

SCIENTIFIC RESEARCH MONITORING ON COVID-19

11 JULY 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 160)

Abu Dhabi Public Health Center (ADPHC) is gathering the latest scientific research updates and trends on coronavirus disease (COVID-19) in a daily report. The report provides summaries on breakthrough or updated research on COVID-19 to allow health care professionals and public health professionals get easy and fast access to information.

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Research
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Articles
Summary

Note : All articles presented in this report represent the authors' views and not necessarily represents Abu Dhabi Public Health Center views or directions. Due the nature of daily posting, some minor language errors are expected.

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RESEARCH UPDATES

The views and opinions expressed in this report are those of the authors and do not reflect the official policy or position of the Abu Dhabi Public Health Center (ADPHC).

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UAE Research

Acute Myelitis as a Neurological Complication of COVID-19: A Case Report and MRI Findings

Clinical Features

Neurologic and Radiographic Findings Associated with COVID-19 Infection in Children

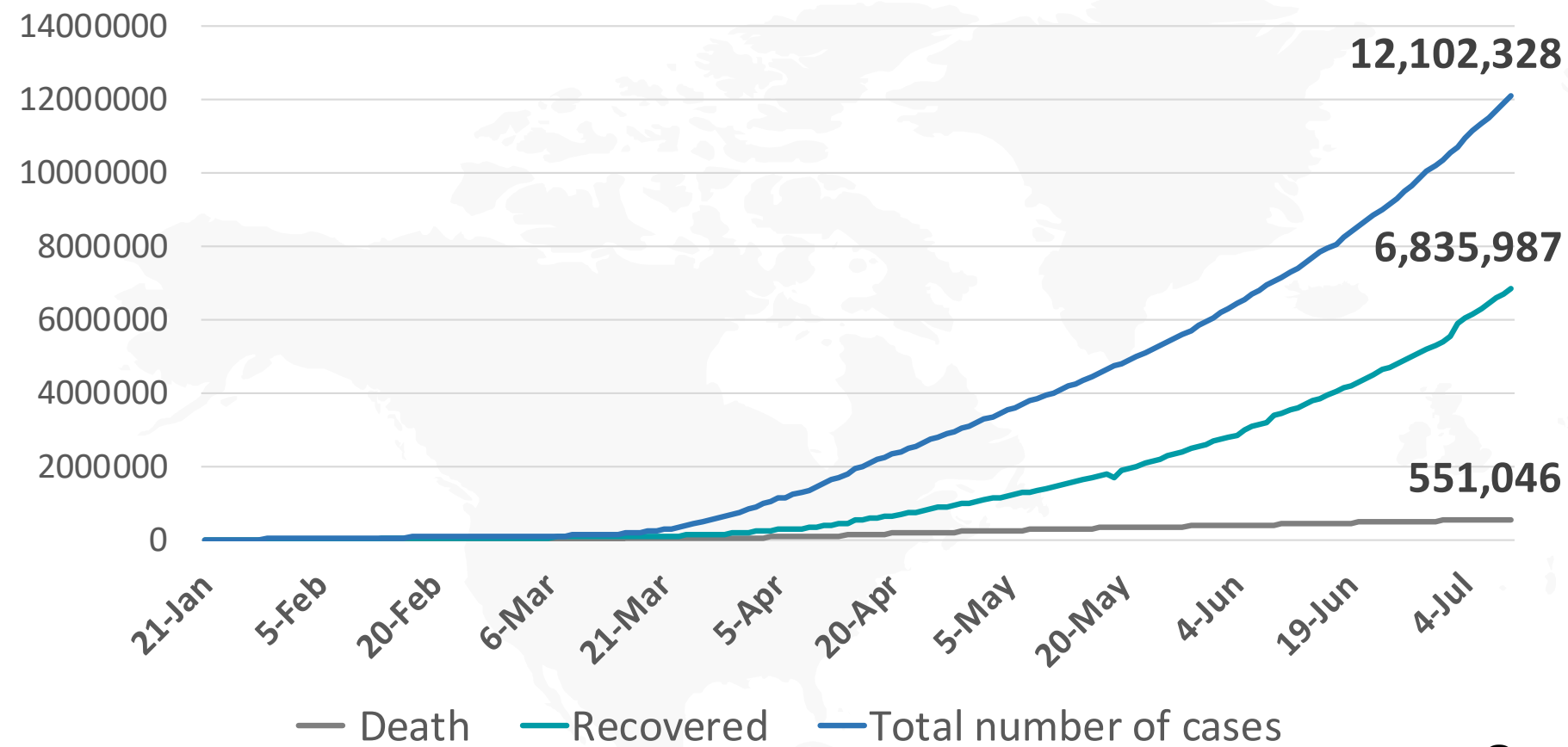




- **On 9 July 2020**, WHO updated the scientific brief on transmission of SARS-CoV-2, the virus that causes COVID-19. **This replaces a previous version of the scientific brief, published on 29 March 2020.**
- **Main findings:**
 - Current evidence suggests that transmission of SARS-CoV-2 occurs primarily between people through direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions, or through their respiratory droplets, which are expelled when an infected person coughs, sneezes, talks or sings.
 - **Airborne transmission** of the virus can occur in health care setting such aerosol generating procedure and indoor crowded spaces such as **during choir practice, restaurants or fitness classes.**
 - **Contaminated surfaces:** As environmental contamination has been documented by many reports, it is likely that people can be infected by touching these surfaces and touching their eyes, nose or mouth before cleaning their hands.
 - **Asymptomatic transmission:** Based on what we currently know, transmission of COVID-19 is primarily occurring from people when they have symptoms, and can also occur just before they develop symptoms, when in close proximity to others for prolonged periods of time. While someone who never develops symptoms can also pass the virus to others, it is still not clear to what extent this occurs, and more research is needed in this area.
- **How to prevent transmission:**
 - Identify suspect cases as quickly as possible, test, and isolate all cases.
 - Identify and quarantine **all close contacts of infected people.**
 - **Use fabric masks** in specific situations, transmission (public places).
 - Use of contact and droplet precautions by health workers and use of mask in all setting.
 - Use of hand hygiene and social distancing measures for public and avoid crowded places.



Figure 1: Total number of infected, recovered, and death cases



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Figure 3: Total number of death due to COVID-19 (china and the result of the world)

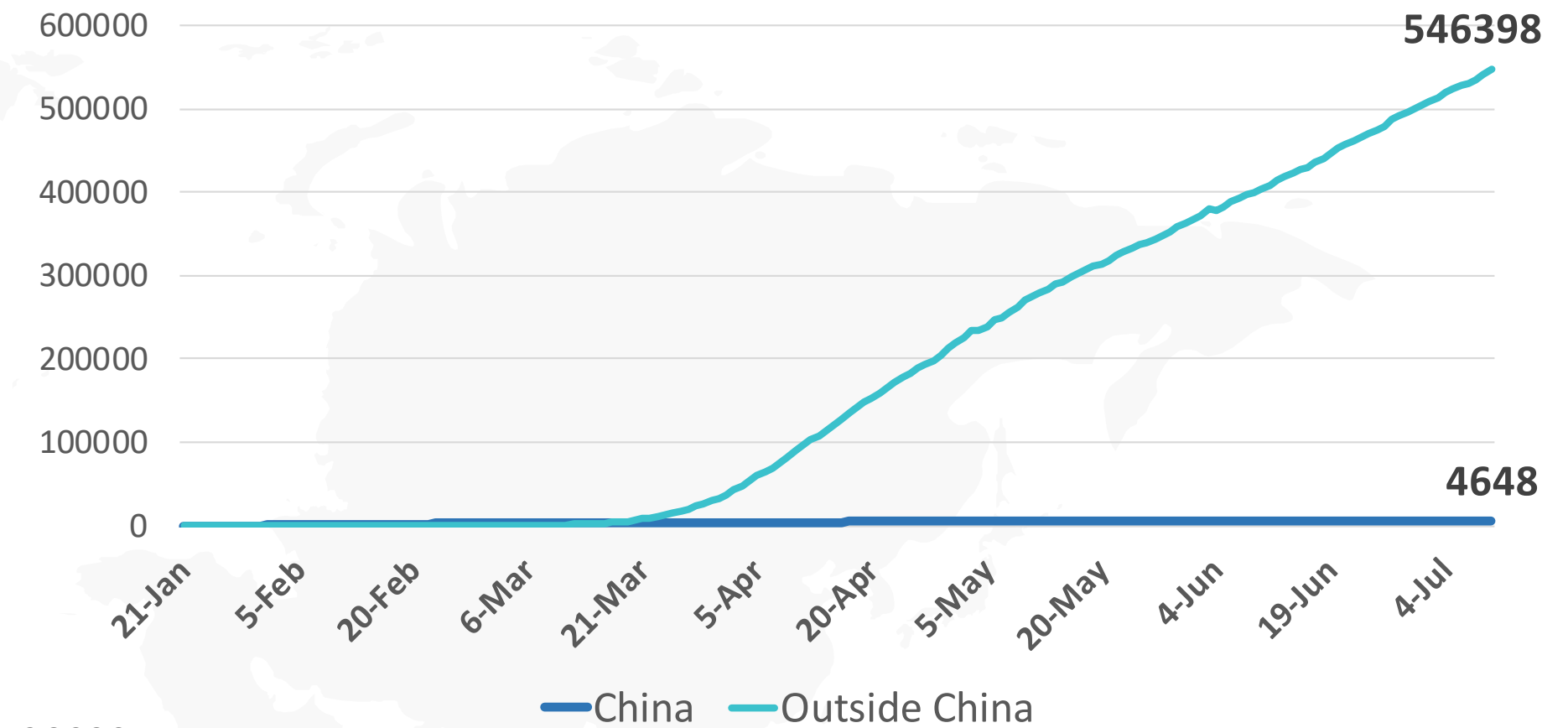


Figure 2: Daily new infected COVID-19 cases (china and the rest of the world)



Figure 4: Global daily new deaths due to COVID-19 (china and rest world)

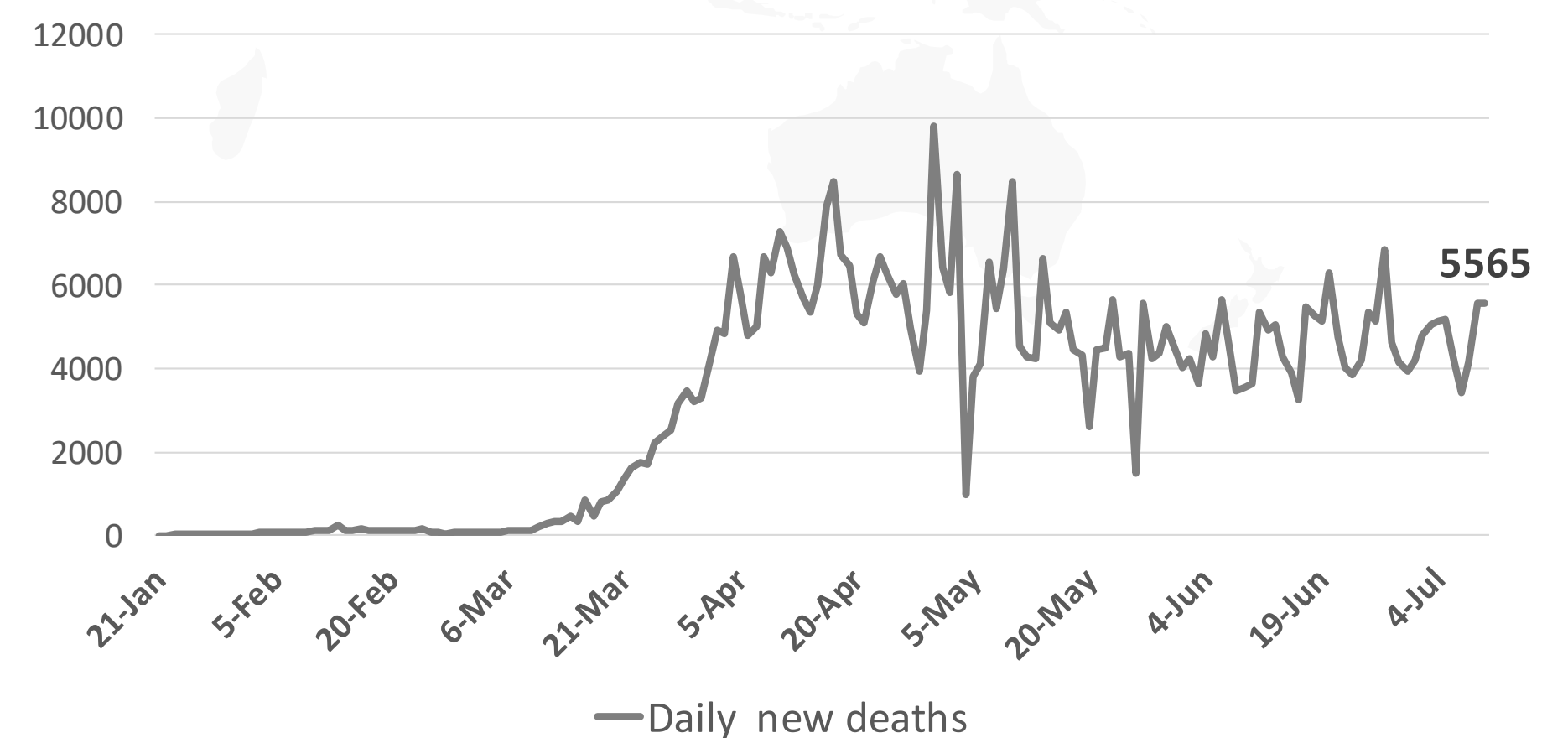


Figure 3: Top 10 countries in the total number of cases due to COVID-19

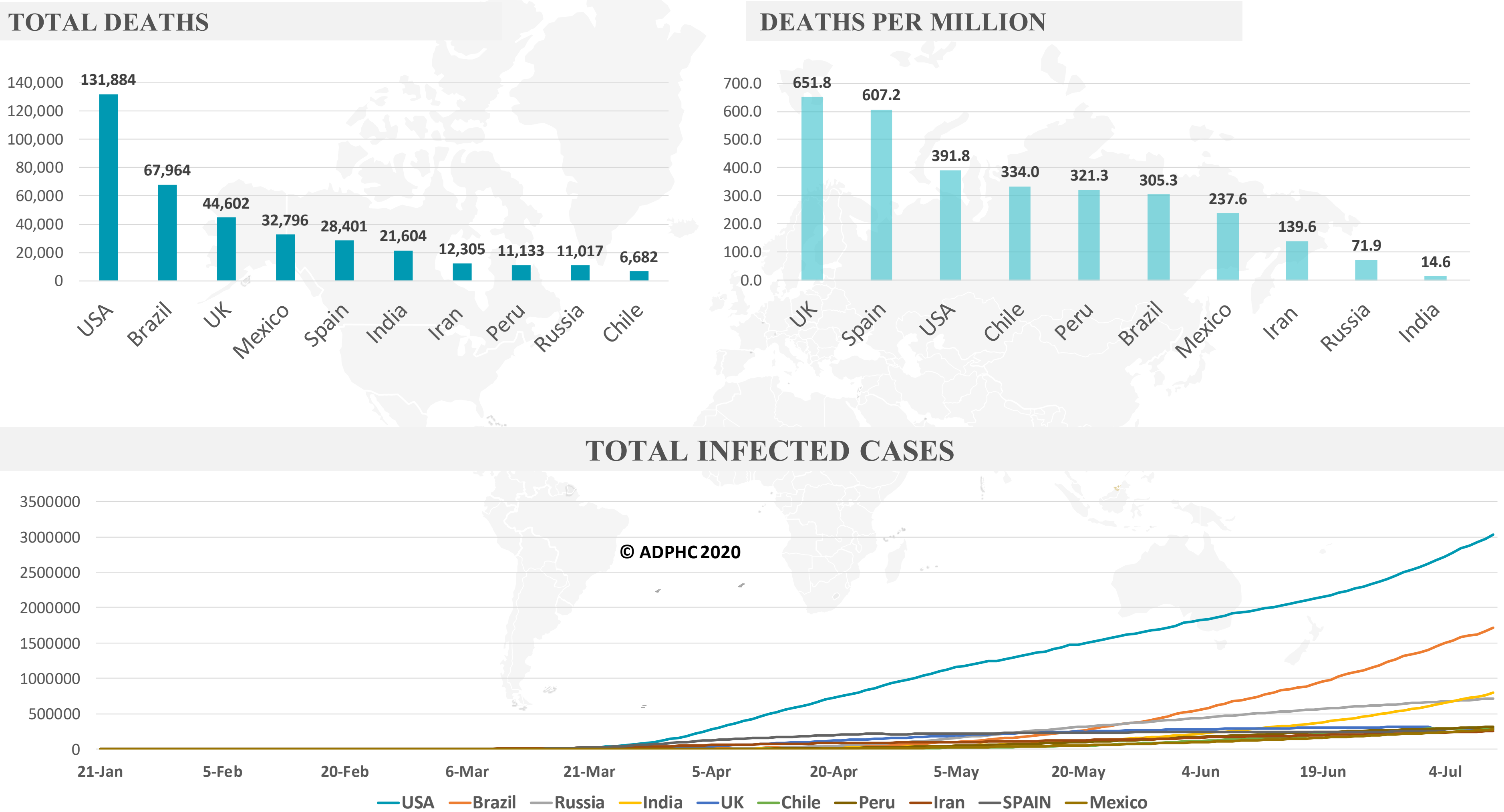


Figure 5: Total number of infected and recovered due to COVID-19 reported by the UAE

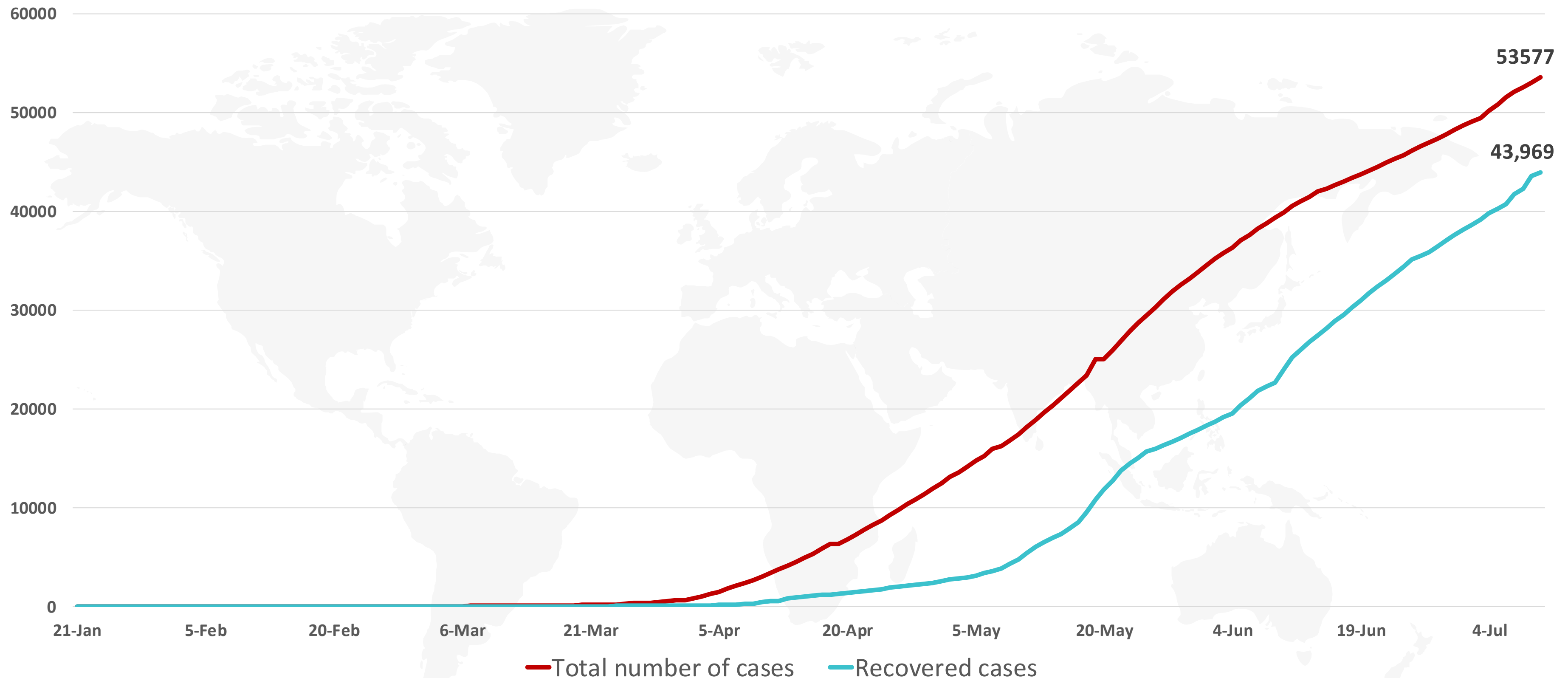


Figure 7A : Global distribution of COVID-19 cases

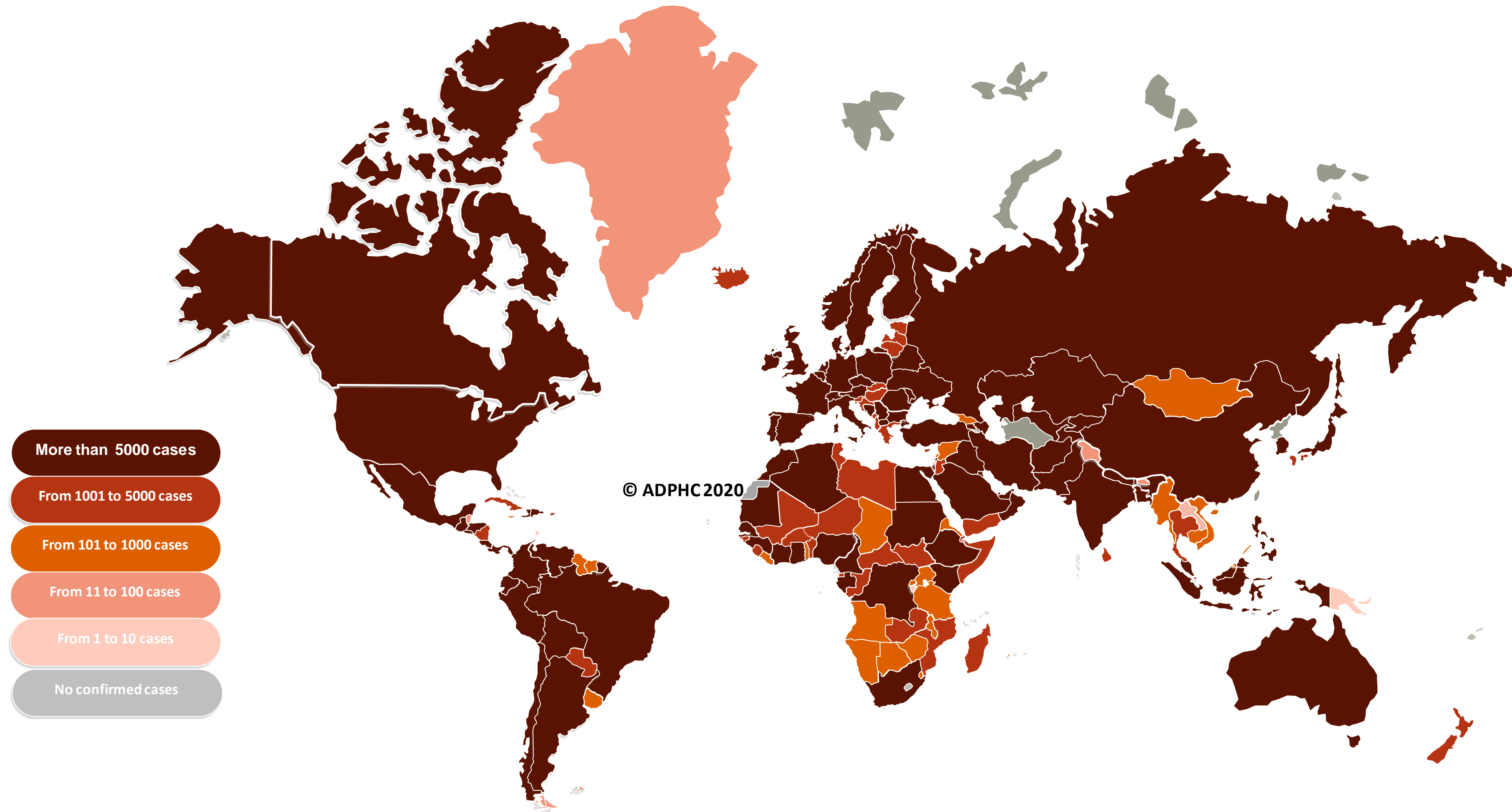
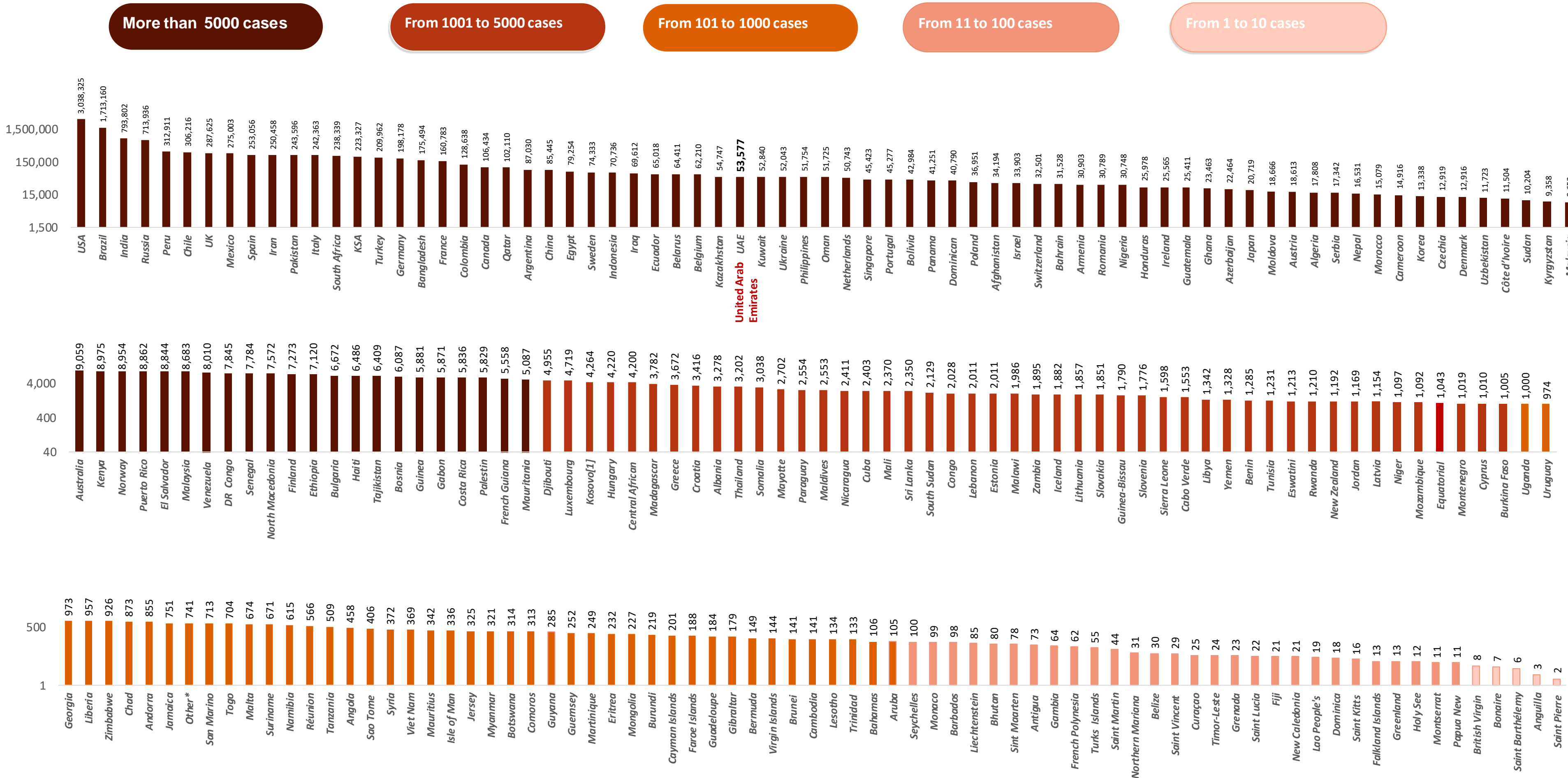


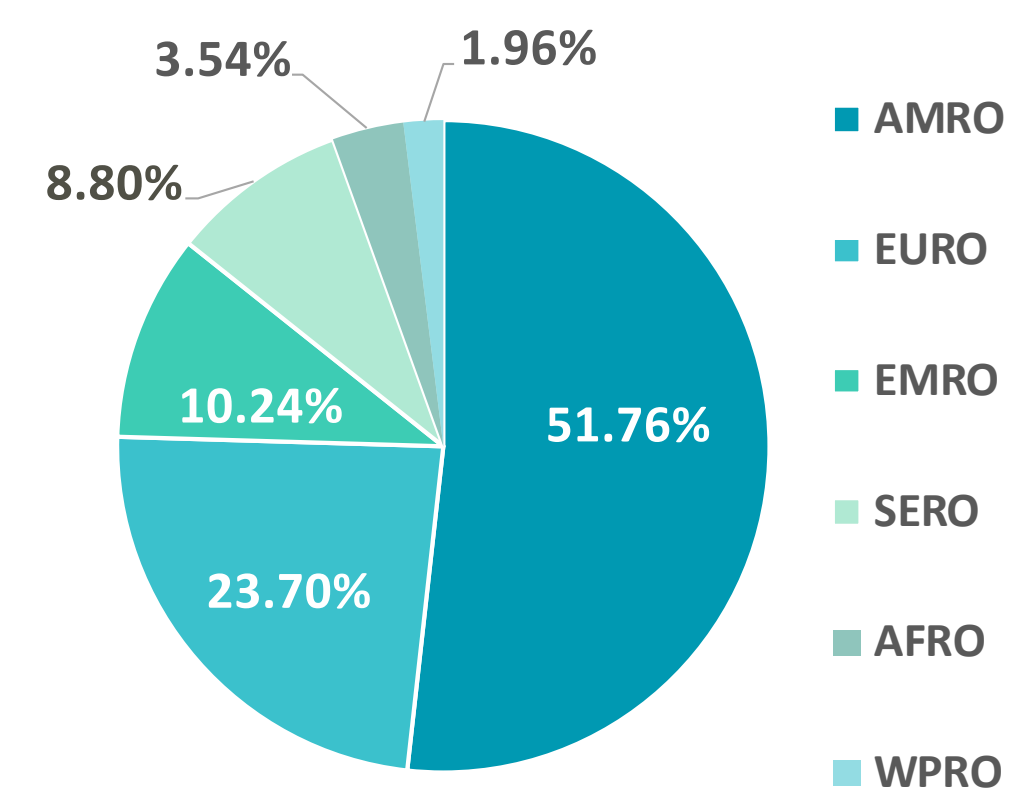
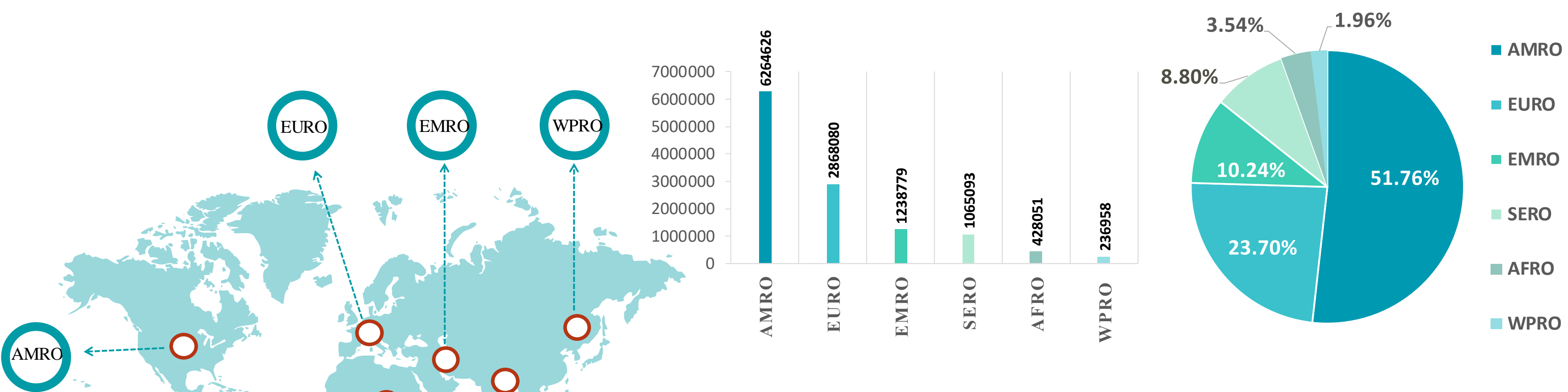
Figure 7B: Bar chart illustrate the global distribution of COVID19 cases



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

Figure 8: illustrate the Global distribution of COVID19 cases per region

INFECTED



DEATH

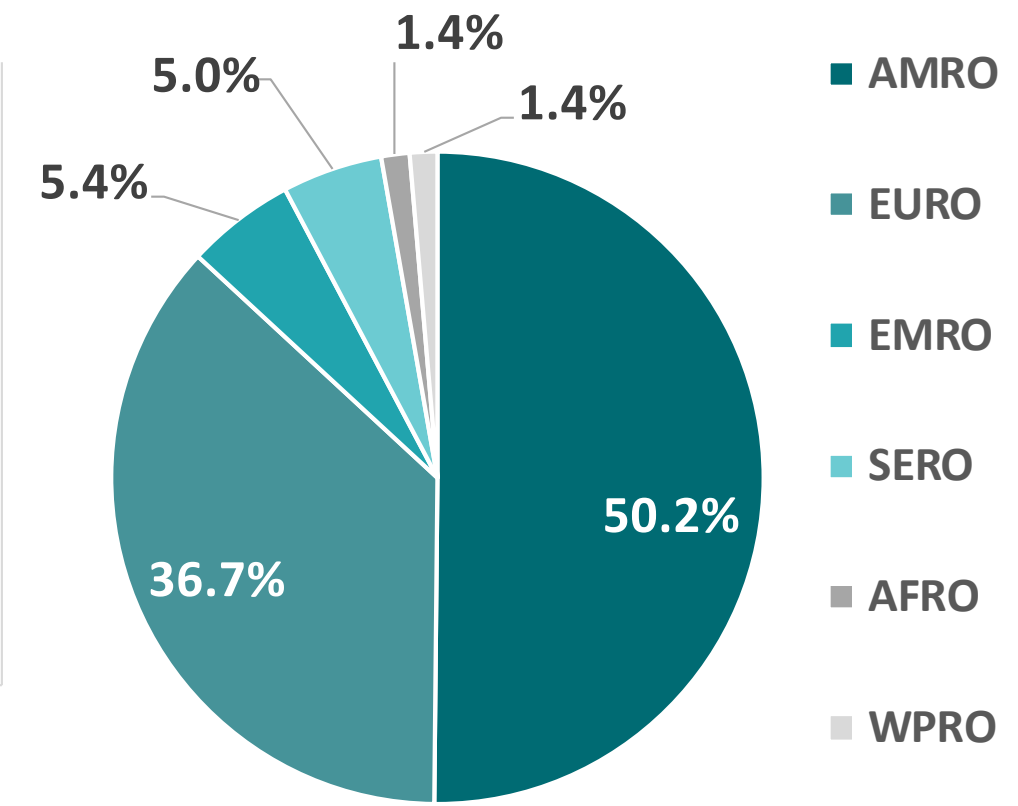
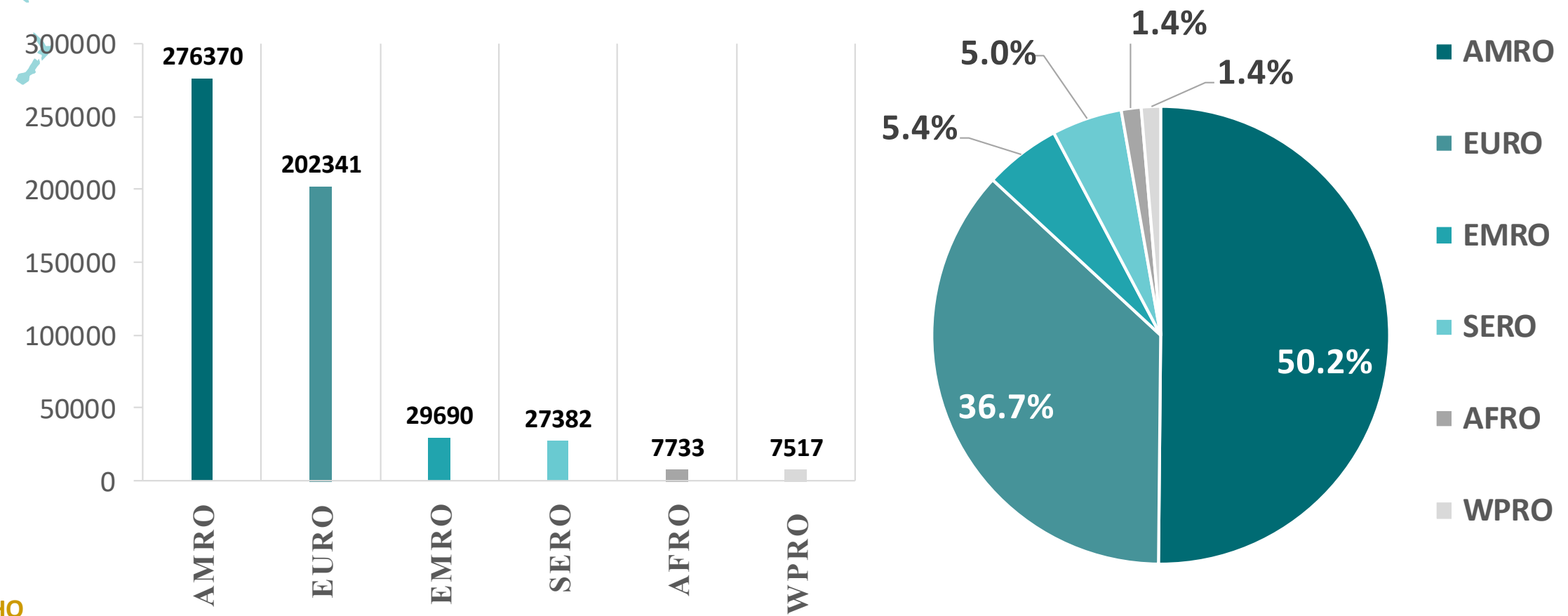
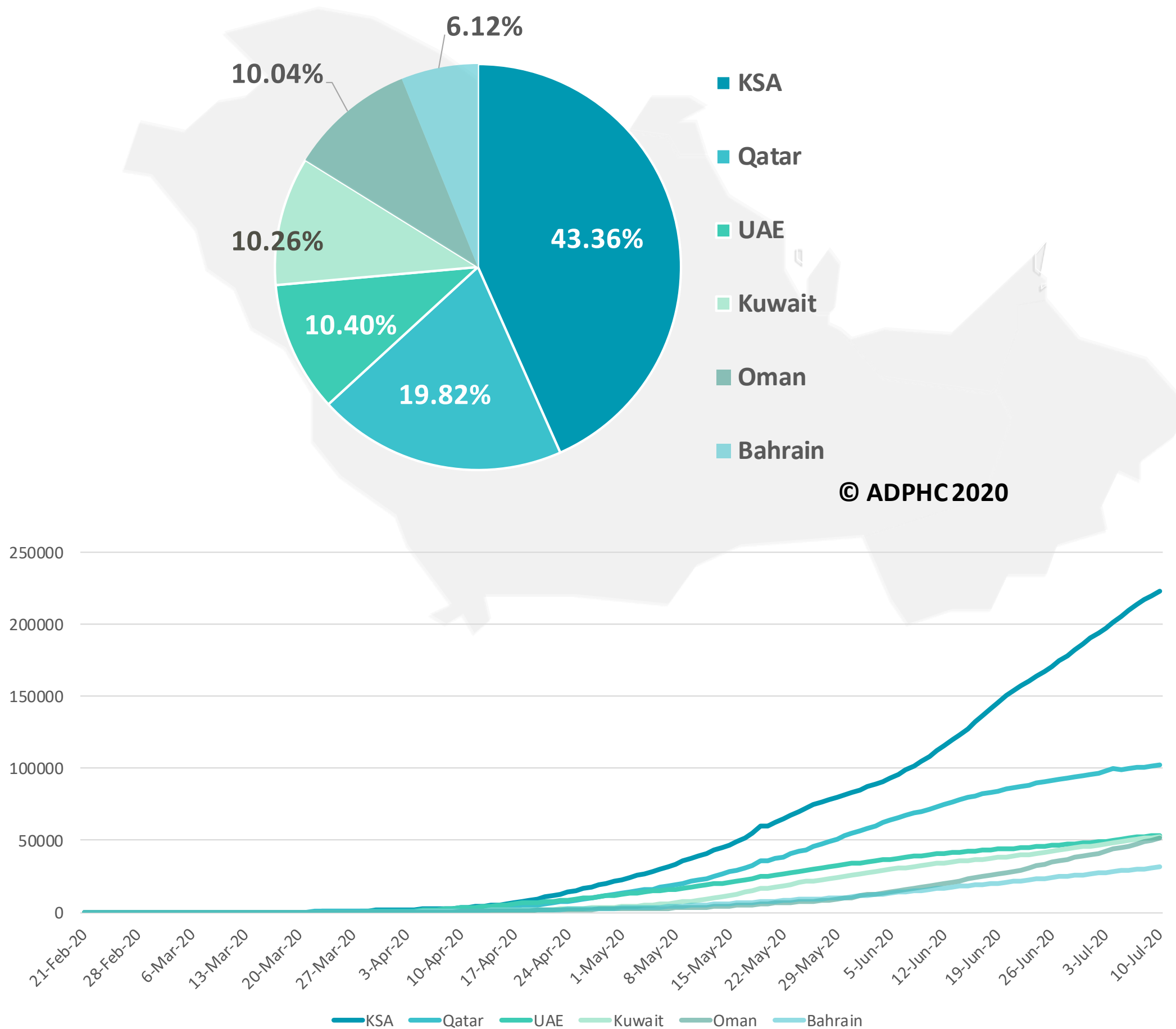
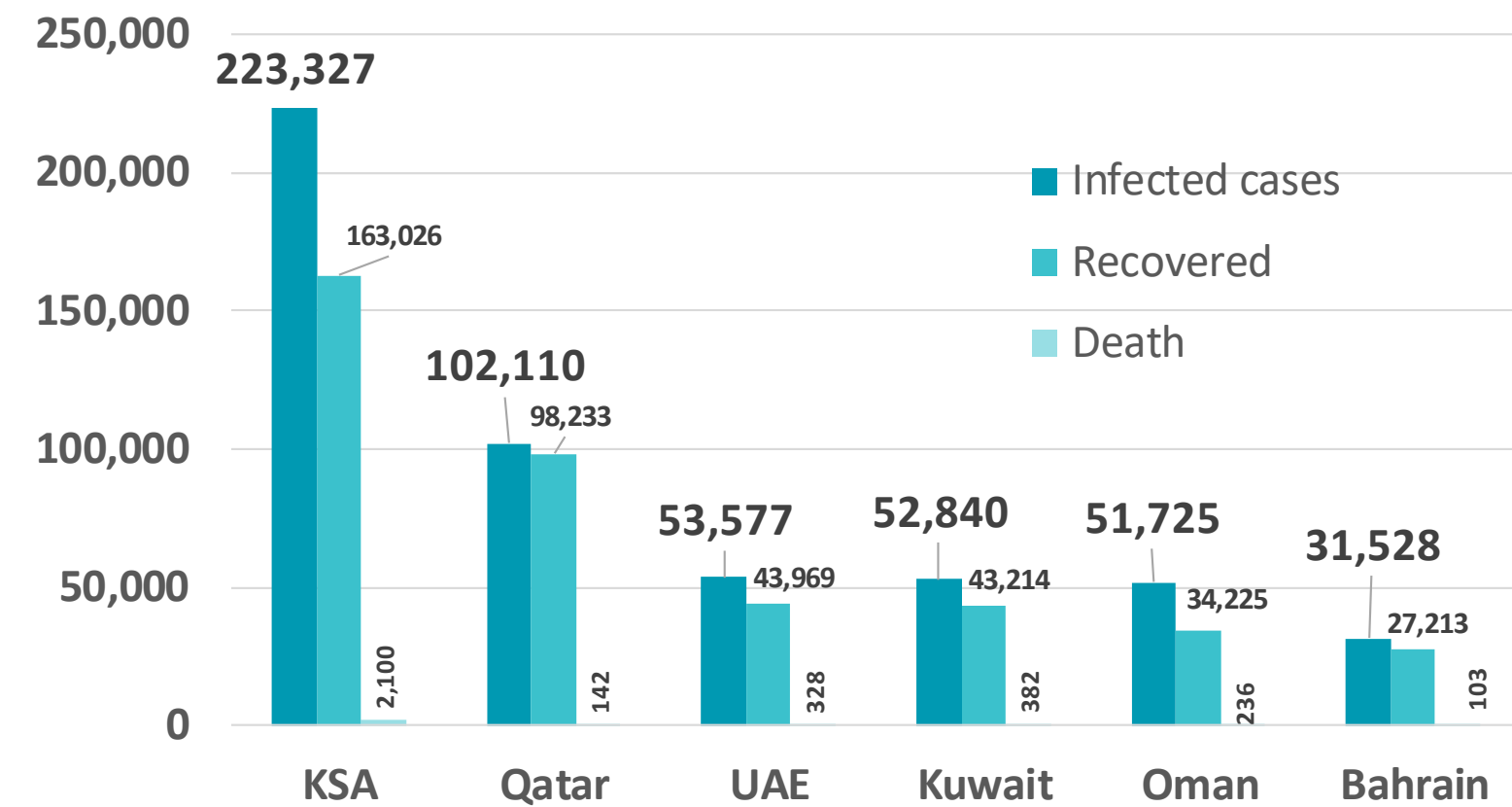


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries

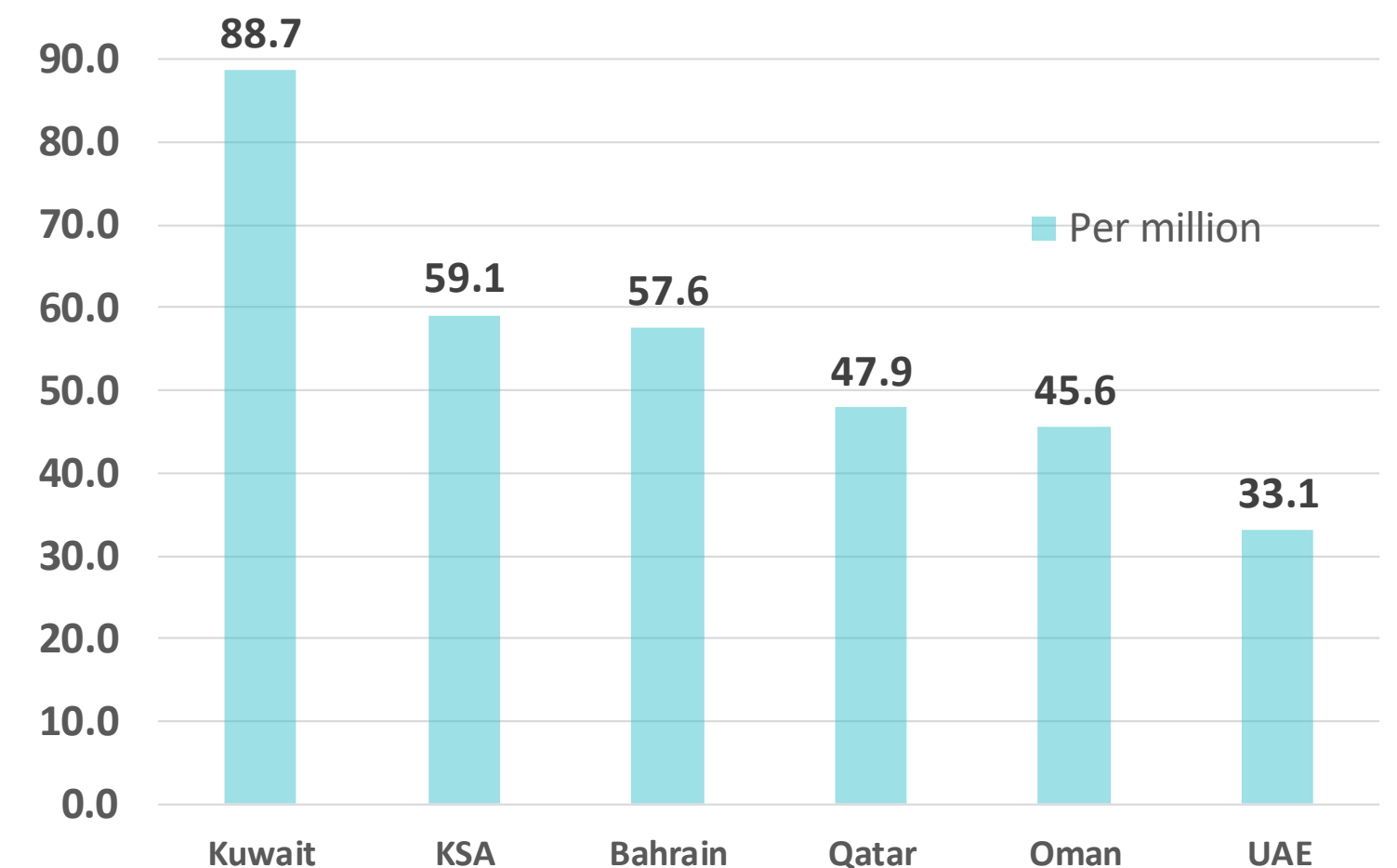
TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATH PER MILLION



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: [WHO](#)

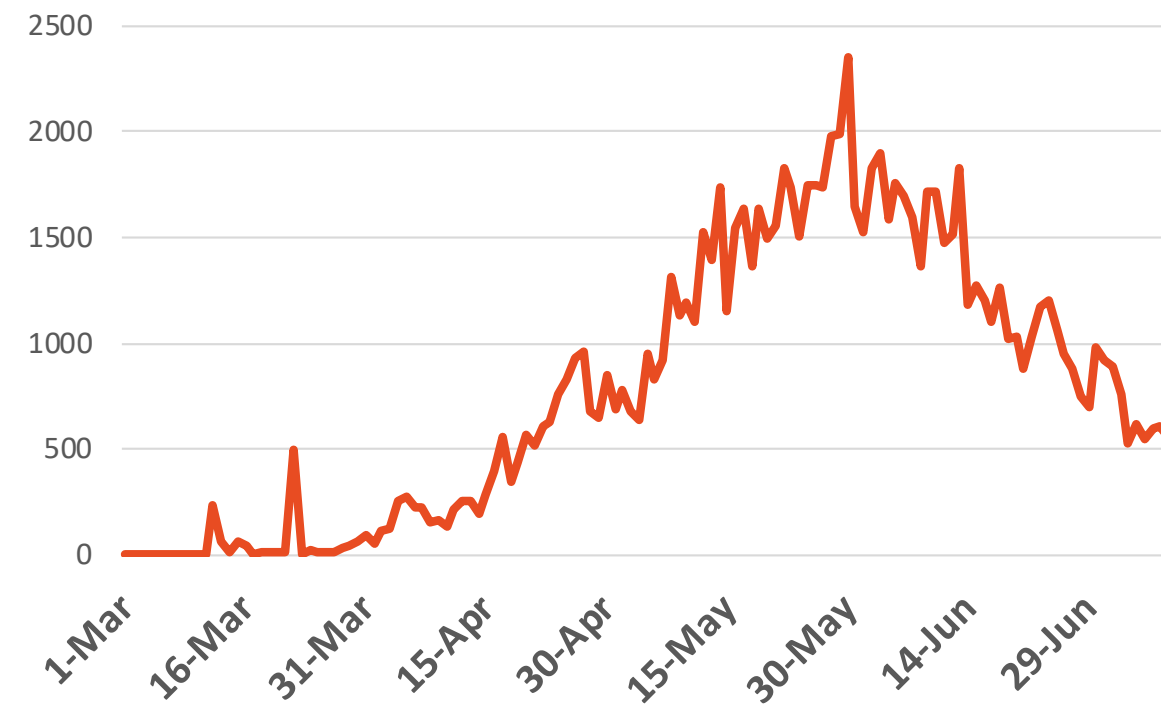
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries

KSA



Source : KSA ministry of health

Qatar



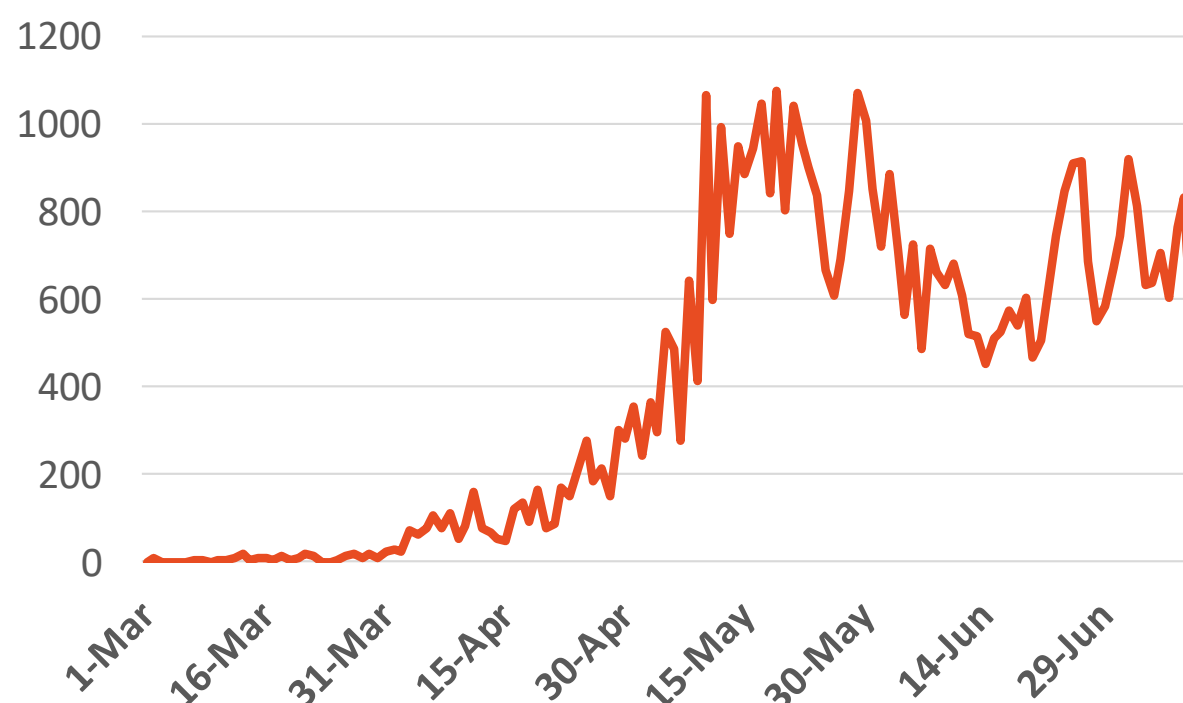
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

Kuwait



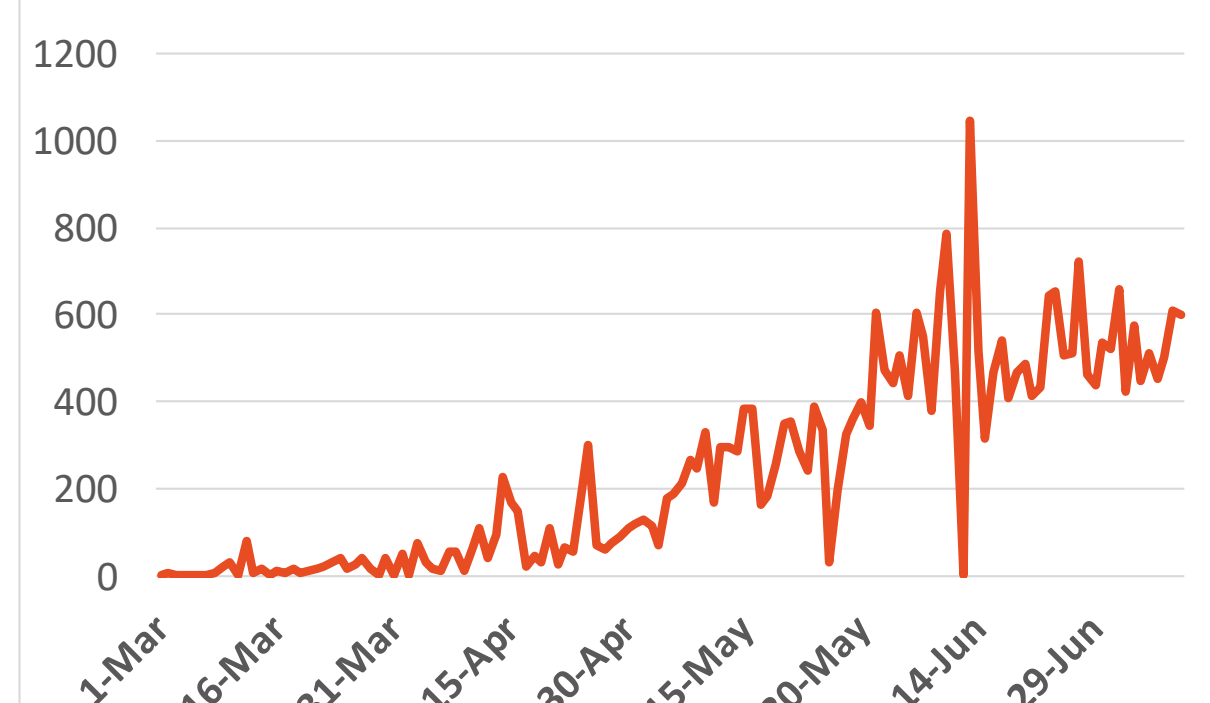
Source : Kuwait ministry of health

Oman © ADPHC 2020



Source :Oman ministry of health

Bahrain

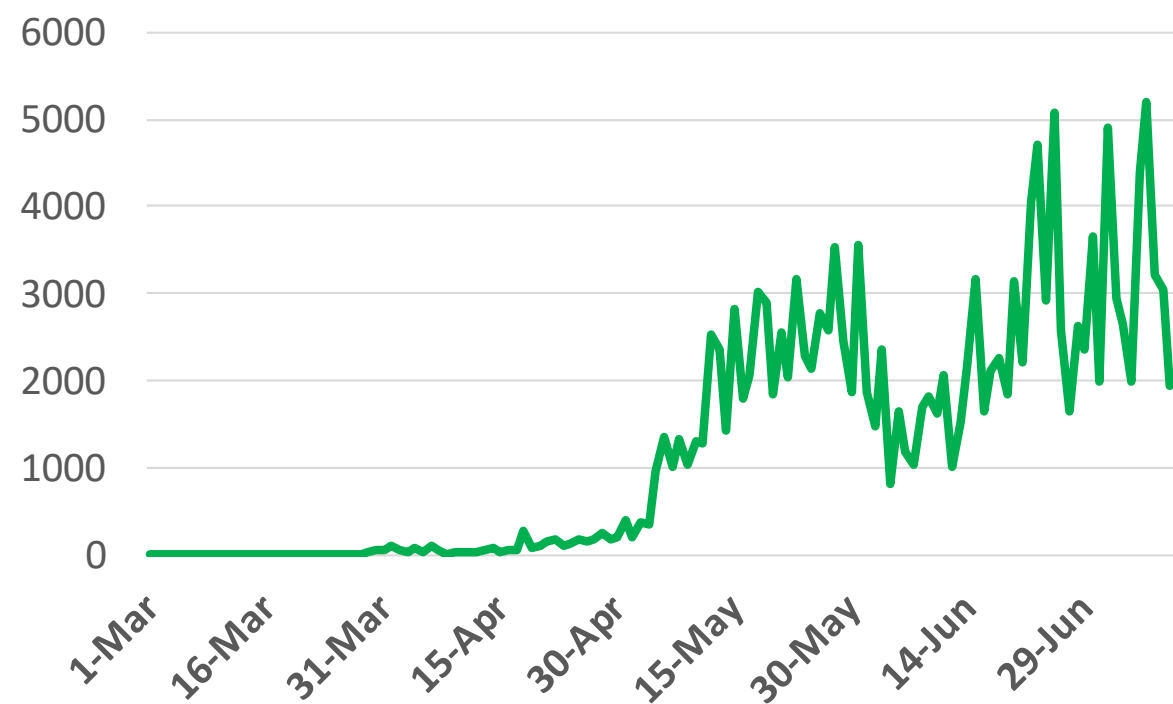


Source :WHO



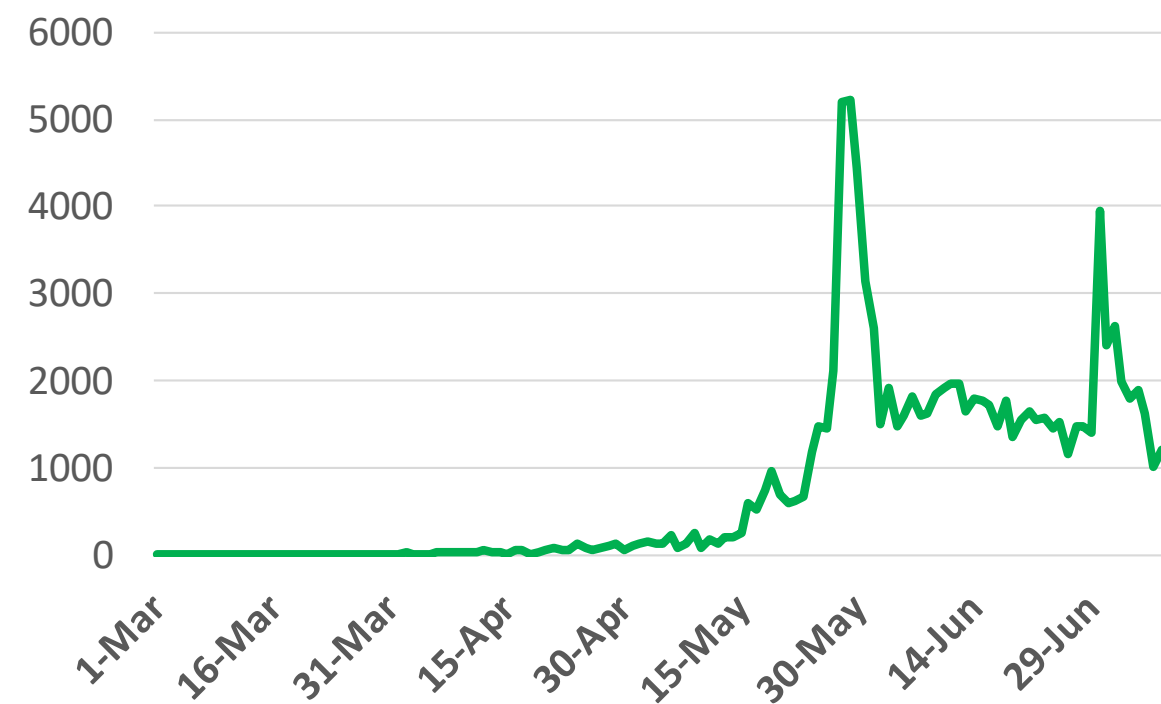
Figure 11: Comparative analysis of the distribution of COVID19 newly recovered cases in GCC Countries

KSA



Source : KSA ministry of health

Qatar



Source : Qatar ministry of health

UAE



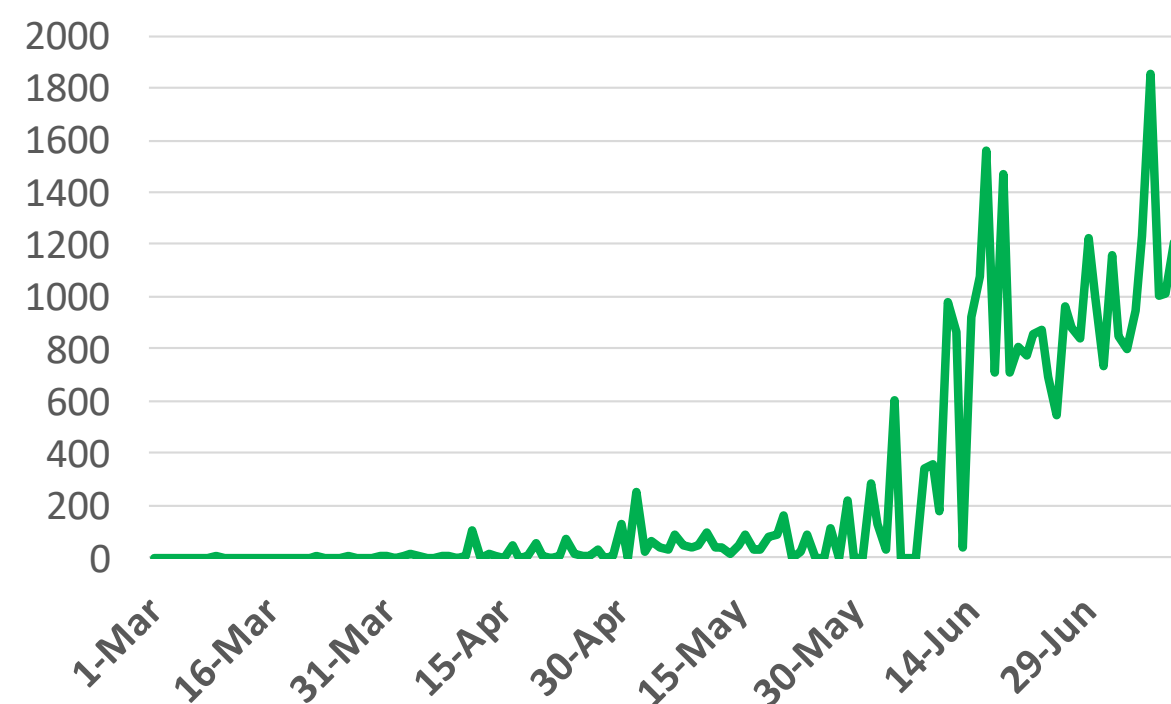
Source : National Emergency Crisis and Disaster Management Authority

Kuwait



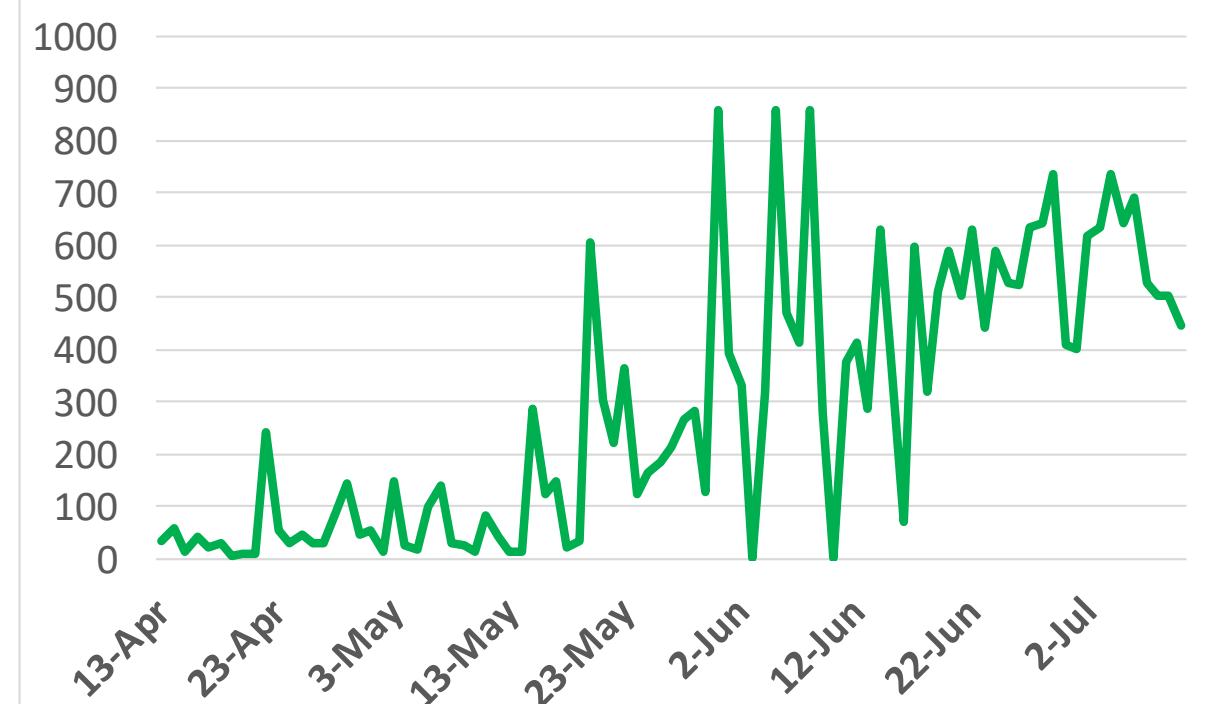
Source : Kuwait ministry of health

Oman © ADPHC 2020



Source : Oman ministry of health

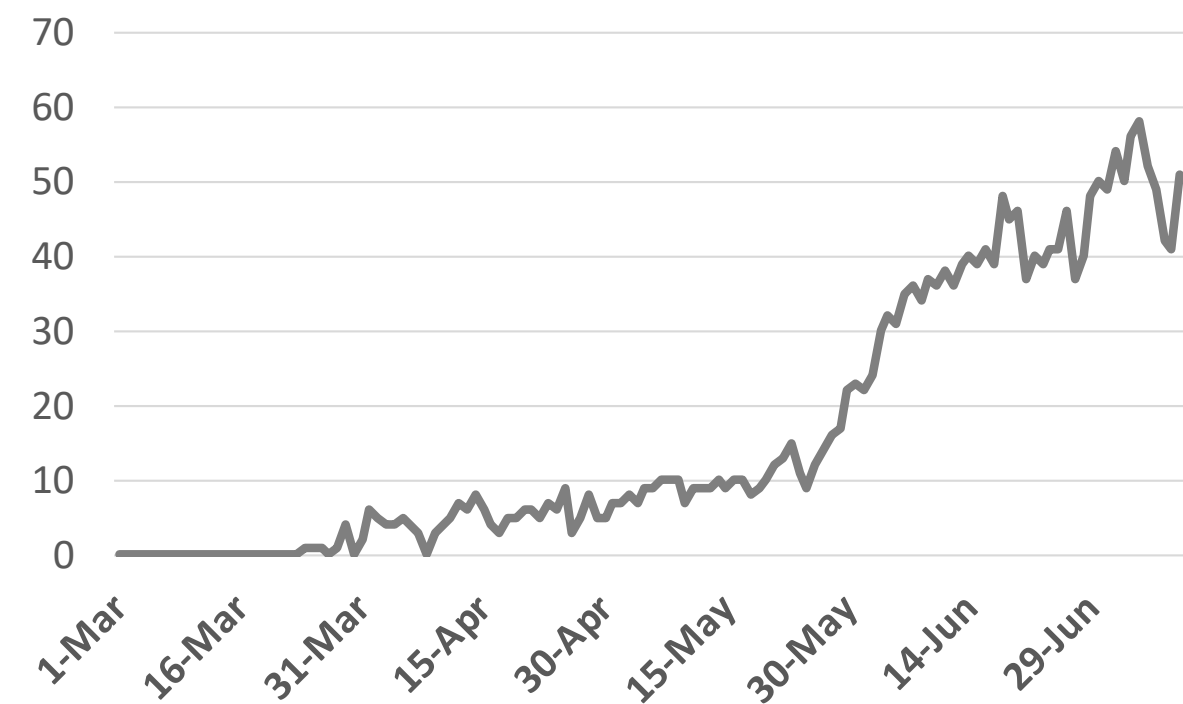
Bahrain



Source : GCCStat

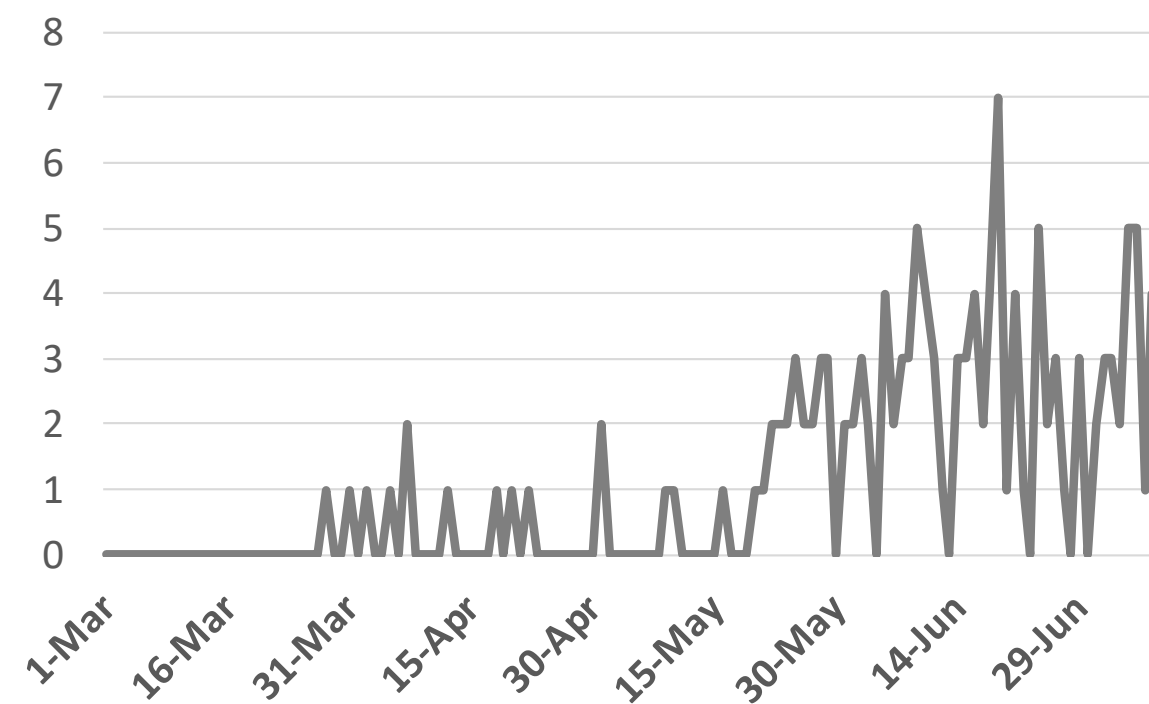
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries

KSA



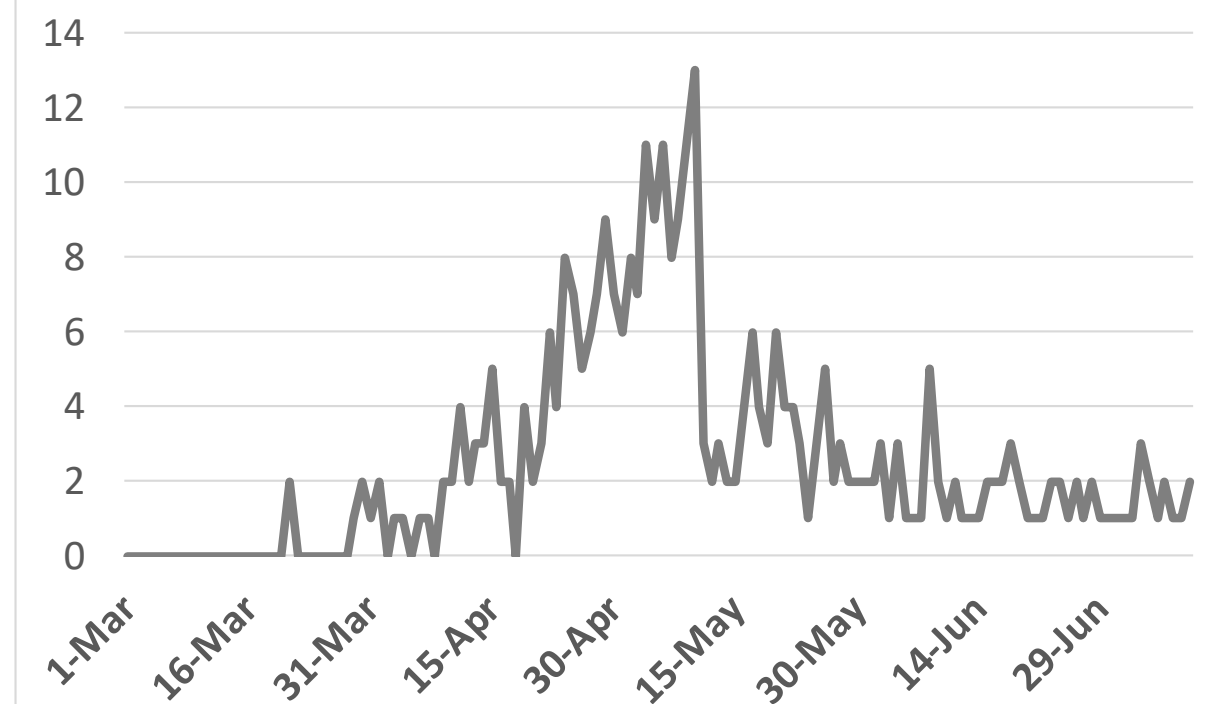
Source : KSA ministry of health

Qatar



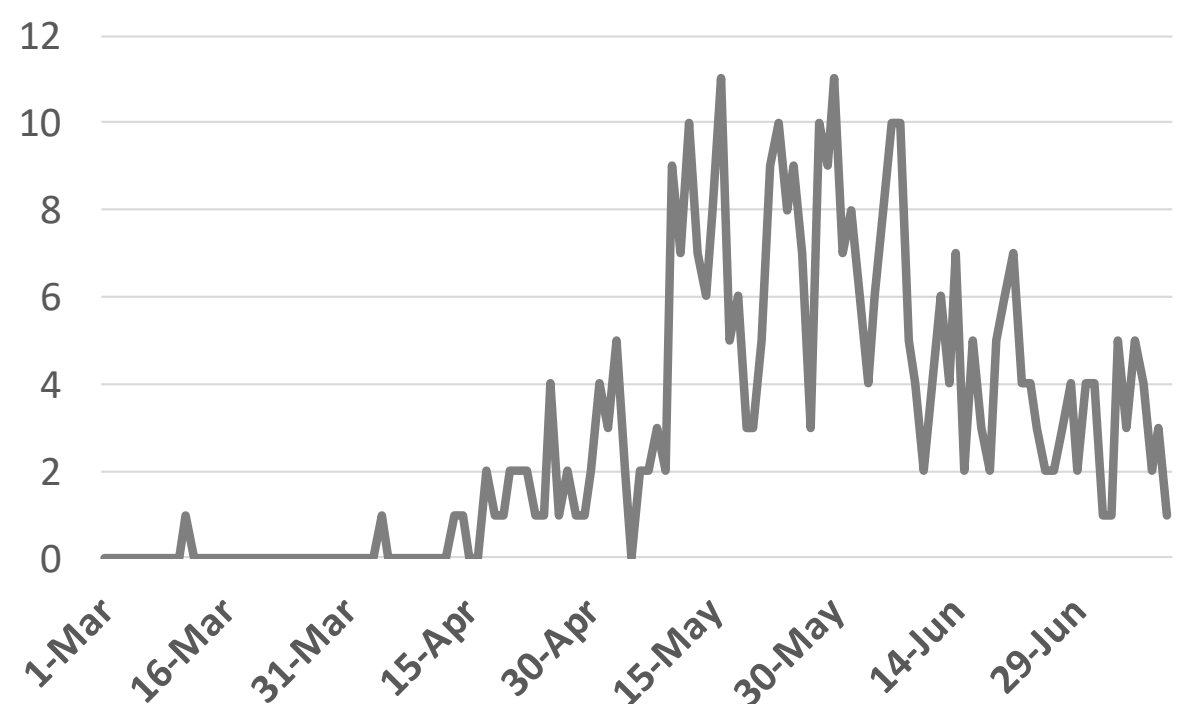
Source : Qatar ministry of health

UAE



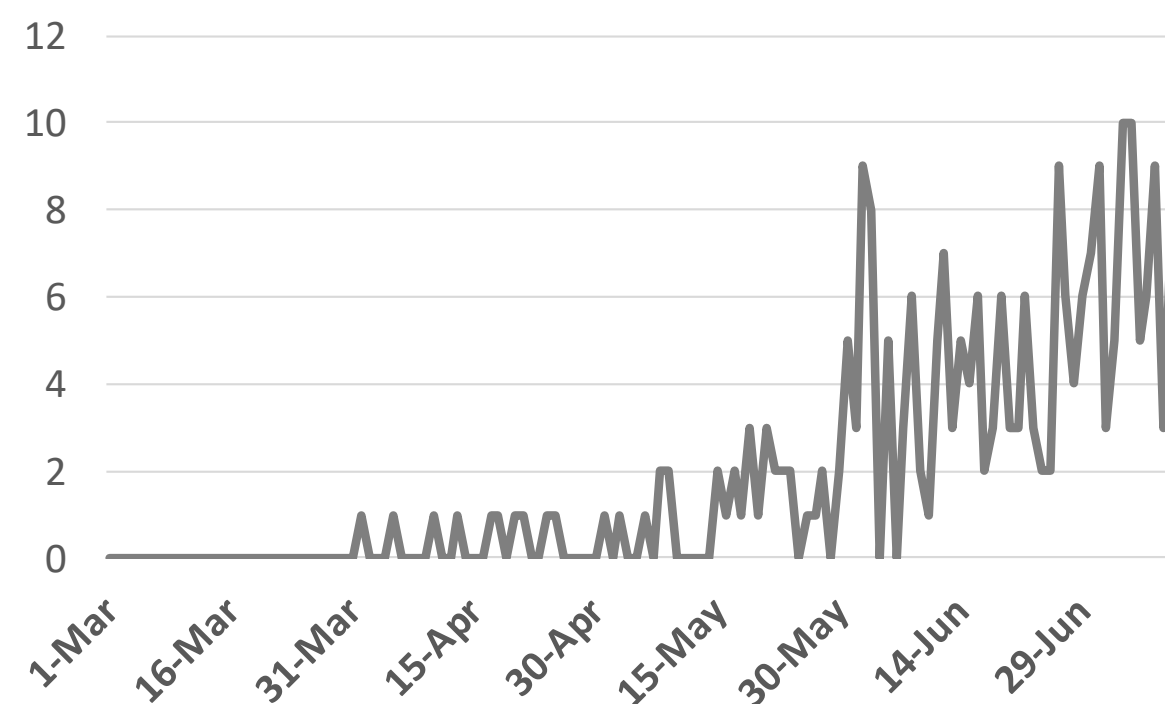
Source : National Emergency Crisis and Disaster Management Authority

Kuwait



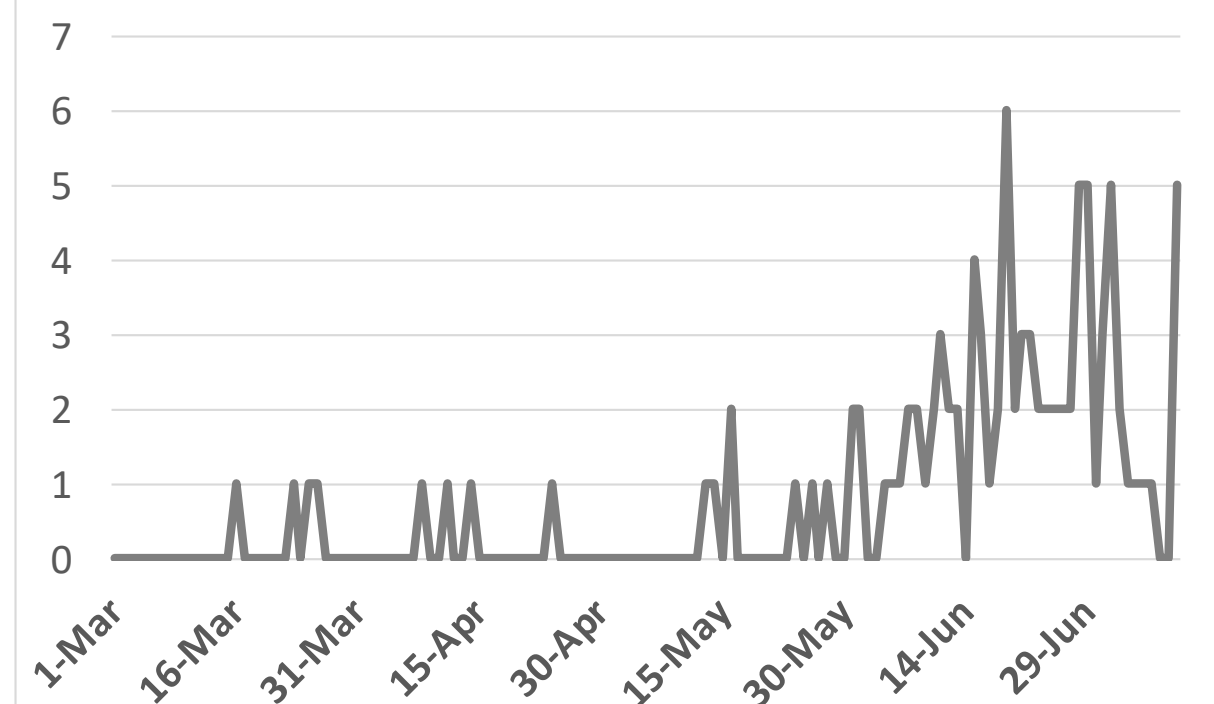
Source : Kuwait ministry of health

Oman © ADPHC 2020



Source :Oman ministry of health

Bahrain



Source :WHO



Article 1:

Acute Myelitis as a Neurological Complication of COVID-19: A Case Report and MRI Findings

Published

6 JUNE 2020 [ELSEVIER](#)

Authors

Reem AlKetbi, MD, Dana AlNuaimi, Muna AlMulla, Nouf AlTalal, Mohammed Samir, Navin Kumar, MD and Usama AlBastaki (Dubai Health Authority)

- This is a case report of a 32-year old Asian male in a hospital in Dubai with acute myelitis and COVID-19 positive. Patient presented with a 2-day history of flu-like symptoms then sudden onset paralysis of the legs and inability to urinate.
- The incidence is not known and the pathogenesis of the disease behind this manifestation is still not fully understood. Patients presenting with neurological symptoms such as loss of consciousness, incoordination, seizure attacks and found to have in radiological finding inflammation in brain and the spinal cords.
- Patient was diagnosed with acute myelitis (neurological disease-causing inflammation of the neurological system) and received needed treatment and eventually improved and regained motor functions.
- It is still debatable whether the myelitis occurs directly from the viral infection or as an autoimmune sequelae. In the current pandemic Status; COVID-19 should be considered as a differential diagnosis in patients presenting with loss of consciousness, abnormal coordination, seizures and other neurological symptoms.



Article 2:

Neurologic and Radiographic Findings Associated with COVID-19 Infection in Children

Published

1 July 2020 [JAMA](#)

- In the United Kingdom (UK), a case series study was conducted with patients <18 years who presented with SARS-CoV-2 infection and neurological symptoms between March 1 and May 8, 2020.
- Electronic medical records were used to retrieve data on demographics, comorbidities, neurological symptoms, relevant investigations (cerebrospinal fluid, neuroimaging, and neurophysiology), treatments, and outcomes.
- Data showed 27 children had COVID-19 multisystem inflammatory syndrome, of those 4 (14.8%) had neurological symptoms such as encephalopathy, headaches, brainstem and cerebellar signs, muscle weakness, and reduced reflexes. Splenium signal changes were seen in all 4 patients on magnetic resonance imaging of the brain. Tests for marker of neurological autoantibodies had negative results in all patients.



Continued

- Cerebrospinal fluid from lumbar puncture was tested in 2 of 3 patients negative for viral and bacterial PCR.
- Electroencephalography showed a mild excess of slow activity in the 3 patients tested. Nerve conduction studies and electromyography showed mild myopathic and neuropathic changes in all 3 patients tested. (all indicated neurological activities).
- Children with COVID-19 might present with neurological symptoms that involve both the central and peripheral nervous system, in the absence of respiratory symptoms. Further research is required to assess the association of neurological symptoms with immune-mediated changes among children with COVID-19.

Table 1. Patient Demographics and Neurological Characteristics

Patient No./sex/age, y	Ethnicity	Central nervous system manifestations	Peripheral nervous system manifestations	Cerebrospinal fluid findings	EEG	EMG	Immune therapy	Outcome
1/M/8	South Asian	Encephalopathy (confused and agitated); meningism; headache	Generalized proximal weakness (MRC 3/5) on day 7; normal reflexes	White blood cell count, 8000 cells/ μ L; protein, 2.0 g/dL; negative culture and virology results (including SARS-CoV-2); negative oligoclonal band test results	Mild diffuse slowing	Patchy myopathic changes	Intravenous immunoglobulin (1 g/kg, 1 dose); dexamethasone (10 mg/m ² , 7 d); IVMP (2 mg/kg, ongoing); Anakinra (2 mg/kg, 7 d)	Day 17: still inpatient; encephalopathy resolved, wheelchair bound
2/M/9	Afro-Caribbean	Encephalopathy (confused); ataxia; dysarthria; headache	Bilateral proximal leg weakness (MRC 3/5) on day 2; normal reflexes; urinary retention	White blood cell count, 2000 cells/ μ L; protein, 1.9 g/dL; negative culture and virology results (including SARS-CoV-2); negative oligoclonal band test results	Diffuse slow activity	Not performed	None	Discharged after 11 d; encephalopathy resolved, fully ambulant
3/F/15	South Asian	Encephalopathy (confused); dysarthria; dysphagia	Global flaccid weakness (MRC 3/5), day 8; reduced reflexes	Not performed	Mild excess of slow activity over the anterior regions	Mild myopathic or neuropathic changes	Anakinra (2 mg/kg, 7 d); IVMP (10 mg/kg, 3 d); dexamethasone (10 mg/m ² , 7 d); rituximab (375 mg/m ² , 2 doses)	Day 32: still inpatient; encephalopathy resolved, wheelchair bound
4/F/15	Afro-Caribbean	Encephalopathy (confused and disoriented); headache	Global proximal weakness (MRC 4/5) on day 4; reduced reflexes	Not performed	Not performed	Mild myopathic changes	Intravenous immunoglobulin (1 g/kg, 1 dose)	Discharged after 18 d; encephalopathy resolved, fully ambulant

Abbreviations: EEG, electroencephalography; EMG, electromyography; IVMP, intravenous methylprednisolone; MRC, Medical Research Council power scale; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

SI conversion factors: To convert white blood cell count to cells $\times 10^9$ per liter, multiply by 0.001; protein to g/L, multiply by 10.0.



THANK YOU

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