مركز أبوظبي
للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

4 AUGUST 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

SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 184)

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

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.

Click on icon to view content

Research
Update

WHO
Report

Statistics

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.
For further inquiries you may communicate with us as PHP@adphc.gov.ae

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).

Click on icon to view content

Public Health Response

COVID-19 Mortality is Negatively Associated with Test Number and Government Effectiveness

Treatment

Discovery of SARS-CoV-2 Antiviral Drugs Through Large-Scale Compound Repurposing

WHO SITUATION REPORT 2 AUG 2020

- Among all the countries, territories, and areas reporting confirmed cases, the United States of America, Brazil, and India remain the top three most affected countries in the past seven days.

- WHO has published a COVID-19 Preparedness and Response Progress Report. The report highlights the progress made from 1 February to 30 June 2020 under the three objectives outlined in the Strategic Response and Preparedness Plan: scaling up international coordination and support; scaling upcountry preparedness and response by the pillar and accelerating research and innovation.

- "Immune systems are compromised by malnutrition, especially in the case of children, leaving them vulnerable to infectious diseases, including COVID-19," said Salah Alshaoof, a nutrition and health professional at the WHO-supported therapeutic feeding centre in Yemen. WHO has provided support to 90 therapeutic feeding centres in Yemen with support from Italy and other donors.

- Robots are being used in Rwanda in the fight against COVID-19. The 5 human-size robots which were acquired through a partnership between the UNDP Rwanda Accelerator Lab and the Ministry of ICT and Innovation were launched in May 2020 at the Kanyinya COVID-19 Treatment Centre. As the Kigali International Airport in Rwanda will be reopened for commercial international flights from 1 August, one of the robots - Urumuri - will be used to facilitate the faster screenings of passengers. body temperature.

EPIDEMIOLOGY

FROM 21 JAN TO 3 AUG 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Figure 1: Total Number of Infected, Recovered, and Death Cases

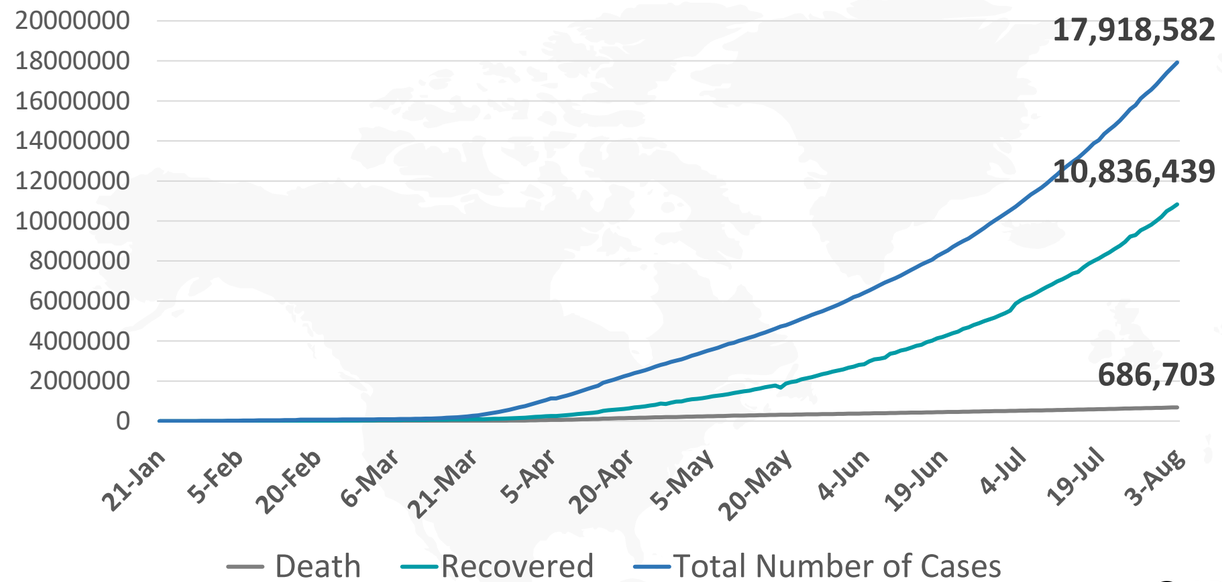


Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)

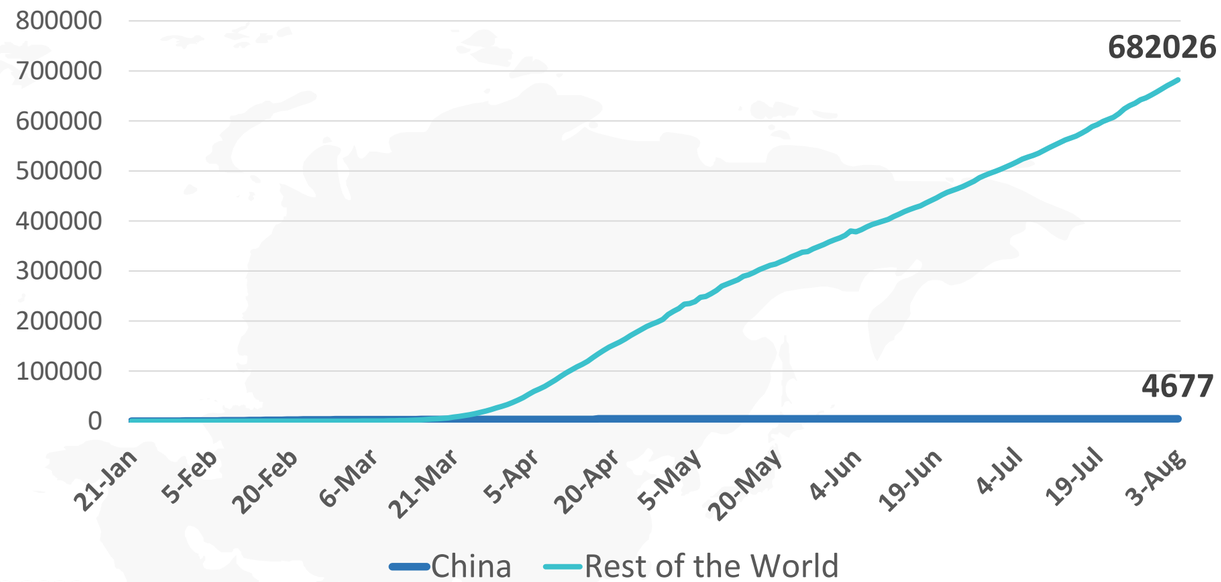


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

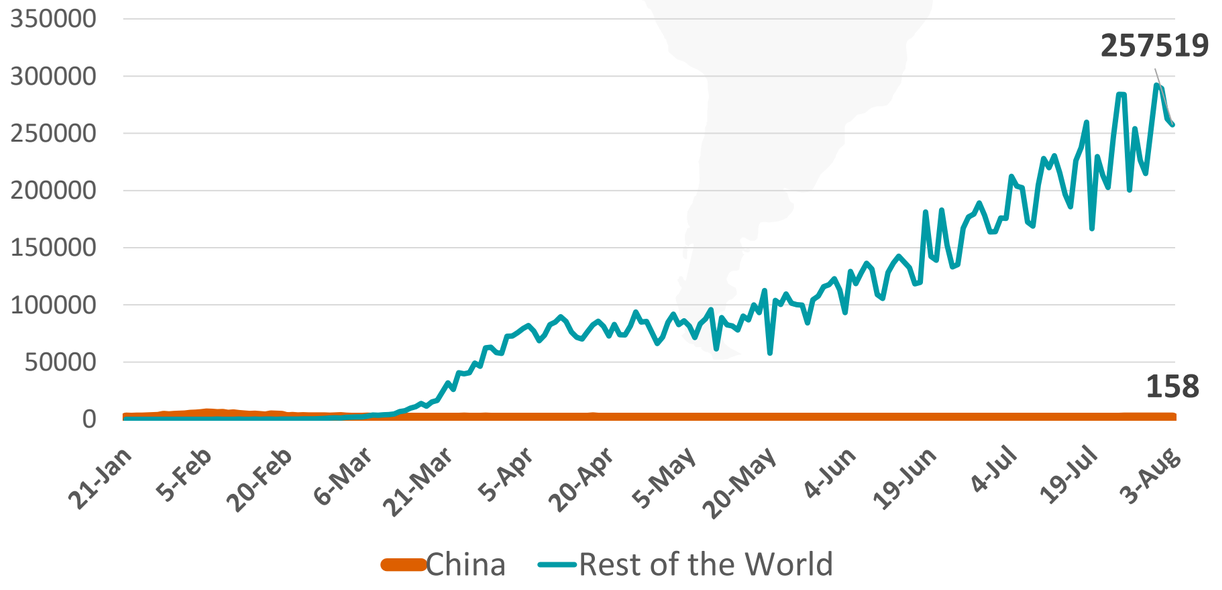
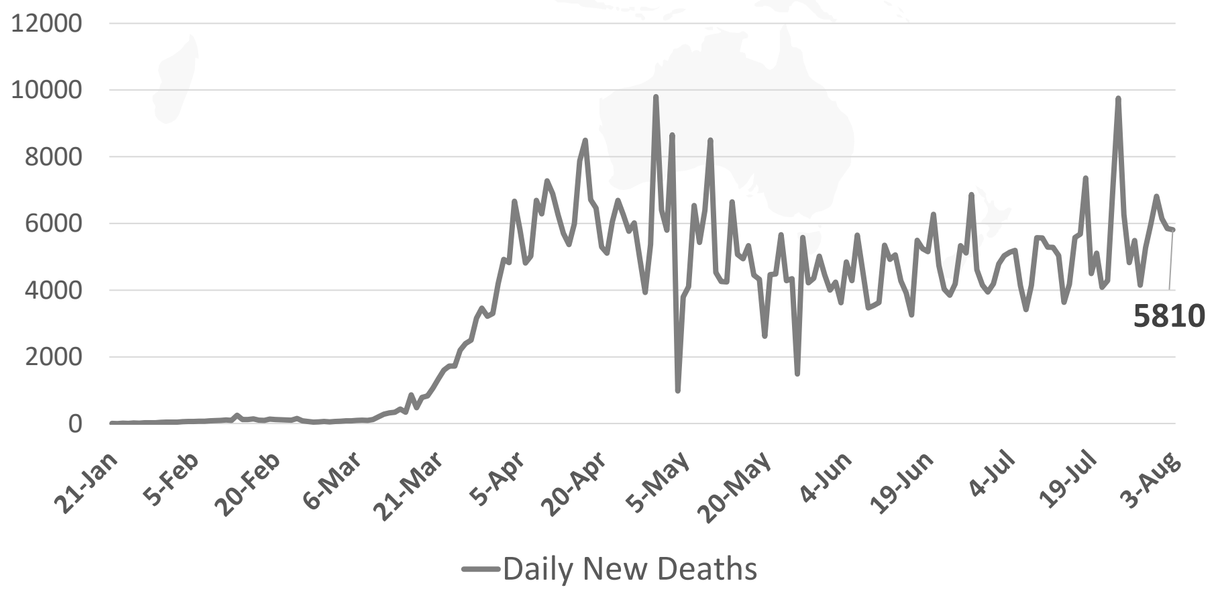


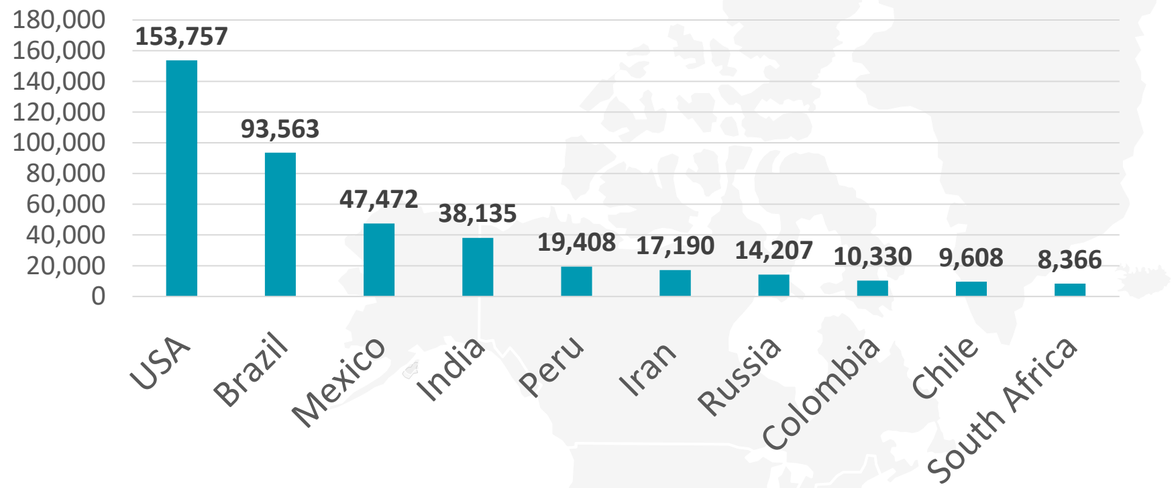
Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)



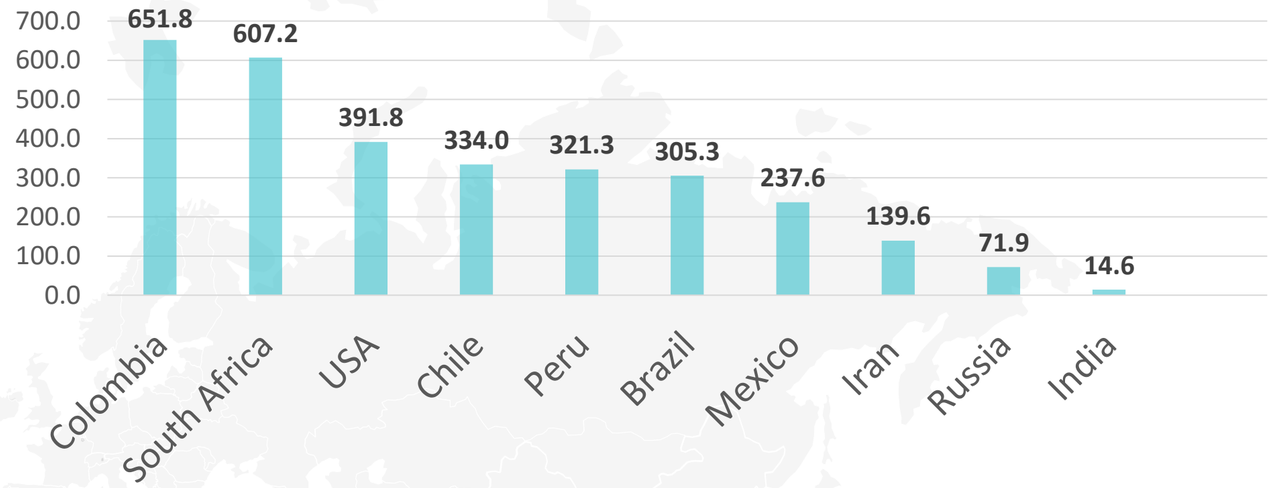
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

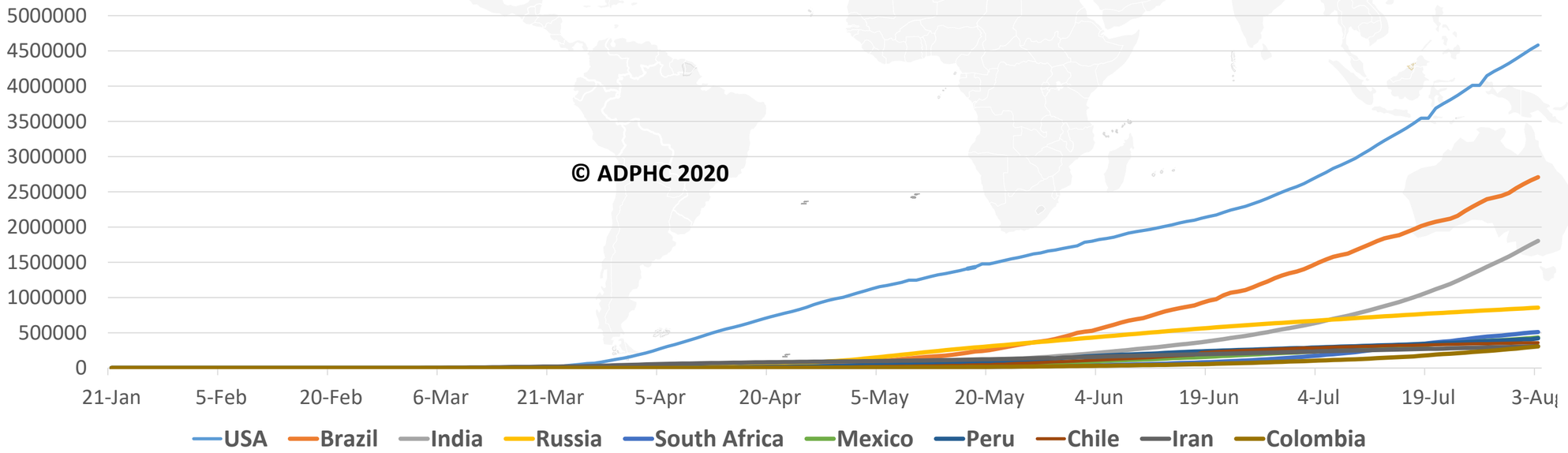
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	4,582,276
Brazil	2,707,877
India	1,803,695
Russia	856,264
South Africa	511,485
Mexico	434,193
Peru	422,183
Chile	359,731
Iran	309,437
Colombia	306,181

Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

FROM 21 JAN TO 3 AUG 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Figure 6: COVID-19 Status in the UAE (Federal Competitiveness and Statistics Authority Dashboard)

Daily Tests

44,942.3 Average Tests

454.4 per 100k population

0.6% Positive Rate

Daily Cases

283.7 Average Cases

2.9 per 100k population

Daily Recovered

336.1 Average Recovered

3.4 per 100k population

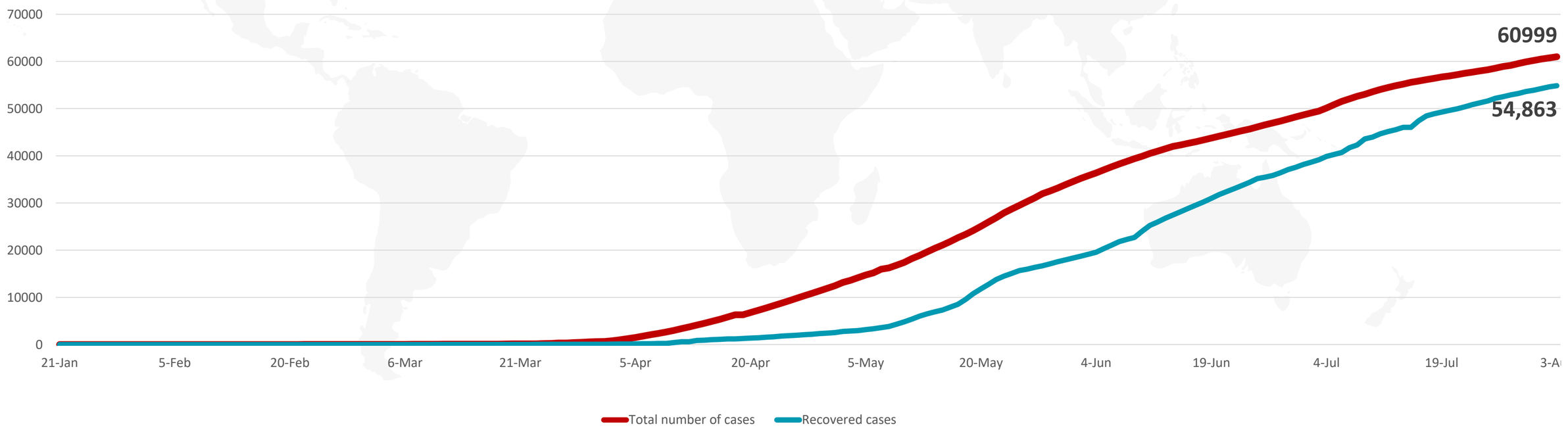
Daily Deaths

0.9 Average Deaths

0.0 per 100k population

0.3% Case Fatality Rate

TOTAL NUMBER OF INFECTED AND RECOVERED CASES DUE TO COVID-19 REPORTED BY THE UAE



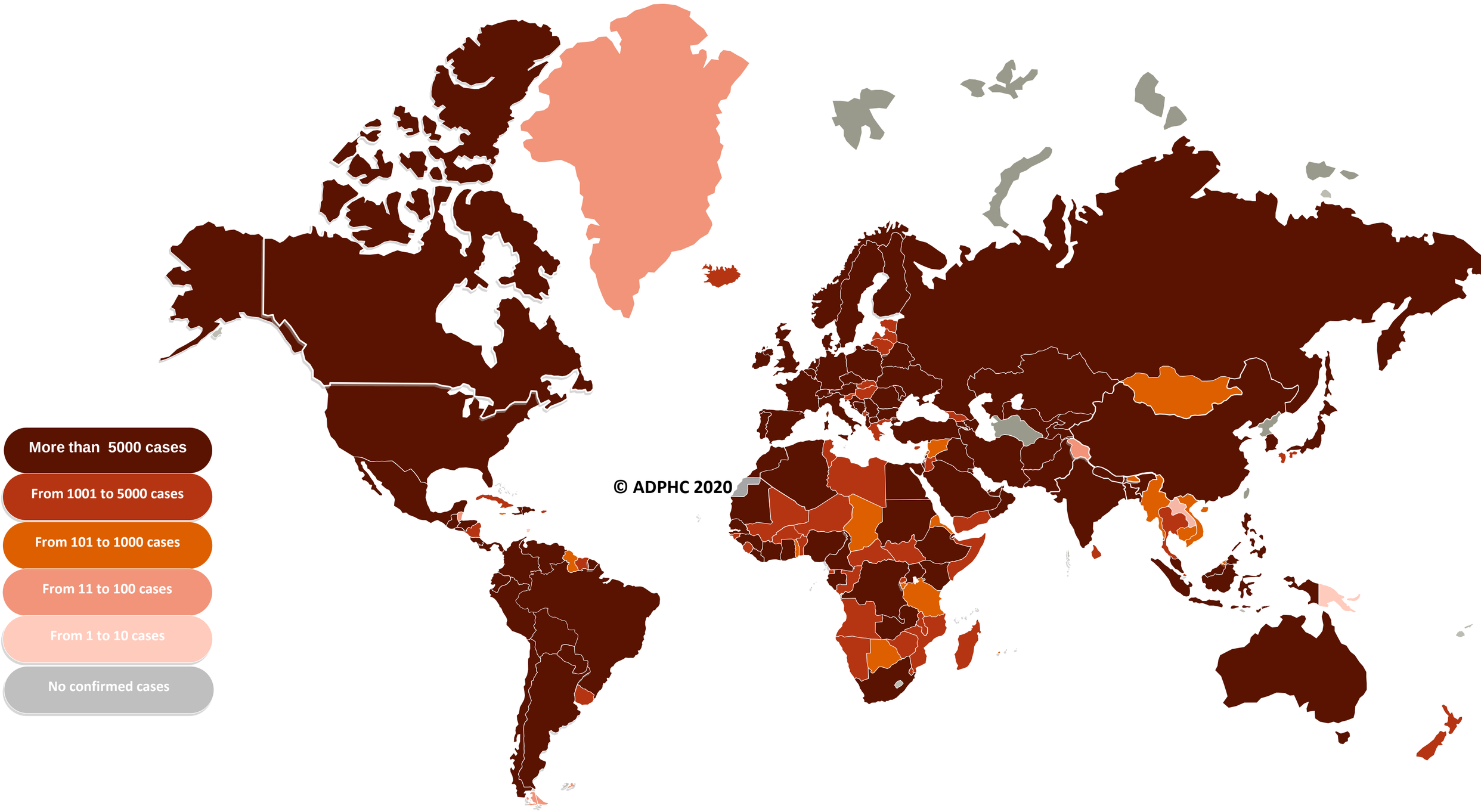
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: FCSA, WHO,

EPIDEMIOLOGY

Date: 3 AUG 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Figure 7A : Global Distribution of COVID-19 Cases



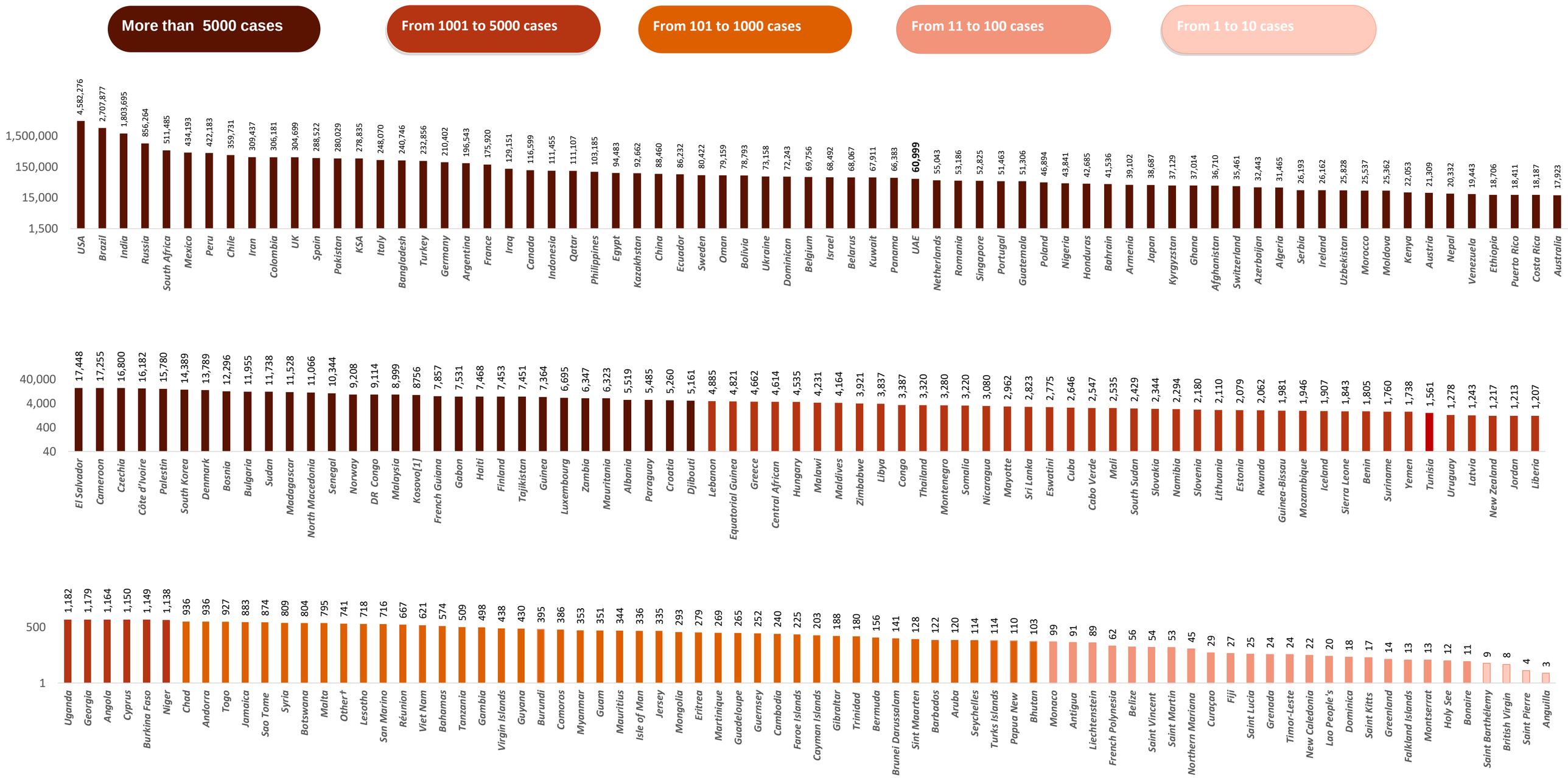
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

Date: 3 AUG 2020

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

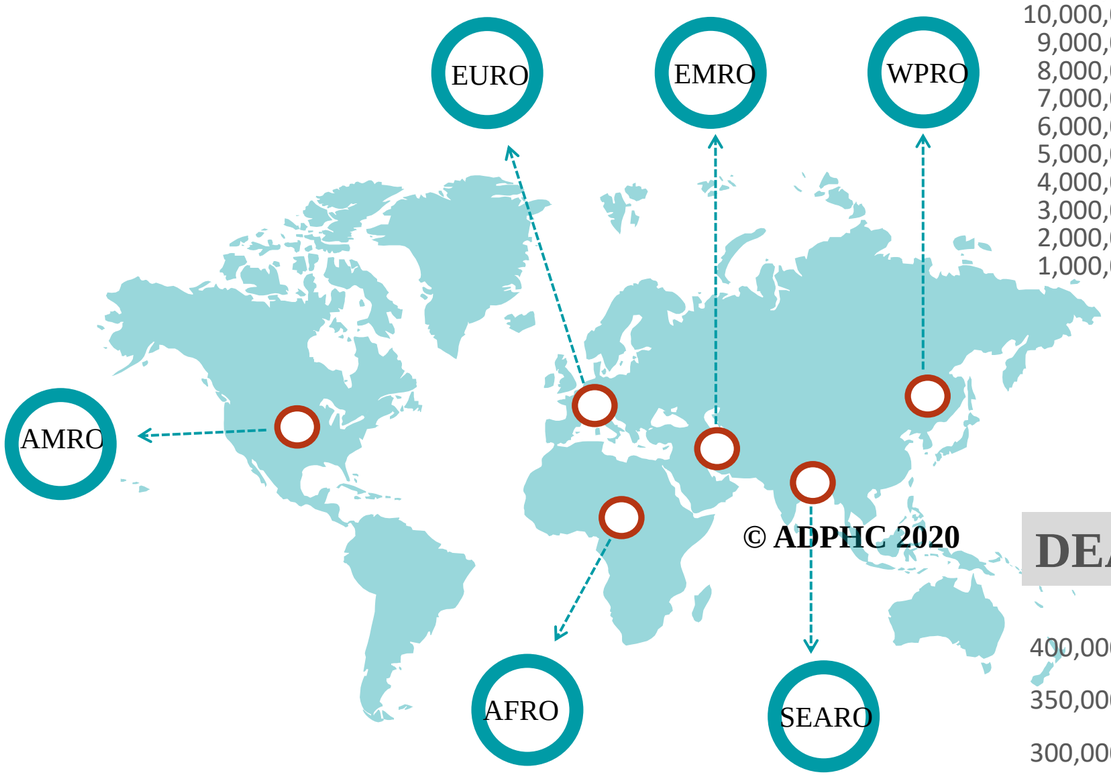
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



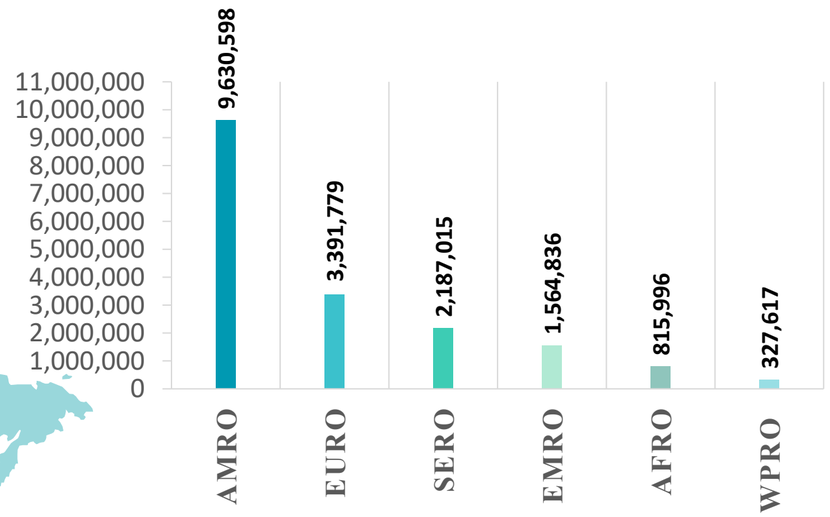
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

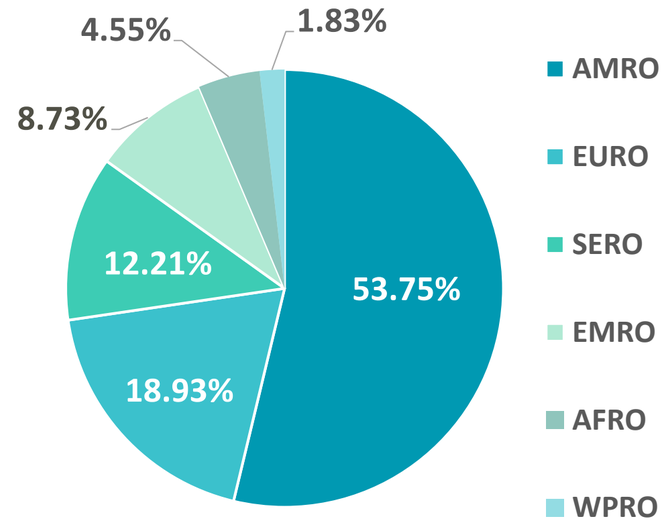
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

Figure 8: Global Distribution of COVID-19 Cases per Region

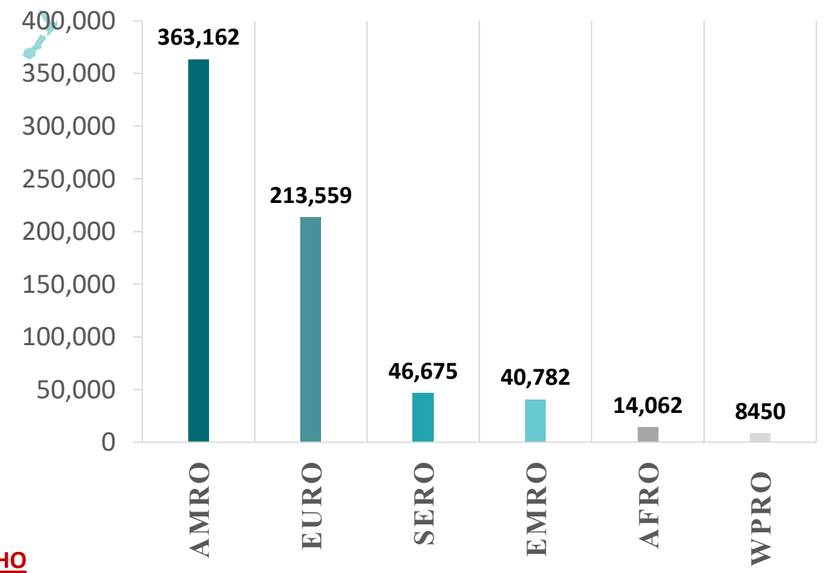


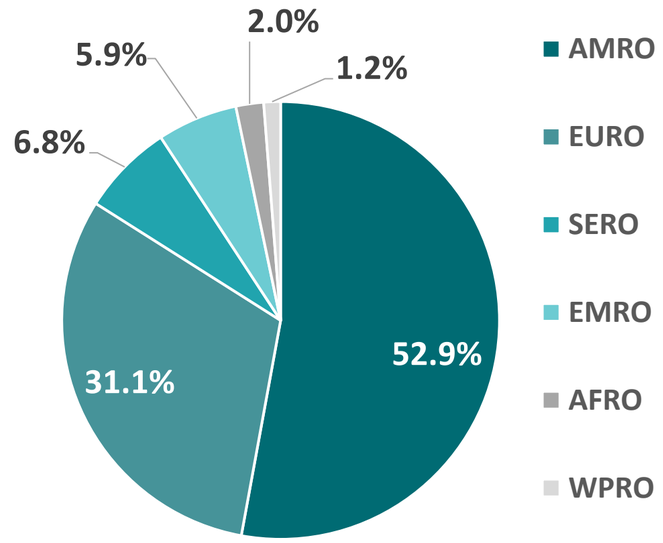
INFECTED





DEATHS

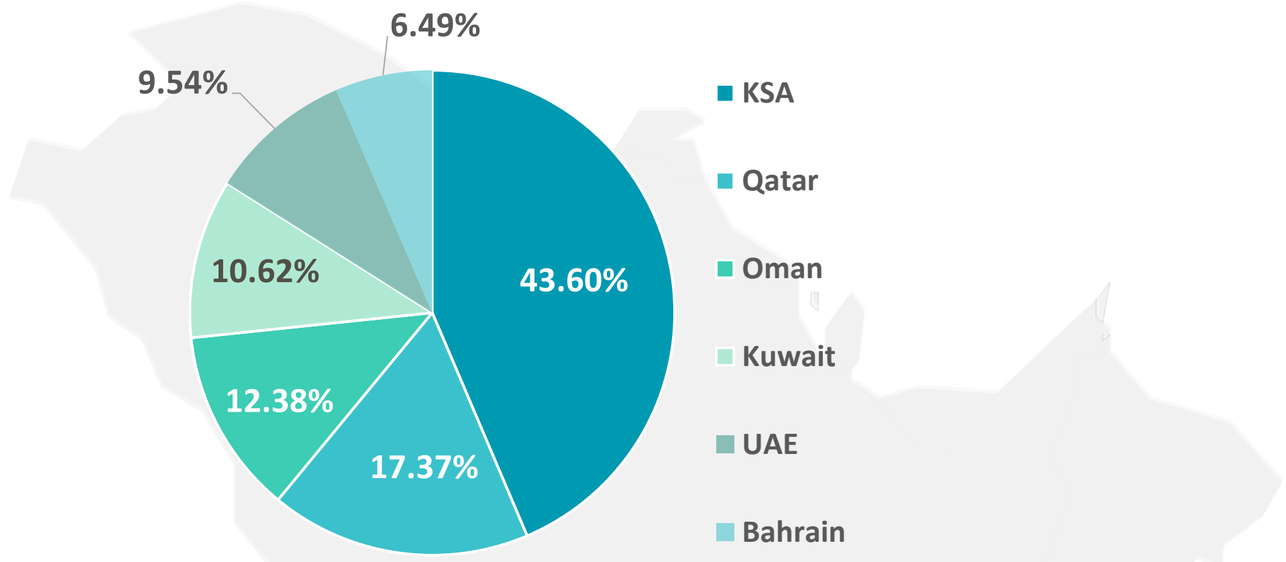


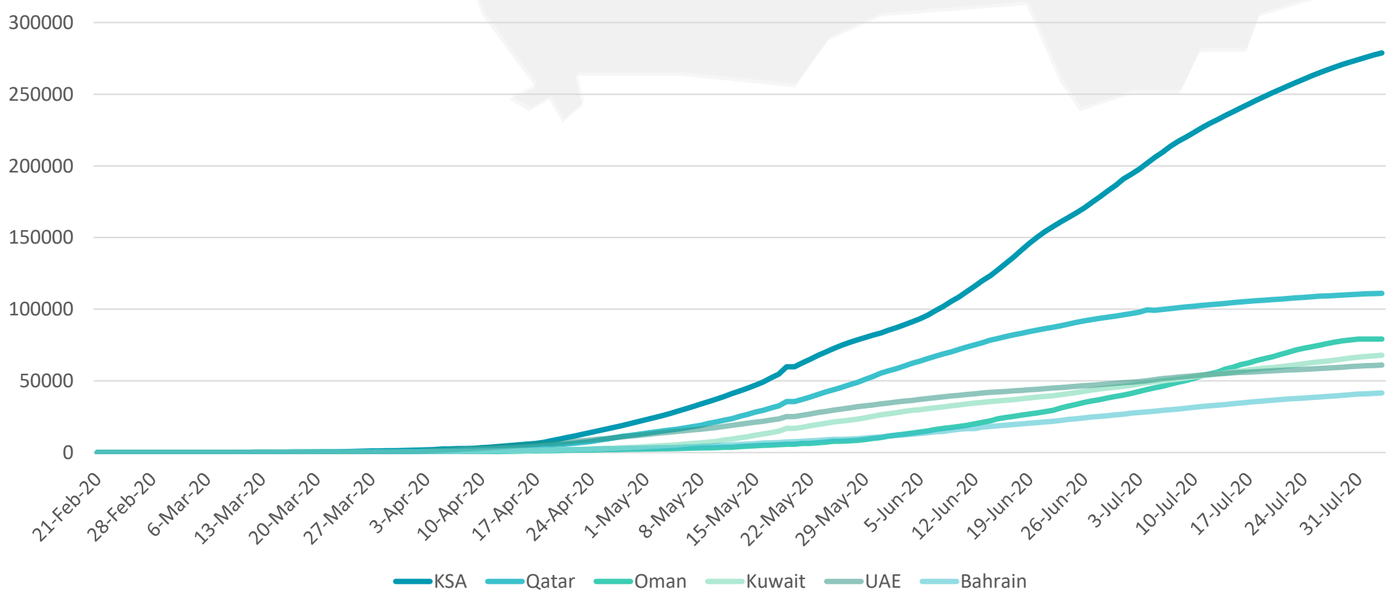


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

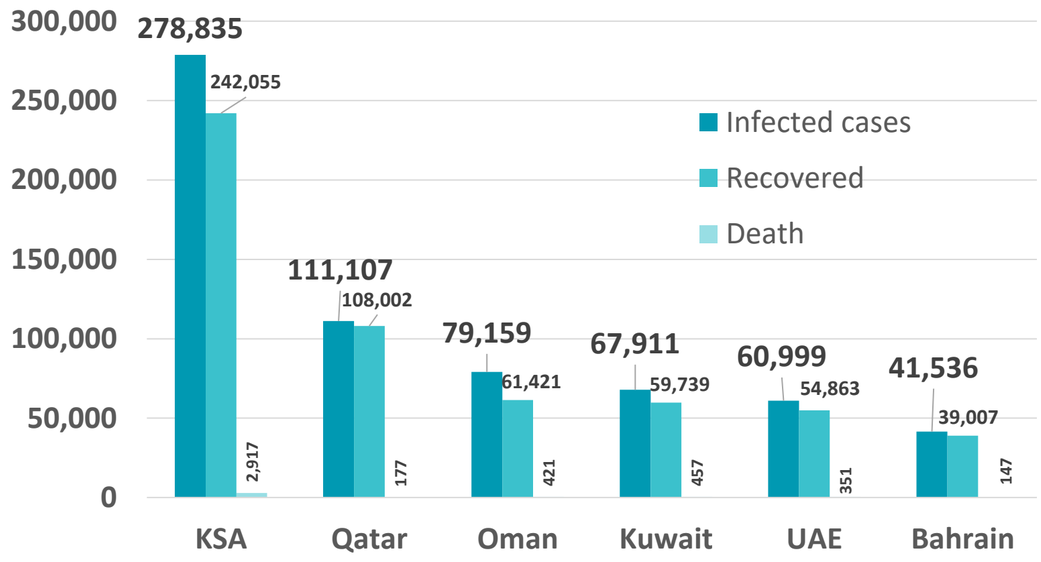
Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES

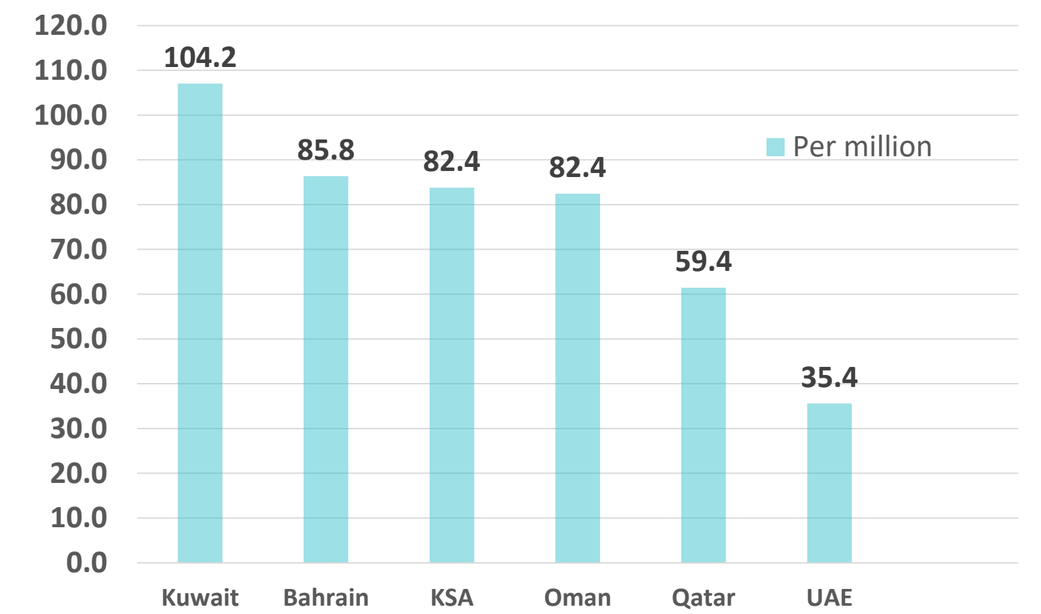




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION



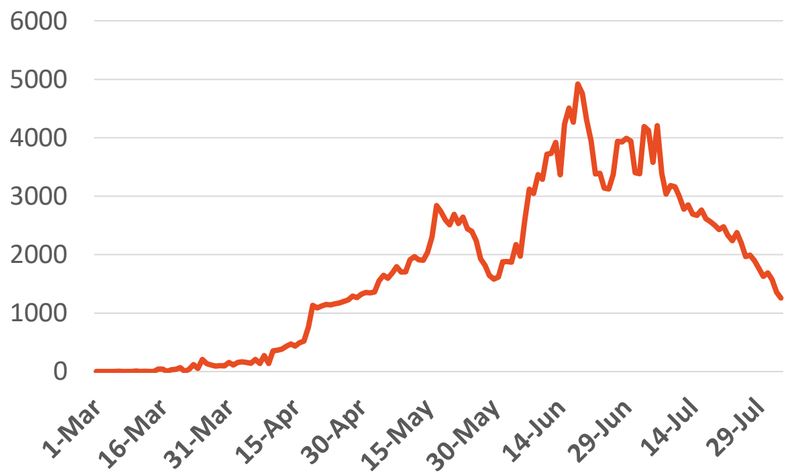
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

UAE

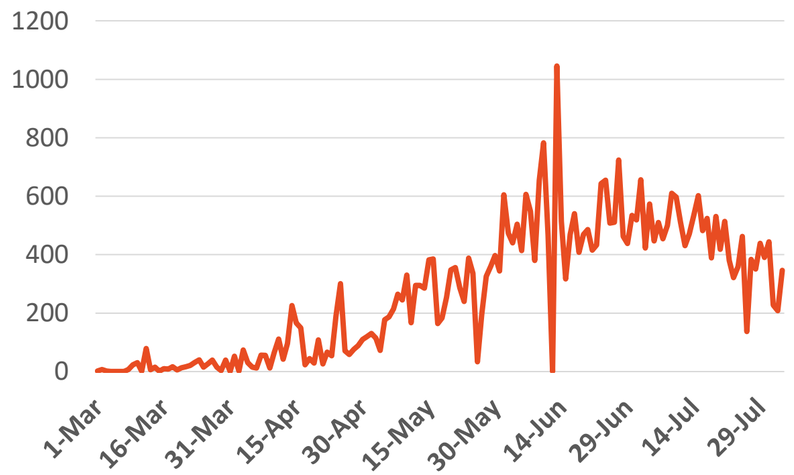
Source : National Emergency Crisis and Disaster Management Authority

KSA



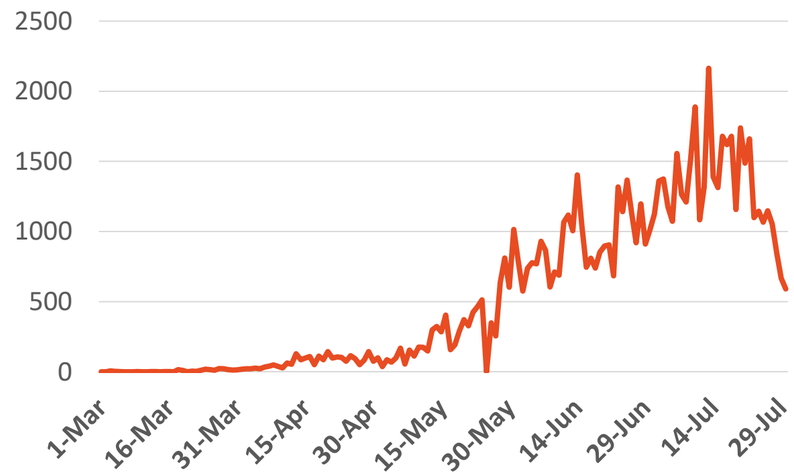
Source : KSA ministry of health

Bahrain



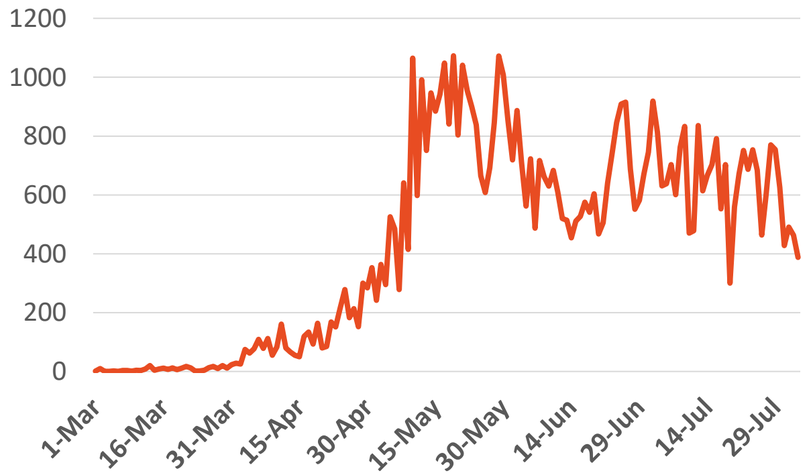
Source :WHO

Oman



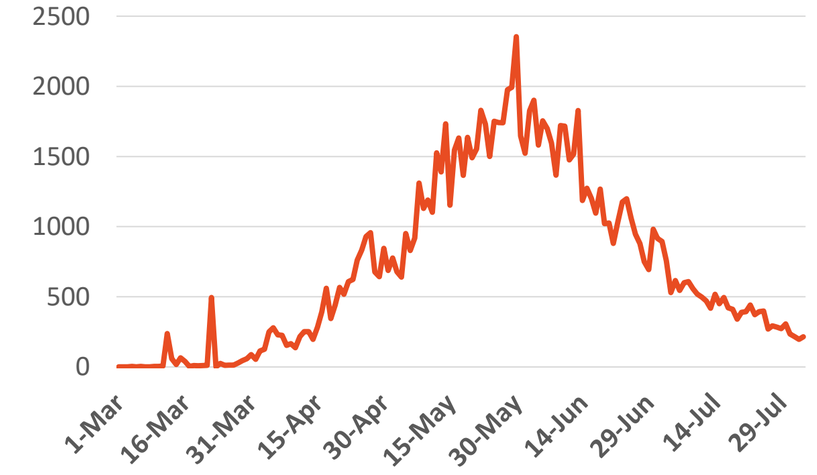
Source :Oman ministry of health

Kuwait



Source : Kuwait ministry of health

Qatar



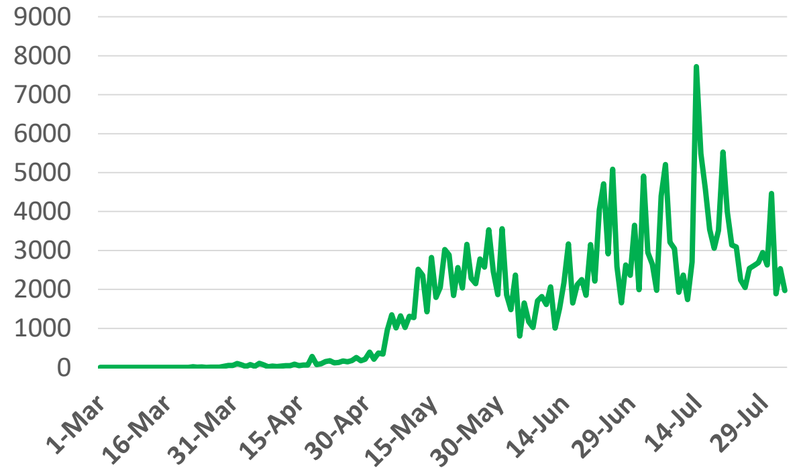
Source : Qatar ministry of health

Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE

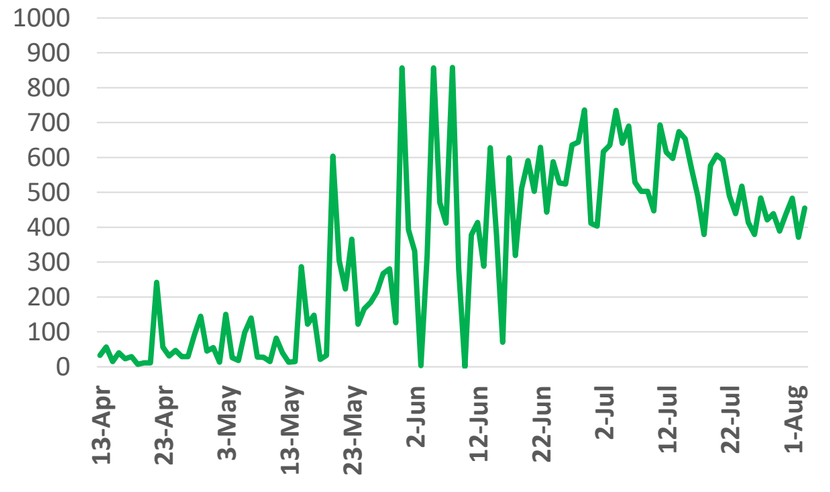
Source : National Emergency Crisis and Disaster Management Authority

KSA



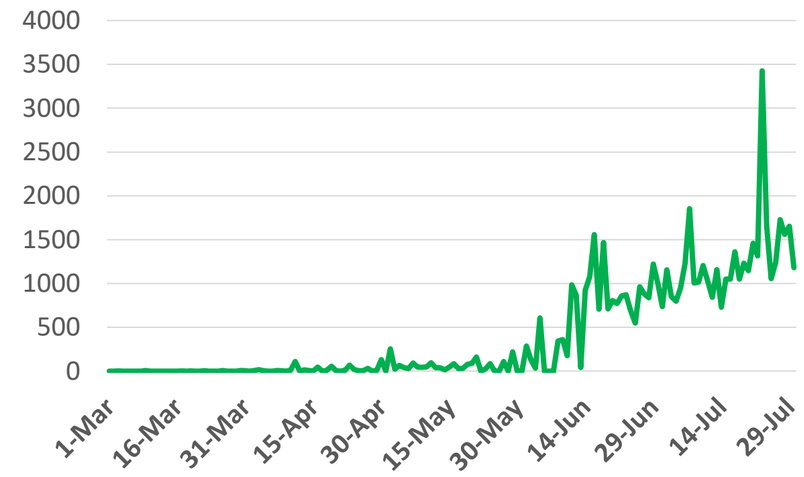
Source : KSA ministry of health

Bahrain



Source : GCCStat

Oman



Source :Oman ministry of health

Kuwait

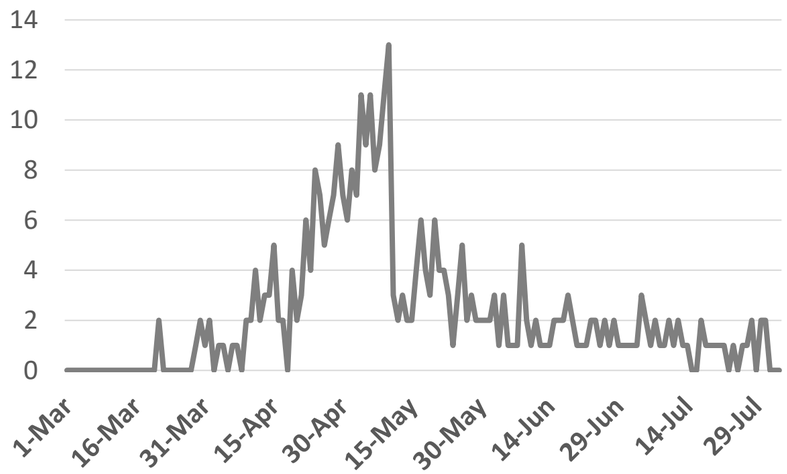
Source : Kuwait ministry of health

Qatar

Source : Qatar ministry of health

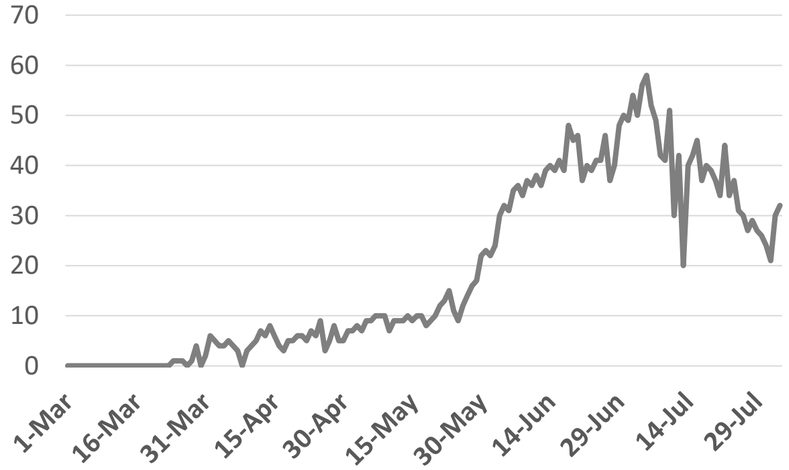
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



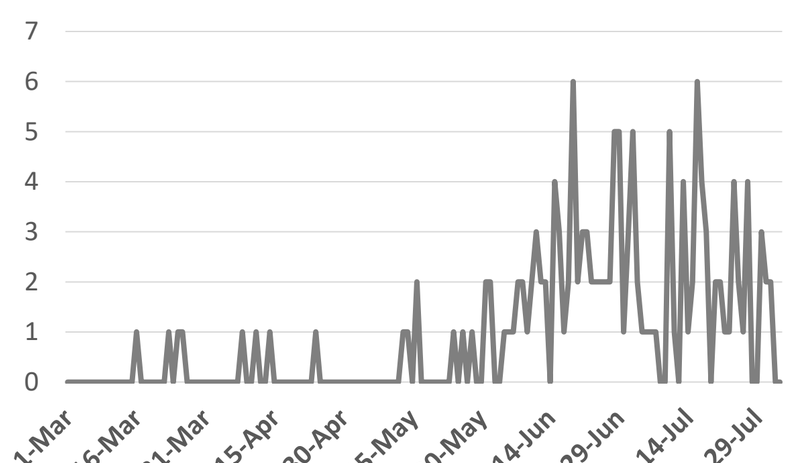
Source : National Emergency Crisis and Disaster Management Authority

KSA



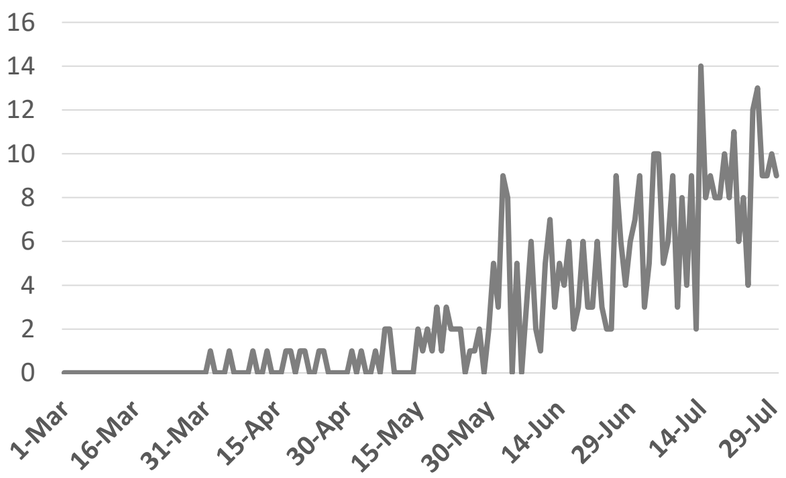
Source : KSA ministry of health

Bahrain



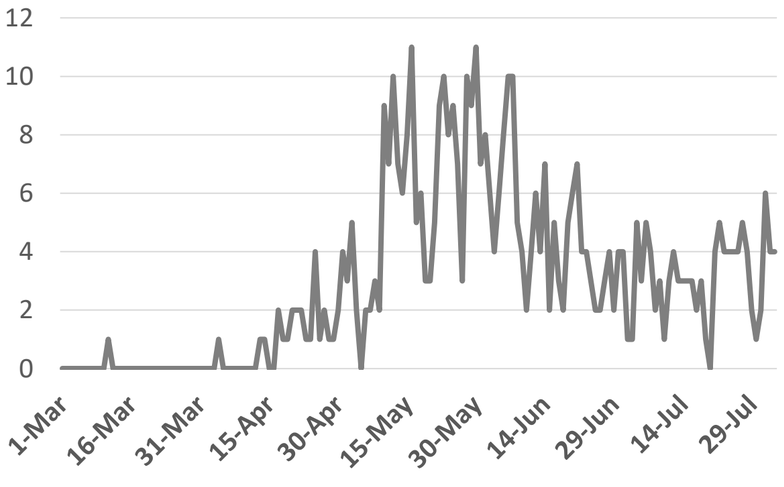
Source :WHO

Oman



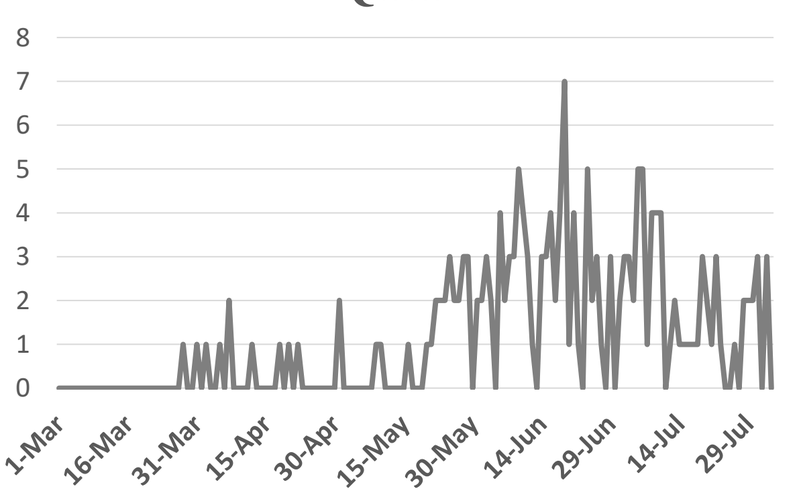
Source :Oman ministry of health

Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

PUBLIC HEALTH RESPONSE

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Article 1

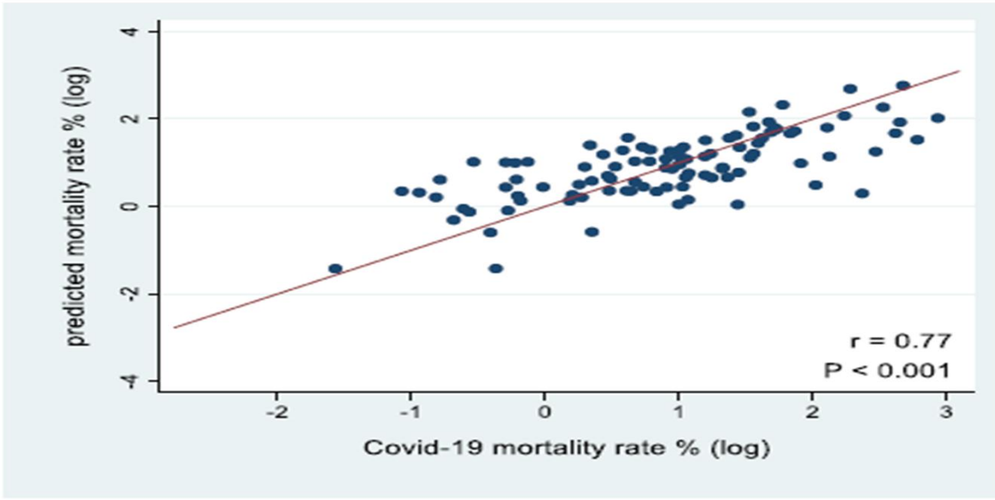
COVID-19 Mortality is Negatively Associated With Test Number and Government Effectiveness

Published 24 July 2020 NATURE

This paper reported the factors associated with COVID-19 mortalities at the country level through a cross-sectional study. Data was utilized from open-access databases such as the Worldometer website, Worldwide Governance Indicators (WGI) website and more. COVID-19 mortality rate was calculated as the number of deaths per 100 COVID-19 cases.

- COVID-19 mortality rate was negatively associated with COVID-19 screening test per 100 people (RR = 0.92; p = 0.001), government effectiveness score (RR = 0.96; p = 0.017), and number of hospital beds (RR = 0.85; p<0.001).· However, COVID-19 mortality rate was positively associated with the population aged 65 or older (RR = 1.12; p < 0.001) and transport infrastructure quality score (RR = 1.08; p = 0.002).
- A strong negative correlation between COVID-19 mortality rate and test numbers was found among low-income countries, young persons, low number of hospital beds, and countries with lower government effectiveness scores. The predicted mortality rates were significantly and positively correlated with the observed mortality rates (r = 0.77; p < 0.001).
- Increasing COVID-19 test number and improving government effectiveness have the potential to reduce COVID-19 related mortality.

Predictors	RR[a]	SE[b]	P	95% CI
Test number per 100 people	0.92	0.02	0.001	0.87–0.96
Case number per 1,000 people	1.03	0.04	0.477	0.95–1.10
Critical case rate (%)	1.05	0.06	0.372	0.94–1.18
Government effectiveness score[c]	0.96	0.02	0.017	0.92–0.99
Population aged 65 or older (%)	1.12	0.02	<0.001	1.07–1.17
Bed number per 1,000 people	0.85	0.03	<0.001	0.80–0.90
Communicable disease death rate (%)	0.99	0.01	0.157	0.98–1.00
Transport infrastructure quality score[d]	1.08	0.03	0.002	1.03–1.14



TREATMENT

Article 2

Discovery of SARS-CoV-2 Antiviral Drugs Through Large-Scale Compound Repurposing

Published 24 July 2020 NATURE

- The production of COVID-19 vaccine will require approximately 12-18 months, and de novo development of antiviral drugs usually requires 10-17 years. Therefore, repurposing clinically evaluated drugs represents one of the most practicable strategies for the rapid identification and deployment of treatments for COVID-19.

- A comprehensive open-access library of known drugs encompassing about 12,000 clinical-stage or United States Food and Drug Administration (FDA) approved small molecules have been profiled to identify existing drugs that harbor antiviral activity against SARS-CoV-2. Each compound has been previously optimized for efficacy, safety, and bioavailability.

- One hundred known drugs have been identified that inhibit SARS-CoV-2 replication, including 21 that exhibits dose-response relationships. Of those, 13 were found to harbor effective concentrations likely commensurate with achievable therapeutic doses in patients including PIKfyve kinase inhibitor apilimod, MDL 28170, Z LVG CHN2, VBY 825, and ONO 5334.

- ONO 5334, MDL 28170, and apilimod were further evaluated for antiviral activity in human pluripotent stem cell (iPSC) derived pneumocyte like cells. Treatment with antivirals resulted in a significantly decreased viral replication in these primary cell types. ONO 5334 reduced the number of infected cells by 72%, MDL 28170 by 65%, while apilimod blocked SARS-CoV-2 challenge by 85%.

- Since most of the compounds identified have already advanced into the clinic, the known pharmacological and human safety profiles of these compounds will enable accelerated preclinical and clinical evaluation of these drugs for the treatment of COVID-19.