مركز أبوظبي
للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

8 SEPTEMBER 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 219)

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.

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Research
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Articles
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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).

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Vaccine

COVID-19 and mRNA Vaccines - First Large Test for a New Approach

Vaccine

Regulatory Decision-Making on COVID-19 Vaccines During a Public Health Emergency

Public Health Response

Health and Medicine Cannot Solve COVID-19

EPIDEMIOLOGY

FROM 21 JAN TO 7 SEPT 2020

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

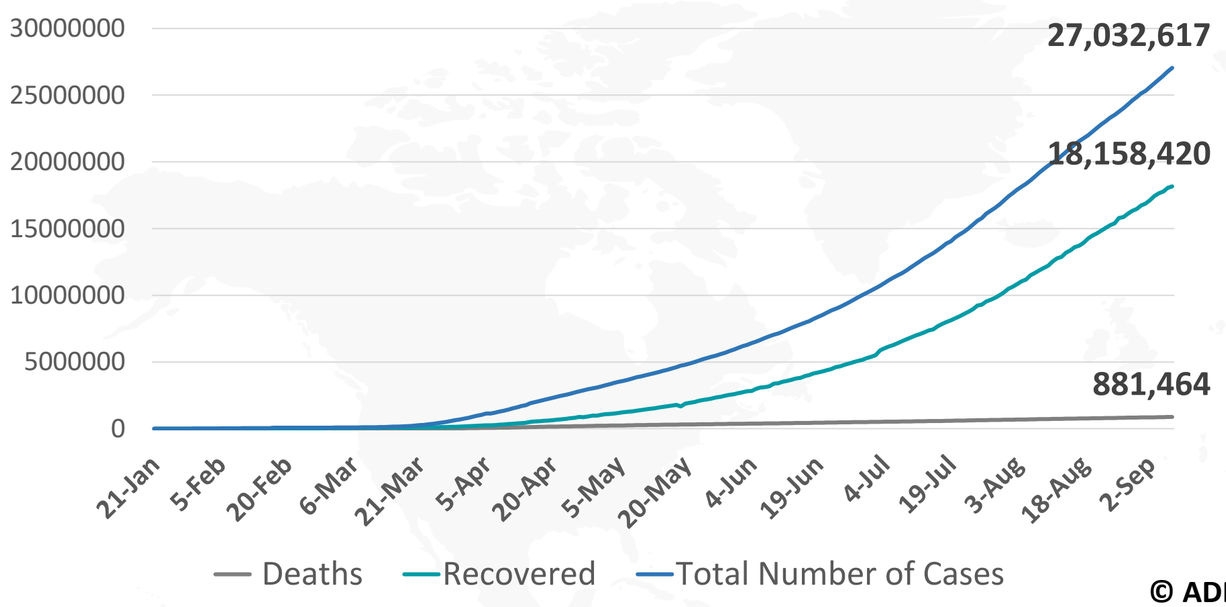


Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)

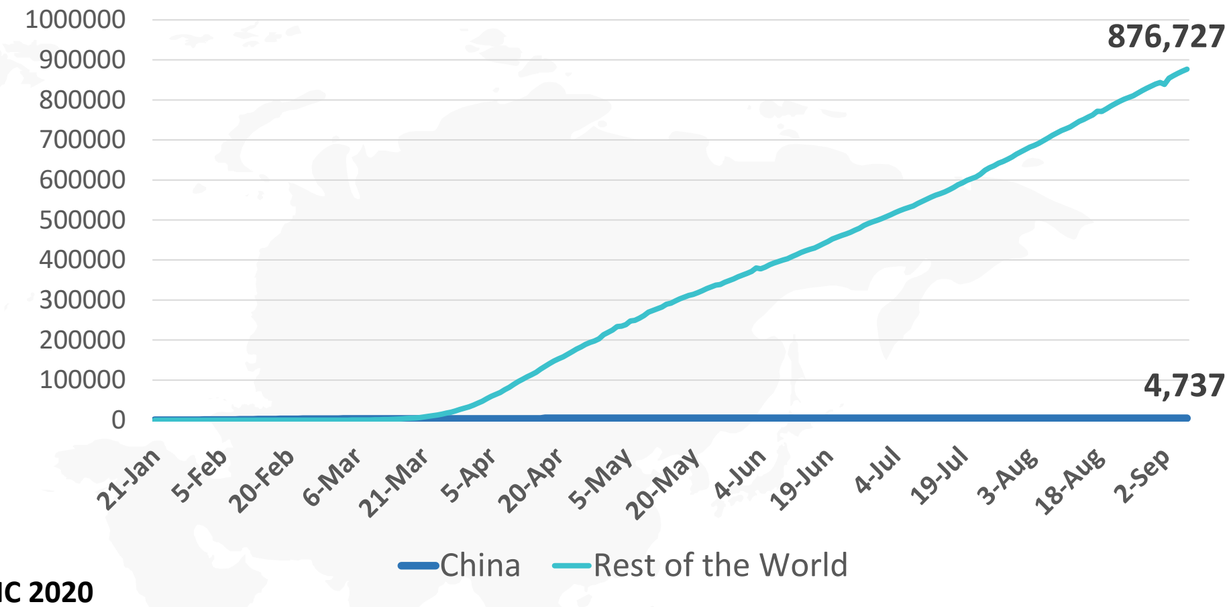


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

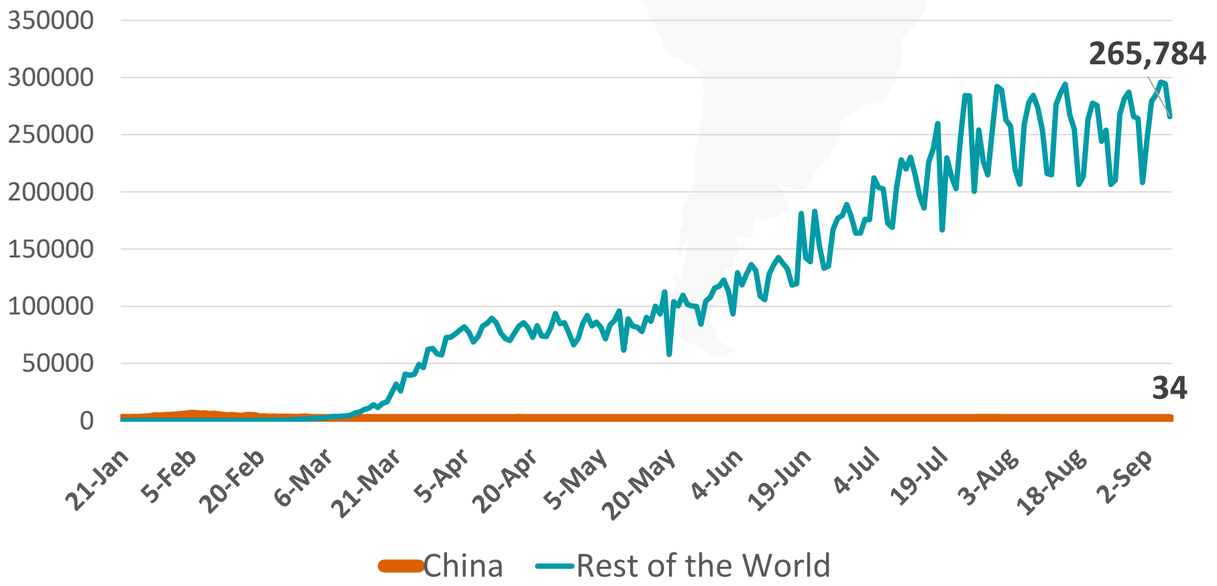
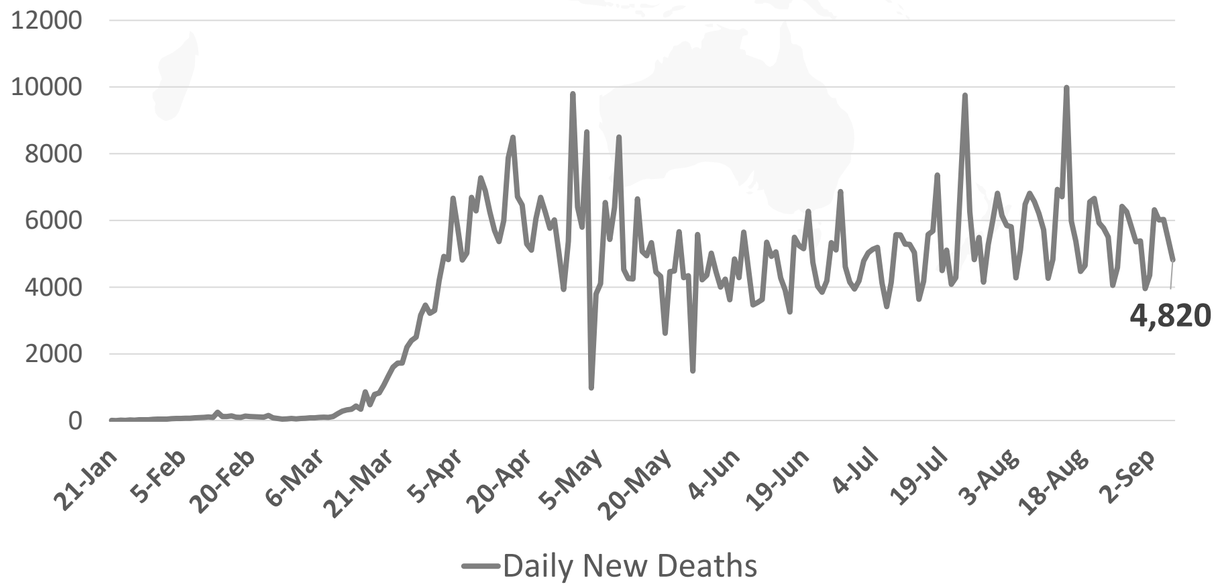


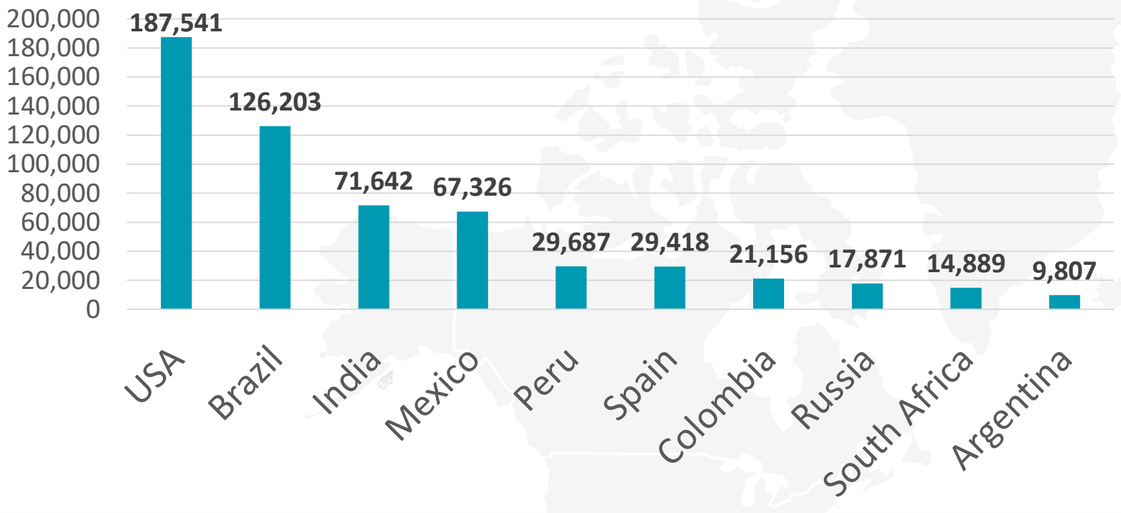
Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)



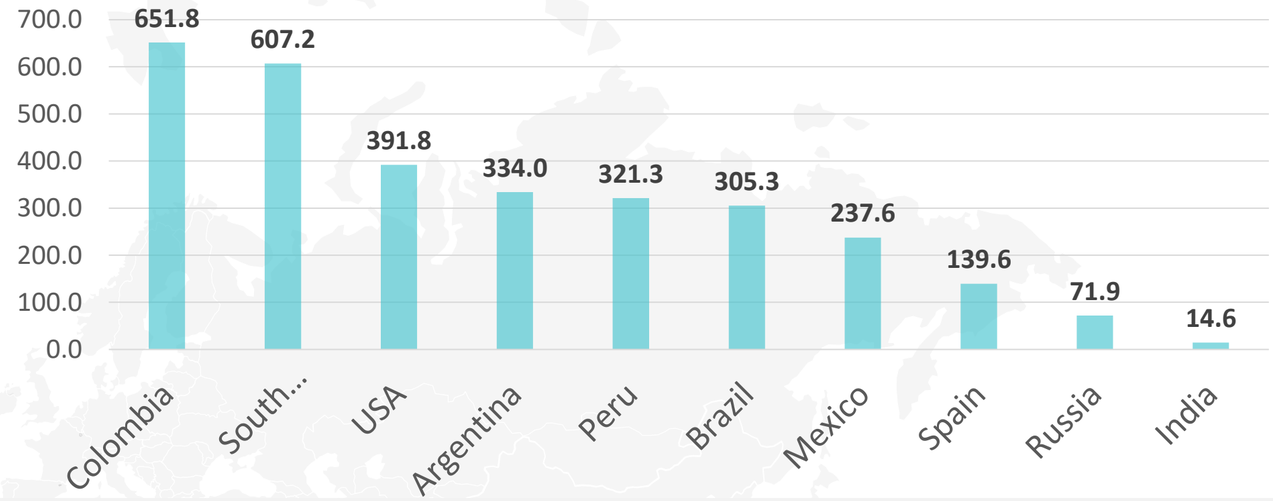
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: John Hopkins, WHO

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

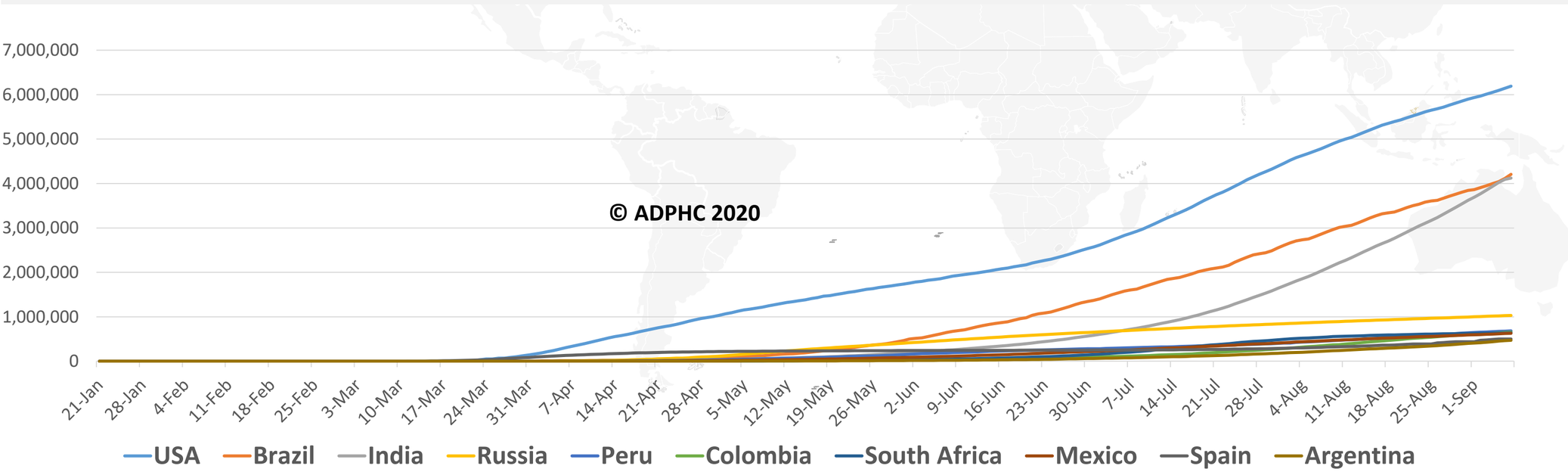
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	6,189,488
Brazil	4,204,613
India	4,123,000
Russia	1,030,690
Peru	683,702
Colombia	658,456
South Africa	638,517
Mexico	629,409
Spain	498,989
Argentina	471,806

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

EPIDEMIOLOGY

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

Daily Tests

76,903.7 Average Tests

777.6 per 100k population

0.8% Positive Rate

Daily Cases

603.3 Average Cases

6.1 per 100k population

Daily Recovered

800.3 Average Recovered

8.1 per 100k population

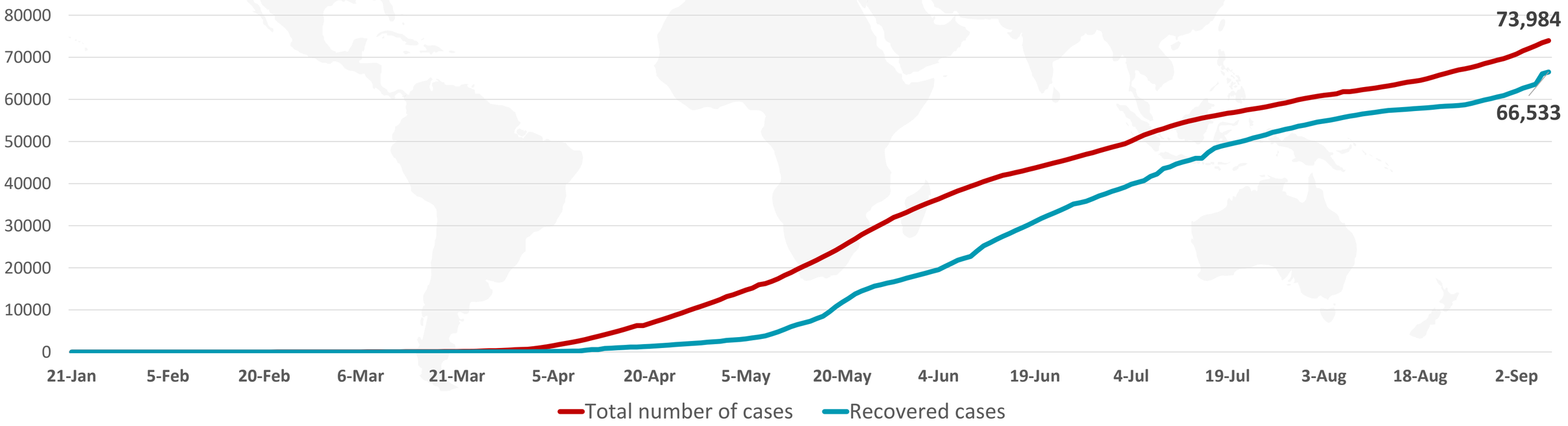
Daily Deaths

0.9 Average Deaths

0.0 per 100k population

0.1% 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, John Hopkins

EPIDEMIOLOGY

Date: 7 SEPT 2020

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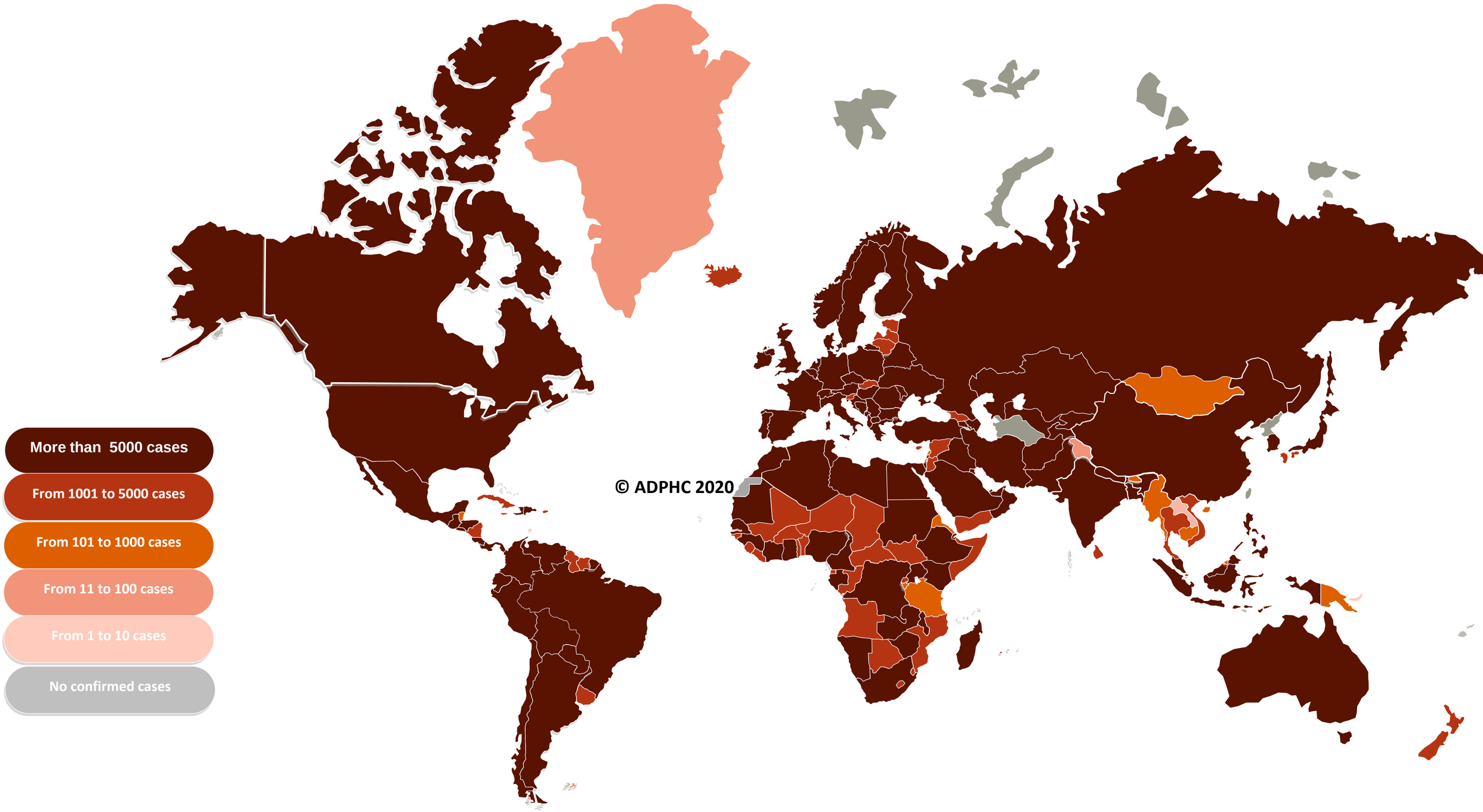
Figure 7A : Global Distribution of COVID-19 Cases



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

EPIDEMIOLOGY

Date: 7 SEPT 2020

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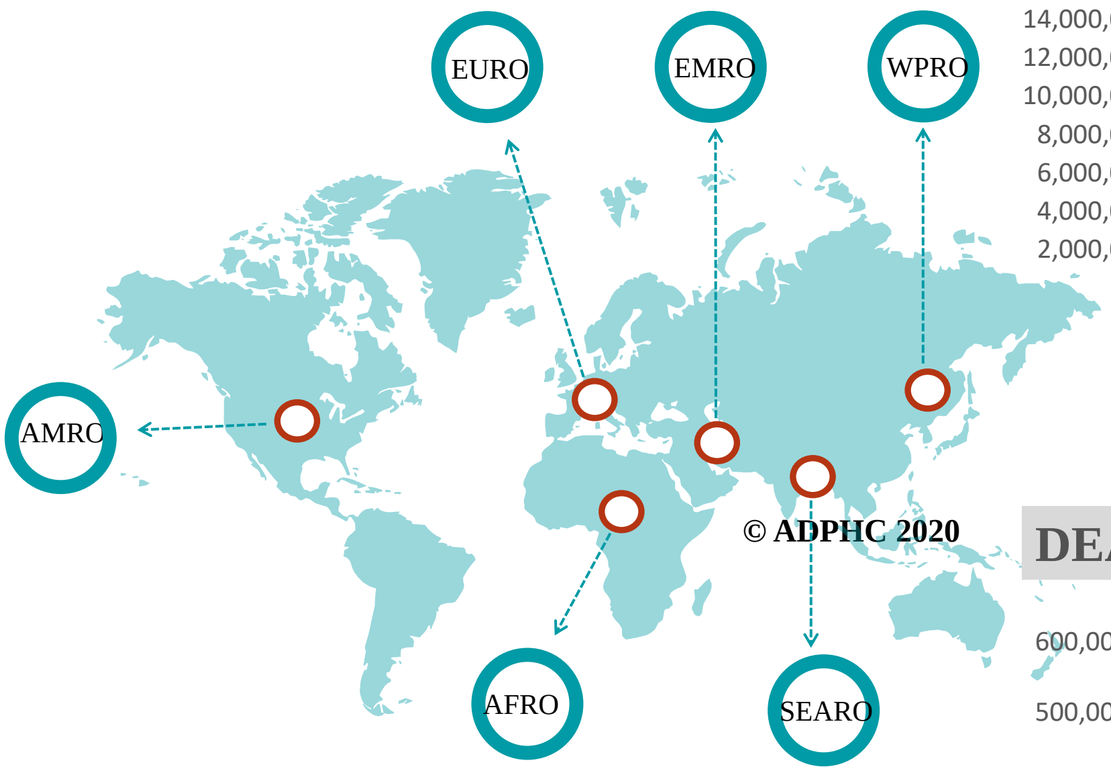
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases

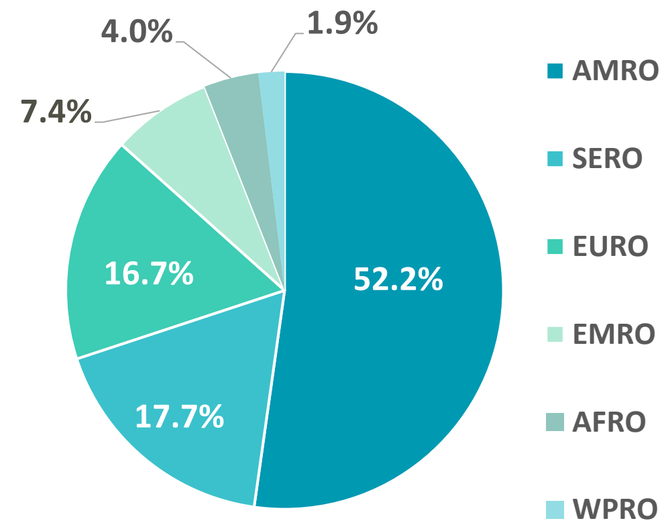
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

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

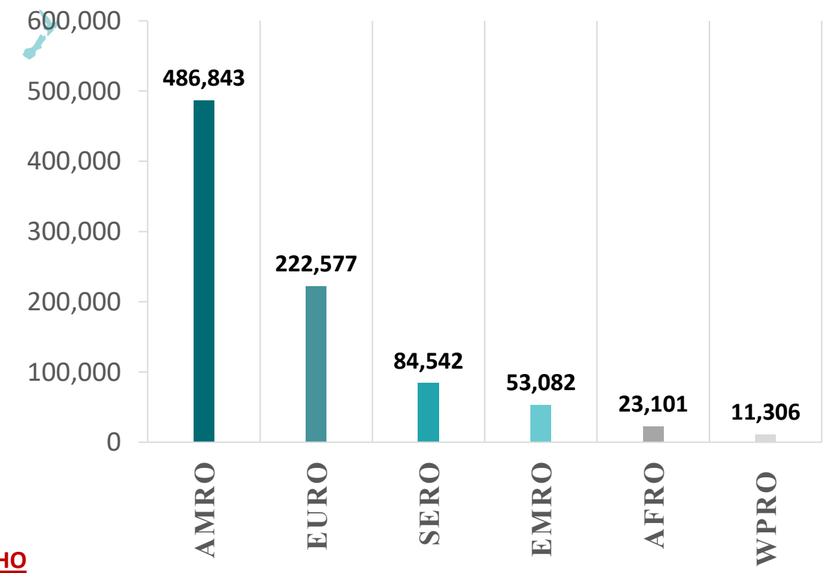
Figure 8: Global Distribution of COVID-19 Cases per Region

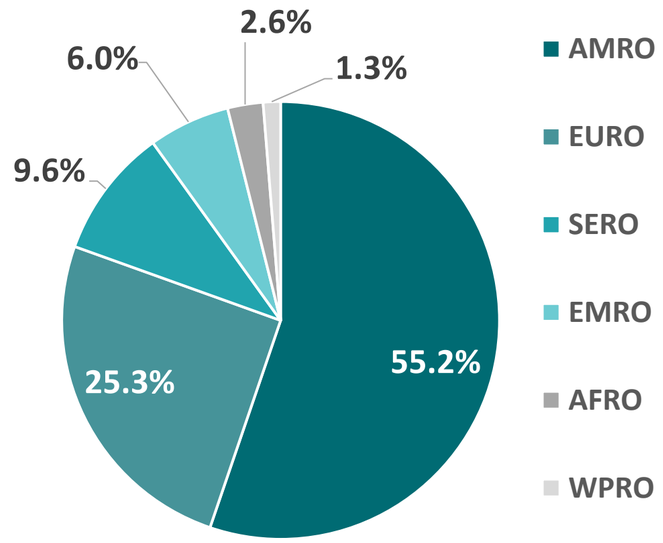


INFECTED



DEATHS

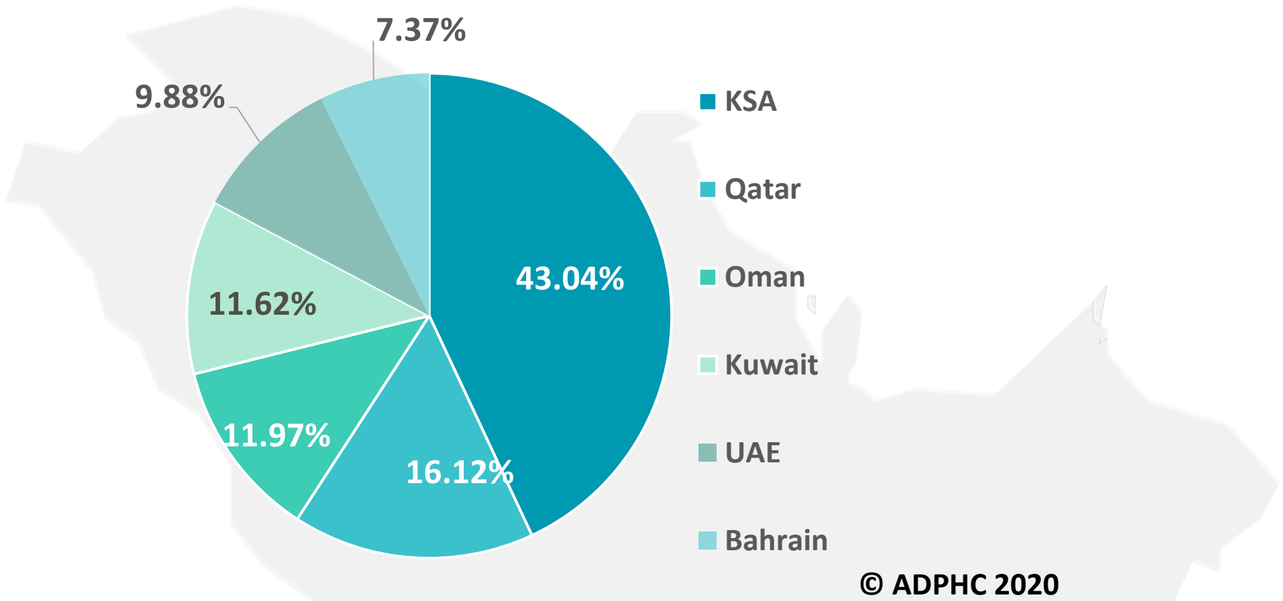


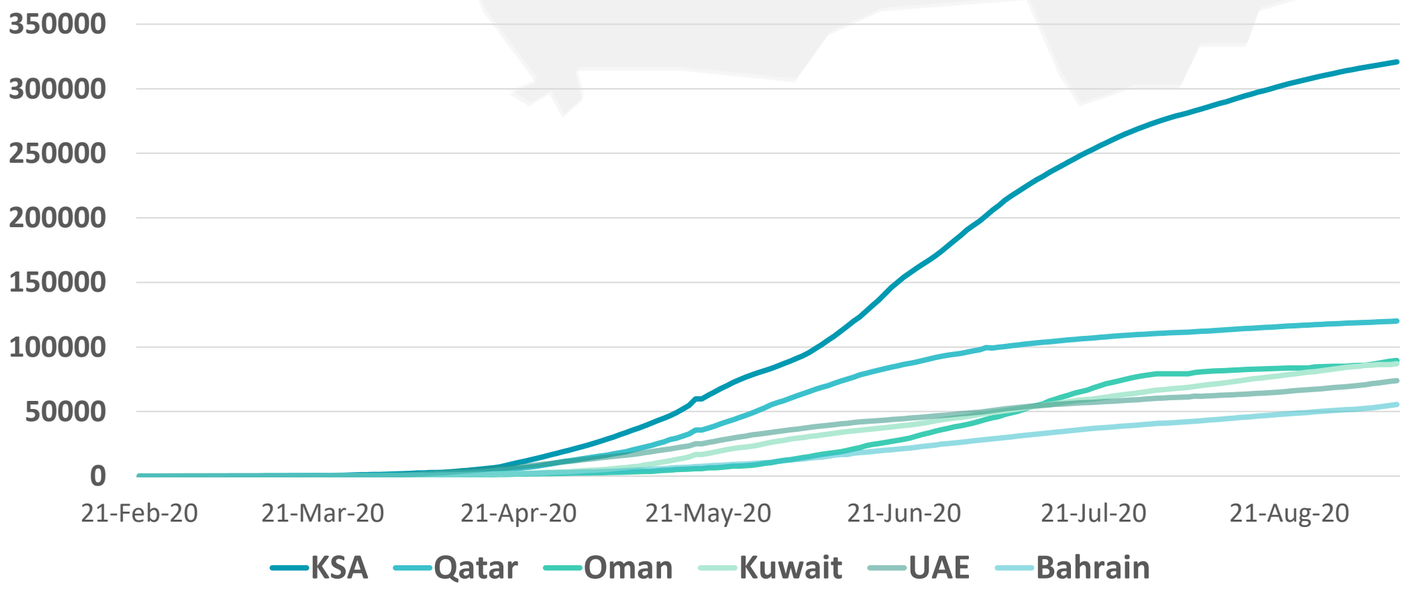


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

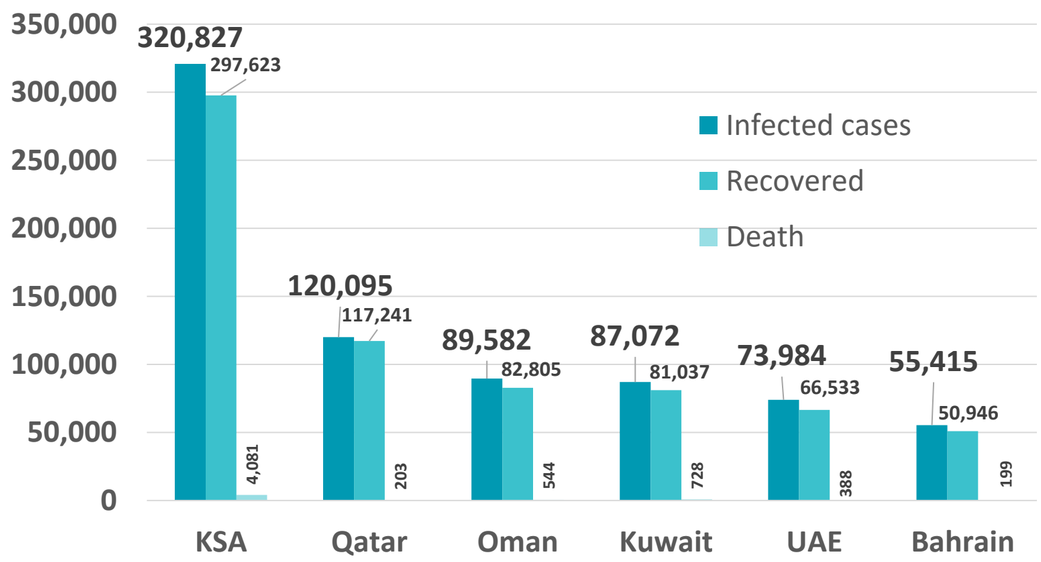
Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES

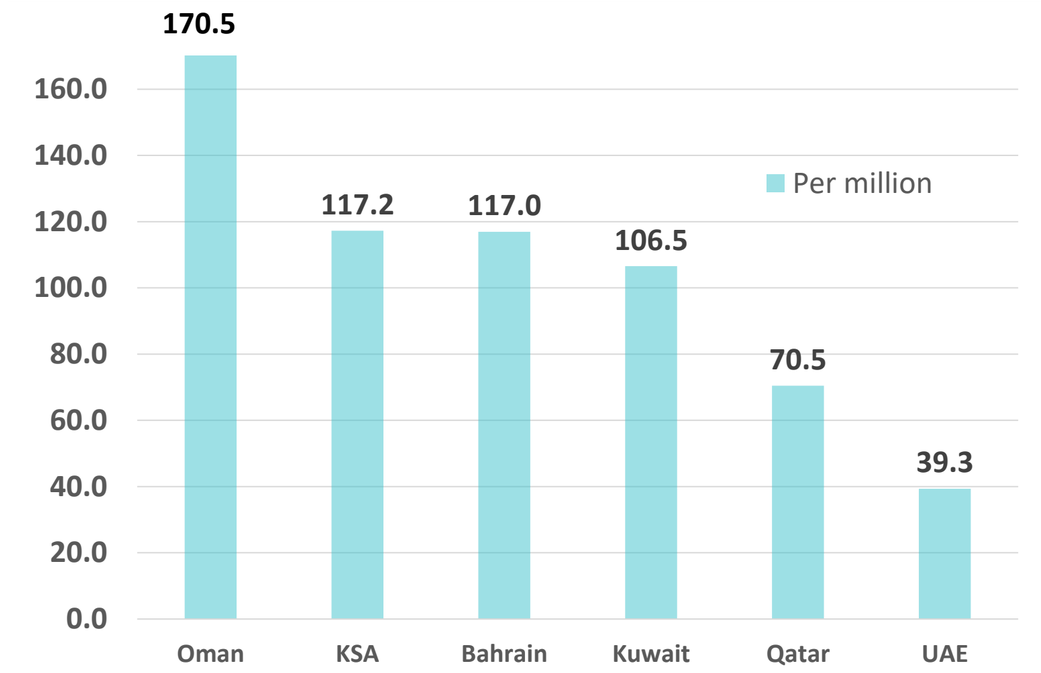




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION



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

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

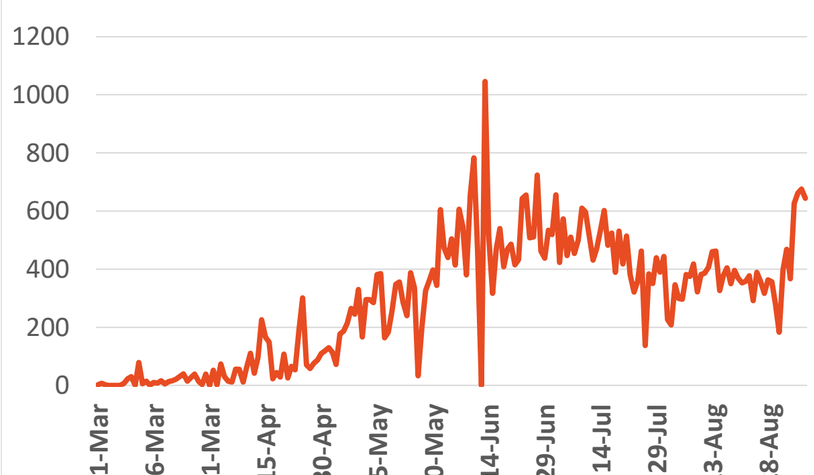
UAE

Source : National Emergency Crisis and Disaster Management Authority

KSA

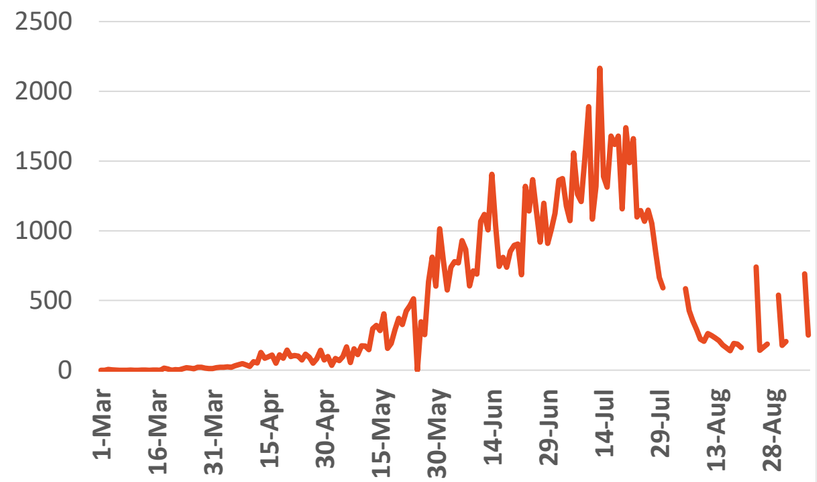
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

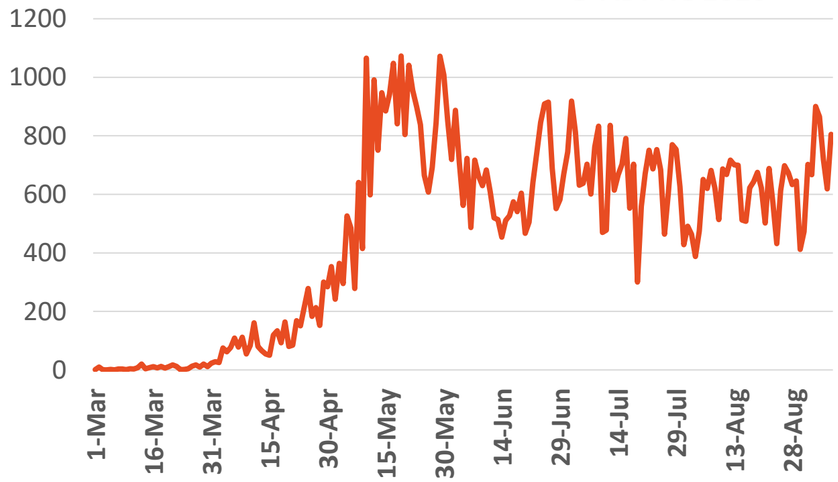


Source :Oman ministry of health

*No announced statistic data from 31 July to 4 August, 21 to 23 August & from 28 to 30 August, 2, 4& 5 September

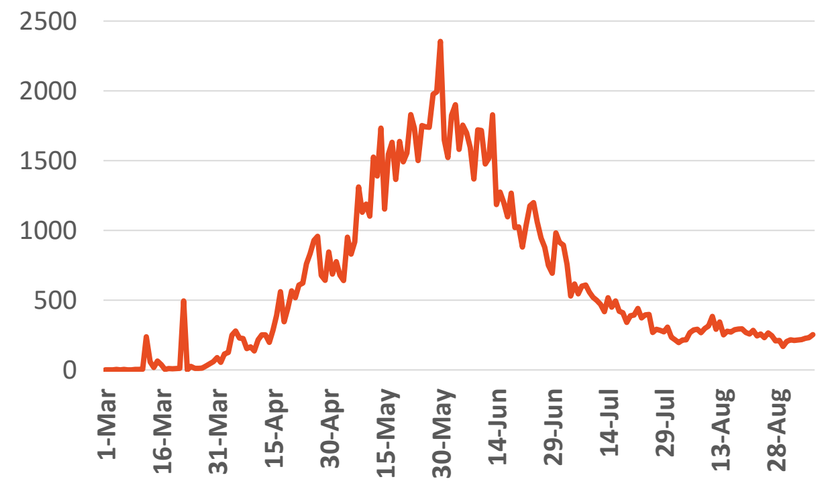
*No announced statistic data on weekends and official holidays.

Kuwait



Source : Kuwait ministry of health

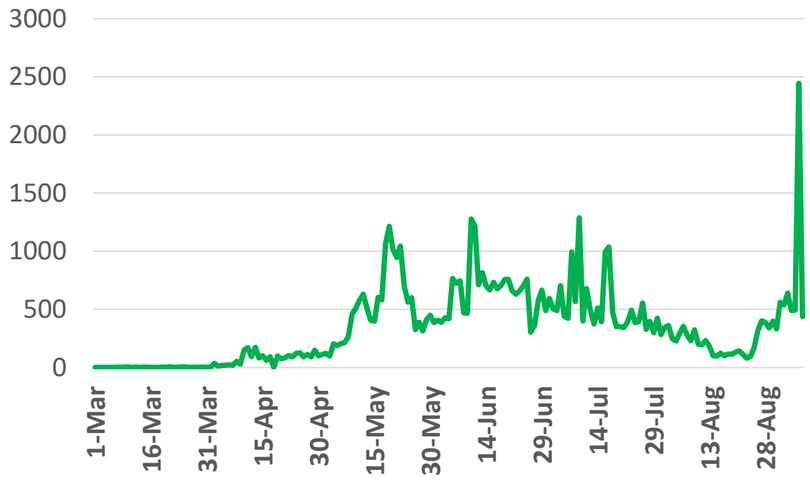
Qatar



Source : Qatar ministry of health

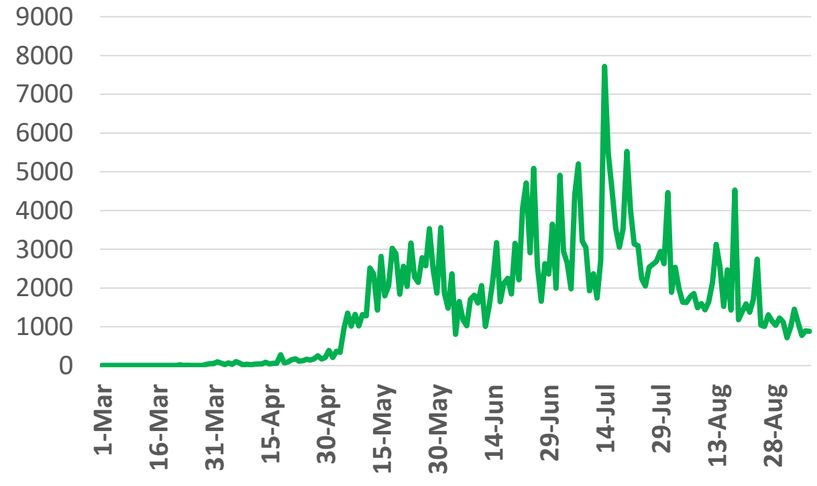
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



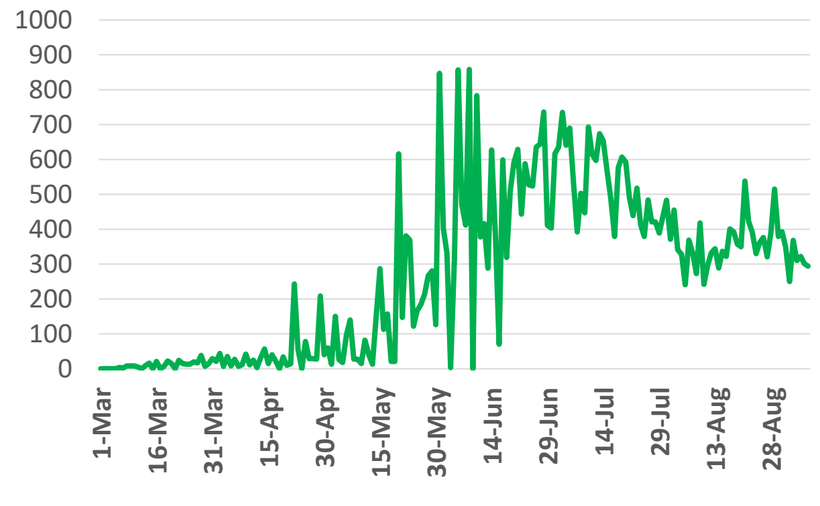
Source : National Emergency Crisis and Disaster Management Authority

KSA



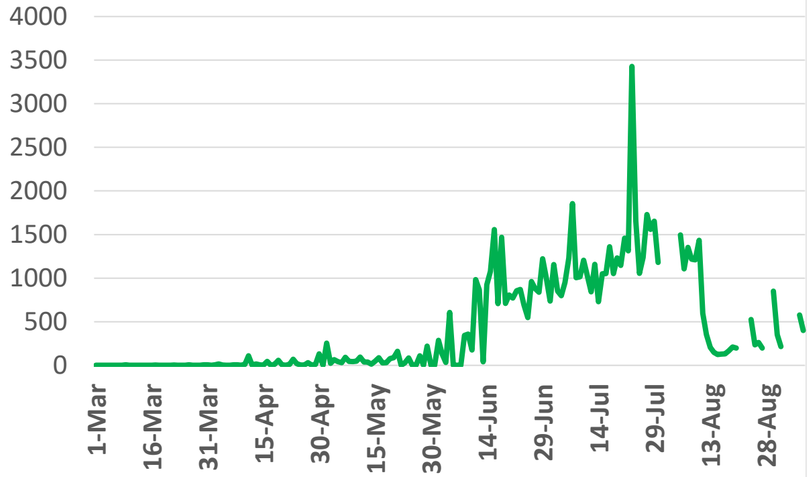
Source : KSA ministry of health

Bahrain



Source : Bahrain ministry of health

Oman



Source :Oman ministry of health

Kuwait

Source : Kuwait ministry of health

Qatar

Source : Qatar ministry of health

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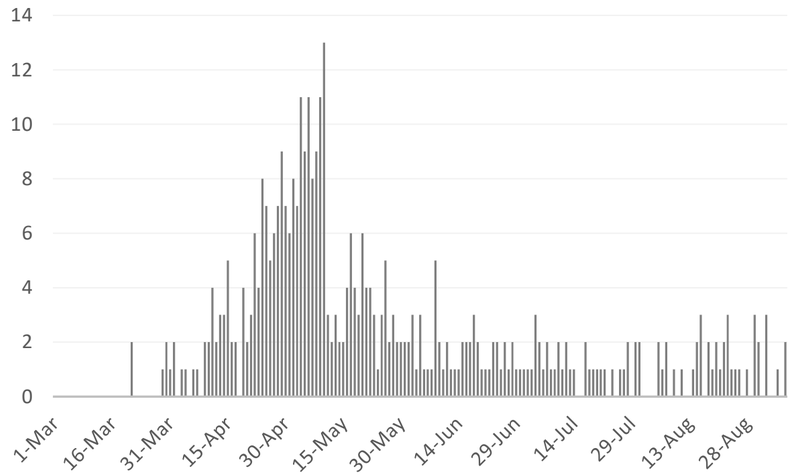
*No announced statistic data on weekends and official holidays.

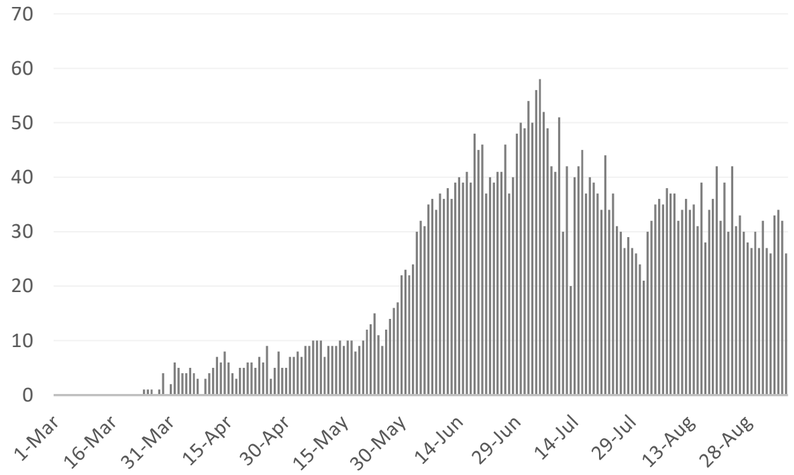
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



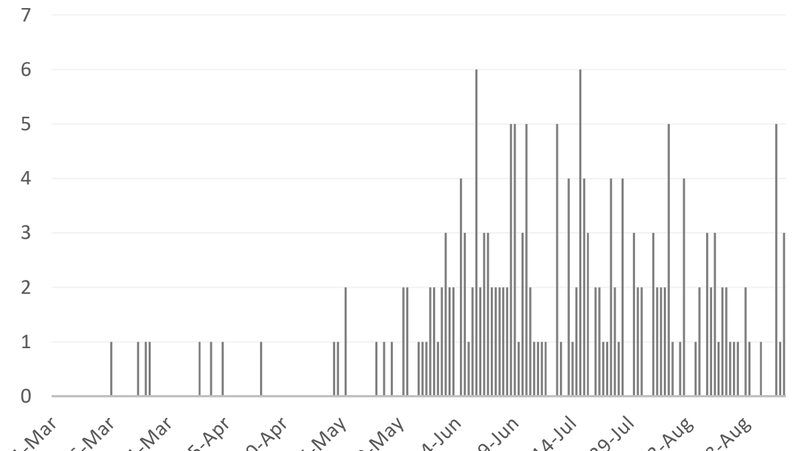
Source : National Emergency Crisis and Disaster Management Authority

KSA



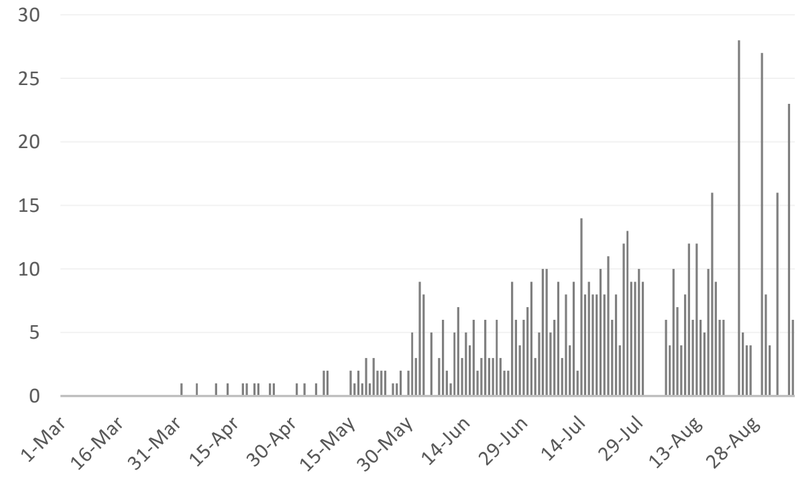
Source : KSA ministry of health

Bahrain



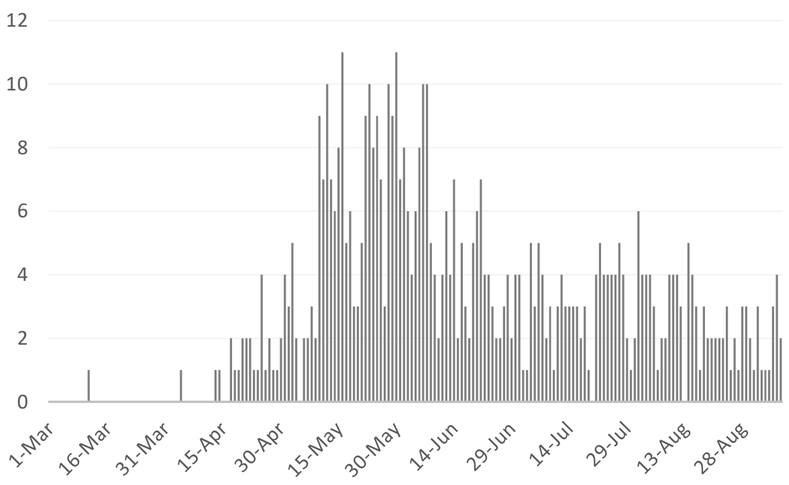
Source :WHO

Oman



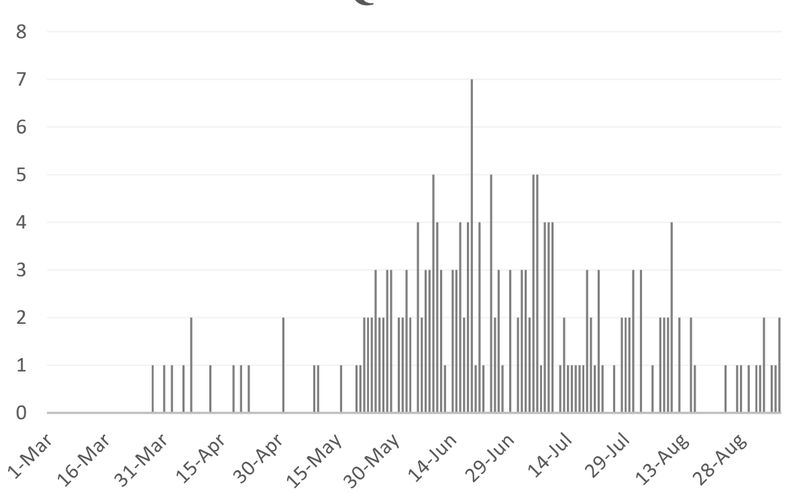
Source :Oman ministry of health

Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

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*No announced statistic data on weekends and official holidays.

VACCINE

Article 1

COVID-19 and mRNA Vaccines - First Large Test for a New Approach

Published 03 September 2020, JAMA

- In the early phase of clinical trials, mRNA platforms have shown supportive results - generating immune response and reaction profiles have not been associated with severe reactions. However, the real proof of the pudding will be the phase 3 trials where it will be determined if the vaccine prevents disease. Additionally, phase 3 trials could also reveal more serious safety concerns and unexpected adverse effects could emerge later. In the United States, the Food and Drug Administration (FDA) has mentioned that a COVID-19 vaccine will need at least 50% efficacy to be approved.

- Researchers reported several factors that argue for mRNA vaccines' safety. For one, mRNA can not cause an infection and does not enter the cell's nucleus, so the chance of its integration into human DNA is believed to be very low. Furthermore, the body breaks down mRNA and its lipid carrier within a matter of hours, assuaging some concerns about long term risks.

- Rapid breakdown raises questions about mRNA vaccines' protective duration. Researchers found that antibodies rapidly decrease among patients with mild COVID-19. The current candidates' two dose regimens could help to overcome this, and their cell-mediated immunity should provide additional support. Finally, vaccines' protective duration won't be known until the product is approved and put into use. A vaccine that is safe and effective for a finite amount of time could be enough to break the back of the pandemic.

Article 2 Regulatory Decision-Making on COVID-19 Vaccines During a Public Health Emergency

Published 31 August 2020, JAMA

- In the United States, the Food and Drug Administration (FDA) has reported that no vaccine would receive formal approval unless it met the agency's published standards. FDA (June 2020 guidance document) established its expectation that an approved vaccine would reduce the occurrence or severity of disease in at least 50% of recipients, a standard similar to that for annual influenza vaccines.

- FDA has noted that it could implement an Emergency Use Authorization (EUA) to make a COVID-19 vaccine available before it is evaluated. However, it could reduce the ability to demonstrate the effectiveness of the investigational vaccine in a clinical disease endpoint efficacy trial to support licensure.

- Based on trends in a biomarker; such as antibody levels before clinical trials are complete, the FDA might be pressured to authorize emergency use of a not yet approved vaccine among the high-risk population (e.g. health care workers) on the grounds that the need is too pressing to wait for the usual assessment of efficacy and safety. It has been reported that there is a distinction between emergency use and final approval suggesting the criteria for an EUA could well differ from those for standard approval.

- FDA has established a science-based approach for vaccine approval. It has thoroughly presented sensible plans for evaluating COVID-19 candidate products but also reported the possibility of approaches using an EUA based on surrogate measures before ongoing randomized trials are completed. The nation's health will be better served by relying on the usual rigorous approach to vaccine evaluation.

PUBLIC HEALTH RESPONSE

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Article 3 Health and Medicine Cannot Solve COVID-19

Published 29 August 2020, THE LANCET

- This article investigates how combination prevention and global health collaboration are required to address the COVID-19 pandemic.

- Thinking closely in terms of how medical solutions could create false public expectations of a return to normal life, and the risks involved in closing out non-health interventions that could lead to substantial improvements.

- COVID-19 has exposed the complex and interdependent systems of everyday life. Therefore, health improvements could come from fields outside of the health sector, for example:
  - Reshaping of education.
  - Improvement in air quality.
  - Reconstruction of sewer systems, which can substantially reduce infectious disease burden.

- As the COVID-19 pandemic is framed as a global health crisis, the public expects health interventions such as a vaccine, new public health measures and hygiene behaviors, and effective treatments-to end COVID-19 and be permitted to return to the old normal life. However, the authors caution against this framing.

- The medical sector is laying the groundwork for collective intervention through collaborations to formulate a new future with or without COVID-19.

THANK YOU

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