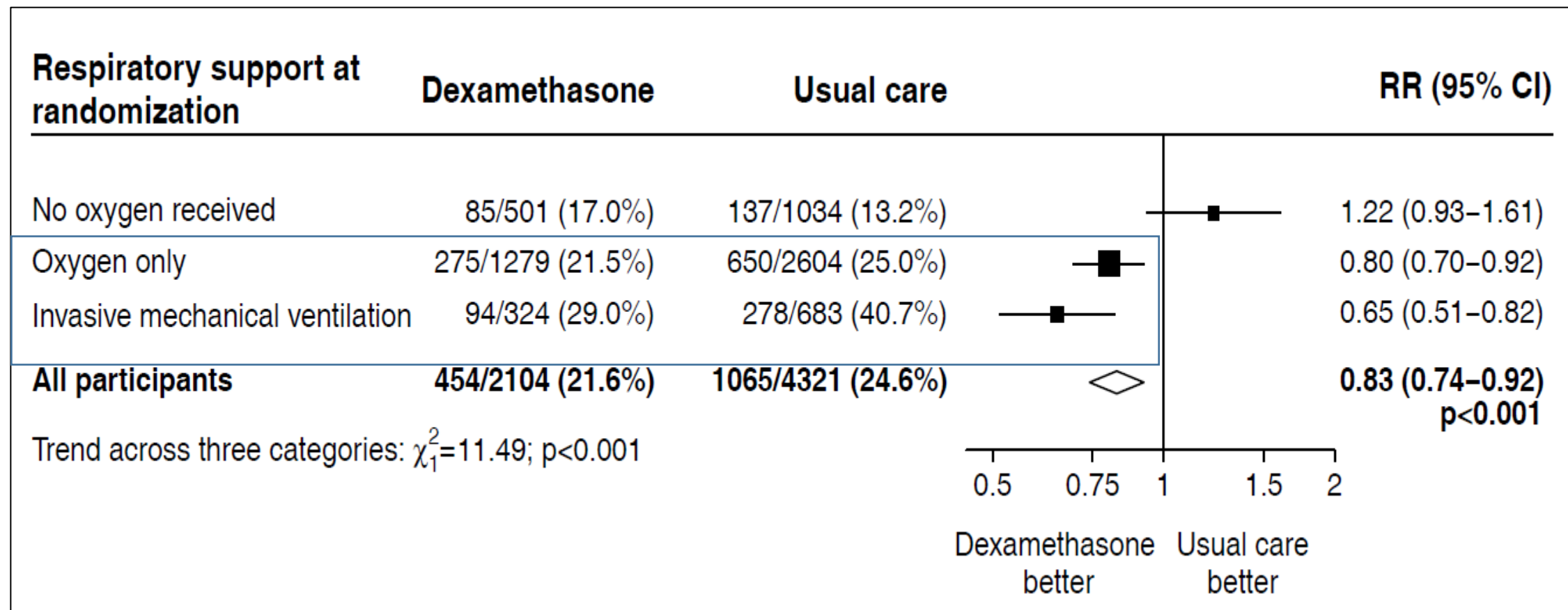
This paper have not been t peer- reviewed

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**Article 1 : Cont.,
Published:
Summary**



Results

- Overall, 454 (**21.6%**) patients allocated dexamethasone and 1065 (**24.6%**) patients allocated usual **care died within 28 days**
- Allocation to dexamethasone was associated with a shorter duration of hospitalization than usual care (median 12 days vs. 13 days)
- Dexamethasone reduced 28-day mortality by 35% in patients receiving invasive mechanical ventilation

This paper have not been t peer- reviewed



Public Health Response

Article 2 : Assessment of Coronavirus Disease 2019 Community Containment Strategies in Shenzhen, China.

Published: 22 June 2020 in [the JAMA](#)

Link:

Summary:

Summarized by subject matter expert

This article examined the effect of community preventive measures on the spread of Covid-19.

How the study was done?

- On 23 Jan 2020, rigorous preventive measures were implemented in a community of Haiyu, Shenzhen, China which is 1000 km away from Wuhan.
- Community containment strategies for tracking, quarantine, and management were strictly, cooperatively, and effectively implemented by a team that included a general practitioner, a community manager, and public safety bureau officials.
- The outcome was number of locally acquired cases with indirect links to confirmed Covid-19 cases.

What this study found?

- Approximately 34 686 individuals live in Haiyu community, including 2382 residents aged 65 years or older.
- Seven individuals (age, 20-70 years) living in the community were tested positive with Covid-19 which was acquired from outside the community.
- These individuals were initially in quarantine, and after positive test, they were moved to a hospital for standard isolation treatment.

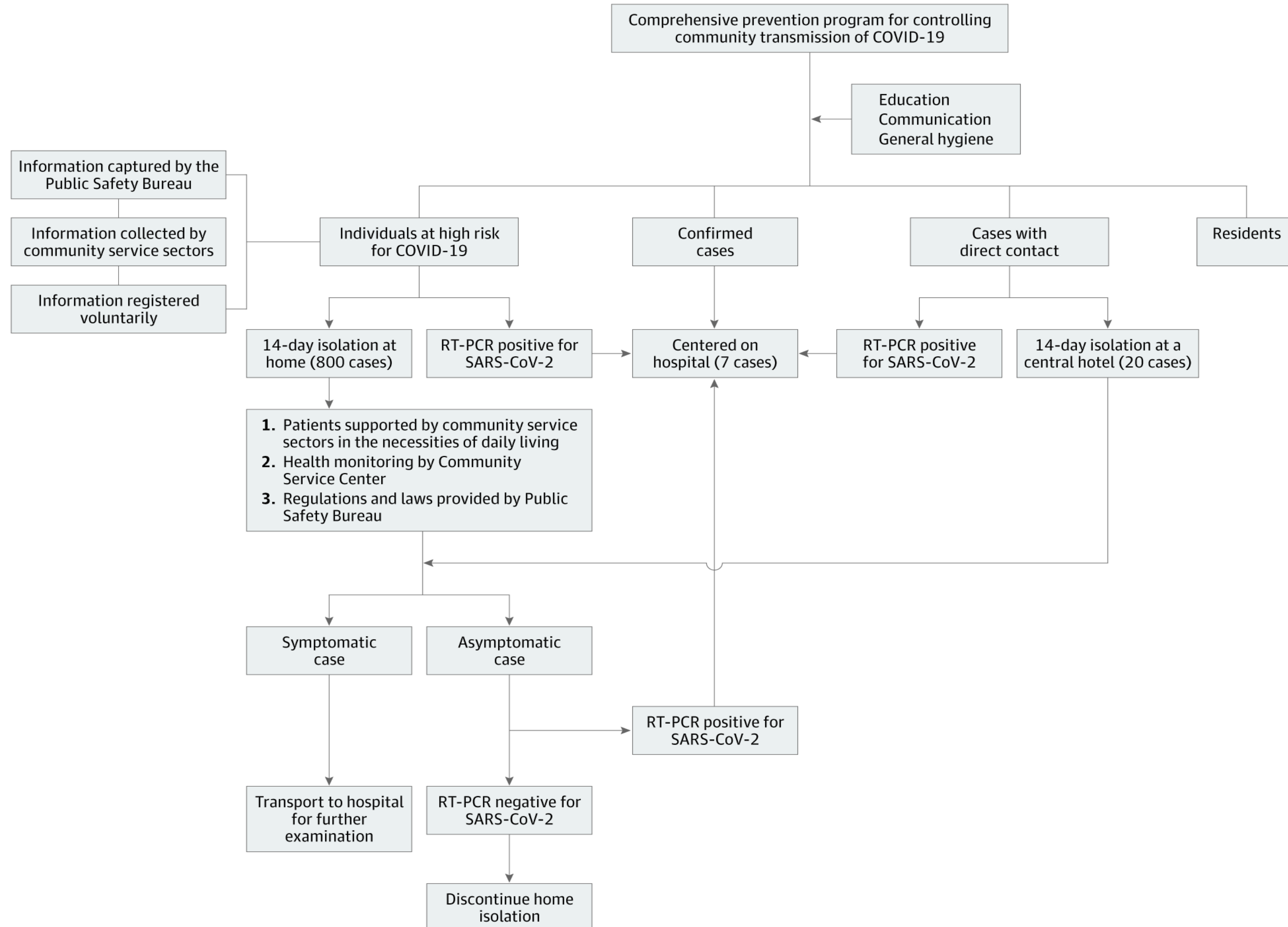
- A total of 20 people who were asymptomatic and who had had direct contact with these individuals were closely observed by health care workers at a nearby hotel.
- Additionally, 800 individuals considered to be at higher risk were moved from quarantine to home isolation for 14 days.
- Until April 10, 2020, there were NO locally acquired cases of Covid-19 in the community.

Public Health Message

- Rapid early detection, isolation of residents, and the implementation of comprehensive multidisciplinary measures decrease the community transmission of Covid-19.
- Cooperation among the authorities of multiple sectors is needed for the implementation of community prevention programs.
- Governments should promptly carry out rigorous and comprehensive measures to stop the spread of the infection.



Flow-Chart of the Community Prevention Program



Treatment

Article 3: Use of aerosolised medications at home for COVID-19

Published: June 22, 2020 in [the lancet](#)

Summary:

- Aerosol therapy is one method of medication delivery. This method might carry the risk of infection transmission.
- Two thirds of the aerosols that jet nebulizers generate are released into the environment that might increase the risk of infection for family members. Therefore, **mesh nebulizers** might be a good alternative that separate the medication from the patient interface and operate without external gas flow that disperses patient generated bioaerosols.
- **Successful administration of aerosol therapy** in patients with COVID-19 requires a clear understanding of the options and rationales on device selection, delivery technique, device preparation, and cleaning. If aerosolised medications is the only treatment, physicians **should prefer inhalers than nebulizers** unless patients cannot perform the specific breathing techniques that inhaler requires. Exhaled air dispersion and virus transmission with inhalers are much lower than jet nebulizers as inhalers have lower emitted doses and generate less aerosol mass.
- As hospitals are under pressure and there is shortage of ventilators and essential medical supplies, therefore, **improving health care at home is one of the most pressing needs**. Proactive training of patients and their family members is essential to effectively address the need during this pandemic.

