



# Scientific Research Monitoring on COVID-19

21 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>

Note: This report has not been professionally edited as it contains a variety of sources captured on a **daily basis**.

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# 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

**Public Health Response:** an article that presents an extraordinary proposal for the UK to mobilize economy faster in the COVID19 era; **stating patient younger 40 year shall be allowed to work and to get infected !**

**Public Health Response:** article that suggests strategies on how to return to work during COVID19 pandemic including , testing of employee , contact tracing , reducing work crowding, change workplace architecture.

**Diagnosis:** a genetic analysis of more than 1000 severe cases of COVID19 in Italy and Spain found that blood group may serve as a predictive markers for COVID-19 disease severity.

**Public Health Response:** an article that discusses how COVID19 showed governments neglecting men's health and the importance to develop men's health policy.



# WHO daily report

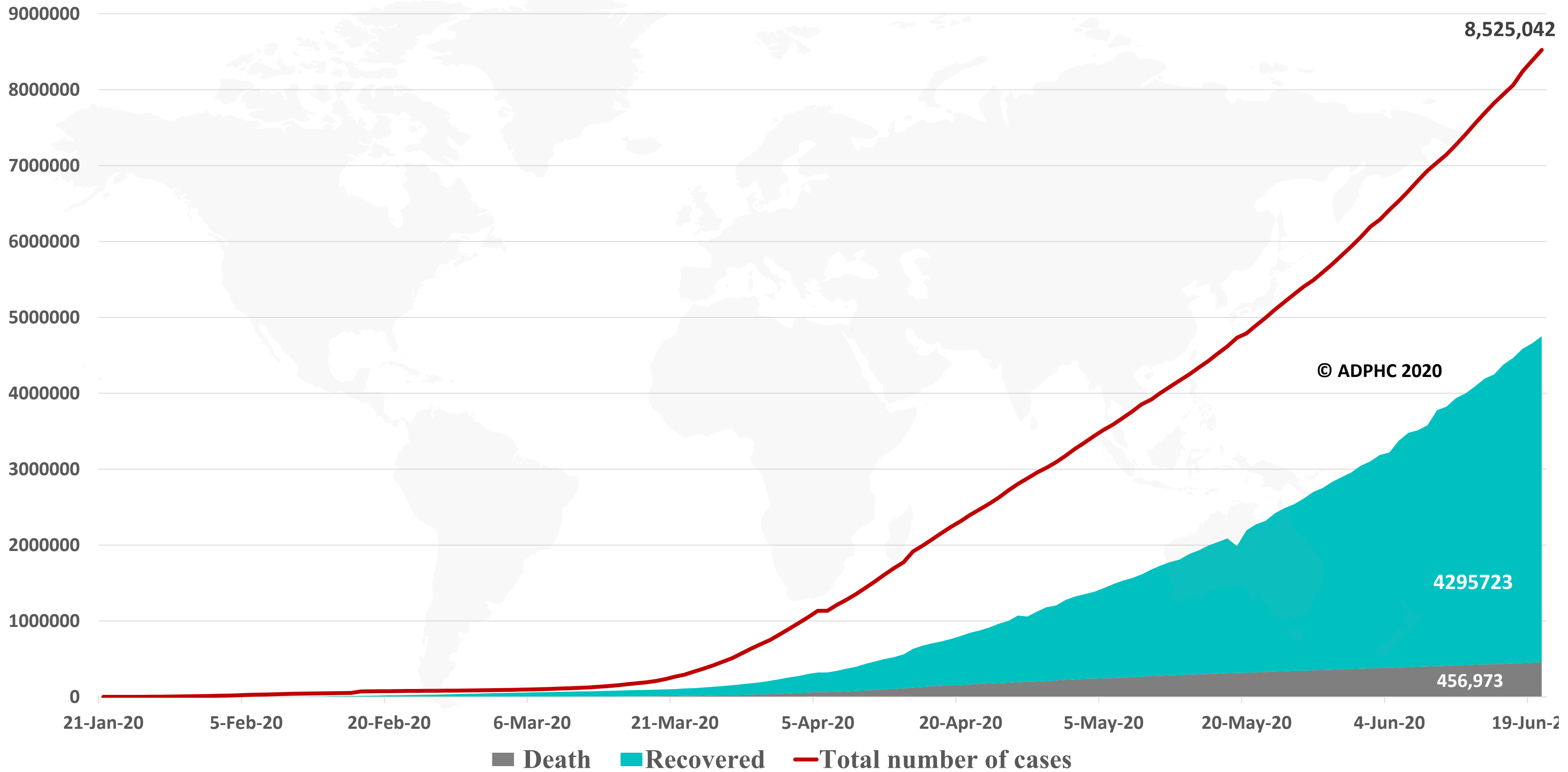
WHO Daily Report 20 June 2020

- WHO Director-General Dr Tedros, highlighted that today is World Refugee Day and highlighted the risks of COVID-19 for some of the world's most vulnerable people. He also stressed the shared duty to do everything we can to prevent, detect and respond to transmission of COVID-19 among refugee populations.
- WHO has published '[Criteria for releasing COVID-19 patients from isolation](#)' which provides an update to previous guidance. The updated criteria reflect recent findings that patients whose symptoms have resolved may still test positive for the COVID-19 virus for many weeks. Despite this positive test result, these patients are not likely to be infectious and therefore are unlikely to be able to transmit the virus to another person.
- WHO has published an [Emergency Global Supply Chain System \(COVID-19\) catalogue](#). This catalogue lists all medical devices, including personal protective equipment, medical equipment, medical consumables, single use devices, laboratory and test-related devices that may be requested through the COVID-19 Supply Portal.

# Epidemiology



Figure 1: Total number of infected, recovered , and death cases (January 21<sup>st</sup> to Jun 20, 2020)

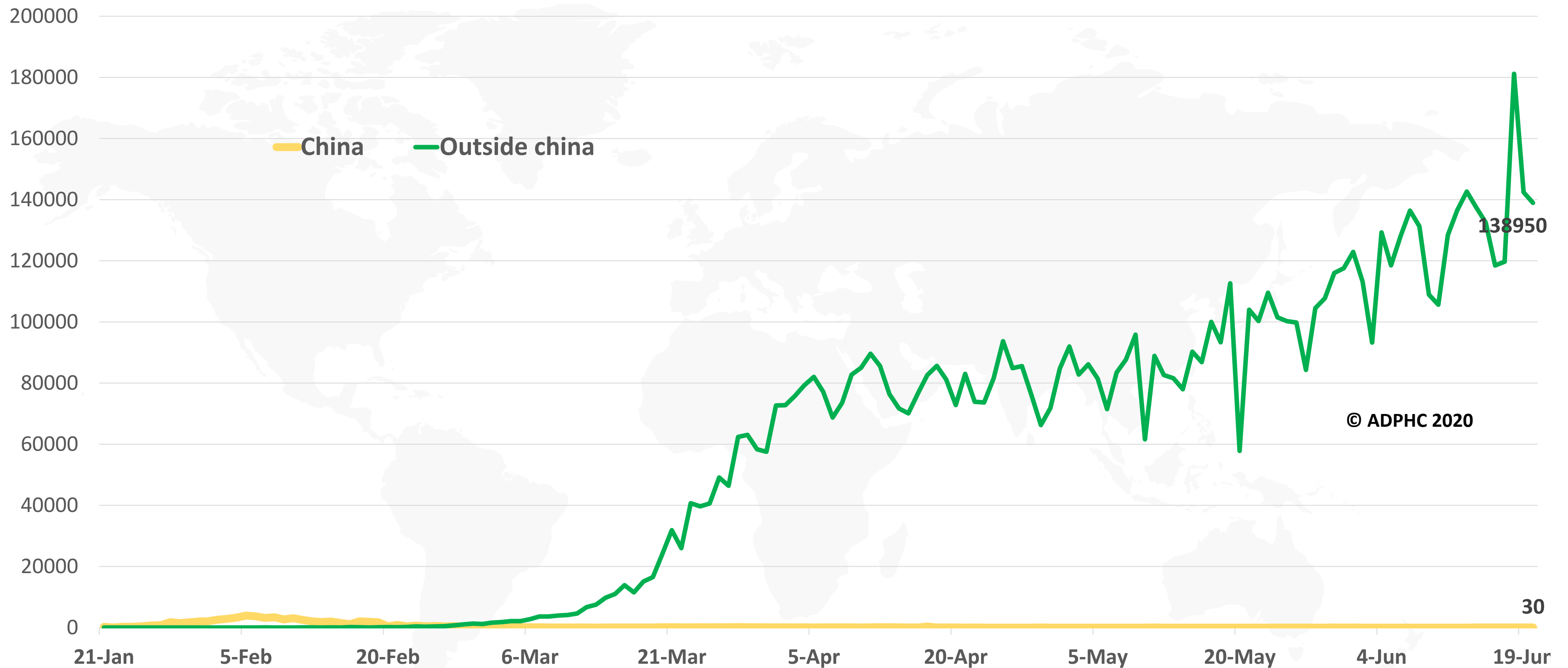


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to Jun 20, 2020).



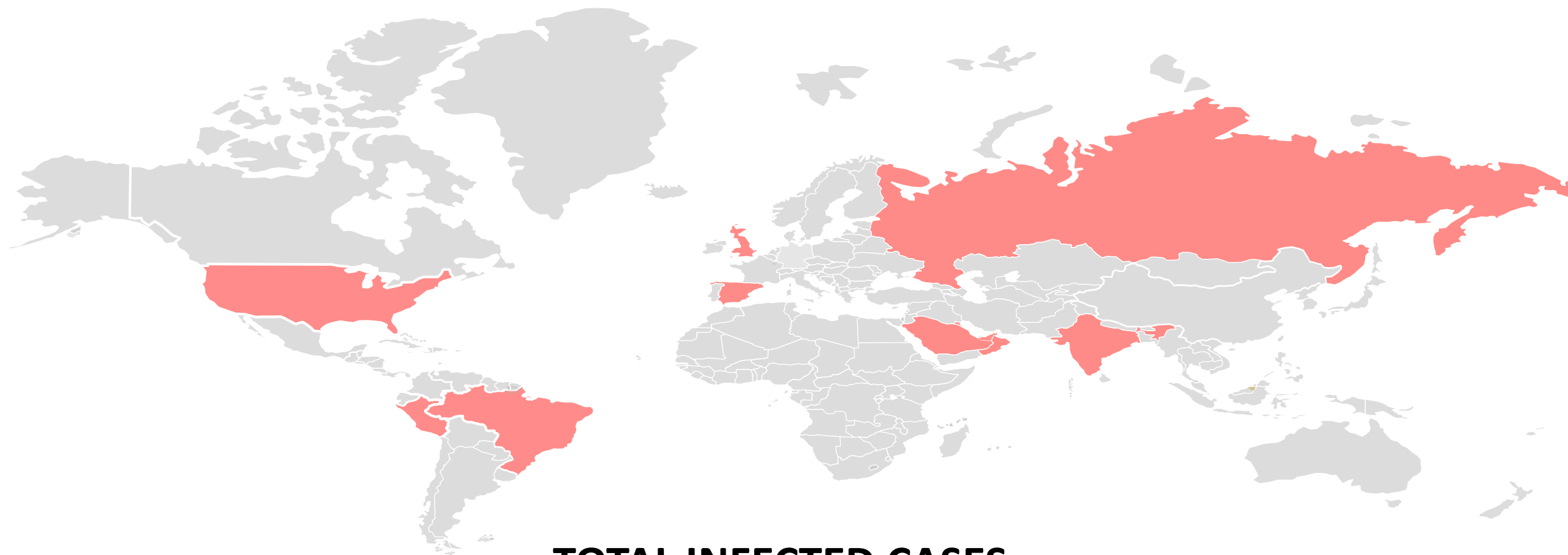
Line graph published by Abu Dhabi Public Health Center 2020.

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

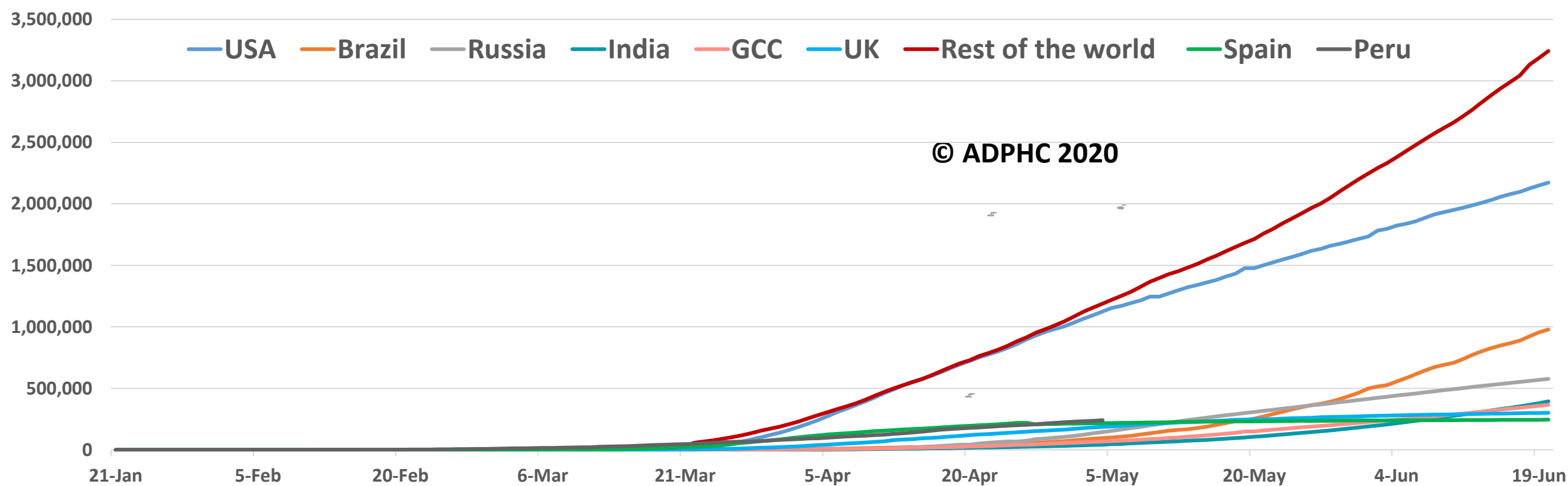
# Epidemiology



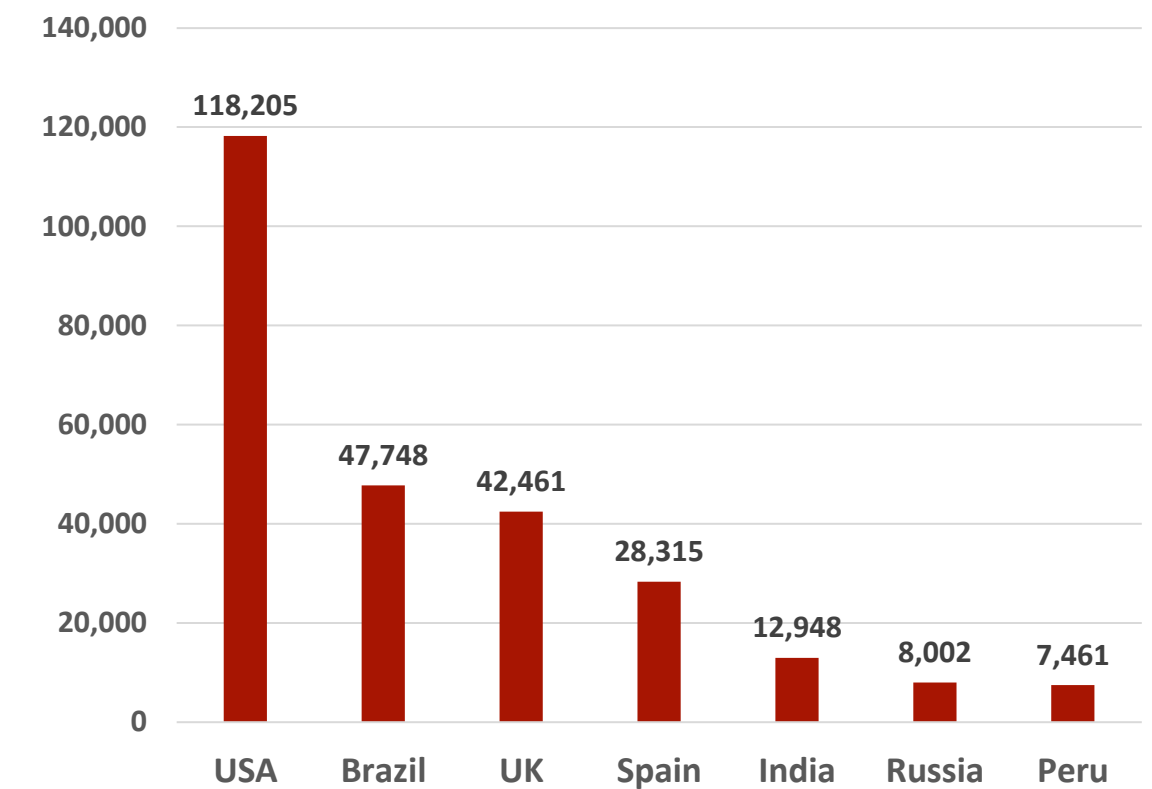
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to Jun 20, 2020).



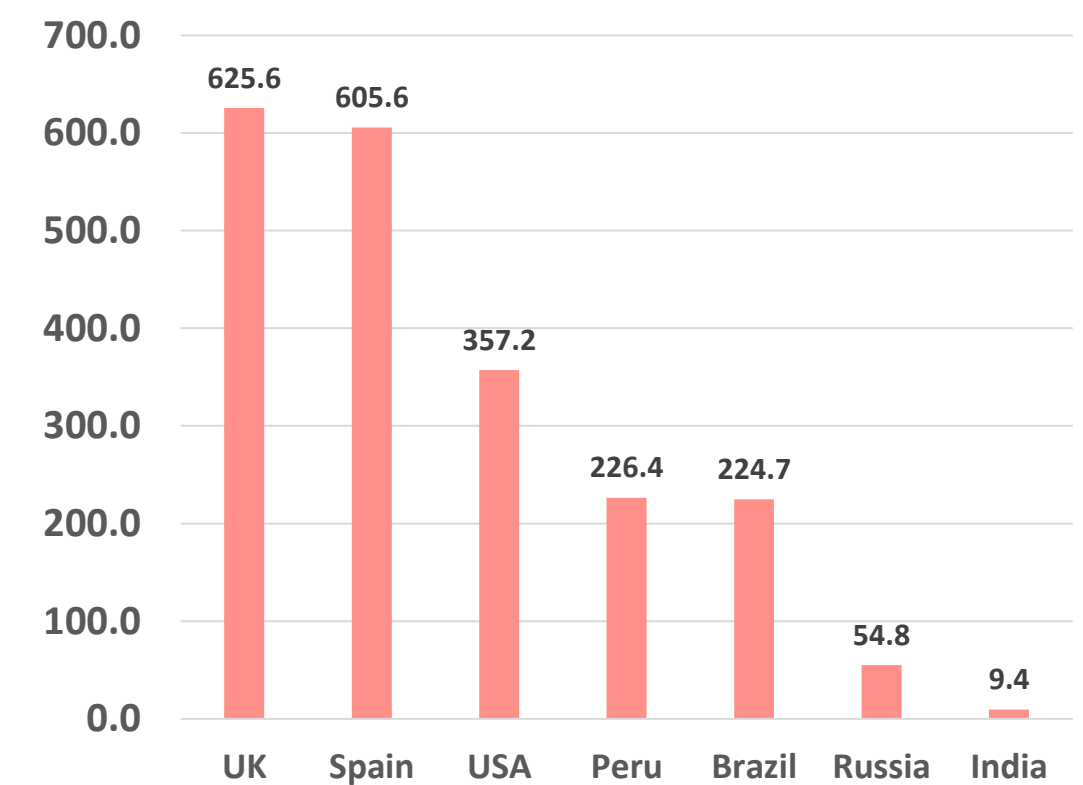
## TOTAL INFECTED CASES



## TOTAL DEATHS



## DEATHS PER MILLION



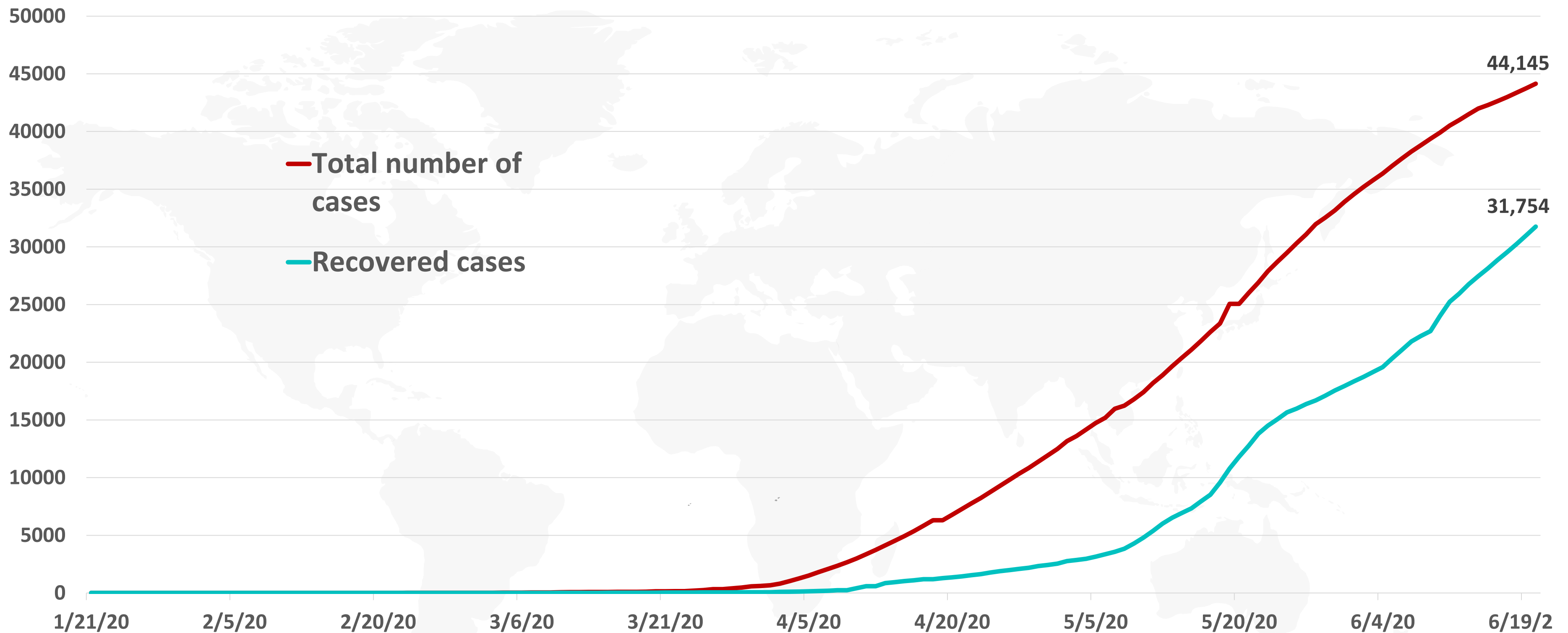
Line graph published by Abu Dhabi Public Health Center 2020.

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





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



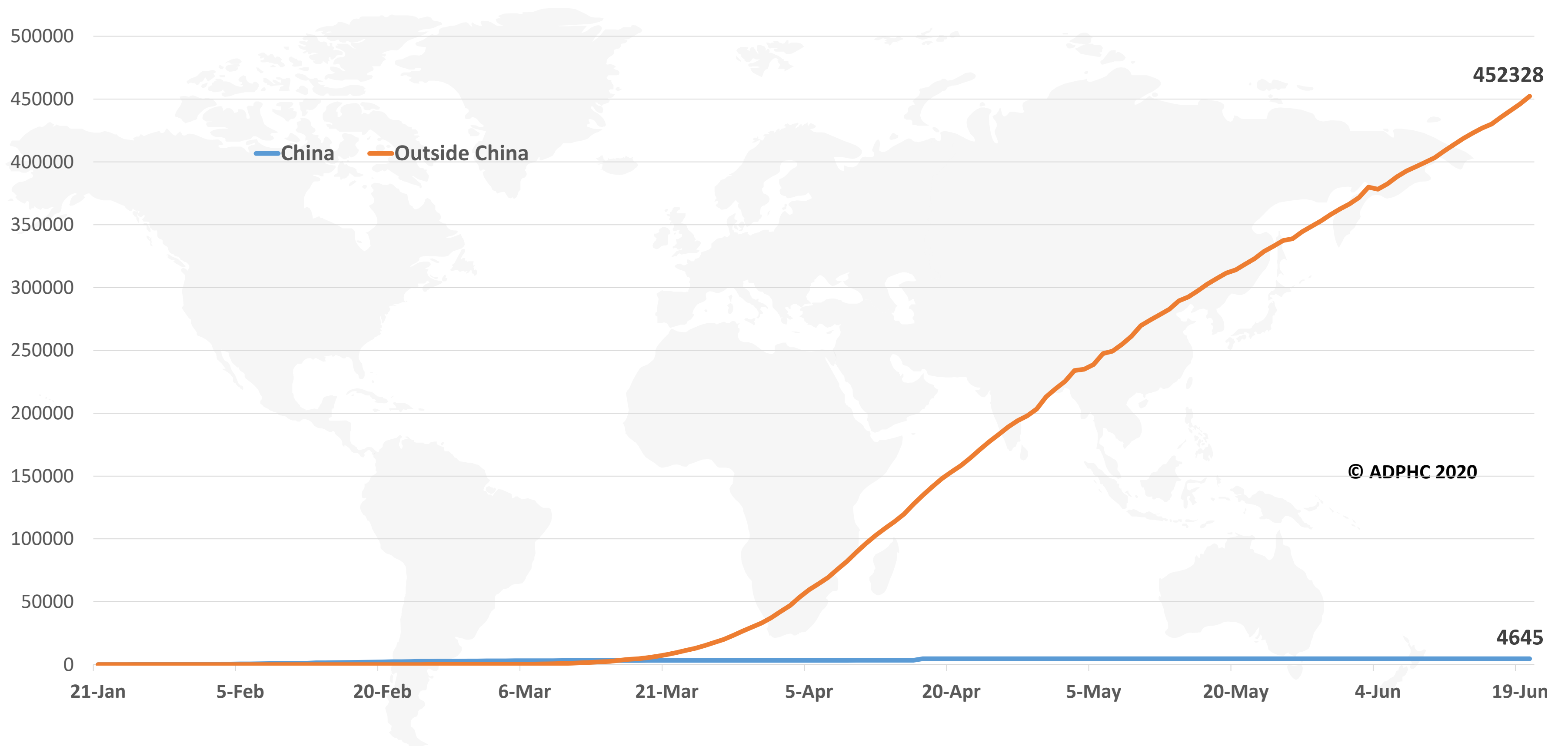
Line graph published by Abu Dhabi Public Health Center 2020.

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 20, 2020).**

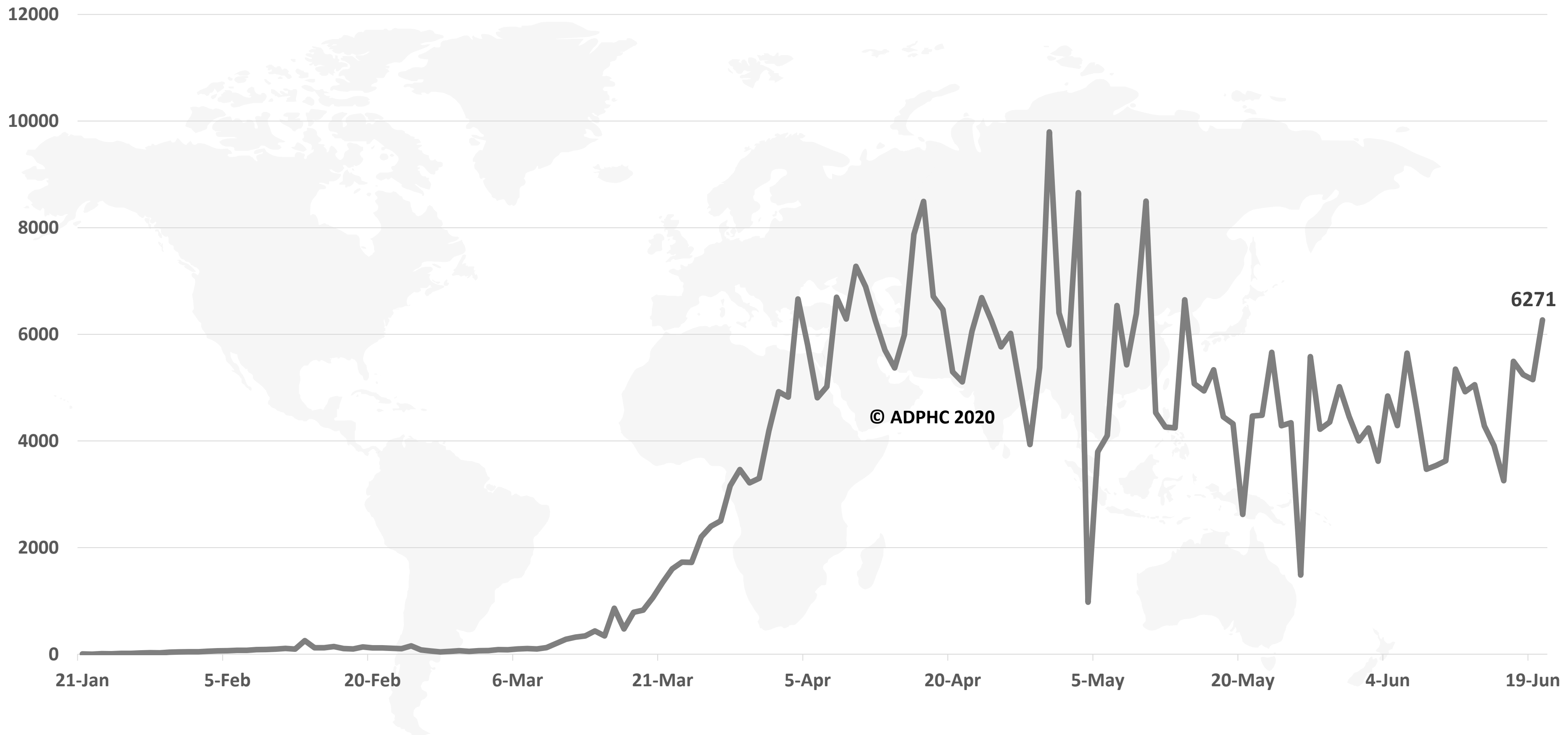


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 6: Global daily new deaths due to COVID-19 (January 22 to Jun 20, 2020).



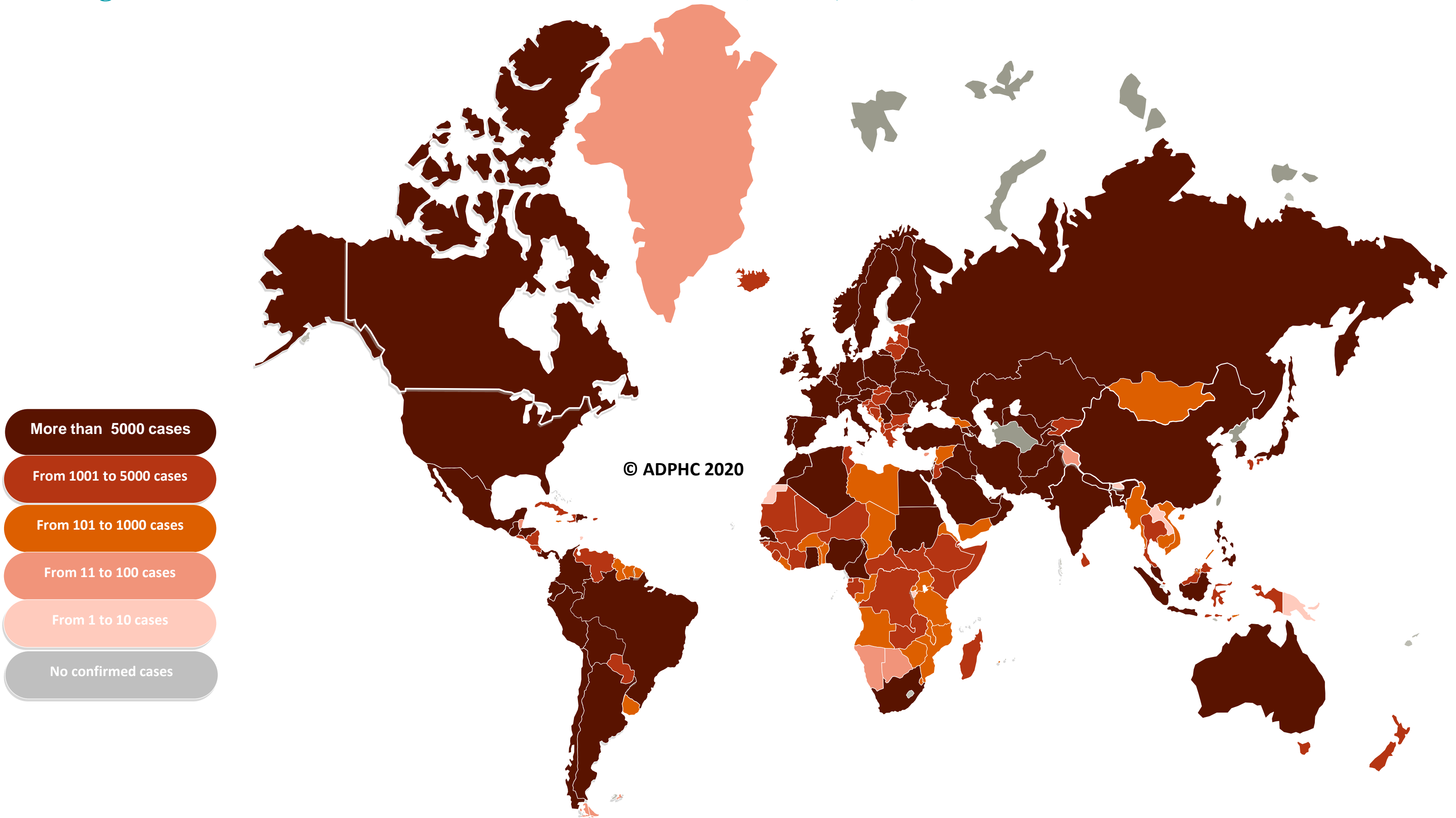
Line graph published by Abu Dhabi Public Health Center 2020.

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

# Epidemiology



Figure 7a : Global distribution of COVID-19 cases (Jun 20, 2020).

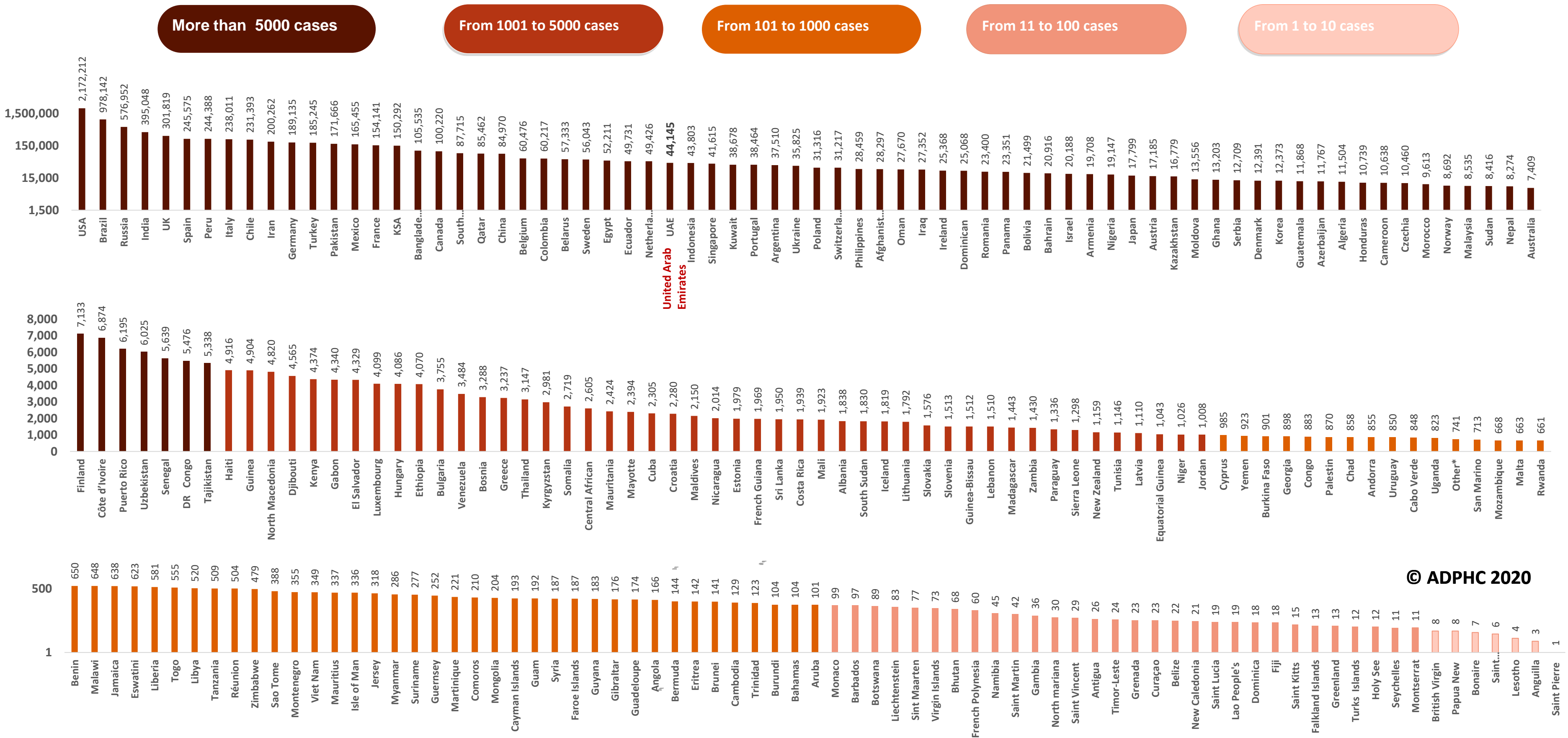


Map chart published by Abu Dhabi Public Health Center 2020.

# Epidemiology



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases Jun 20, 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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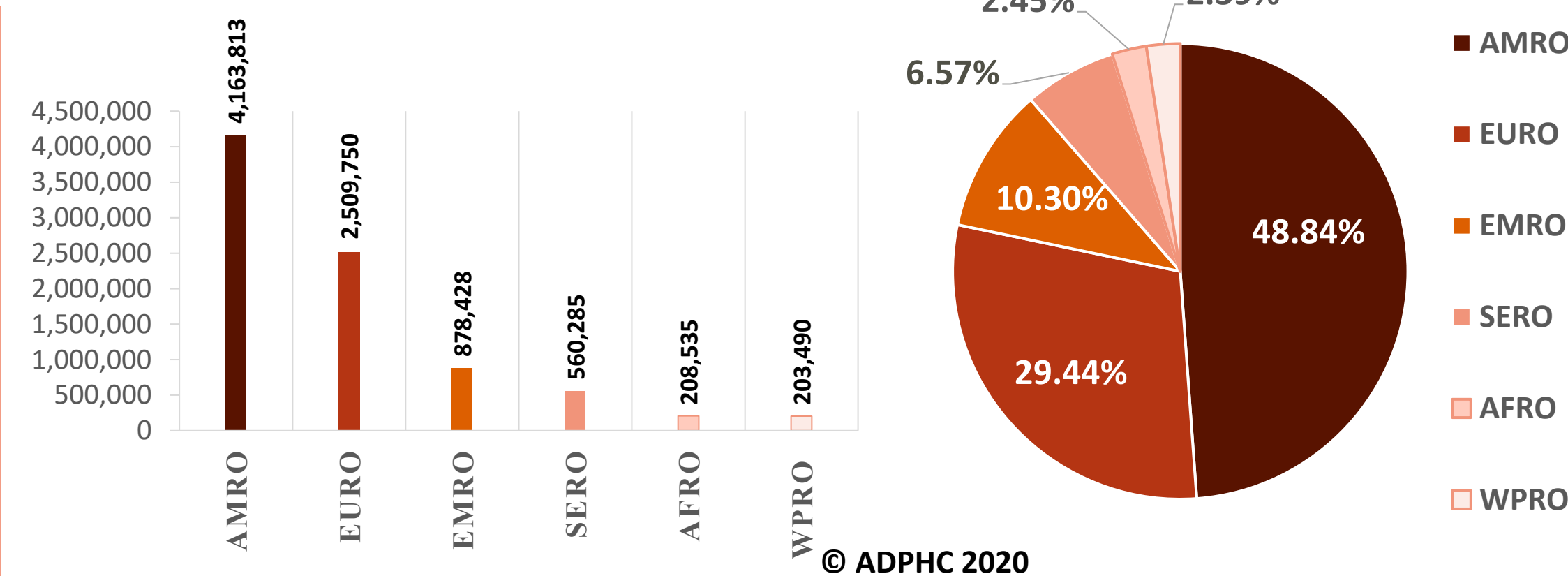
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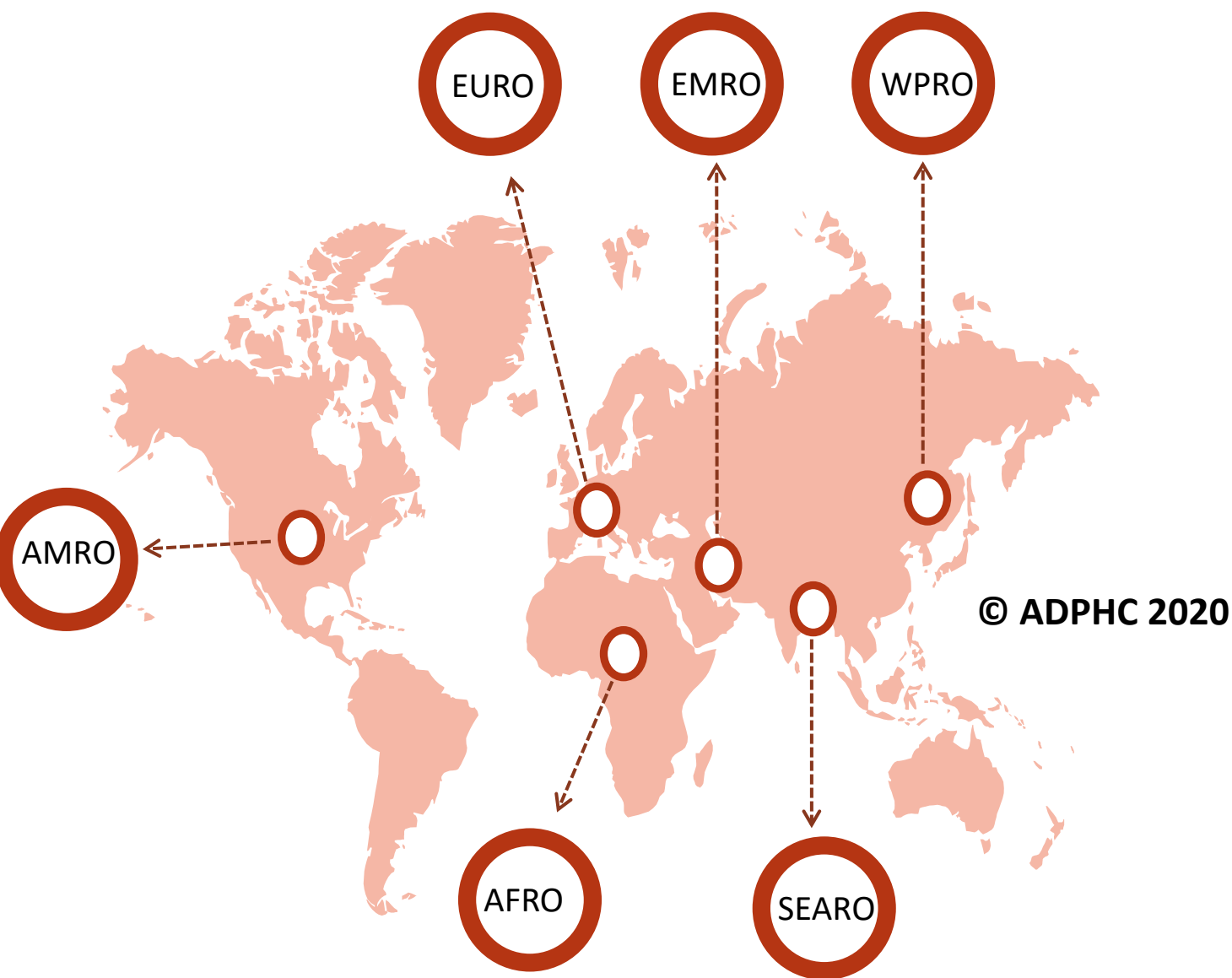
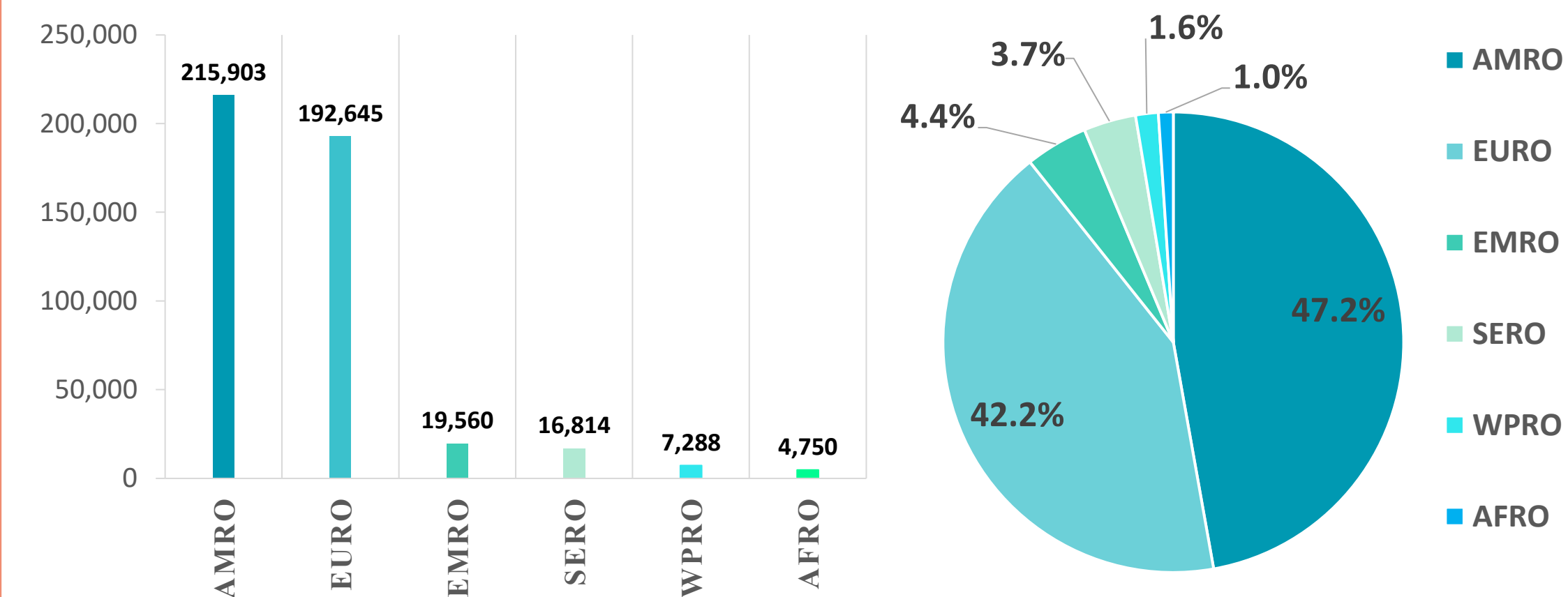


Figure 8: illustrate the Global distribution of COVID19 cases per region (Jun 20, 2020)

## INFECTED



## DEATH



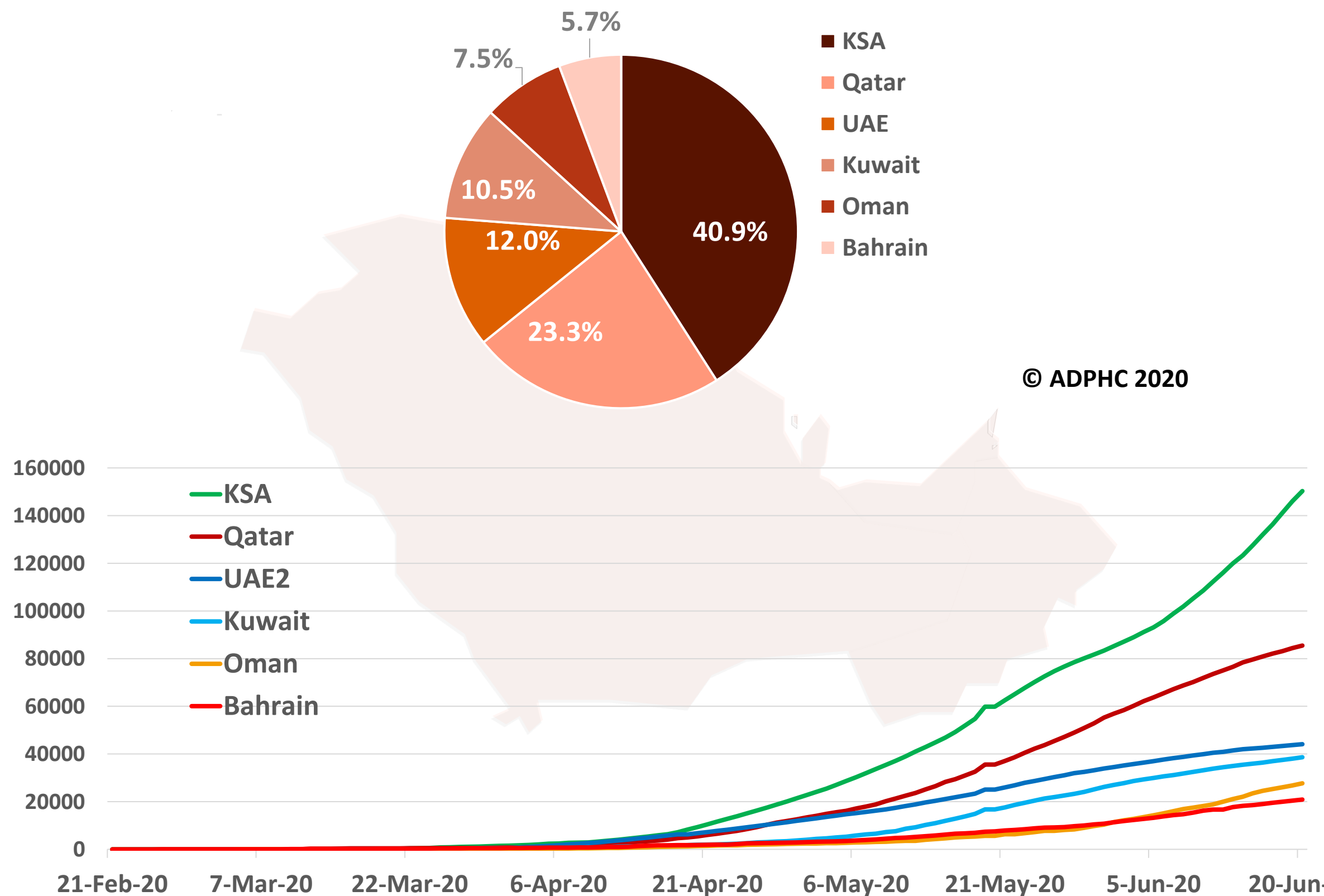
Map chart published by Abu Dhabi Public Health Center 2020.

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

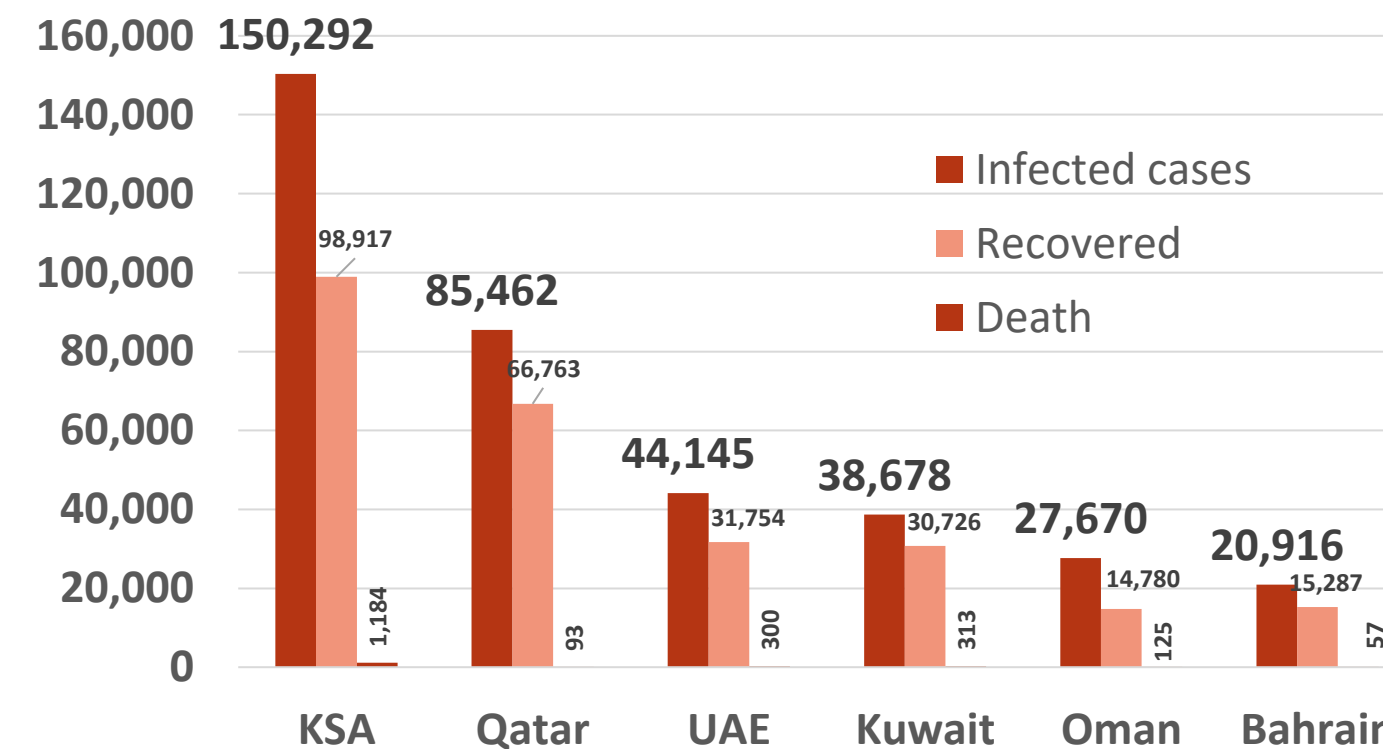


**Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (Jun 20, 2020)**

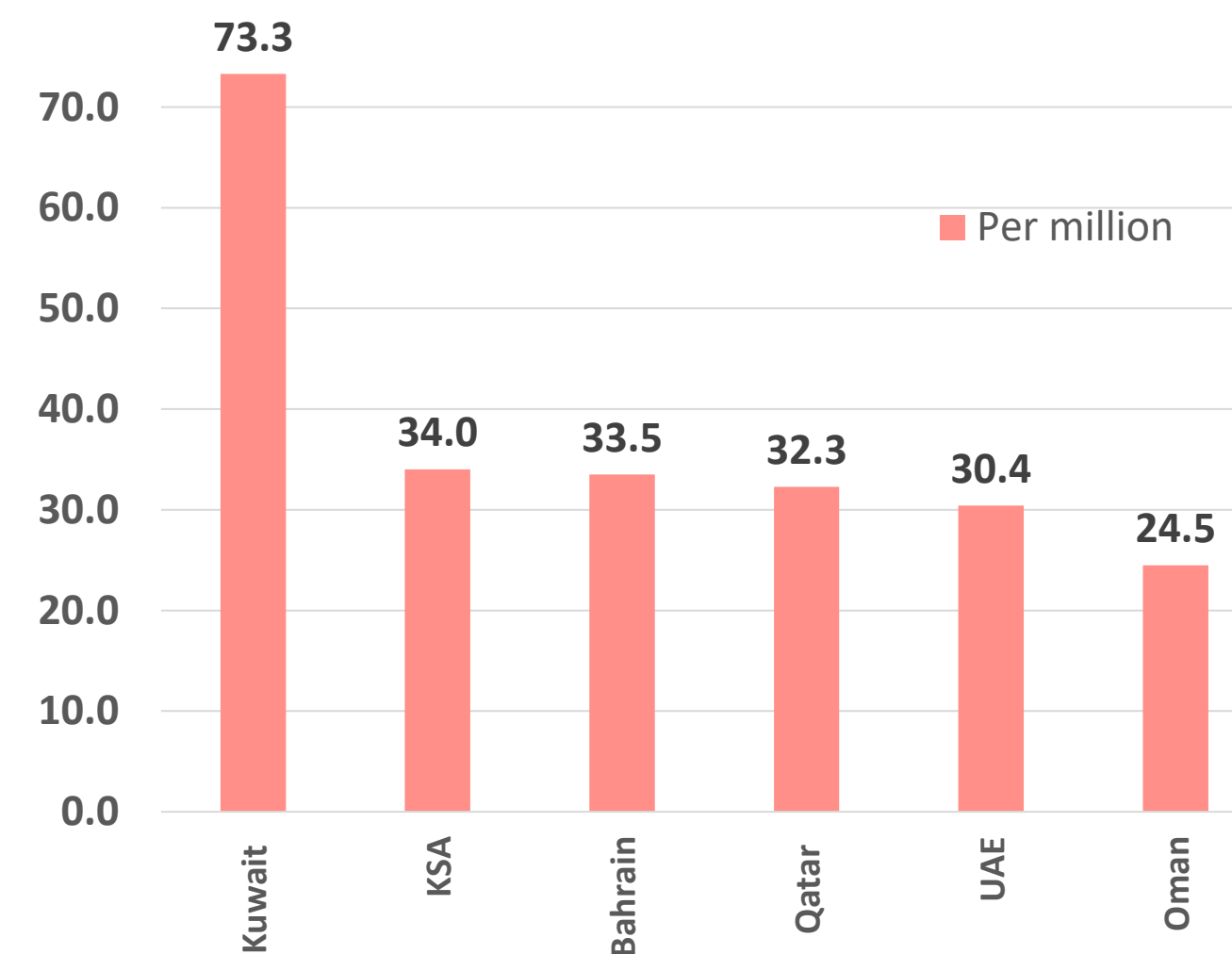
## TOTAL NUMBER OF INFECTED CASES



## 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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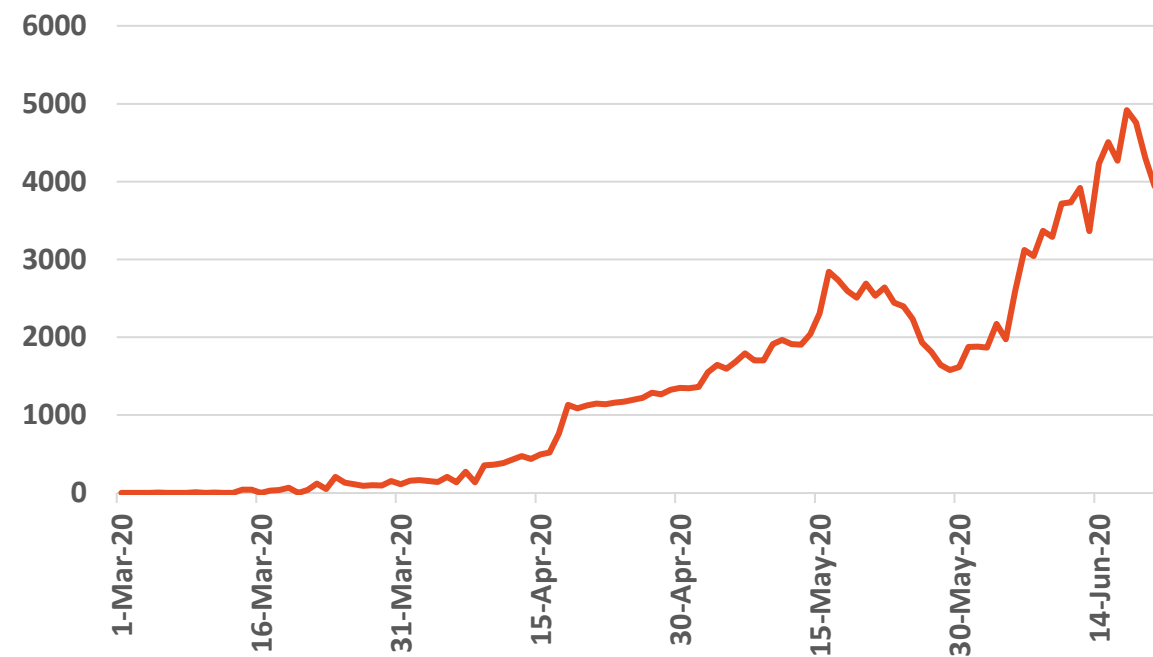
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# Epidemiology



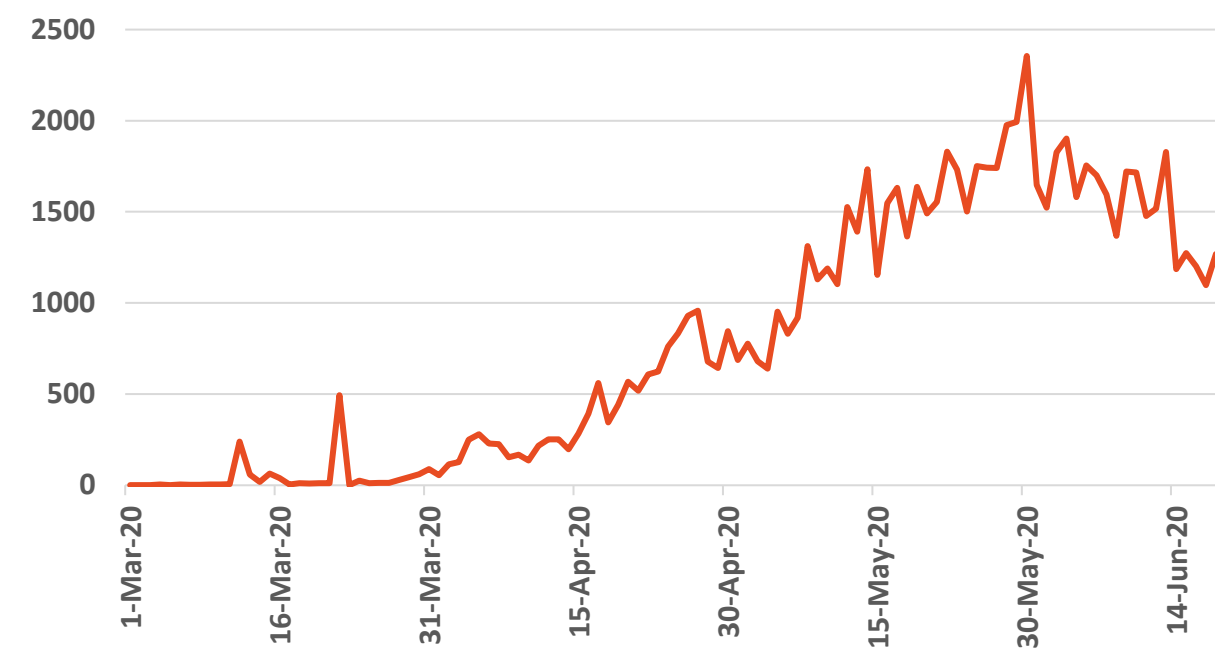
Figure 10: Comparative analysis of the distribution of COVID19 new cases in GCC countries (June 20, 2020)

## KSA



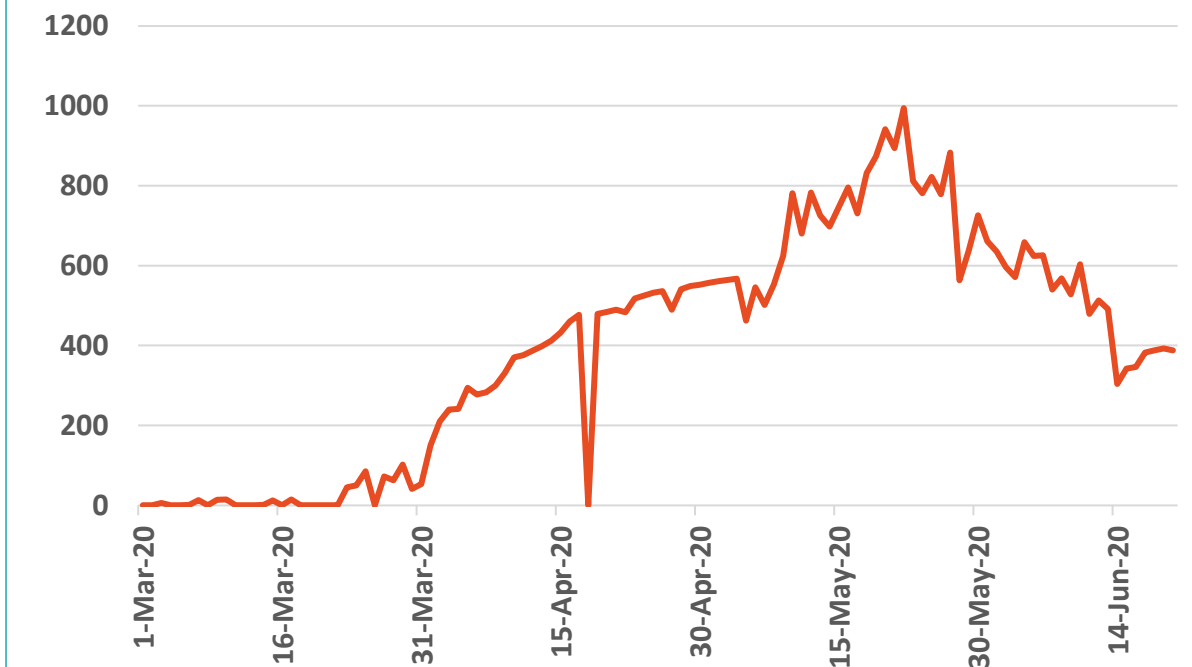
Source : KSA ministry of health

## Qatar



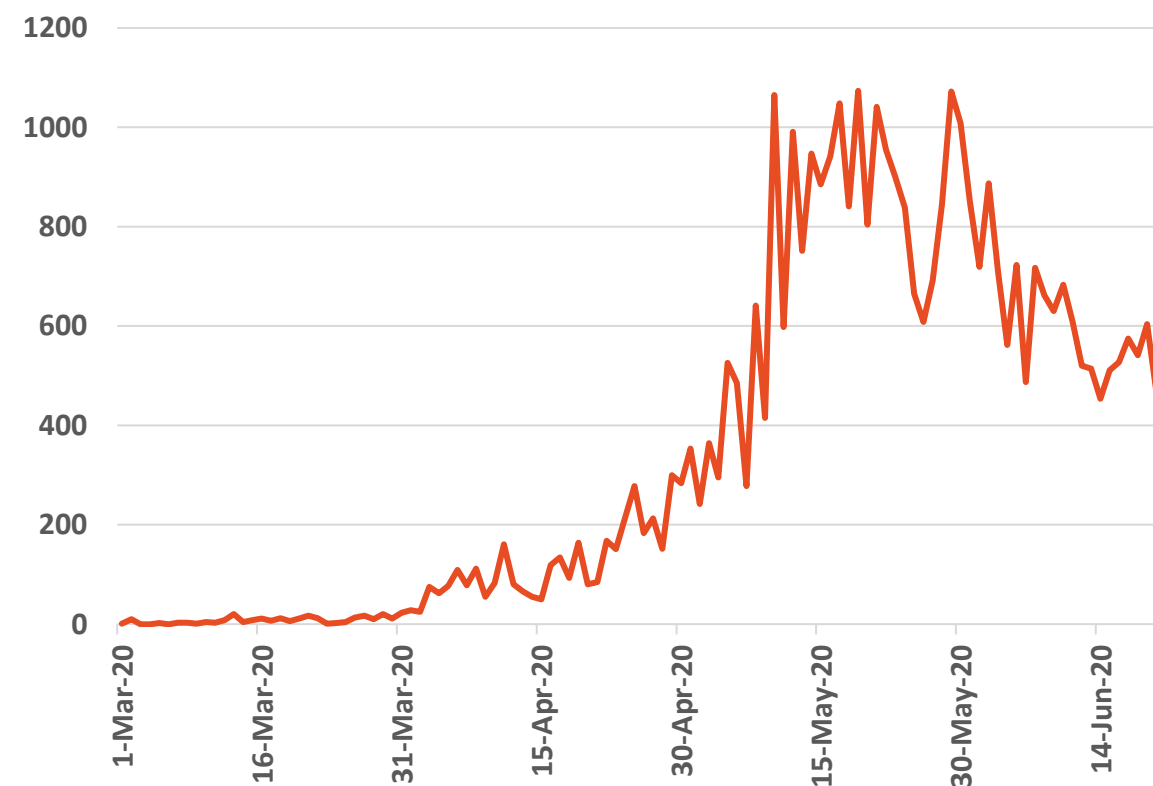
Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

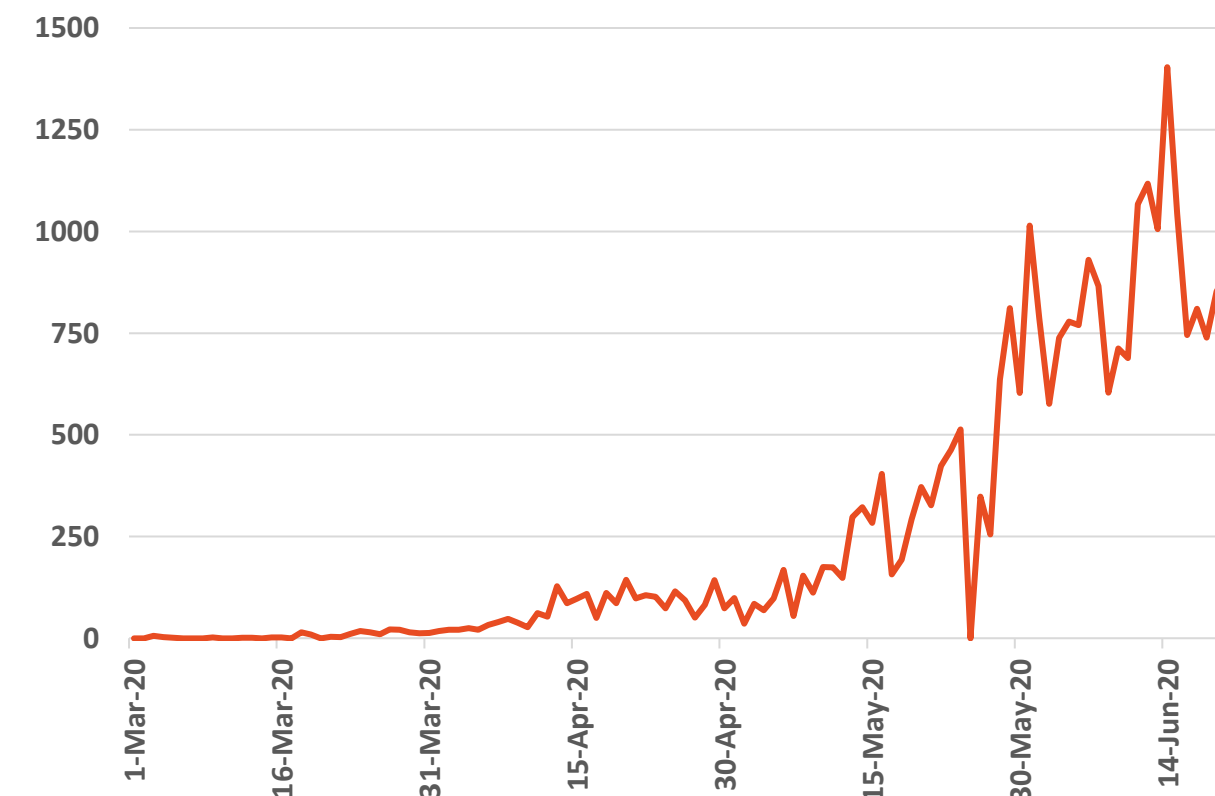
## Kuwait



Source : Kuwait ministry of health

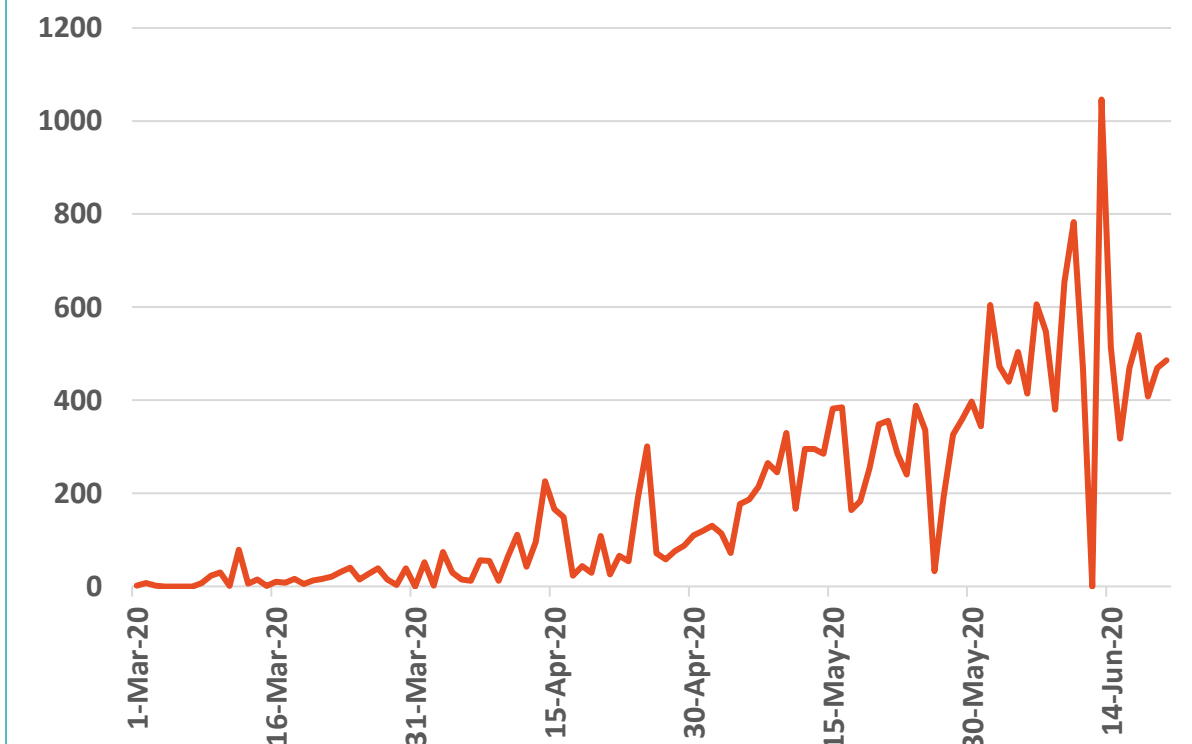
## Oman

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Source : Oman ministry of health

## Bahrain



Source : WHO

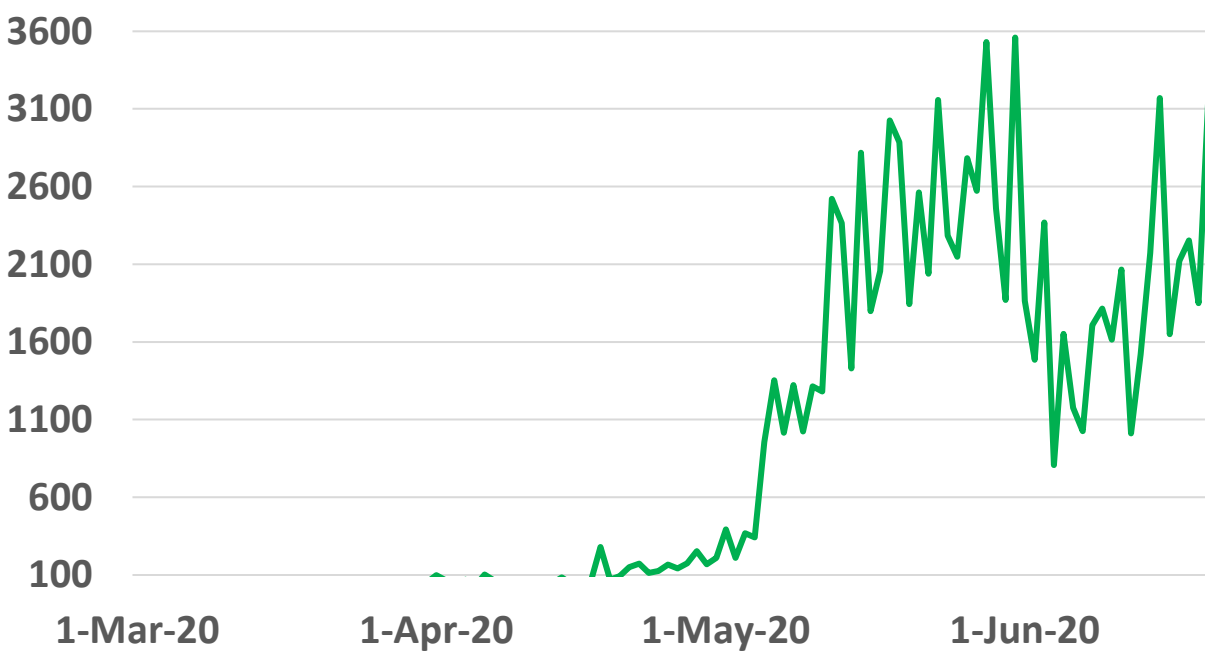


# Epidemiology



**Figure 11 : Comparative analysis of the distribution of COVID19 newly recovered cases in GCC countries (June 20, 2020)**

## KSA



Source : KSA ministry of health

## Qatar



Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

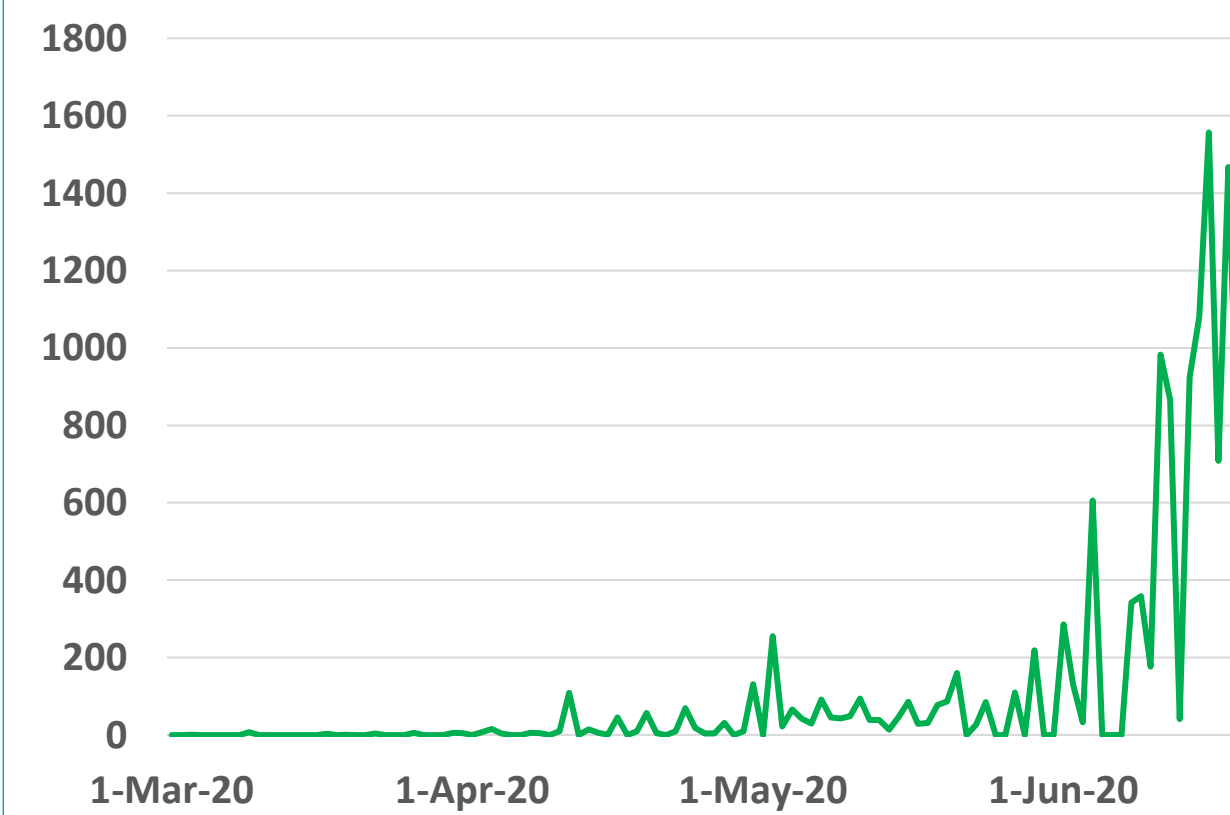
## Kuwait



Source : Kuwait ministry of health

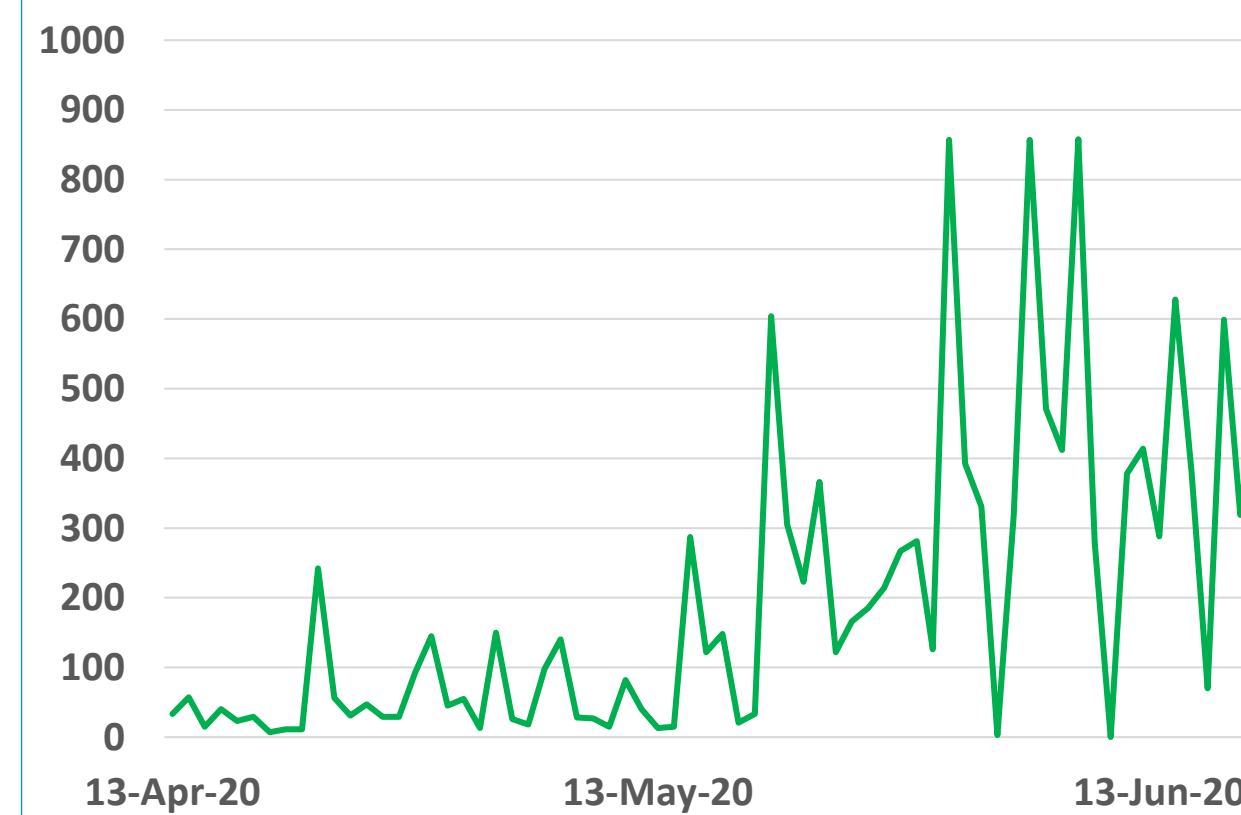
## Oman

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Source : Oman ministry of health

## Bahrain



Source : GCCStat

# Epidemiology



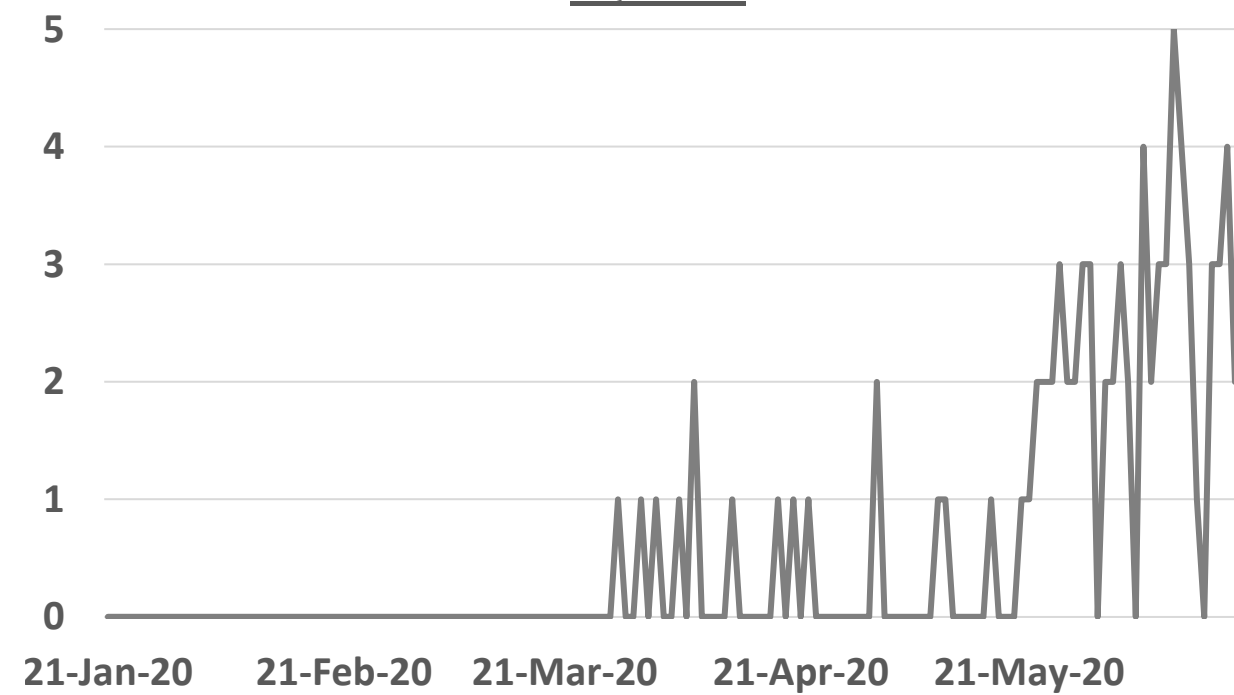
**Figure 12: Comparative analysis of the distribution of COVID19 newly death cases in GCC countries (June 20, 2020)**

## KSA



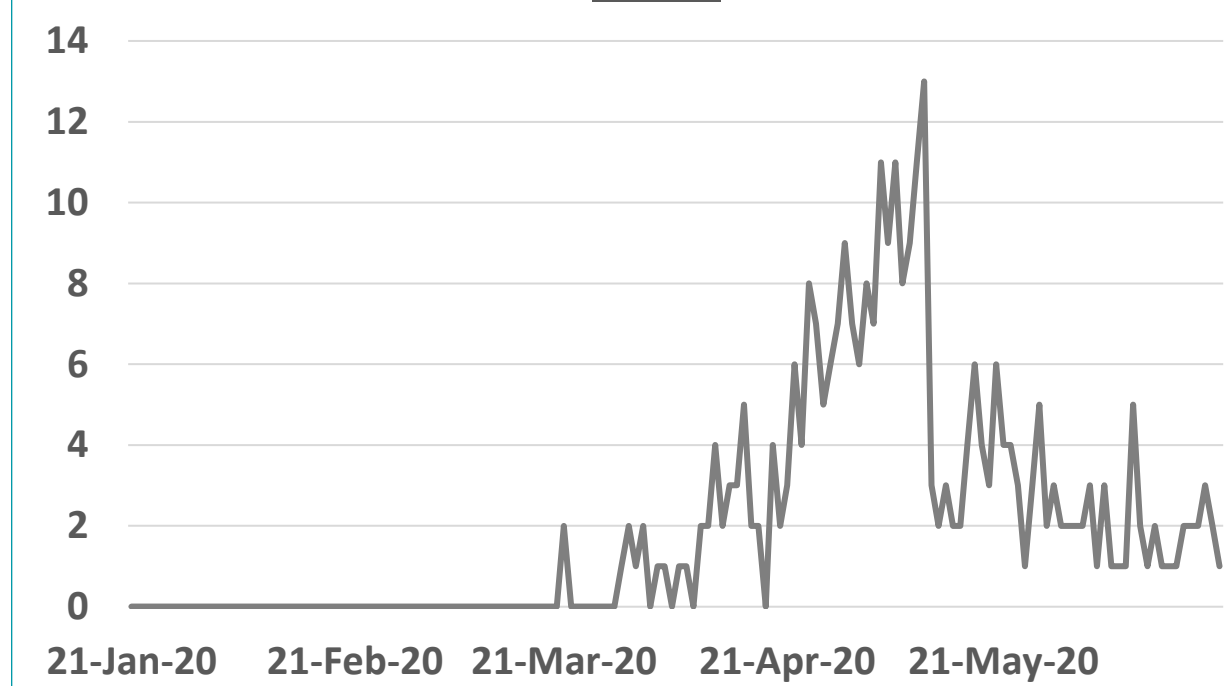
Source : KSA ministry of health

## Qatar



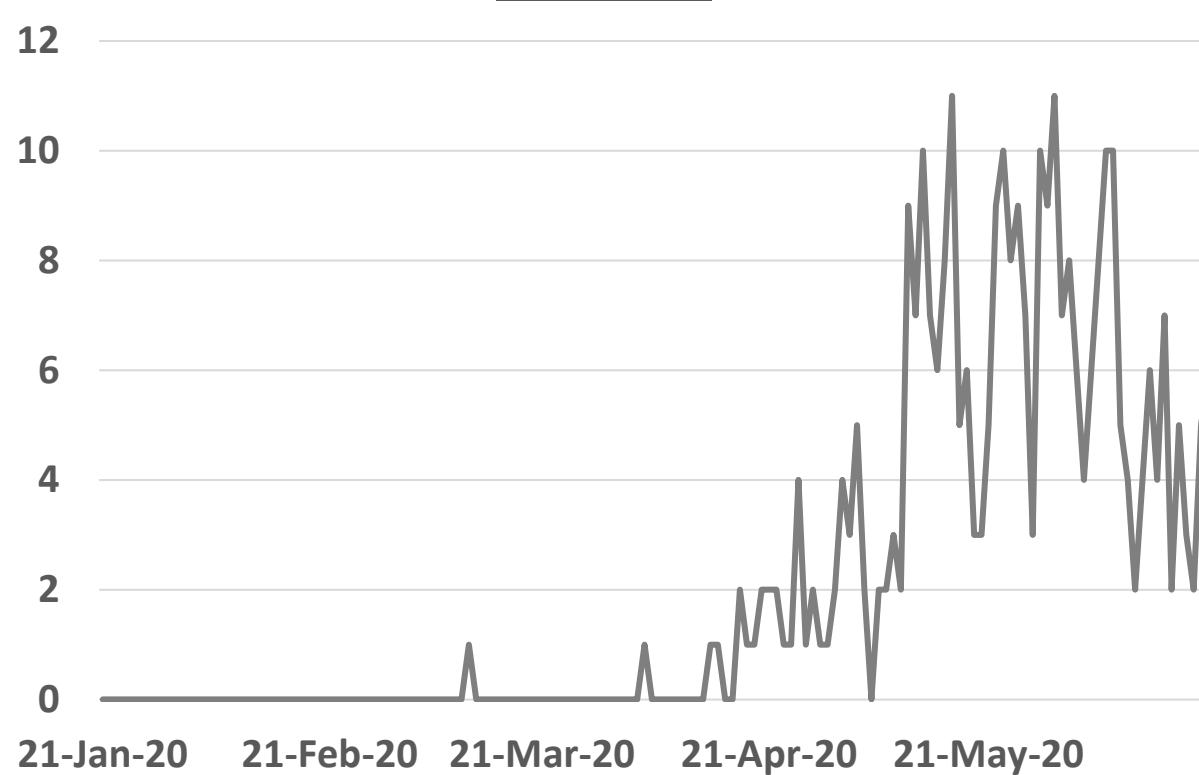
Source : Qatar ministry of health

## UAE



Source : National Emergency Crisis and Disaster Management Authority

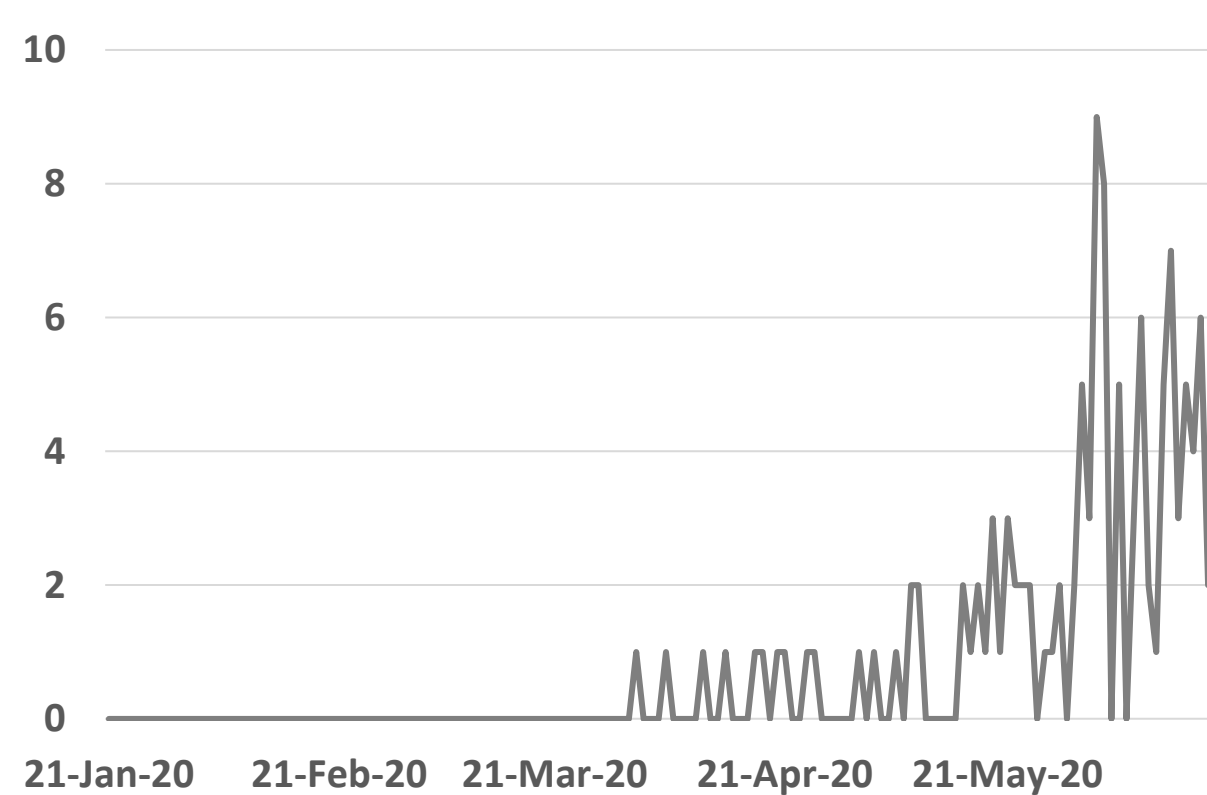
## Kuwait



Source : Kuwait ministry of health

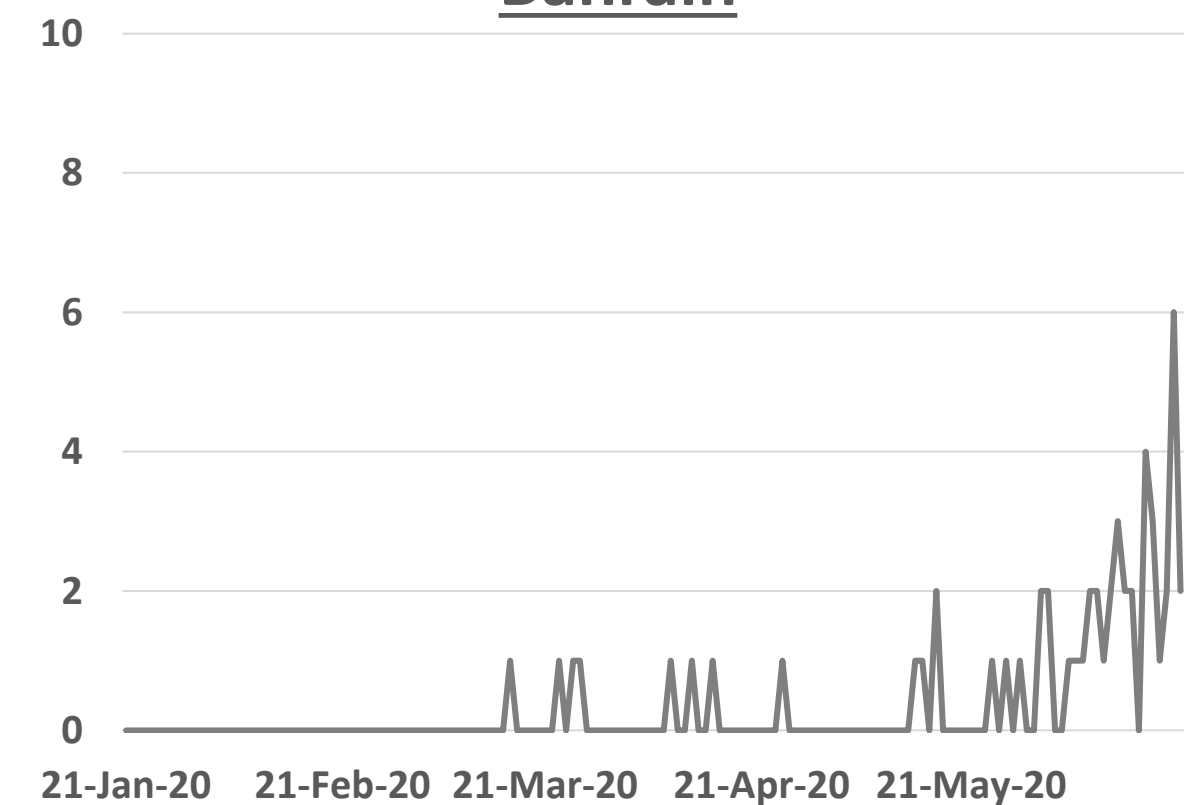
## Oman

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Source :Oman ministry of health

## Bahrain



Source :WHO



# Public Health Response

## Article 1: Offline: A novel solution to live with coronavirus

Published: June 20, 2020 [in the lancet](#)

### Summary:

- The author in this article is discussing a proposal to the UK government to act on COVID19 situation in very different way. The proposal is coming from a UK professor in epidemiology. He suggests that since Age is a very prominent factor in COVID19 severity, and the risk of severity increase above the age of 40. the professor suggests to allow individual under the age of 40 to get back to work, and, if possible, all could become infected. Infection would bring with it immunity (he agreed this was one area of uncertainty, although we have no reason to believe that immunity would not follow infection). Once immune, this cohort of under-40-year-olds would no longer be at risk of infection and they would no longer be a risk to others.

A bonus is that it would :

- I. ease pressure on test, trace, and isolate.
- II. schools could reopen immediately.
- III. the real advantage is economic.

- Those older than 40 years should continue to work from home. Some people will surely become critically ill and a proportion will die. True, so we need a “salvage therapy” urgently so that there is a treatment for those who do become sick.
- On the other hand , opponents think this model will be impossible to implement.
- Added to which, “people don’t mix by age categories”. What would a couple divided across the 40-year cutoff do? Or older parents living with children?
- And younger care workers looking after older more vulnerable age groups?
- The author concluded that The sum of responses endorsed the courage of radical thinking. But the practical challenges seemed hard to ignore.



# Public Health Response

## Article 2: Challenges of “Return to Work” in an Ongoing Pandemic

Published: June 18, 2020, in the [NEJM](#)

### Summary:

- In this pandemic, many employees are unable, given family circumstances, to return to work if education/day care centers for children and elderly family members remain closed. Therefore, **government must coordinate reopening of industries/institutions with restarting of schools, day care, and day treatment.** Conditions of public transportation to and from work as well as social and leisure activities outside working hours, in which failure to maintain personal protective measures can put them at risk for infection.
- Environmental and engineering controls can inflate infection control and safety. Changing the architecture of workplace **including placing partitions or barriers between employees or between employees and customers, adhering to standards for ventilation, and air conditioning systems** can reduce the risk of transmission. However, these mechanisms are more expensive than low-tech interventions (e.g. **hand washing, using mask**) that depend on individual adherence but reduce the need for monitoring and corrective action.
- **Reduced density in workplace** decreases transmission risk. Various methods have been explored of segmenting the workforces such as timing of work presence. A strategy of staggering work shifts and allowing both early and late shifts reduce workplace density and allows employees to use public transport at off peak, less crowded hours thus reducing commuting risk.
- In order to limit risk among returning employees, **two strategies such as testing employees for infection with SARS-CoV-2 and install electronic tracking of infection through apps** downloaded onto employee mobile phone have received substantial public and government attention. However, practical issues regarding the testing limit the applicability of this strategy. For instance, molecular testing provides a valid result only for the time at which the specimen for testing was obtained. It is not clear with what frequency such testing should take place.



# Public Health Response

## Article 3 : Men's health: COVID-19 pandemic highlights need for overdue policy action

Published: June 20, 2020 [in the lancet](#)

### Summary:

- Men and women are differentially affected by COVID-19. Men's lower immune responses, higher prevalence of preexisting comorbidities with masculinity behaviors including smoking and drinking, engaging less in preventive measures such as mask wearing or handwashing, and delayed health care seeking could contribute to vulnerability to COVID-19. These conditions have long been responsible for men's excess burden of premature and avoidable mortality that is also affected by the historical neglect of men's health at the policy level.
- It has been previously reported why men's health is overlooked. Inadequate awareness and knowledge among policy makers of men's health issues and absence of political influence will push men's health issues onto policy agendas. Other factors include lack of gender disaggregated health data and the scarcity of research into the economic costs of men's poor health.
- Four countries (Australia, Brazil, Iran, and Ireland) have national men's health policies that seek to promote health and wellbeing specifically focus on health equity between different population groups of men. These national policies are consolidated with existing policies, adopt a social determinants approach, work from a strengths based perspective, and support them to take increased responsibility for their own health.
- Any developments in men's health policy should be located within a framework that holds a commitment to gender equality. An equity based approach is required to ensure that men at risk groups with poor health outcomes (e.g. homeless, prisoner) benefit most. Policies that are aligned with existing public health priorities including sustainable development goals (SDGs), or that reduce the burden on health systems and costs, are more likely to achieve traction with policy makers.



## Article 4 : Genomewide Association Study of Severe COVID-19 with Respiratory Failure

**Published:** Jun 17, 2020 [in NEJM](#)

### Summary:

To address genetic factor associated with covid19 severity , the authors conducted a genome-wide study (A genome-wide association study (GWAS) is an approach used in genetics research to associate specific genetic variations with particular diseases. The method involves scanning the genomes from many different people and looking for genetic markers that can be used to predict the presence of a disease. Once such genetic markers are identified, they can be used to understand how genes contribute to the disease and develop better prevention and treatment strategies) to identify potential infected patient genetic factors involved in the development of respiratory failure in COVID-19 using samples from two European countries hit hard by this pandemic, exhibiting high mortality rates. Two cohorts of COVID-19 patients were analyzed independently, one **from Italy** and another **from Spain**, representing two case control groups, **including 835 patients/1255 controls from Italy and 775 patients/950 controls from Spain**. A total of 8,582,968 gene sequence were evaluated, both separately as well as combined.

Theses gene sequences was **correlated with patient blood marker (ABO and also immune markers)**

The study was done on patients **receiving oxygen only versus those on mechanical ventilation**.

### Results & Conclusions:

Two gene postitions were observed to be significantly associated with COVID-19–induced respiratory failure.

**Blood group A was associated with a higher risk for developing severe COVID-19, while blood group O was protective.**

**Implications:** A patient’s blood group may serve as a prediver marker for COVID-19 disease severity.