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HEALTH CENTRE

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Scientific Research Monitoring on COVID-19

17 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

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

- **Clinical Features :**
 - article highlights the potential of thyroid dysfunction post coronavirus infection. So far , no reported cases however , physician shall be aware about this possible complication when managing patient with COVID19 and thyroid disease.
 - Article of diamond princess cruise ship found LDH (marker of inflammation) was higher on asymptomatic patients who eventually developed symptoms compared to those who remained asymptomatic.
- **Mental health:** article on prevention and management of mental health during COVID19 era.
- **Diagnosis:** article gave a review on lab findings and comparison between age groups.
- **Covid19 Research:** WHO have posted the outcome to be used in COVID19 clinical studies
- **Others:** article on CT role in COVID19 and another article on rehabilitation services and addiction during COVID19 era.



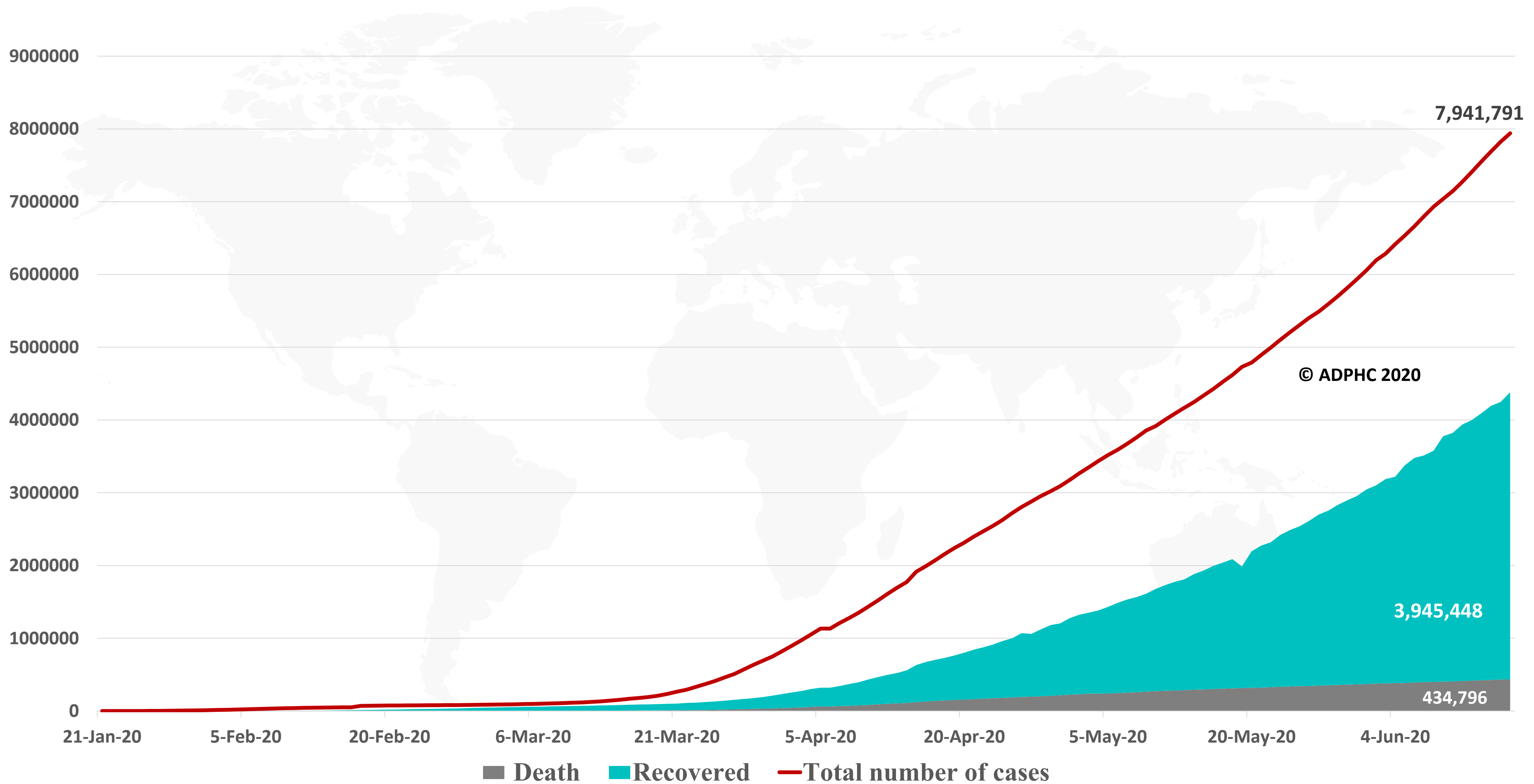
WHO Daily Report 16 June 2020

- WHO Director-General Dr. Tedros, in his speech focused on that “Despite the ongoing global response to the COVID-19 pandemic, we cannot lose sight of other significant public health issues, including influenza”.
- WHO advice countries to address the sharp decrease in flu reconnaissance and testing during the COVID-19 pandemic, especially as the southern side of the equator enters the influenza season.
- The world's most noticeably worst humanitarian crisis is Yemen is facing the most threat to health security — COVID-19.
- A health care worker asked Yemenis to be extremely vigilant and protect themselves and urged them to stay at home as health care workers put their lives at unprecedented risk to save lives.
- The WHO Information Network for epidemics – listening to our stakeholders
- Since its declaration of a Public Health Emergency, WHO has coordinated global response efforts, working with other United Nations agencies, national governments, and a host of other partners.
- One of the main objectives of WHO’s Information Network for Epidemics (EPI-WIN) in the COVID-19 response is to manage “infodemics”, which can spread mis- and dis-information and rumours during a health emergency, that will be affect response or be harmful to public health.
- Sixty webinars have been organized since January 2020 featuring over 270 subject matter experts and panelists.
- In total, the webinars have reached over 12,000 participants from 121 countries.

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to Jun 16, 2020)

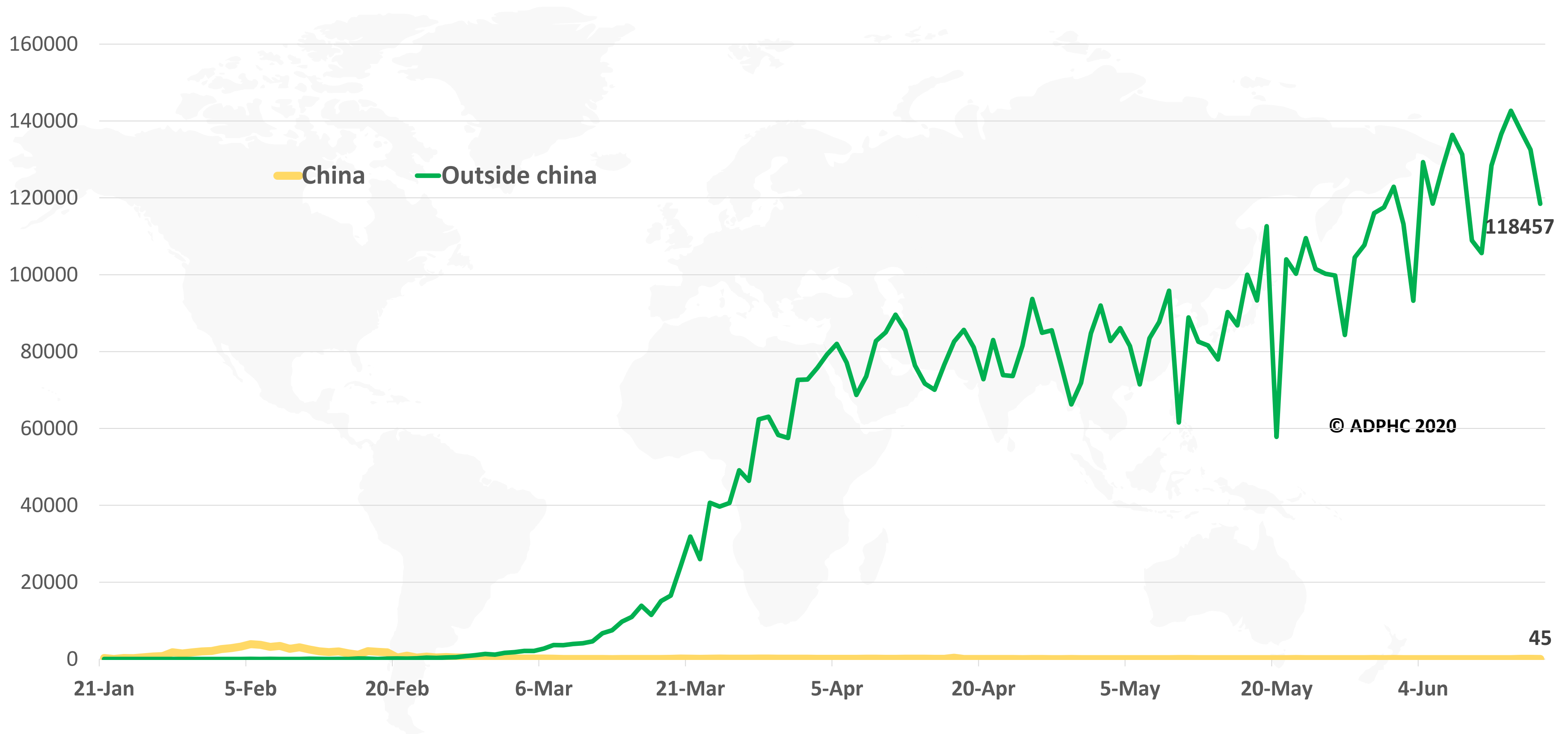


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 16, 2020).



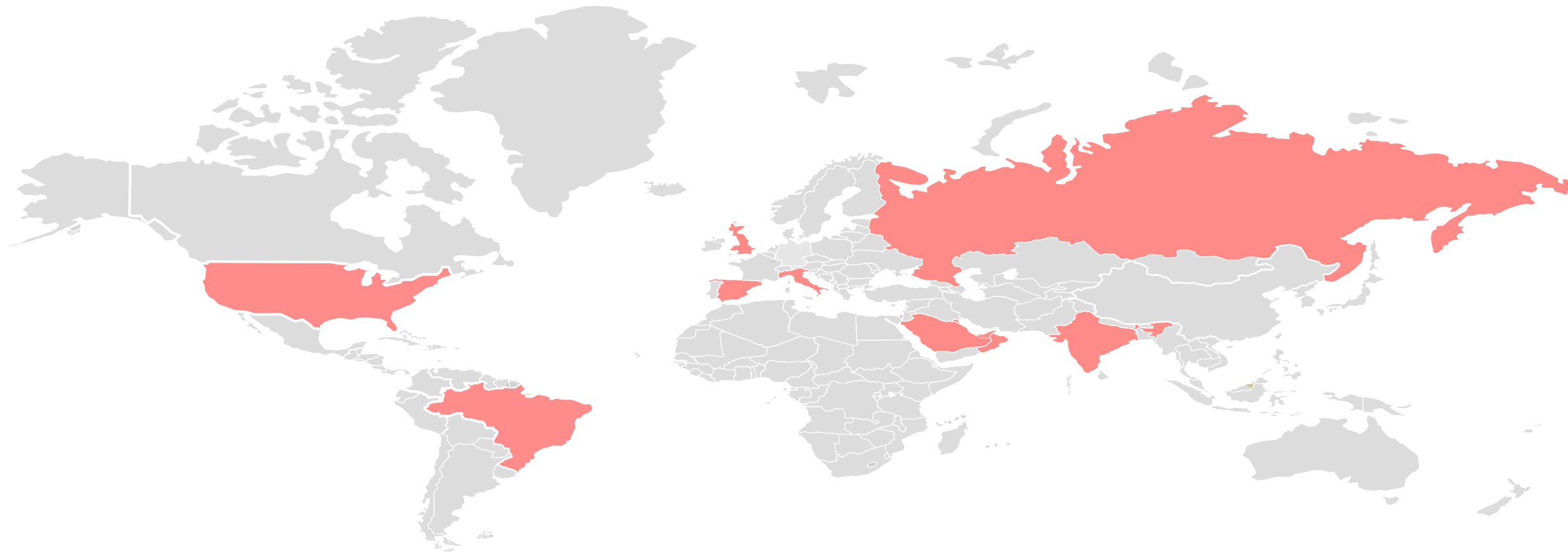
Line graph published by Abu Dhabi Public Health Center 2020.

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

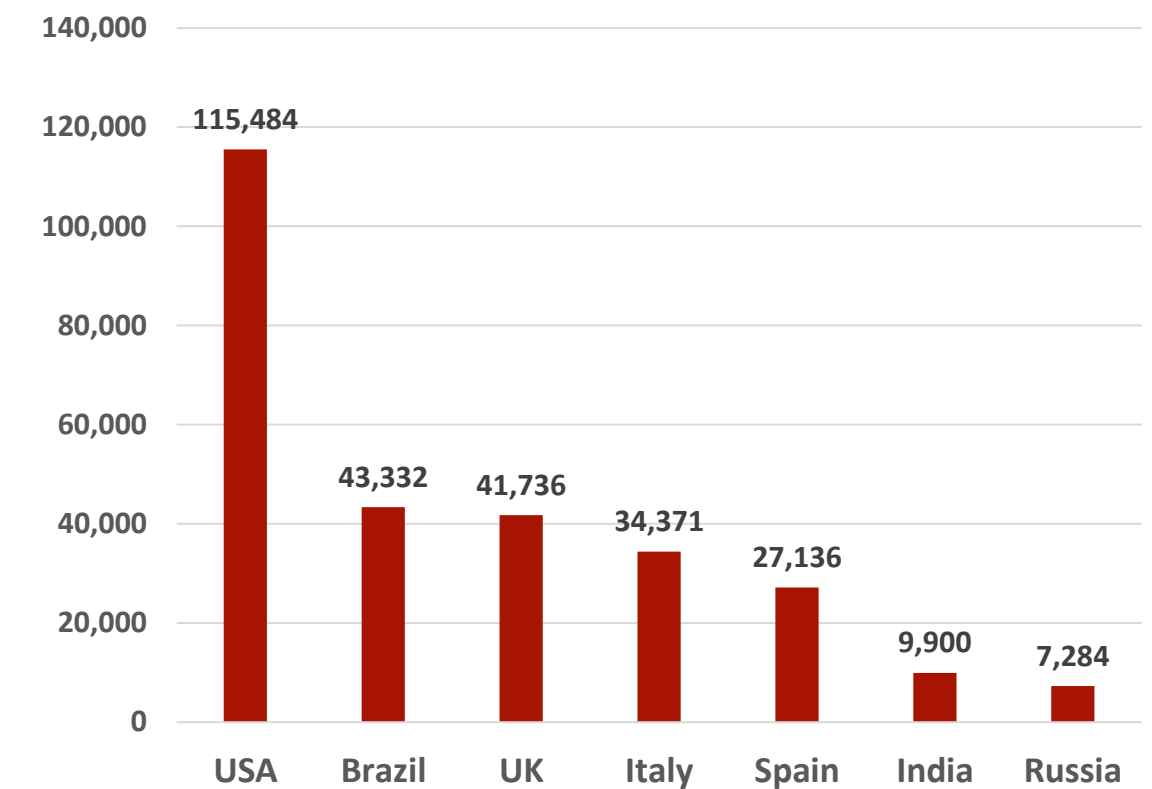
Epidemiology



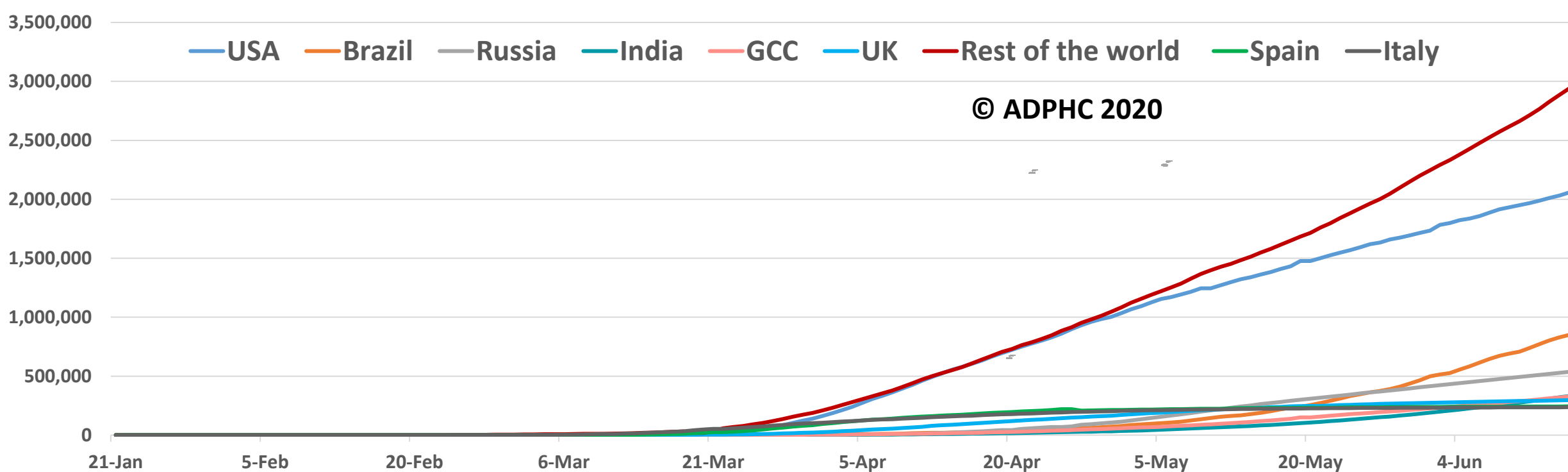
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 16, 2020).



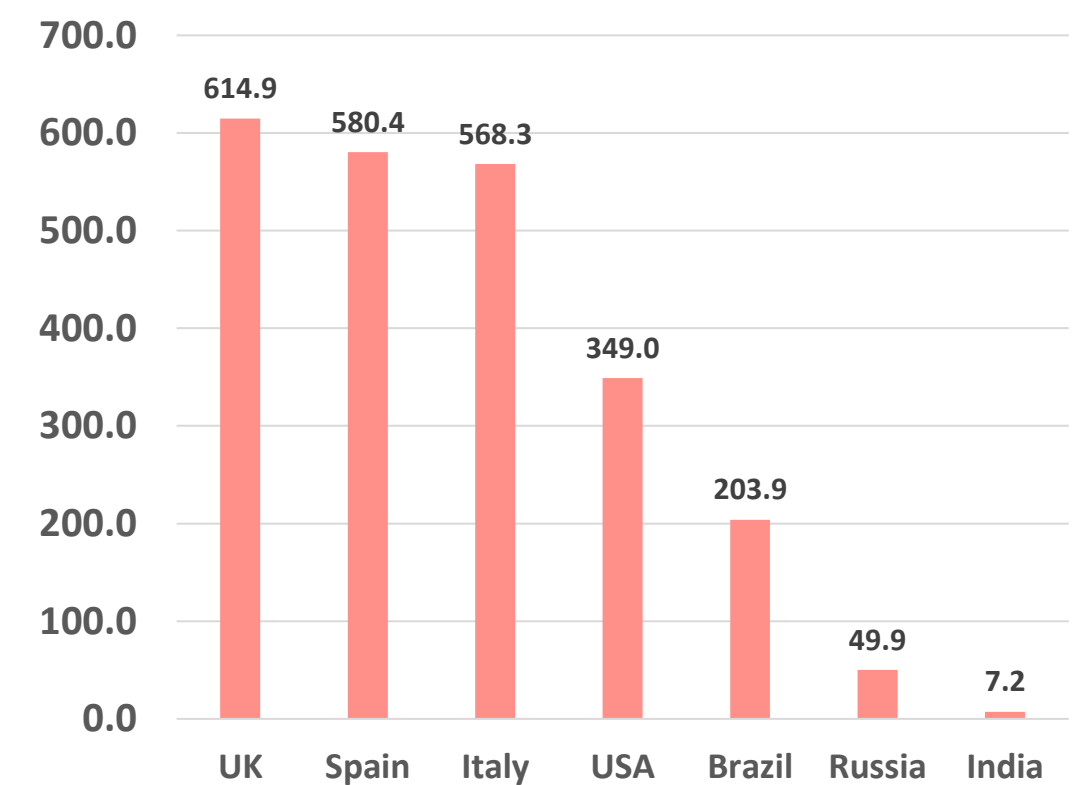
TOTAL DEATHS



TOTAL INFECTED CASES



DEATHS PER MILLION



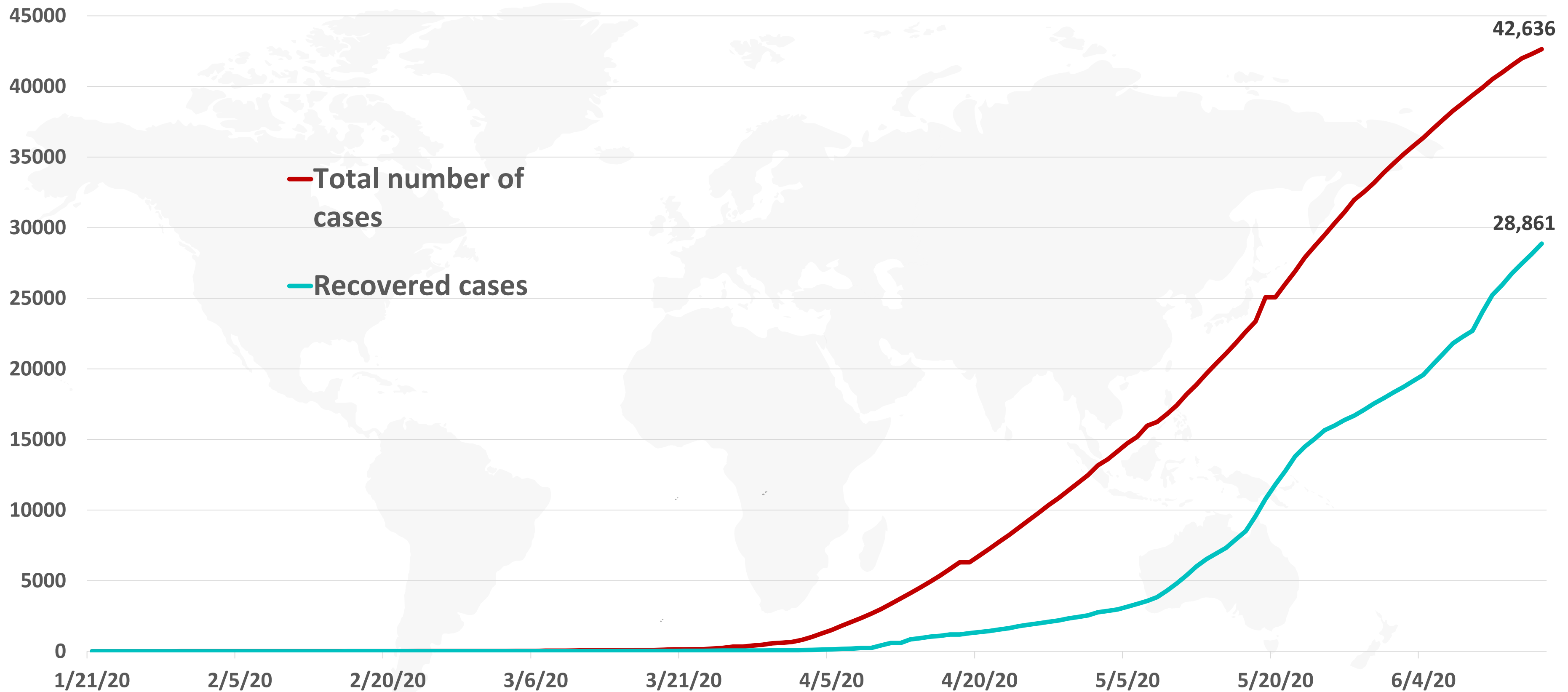
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



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



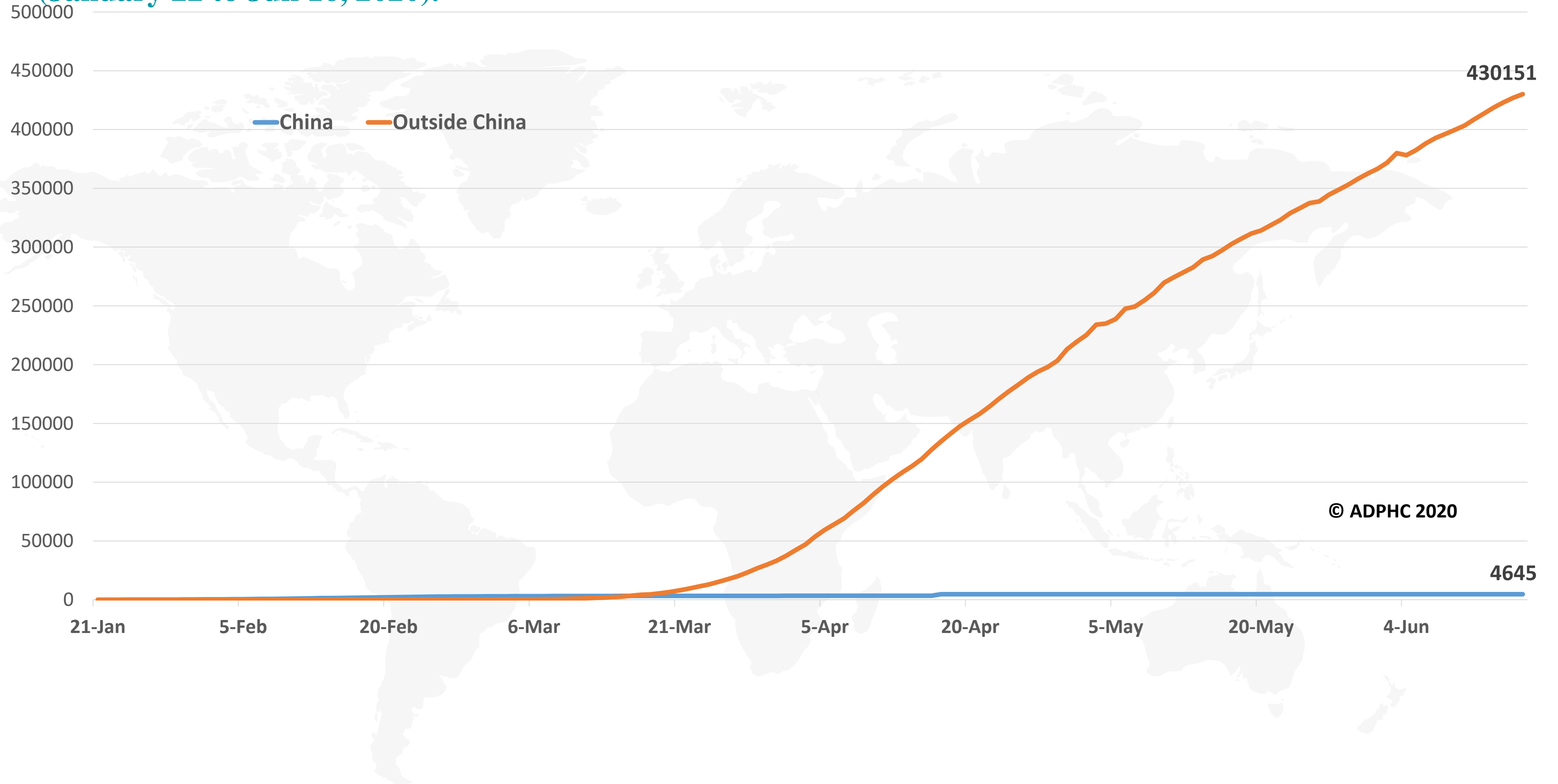
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to Jun 16, 2020).

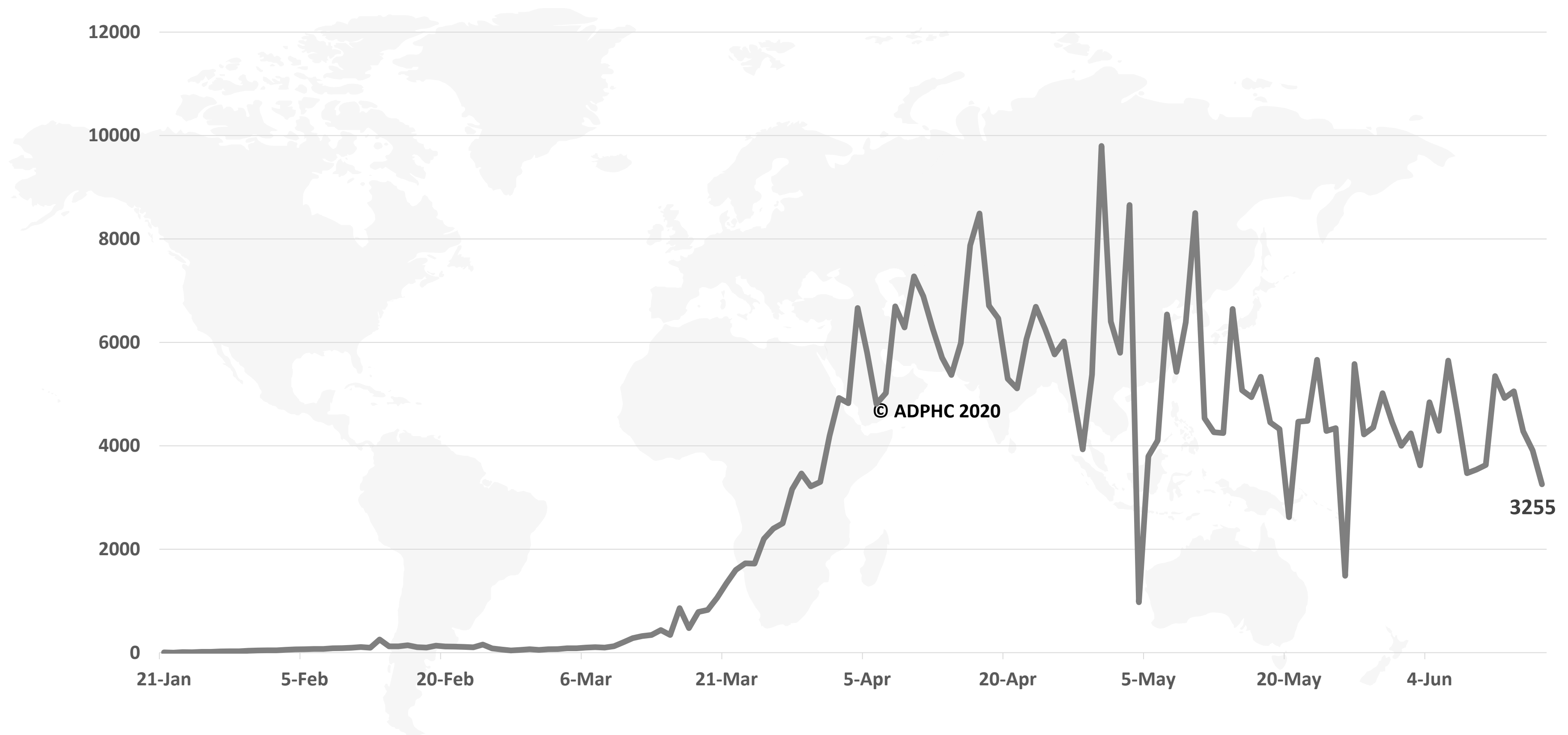


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 16, 2020).



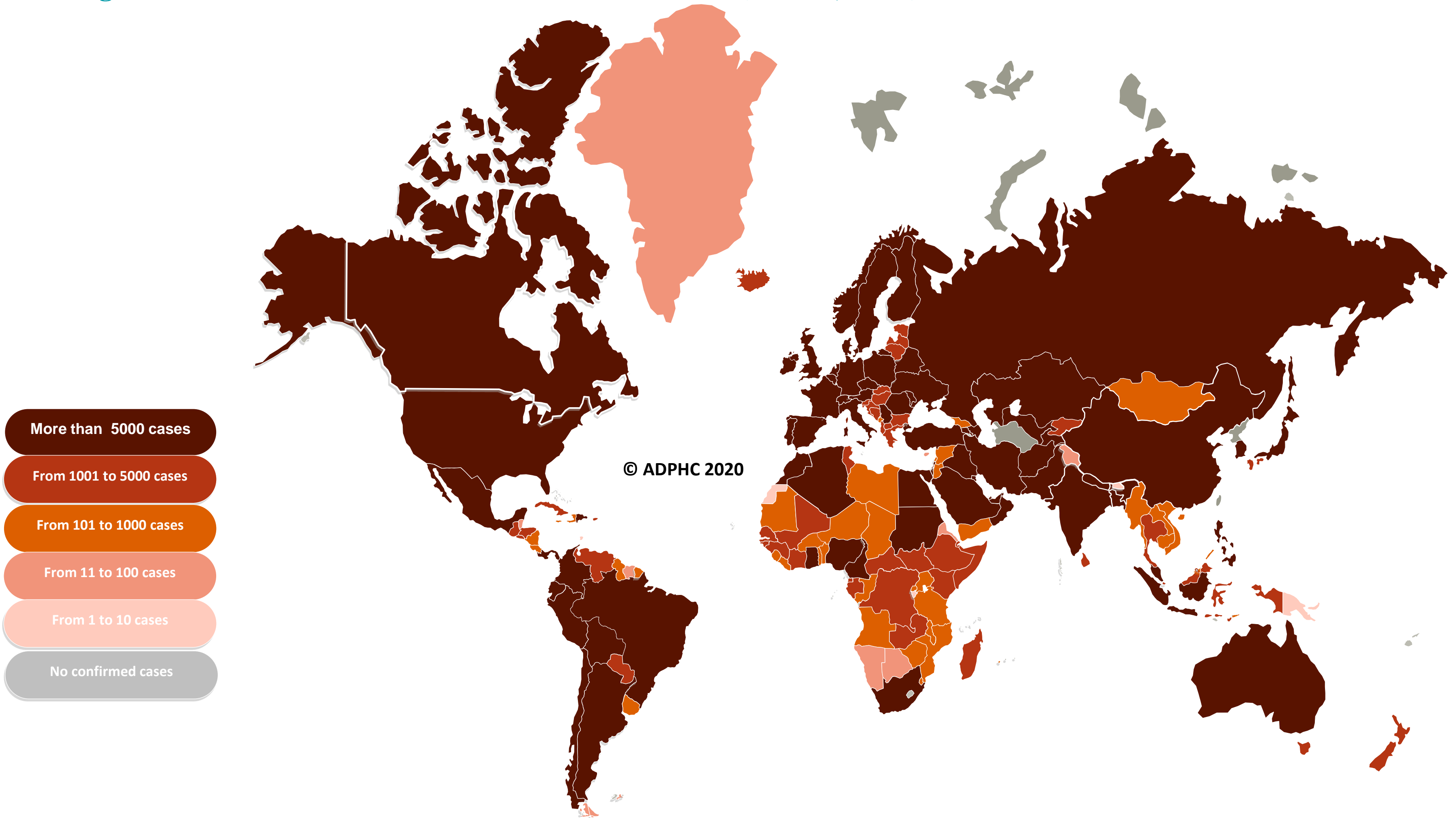
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



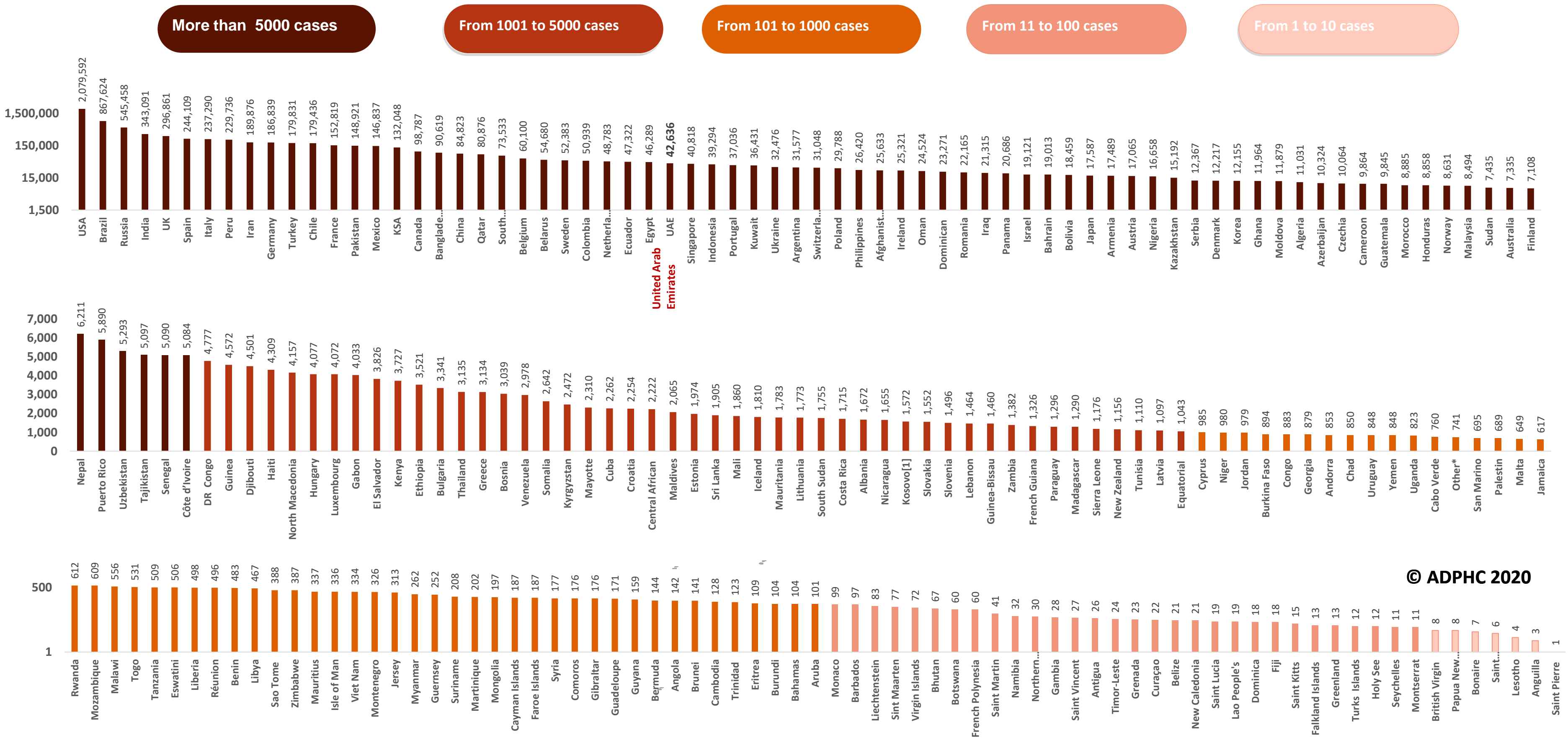
Figure 7a : Global distribution of COVID-19 cases (Jun 16, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 16, 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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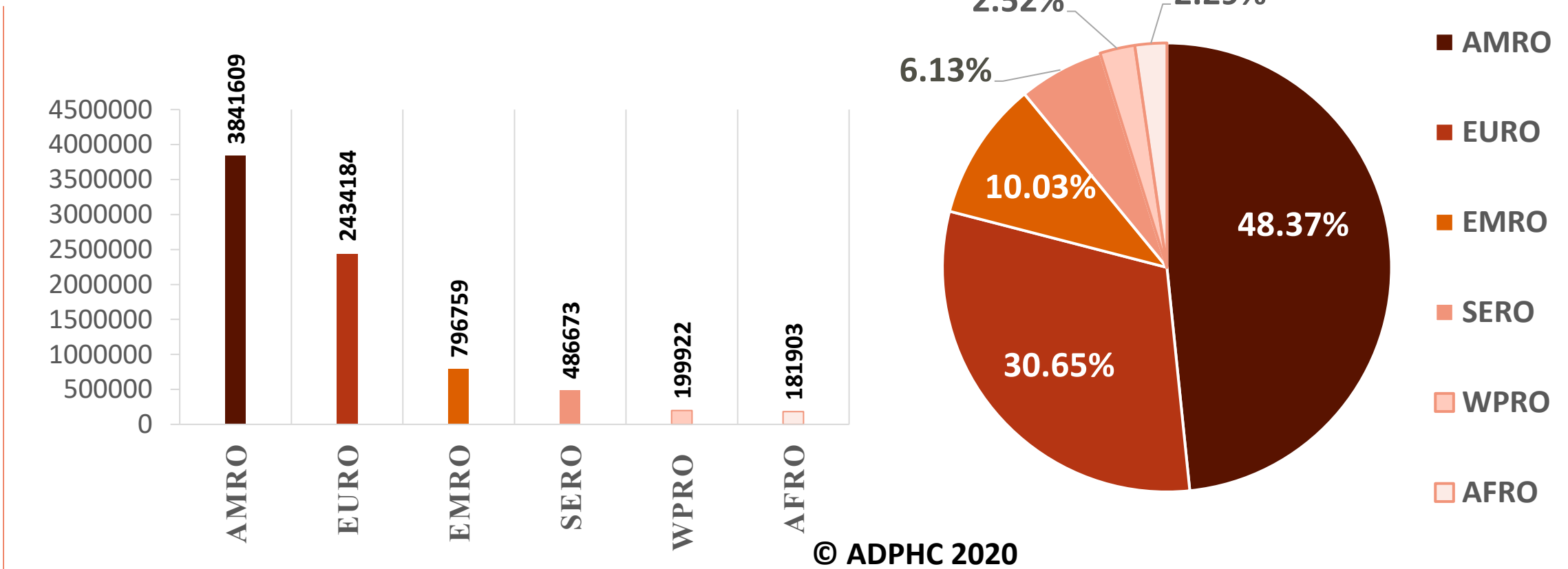
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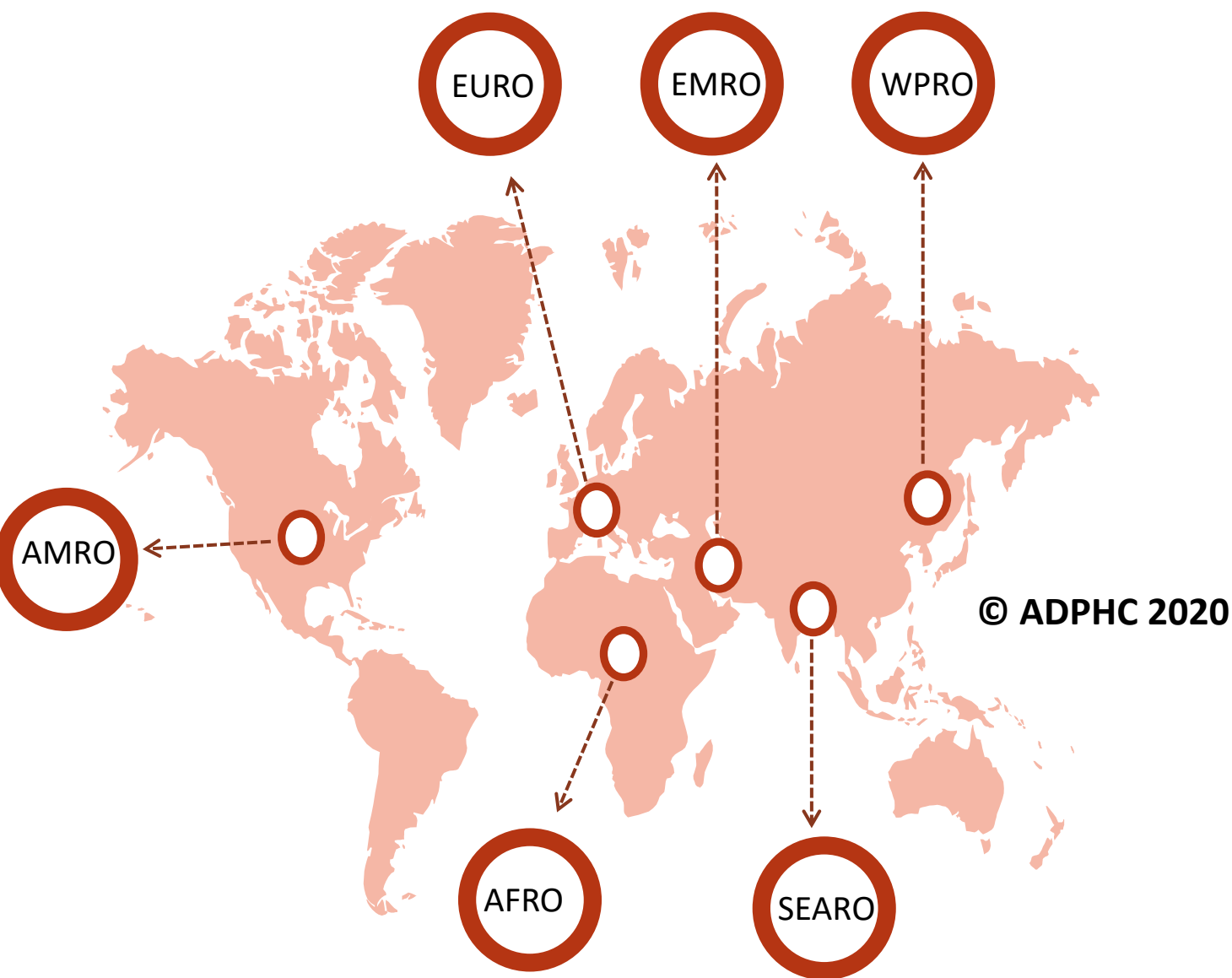
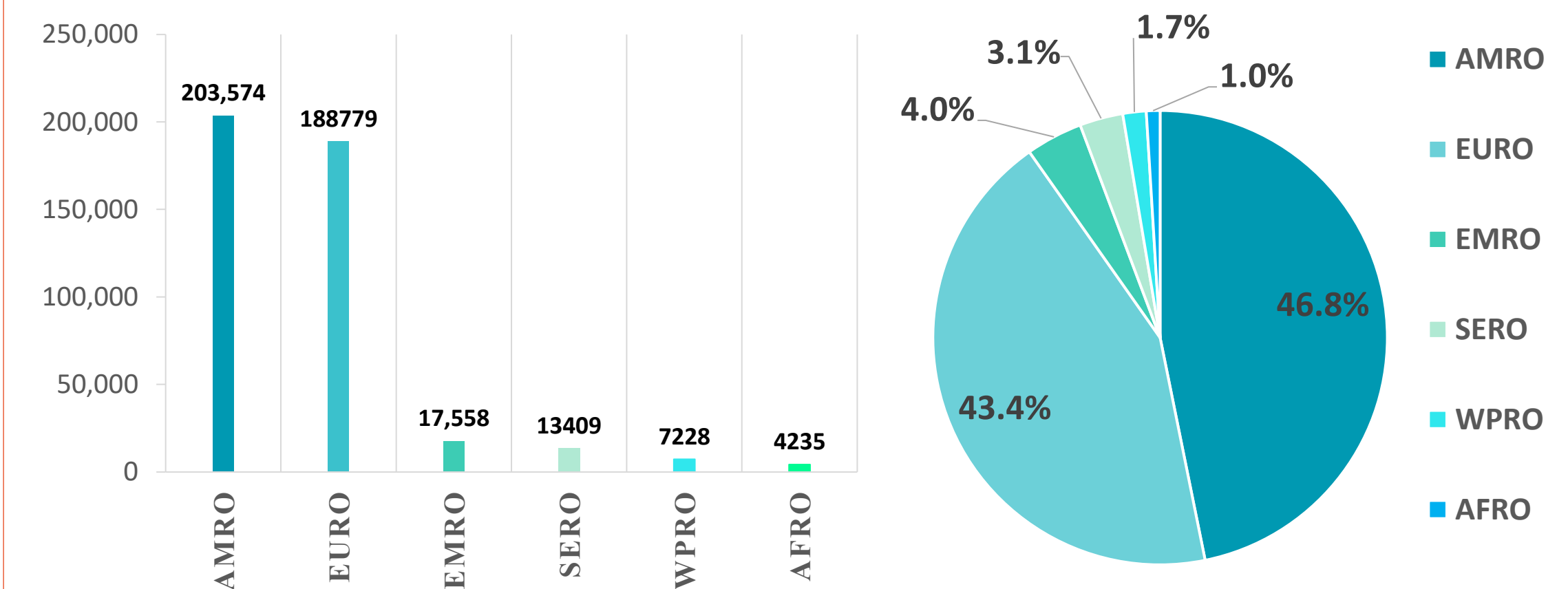


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 16, 2020)

INFECTED



DEATH



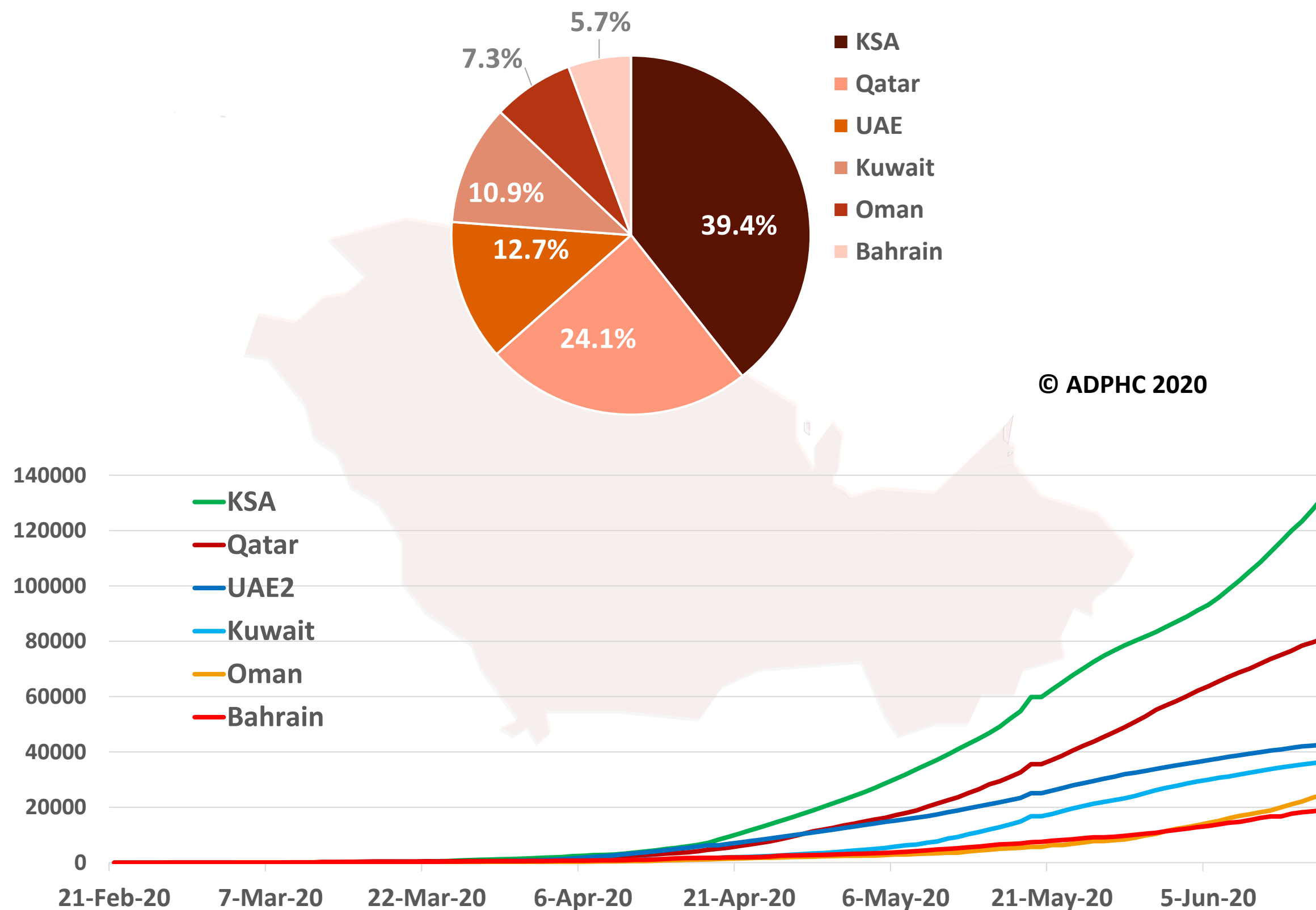
Map chart published by Abu Dhabi Public Health Center 2020.

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

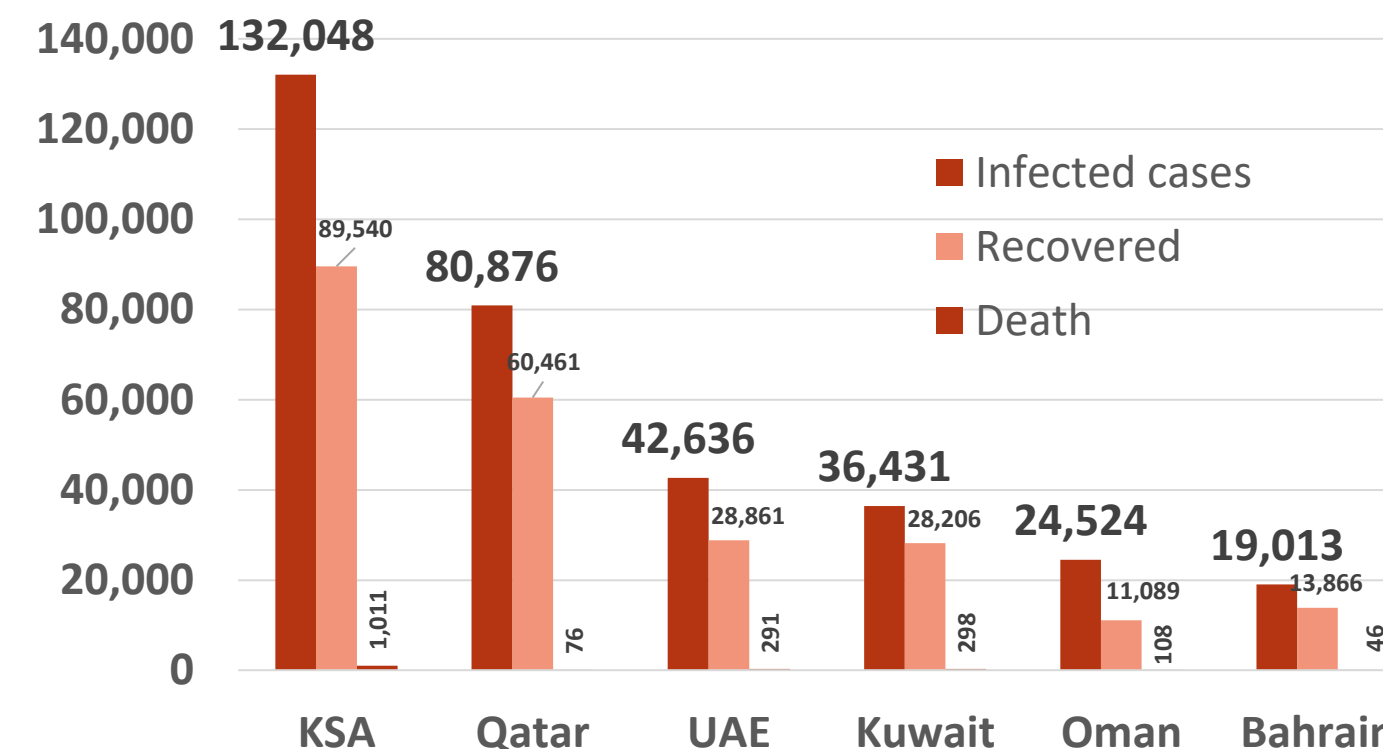


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 16, 2020)

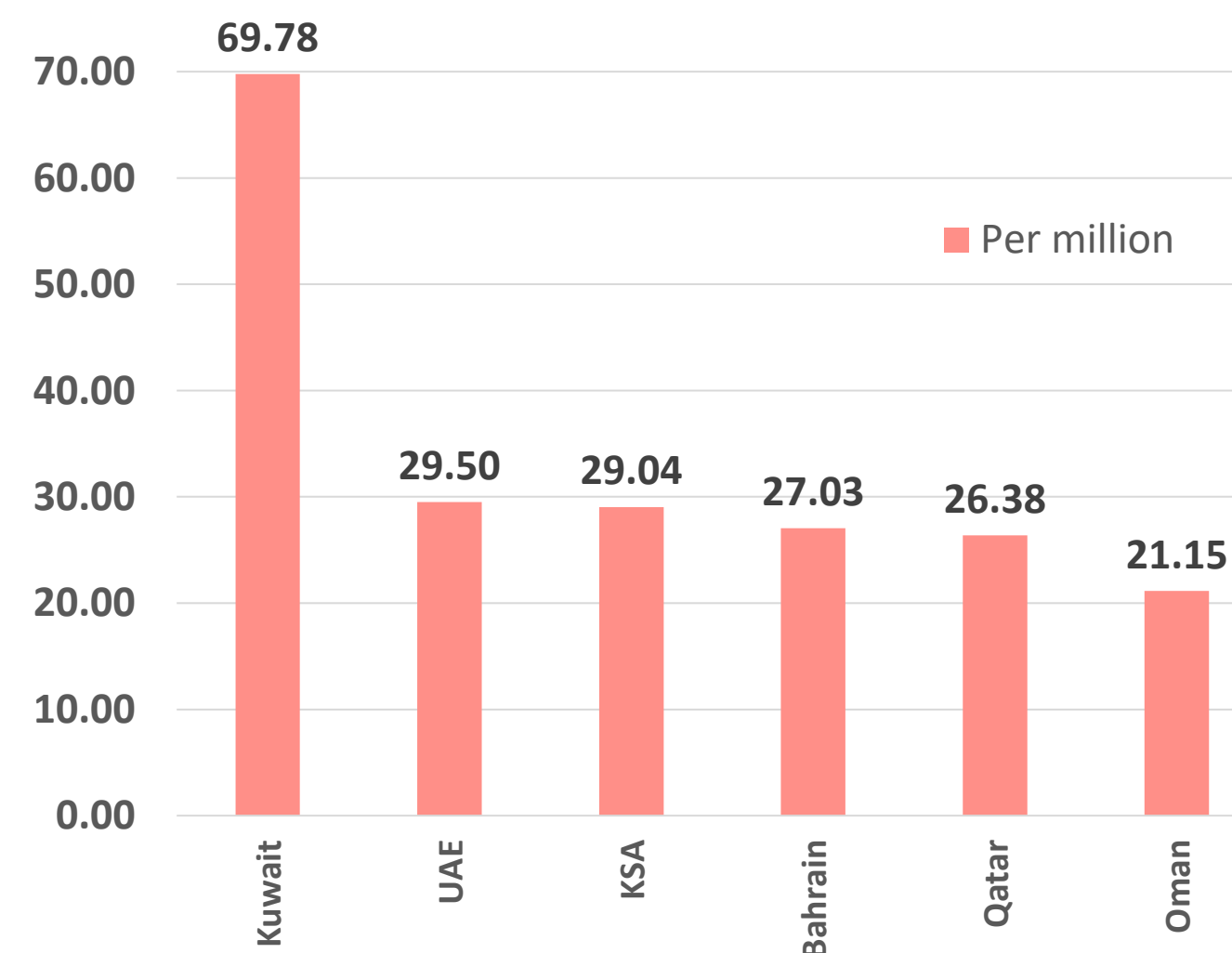
TOTAL NUMBER OF INFECTED CASES



Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

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

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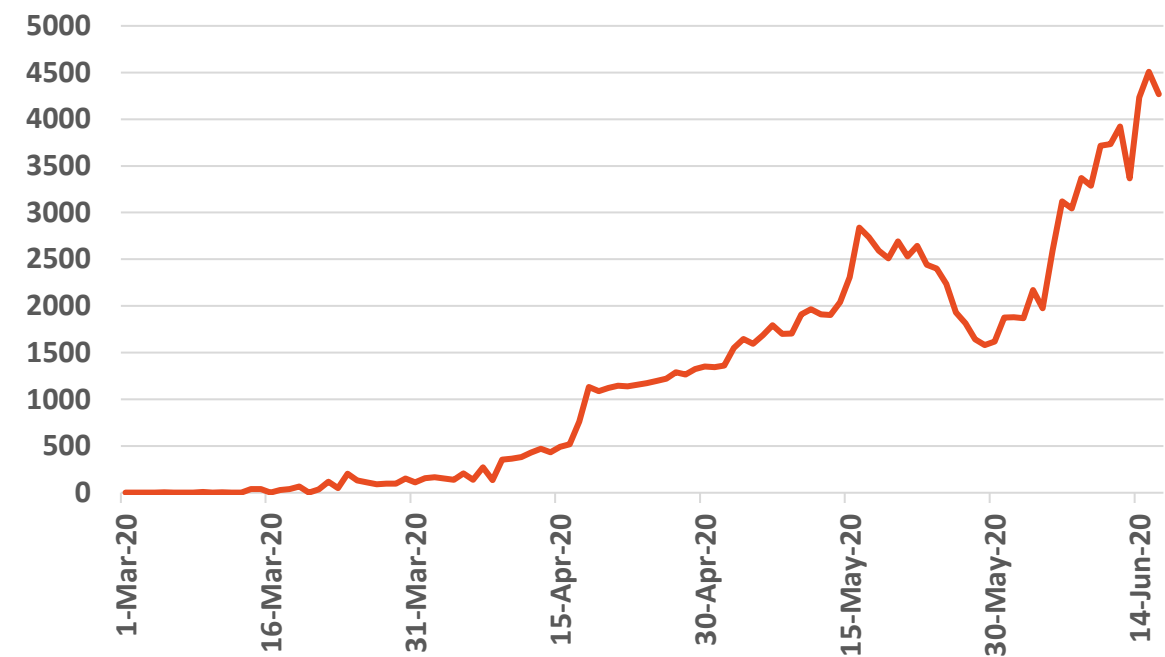
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Epidemiology



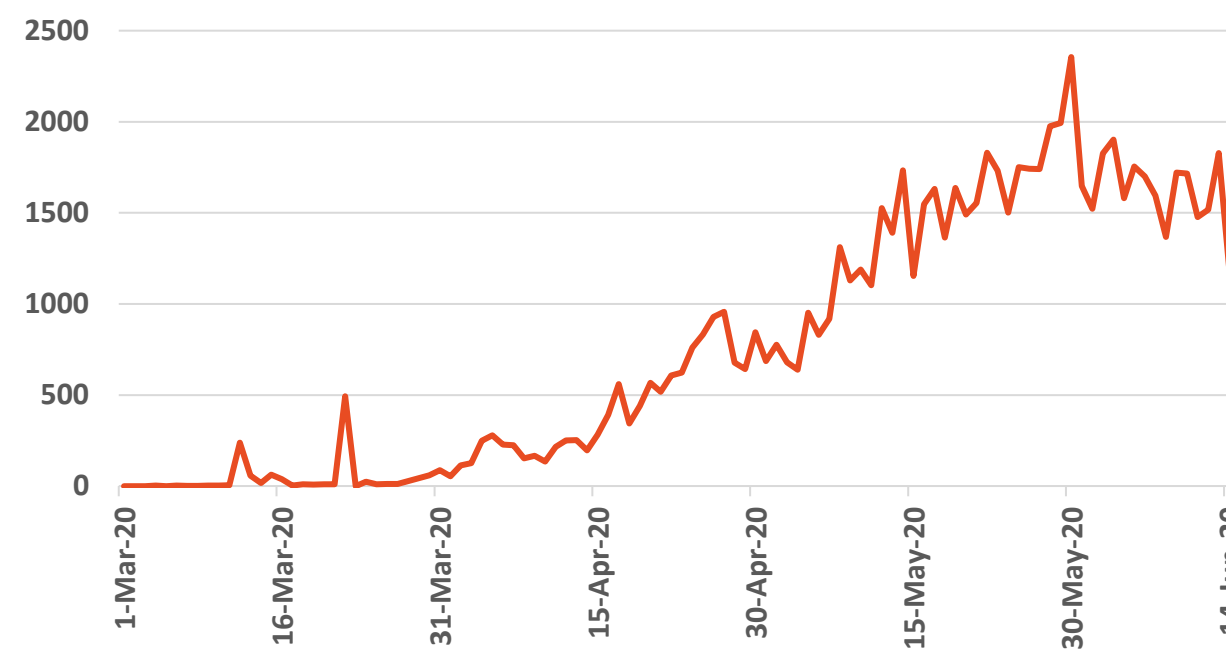
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 16, 2020)

KSA



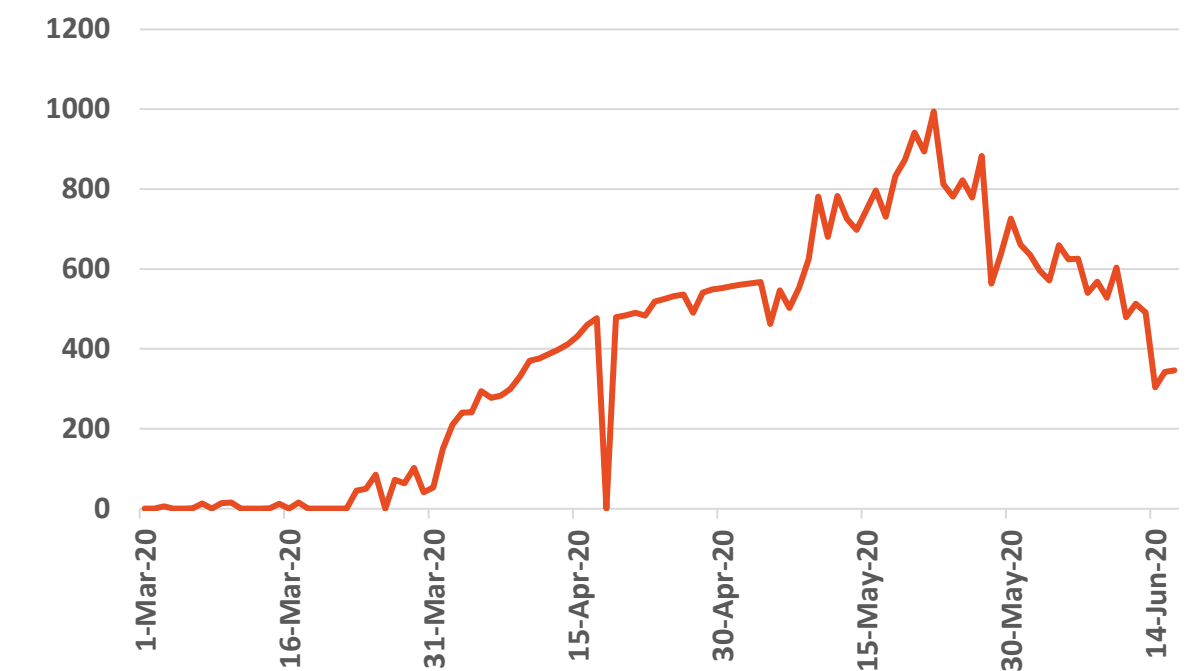
Source : KSA ministry of health

Qatar



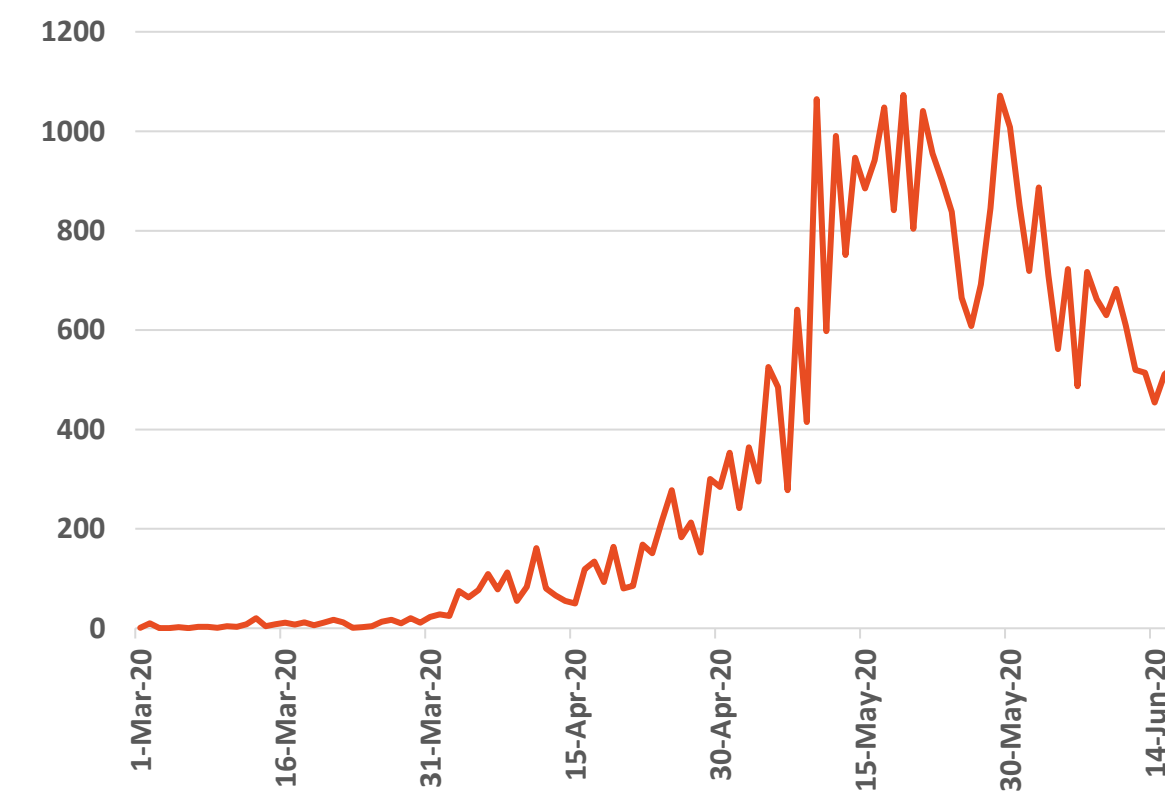
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

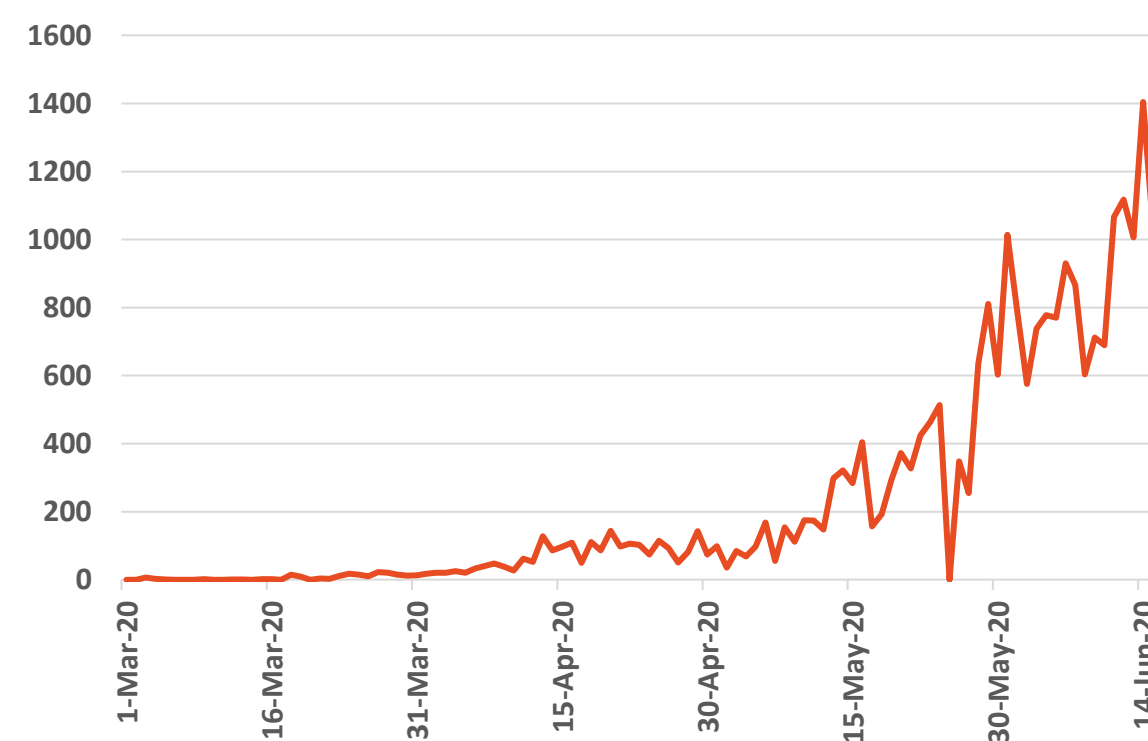
Kuwait



Source : Kuwait ministry of health

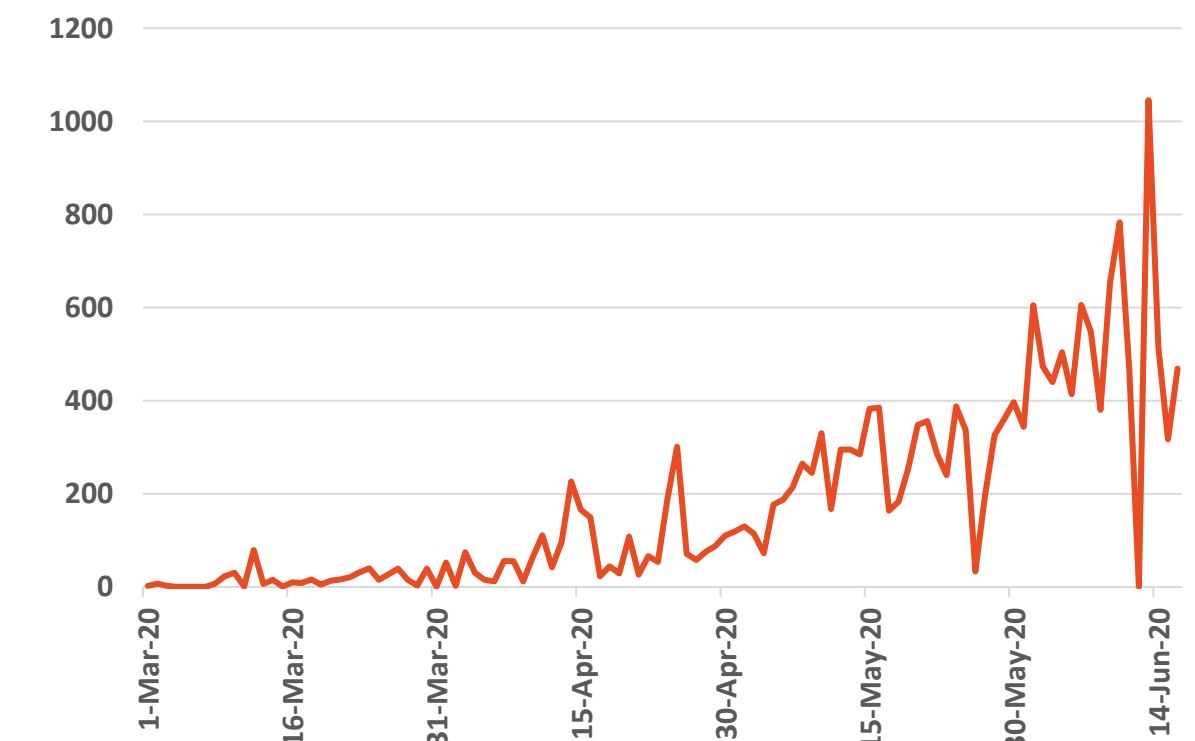
Oman

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Source :Oman ministry of health

Bahrain



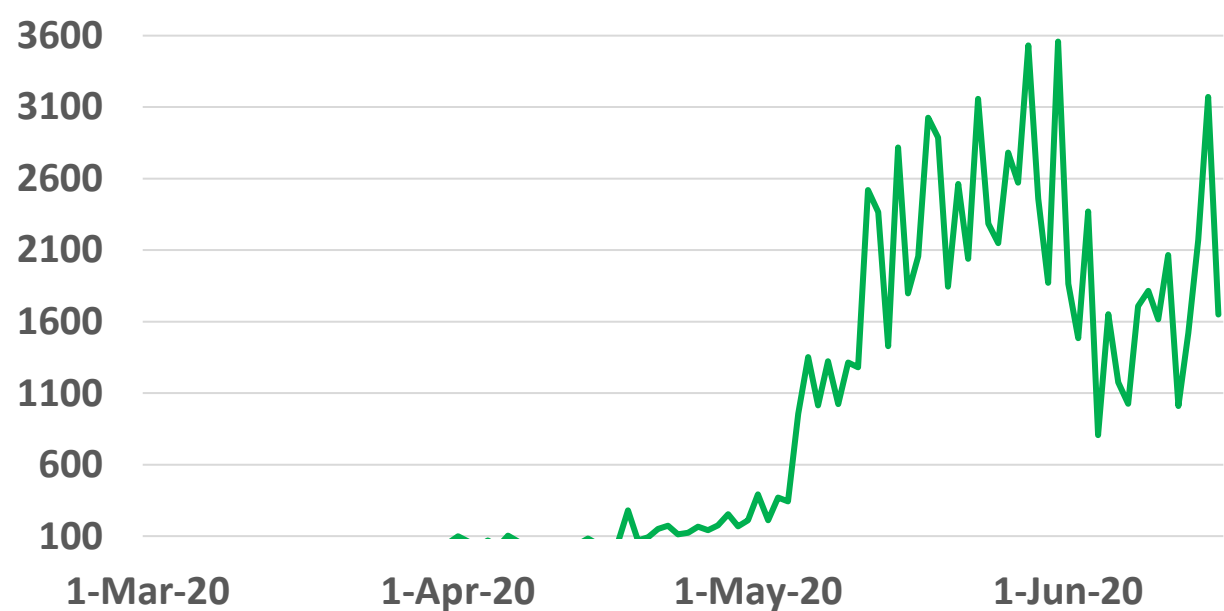
Source :WHO

Epidemiology



Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 16, 2020)

KSA



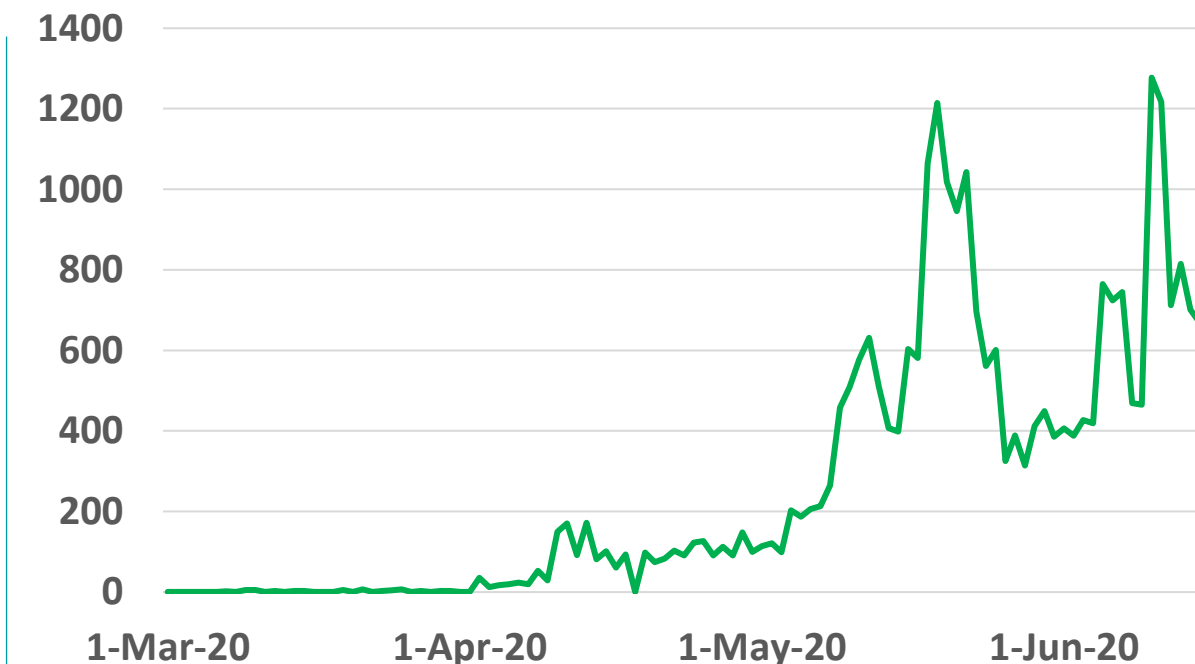
Source : KSA ministry of health

Qatar



Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

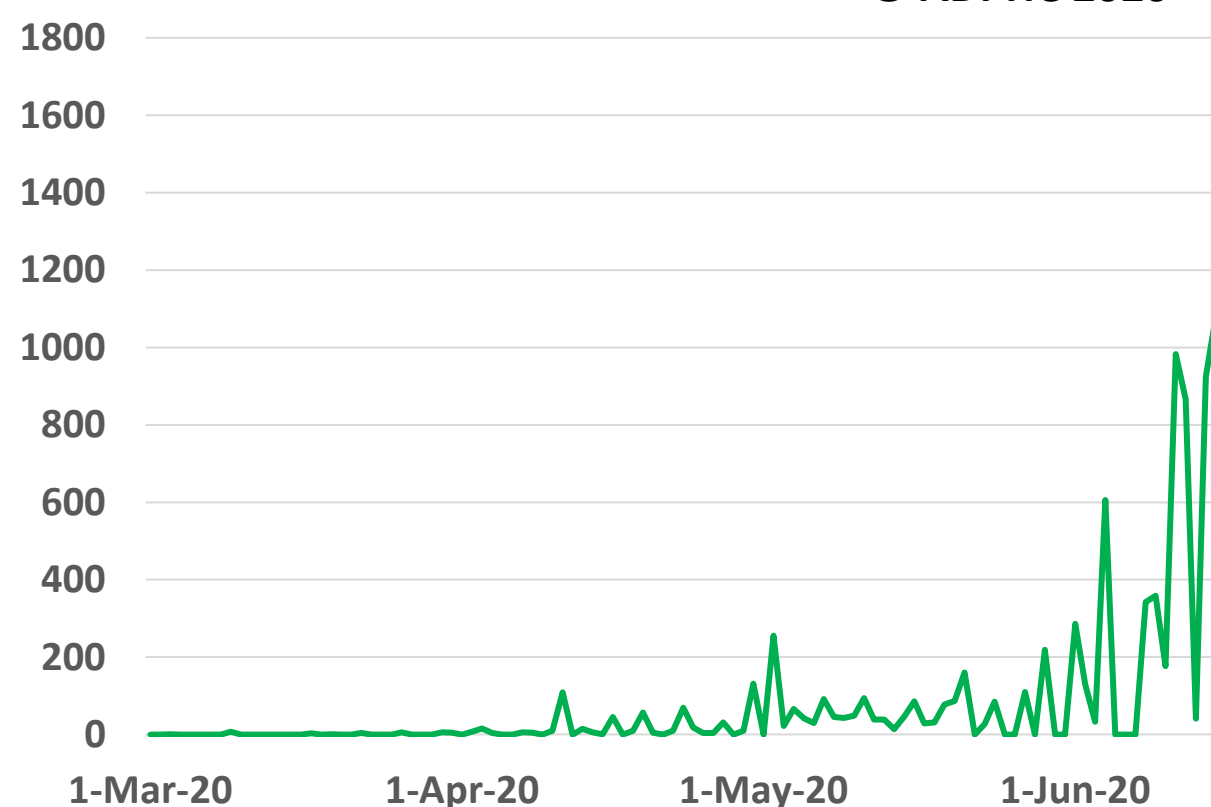
Kuwait



Source : Kuwait ministry of health

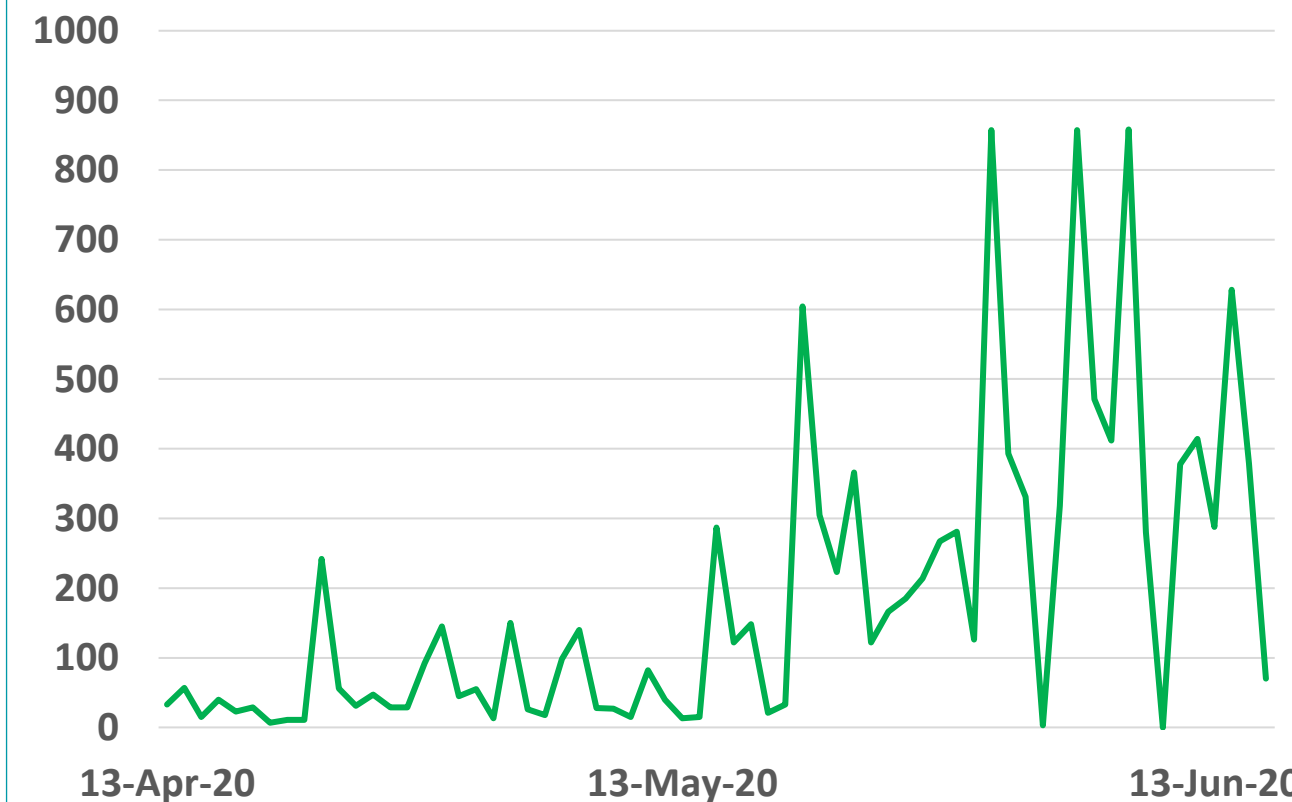
Oman

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Source : Oman ministry of health

Bahrain



Source : GCCStat

Epidemiology



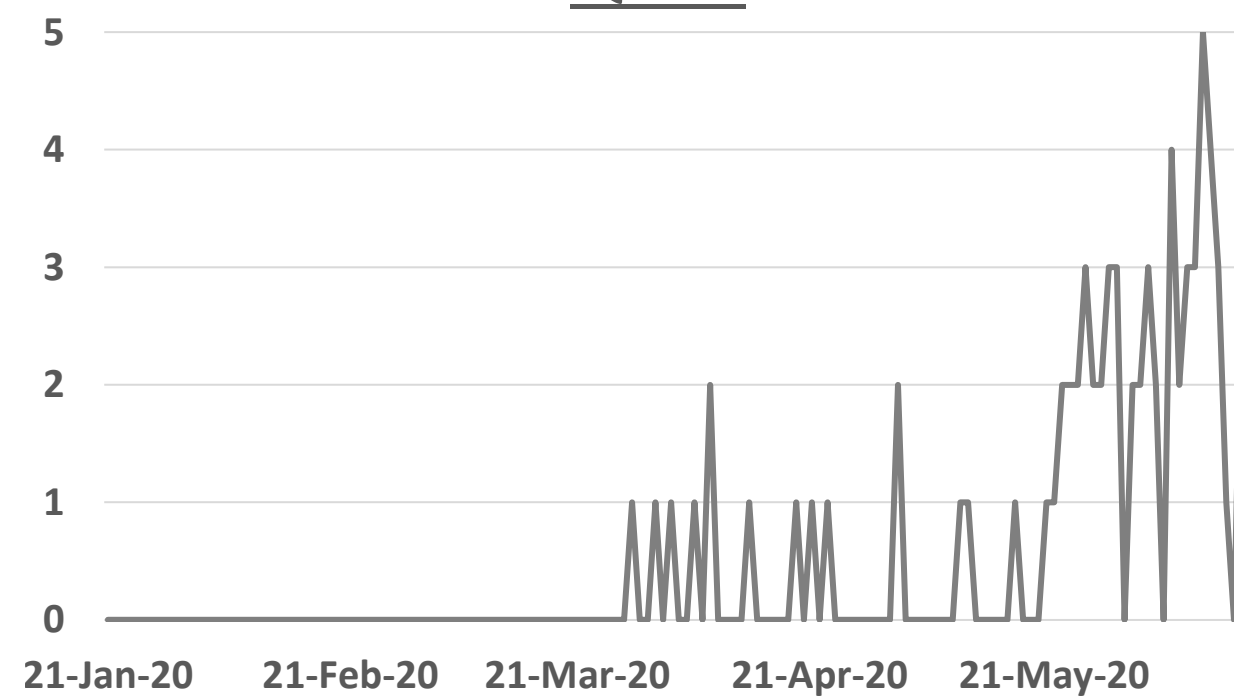
Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 16, 2020)

KSA



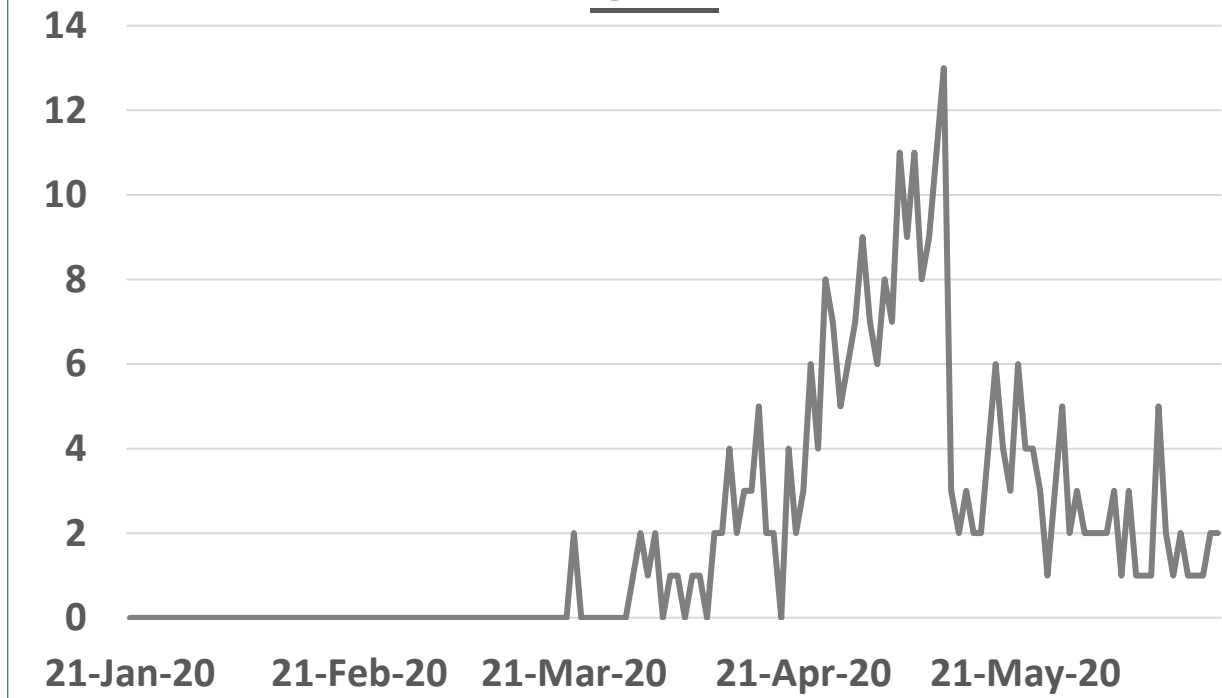
Source : KSA ministry of health

Qatar



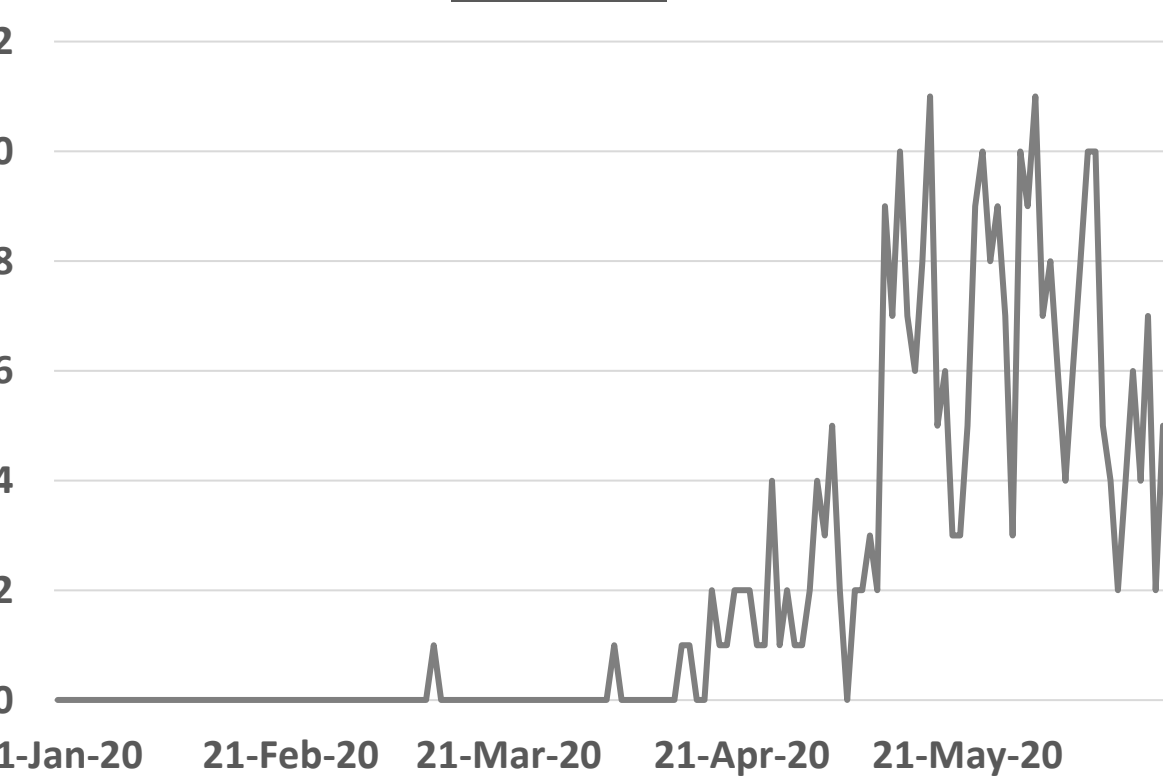
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

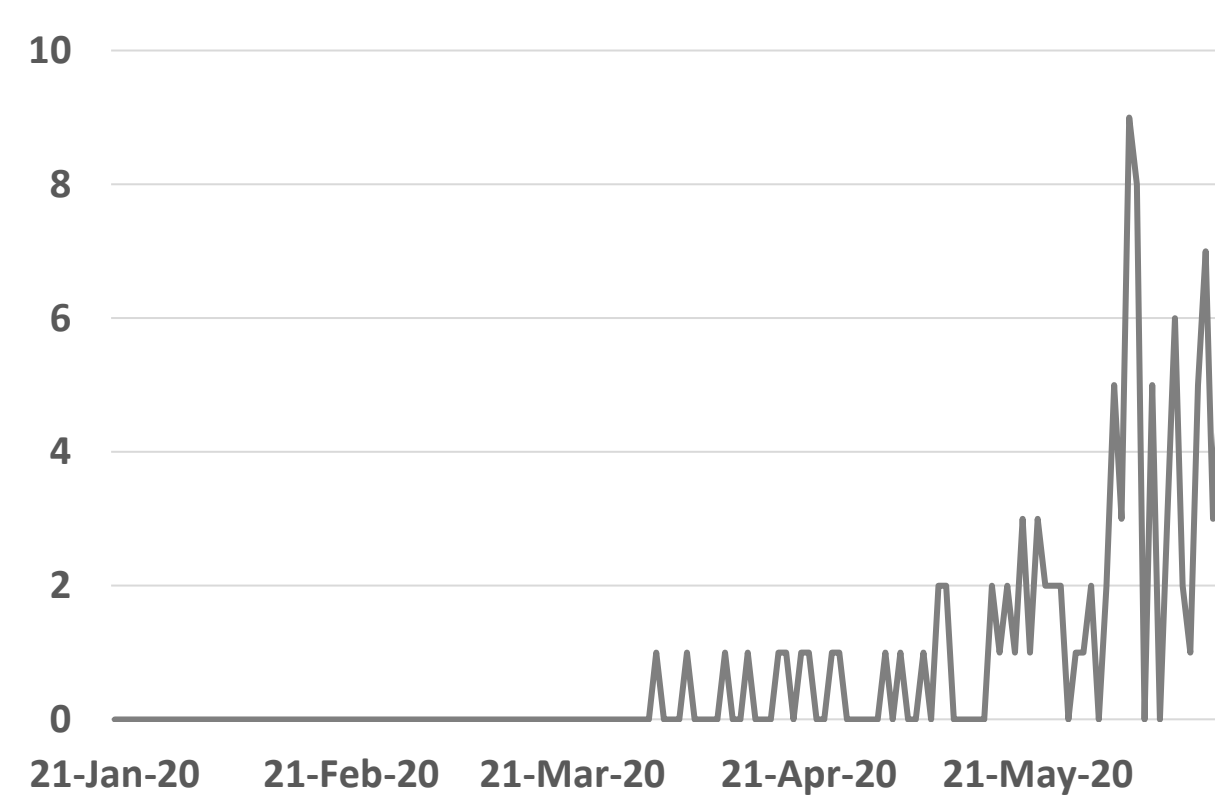
Kuwait



Source : Kuwait ministry of health

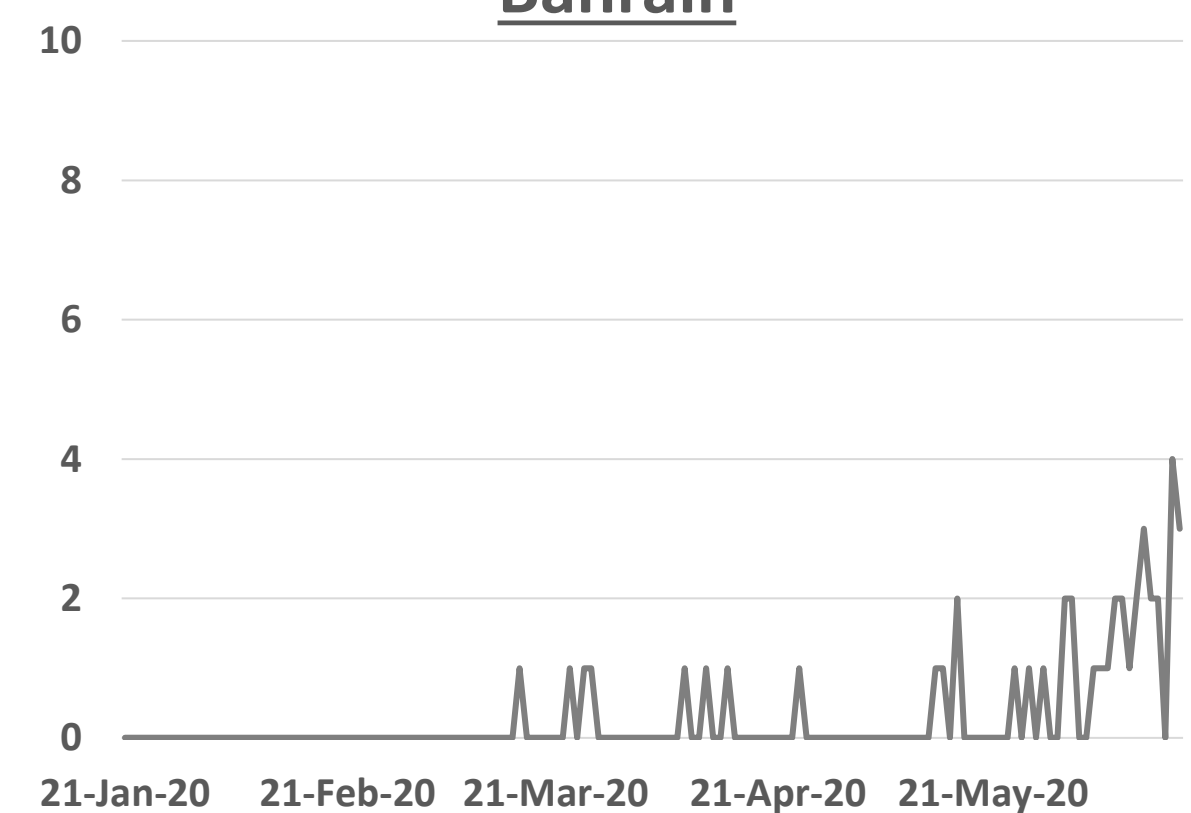
Oman

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Source :Oman ministry of health

Bahrain



Source :WHO

Clinical Feature



وزارة الصحة ووقاية المجتمع
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Article 1: Thyroid Disease in the Time of COVID-19

Published: June 7, 2020 [in PubMed](#)

Summary:

This review included the current literature on thyroid diseases (excluding cancer) and COVID-19, including data from the previous coronavirus pandemic caused by the SARS-associated coronavirus (SARS-CoV). The results indicate that in patients severely affected by COVID-19, changes in thyroid function may relate to a ‘sick euthyroid’ syndrome, but there may be specific thyroid-related damage which requires further investigation. Presently, there is no data suggesting that thyroid patients are at higher risk of COVID-19, but this requires further research and data analysis.



Clinical Feature and Transmission

Article 2: Addressing the public mental health challenge of COVID-19

Published: June 9, 2020 in The LANCET

Summary:

The study emphasized on the public mental health interventions that can be divided into mental disorder prevention and mental wellbeing promotion. Such interventions need to be proportionately targeted to groups at a higher risk of mental disorder and poor mental wellbeing than the general population. The prevention of mental disorder can occur at primary, secondary, or tertiary levels. The primary intervention highlights risk factors exacerbated by COVID-19, including **socioeconomic inequalities, debt, poverty, unemployment, food insecurity, parental mental disorder, child adversity, stress at work** (such as health professionals), physical inactivity, physical ill health, and social isolation (such as from quarantine). Early intervention for mental disorders and their associated effects, such as those associated to COVID-19. Intervention for people with an established mental disorder to prevent the related consequences and disability through patient education, treatment, and addressing health-risk behaviour, socioeconomic issues, physical illness (such as from COVID-19), stigma, social isolation, and discrimination.

Mental health promotion includes promotion of infant attachment, parental physical and mental health, as well as parenting programmes (such as digital programs). School-based and preschool based programs to promote mental wellbeing, physical health (such as by means of digital programs and development). Promotion of social interaction, physical activity, care for physical health, access to green space, arts, culture, creativity, and mindfulness. Promotion of healthy working conditions through training, flexible working, and online psychological approaches. Living well interventions, psychosocial interventions, and addressing sensory deficits, for example poor eyesight or hearing. Implementation of these interventions will mitigate the impact of the pandemic on mental health, improve population wellbeing, prevent mental disorders from arising, and reduce relapse of mental disorders, with related economic returns, even in short term.



Article 3: Characteristics of COVID-19 in 104 people with SARS-CoV-2 infection on the Diamond Princess cruise ship: a retrospective analysis

Published : June 12, 2020 in [the lancet](#)

Summary:

This study retrospectively analysed the detailed clinical characteristics of hospitalised individuals with SARS-CoV-2 infection as a result of the Diamond Princess outbreak, including those with asymptomatic infection and mild or severe COVID-19, who were treated in the Self- Defense Forces Central Hospital. The study used 104 participants with laboratory-detected SARS-CoV-2 infection who were admitted to the Self-Defense Forces Central Hospital from **Feb 11 to Feb 25, 2020** and were followed up until discharge. Clinical records, laboratory data, and radiological findings were analysed. Univariate analysis was used to analyse the collected data and to identify the factors associated with symptomatic illness among asymptomatic individuals infected with SARS-CoV-2 and disease progression in patients with COVID-19.

The median age was 68 years (IQR 47–75) and 54 (52%) were males. On admission, 41 (39%) had mild COVID-19, 43 (41%) participants were classified as asymptomatic, and 20 (19%) had severe COVID-19. At the end of observation, 43 (41%) had mild COVID-19, 33 (32%) participants were confirmed as being asymptomatic, and 28 (27%) had severe COVID-19. The findings shows that Serum lactate hydrogenase concentrations were significantly higher in the ten participants who were asymptomatic on admission but developed symptomatic COVID-19 compared with the 33 participants who remained asymptomatic throughout the observation period (five [50%] vs four [12%] participants; odds ratio 7.25, 95% CI 1.43–36.70; $p=0.020$). Thus, older age, consolidation on chest CT images, and lymphopenia might be risk factors for disease progression of COVID-19 and contributes to improved clinical management.



Diagnosis

Article 4: Findings of COVID-19 Infection are Conflicting in Different Age Groups and Pregnant Women: A Literature Review

Published: June 11, 2020 [in NCBI](#)

Summary:

This review aimed at studying a broad spectrum of COVID-19 clinical and laboratory reports to provide a comprehensive data collection in order to clarify the dark parts of laboratory-based diagnosis and monitoring of COVID-19 in a different group of patients including neonates, children,

- elderly, adults, and pregnant women altogether for the first time. The study demonstrated the laboratory findings of COVID-19 confirmed pneumonia patients were conflicting and different while some test attracts more attention. Laboratory findings of **neonates were very conflicting** and diverse regardless of clinical symptoms, and **CRP was normal in the cases compared to other age categories. Normal or temporary elevated CRP, conflicting WBC count results and elevation of procalcitonin are the most essential laboratory reports of COVID-19 infected children.** Regarding adult patients, **elevated LDH and lymphopenia were more common.**
- **Lymphopenia, elevated CRP and LDH were markers that should be considered more in elderly individuals.**
- Leukocytosis, high CRP and elevated neutrophil ratio were considered to be the most reliable markers of COVID-19 among pregnant women. Differences in the functioning, distribution, and maturation of viral receptors is often cited as a probable reason of the age-related differences in laboratory and clinical features on COVID-19 patients.



Article 5: Guideline on COVID-19: Ultrasound Machine and Transducer Cleaning

Published: June 7, 2020 [in PubMed](#)

Summary:

This policy is an addendum to the ACEP policy, Guideline for Ultrasound Transducer Cleaning and Disinfection, 2018. The ACEP Emergency Ultrasound Section offered guidance for cleaning and disinfection of ultrasound equipment in the context of the COVID-19 pandemic. Special guidance regarding COVID-19 includes following optimal hand hygiene, removal of all nonessential equipment prior to entering the suspected COVID-19 patient's room, recommendation on disinfecting the probe and surfaces, probes and machines should be covered (if possible) and disinfected with low-level disinfection (LLD) after every use, high-level disinfection (HLD) is not required when using ultrasound probes on intact skin, items should be cleaned with LLD after use on each patient, and innovative cleaning solutions should be discussed with local infection control and the vendors supplying the machine.



Research

Article 6: A minimal common outcome measure set for COVID-19 clinical research

Published: June 12, 2020 [in The LANCET](#)

Summary:

Clinical research is important for an effective public health response during an emerging infectious outbreak. The utilization of diversity of tools and research efforts often organised hastily indicates that the data pooling across studies is challenging. Due to the rapidly evolving COVID-19 outbreak, the response from the International Forum for Acute Care Trialists, the Clinical Characterisation and Management Working Group of the WHO Research and Development Blueprint programme, and the International Severe Acute Respiratory and Emerging Infections Consortium **have formed a standard for COVID-19 studies**. This includes three elements:

- a measure of viral burden (quantitative PCR or cycle threshold),
- a measure of patient survival (mortality at hospital discharge or at 60 days)
- a measure of patient progression through the health-care system by use of the WHO Clinical Progression Scale, which reflects patient trajectory and use of resources over the course of clinical illness.

Public Health response



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Article 7: What PAARI has been doing to help people with addiction during COVID-19

Published: June 12, 2020 [in Wiley Online Library](#)

Summary:

This update emphasizes on the role of Police Assisted Addiction & Recovery Initiative (PAARI) that helps in building the capacity of law enforcement agencies to design and implement non arrest programs. As many of the populations who have been hit hard by the opioid crisis have also been hit hard by COVID-19. It is therefore essential that we are able to connect these vulnerable populations to the services they need and deserve, and law enforcement officers are uniquely positioned to do that. They also co-led a training with about 50 police officers and their partners (clinicians, recovery coaches, harm reductionists, etc.) on overdose prevention and outreach safety precautions amid COVID-19 outbreak.

Diagnosis



Article 8: Chest CT in COVID-19 pneumonia: a review of current knowledge

Published: June 11, 2020 [in NCBI](#)

Summary:

This study highlights the essential role of chest computed tomography (CT) examination in patient triage in the emergency departments, allowing them to be referred to "COVID" or "non-COVID" wards. Initial chest CT examination must be undertaken without intravenous administration of iodinated contrast material, but contrast material administration is required when pulmonary embolism is suspected, which seems to be frequent in severe disease forms. The results of the study show that typical CT features consist of bilateral ground-glass opacities with peripheral, posterior and basal predominance. Lung disease extent on CT correlates with clinical severity. Artificial intelligence can therefore, help radiologists for prognosis evaluation and diagnosis.