مركز أبوظبي
للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

25 AUGUST 2020

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https://www.doh.gov.ae/ar/covid-19/Healthcare-Professionals/Scientific-Publication

SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 205)

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
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).

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Public Health Response

Back to Basics: The Outbreak Response Pillars

Clinical Features

Effects of a Major Deletion in the SARS-CoV-2 Genome on the Severity of Infection and the inflammatory Response: an Observational Cohort Study

Public Health Response

Filtration Efficiency of Hospital Face Mask Alternatives Available for Use During the COVID-19 Pandemic

WHO WEEKLY EPIDEMIOLOGICAL UPDATE

In the week ending 23 August, there was a 4% decrease in the number of cases and 5% increase in the number of deaths compared to the previous week (10 to 16 August) (Figure 1).

Eastern Mediterranean Region

The number of cases increased by 2% in the last seven days; however, the number of deaths decreased by 5% and has consistently decreased over the last six weeks. Lebanon, Tunisia and Jordan reported the highest increase in cases compared to the previous week.

Region of the Americas

The number of cases and deaths decreased by 11% and 17% respectively compared to the previous week.

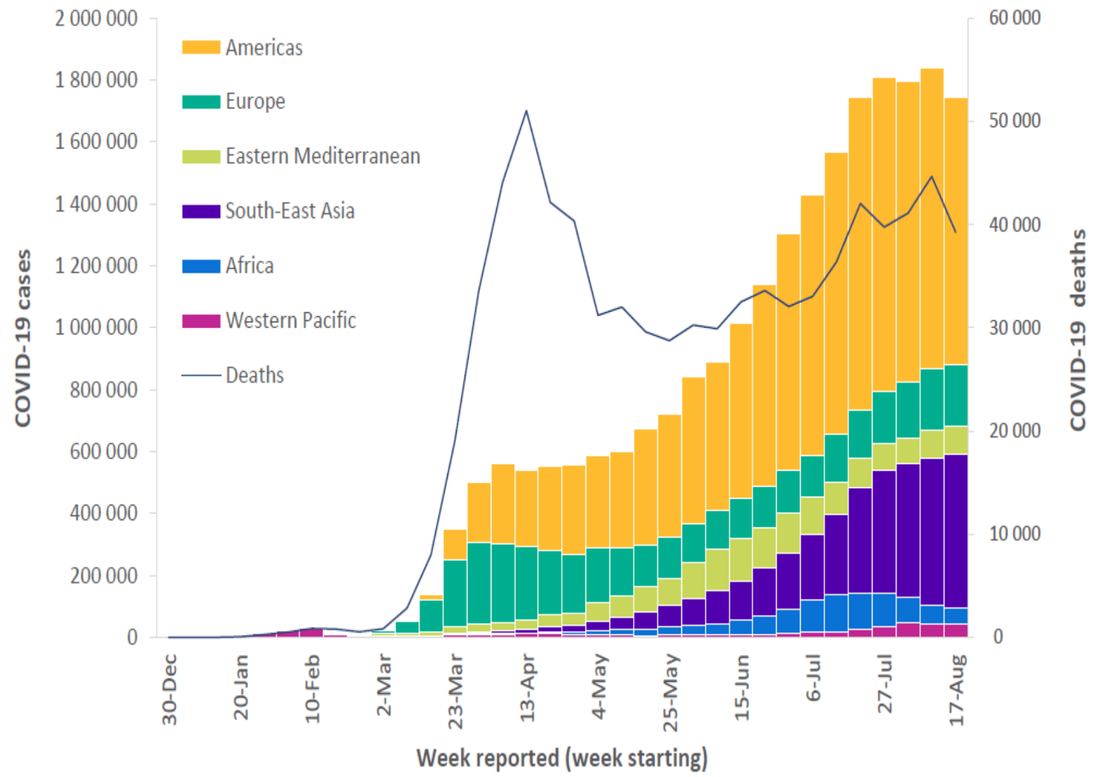
South-East Asia Region

South-East Asia is the second most affected region and currently accounts for 28% and 15% of newly reported cases and deaths, respectively, globally in the past seven days.

Western Pacific Region

The number of cases decreased by 5% the following a decrease in the number of new cases reported by Japan, Australia, Singapore, China and Viet Nam. The Republic of **Korea reported a 180% increase in cases, mainly due to an increase in cases associated with religious gatherings.**

Figure 1: Number of COVID-19 cases and deaths reported weekly by WHO region, 30 December to 23 August 2020**



European Region

The number of cases decreased slightly by 1% in the last seven days. The number of deaths reported in the last seven days decreased by 12%, continuing the downward trend except Spain reported a 200% increase in the number of deaths in the last week compared to the previous week.

EPIDEMIOLOGY

FROM 21 JAN TO 24 AUG 2020

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

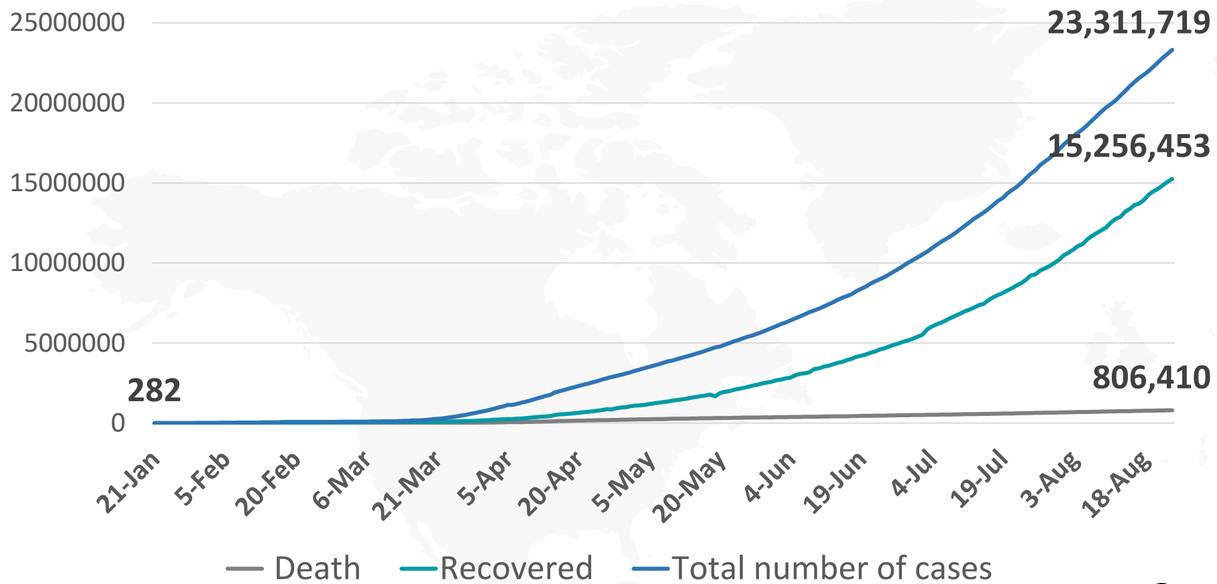


Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)

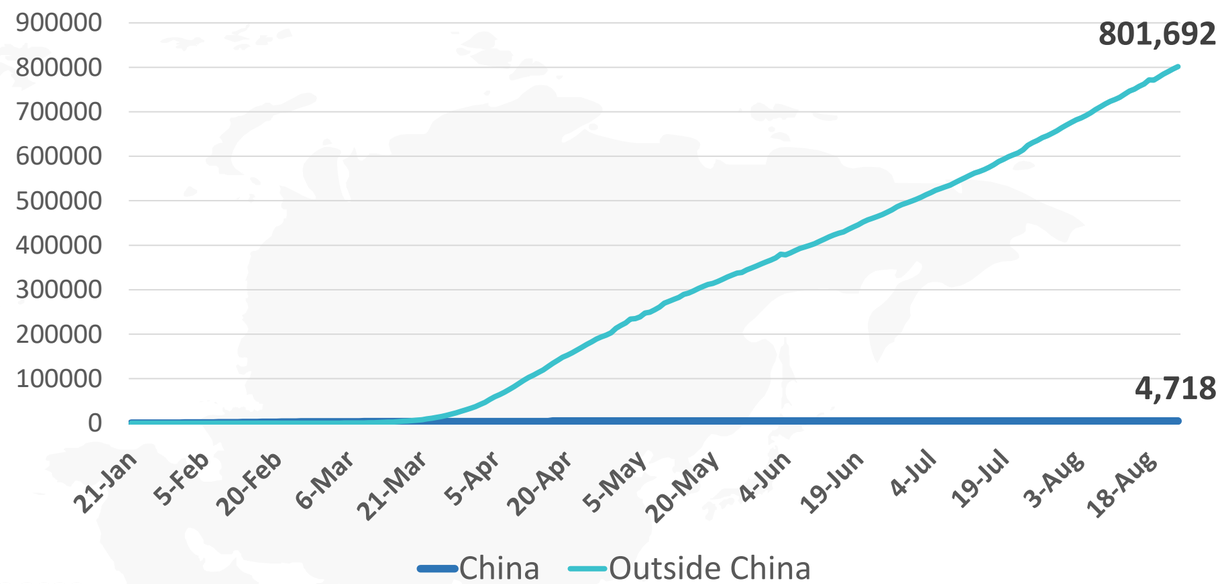


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

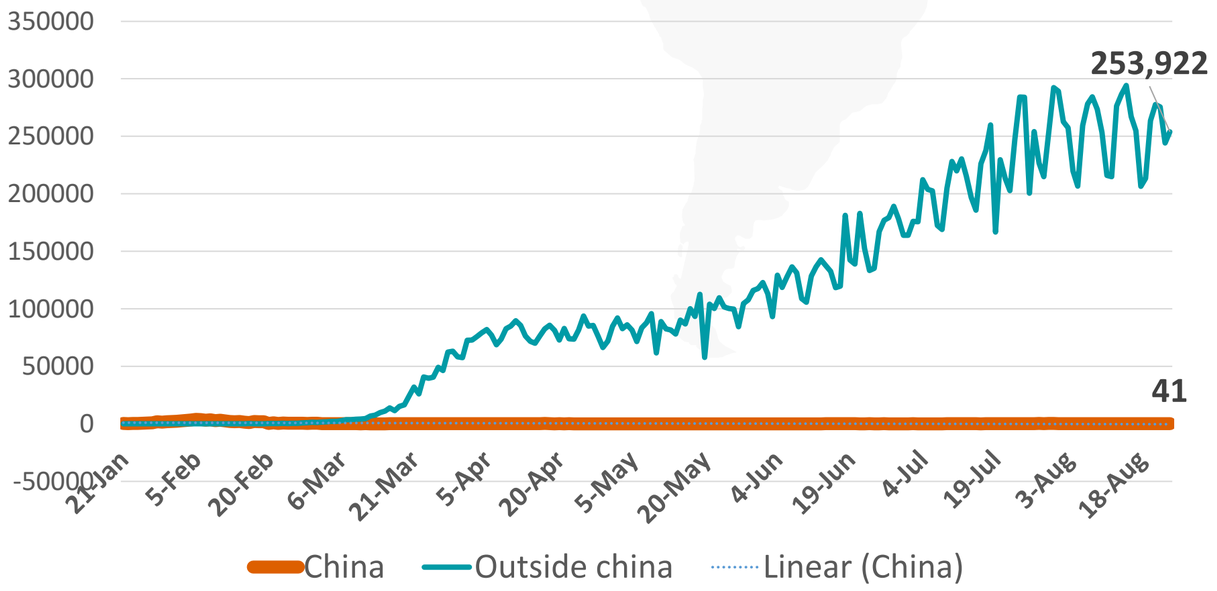
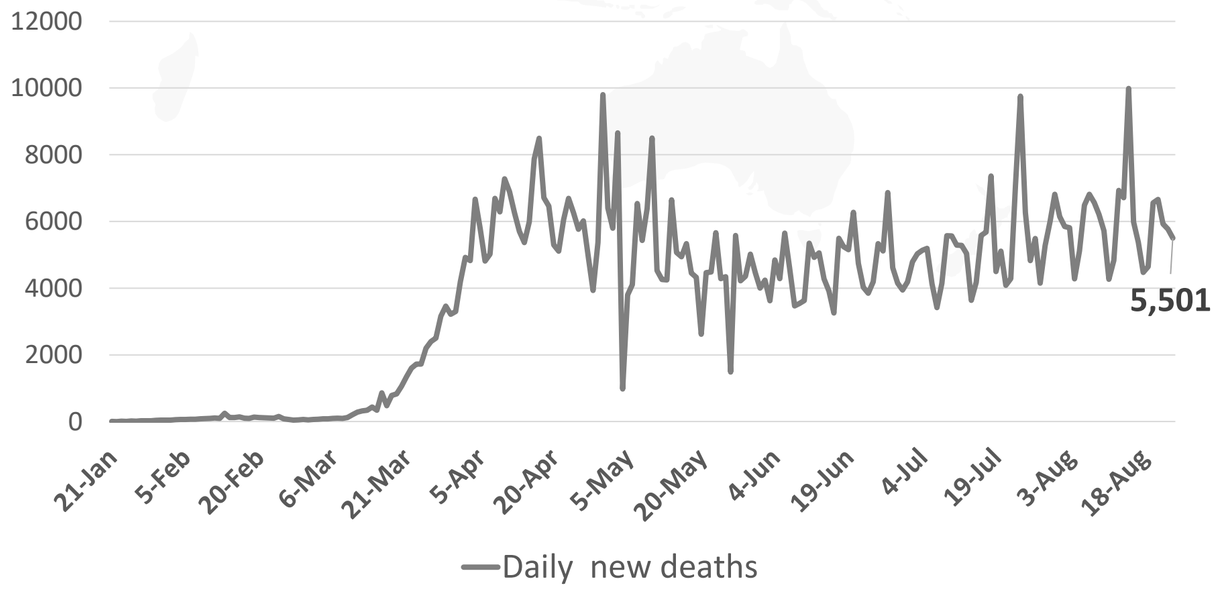


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)



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

EPIDEMIOLOGY

FROM 21 JAN TO 24 AUG 2020

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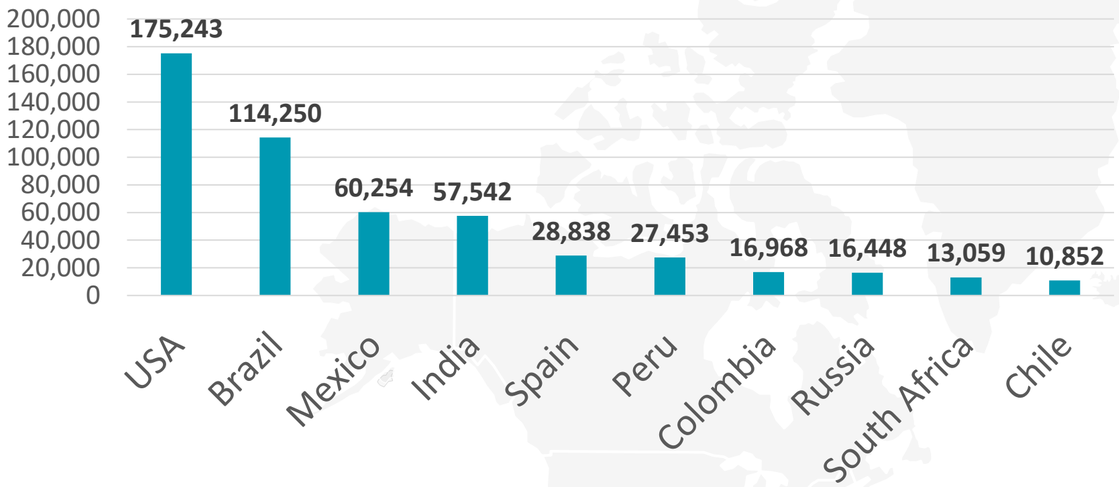
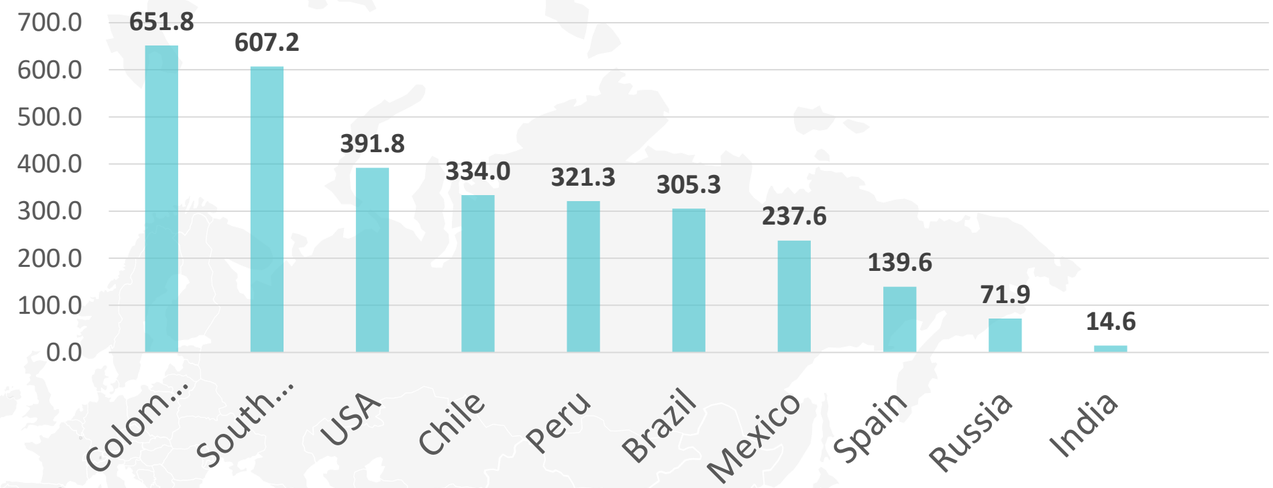
Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

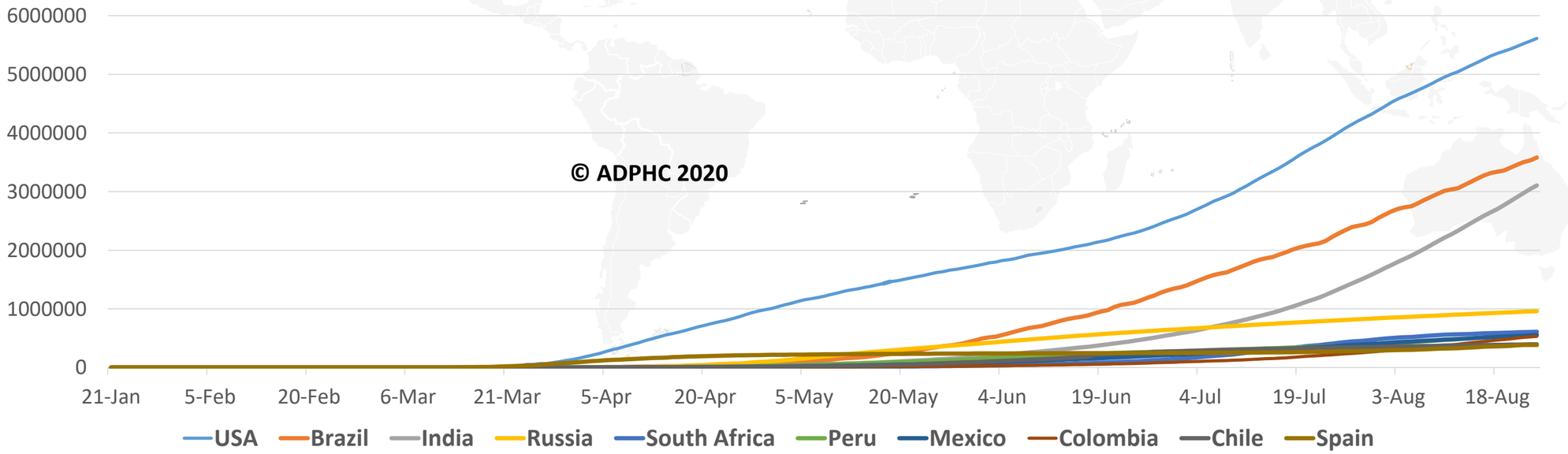
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	5,612,163
Brazil	3,582,362
India	3,106,348
Russia	961,493
South Africa	609,773
Peru	585,236
Mexico	556,216
Colombia	533,103
Chile	397,665
Spain	386054

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

EPIDEMIOLOGY

FROM 21 JAN TO 24 AUG 2020

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

Daily Tests

71,262.3 Average Tests

720.5 per 100k population

0.5% Positive Rate

Daily Cases

391.6 Average Cases

4.0 per 100k population

Daily Recovered

112.6 Average Recovered

1.1 per 100k population

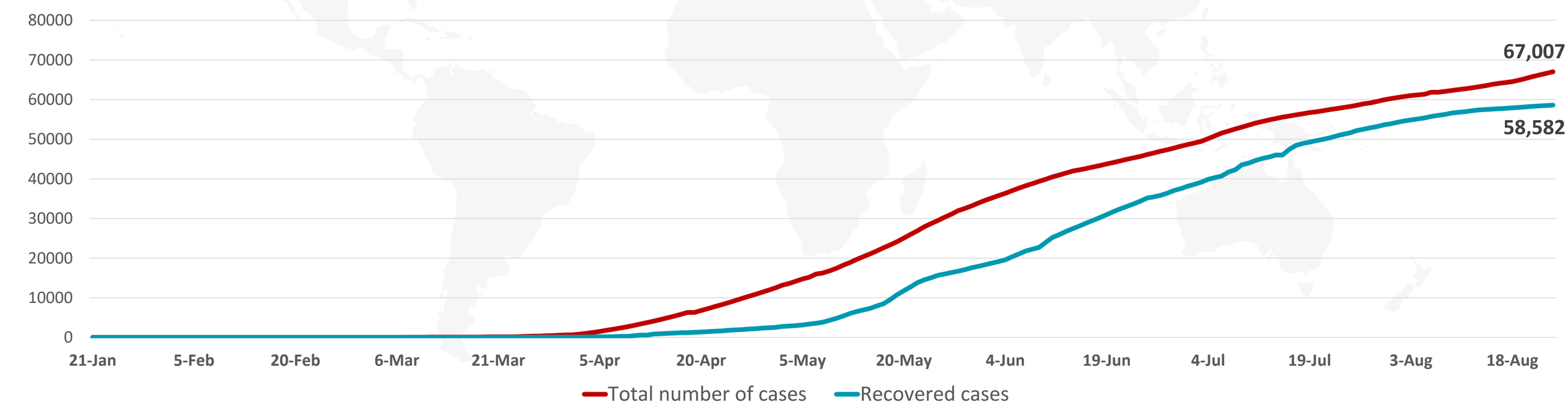
Daily Deaths

1.7 Average Deaths

0.0 per 100k population

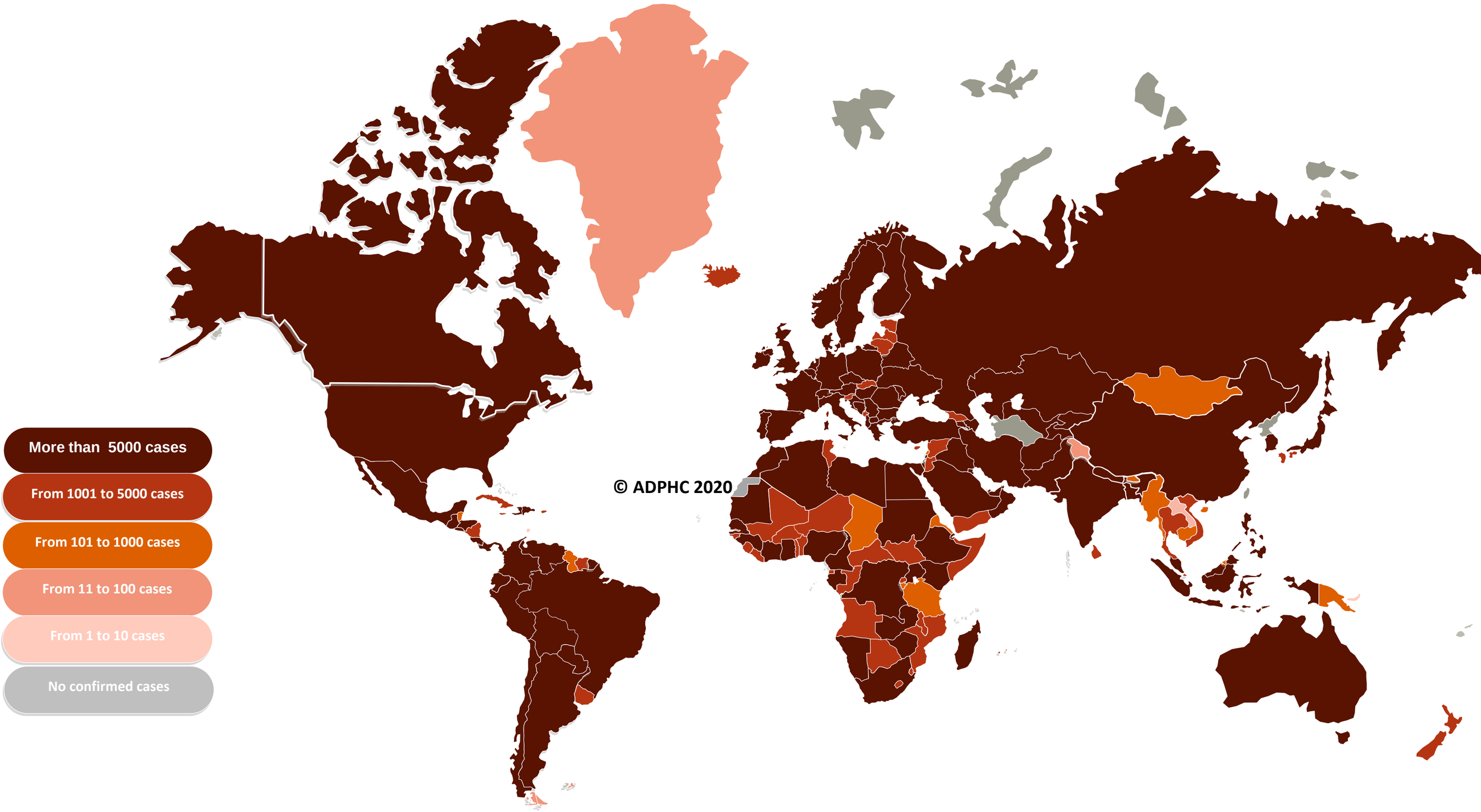
0.4% Case Fatality Rate

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,

Figure 7A : Global Distribution of COVID-19 Cases



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

EPIDEMIOLOGY

Date: 24 AUG 2020

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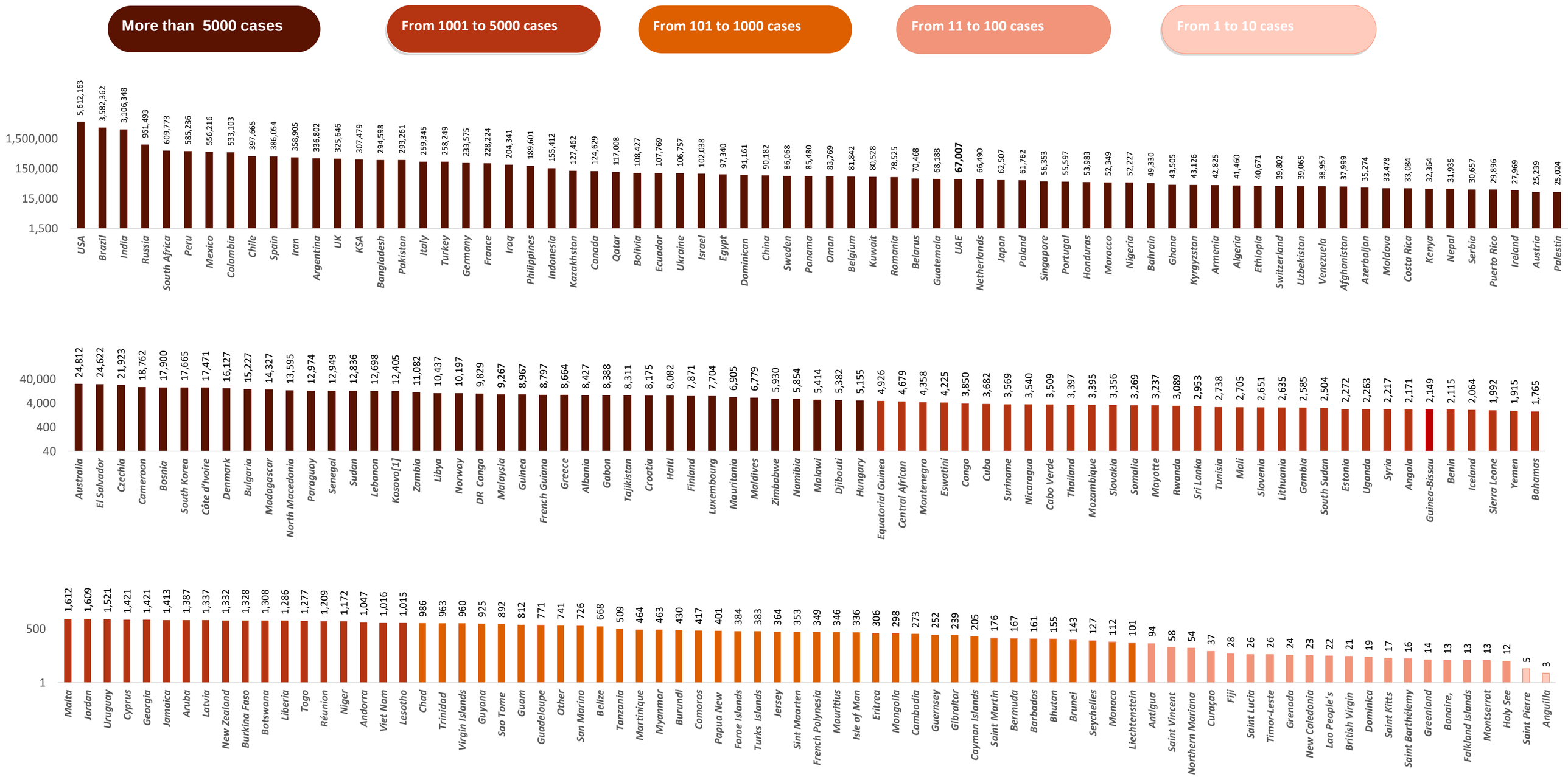
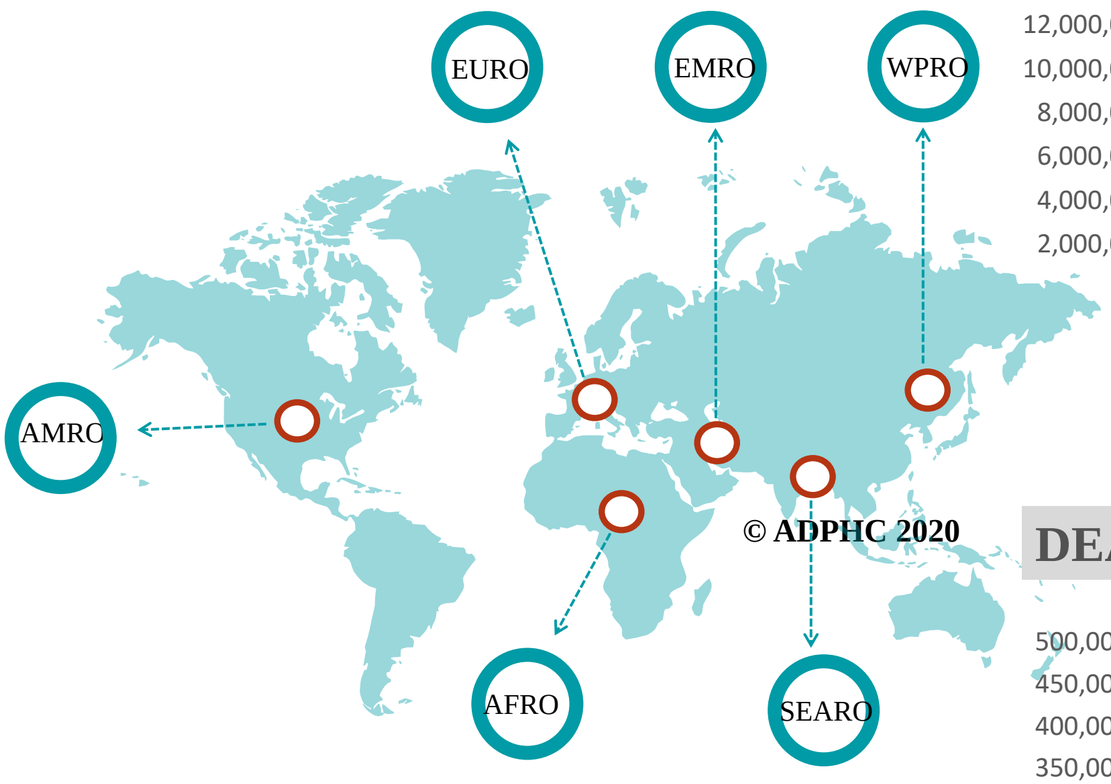
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



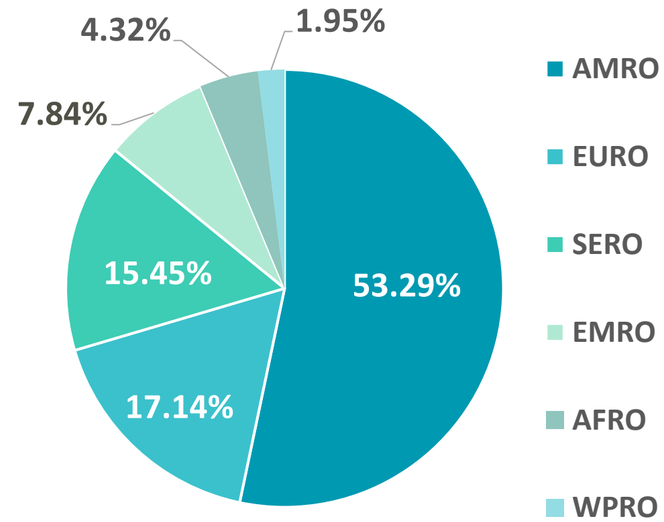
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

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

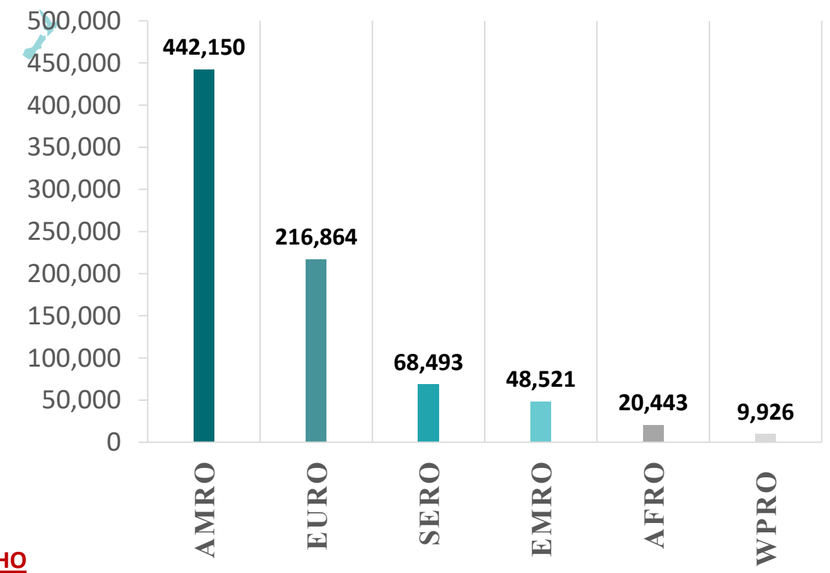
Figure 8: Global Distribution of COVID-19 Cases per Region

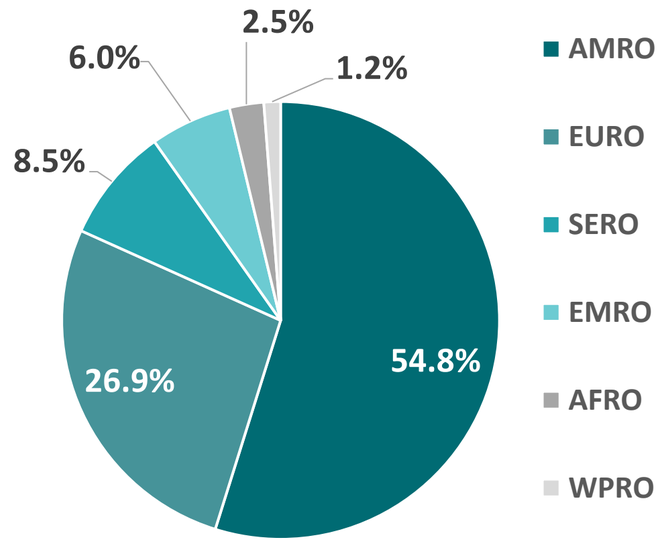


INFECTED



DEATHS

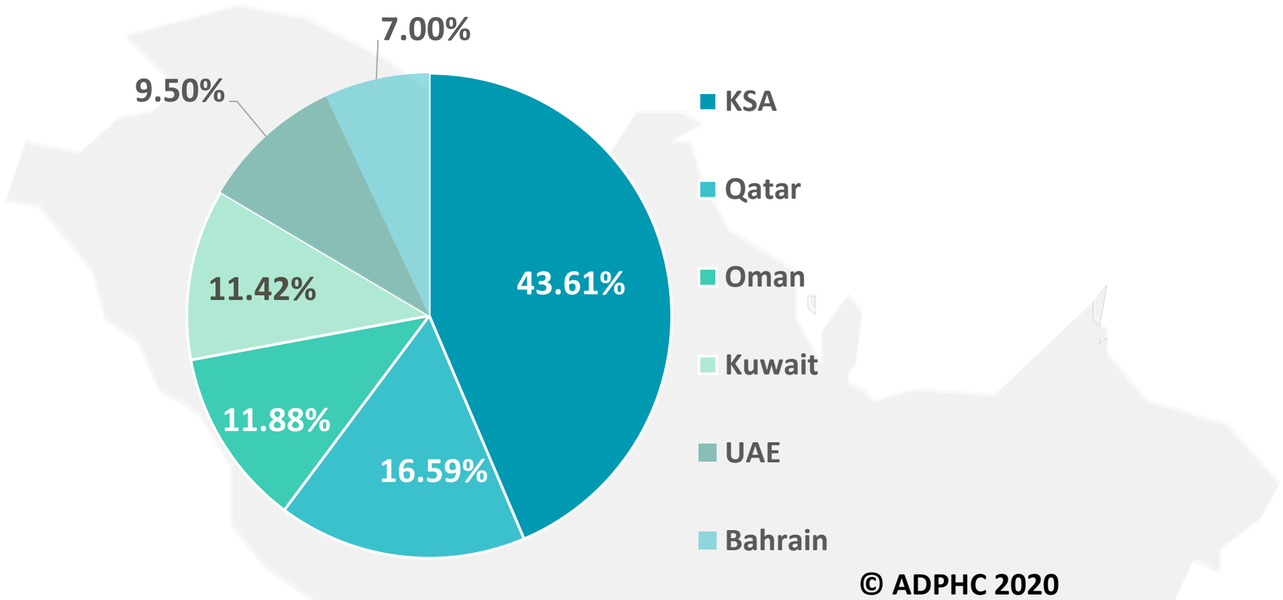


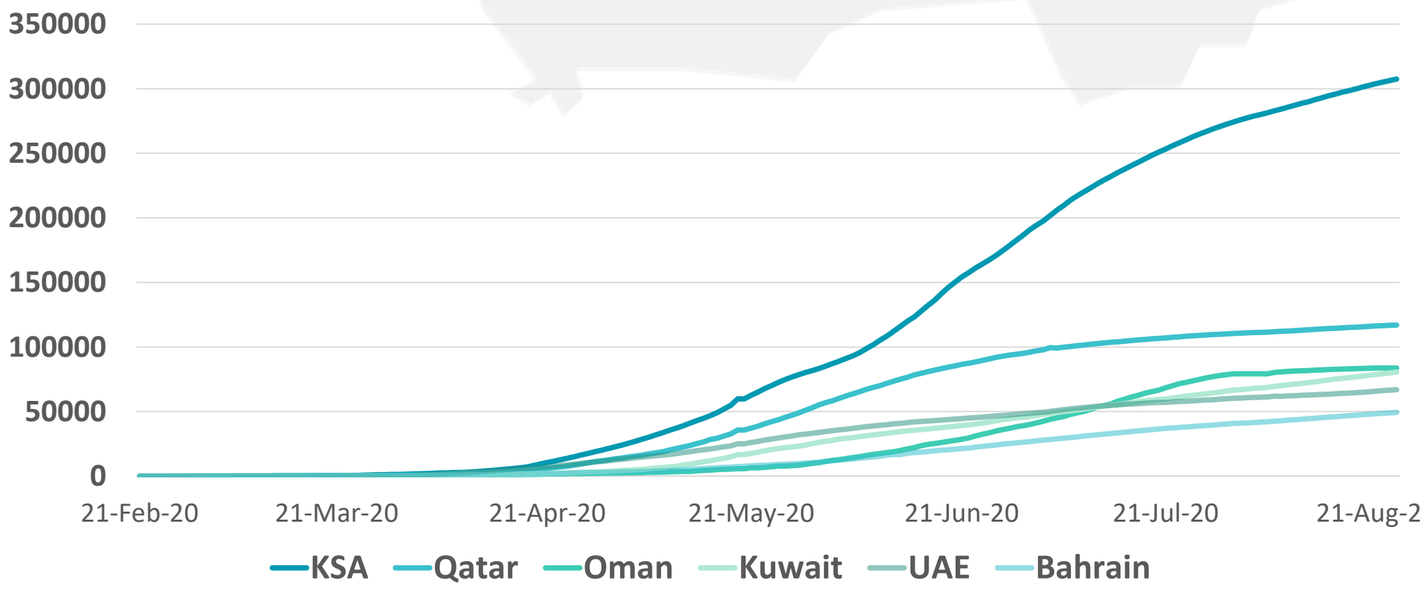


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

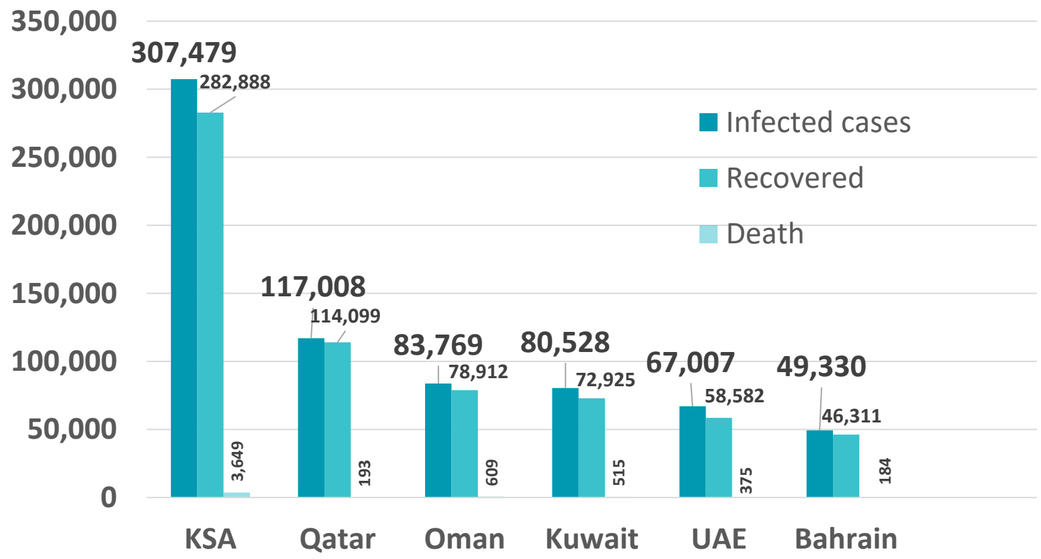
Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES

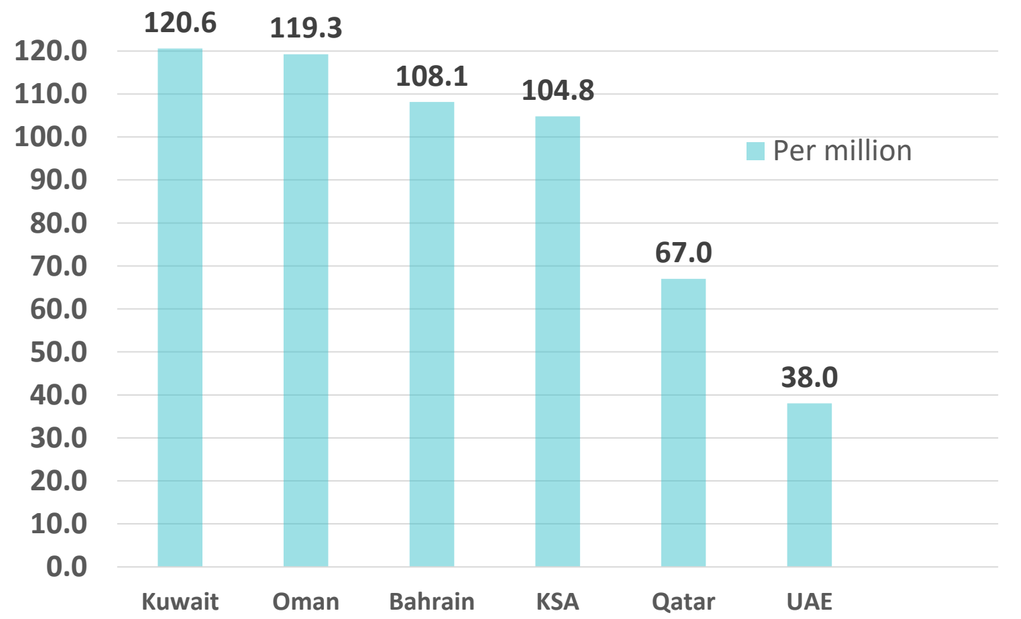




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION



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

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

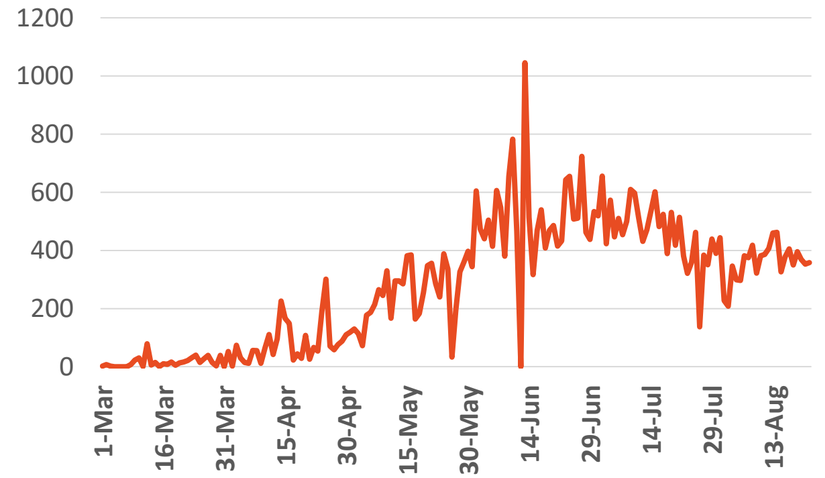
UAE

Source : National Emergency Crisis and Disaster Management Authority

KSA

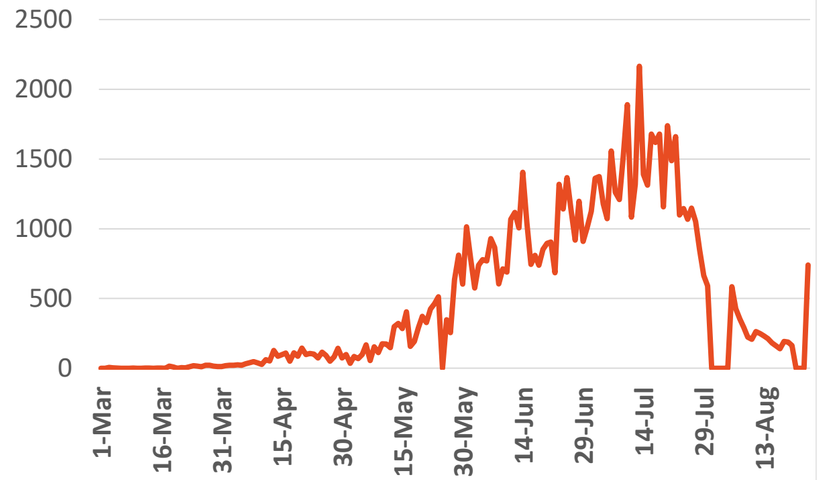
Source : KSA ministry of health

Bahrain



Source :WHO

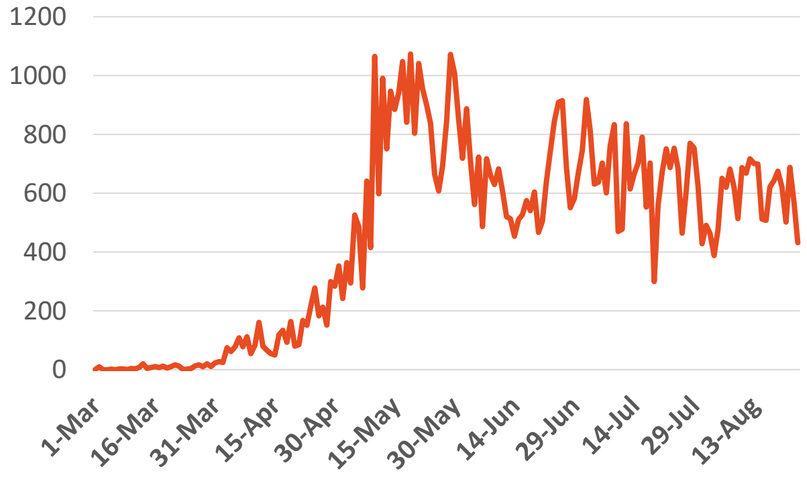
Oman



Source :Oman ministry of health

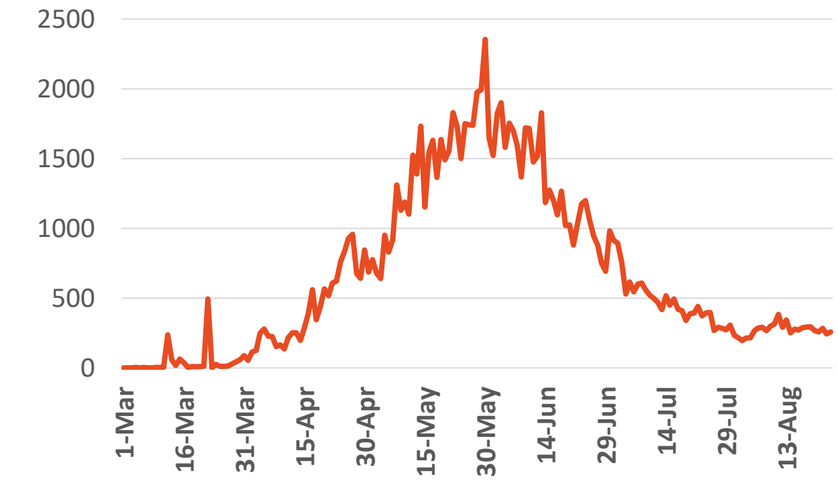
*No announced statistic data from 31 July to 4 August & from 21 to 23 August
*No announced statistic data on weekends and official holidays.

Kuwait



Source : Kuwait ministry of health

Qatar

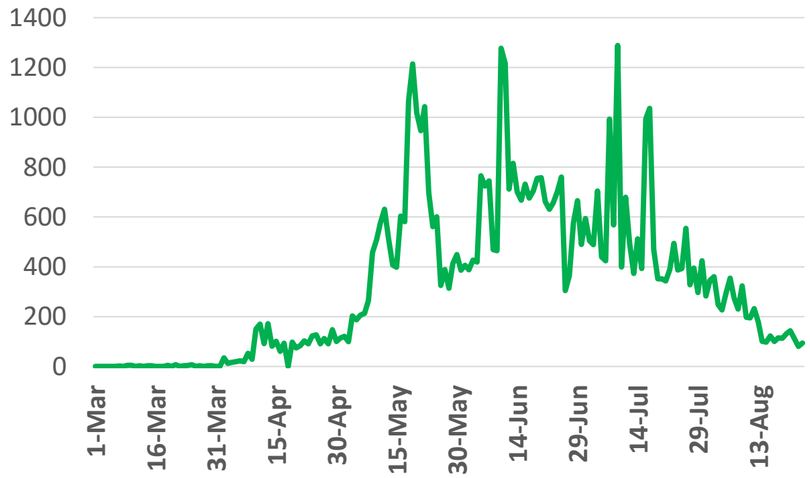


Source : Qatar ministry of health

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

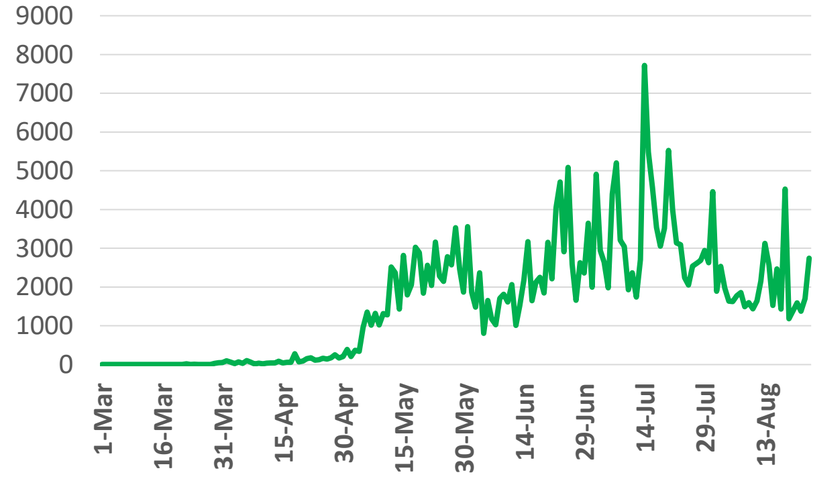
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



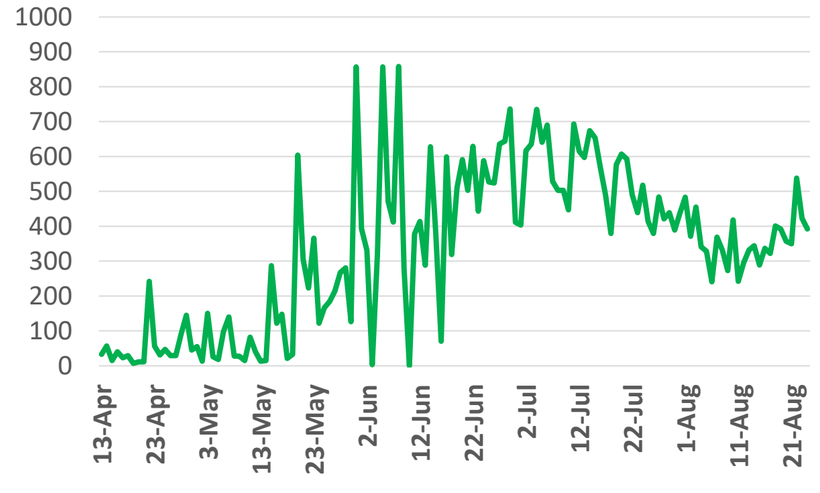
Source : National Emergency Crisis and Disaster Management Authority

KSA



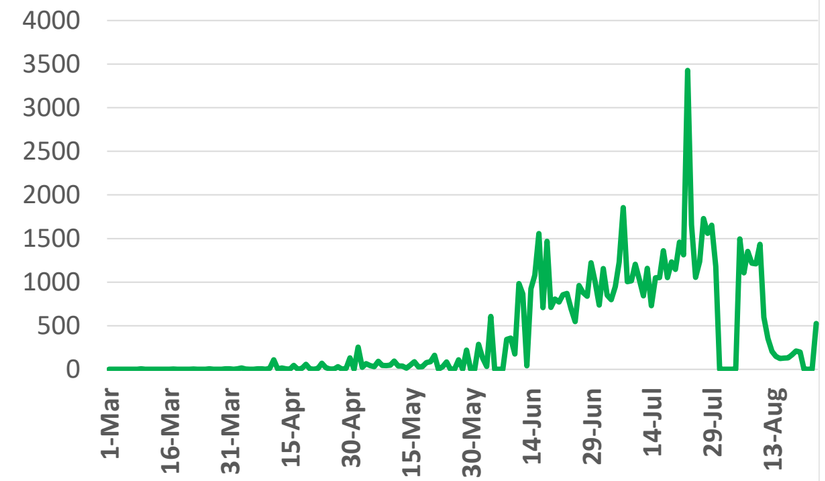
Source : KSA ministry of health

Bahrain



Source : GCCStat

Oman



Source :Oman ministry of health

*No announced statistic data from 31 July to 4 August & from 21 to 23 August

*No announced statistic data on weekends and official holidays.

Kuwait

Source : Kuwait ministry of health

Qatar

Source : Qatar ministry of health

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

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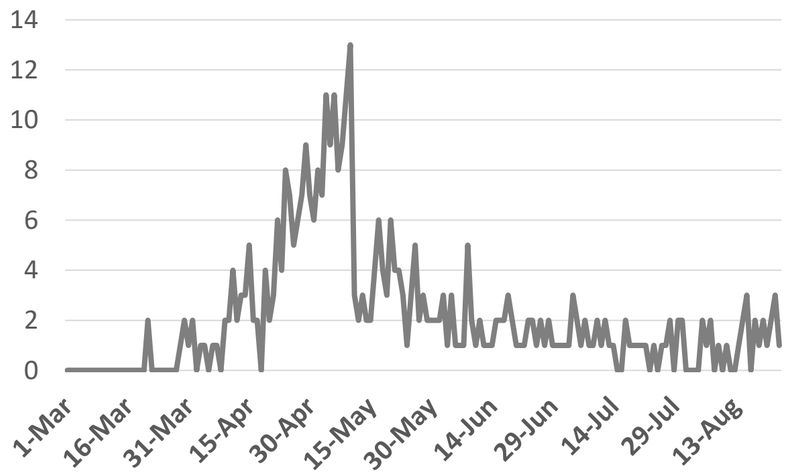
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE

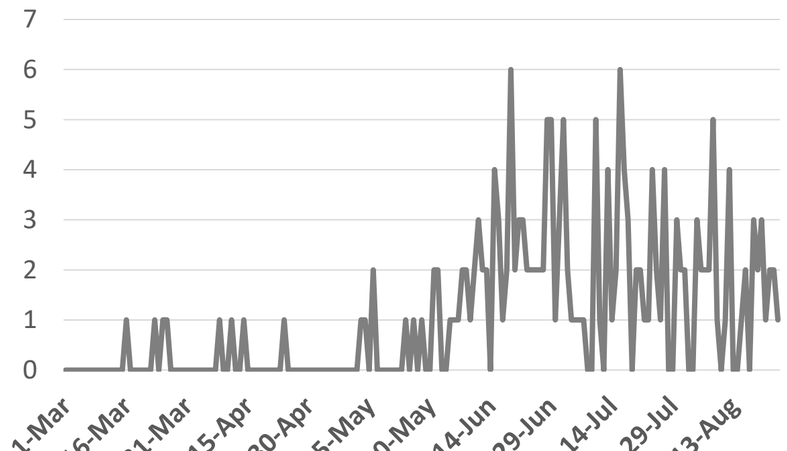


Source : National Emergency Crisis and Disaster Management Authority

KSA

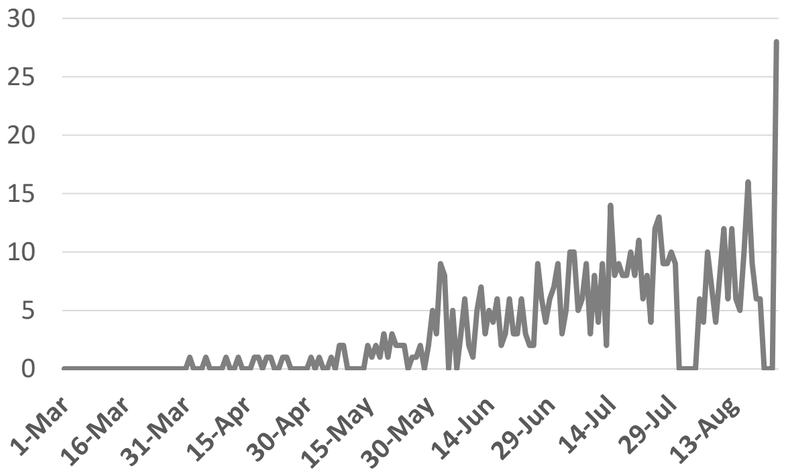
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

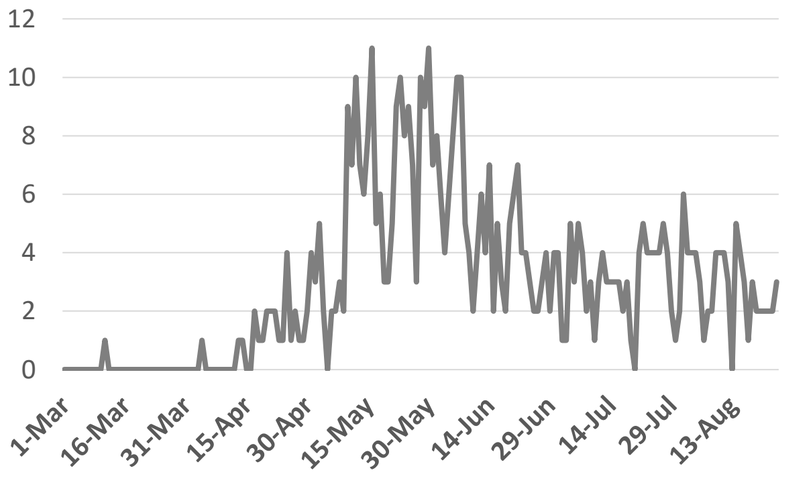


Source :Oman ministry of health

*No announced statistic data from 31 July to 4 August & from 21 to 23 August

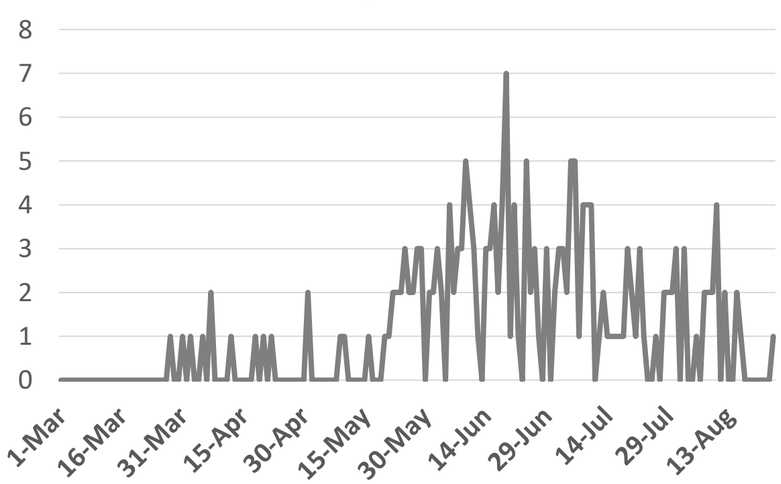
*No announced statistic data on weekends and official holidays.

Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

Article 1 Back to Basics: The Outbreak Response Pillars

Published 17 August 2020 THE LANCET

- The Global Outbreak Alert and Response Network (GORAN) stated that worst-case scenario can be avoided through rapid action of these core pillars: surveillance and contact tracing, testing, case management, infection prevention and control, epidemiological and outbreak analytics, logistics, risk communication, and community engagement.

- In order to gain more time to build capacities for public health response, lockdown and border closure are used but not as a long term strategy.§§GORAN Steering Committee urges all governments at the local level to:

- Separate politicization from COVID-19 response:
  - Strengthen in-country expertise of experienced outbreak responders, and invest in the rapid expansion of the public health workforce.
  - Make decisions based on the latest evidence and the epidemiological situation. As well as, explain these clearly for communities to build trust.
  - Diagnostic test, therapeutics, and vaccines should be available and allocated according to the criteria and needs.
  - Work as international solidarity to get champion multilateral action.

CLINICAL FEATURE

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Article 2

Published

Effects of a Major Deletion in the SARS-CoV-2 Genome on the Severity of Infection and the Inflammatory Response: An Observational Cohort Study

18 August 2020 **THE LANCET**

- SARS-CoV-2 variants with a 382 nucleotide deletion (Δ382) in the open reading frame 8 (ORF8) region of the genome have been detected, in Singapore and other countries such as Australia, Spain, and Bangladesh. This paper compared the clinical outcomes and immune responses of patients infected with wild type and Δ382 SARS-CoV-2.
- Individuals who screened for the Δ382 variant; were retrospectively identified and recruited to a prospective observational cohort study conducted at seven public hospitals in Singapore. Electronic medical records of patients enrolled on this study were reviewed, and data entered onto a standardized collection form. Serial blood and respiratory samples were collected during hospitalization and post-discharge. Individuals infected with Δ382 variant were compared with those infected with wild type SARS-CoV-2.
- 131 (52%) of the 251 individuals screened for Δ382 variant were enrolled in the study. Of those, 92 (70%) were infected with wild type virus only, 29 (22%) had Δ382 variant only, and 10 (8%) had mixed Δ382 variant and wild type virus. Clinical outcomes were considerably better in patients with Δ382 variant than with the wild type virus. Although rates of pneumonia visualized on chest radiograph were similar across all three groups, fewer patients required supplemental oxygen in Δ382 variant the only group than in mixed Δ382 variant and wild type group and wild type only group (p=0·0050). After adjustment for age and presence of comorbidities, patients with Δ382 variant had lower odds of developing hypoxia [adjusted odds ratio (AOR) - 0·07; 95% CI: 0·00-0·48] compared with those infected with wild type virus only.
- ORF8 is a hotspot for coronavirus mutation. The clinical effect of deletions in this region appears to be a milder infection with the less systemic release of proinflammatory cytokines and a more effective immune response to SARS-CoV-2. Further study of these variants could have implications for the development of treatments and vaccines.

Article 3

Published

Filtration Efficiency of Hospital Face Mask Alternatives Available for Use During the COVID-19 Pandemic

11 August 2020 JAMA

The study discusses the efficiency of face masks alternatives and their fitted filtration efficiencies (FFEs) used during the COVID-19 pandemic.

Background

- During the pandemic, there has been a shortage of protective personal equipment, resulting in clinicians and healthcare workers turning to nonstandard practices to wearing face masks. These include the use of expired N95 masks, decontaminating and reusing face masks and using non- National Institute for Occupational Safety and Health approved face masks as part of the contingency plan developed by the CDC.

Methodology

- FFE tests were performed between April and June 2020 in a custom-built exposure chamber.
- FFE was measured through a series of repeated movements of the body, head, and facial muscles to simulate characteristic occupational activities experienced by a mask wearer.
- The total testing time was 3 minutes.

Results

- N95 respirators that have expired for up to 11 years and N95 respirators subjected to ethylene oxide and vaporized hydrogen peroxide sterilization kept FFEs more than 95%.
- All non-approved face masks in this test failed to achieve 95% FFE.
- All surgical and procedure masks had significantly lower average FFEs than the N95 masks, and the inconsistency in their performances was mostly dependent on the tightness of the contact between the material and the test individual's facial skin. In addition, those with ties were more efficient than those with ear loops.
- There was no difference in the size of the masks worn by either male or female to the FFEs of the masks tested.

Conclusion

The study showed that using the mentioned alternative face mask options in a worst case scenario had the efficiency of using a new one.

THANK YOU

ADPHCAE ADPHC_AE ADPHC_AE ADPHC.AE ADPHC-AE 056 2312171