

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Scientific Research Monitoring on COVID-19

27 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





Todays' Content

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.

Scientific Research

- **Treatment:** an open- label randomized study in Italy found Both intravenously or subcutaneously administered Tocilizumab **might reduce the risk of invasive mechanical ventilation or death** in patients with severe COVID-19 pneumonia.
- **Public Health response:** an article that gave some recommendations on how reduction of asthma attacks have been noted during pandemic and suggestion to adopt a virtual management after the COVID19 era.
- **Clinical feature:** a multicenter study studied children infected with covid19 in Europe confirms a milder disease affecting this population however , findings on patient admitted to the ICU were consistent with age younger than 1 month, male , preexisting disease.



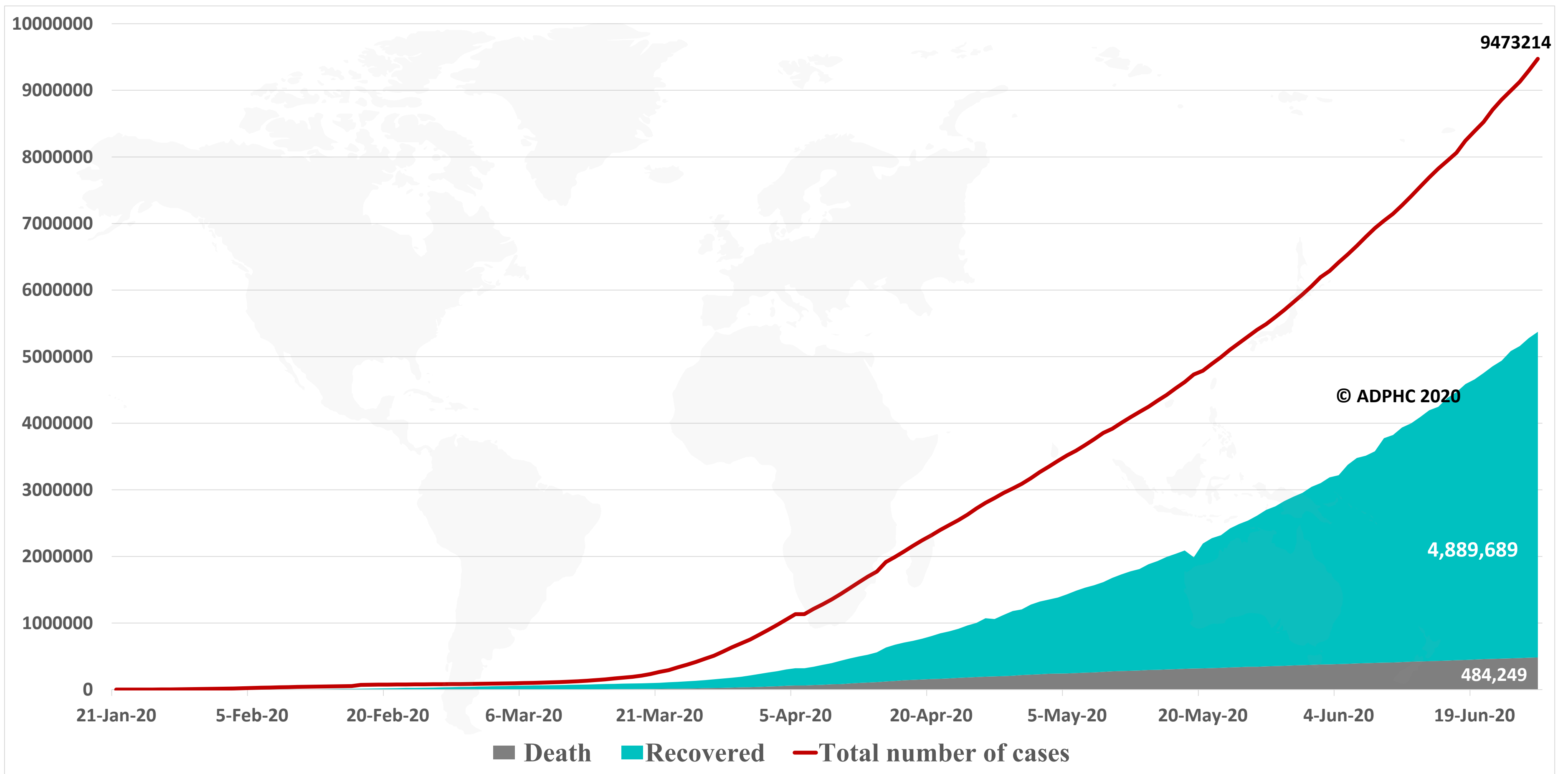


- On 25 June, Health of Germany and France, visited WHO headquarters. During a press briefing they expressed their **solidarity and additional support to both COVID-19 response and WHO's core programmes.**
- In a press briefing, the WHO Regional Director for Europe, spoke about COVID-19 in the region and how digital technology and artificial intelligence can empower people and play a leading role in optimizing efforts to control transmission of the disease. The main messages were :
 1. Go digital, but go wisely
 2. Build trust by respecting privacy
 3. Address the digital gap.
- WHO Health Security Learning Platform and have developed a package for [National Rapid Response Teams Online Learning](#). It will be released also in French and Spanish (July) as well as Arabic and Russian. It addresses the following training modules:
 1. How to compose a RRT in the context of COVID-19
 2. How to apply infection prevention and control (IPC) measures in the context of COVID-19
 3. How to conduct active case finding and contact tracing in the context of COVID-19
 4. How to manage data in the context of COVID-19
 5. How to manage laboratory samples in the context of COVID-19
 6. How to ensure Occupational Health and Safety in the context of COVID-19
 7. How to communicate risk in the context of COVID-19
 8. How to engage communities in the context of COVID-19





Figure 1: Total number of infected, recovered, and death cases (January 21st to Jun 26, 2020)



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Data resources: [WHO](#)

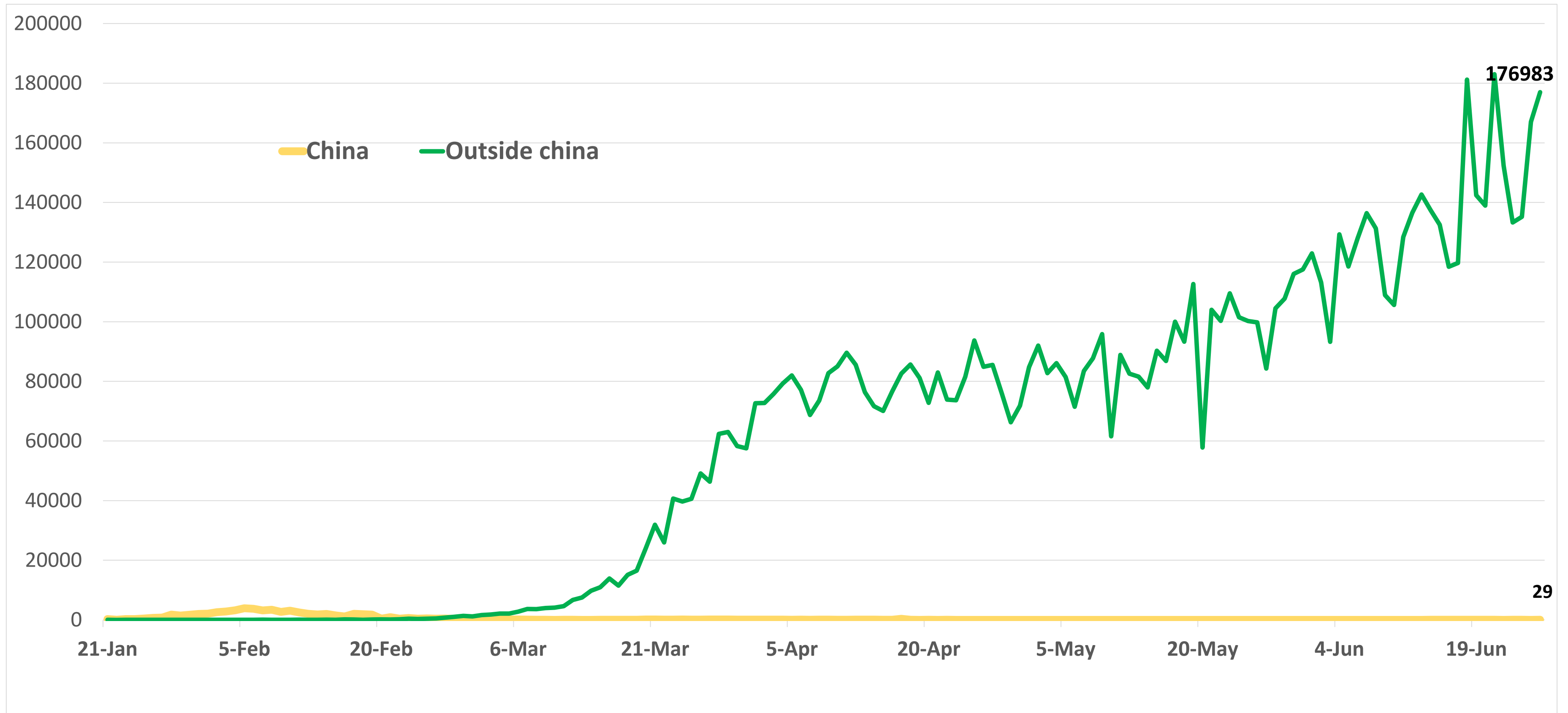
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Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 26, 2020).



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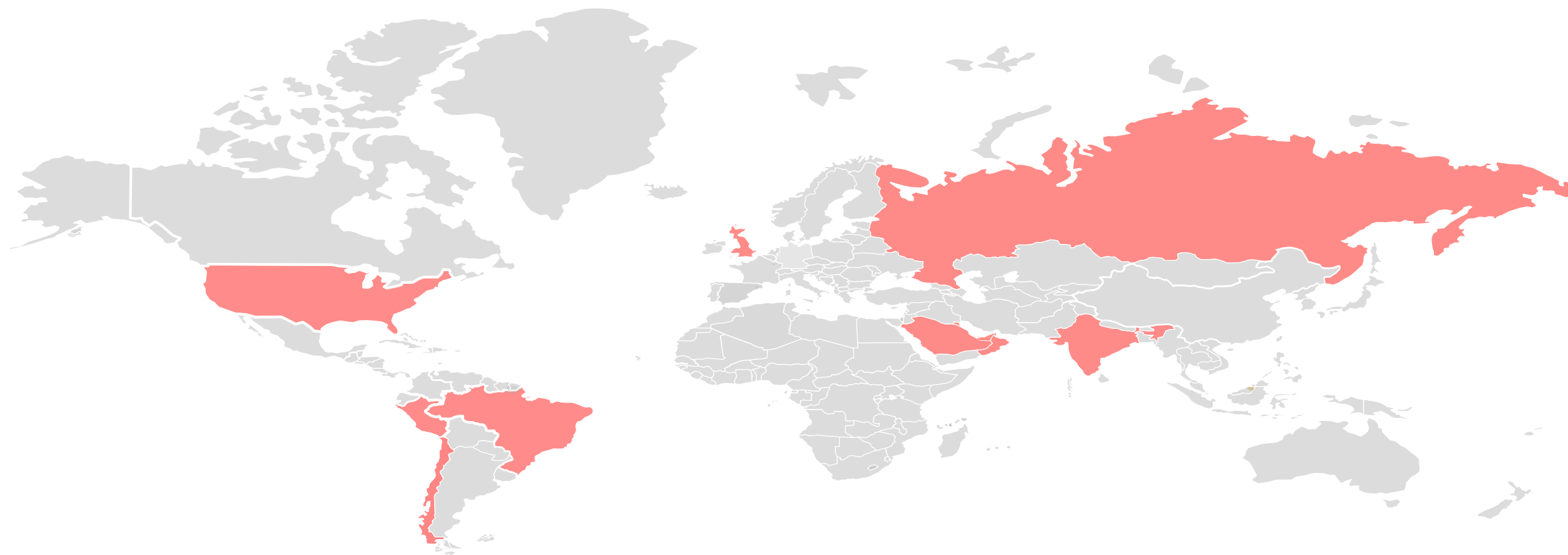
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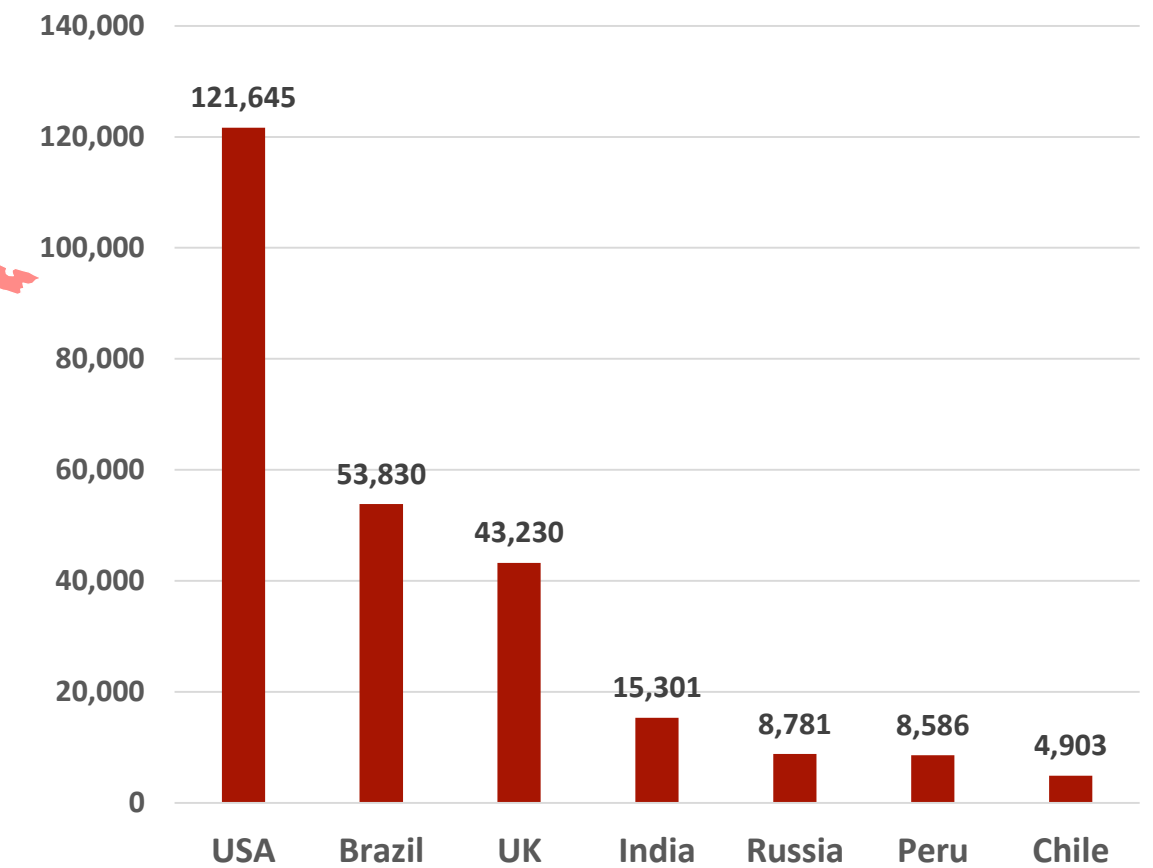
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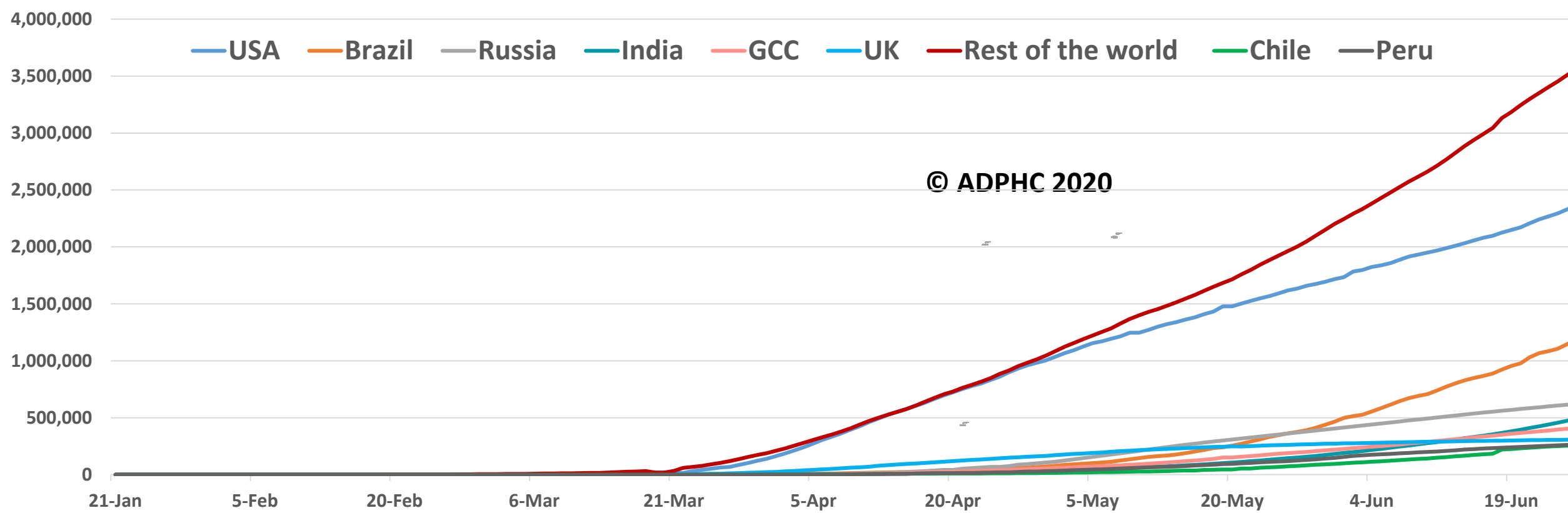
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 26, 2020).



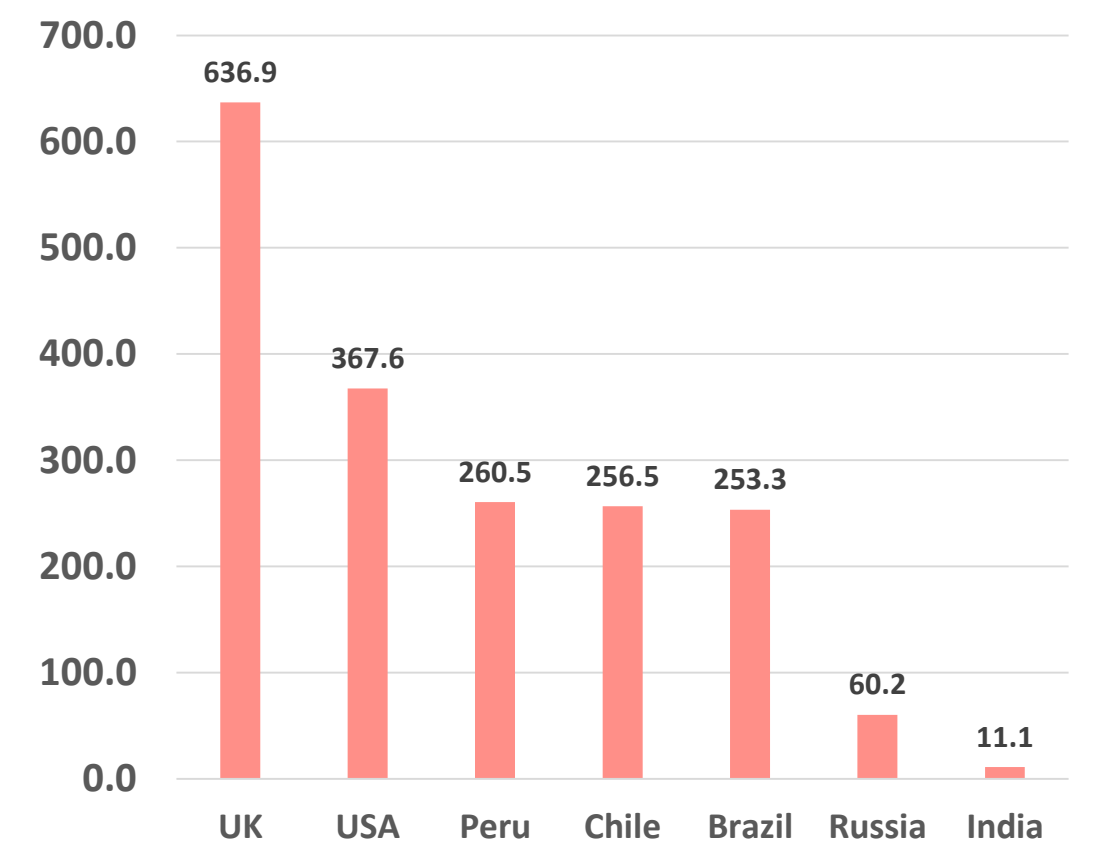
TOTAL DEATHS



TOTAL INFECTED CASES



DEATHS PER MILLION



Line graph published by Abu Dhabi Public Health Center 2020.

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

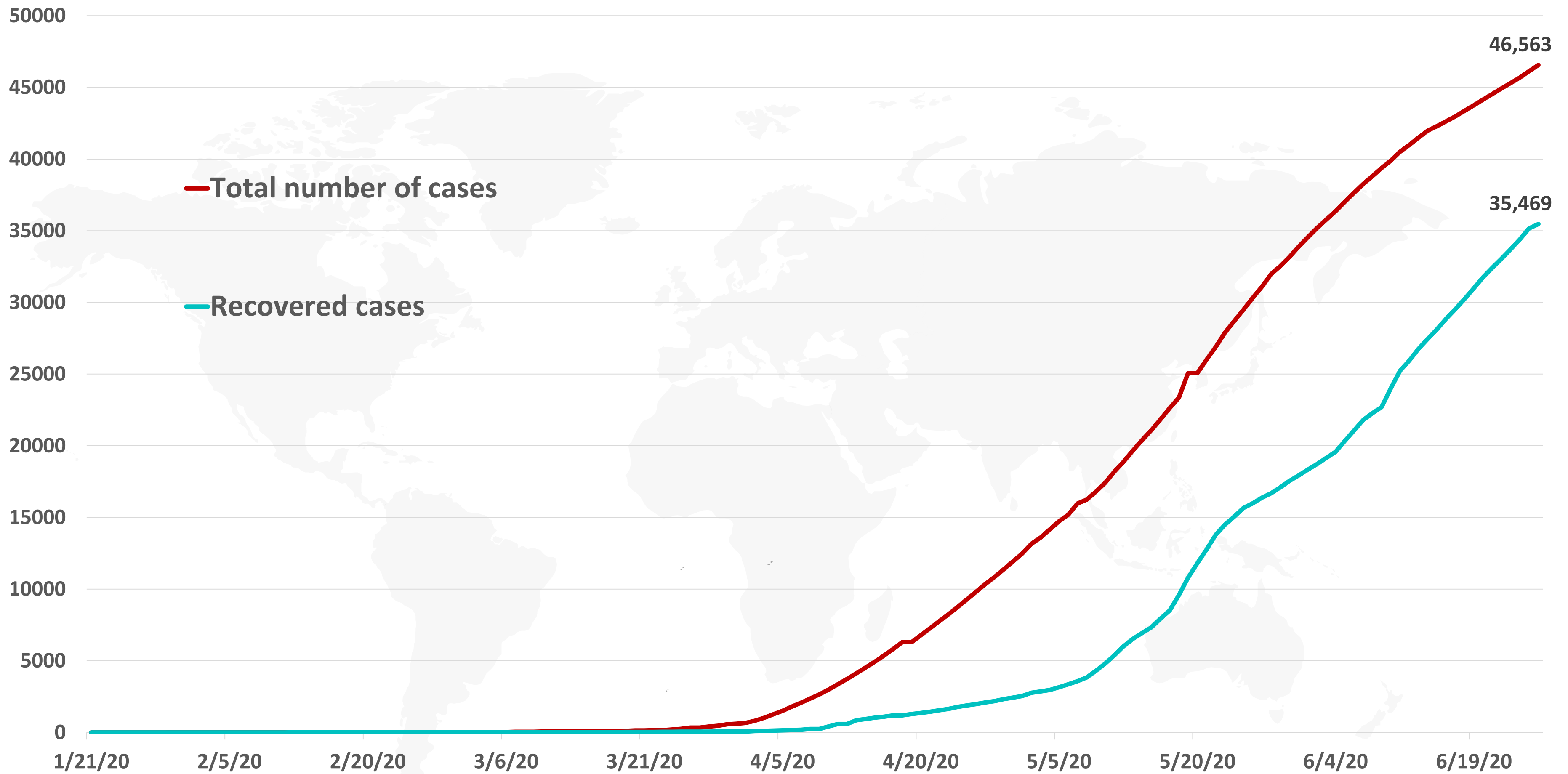
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Figure 4: Total number of COVID-19 infected and recovered cases in UAE over time



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

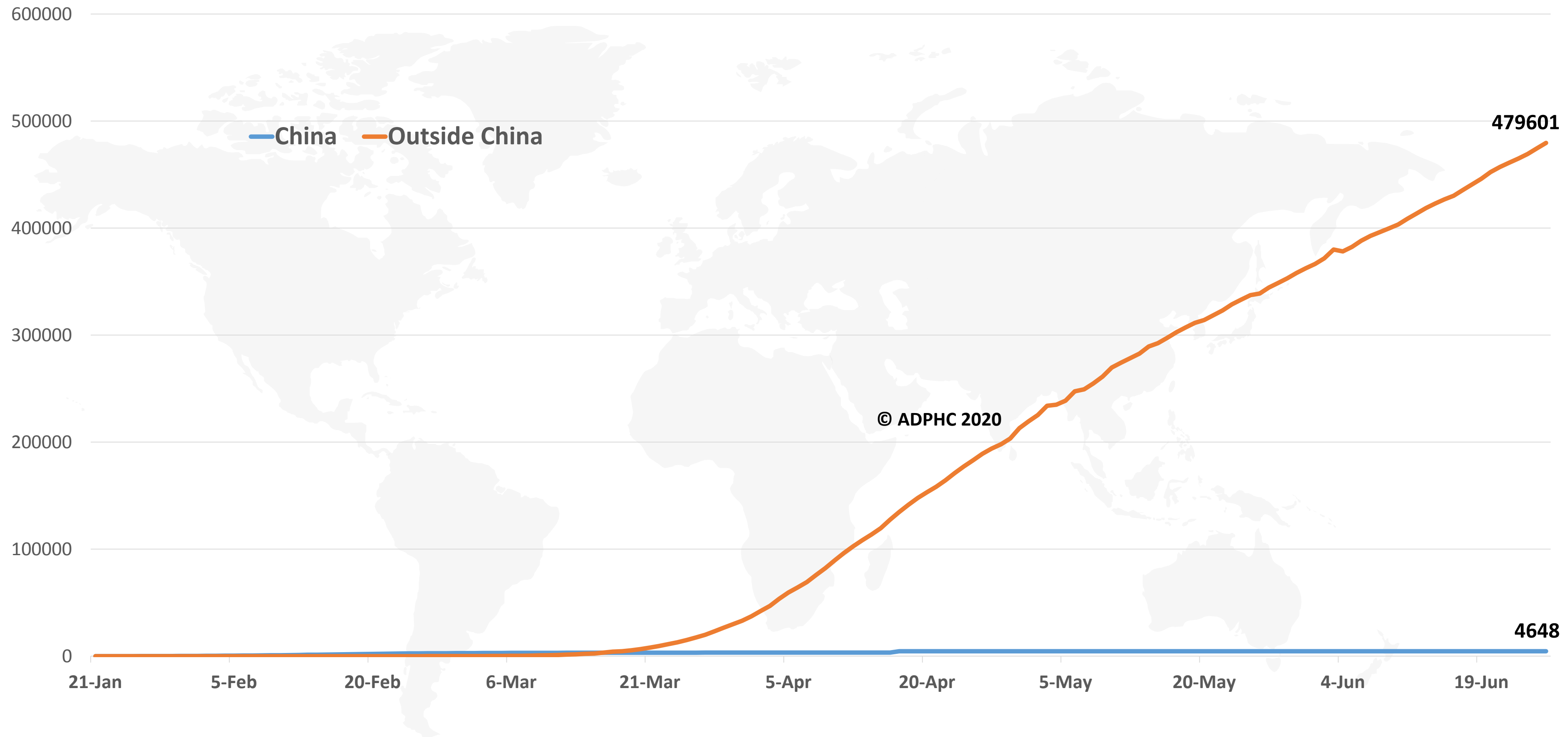
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Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to Jun 26, 2020).



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Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

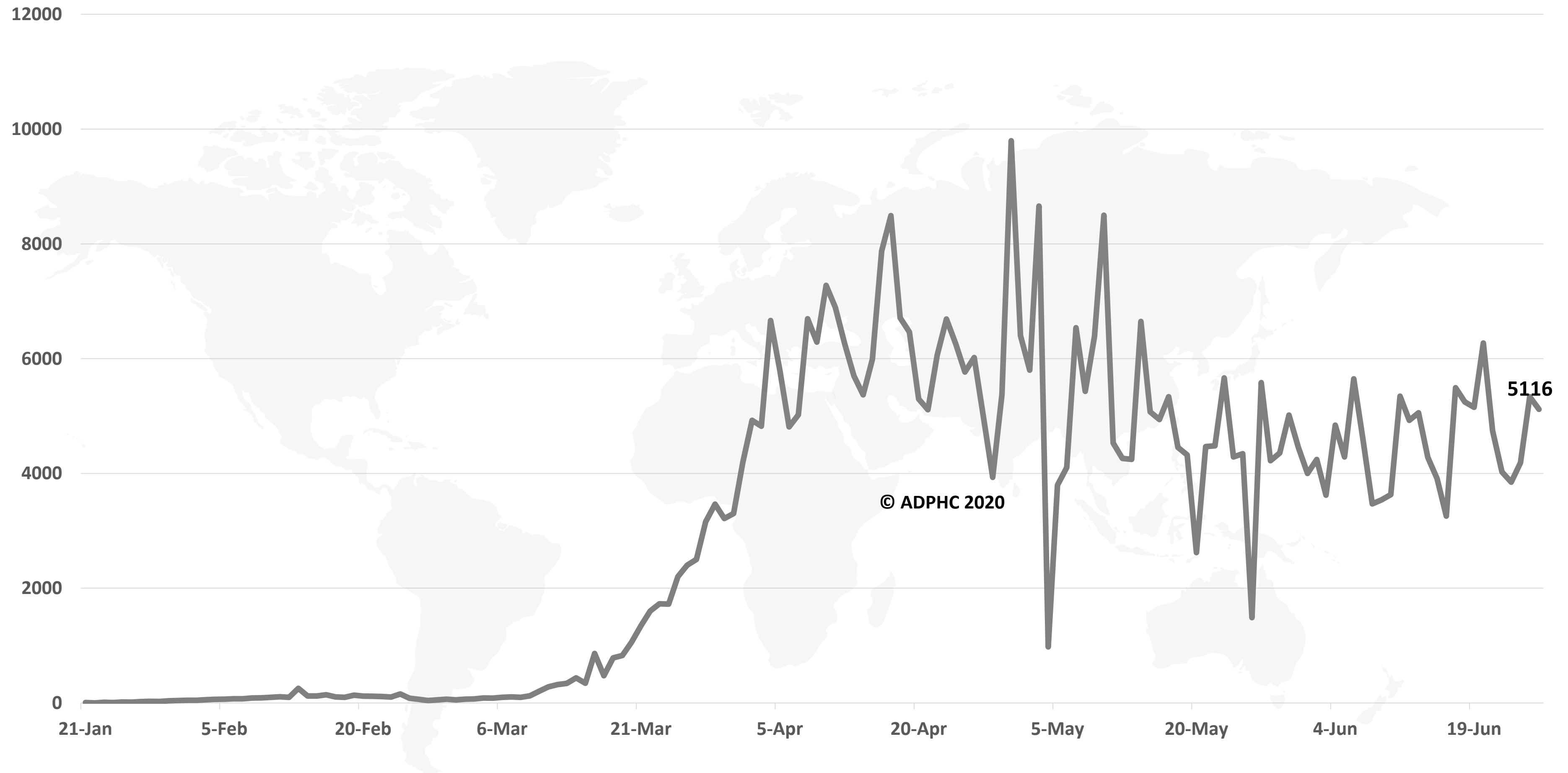
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Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 26, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

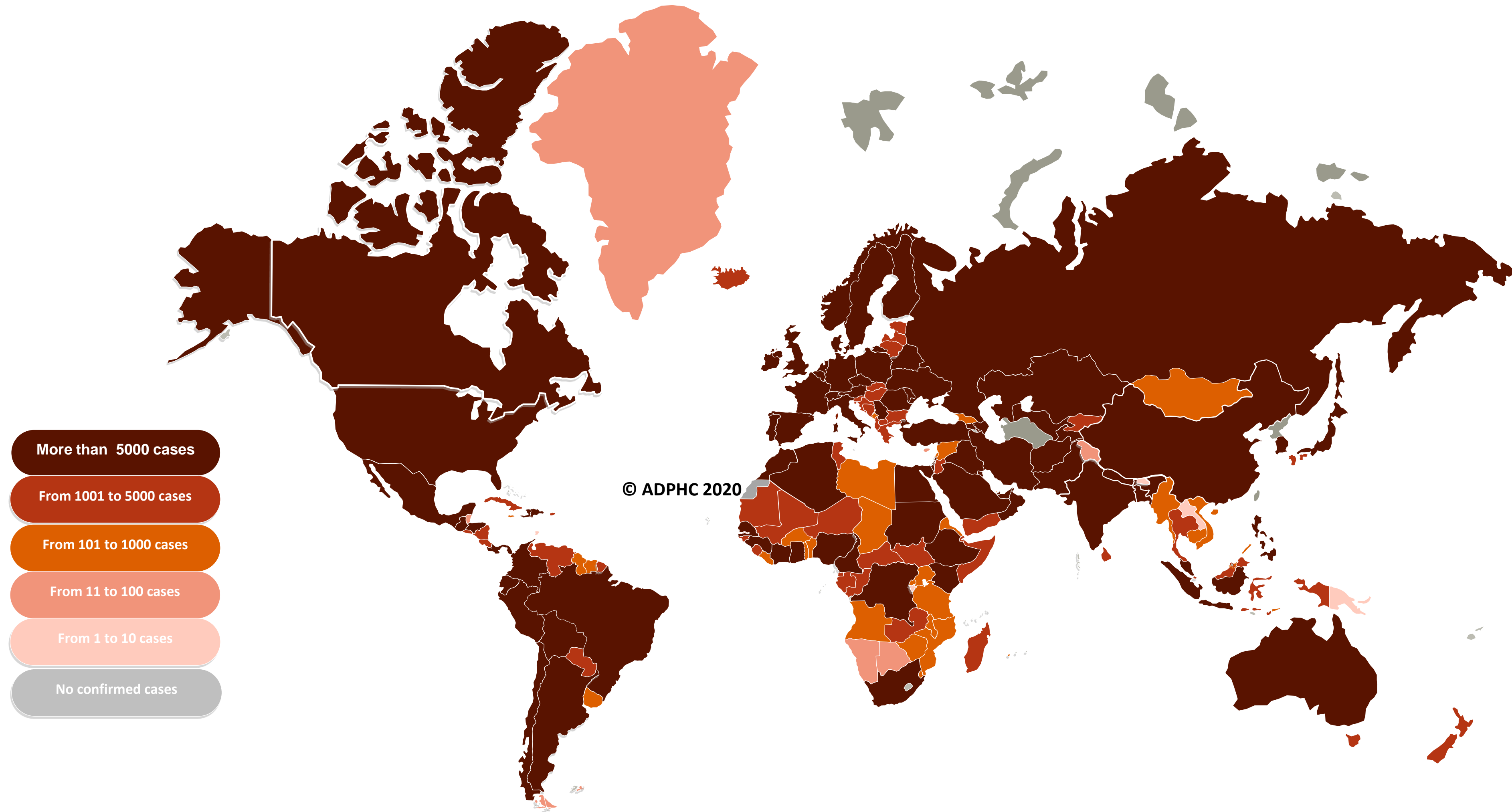
Data resources: [WHO](https://www.who.int/)

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Figure 7a : Global distribution of COVID-19 cases (Jun 26, 2020).



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Data resources: [WHO](#)

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Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 26, 2020)



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

Bar chart published by Abu Dhabi Public Health Center 2020.

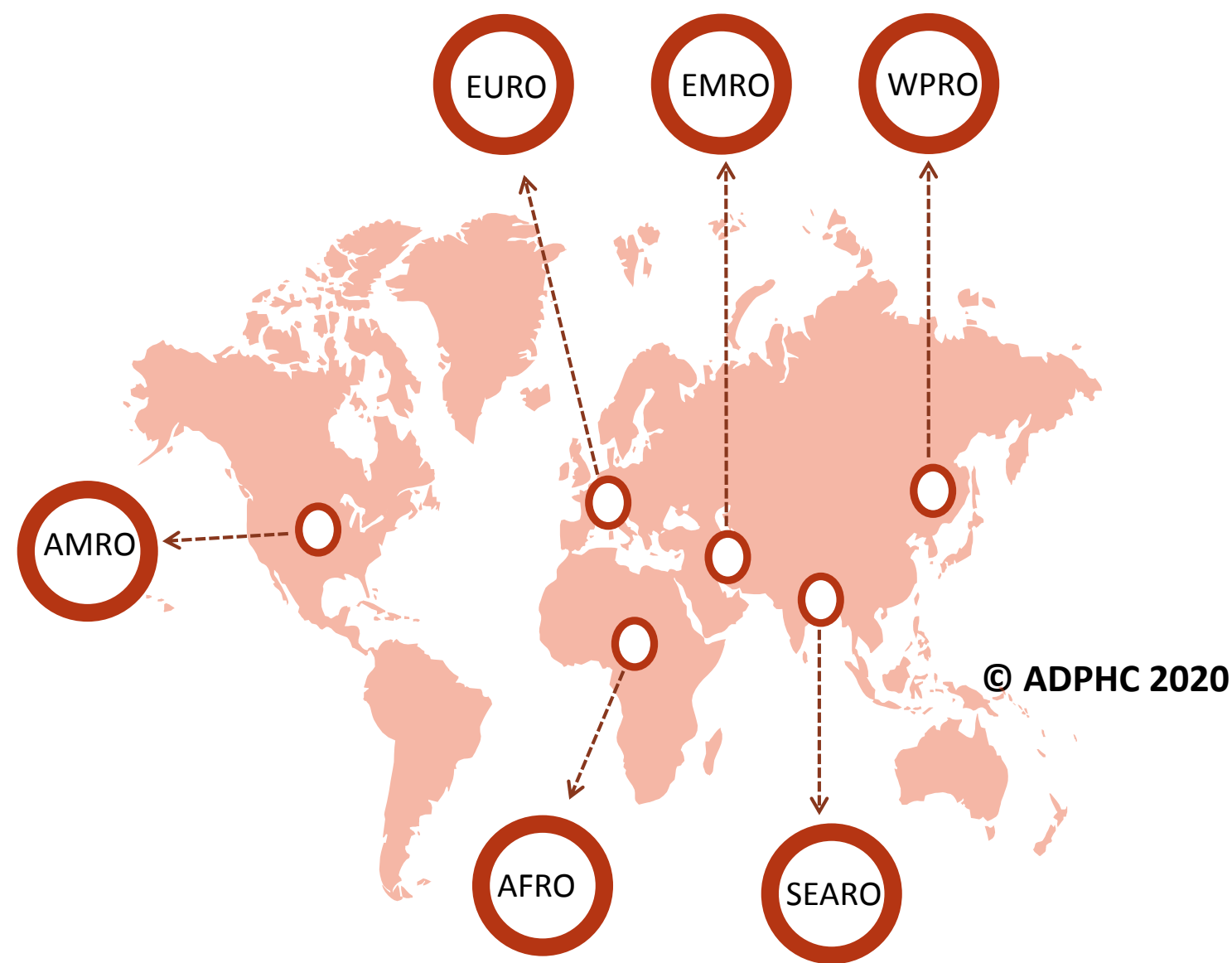
Data resources: [WHO](https://www.who.int/)

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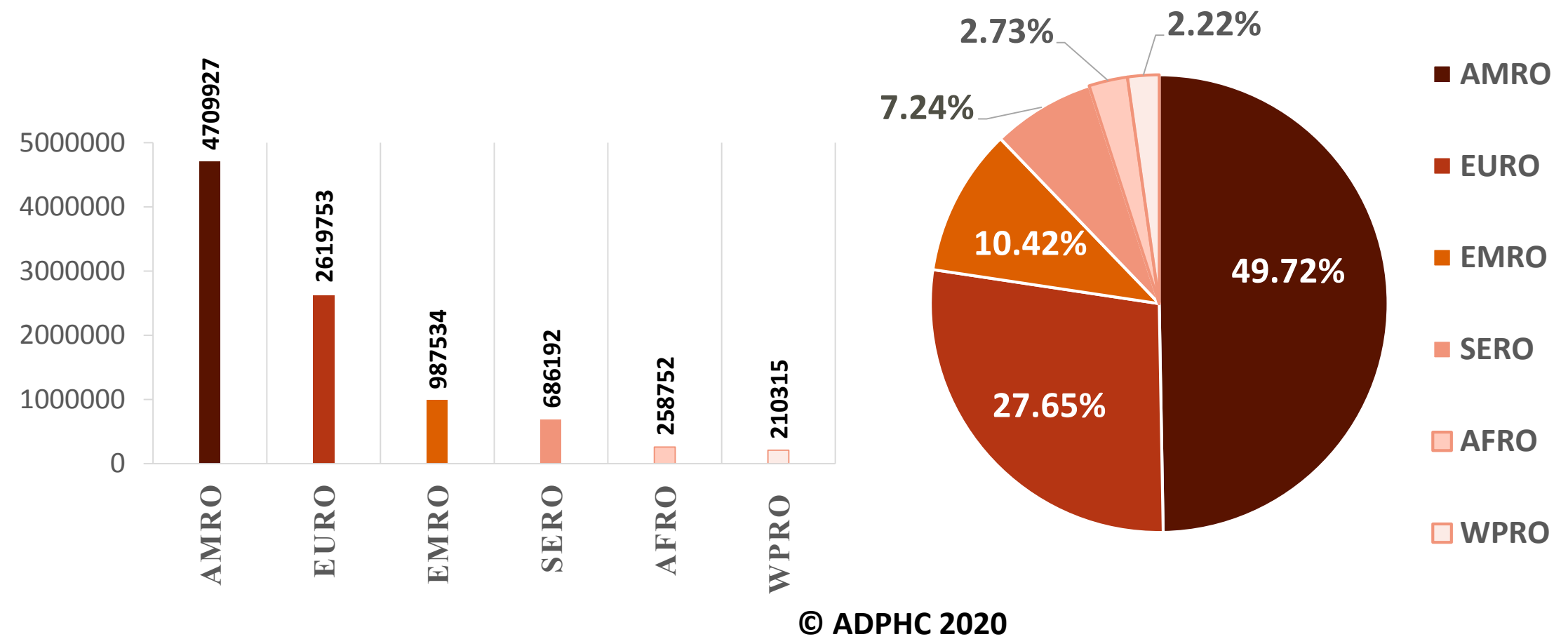
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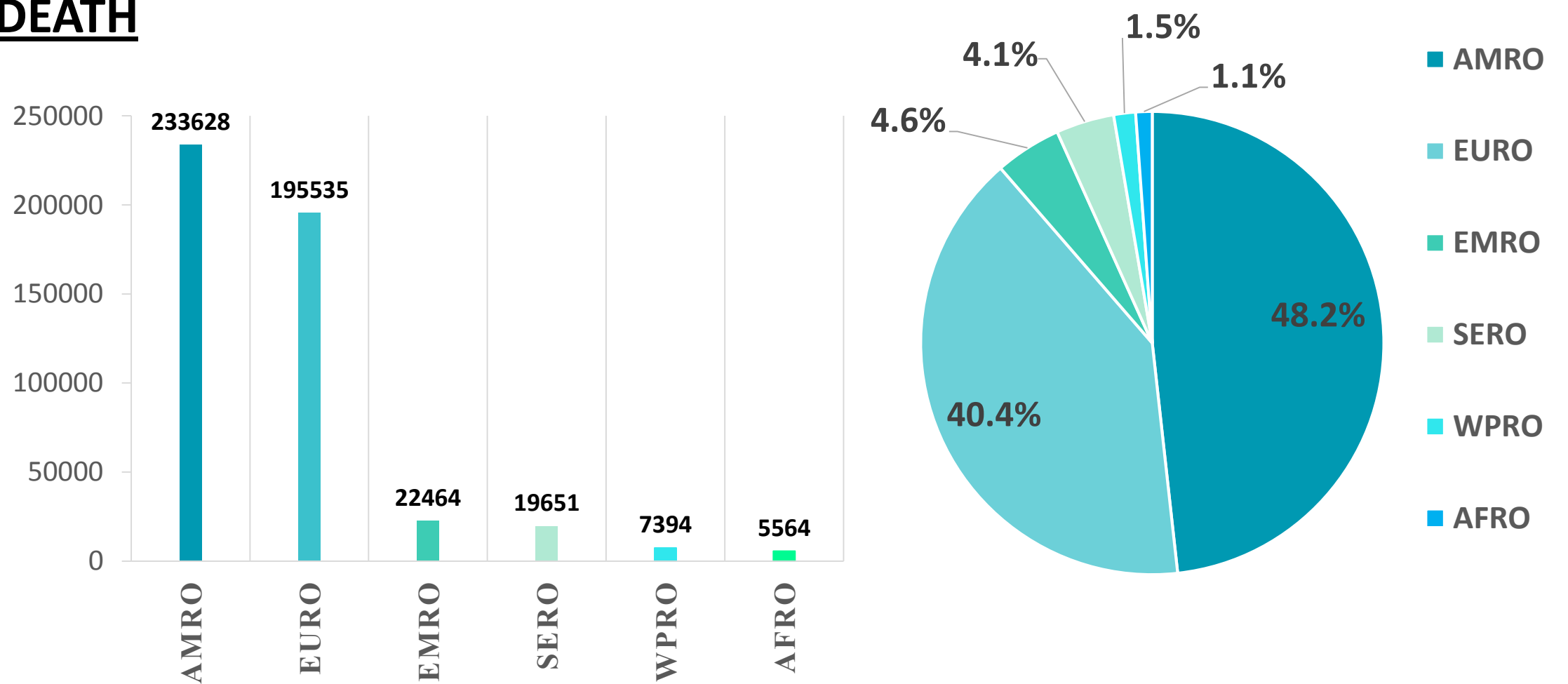
Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 26, 2020)



INFECTED



DEATH



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

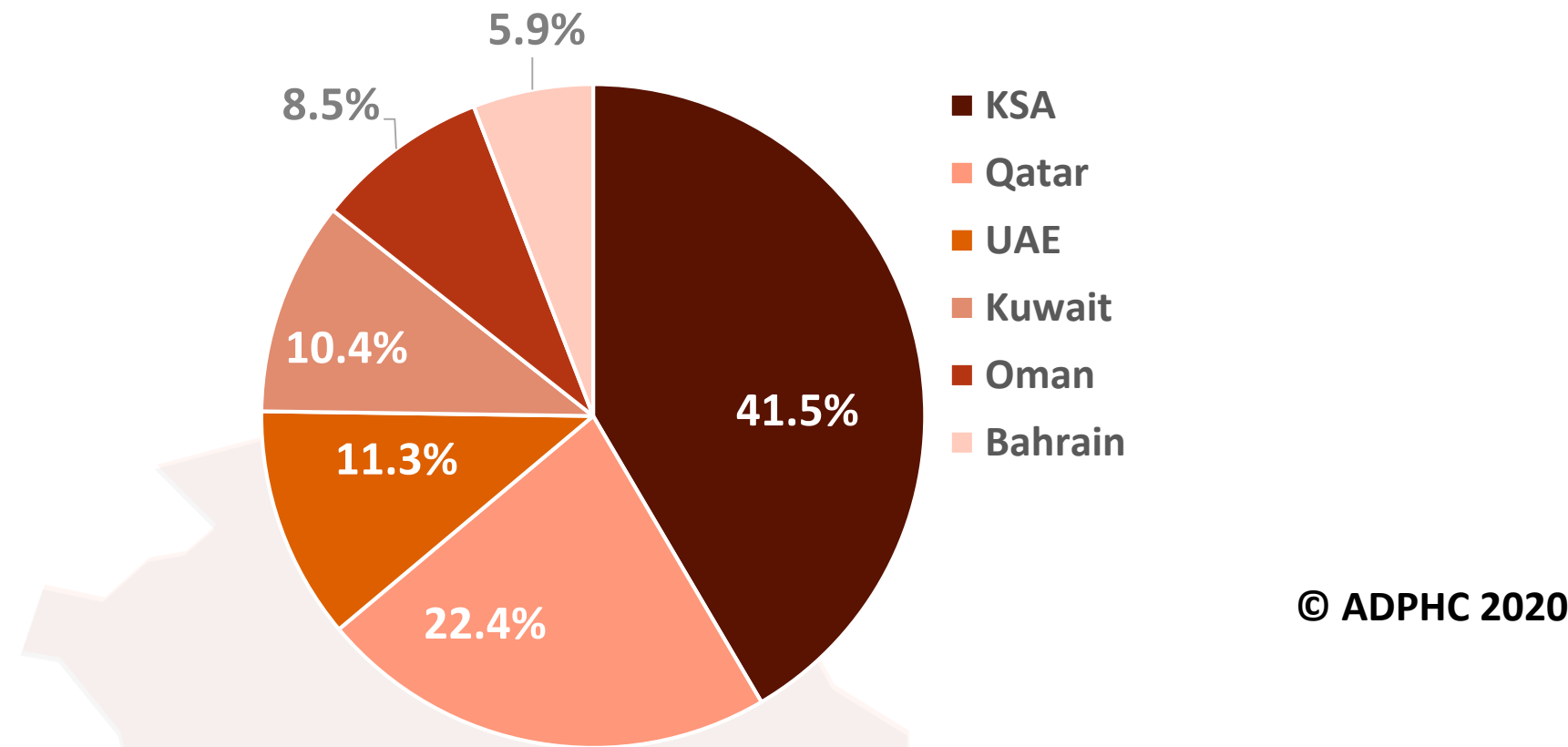
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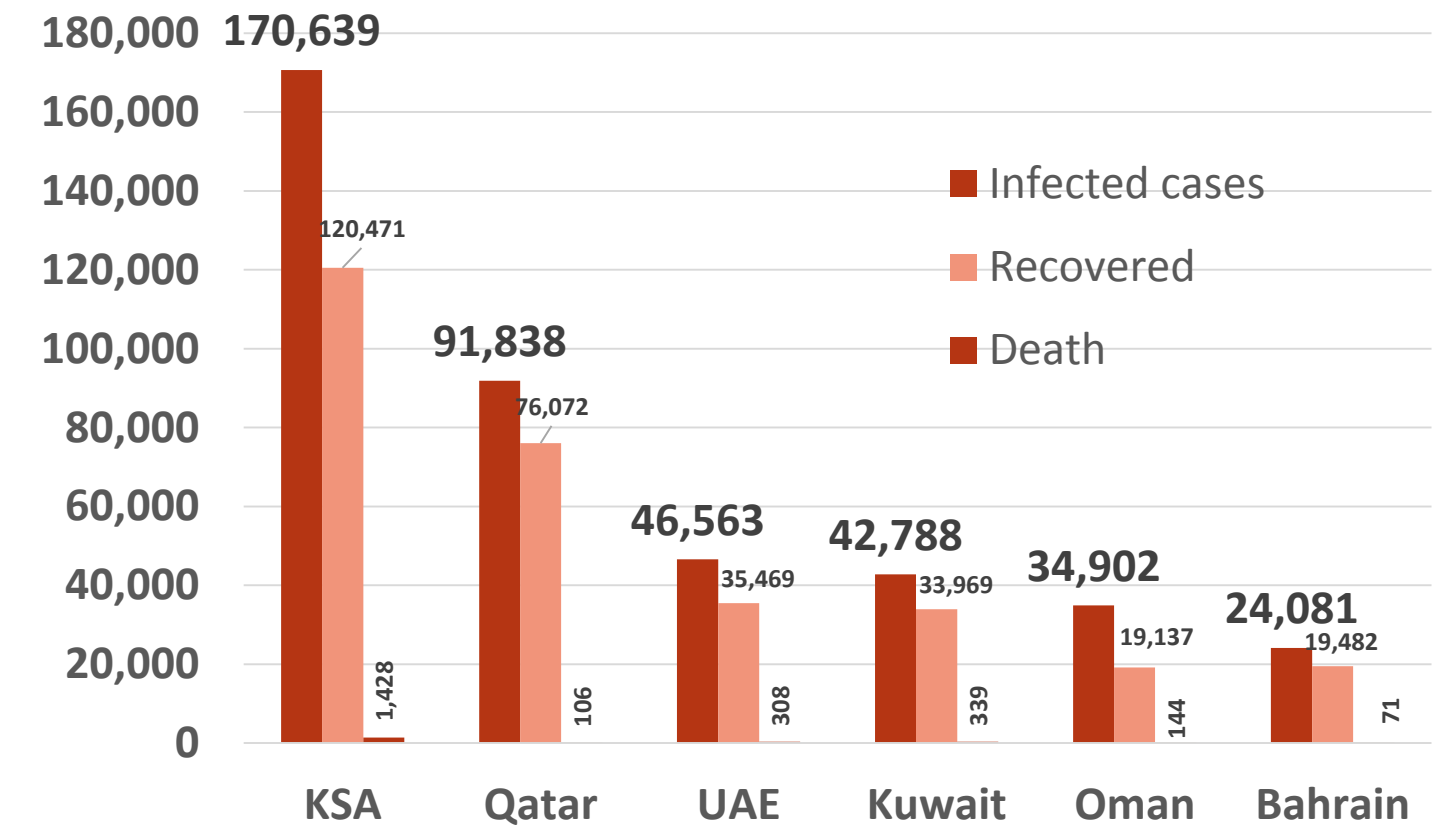
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Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 26, 2020)

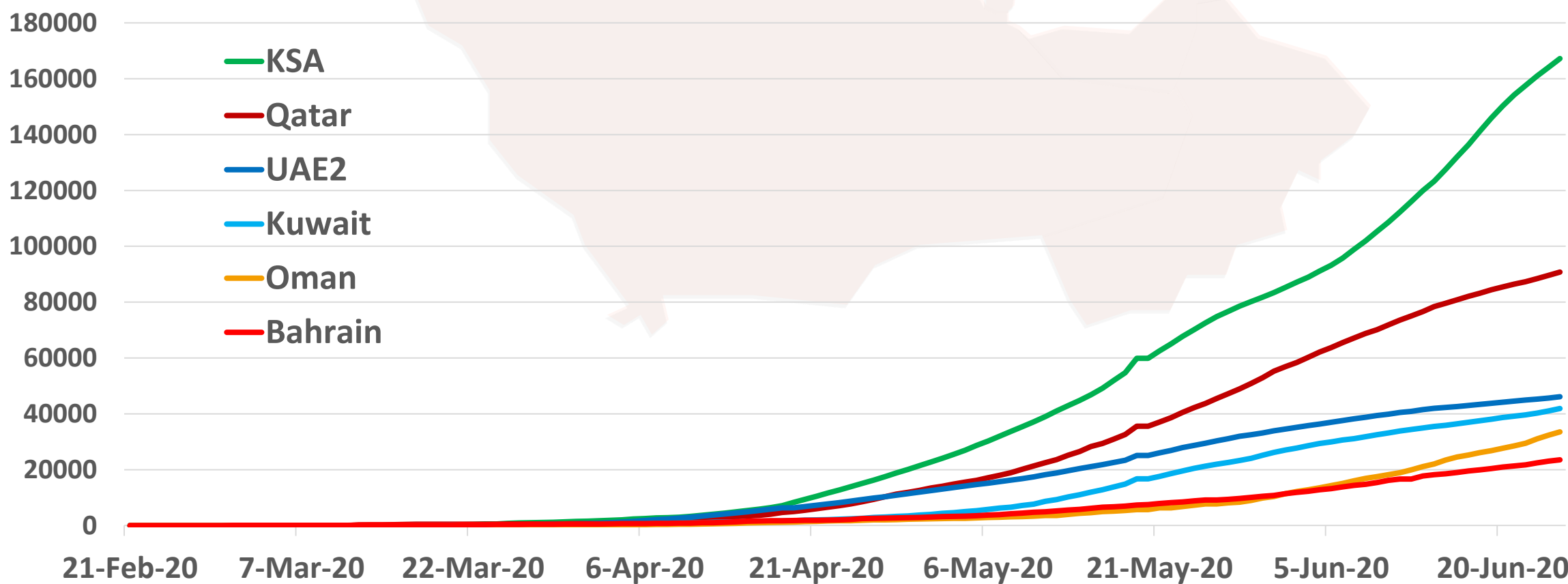
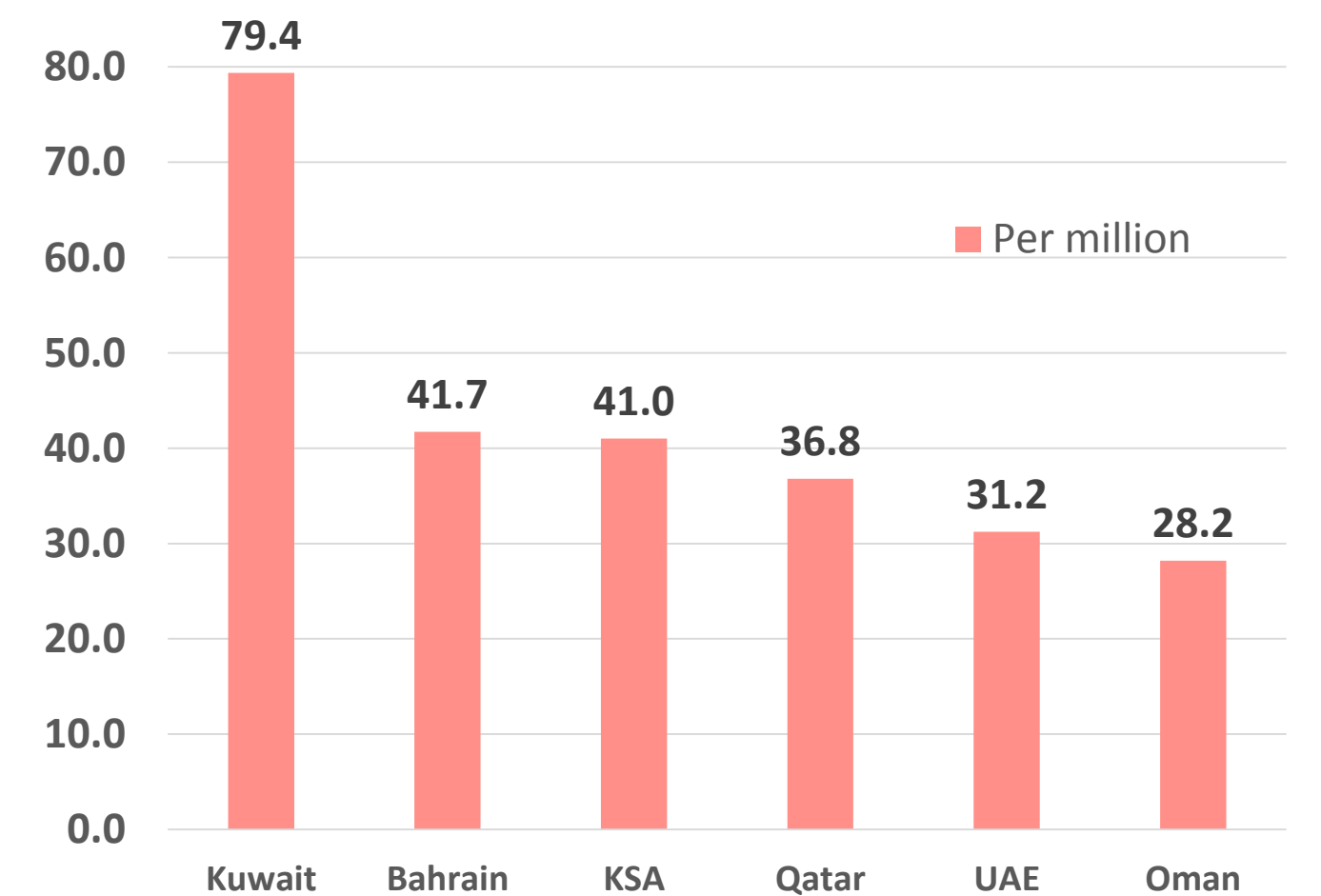
TOTAL NUMBER OF INFECTED CASES



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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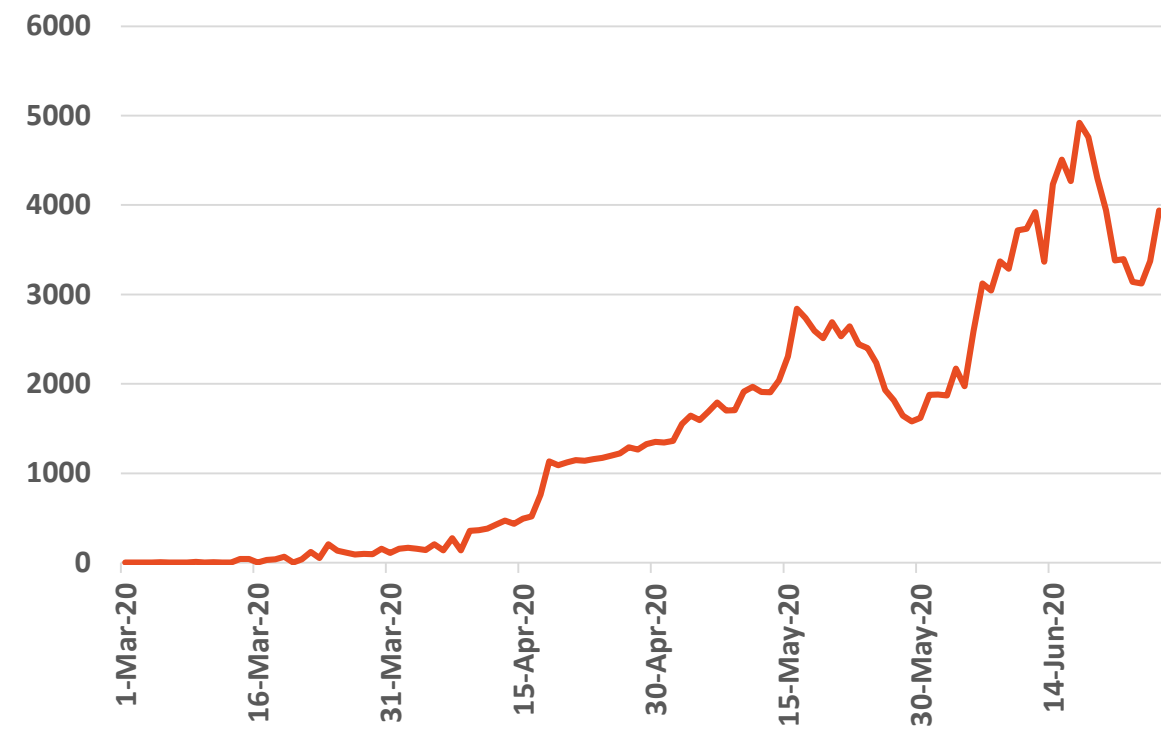
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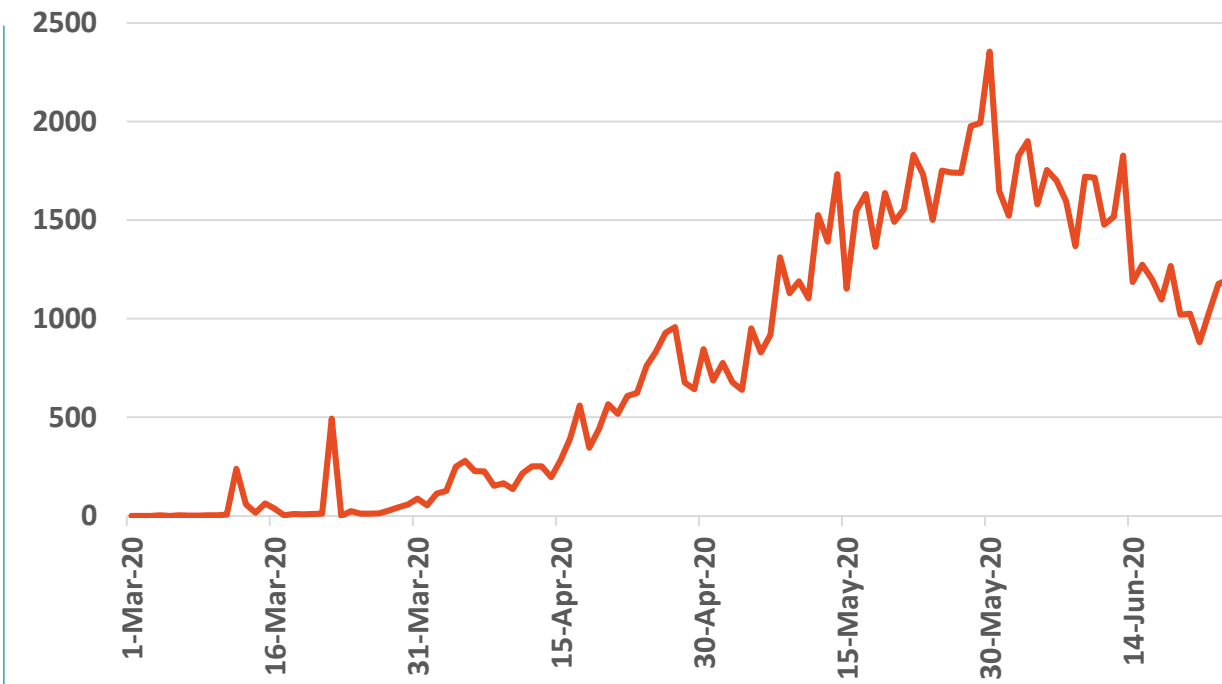
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 26, 2020)

KSA



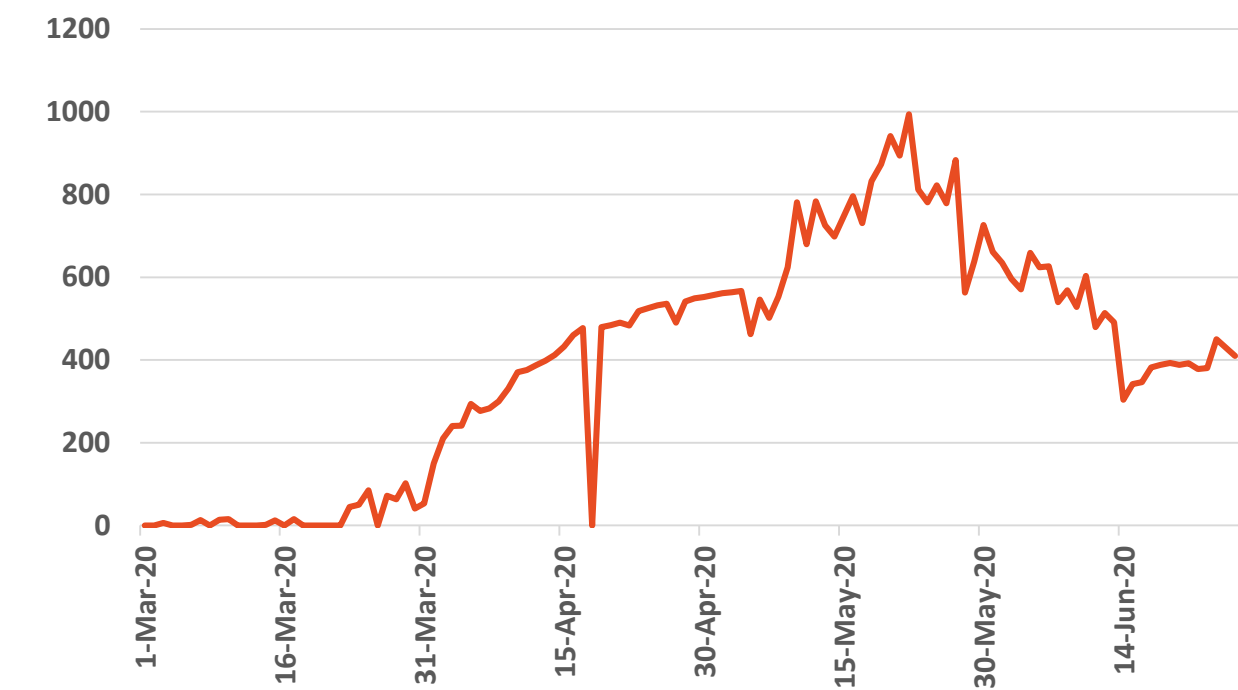
Source : KSA ministry of health

Qatar



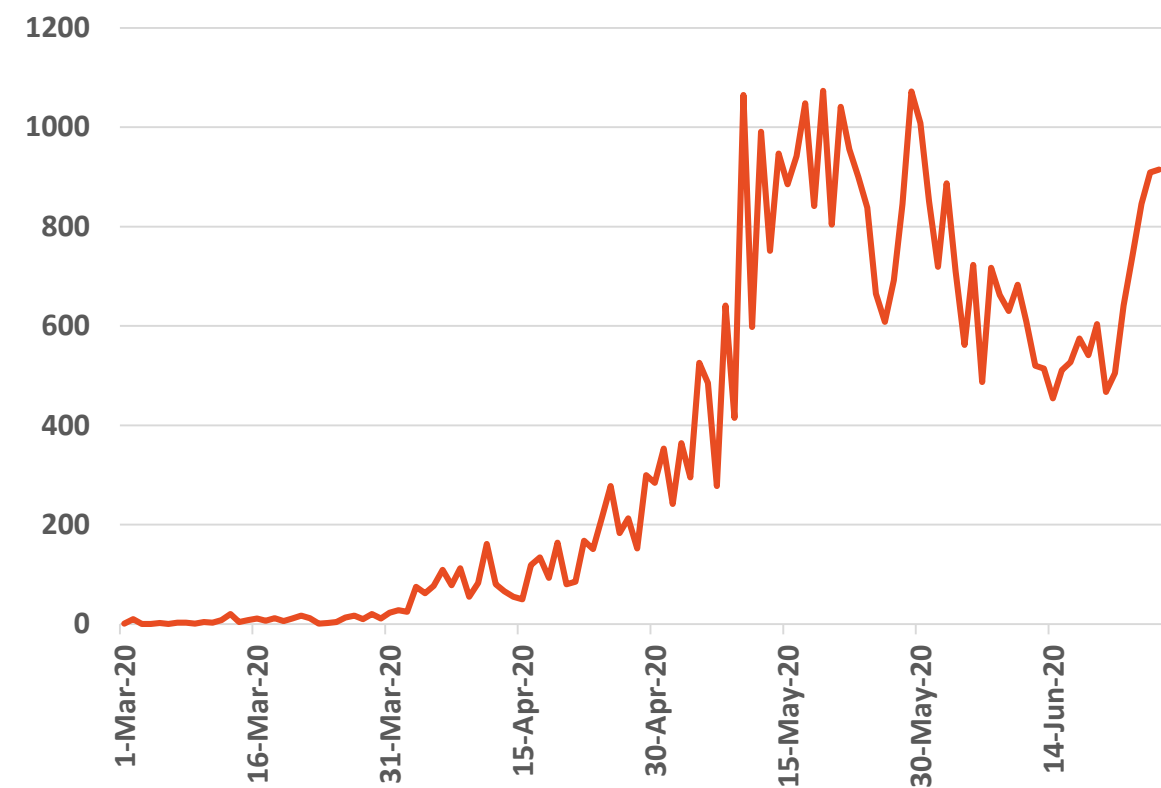
Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

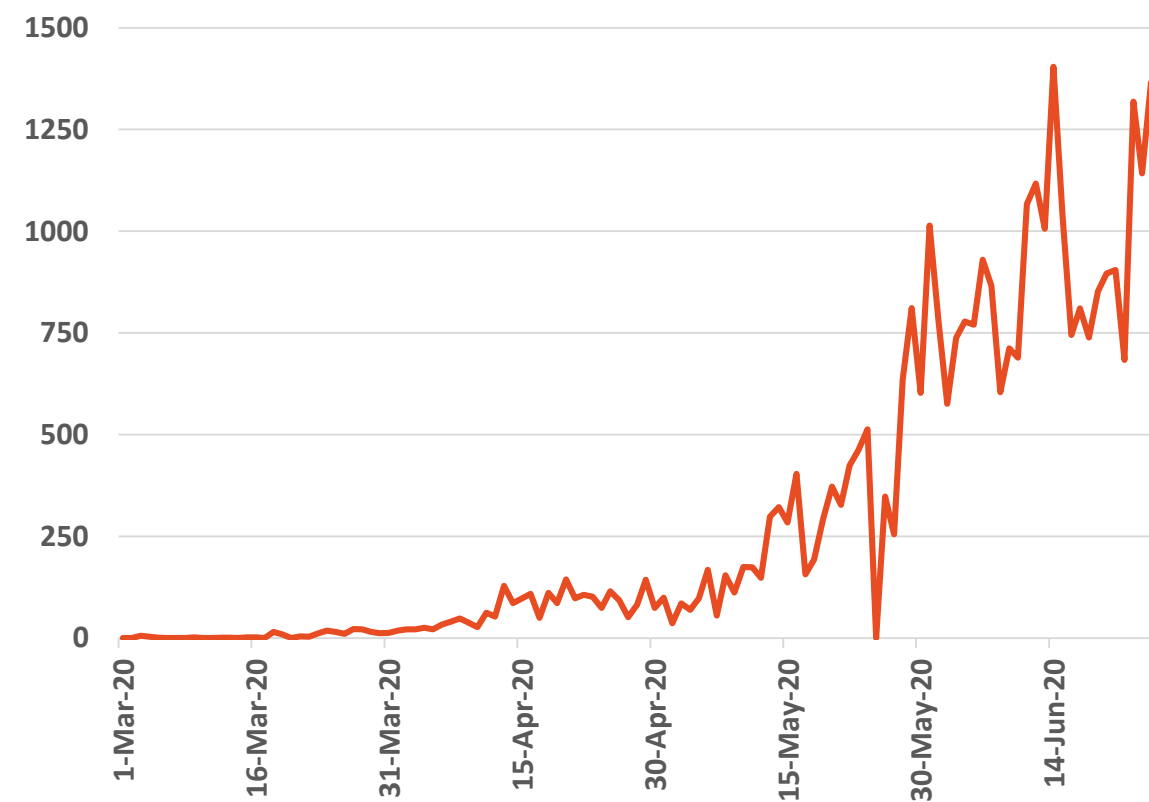
Kuwait



Source : Kuwait ministry of health

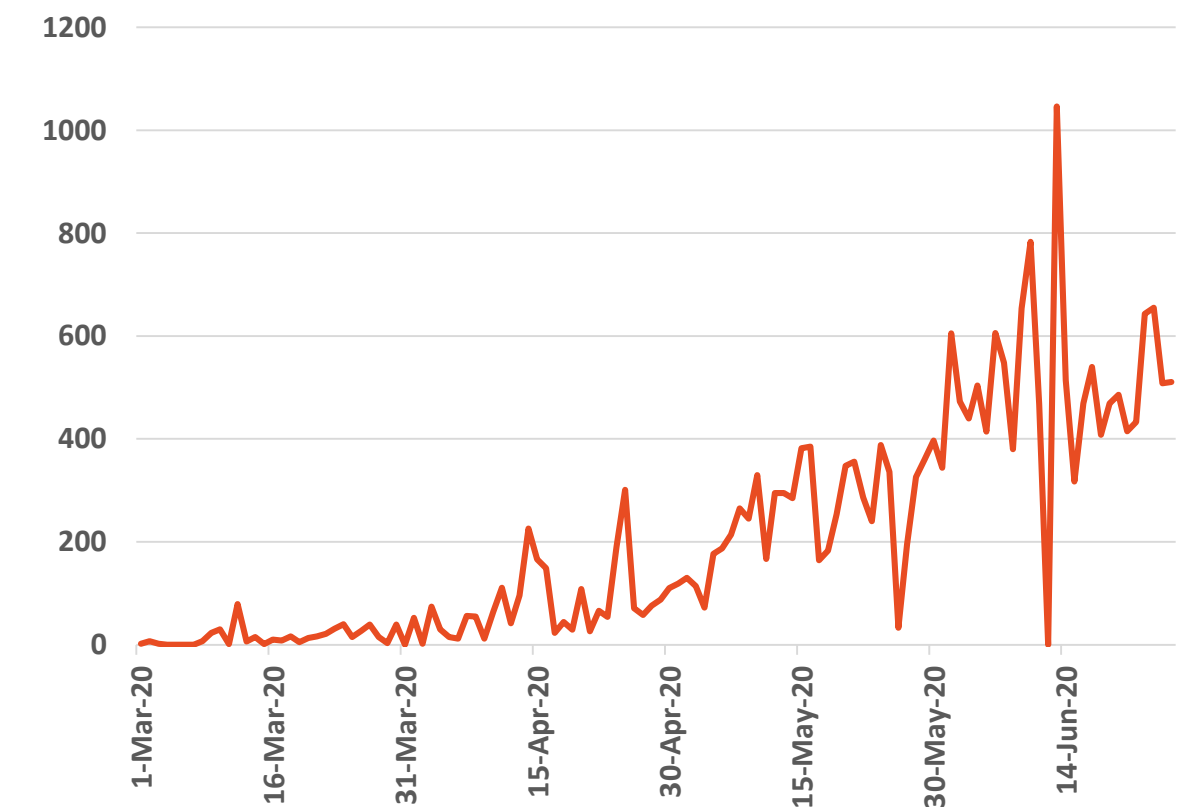
Oman

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Source :Oman ministry of health

Bahrain



Source :WHO

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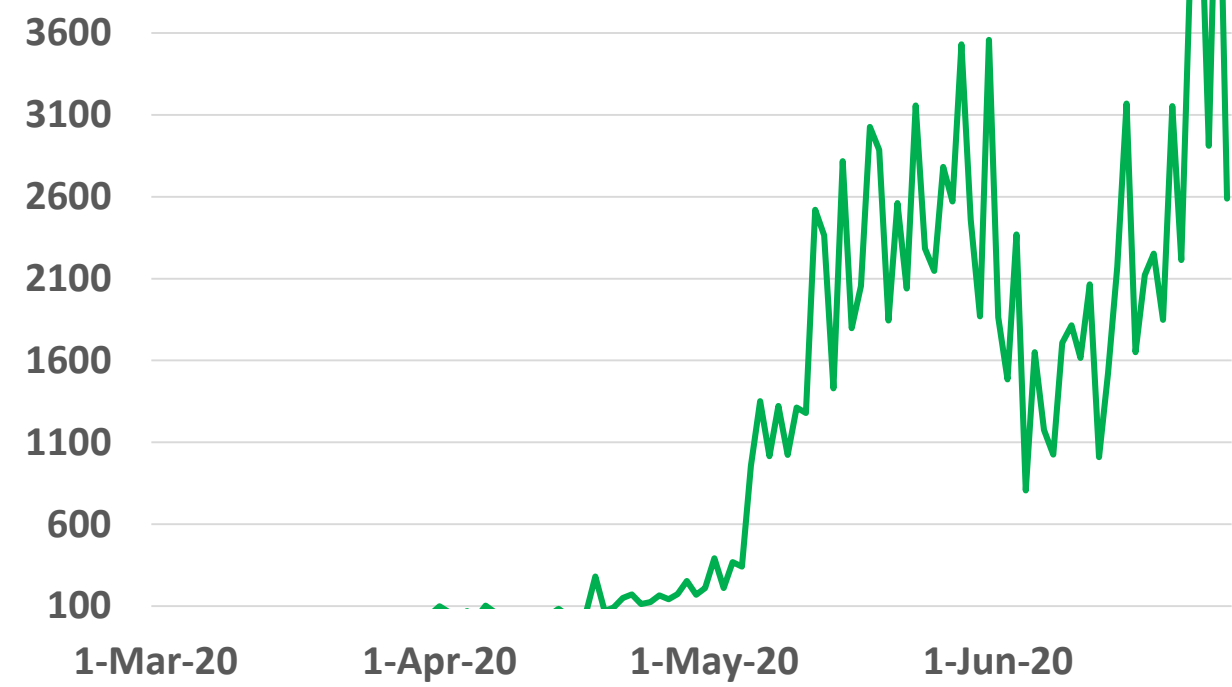
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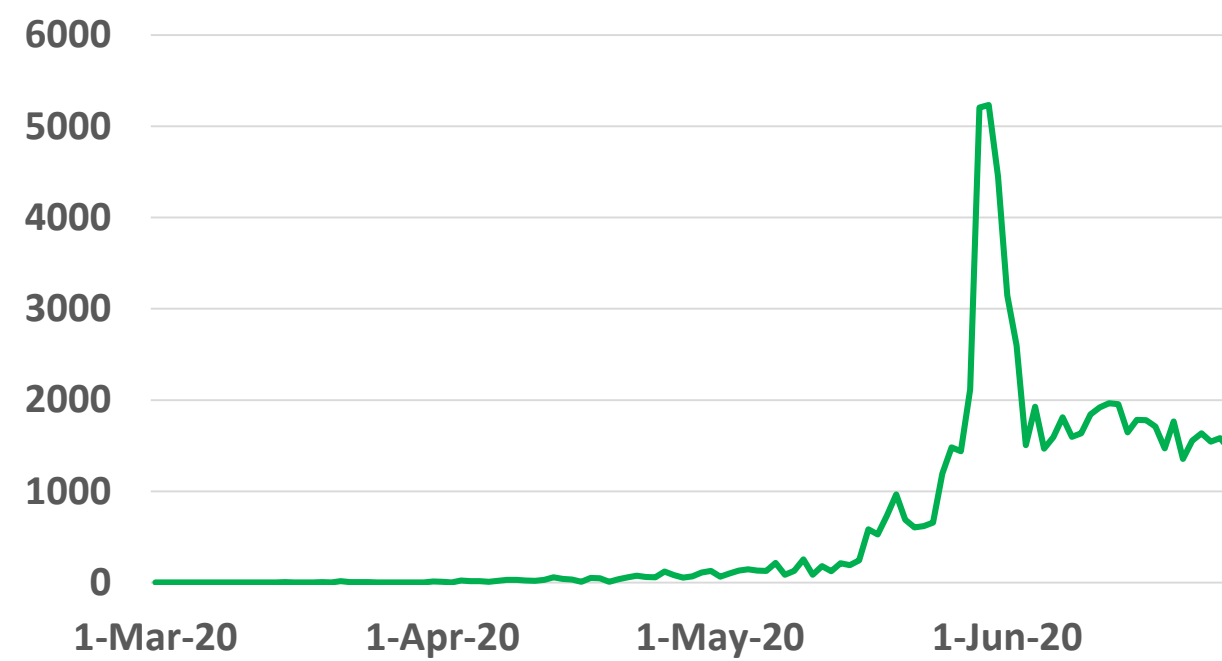
Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 26, 2020)

KSA



Source : KSA ministry of health

Qatar



Source : Qatar ministry of health

UAE



Source : National Emergency Crisis and Disaster Management Authority

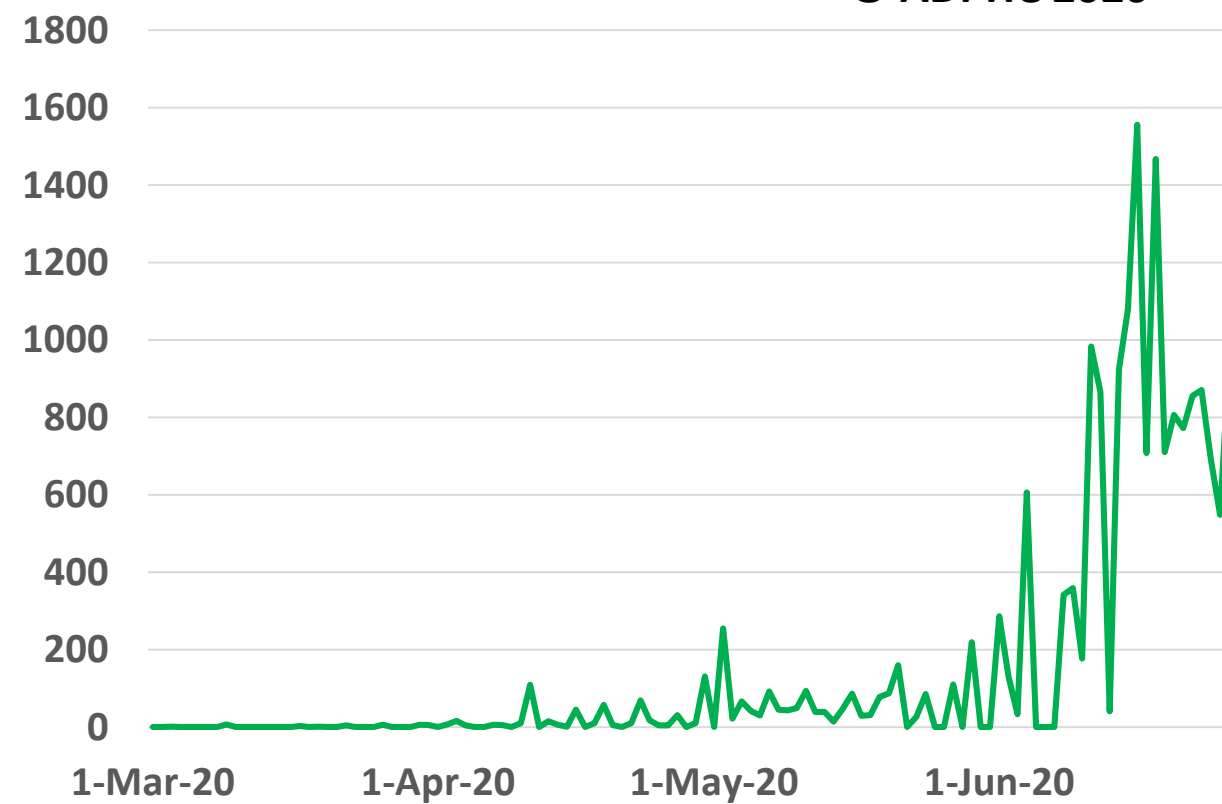
Kuwait



Source : Kuwait ministry of health

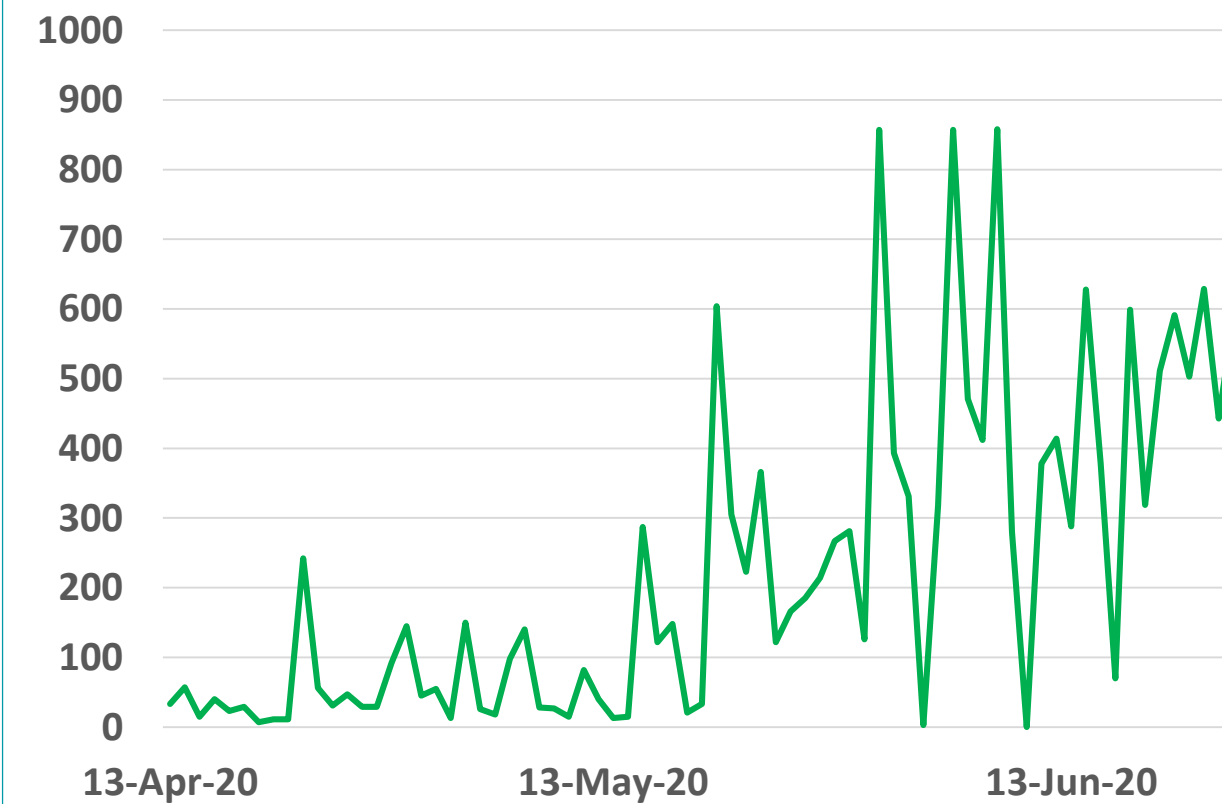
Oman

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Source : Oman ministry of health

Bahrain



Source : GCCStat

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Data resources: [WHO](#)

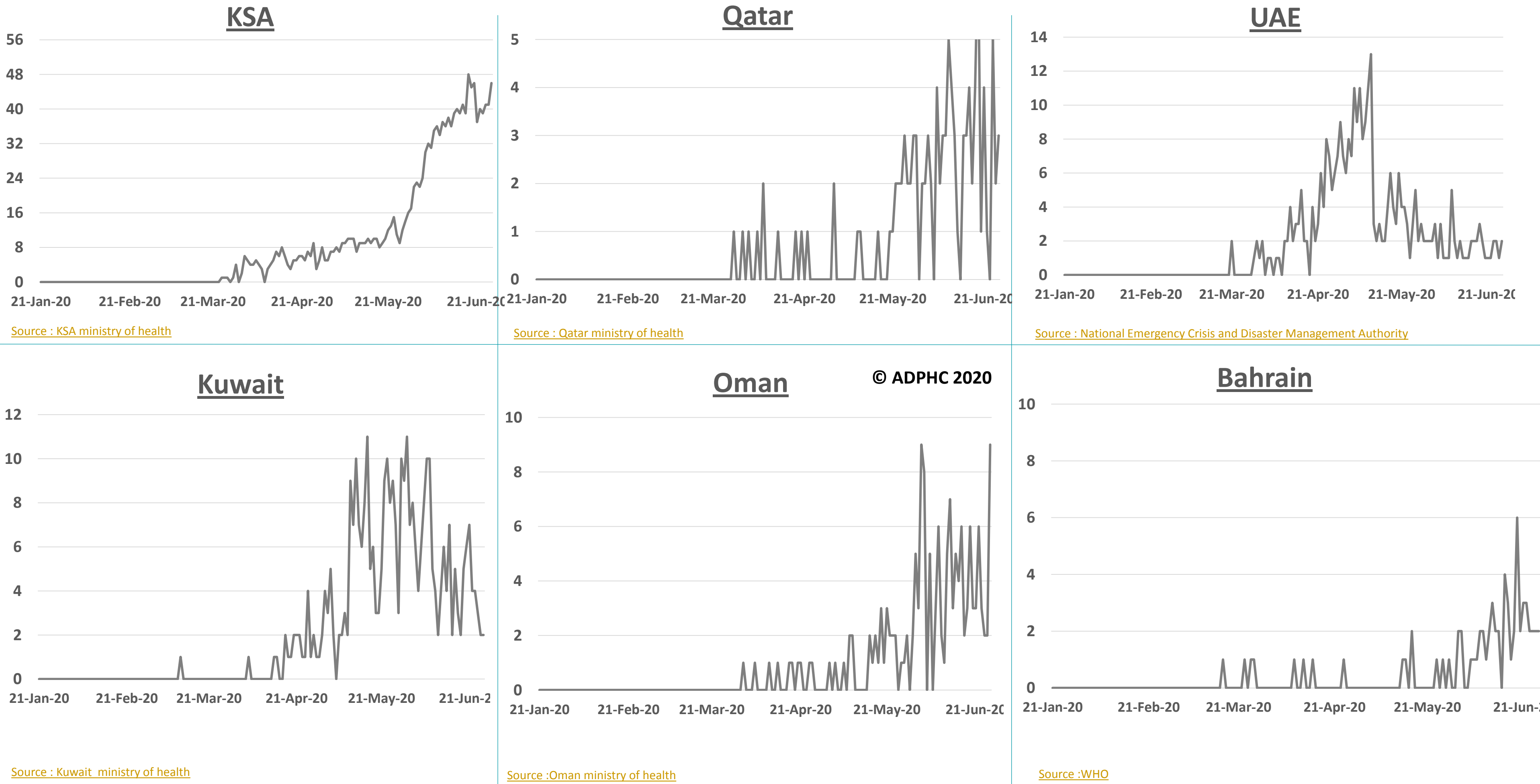
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Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 26, 2020)





Article 1: Tocilizumab in patients with severe COVID-19: a retrospective cohort study

Published: June 24, 2020 in [The Lancet](#)

Summarized by subject matter expert

Study objective: Research has indicated that patients with severe COVID-19 pneumonia can develop an inflammatory cytokine storm which may contribute to the high mortality of severe COVID-19 patients. This study aimed to determine whether tocilizumab (humanized monoclonal antibody which blocks the IL-6 pathways and may potentially curb the inflammatory storm) reduces the risk of invasive mechanical ventilation or death in patients with severe COVID-19 pneumonia.

Methodology used: This was a multi-center, retrospective cohort study conducted in tertiary care centers in Bologna and Reggio Emilia, Italy, between Feb 21 and March 24, 2020, and a tertiary care center in Modena, Italy, between Feb 21 and April 30, 2020. Of the 554 eligible patients with severe COVID-19 pneumonia, 179 received tocilizumab (49% intravenously; 51% subcutaneously) and standard of care, while 365 received standard of care. The primary outcome of the study was a composite of death or invasive mechanical ventilation. The median follow-up was 9 days (interquartile range 4–15 days).

Results reported: 73 (20%) patients in the standard care group died vs. 13 (7%; $p < 0.0001$) patients treated with tocilizumab. After adjustment for sex, age, recruiting center, duration of symptoms, and Sequential Organ Failure Assessment score, tocilizumab treatment was associated with a reduced risk of invasive mechanical ventilation or death (hazard ratio 0.61, 95% CI 0.40–0.92; $p = 0.020$). 24 (13%) of patients treated with tocilizumab were diagnosed with new infections, vs. 14 (4%) of patients treated with standard of care alone ($p < 0.0001$).

Limitations: Non-blinded study; patients were non-randomized; the follow-up period was relatively short.

Study conclusion: Both intravenously or subcutaneously administered tocilizumab might reduce the risk of invasive mechanical ventilation or death in patients with severe COVID-19 pneumonia. Randomized studies are required to confirm these findings.

*This paper has not been peer - reviewed

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Article 2 : COVID-19 in children and adolescents in Europe: a multinational, multicentre cohort study

Published: June 25, 2020 in [the lancet](#)

Summary:

This study is the first multinational, multicenter study in children (n 585 cases) with COVID-19, and provides a detailed overview on SARS-CoV-2 infection in children in Europe during the initial peak of the pandemic, which was facilitated by a collaboration of 82 units across 25 European countries.

The study has several key findings. First, the data show that COVID-19 is generally a mild disease in children, including infants. (A quarter (n=145) of the participants had pre-existing medical conditions, 363 (62%) were admitted to hospital, 48 (8%) required ICU admission, 25 (4%) mechanical ventilation, 19 (3%) inotropic support, and 1 (<1%) extracorporeal membrane oxygenation.

Second, the study found that a substantial proportion (**8%**) of children develop severe disease, requiring intensive care support and prolonged ventilation. Several predisposing factors for requiring intensive care support were identified. (<1 month, male; signs or symptoms of lower respiratory tract infection at presentation; and presence of pre-existing medical conditions.

Third, the study confirms that fatal outcome is rare in children (case fatality rate [CFR] - 0.69 in children older than 10 year). There was considerable variability in the use of drugs with antiviral activity (HCQ was the widely used drug accounting of 7% of cases) as well as immunomodulatory medication, reflecting current uncertainties regarding specific treatment options.

	Entire cohort (n=582)	Not admitted to ICU (n=534)	Admitted to ICU (n=48)	p value	Odds ratio (95%CI)
Age, years	5-0 (0-5-12-0)	5-5 (0-6-12-0)	4-0 (0-3-11-0)	0-20	0-9 (0-9-1-0)
<2	230 (40%)	207 (39%)	23 (48%)	..	1-4 (0-8-2-6)
2-5	62 (11%)	60 (11%)	2 (4%)	..	0-3 (0-1-1-4)
5-10	94 (16%)	86 (16%)	8 (17%)	..	1-0 (0-4-2-3)
>10	196 (34%)	181 (34%)	15 (31%)	..	0-8 (0-4-1-6)
Age <1 month	40 (7%)	33 (6%)	7 (15%)	0-027	2-5 (1-0-6-2)
Sex					
Female	271 (47%)	256 (48%)	15 (31%)	..	1 (ref)
Male	311 (53%)	278 (52%)	33 (69%)	0-026	2-2 (1-0-3-8)
Pre-existing medical conditions					
Any	145 (25%)	120 (22%)	25 (52%)	<0-0001	3-7 (2-0-6-8)
Signs and symptoms at presentation					
Asymptomatic	92 (16%)	90 (17%)	2 (4%)	0-021	0-2 (0-1-0-9)
Pyrexia	379 (65%)	339 (63%)	40 (83%)	0-0065	2-8 (1-3-6-2)
Upper respiratory tract infection	313 (54%)	288 (54%)	25 (52%)	0-80	0-9 (0-5-1-6)
Lower respiratory tract infection	143 (25%)	108 (20%)	35 (73%)	<0-0001	10-6 (5-4-20-7)
Gastrointestinal	128 (22%)	113 (21%)	15 (31%)	0-10	1-6 (0-8-3-2)
Headache†	70/255 (28%)	64/236 (27%)	6/19 (32%)	0-67	1-2 (0-4-3-4)

Note that the study population is likely to primarily represent individuals at **the more severe end of the disease** spectrum. Therefore, case fatality rate might be lower than what was represented in this study





Public Health Response

Article 2 : Asthma in children during the COVID-19 pandemic: lessons from lockdown and future directions for management

Published: June 25, 2020 in [the lancet](#)

- It was reported that there was a **76% drop in emergency visits for asthma** of all severities during the COVID-19 pandemic, a similar drop to UK experience.
- This decrease in emergency visits is unlikely to be accounted for simply parents managing mild attacks at home, but the causes for what is clearly a relevant change are uncertain.
- Reasons could include:
 - Lockdown preventing transmission of conventional respiratory viruses, such as **rhinovirus and respiratory syncytial virus, and reduced exposure to outdoor allergens.**
 - Another factor could be **the striking reductions in atmospheric pollution**, a well-established factor in asthma attacks.
 - It is also possible that parental supervision of asthma drugs, leading to better adherence, is a factor.
- **home monitoring of lung function can be directly observed by a physiologist from the hospital.**
- **Home self-administration of biologicals can also be directly observed by mobile telephone.**
- **Remote consultation clearly has many advantages** that will be important going forward, including minimizing cross-infection risk, which is likely to be a long-term issue, and reducing disruption to normal life.
- **face-to-face consultation will be needed if advanced tests such as **histamine challenge or skin prick is required.****
- **Routine outpatient monitoring includes height, weight, spirometry, exhaled nitric oxide (in some cases), and physical examination including chest auscultation; all these measurements can be done at home. (Technology for electronic stethoscopes on mobile telephones.)**
- Also mobiles can record where we have shopped and where we have dined, and they could potentially be used to record **any unscheduled health visits, mandating an asthma review, with the permission of the family.**

The author recommends adopting virtual **care for asthma cases which has been adopted during COVID19 pandemic and enhanced; so that if it can be used for the new reformed health care system.**

