SCIENTIFIC RESEARCH MONITORING ON COVID-19

29 NOVEMBER 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 300)

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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

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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Epidemiology

SARS-CoV-2, SARS-CoV, and MERS-CoV Viral Load Dynamics, Duration of Viral Shedding, and Infectiousness: A Systematic Review and Meta-Analysis

Public Health Response

Rapid Response to an Outbreak in Qingdao, China

Public Health Response

Cost-Effectiveness of Public Health Strategies for COVID-19 Epidemic Control in South Africa: A Microsimulation Modelling Study

Clinical Features

A Case of SARS-CoV-2 Reinfection in Ecuador

Vaccine

Safety and Immunogenicity of ChAdOx1 nCoV-19 Vaccine Administered in a Prime-Boost Regimen in Young and Old Adults(COV002): A Single-Blind, Randomised, Controlled, Phase 2/3 Trial

Clinical Features

A Proposed Framework and Timeline of the Spectrum of Disease Due to SARS-CoV-2 Infection Illness Beyond Acute Infection and Public Health Implications

Diagnosis

Multi-Center Nationwide Comparison of Seven Serology Assays Reveals a SARS-CoV-2 Non-Responding Seronegative Subpopulation

UAE Research

Eating Habits and Lifestyle during COVID-19 Lockdown in the United Arab Emirates: A Cross-Sectional Study

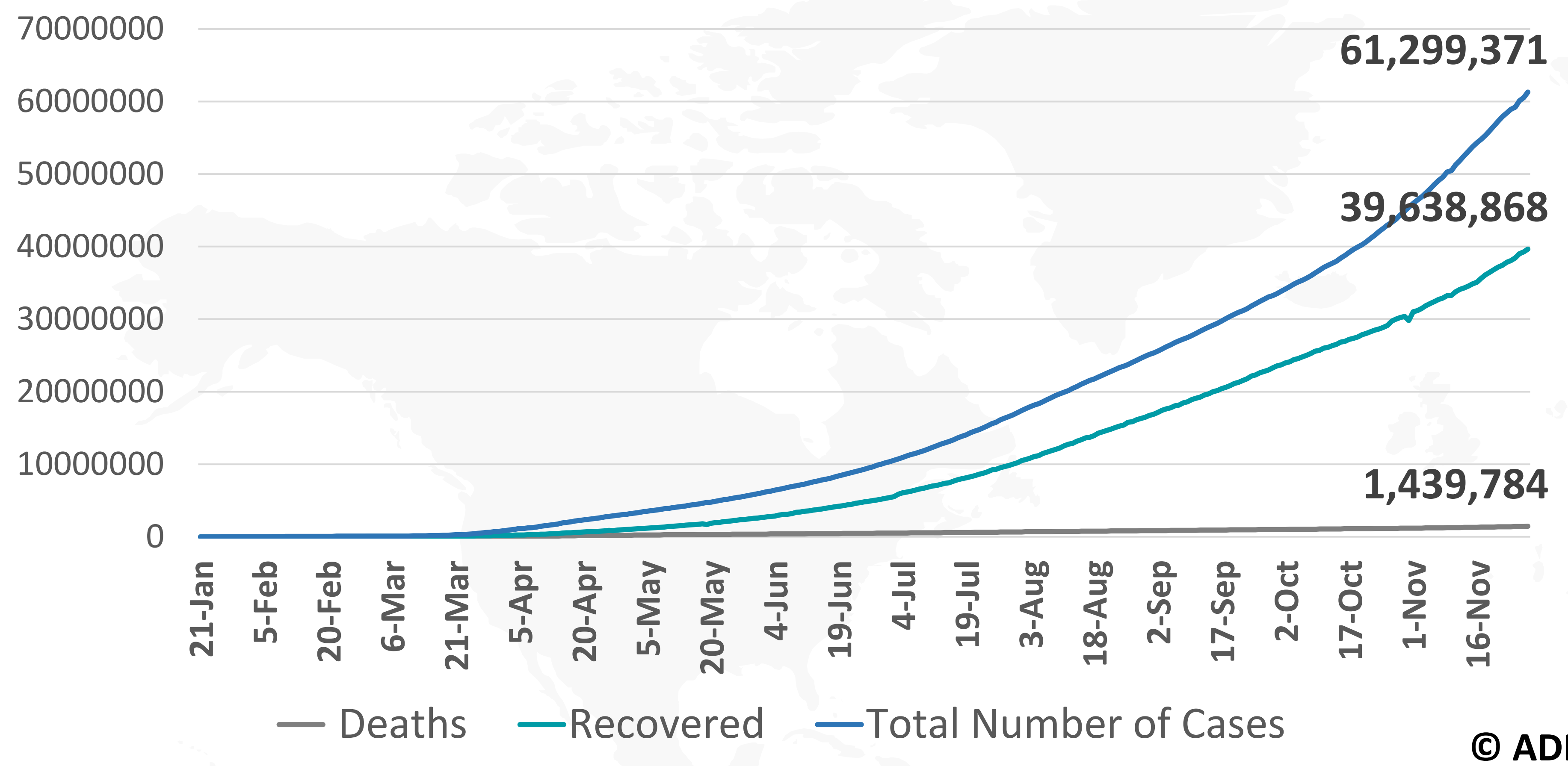
Diagnosis

Ct Values and Infectivity of SARS-CoV-2 on Surfaces

EPIDEMIOLOGY

FROM 21 JAN TO 28 NOV 2020

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



Note: the number of recovered cases in 31[th] October recorrected from 30 million to 29 million in Johns Hopkins website

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

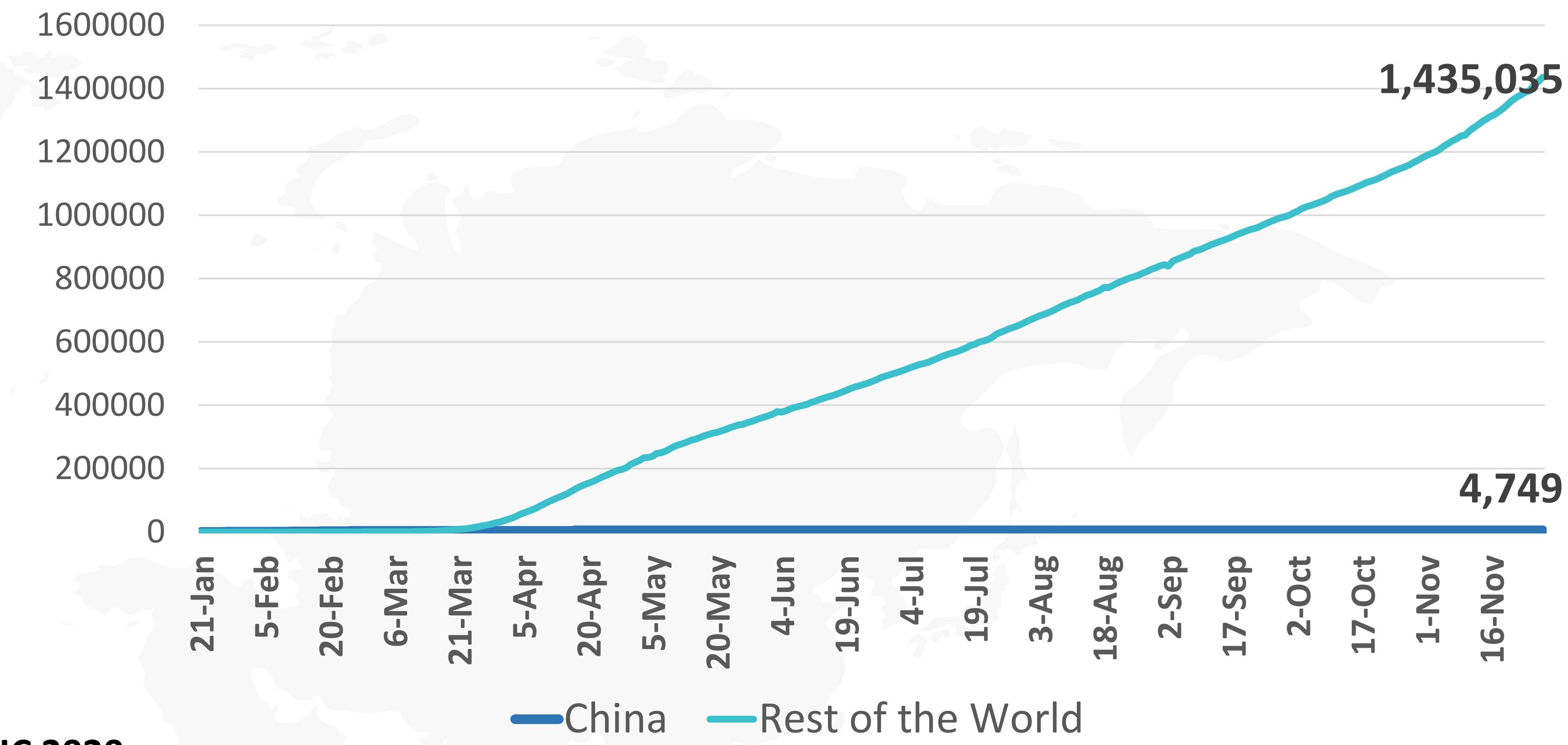


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

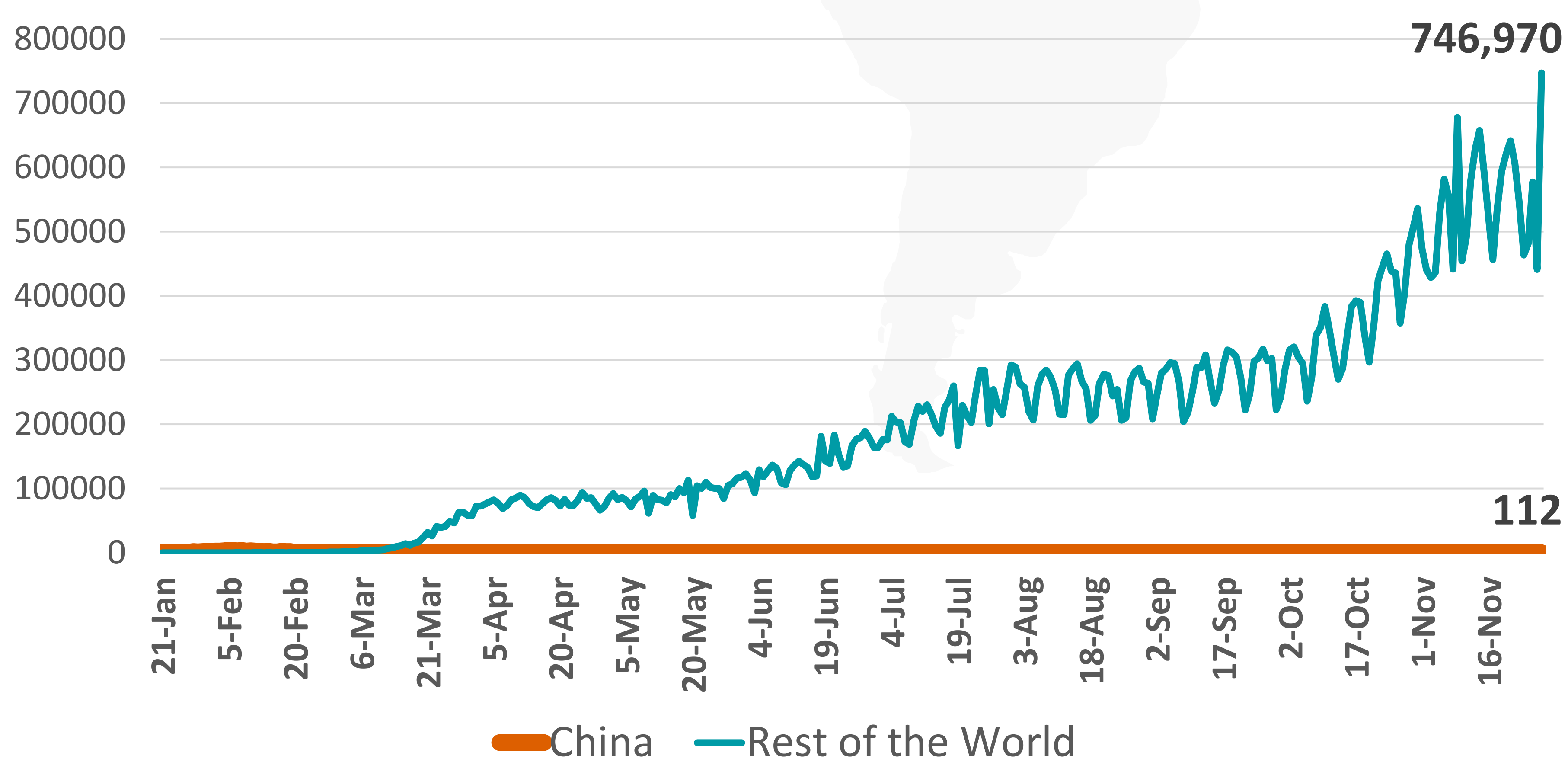
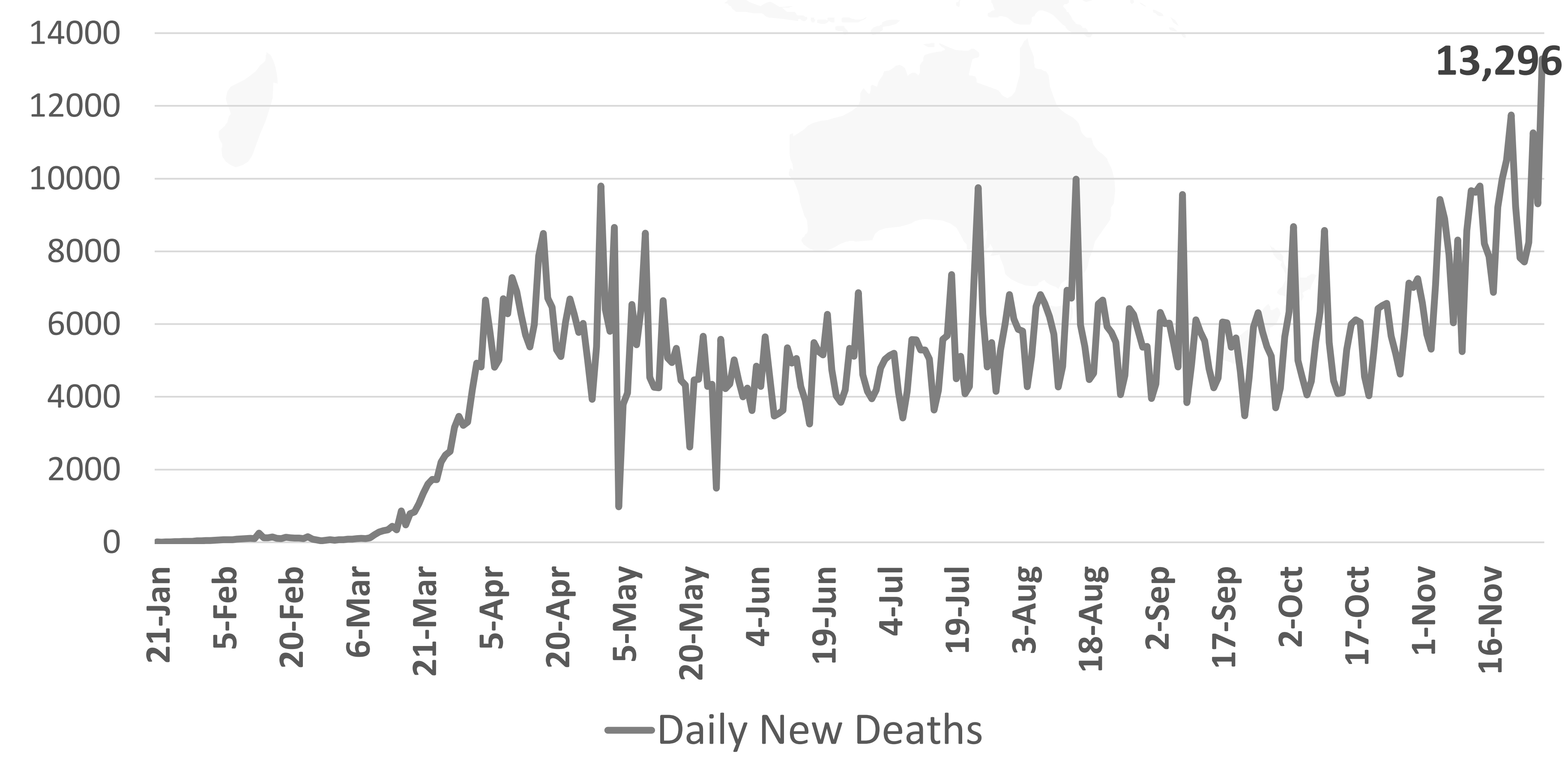


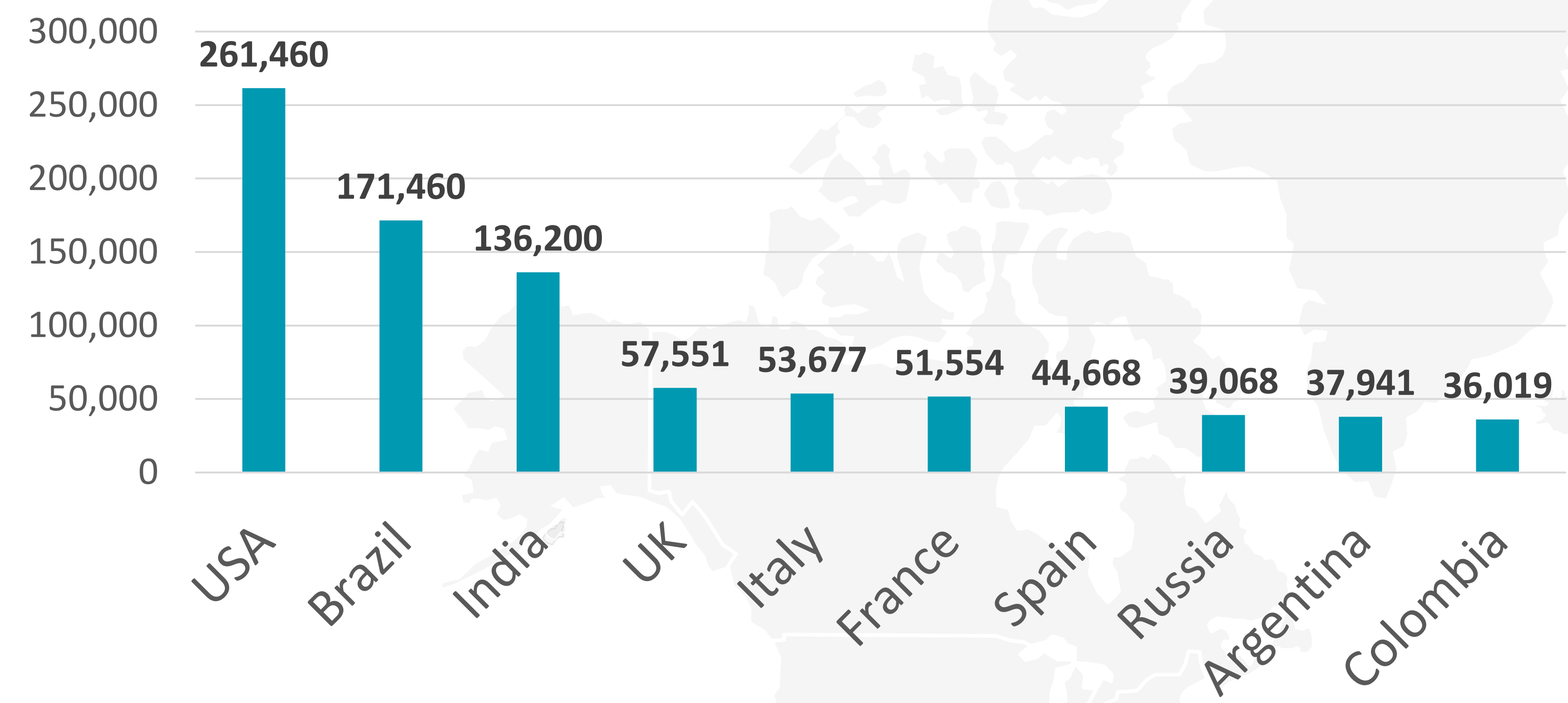
Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)



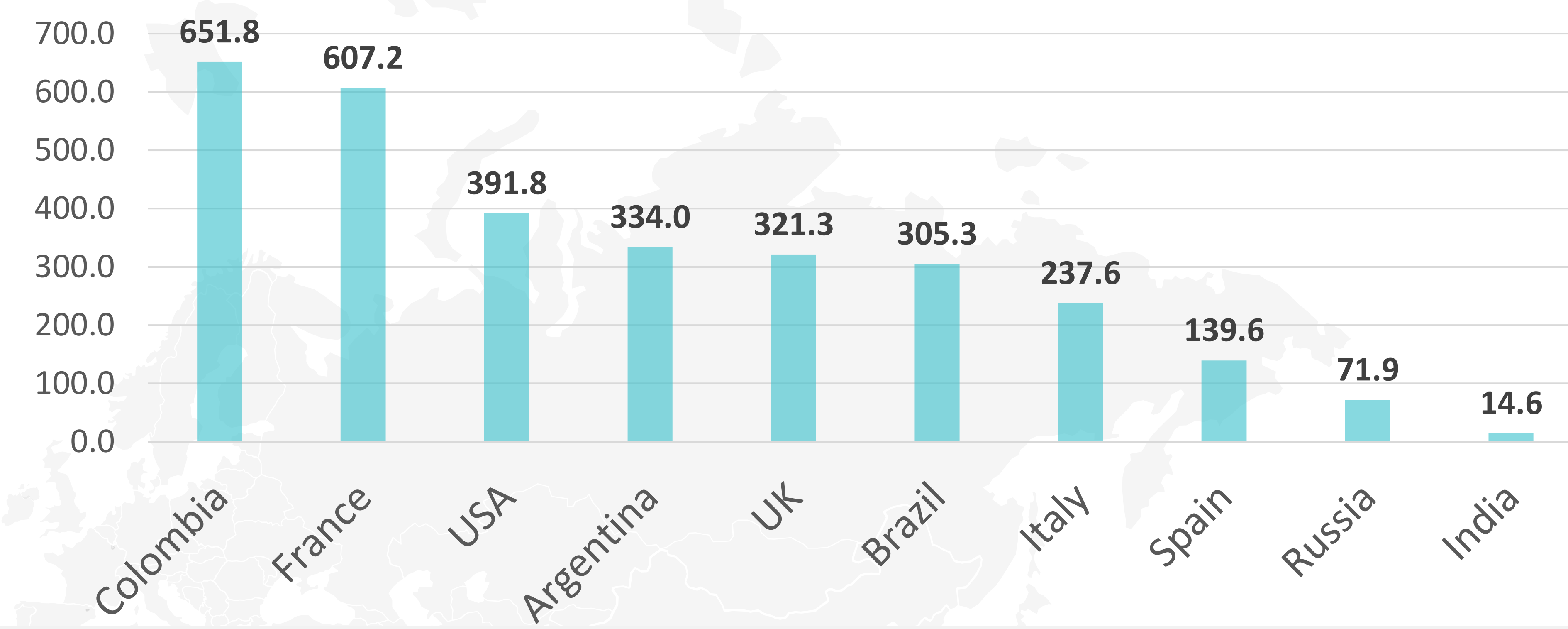
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: John Hopkins, WHO

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

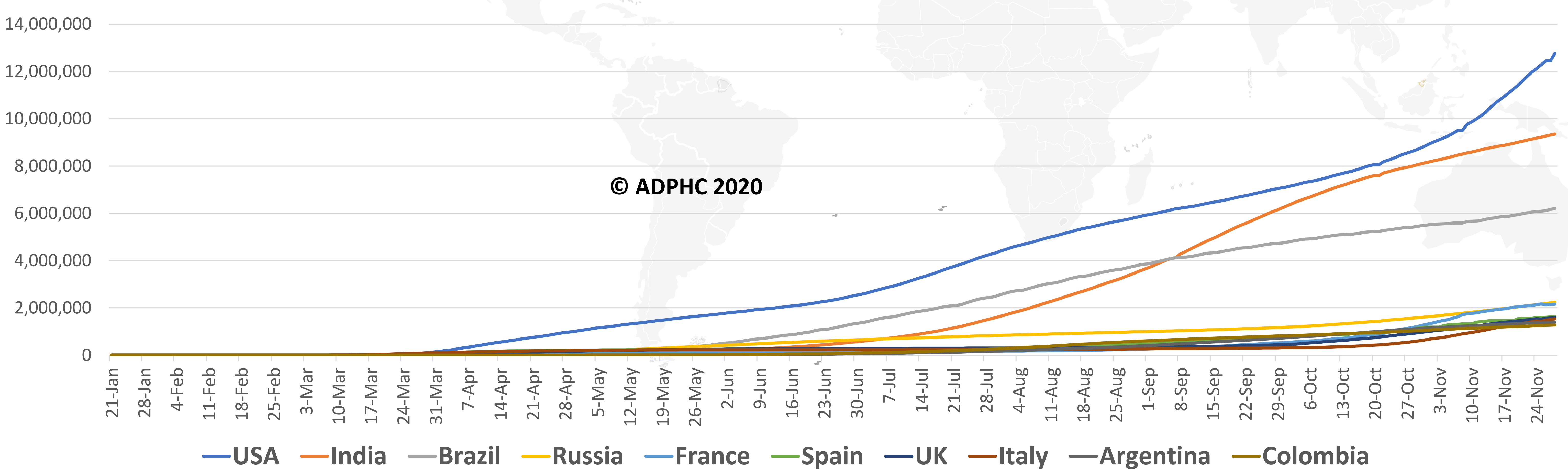
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	12,763,997
India	9,351,109
Brazil	6,204,220
Russia	2,242,633
France	2,157,332
Spain	1,628,208
UK	1,589,305
Italy	1,538,217
Argentina	1,399,431
Colombia	1,280,487

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

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

Daily Tests

119,348.7 Average Tests

1,206.7 per 100k population

1.0% Positive Rate

Daily Cases

1,245.3 Average Cases

12.6 per 100k population

Daily Recovered

767.0 Average Recovered

7.8 per 100k population

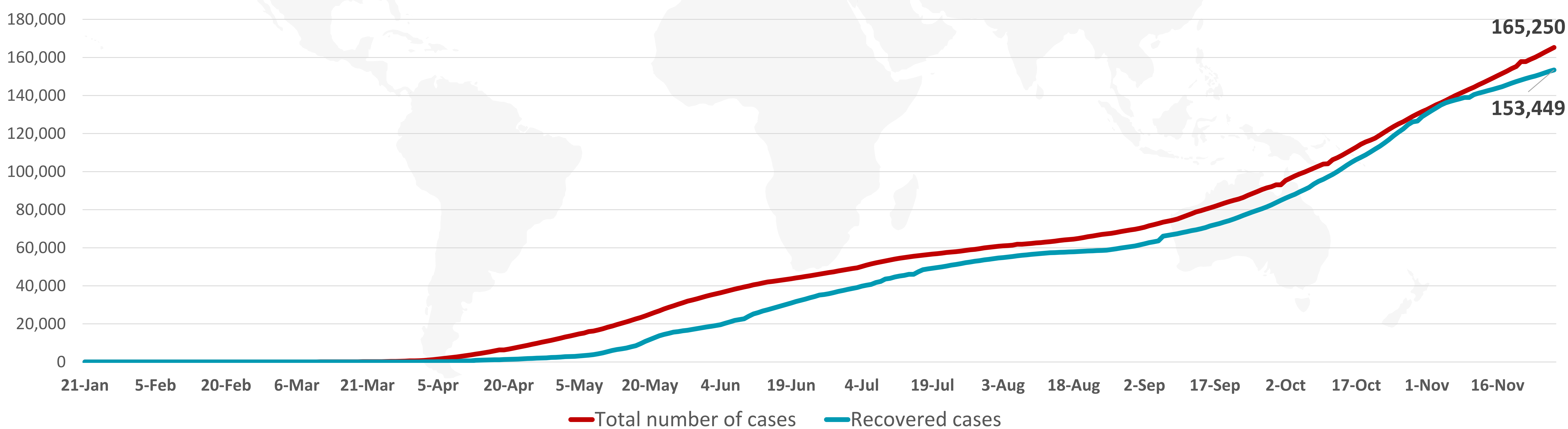
Daily Deaths

3.0 Average Deaths

0.0 per 100k population

0.2% Case Fatality Rate

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



EPIDEMIOLOGY

Date: 28 NOV 2020

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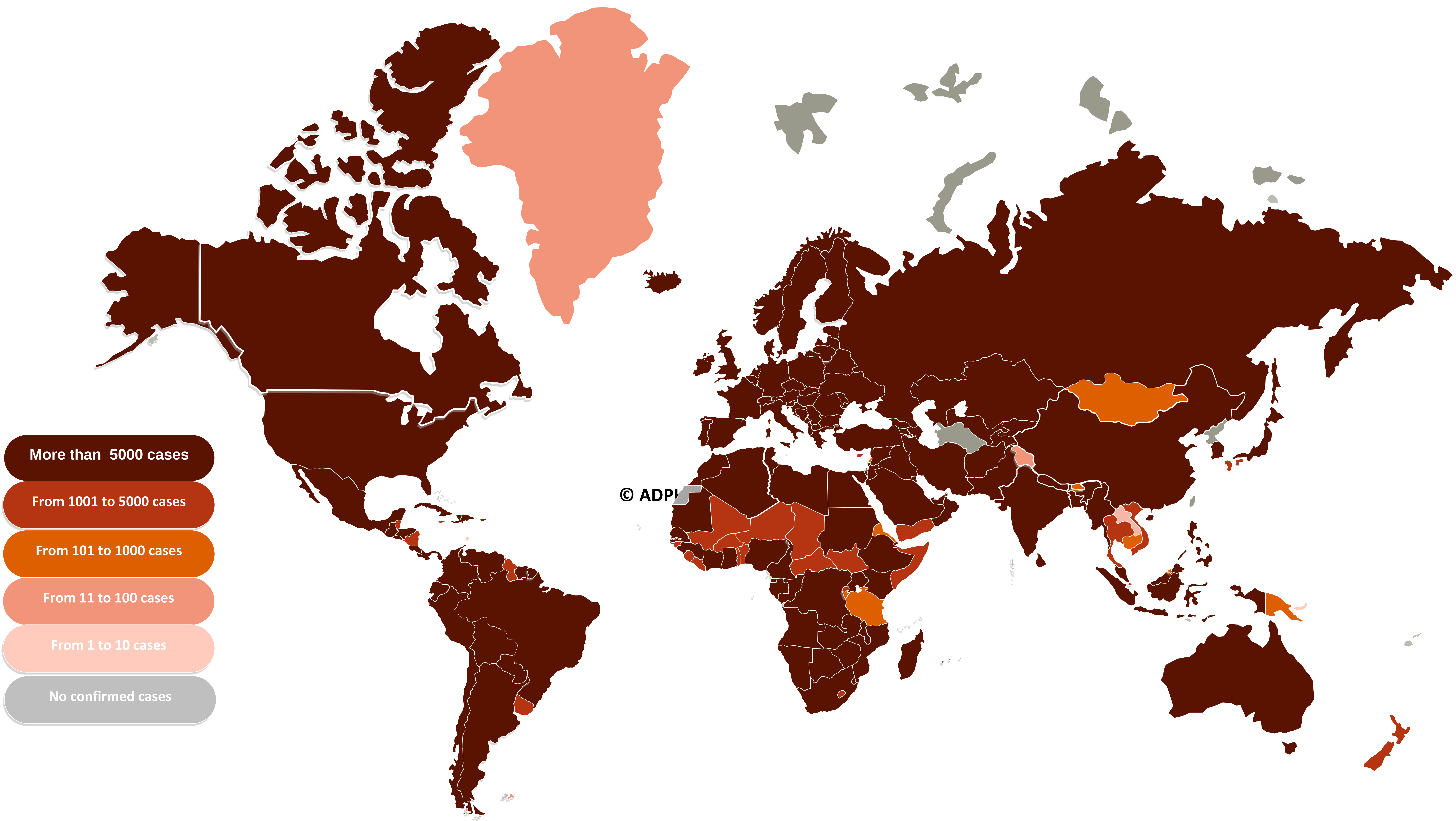
Figure 7A : Global Distribution of COVID-19 Cases

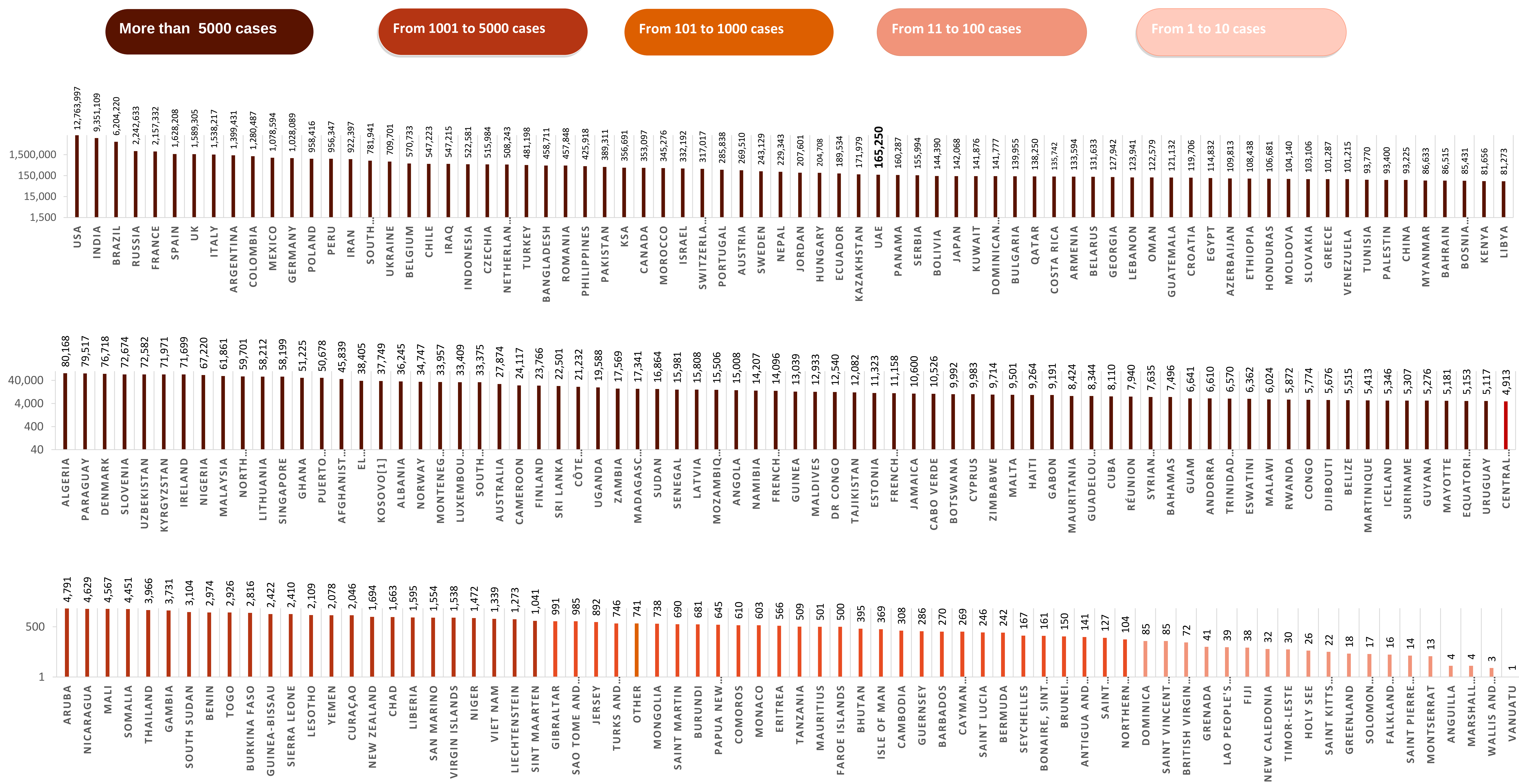


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

EPIDEMIOLOGY

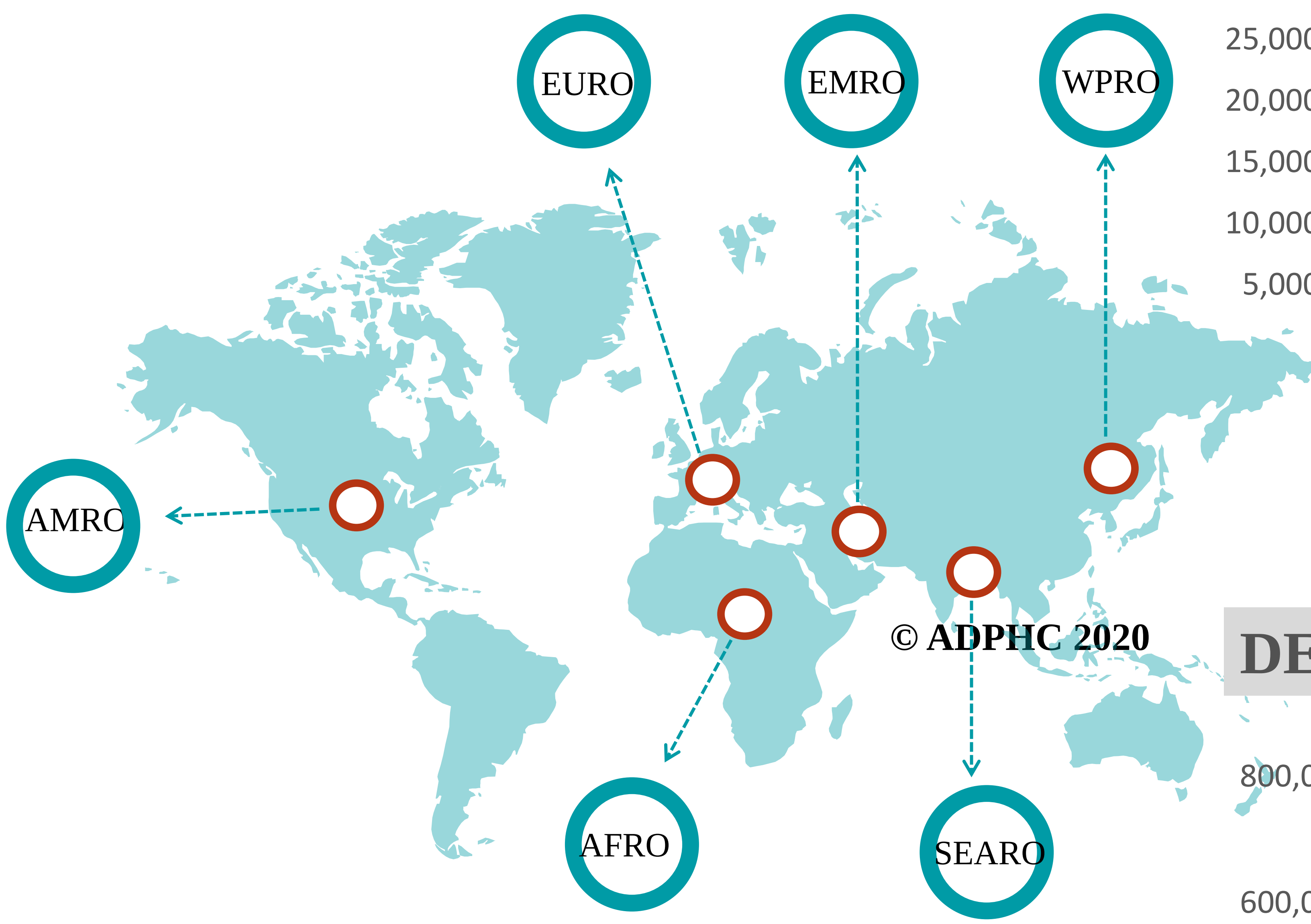
Date: 28 NOV 2020

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

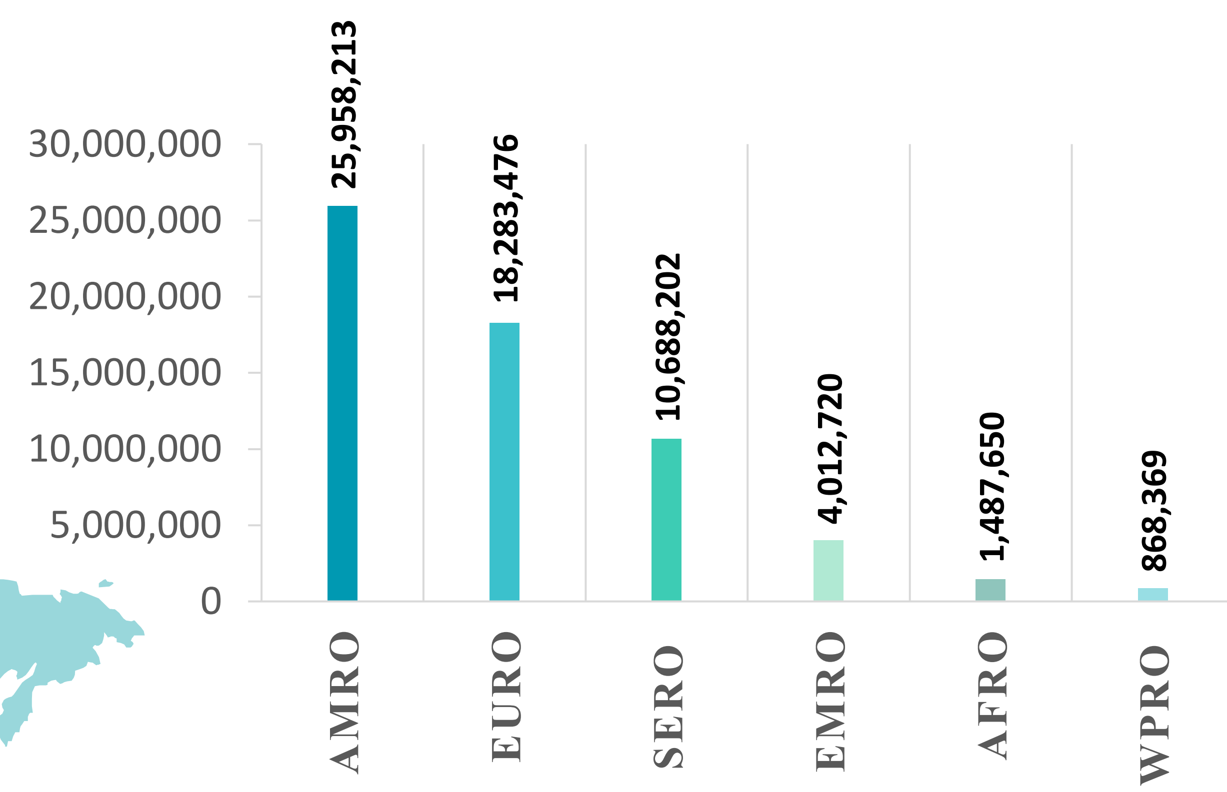


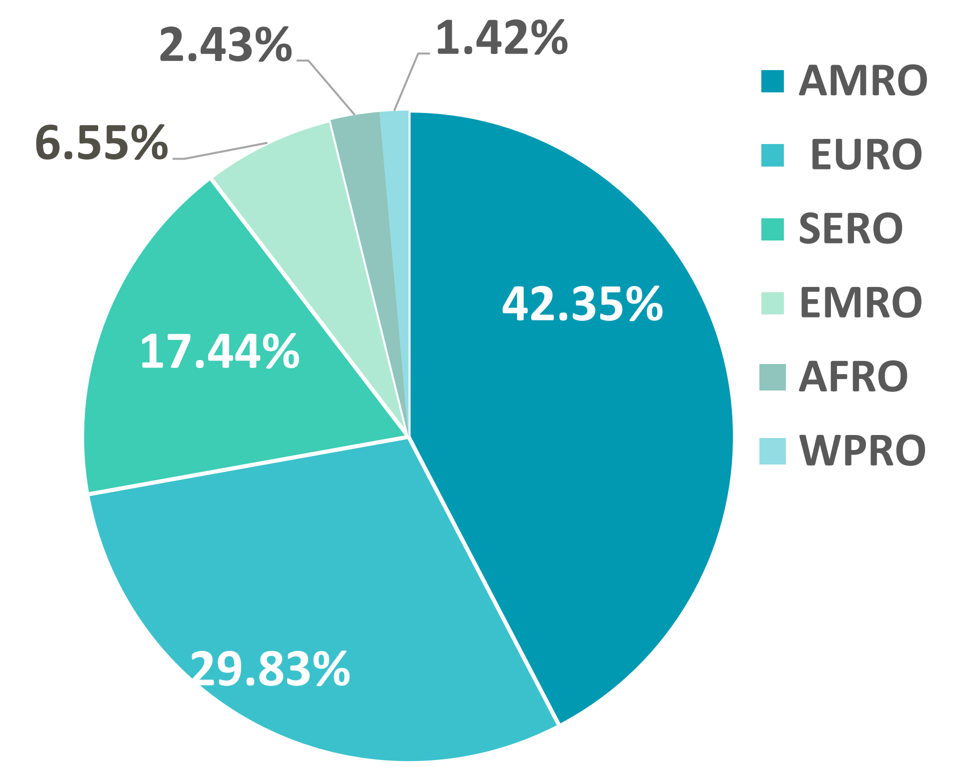
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

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

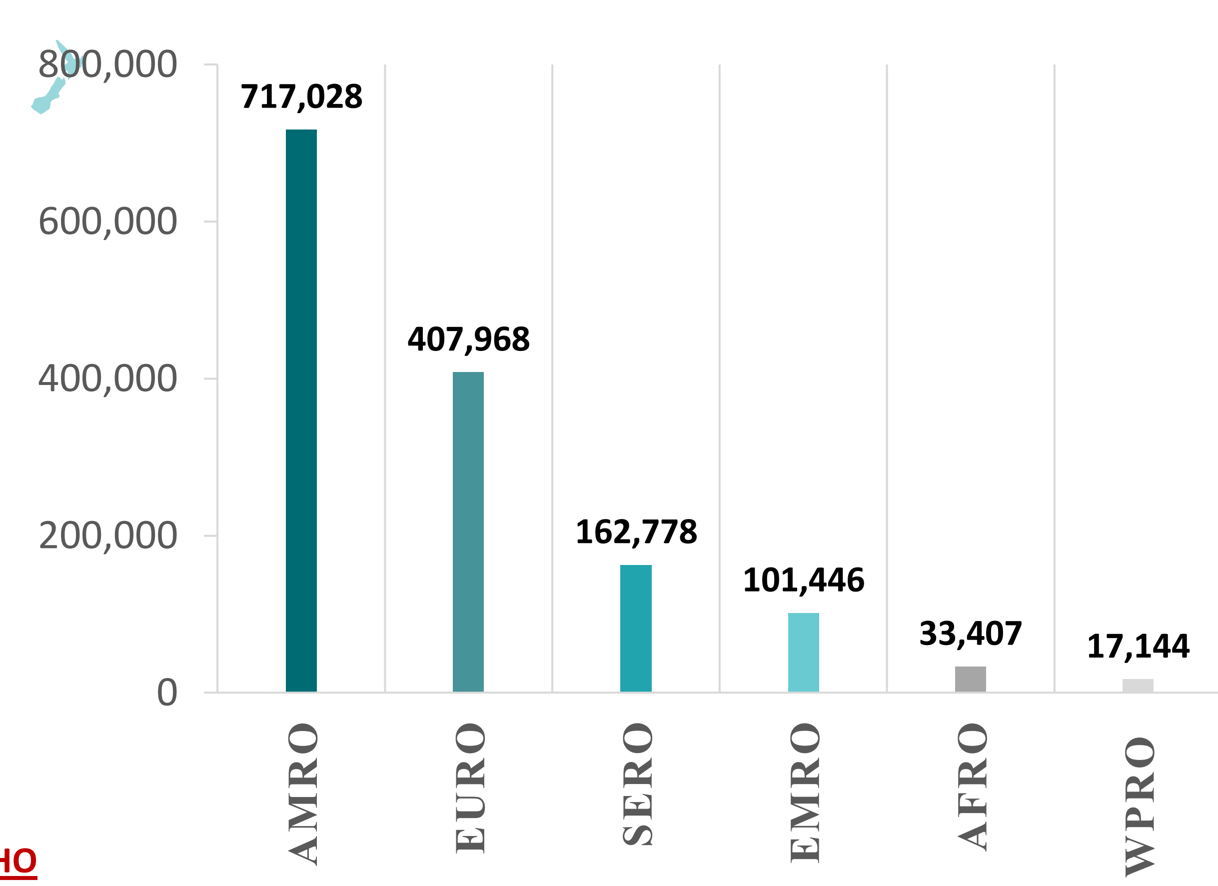


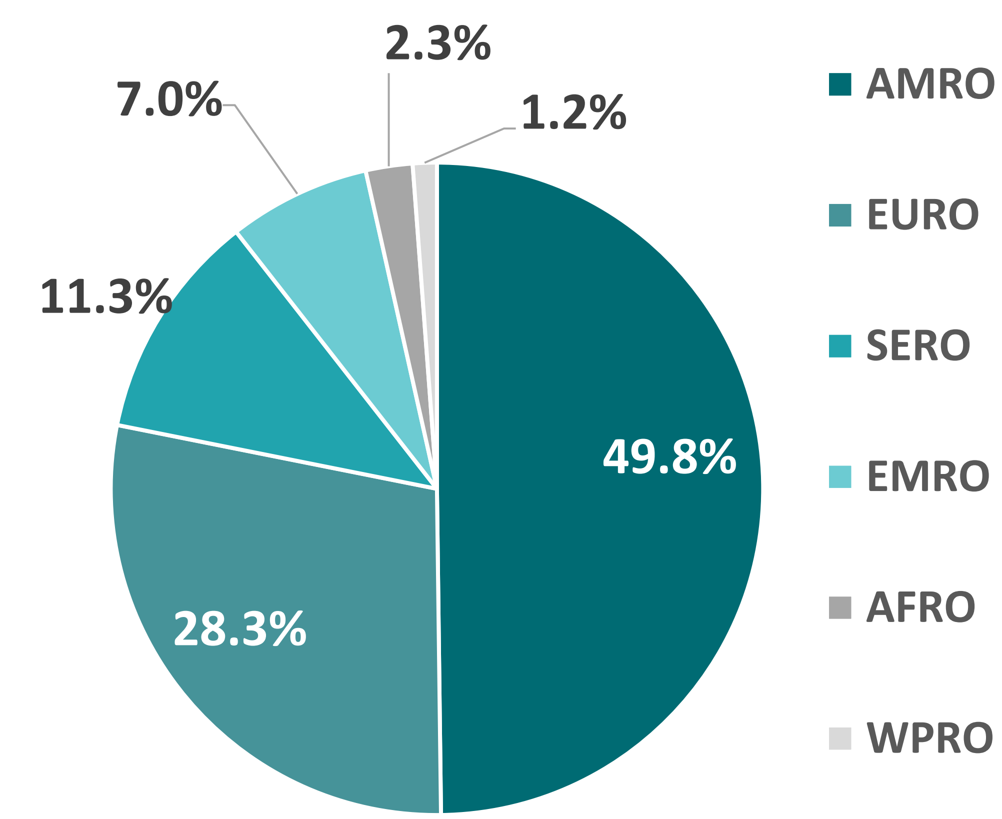
INFECTED





DEATHS





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

EPIDEMIOLOGY

Date: 28 NOV 2020

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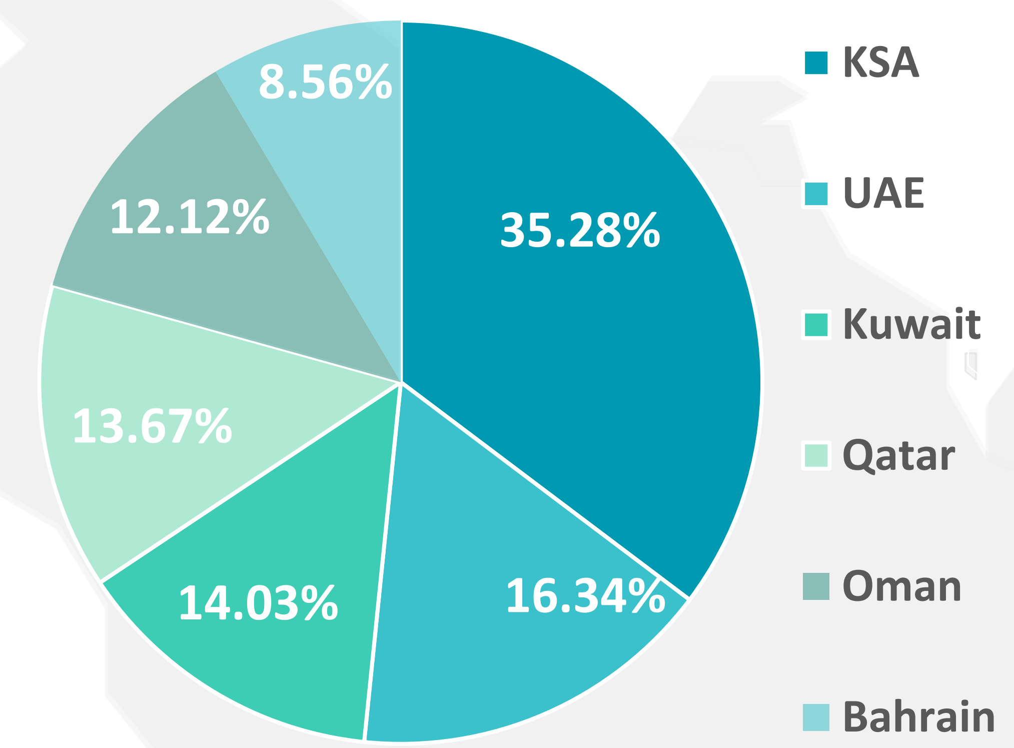
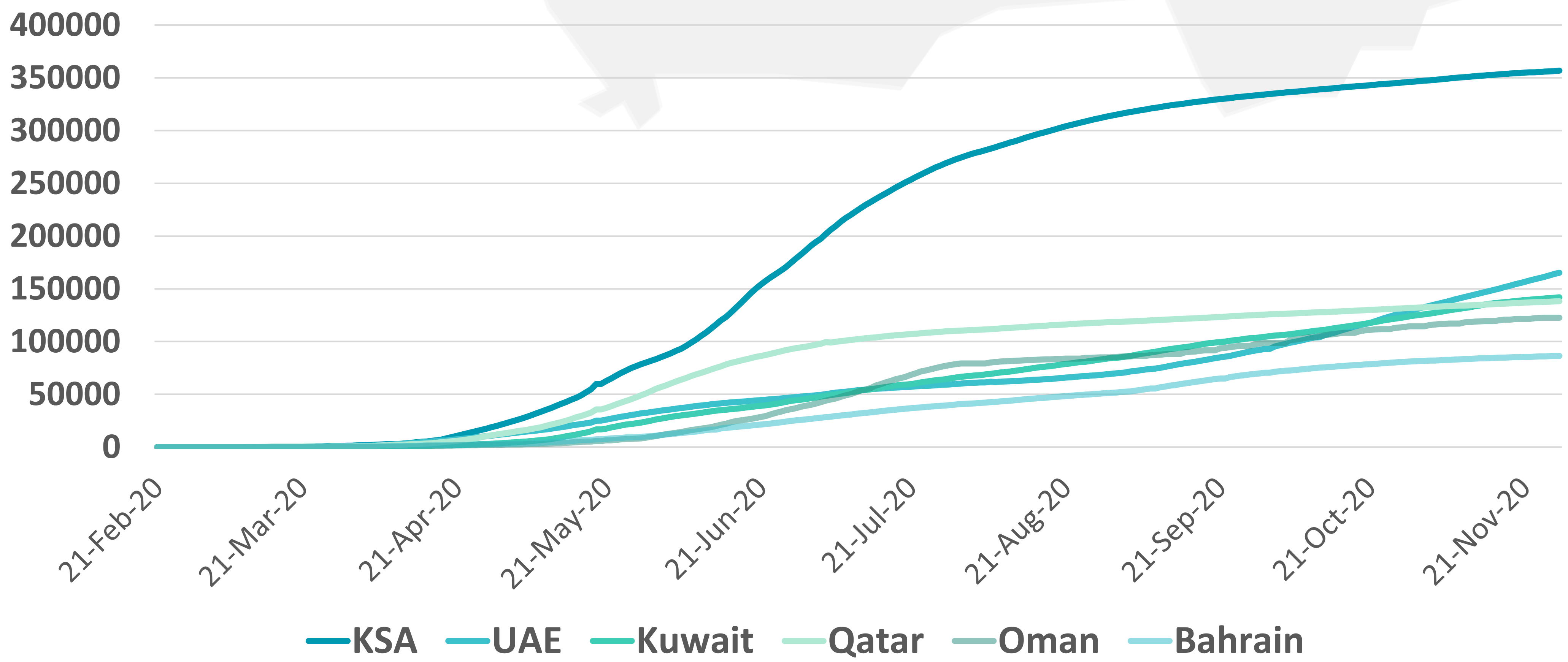
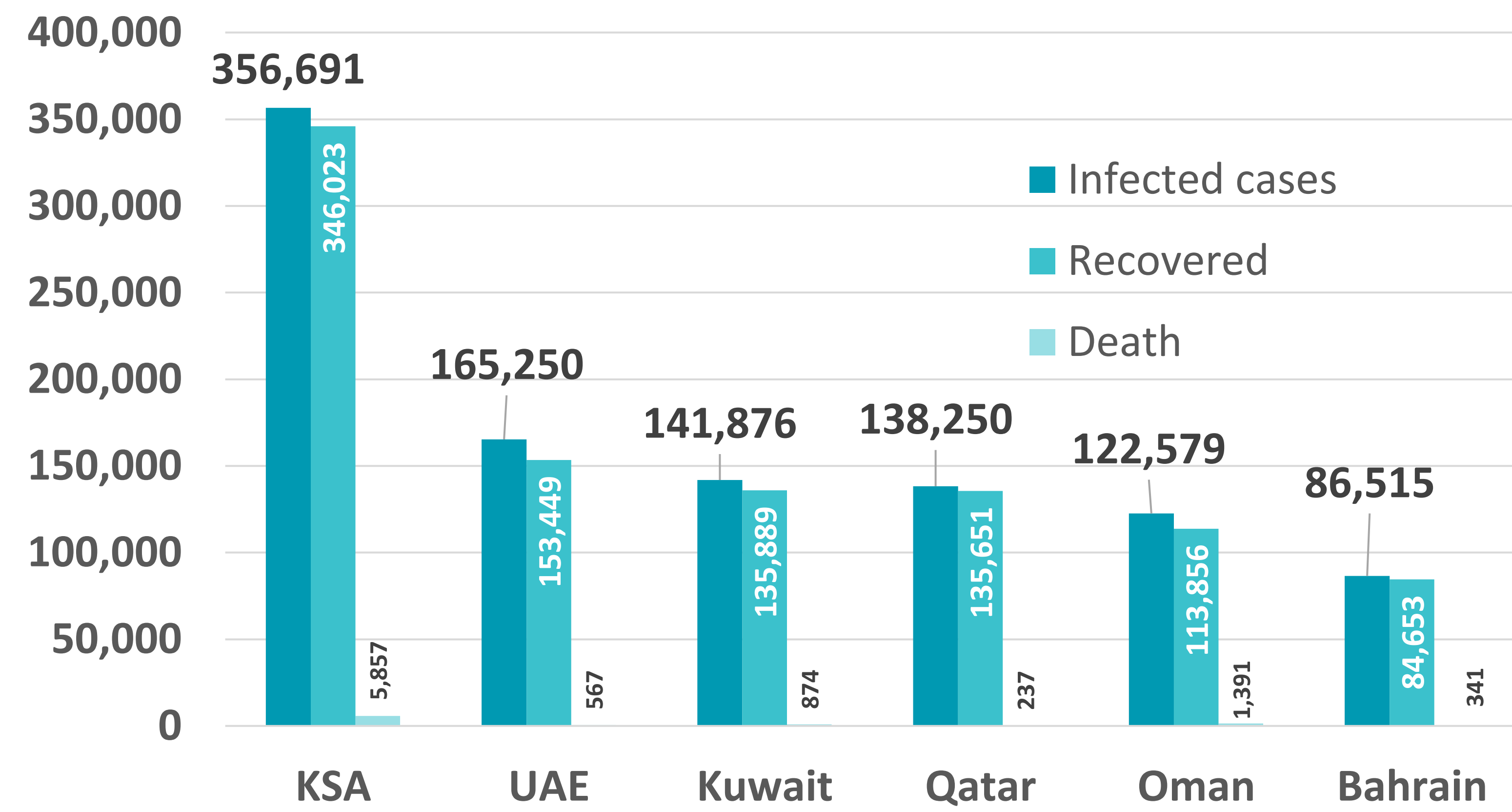
Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES

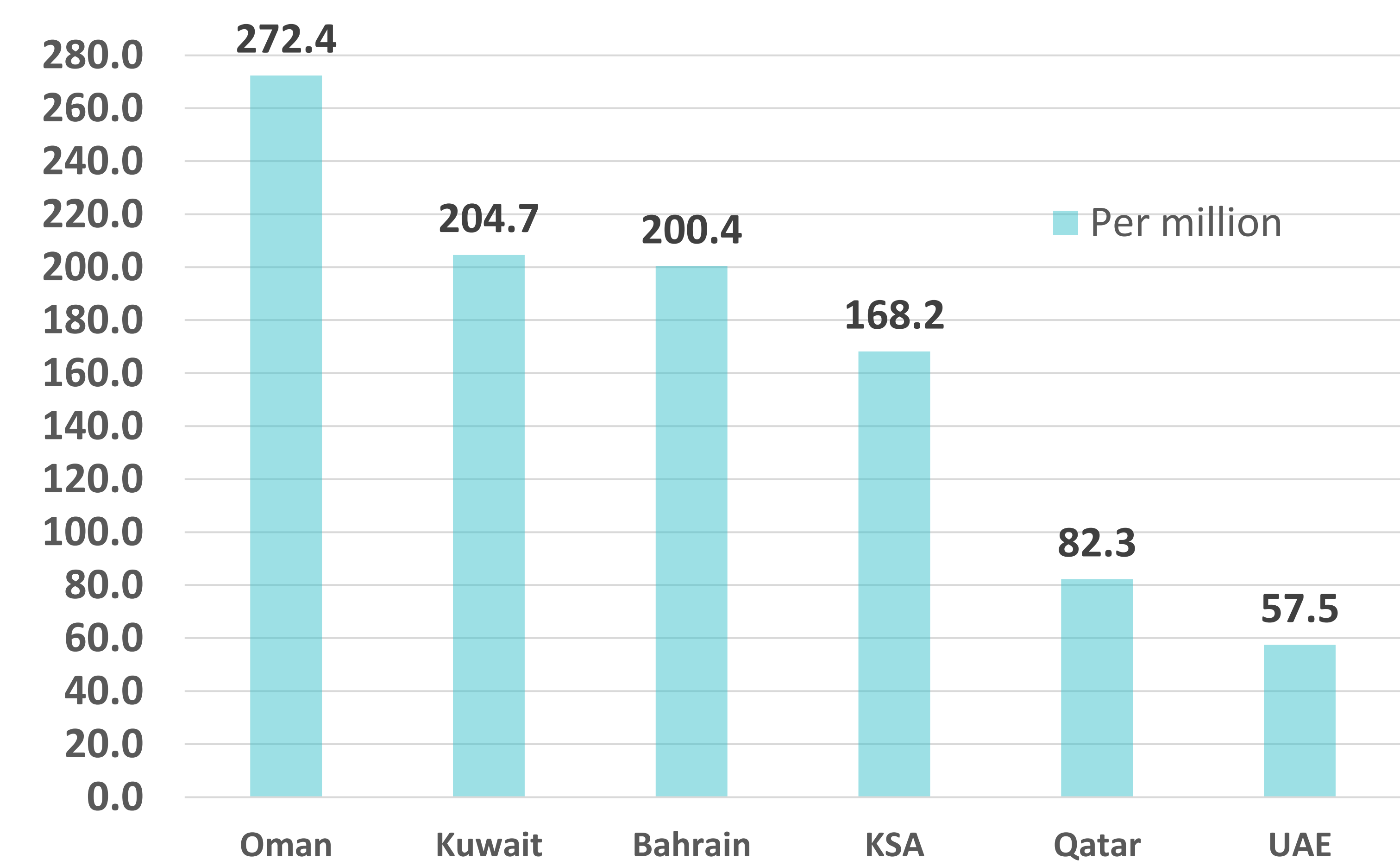




TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS

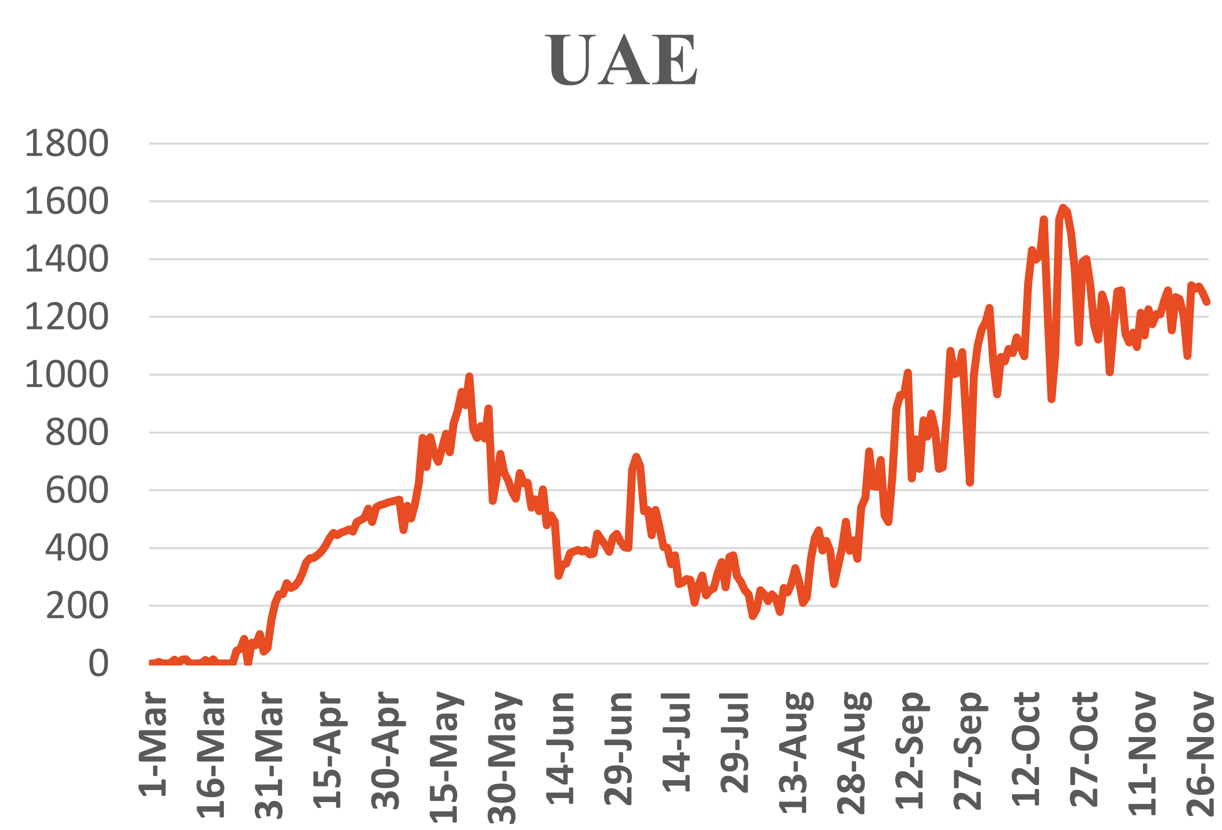


DEATHS PER MILLION

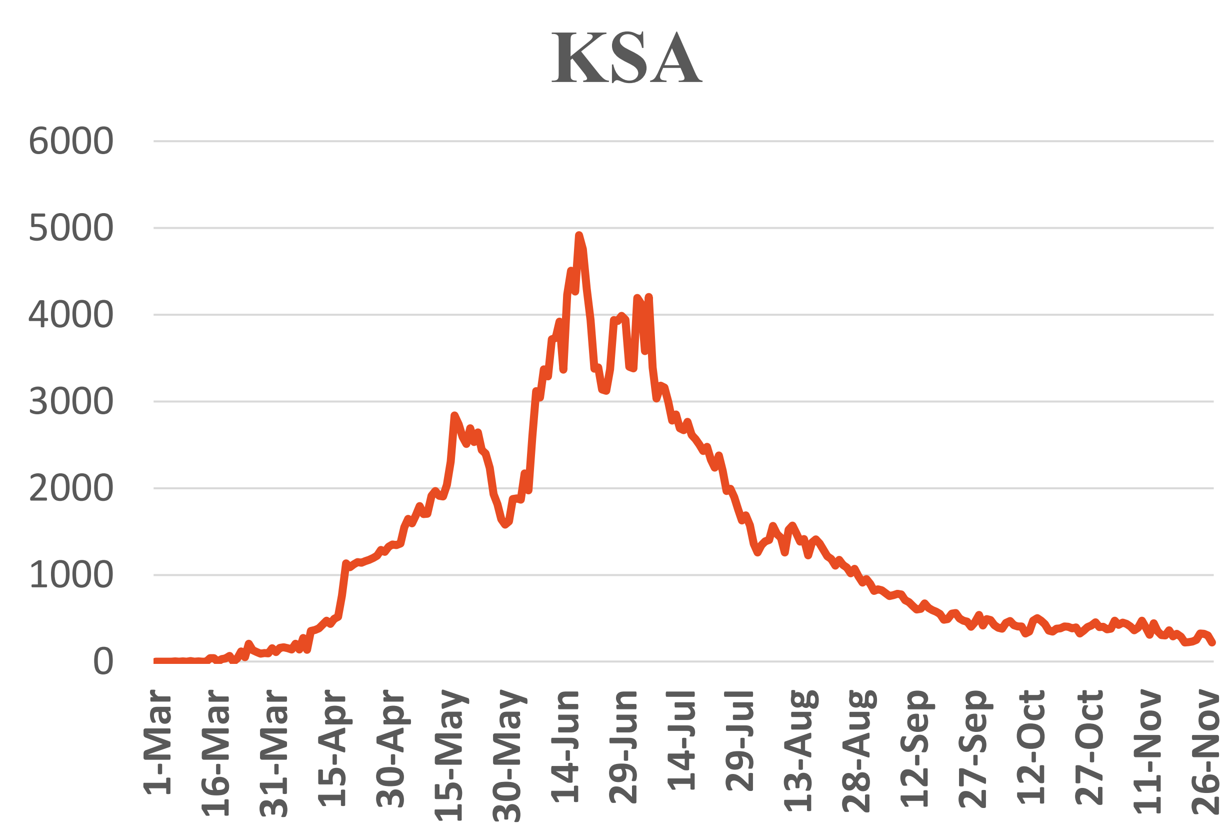


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: John Hopkins, WHO

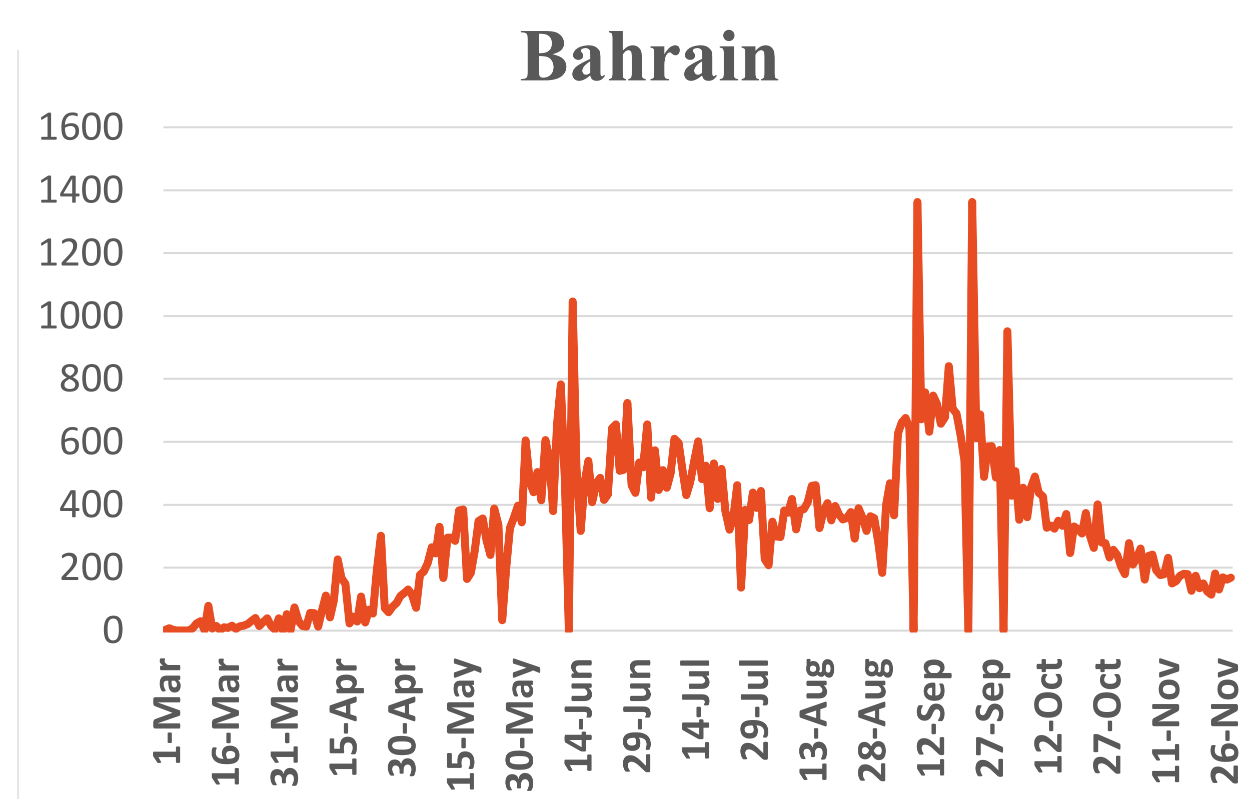
Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries



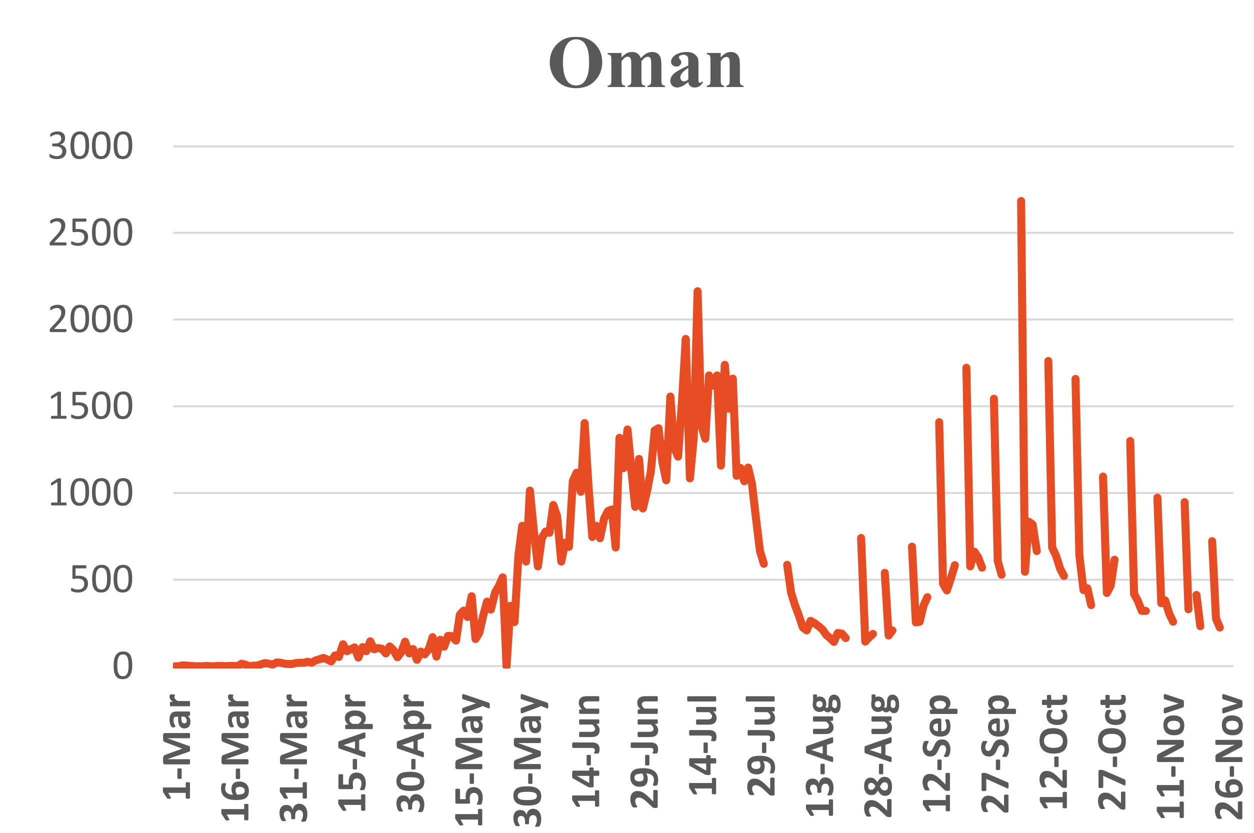
Source : National Emergency Crisis and Disaster Management Authority



Source : KSA ministry of health



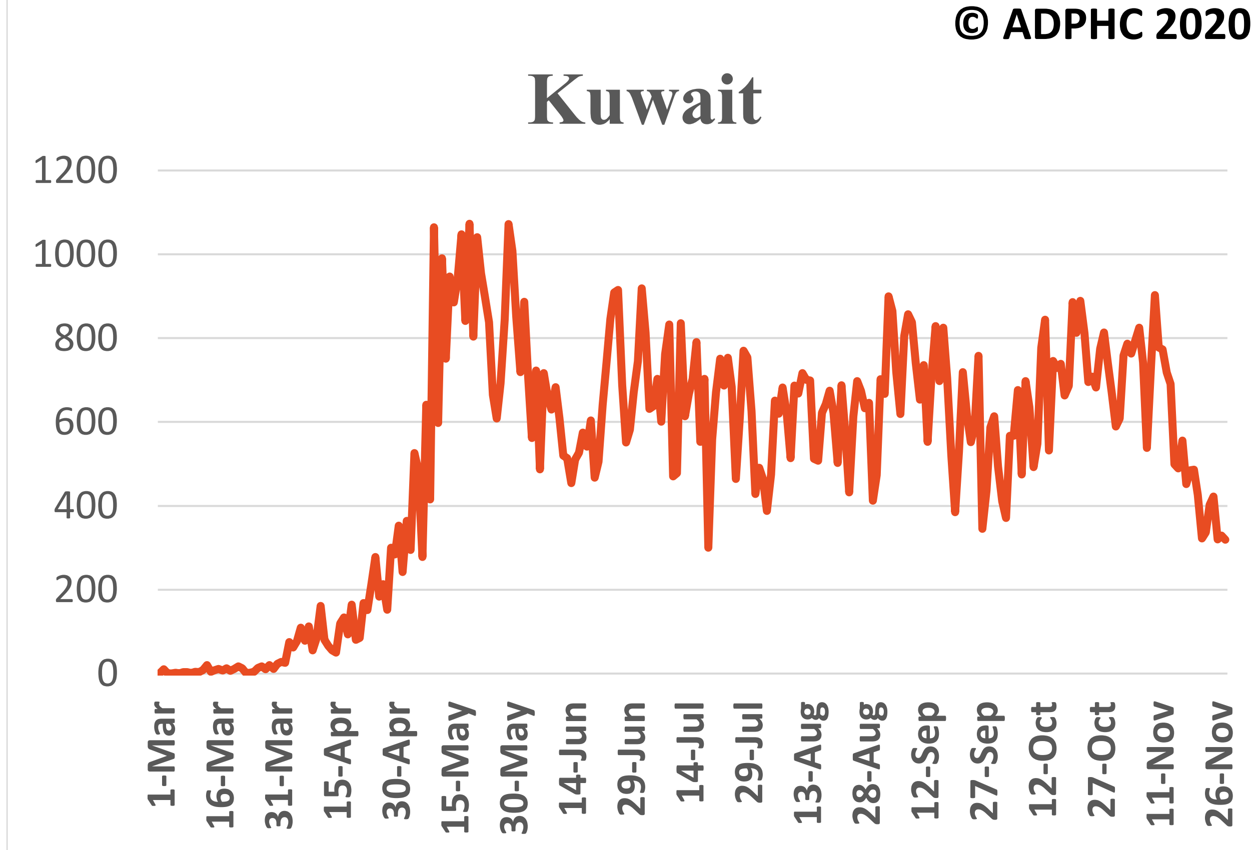
Source :WHO



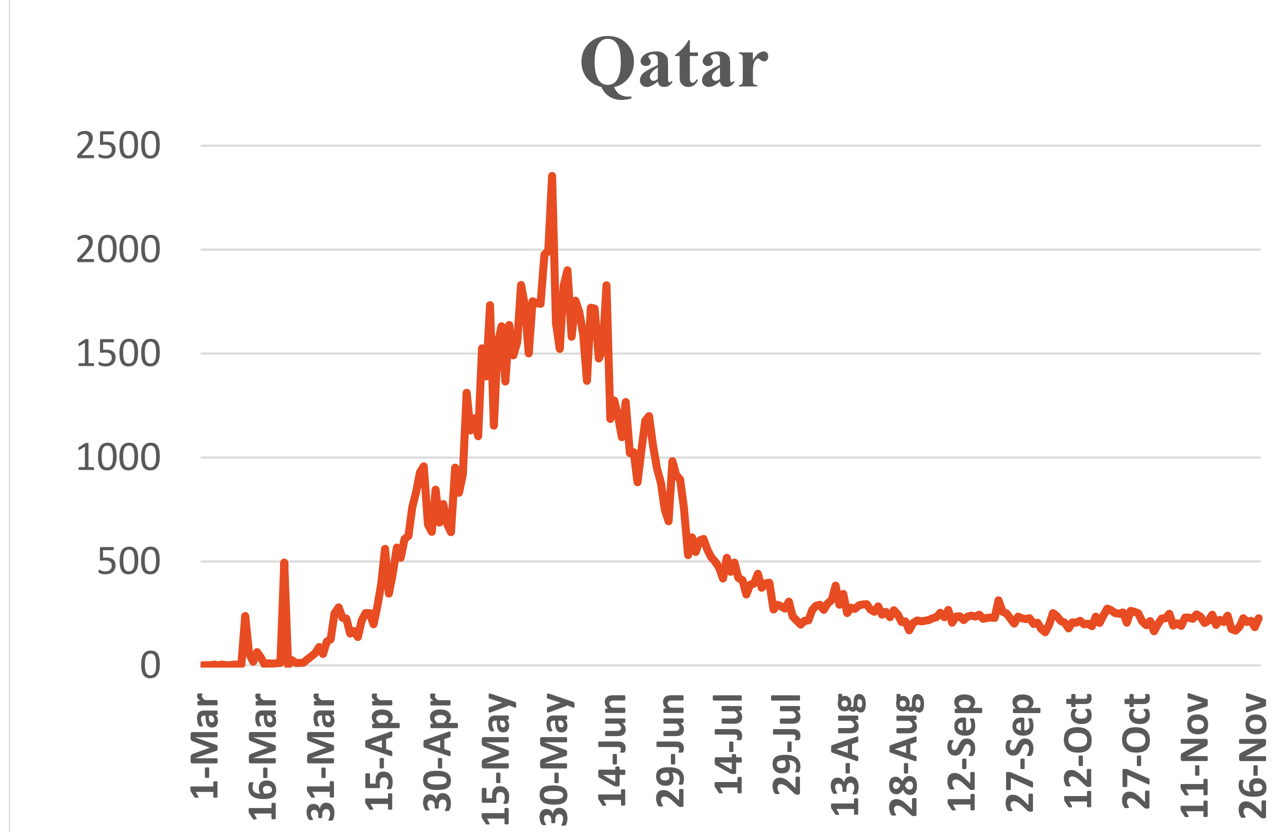
Source :Oman ministry of health

*No announced statistic data from 31 JUL to 4 AUG, 21,23,28,30 AUG 2,4‚ 5,11,12,18,19,25 ,26,30 SEP,1,2,9,10,16,17,23,24,30,21 OCT, 6,7,13,14,17,20,21, 25,26,28 NOV

*No announced statistic data on weekends and official holidays.

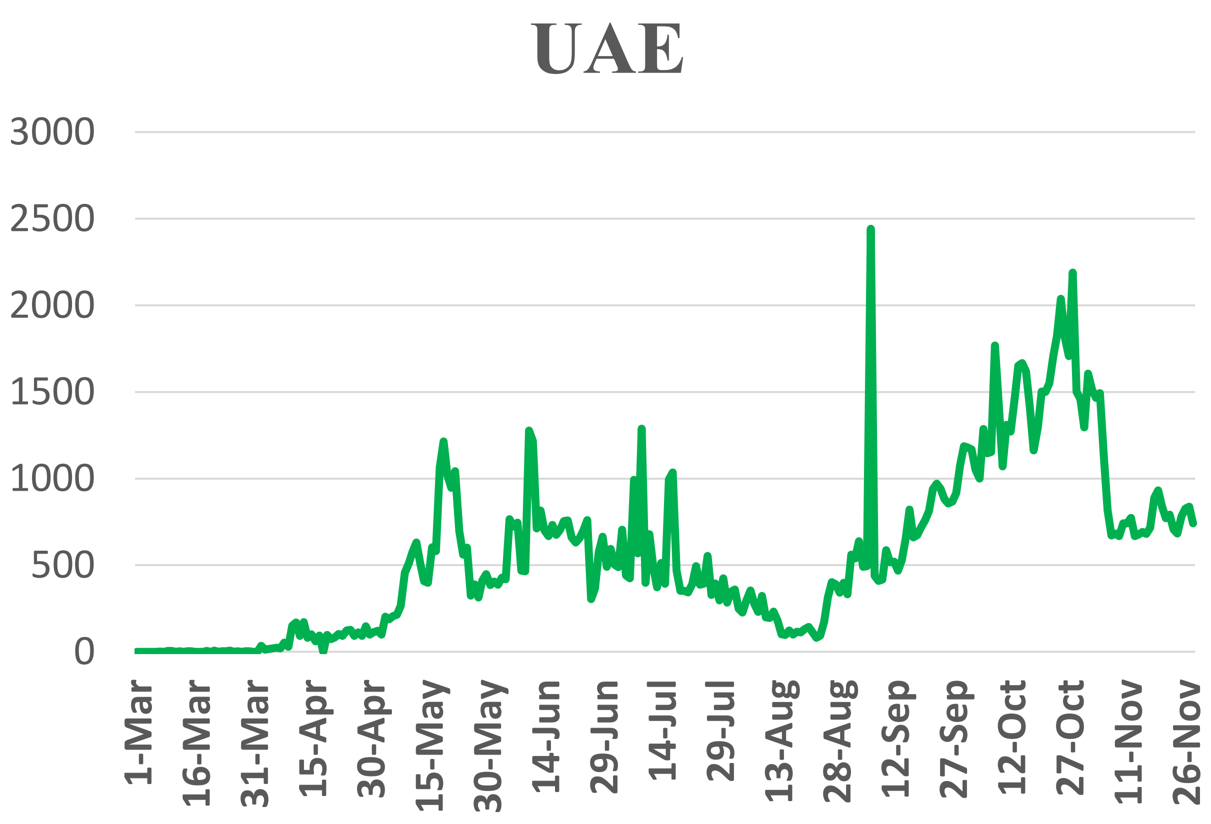


Source : Kuwait ministry of health

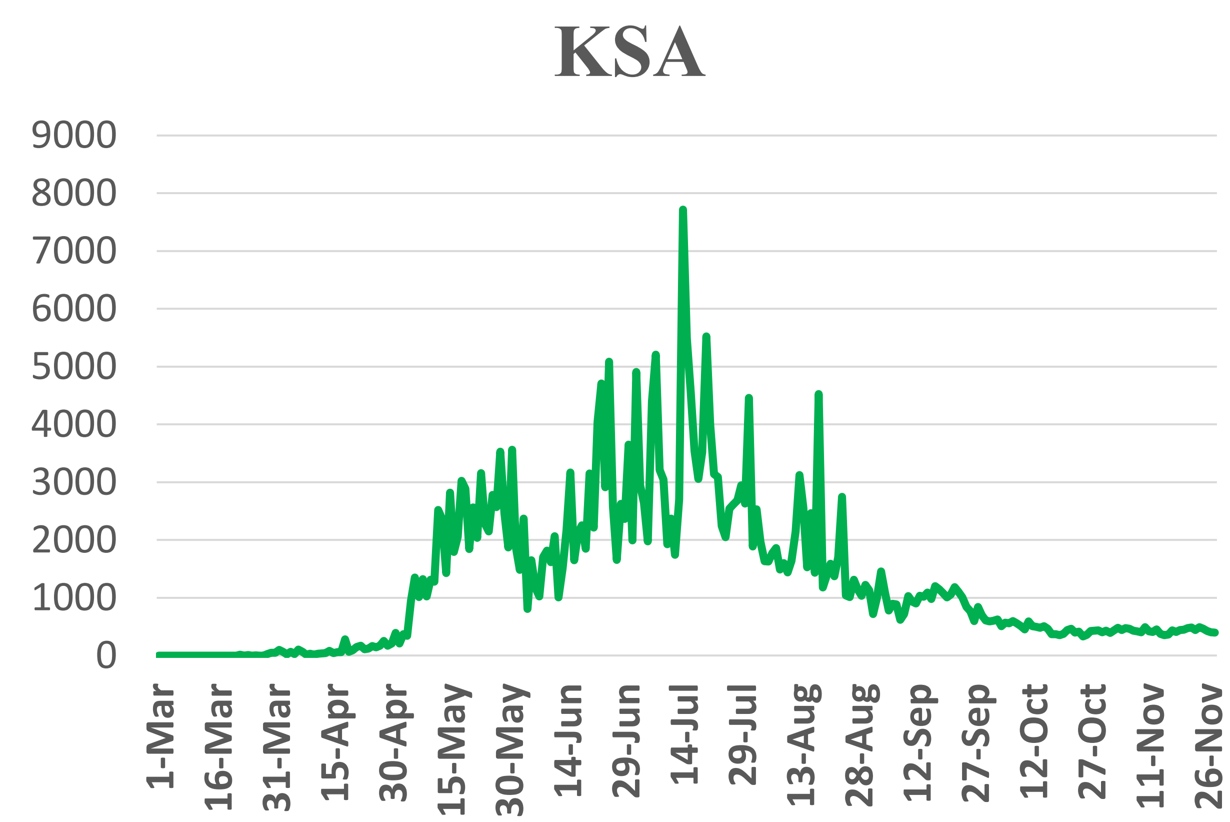


Source : Qatar ministry of health

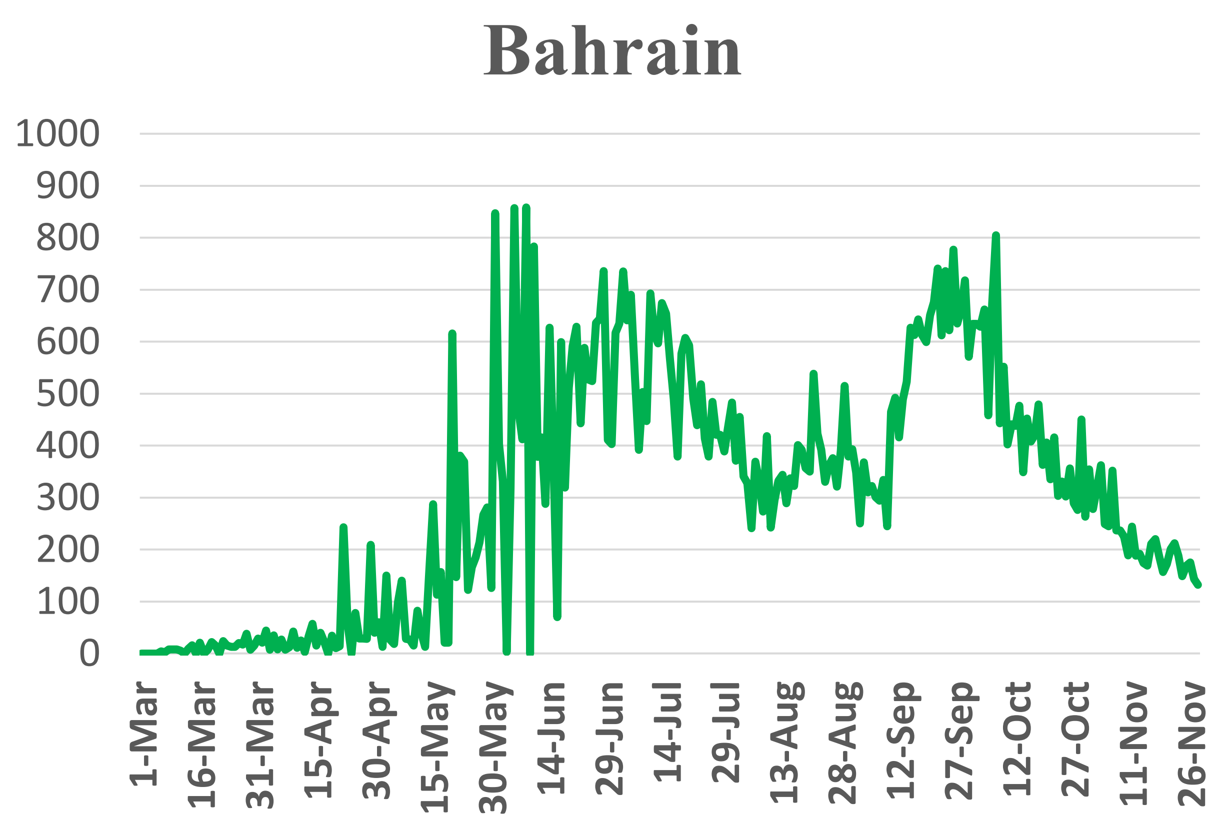
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries



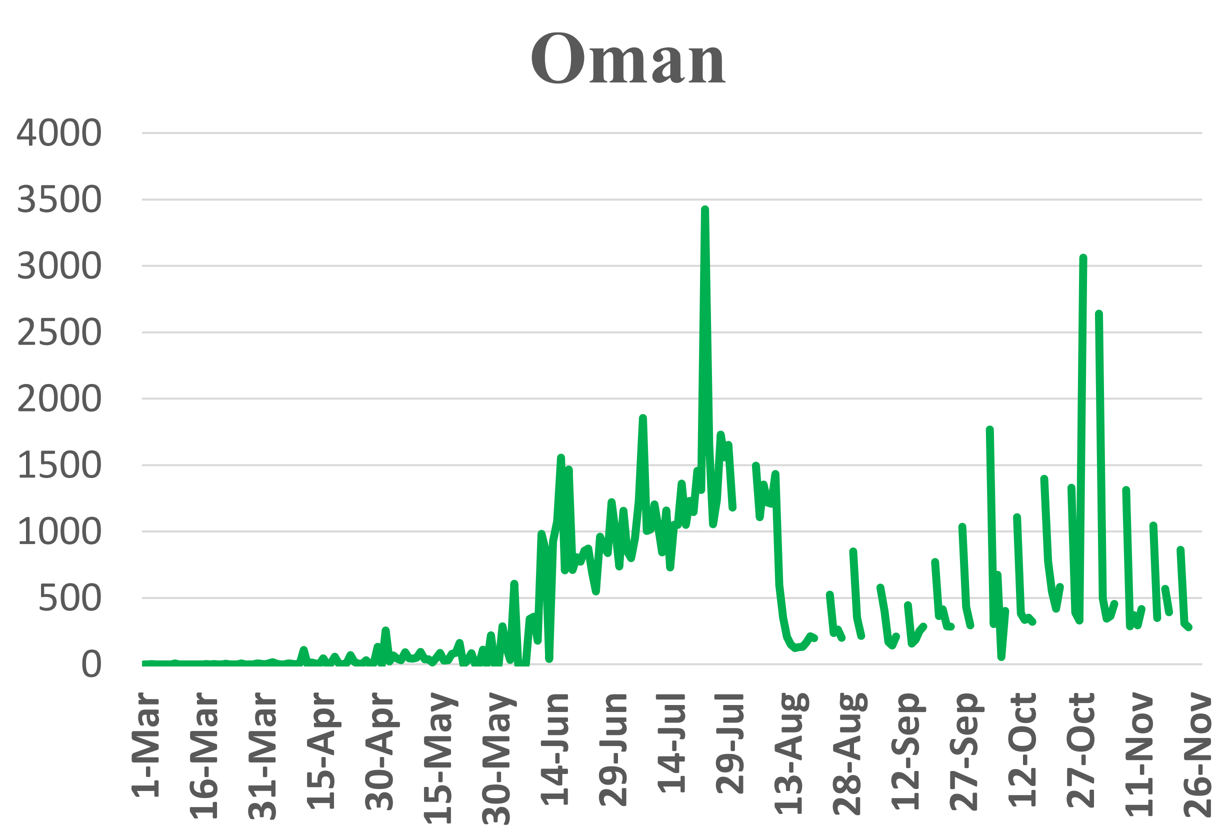
Source : National Emergency Crisis and Disaster Management Authority



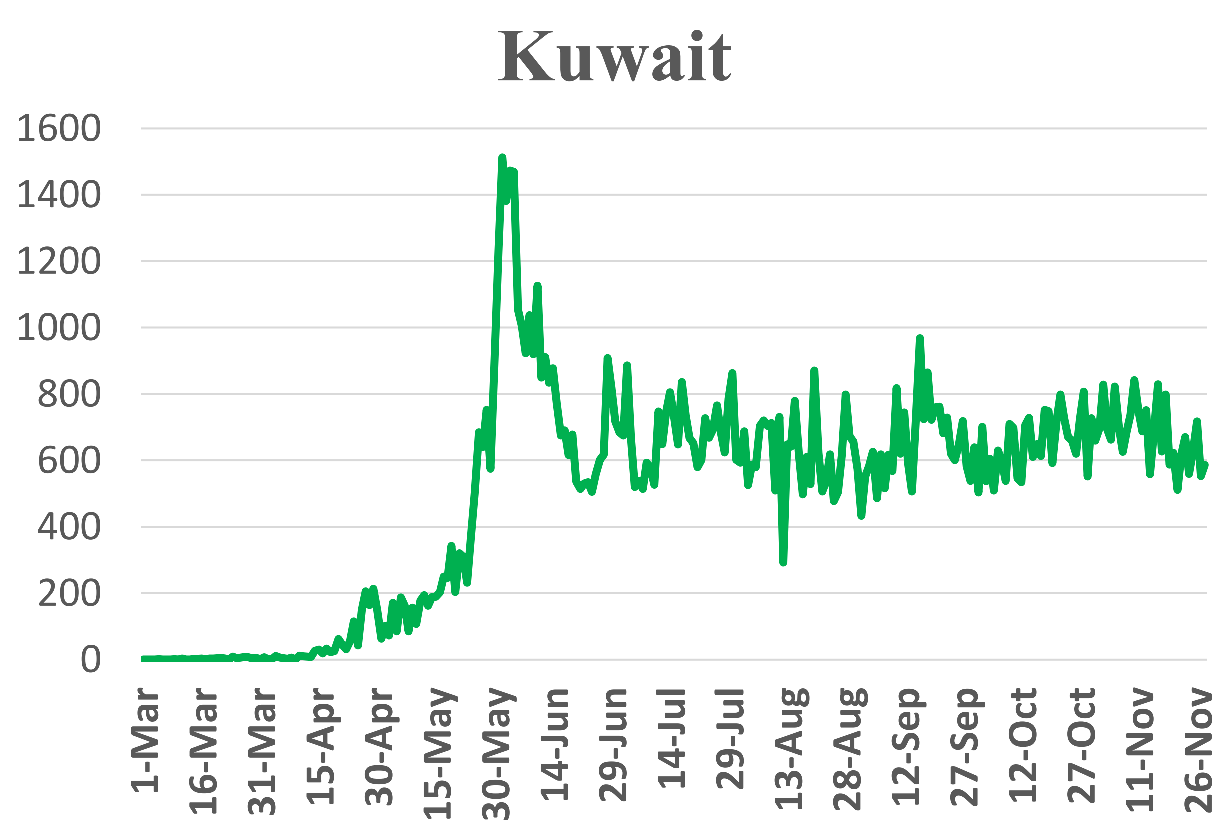
Source : KSA ministry of health



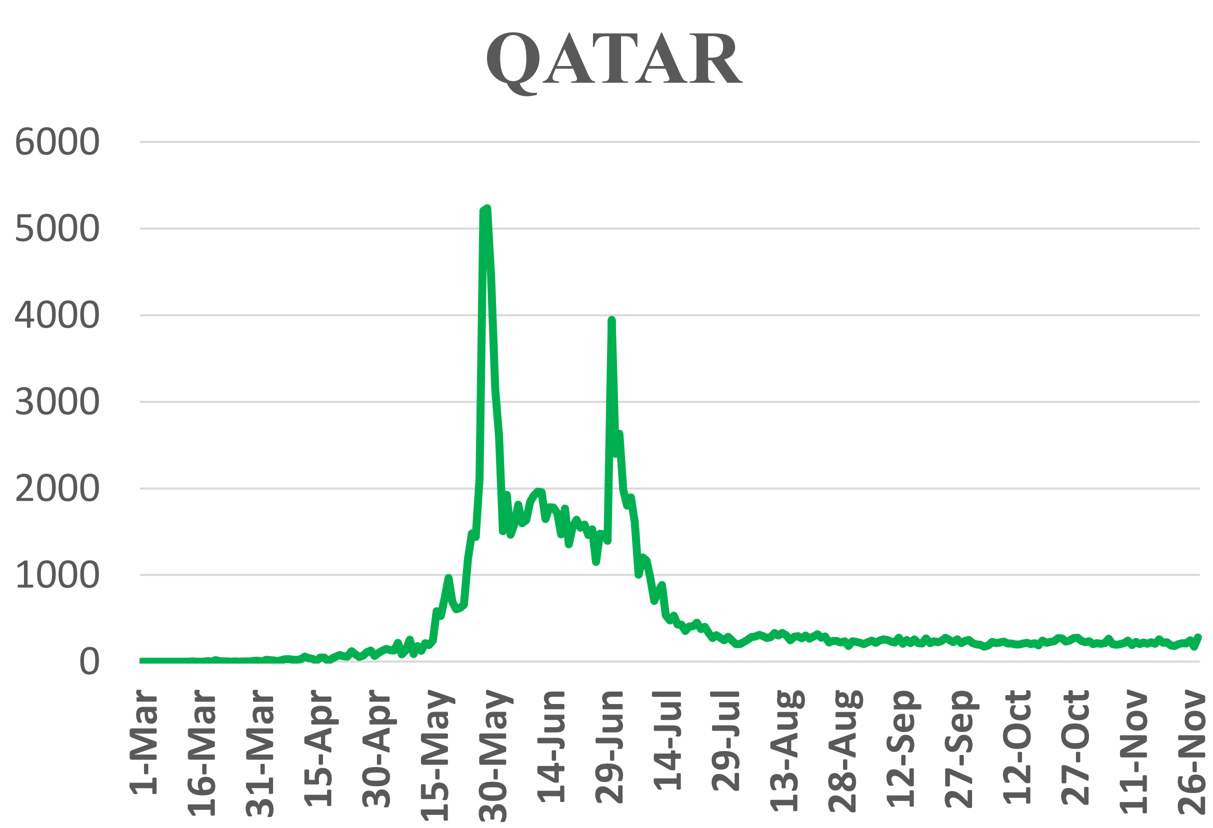
Source : Bahrain ministry of health



Source :Oman ministry of health



Source : Kuwait ministry of health



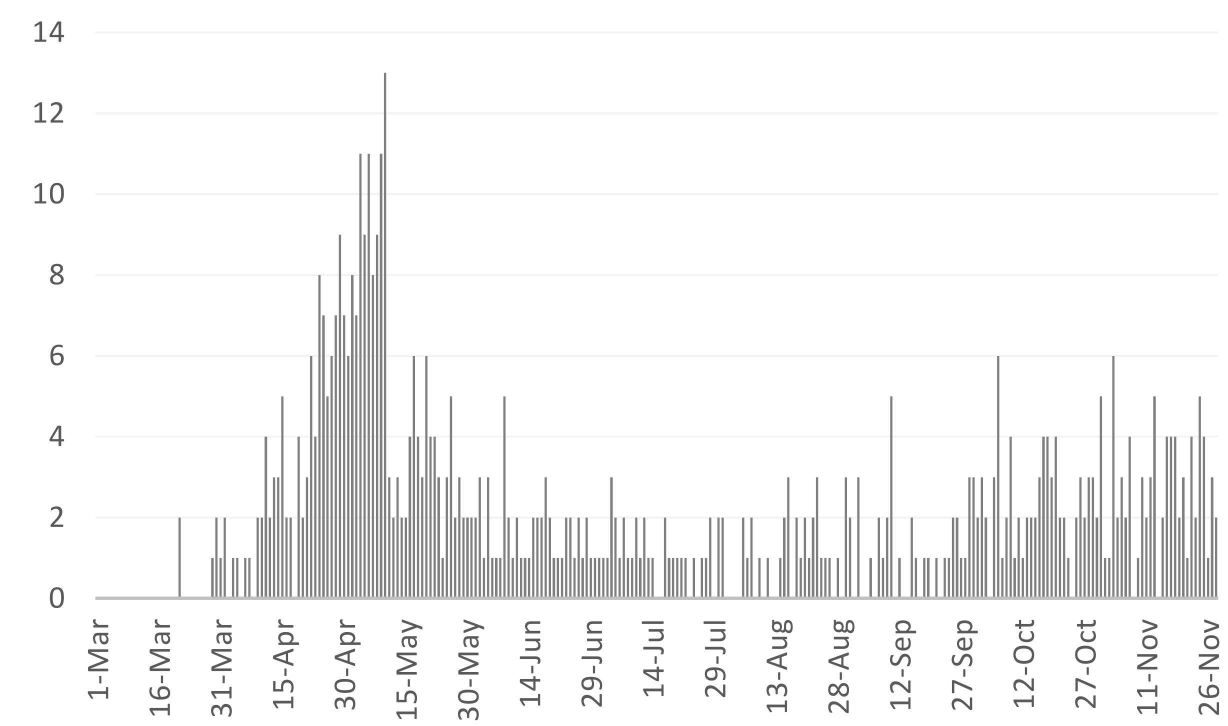
Source : Qatar ministry of health

*No announced statistic data from 31 JUL 4 AUG, 21,23,28,30 AUG 2, 4، 5,11,12,18,19,25 ,26,30 SEP,1,2,9,10,16,17,23,24,30,21 OCT, 6,7,13,14,17,20,21, 25,26,28 NOV

*No announced statistic data on weekends and official holidays.

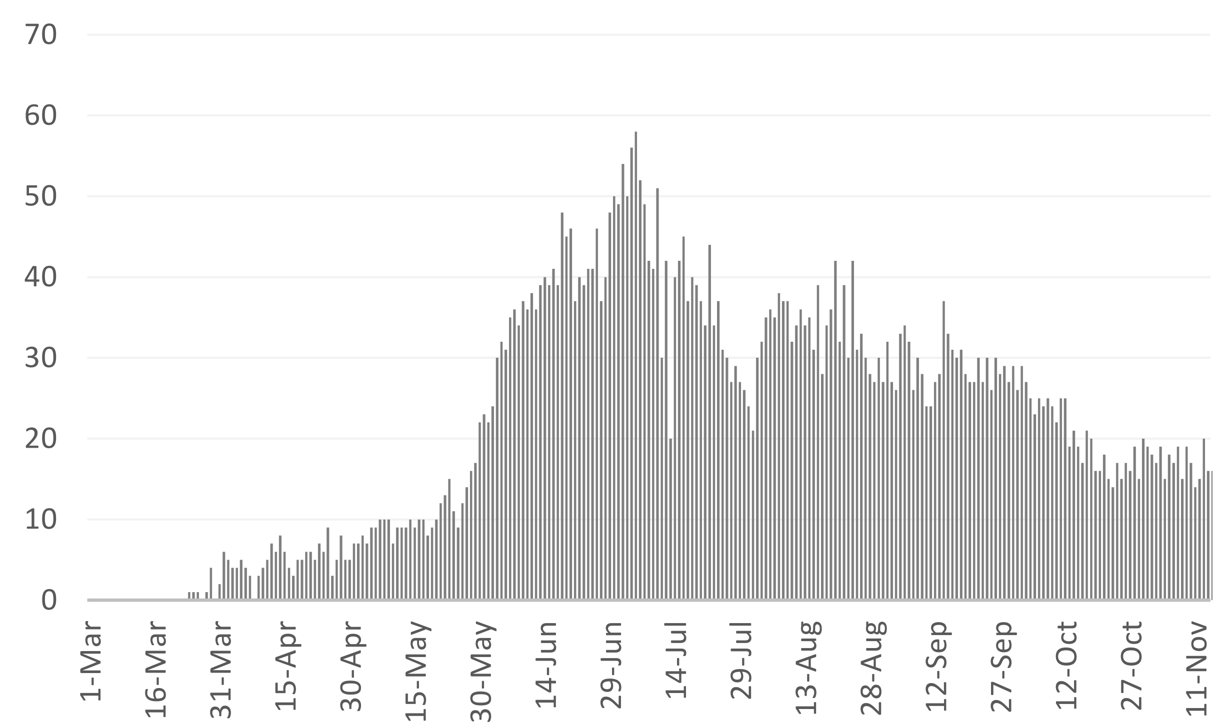
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries

UAE



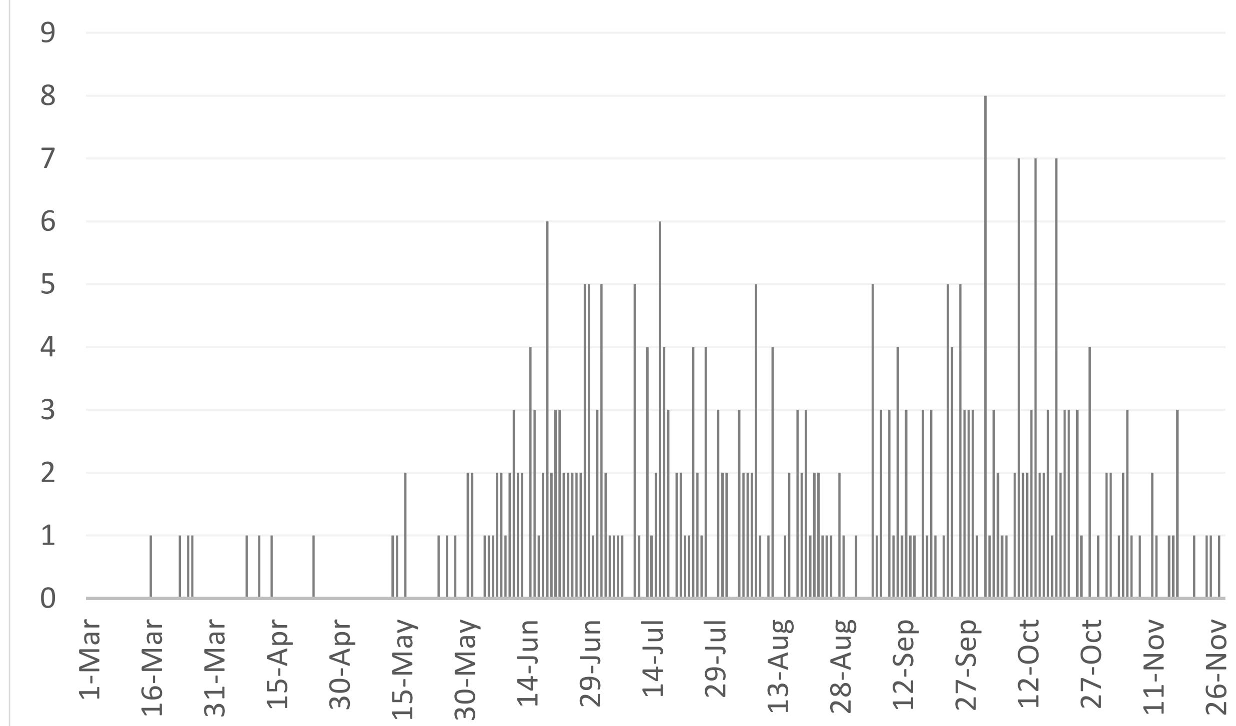
Source : National Emergency Crisis and Disaster Management Authority

KSA



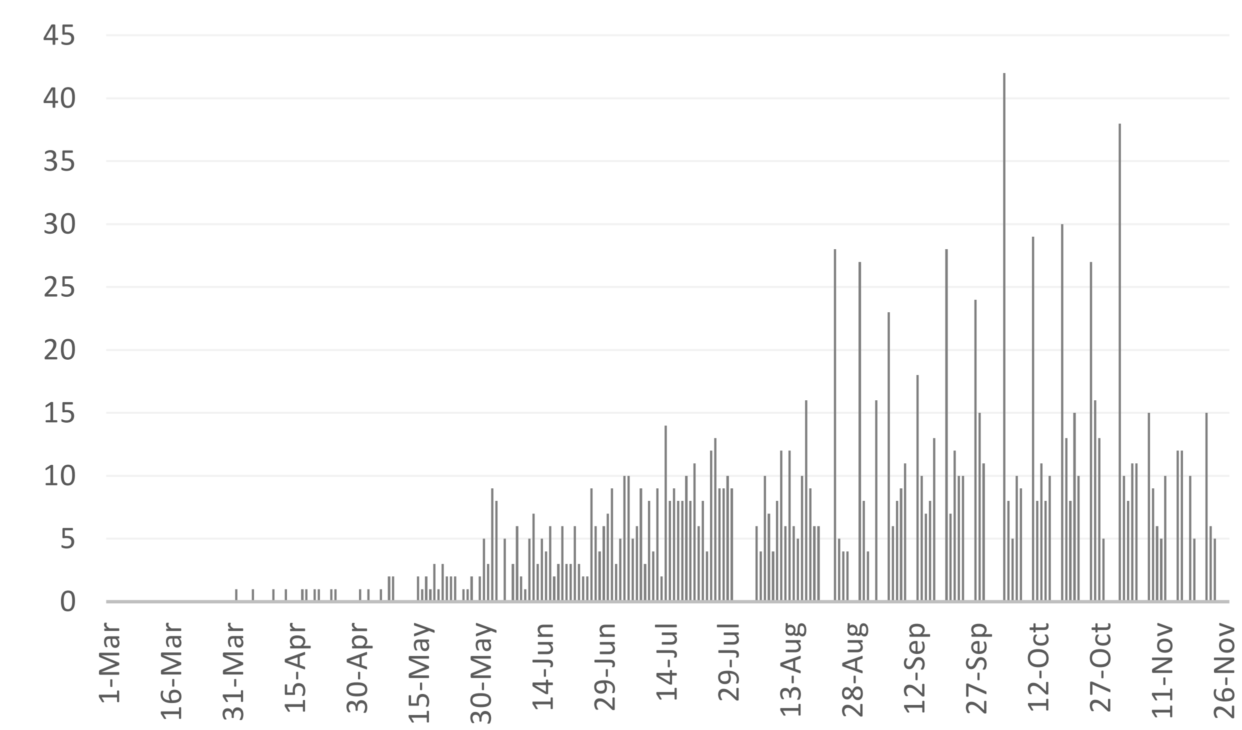
Source : KSA ministry of health

Bahrain



Source :WHO

Oman

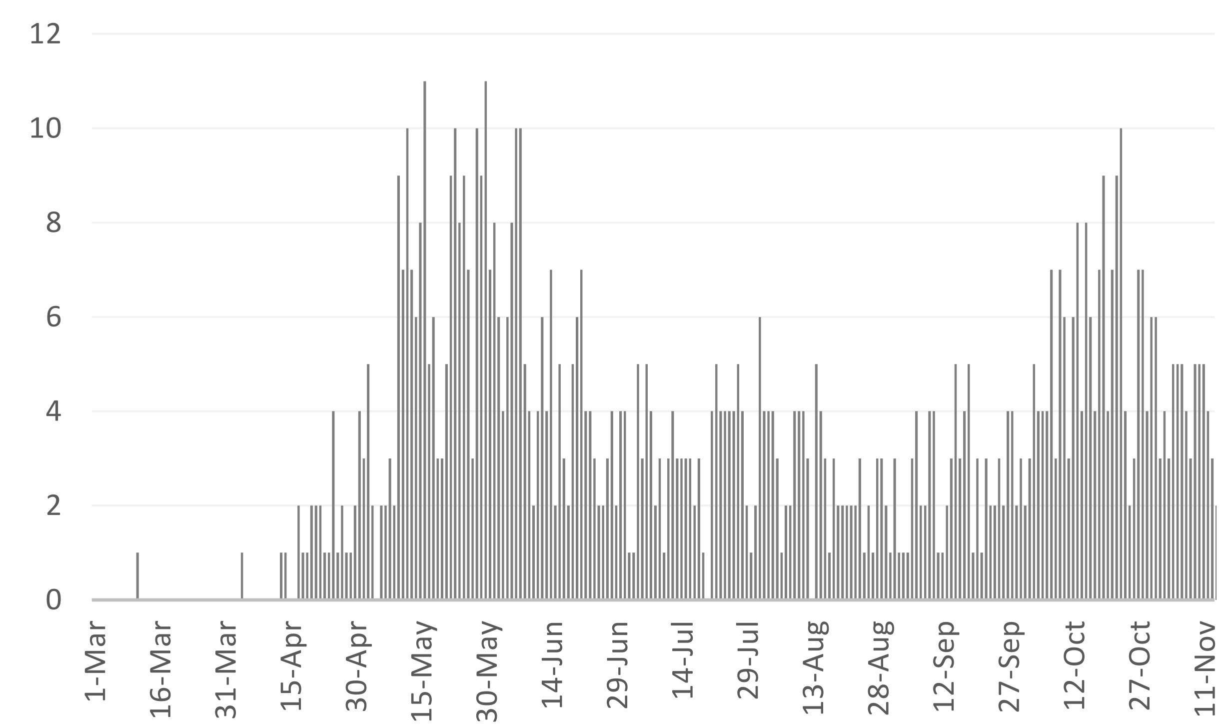


Source :Oman ministry of health

*No announced statistic data from 31 JUL 4 AUG, 21,23,28,30 AUG 2, 4، 5,11,12,18,19,25 ,26,30 SEP,1,2,9,10,16,17,23,24,30,21 OCT, 6,7,13,14,17,20,21,25,26,28 NOV

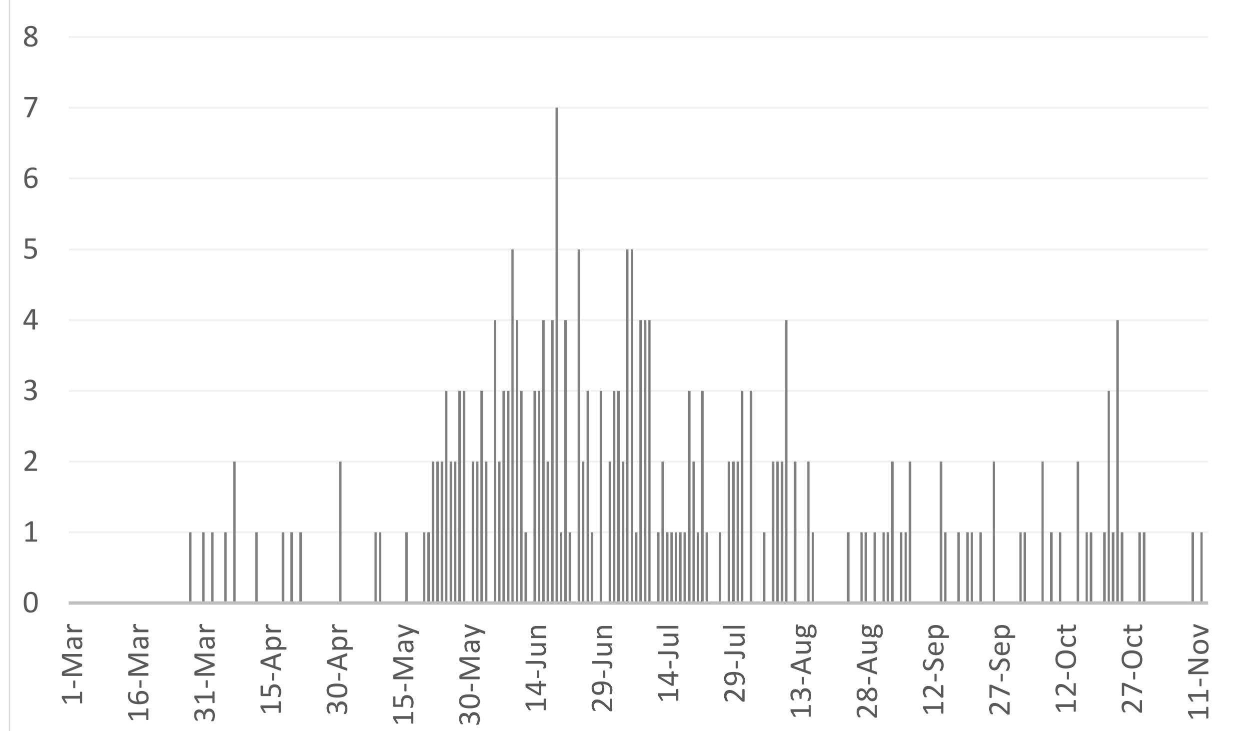
*No announced statistic data on weekends and official holidays.

Kuwait



Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

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Article 1

Published

SARS-CoV-2, SARS-CoV, and MERS-CoV Viral Load Dynamics, Duration of Viral Shedding, and Infectiousness: A Systematic Review and Meta-Analysis

November 19, 2020 The Lancet Microbe

This study aimed to characterize viral load dynamics, duration of viral RNA shedding and viable virus shedding of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in various body fluids, and to compare SARS-CoV-2, SARS-CoV, and Middle East respiratory syndrome coronavirus (MERS-CoV) viral dynamics.

Methodology

- All articles reporting the dynamics and the duration of SARS-CoV-2, SARS-CoV, and Middle East respiratory syndrome coronavirus (MERS-CoV) shedding in various specimens were retrieved through systematic searches of major databases.
- Case series, cohort studies, and randomized controlled trials were included.
- Case reports, case series with fewer than five patients and studies that did not have a clear time of symptom onset were excluded.

Results

- Mean SARS-CoV-2 RNA shedding duration was:
  - 17·0 days (maximum shedding duration 83 days) in the upper respiratory tract,
  - 14·6 days (maximum 59 days) in the lower respiratory tract,
  - 17·2 days (maximum 35 days) in stool
  - 16·6 days (maximum 60 days) in serum samples.
- Pooled mean SARS-CoV-2 shedding duration was positively associated with age.
- No study detected live virus beyond day 9 of illness, despite persistently high viral loads.

EPIDEMIOLOGY

Continued

Results (Contd.)

- SARS-CoV-2 viral load in the upper respiratory tract appeared to peak in the first week of illness.
  - SARS-CoV and MERS-CoV peaked later.
- Among asymptomatic and symptomatic patients infected with SARS-CoV-2, similar viral loads were reported at the start of infection.
  - Faster viral clearance in asymptomatic individuals, as also seen in MERS-CoV, suggesting a shorter infectious period but with similar potential transmissibility at the onset of infection.

Implications

- There is evidence of prolonged SARS-CoV-2 RNA shedding in respiratory and stool samples. However, viable virus appears to be short-lived. Thus RNA detection cannot be used to infer infectiousness.
- High titers of SARS-CoV-2 are detected early in the disease course. Isolation practices should be commenced with the start of first symptoms.
- Early case finding and prompt isolation, as well as public education on the spectrum of illness and period of infectiousness, are key to the effective containment of SARS-CoV-2.

Article 2

Rapid Response to an Outbreak in Qingdao, China

Published

November 18, 2020 The New England Journal of Medicine [COVID-19 Notes]

Outbreak: On October 11, 2020, in Qingdao, a coastal city in Shandong Province an **outbreak** alarm, was triggered after a 2-month period without local transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in China.

- **Three cases of Covid-19 were reported**; a taxi driver, his wife, who was a nursing assistant at Qingdao Chest Hospital, and a man with pulmonary tuberculosis who was treated at the same hospital.

Source of Infection: Local authorities initiated aggressive contact tracing and quarantine of close contacts of people with confirmed infection.

- The probable source of this cluster was determined to be two dock workers from the city's port on September 24.
- They had no history of travel or contact with anyone confirmed with Covid-19 case. Thus may have contracted the virus from ship workers or contaminated cargo.

Health Commission Response: A government task force was established in response to the outbreak

- A Qingdao citywide, grid-based mass-screening protocol using reverse-transcriptase–polymerase-chain-reaction (RT-PCR) testing was launched.
- Trained medical staff from local hospitals, together with teams dispatched from other cities in Shandong Province, were sent to 4090 testing locations.

Continued

Response (contd.)

- Each resident was contacted for testing.
- A pooled testing approach was used, with each pool containing samples from 3 to 10 people
  - 3 for household contacts of infected people, 5 for hospitalized patients or health care workers, and 10 for community members.
  - If a pooled sample tested positive, individual testing was performed, on each person in the pool.

Results

- By October 16, a total of 10.9 million people had been tested, and another 9 cases, were identified using pooled testing, for a total of 12 cases.
- Epidemiology: The outbreak was controlled without a lockdown, and residents were required to wear masks. They had to have a negative test result before they using public transportation and before leaving Qingdao.

Conclusion

- Testing millions of people in a short period requires effective coordination and execution, along with cooperation of residents.
- In smaller countries, cooperation with neighboring countries is important for assembling the expertise, personnel, and resources necessary to mount a rapid response.
- Regular surveillance and testing of high-risk populations may identify infected people before widespread transmission occurs.
- Careful planning at multiple levels of government, especially within the health care sector, will facilitate coordinated management of outbreaks

Article 3

Published

Cost-Effectiveness of Public Health Strategies for COVID-19 Epidemic Control in South Africa: A Microsimulation Modelling Study

November 11, 2020 The Lancet Global Health

This study aimed to develop a dynamic COVID-19 microsimulation model to assess clinical and economic outcomes and cost-effectiveness of epidemic control strategies in KwaZulu-Natal province, South Africa.

Methodology

Different combinations of five public health interventions were compared:

- Health-care testing alone, where diagnostic testing is done only for individuals presenting to health-care centres;
- Health-care testing + Contact tracing in households of cases;
- Health-care testing + Contact tracing + Isolation centres for cases not requiring hospital admission;
- Health-care testing + Contact tracing + Isolation centres + mass symptom screening and molecular testing for symptomatic individuals by community health-care workers; and
- Health-care testing + Contact tracing + Isolation centres + Quarantine centres, for household contacts who test negative.
- Health-care testing + Contact tracing + Isolation centres + mass symptom screening + Quarantine centres

- Two main epidemic scenarios for a period of 360 days, with an R_e of 1·5 and 1·2 were assessed.

- Strategies with incremental cost-effectiveness ratio (ICER) of less than US$3250 per year of life saved were considered cost-effective.

- Sensitivity analyses were done by varying key parameters (R_e values, molecular testing sensitivity, and efficacies and costs of interventions) to determine the effect on clinical and cost projections.

PUBLIC HEALTH RESPONSE

Continued

Interpretation

- In South Africa, strategies involving isolation combined with contact tracing, mass symptom screening, and quarantine of household contacts of cases is a cost-effective strategy for epidemic control, and that upfront expenditures could reduce downstream costs by preventing infections, hospital admissions, and additional resource use.
- The optimal combination of interventions depends on epidemic growth characteristics and practical implementation considerations

	Total life-years lost,* n	Health-care costs over 360-day period, US$†	ICER, US$ per YLS‡
R_e 1·5			
Health-care testing alone	450 940	437 000 000	..
Health-care testing, contact tracing, isolation centres, mass symptom screening, and quarantine centres	27 220	581 000 000	340
Health-care testing and contact tracing	322 970	588 000 000	Dominated
Health-care testing, contact tracing, isolation centres, and mass symptom screening	60 930	668 000 000	Dominated
Health-care testing, contact tracing, and isolation centres	128 890	780 000 000	Dominated
Health-care testing, contact tracing, isolation centres, and quarantine centres	60 190	965 000 000	Dominated
R_e 1·2			
Health-care testing, contact tracing, isolation centres, and quarantine centres	3890	139 000 000	..
Health-care testing, contact tracing, and isolation centres	6850	141 000 000	Dominated
Health-care testing, contact tracing, isolation centres, and mass symptom screening	4260	183 000 000	Dominated
Health-care testing, contact tracing, isolation centres, mass symptom screening, and quarantine centres	2040	190 000 000	27 590
Health-care testing and contact tracing	32 040	276 000 000	Dominated
Health-care testing alone	97 600	393 000 000	Dominated

Strategies are listed in order of ascending costs. Life-years and costs were rounded, but the ICER was calculated using non-rounded values for life-years and costs. ICER=incremental cost-effectiveness ratio. YLS=years of life saved. R_e=effective reproductive number. Dominated=strong dominance, resulting in more life-years lost and higher costs than an alternative strategy. *We assumed that each death results in 16·8 life-years lost, on average, based on our derivation (appendix pp 5–6). †This reflects costs to the health-care sector. ‡The ICER is the difference between two strategies in costs divided by the difference in undiscounted life-years (16·8 YLS per averted COVID-19 death; appendix pp 5–6); a strategy was considered cost-effective when the ICER was less than US$3250 per YLS.[10]

Table 2: Model-projected life-years lost, health-care costs, and cost-effectiveness of COVID-19 intervention strategies in KwaZulu-Natal province, South Africa

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Article 4 A Case of SARS-CoV-2 Reinfection in Ecuador

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- In Ecuador, on May 12, 2020, a 46-year-old man presented with intense headache and drowsiness for three days. He received a rapid antibody test that was positive for IgM and negative for IgG on May 16. The patient tested positive on RT-PCR test on May 20. His symptoms improved subsequently and tested negative on RT-PCR on June 3.

- The patient presented again with more severe COVID-19 symptoms, including odynophagia (painful swallowing), nasal congestion, fever, back pain, productive cough, and dyspnea on July 20. He tested positive on RT-PCR test on July 22. He was not admitted to the hospital, although he had moderate symptoms and dyspnea. On August 4, a fourth RT-PCR test was carried out that was negative. An ELISA quantitative antibody test was performed on August 18, which was positive for IgG and IgM.

- This patient showed more severe disease with the second infection than with the first, although the symptoms of reinfections are usually milder than those of the primary infections. Increased severity of second SARS-CoV-2 infection has also been reported in the United States (male aged 25 years) and in the Netherlands (female aged 89 years).

- The protective immune response to SARS-CoV-2 infection is not fully understood. During the first infection, the antibody test showed only the presence of specific anti-SARS-CoV-2 IgM. It is not possible using conventional antibody tests to determine if a protective immune response developed.

CLINICAL FEATURES

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Figures:

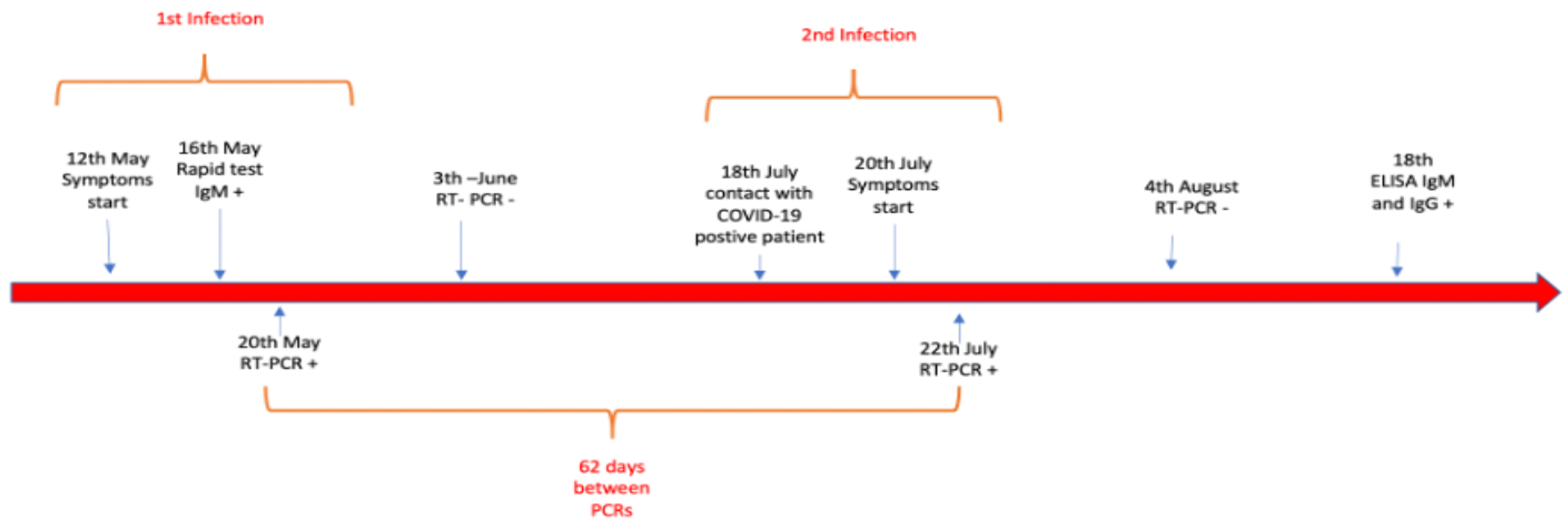

Figure 1. Timeline showing patients infection events and testing dates.

VACCINE

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Article 5

Published

Safety and Immunogenicity of ChAdOx1 nCoV-19 Vaccine Administered in a Prime-Boost Regimen in Young and Old Adults(COV002): A Single-Blind, Randomised, Controlled, Phase 2/3 Trial

November 19, 2020, THE LANCET

- The Immunogenicity of vaccines is usually less in older adults as a result of immunosenescence. The investigators in this single-blind, randomised, controlled, phase 2/3 trial (COV002), sought to report the immunogenicity of a novel chimpanzee adenovirus-vectored vaccine, ChAdOx1 nCoV-19, in a wider range of adults aged 70 years and older.
- The investigators recruited healthy adults aged 18 years and above (18–55, 56–69, and 70 years and older). The study excluded patients who have severe or uncontrolled medical comorbidities. The investigators used block randomization to randomly assign participants to ChAdOx1 nCoV-19 ($2{\cdot}2\times10^{10}$ virus particles) or a control vaccine. Prime-booster regimens were given 28 days apart. Cellular and Humoral responses at baseline and after each vaccination were assessed until one year.
- Between May 30 and Aug 8, 2020, 560 participants were enrolled, 280 (50%) of 552 participants were female. Local and systemic reactions were more common in participants given ChAdOx1 nCoV-19 than in placebo group (injection-site pain, feeling feverish, muscle ache, headache) and less common in older adults (aged ≥56 years) than younger adults. As of Oct 26, 2020, 13 serious adverse events occurred during the study period, none of which were considered to be related to either vaccine.
- In participants who received two doses of vaccine, median anti-spike SARS-CoV-2 IgG responses 28 days after the boost dose were similar across the three age cohorts; p=0·68). Neutralising antibody titres after a boost dose were similar across all age; p=0·40). By 14 days after the boost dose, 208 (>99%) of 209 boosted participants had neutralising antibody responses. T-cell responses peaked at day 14 after a single standard dose of ChAdOx1 nCoV-19.
- The investigators concluded that ChAdOx1 nCoV-19 appears to be better tolerated in older adults than in younger adults and has similar immunogenicity across all age groups after a booster dose.

VACCINE

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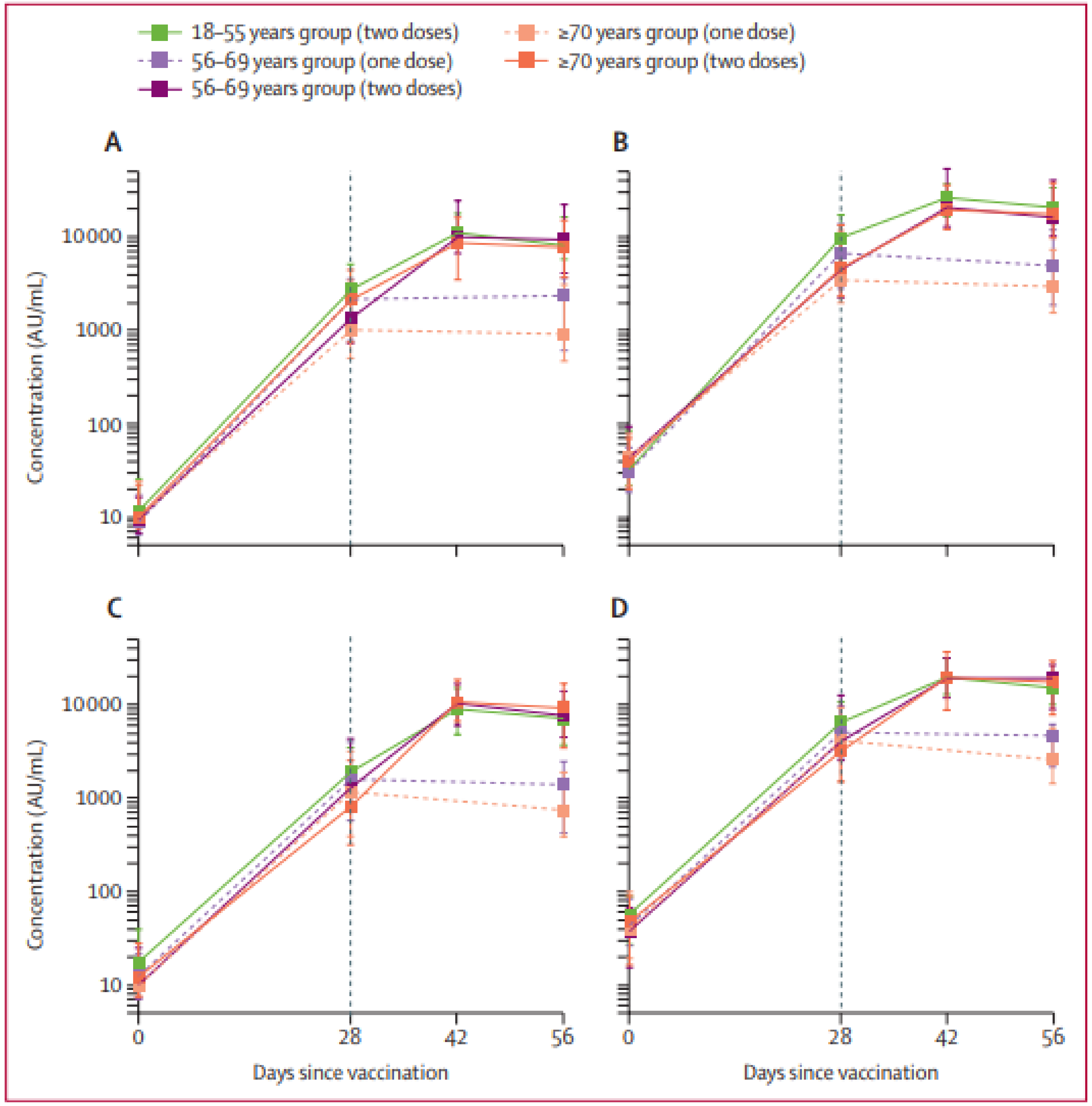

Figure 4: SARS-CoV-2 IgG response to the receptor binding domain in the standard-dose groups (A) and low-dose groups (C) and the spike protein in the standard-dose groups (B) and the low-dose groups (D), by age

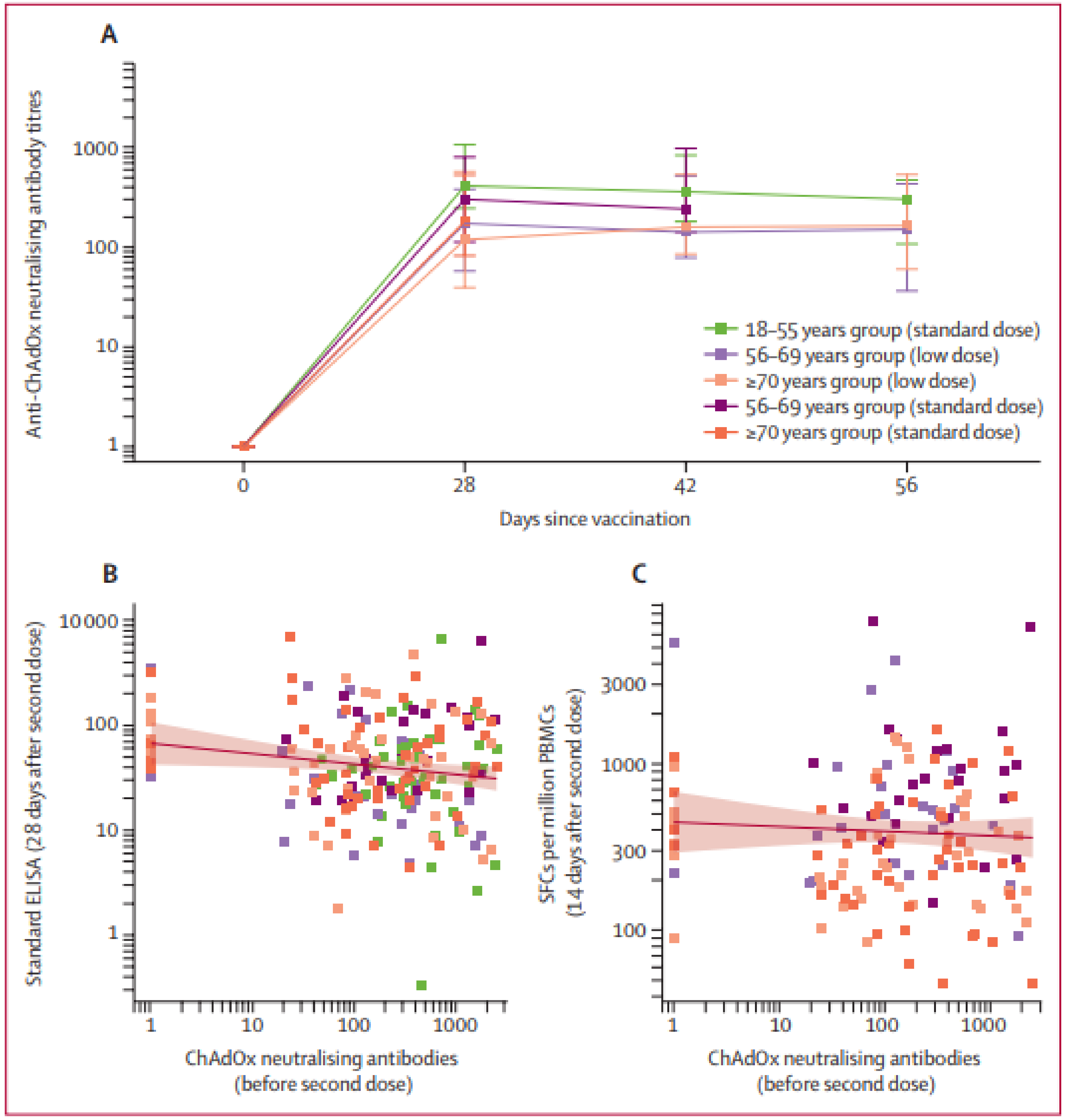

Figure 7: Anti-ChAdOx1 vector neutralising titres after prime and boost doses of vaccine, by age and vaccine dose, and the correlation between pre-boost dose anti-ChAdOx1 neutralising antibodies and 28 days after boost dose antibody and T-cell responses

Article 6

Published

November 18, 2020, JAMA

A Proposed Framework and Timeline of the Spectrum of Disease Due to SARS-CoV-2 Infection Illness Beyond Acute Infection and Public Health Implications

- A theoretical framework reporting illness periods of SARS-CoV-2 infection, pathophysiological support, and laboratory findings may contribute towards a thorough understanding of the natural history of the infection and strengthen research efforts.
- This framework may provide an effective approach to understand the extent of morbidity and mortality from SARS-CoV-2 infection and may have important implications for public health surveillance, clinical research, future treatments, and health services planning.

Figure. Proposed Population-Based Framework for Symptomatic SARS-CoV-2 Infection[a]

Symptom onset → Week 2 → Week 4

	Acute infection (COVID-19)	Postacute hyperinflammatory illness	Late sequelae
Characterization	Active viral replication and initial host response	Dysregulated host response	Pathophysiological pathways proposed but unproven
Clinical presentation	Fever, cough, dyspnea, myalgia, headache, sore throat, diarrhea, nausea, vomiting, anosmia, dysgeusia, abdominal pain	Gastrointestinal, cardiovascular, dermatologic/mucocutaneous, respiratory, neurological, musculoskeletal symptoms	Cardiovascular, pulmonary, neurological, psychological manifestations
Laboratory tests	Viral test (+) Antibody (+) after 2 wk	Viral test (+/−) Antibody (+) after 2 wk	Viral test and antibody profile uncharacterized

COVID-19 indicates coronavirus disease 2019; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

[a] Population-based framework refers to the fact that these illnesses are observed at the population level and not necessarily in any given individual.

Article 7

Published

Multi-Center Nationwide Comparison of Seven Serology Assays Reveals a SARS-CoV-2 Non-Responding Seronegative Subpopulation

November 19, 2020, THE LANCET

- In Israel, the diagnostic laboratories of all four Health Maintenance Organizations and the Central Virology Laboratory of the Ministry of Health participated in the study. Serology assays from Roche, Abbott, Diasorin, BioMerieux, Beckman-Coulter, Siemens, and Mount Sinai ELISA were included. Negative samples from 2,391 individuals representative of the population and 698 individuals with a positive SARS-CoV-2 PCR obtained between March 28 and May 24, 2020, were analyzed.

- Sensitivities between 81.5% - 89.4% and specificities between 97.7% - 100% resulted in an impact on the Positive Predictive Values (PPV) of each assay, in prevalence scenarios less than 15%. No increase was detected in the false positive rate among children compared to adults. There was a positive correlation between antibody titers and disease severity and was no evidence for decreased titers with time and short half-life. In a population-wide, multi assay fashion, the number of seronegative, non-responding patients at

Table 2
Test performance of the different kits (equivocal results were excluded from the calculation of sensitivity and specificity and are not included in the sample size columns of the table).

Test Kit	Negative Patients (n)	% Specificity (95% CI[e])	Positive PCR ≥14d Patients (n)	% Sensitivity (95% CI[e])
Abbott	2382	99.5 (99.2–99.74)	588	84.7 (81.5–87.4)
Diasorin	2379[a]	98.7 (98.2–99.1)	562[b]	82.4 (79.0–85.3)
VIDAS IgG	1304	98.9 (98.2–99.4)	345	89.3 (85.5–92.1)
Roche	1516	100.0 (99.8–100.0)	489	89.0 (85.9–91.4)
ELISA	1209[c]	97.7 (96.7–98.4)	310[d]	89.4 (85.4–92.3)
Beckman	318	100.0 (98.8–100)	162	81.5 (74.6–86.6)
Siemens	432	99.8 (98.7–99.94)	156	85.9 (79.4–90.4)

a 8 equivocal results; b 20 equivocal results; c 19 equivocal results; d 1 equivocal result; e 95% confidence interval calculated using binomial distribution.

Article 8

Published

October 29, 2020, Nutrients

Eating Habits and Lifestyle during COVID-19 Lockdown in the United Arab Emirates: A Cross-Sectional Study

Authors

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- In the United Arab Emirates (UAE), a cross-sectional study (n=1,012) was conducted between April and May 2020 with adults (≥ 18 years) using a multicomponent, self-administrated online questionnaire. The questionnaire was designed using Google document forms in English, Arabic, and French. This survey contained questions (37 questions and was divided into seven sections) on dietary and lifestyle habits before and during the COVID-19 pandemic.
- Nearly one third (31%) of the participants reported weight gain since the start of the lockdown. Over half (51.2%) did not consume fruits daily, and 37% did not consume vegetables daily. 32.1% of the participants reported not engaging in any physical activity before the pandemic that increased to 38.5% during the pandemic ($p<0.001$). Participants spending >5 hours/day on screens for entertainment increased, from 12.9% before the lockdown to 36.2% during the lockdown ($p<0.001$).
- A significant increase in the percentage of participants reported four stress parameters 'all the time' during the pandemic compared to before the pandemic - physical exhaustion (13.3% vs. 7.7%; $p< 0.001$); emotional exhaustion (14.1% vs. 6.3%; $p< 0.001$); irritability (13.5% vs. 6.9%; $p< 0.001$); and tension (17.8% vs. 7.8%; $p< 0.001$). Sleep disturbances were more common during the pandemic (60.8%).
- These findings indicate that individuals experienced negative lifestyle changes, unbalanced food choices, a reduction in physical activity, and psychological problems during the pandemic. Although quarantine is an essential measure to control the transmission of the virus, these findings need to be taken into consideration for future regulations in the UAE.

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Table 1. Demographic characteristics of study participants (n = 1012).

Characteristics	*n*	%
Gender		
Male	244	24.1
Female	768	75.9
Age (years)		
18–25	280	27.7
26–35	294	29.1
36–45	240	23.7
46–55	154	15.2
>55	44	4.3
Education level		
Less than high school	8	0.8
High school	111	11.0
College/Diploma	102	10.1
Bachelor's degree	547	54.1
Higher than bachelor's degree	244	24.1
Employment status		
Full-time	539	53.3
Part-time	44	4.3
Self-employed	31	3.1
Student	156	15.4
Unemployed	230	22.7
Retired	12	1.2

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Article 9

Ct Values and Infectivity of SARS-CoV-2 on Surfaces

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- Six studies were identified with original data on surface contamination with SARS-CoV-2 through MEDLINE search (until October 6, 2020). Viral RNA was found, in the surroundings of confirmed COVID-19 cases in 1.0% - 52.7% of the samples. Infectious SARS-CoV-2 was not detected on any surface in five studies. However, in one study, infectious virus was detected, in 9.2% of the samples that were explained by a single patient with persistent cough and frequent sputum spitting during sampling.

- A cycle threshold (Ct) value >33 obtained from a surface sample probably has no epidemiological significance. In workplaces, only 0.6% of tests among employees were positive over two weeks with Ct values between 33 and 36. Among 5,500 surface samples, only 0.8% were positive with Ct values between 34 and 38 indicated that viral loads were very low on surfaces in close and permanent proximity to viral shedders.

- Routine cleaning of public surfaces has been proposed, and disinfectant is considered when there is evidence that a surface is contaminated with a sufficient amount of infectious virus which is likely to contribute to viral transmission and cannot be controlled by other measures such as surface cleaning or handwashing.

THANK YOU

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