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ABU DHABI PUBLIC
HEALTH CENTRE

SCIENTIFIC RESEARCH MONITORING ON COVID-19

20 DECEMBER 2020

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

SCIENTIFIC RESEARCH MONITORING ON COVID-19 (ISSUE 320)

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 (1/2)

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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Mental Health

Population preferences for inclusive COVID-19 policy responses

Public health response

COVID-19 in Spain: view from the eye of the storm

Treatment

An EUA for Bamlanivimab—A Monoclonal Antibody for COVID-19

Public health response

A Data-Driven Rationale for High-Throughput SARS-CoV-2 Mass Screening Programs

Public health response

Simplifying Policy and Operational Considerations for COVID-19 Surge Planning: The 5S Framework

Epidemiology

Effect of internationally imported cases on internal spread of COVID-19: a mathematical modelling study

Diagnostic

Real-life validation of the PanbioTM COVID-19 antigen rapid test (Abbott) in community-dwelling subjects with symptoms of potential SARS-CoV-2 infection

Digital Health

Detecting COVID-19 infection hotspots in England using large-scale self-reported data from a mobile application: a prospective, observational study

Epidemiology

SARS-CoV-2 infection and transmission in educational settings: a prospective, cross-sectional analysis of infection clusters and outbreaks in England

RESEARCH UPDATES (2/2)

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Mental Health

The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts

Public health response

Mass testing for COVID-19

Digital Health

Rapid triage for COVID-19 using routine clinical data for patients attending hospital: development and prospective validation of an artificial intelligence screening test

Mental Health

Impact of the Covid-19 pandemic on the frequency of primary care-recorded mental illness and self-harm episodes in the UK: population-based cohort study of 14 million individuals

Epidemiology

Community prevalence of SARS-CoV-2 in England from April to November, 2020: results from the ONS Coronavirus Infection Survey

Mental Health

Trajectories of anxiety and depressive symptoms during enforced isolation due to COVID-19 in England: a longitudinal observational study

EPIDEMIOLOGY

FROM 21 JAN TO 19 DEC 2020

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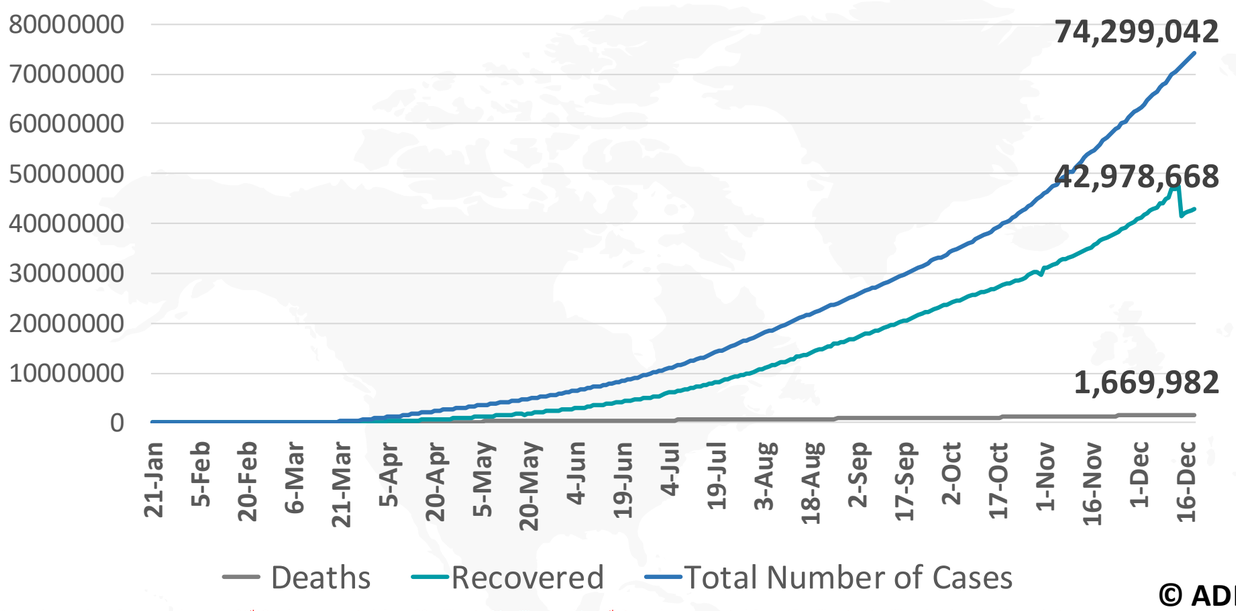
Figure 1: Total Number of Infected, Recovered, and Death Cases



Note: the number of recovered cases in 31th October recorrected from 30 million to 29 million, and in 15th December recorrected from 47 million to 41 million in Johns Hopkins website

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

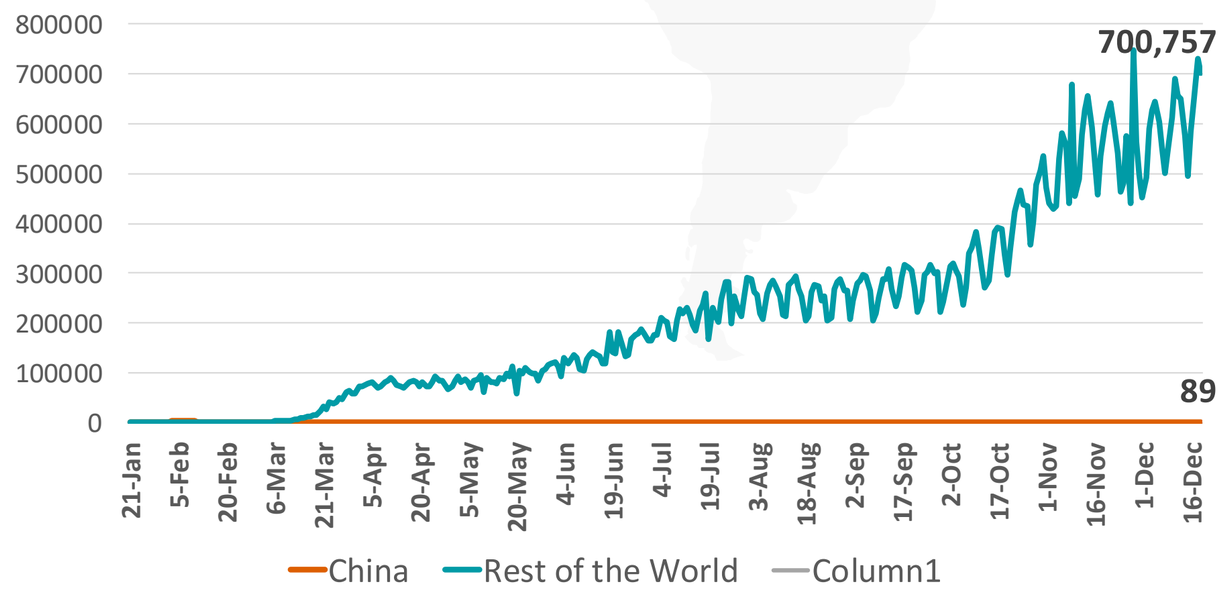


Figure 3: Total Number of Death Due to COVID-19 (china and result of the world)

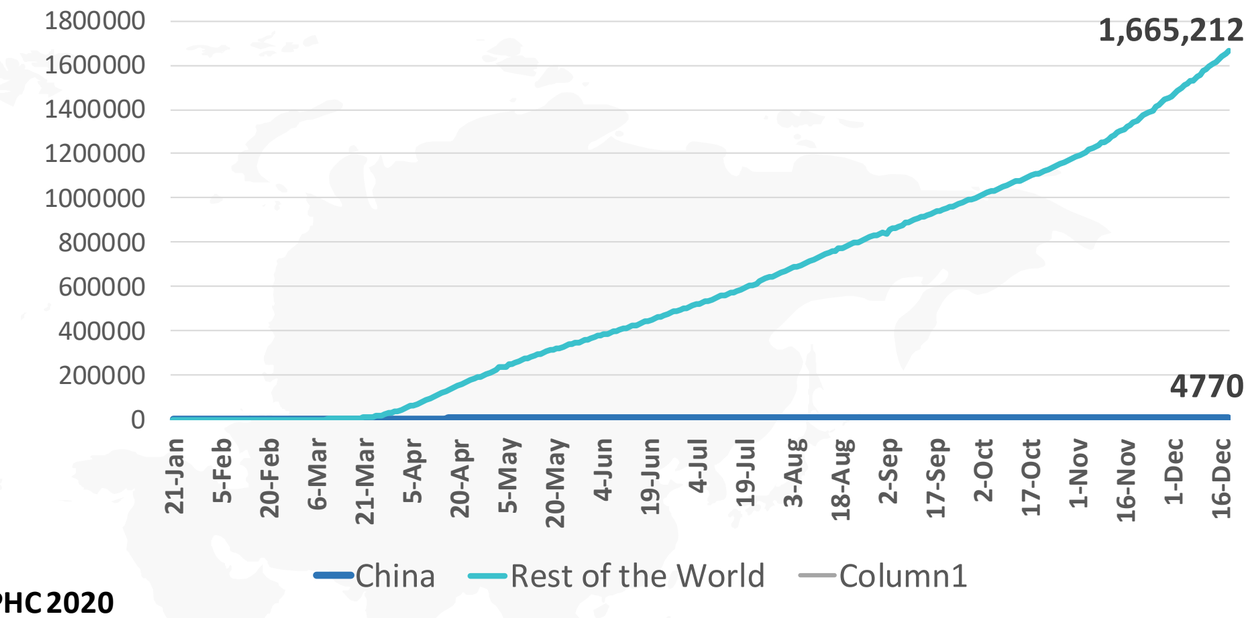
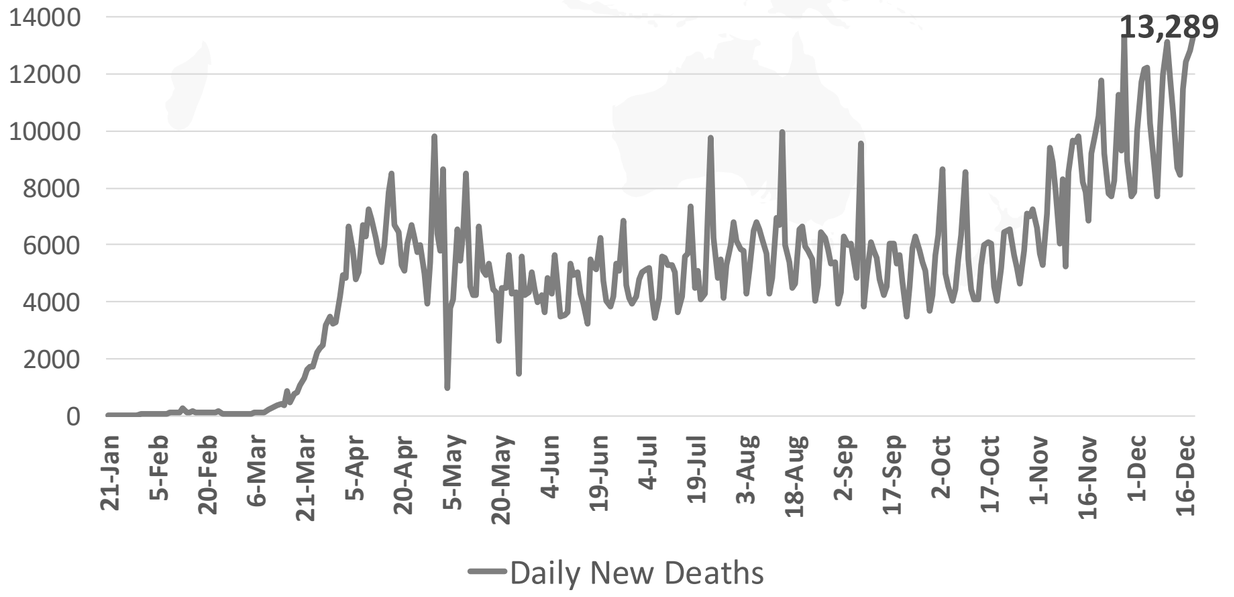


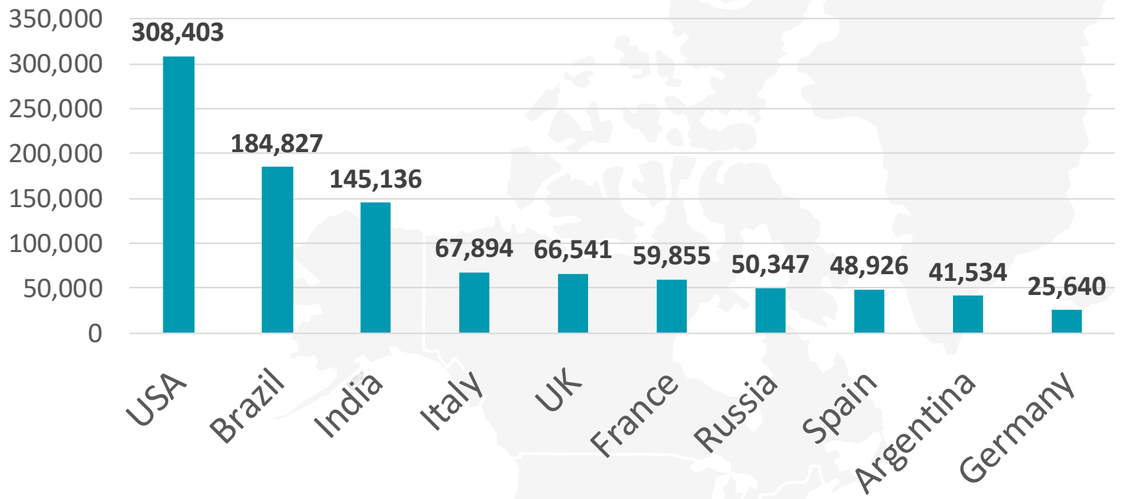
Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)



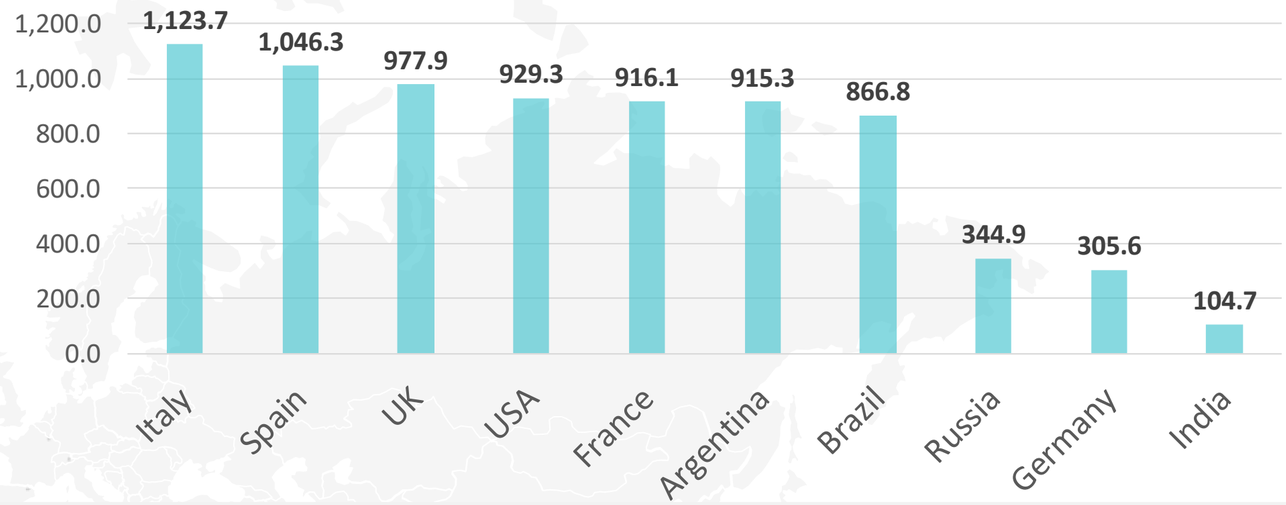
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: John Hopkins, WHO

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

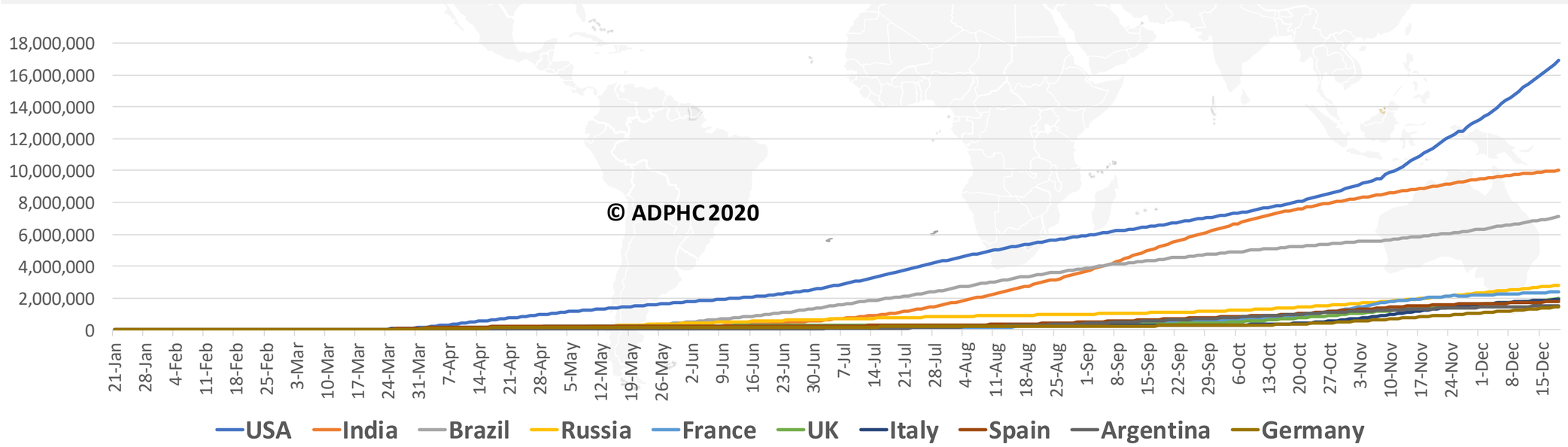
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	16,912,564
India	10,004,599
Brazil	7,110,434
Russia	2,819,429
France	2,401,113
UK	1,977,171
Italy	1,921,778
Spain	1,797,236
Argentina	1,524,372
Germany	1,471,238

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)

7 rolling averages as 19 December 2020

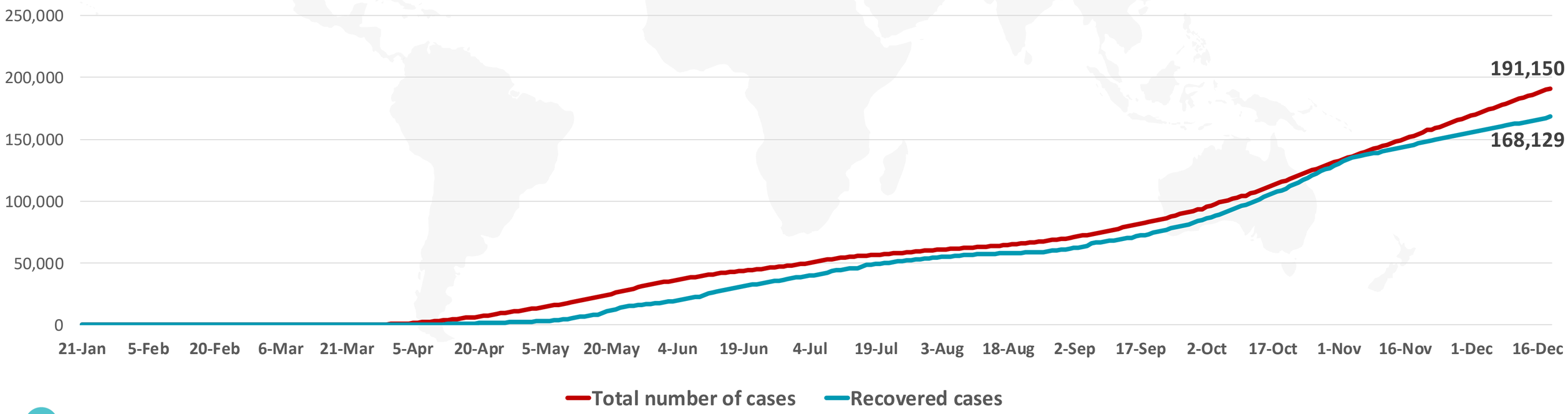
Daily Tests
137,476.6 Average Tests
1,390.0 per 100k population
0.9% Positive Rate

Daily Cases
1,235.6 Average Cases
12.5 per 100k population

Daily Recovered
725.9 Average Recovered
7.3 per 100k population

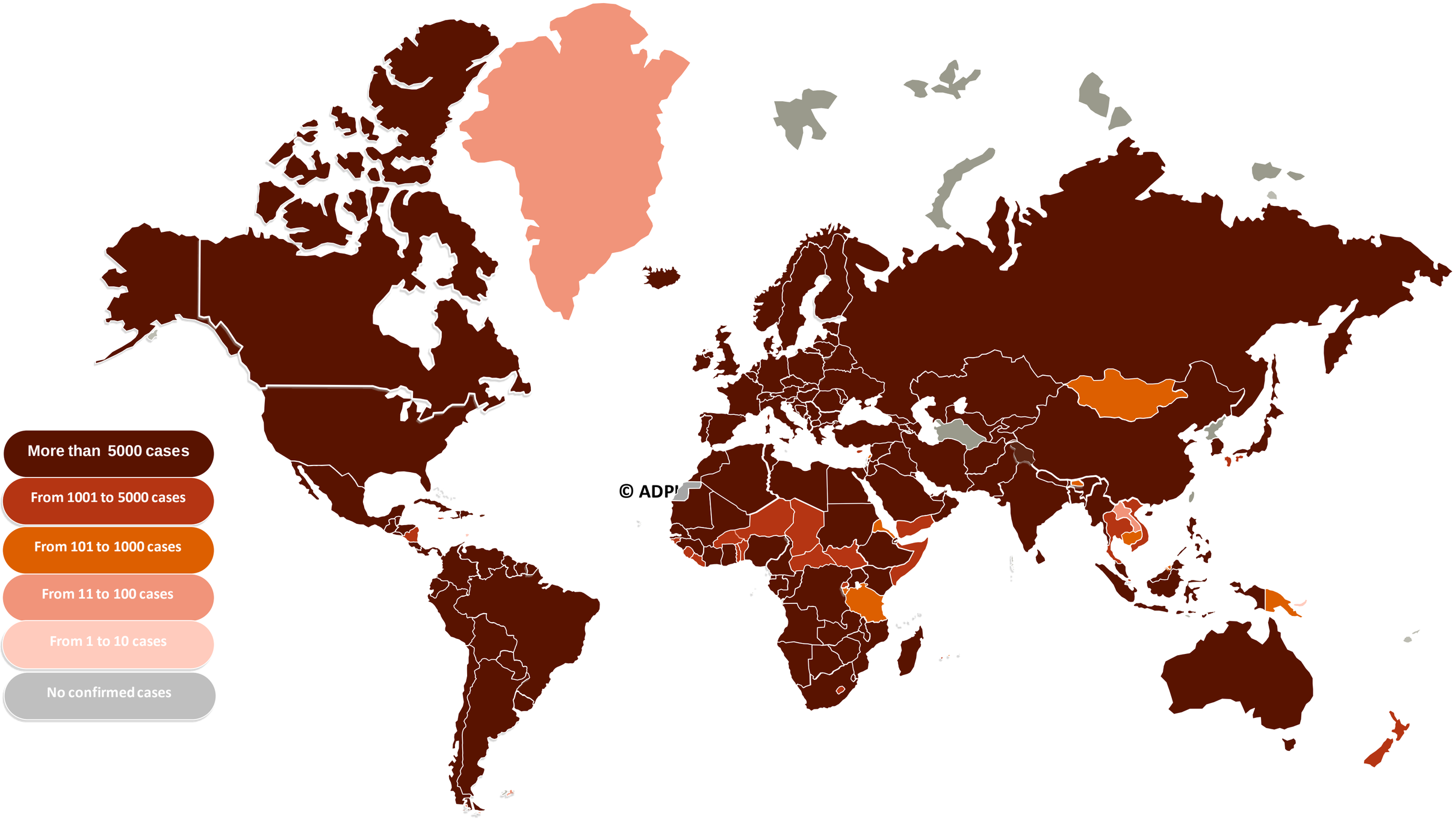
Daily Deaths
3.6 Average Deaths
0.0 per 100k population
0.3% Case Fatality Rate

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, John Hopkins

Figure 7A : Global Distribution of COVID-19 Cases



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

EPIDEMIOLOGY

Date: 19 DEC 2020

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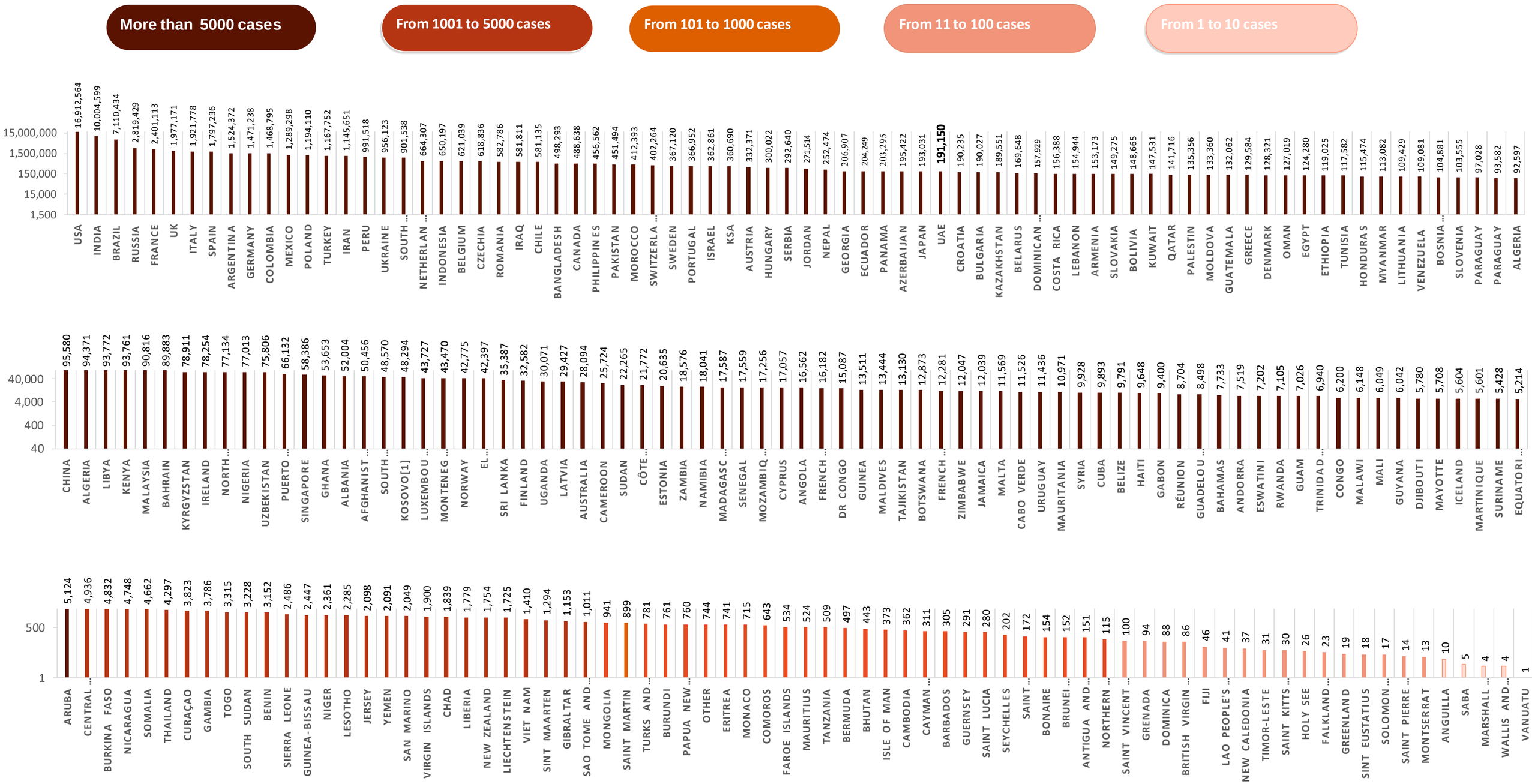
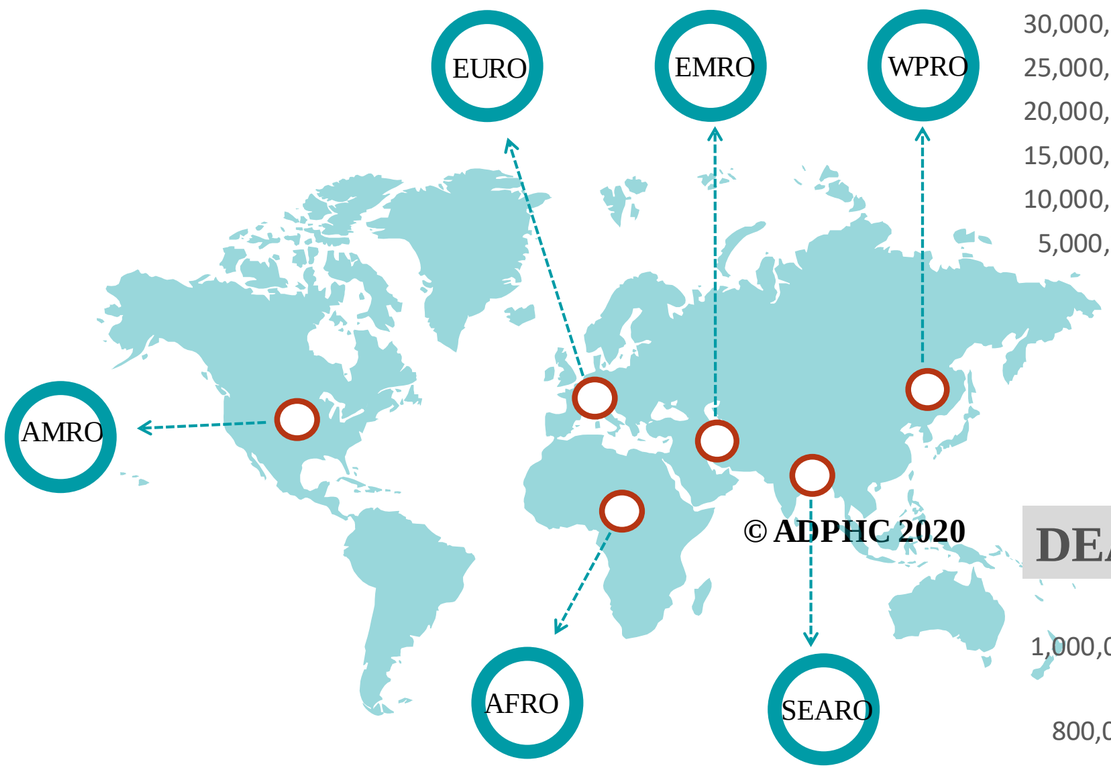
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



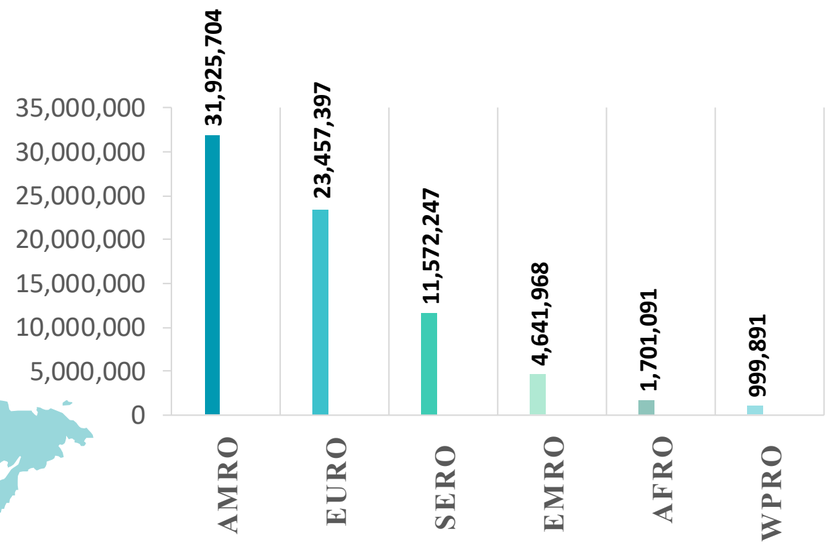
Other*:includes cases and deaths reported under the international conveyance(Diamond Princess)

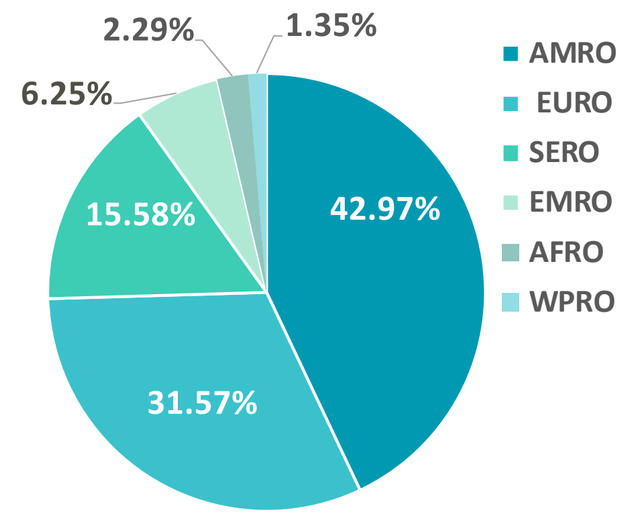
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

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

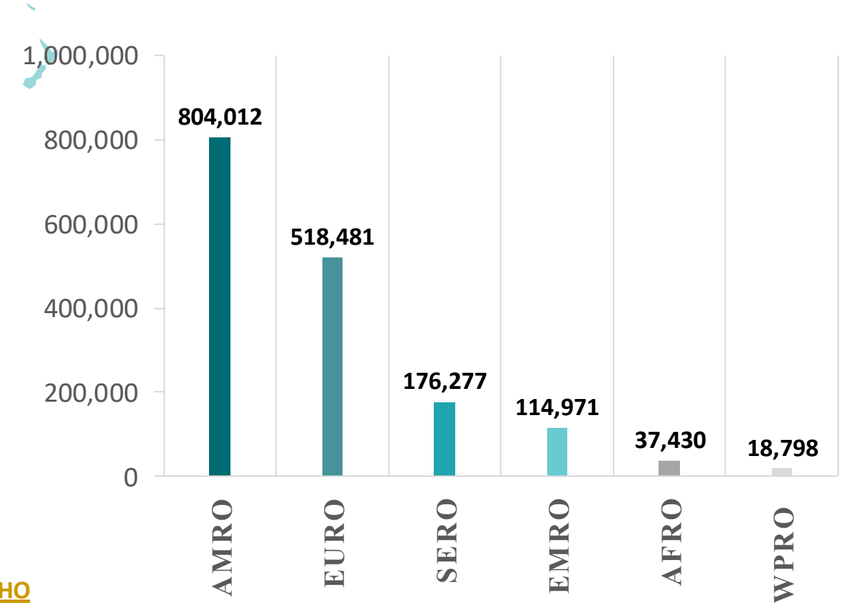


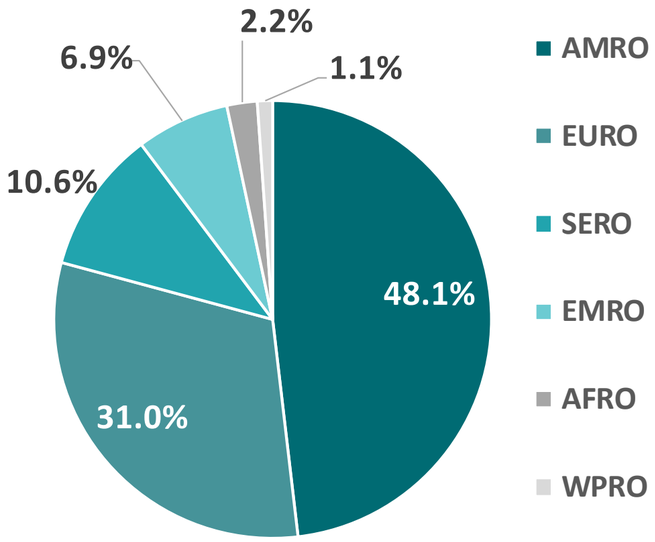
INFECTED





DEATHS

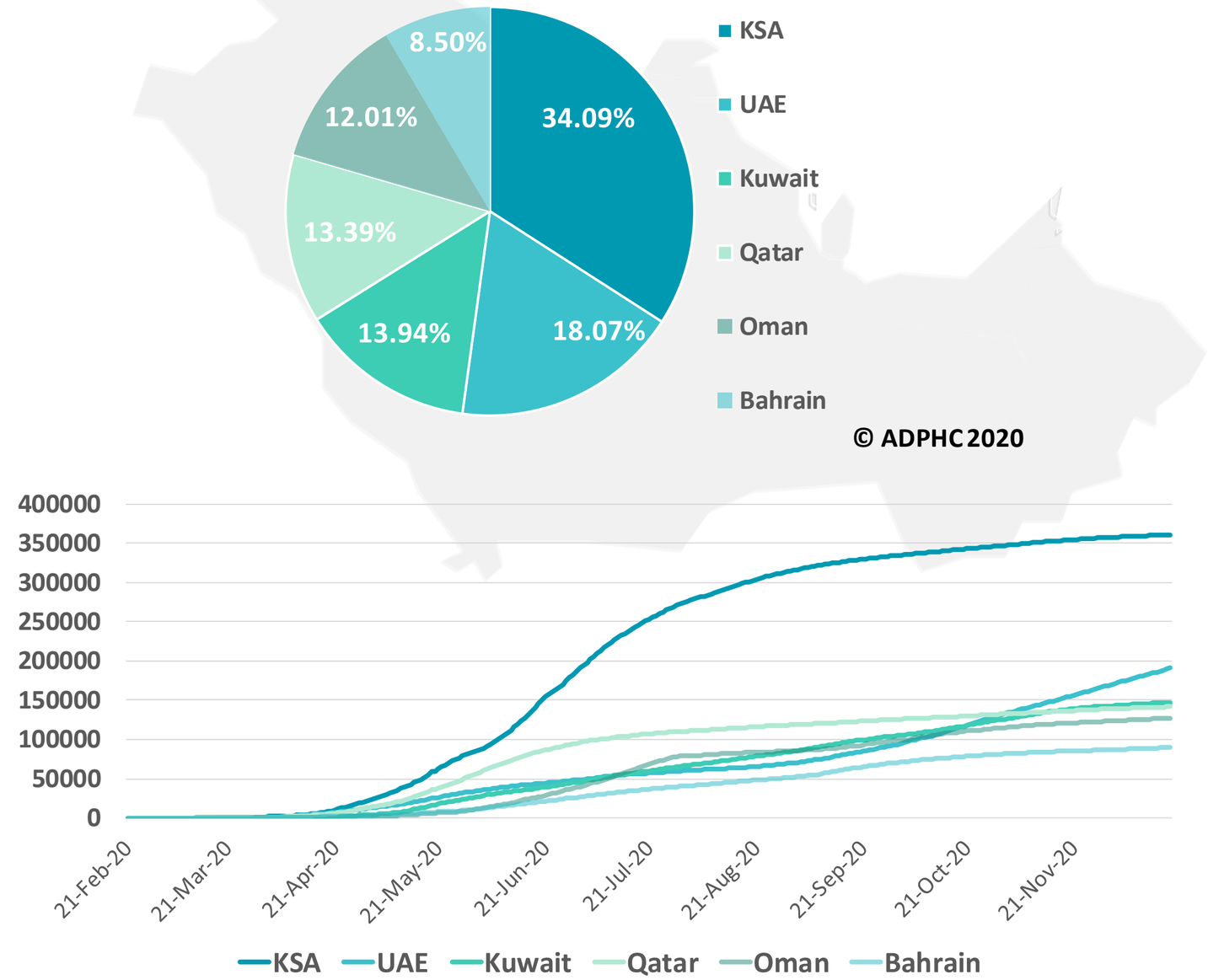




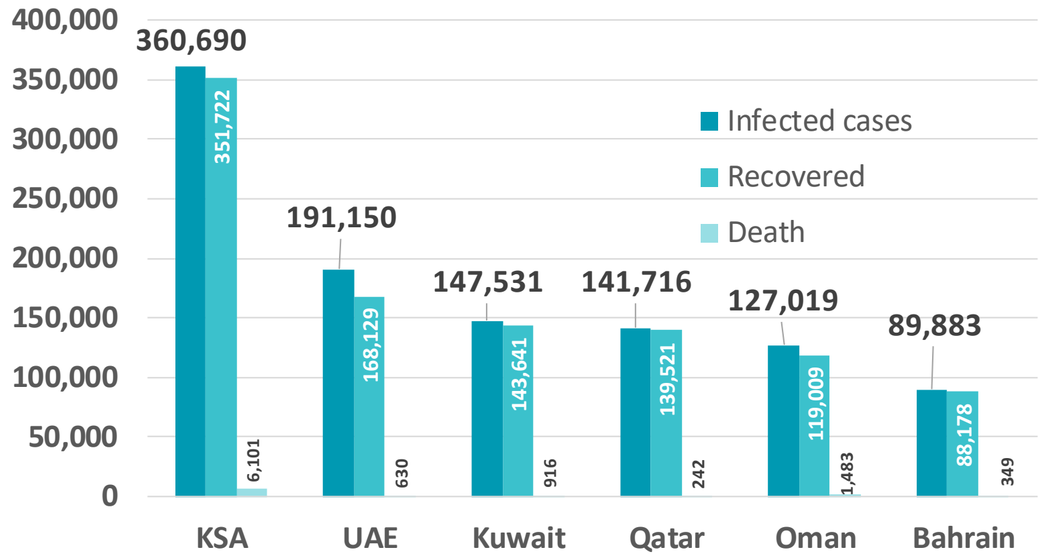
Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: WHO

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

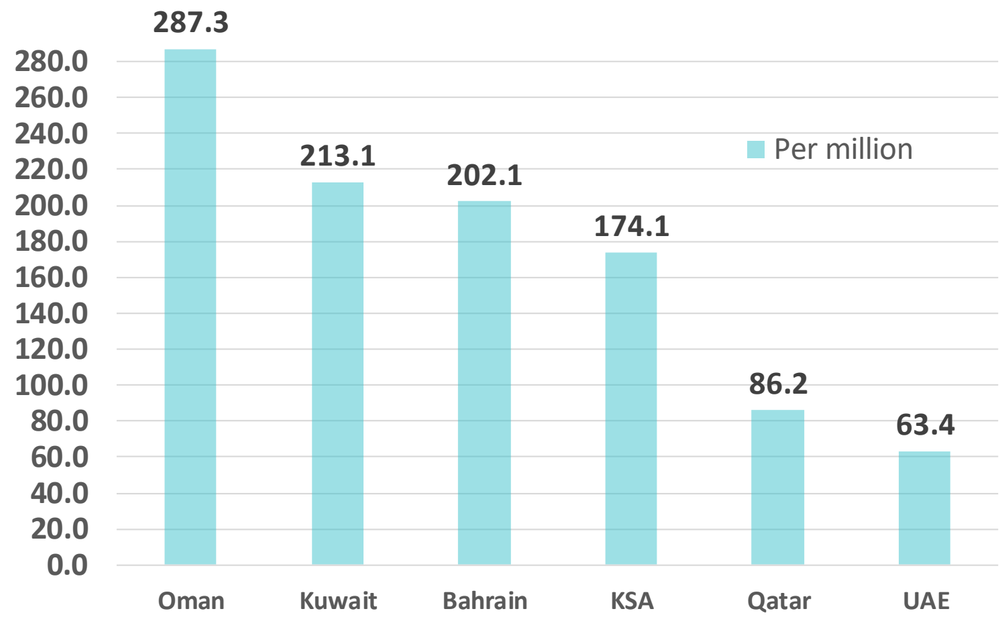
TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS

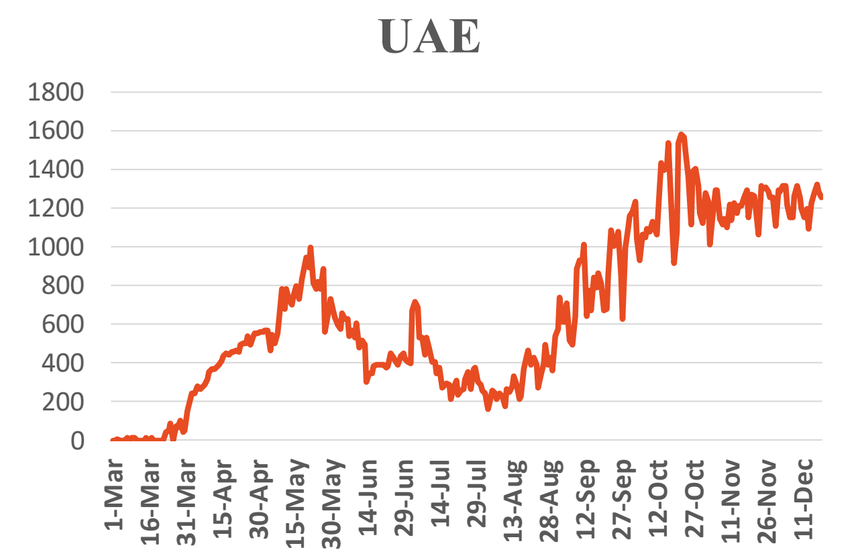


DEATHS PER MILLION

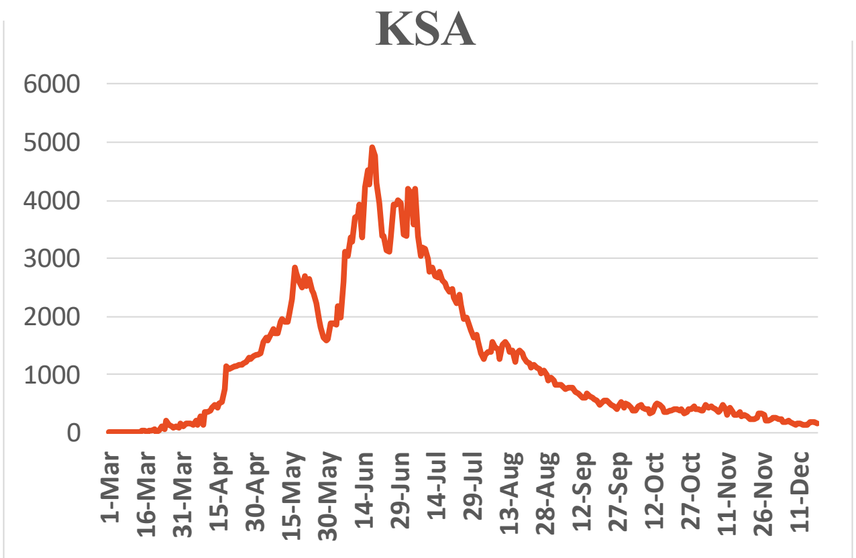


Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: John Hopkins, WHO

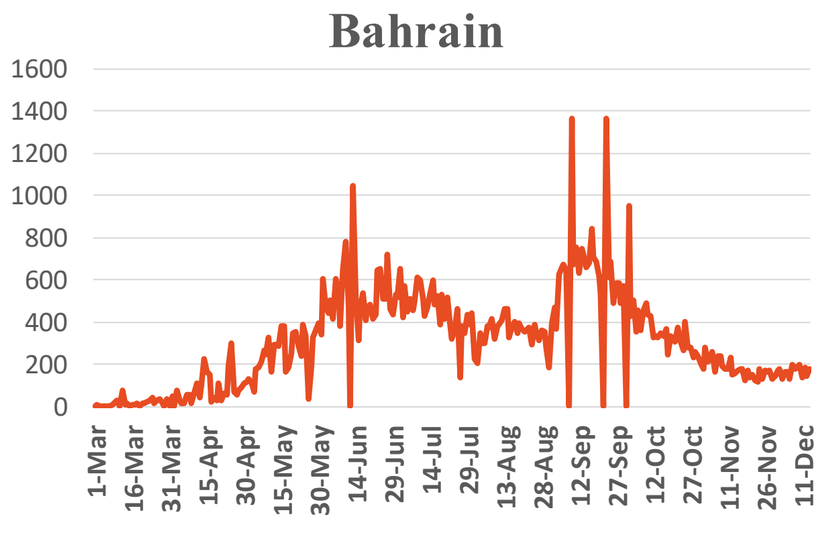
Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries



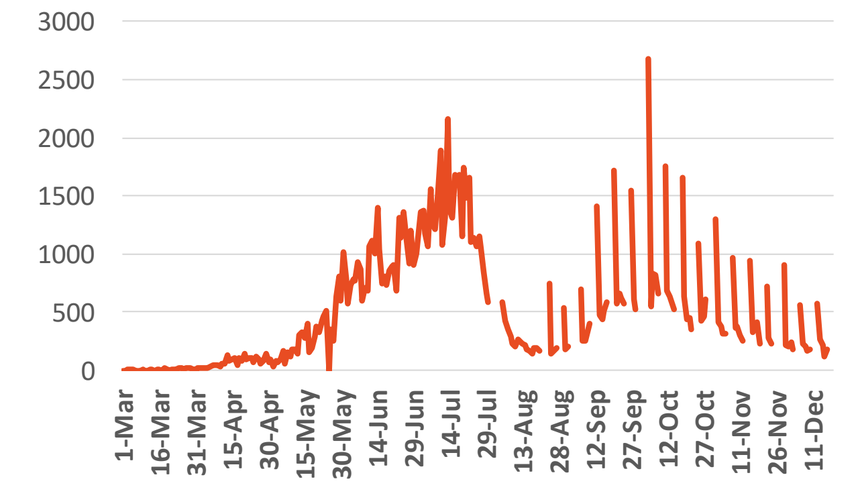
Source : National Emergency Crisis and Disaster Management Authority



Source : KSA ministry of health



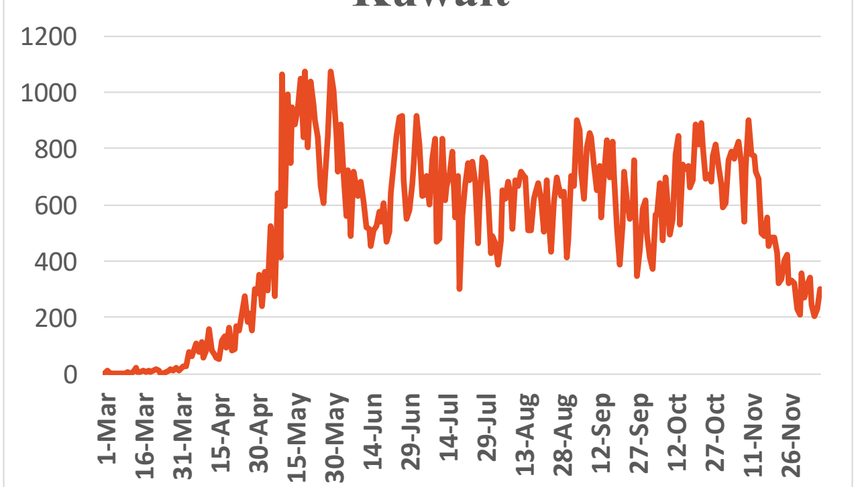
Source :WHO



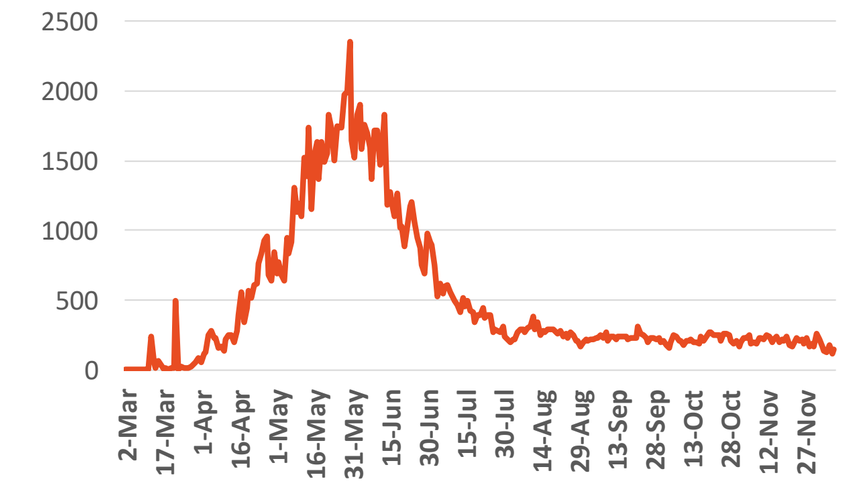
Source :Oman ministry of health

*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, 25,26,6 DEC

*No announced statistic data on weekends and official holidays.

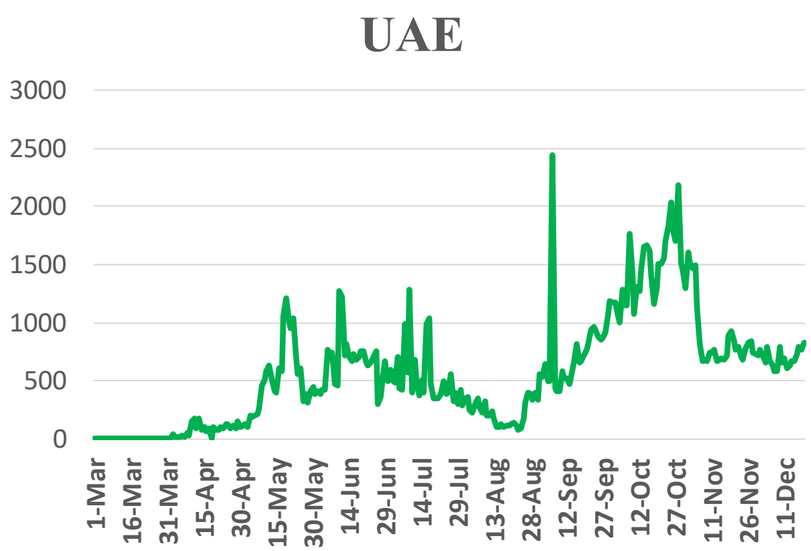


Source : Kuwait ministry of health

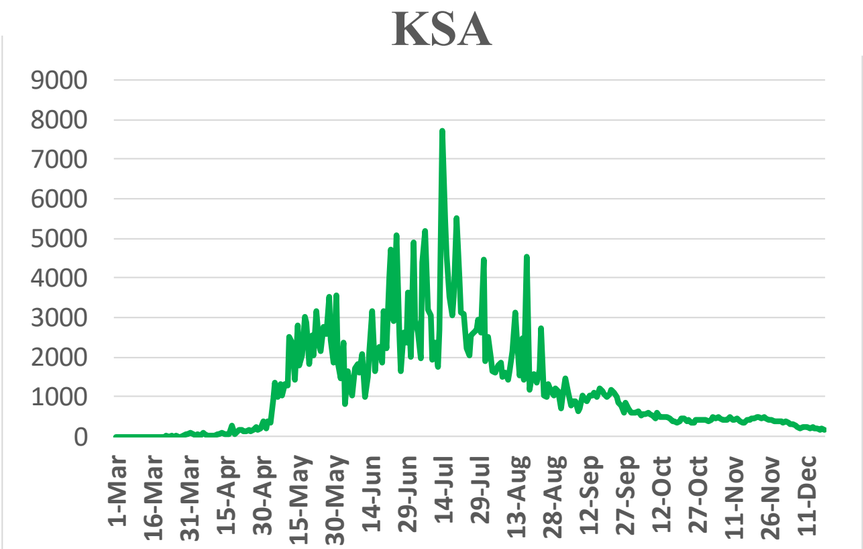


Source : Qatar ministry of health

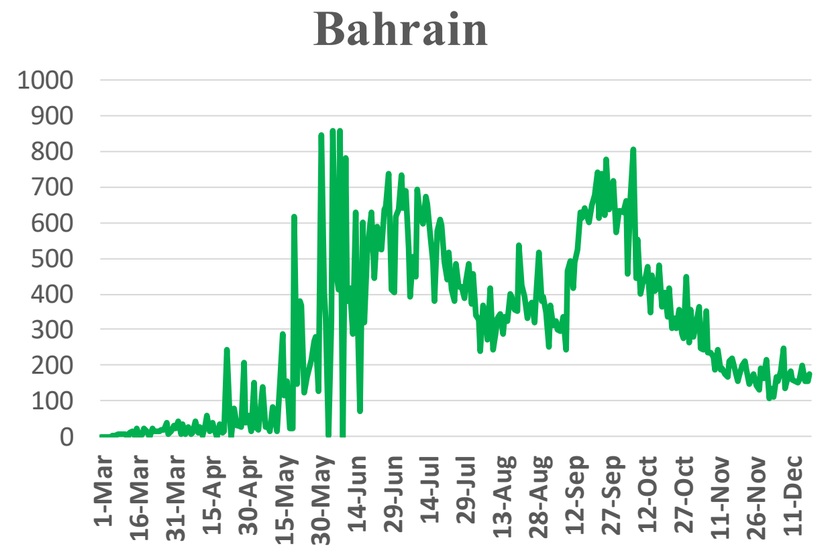
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries



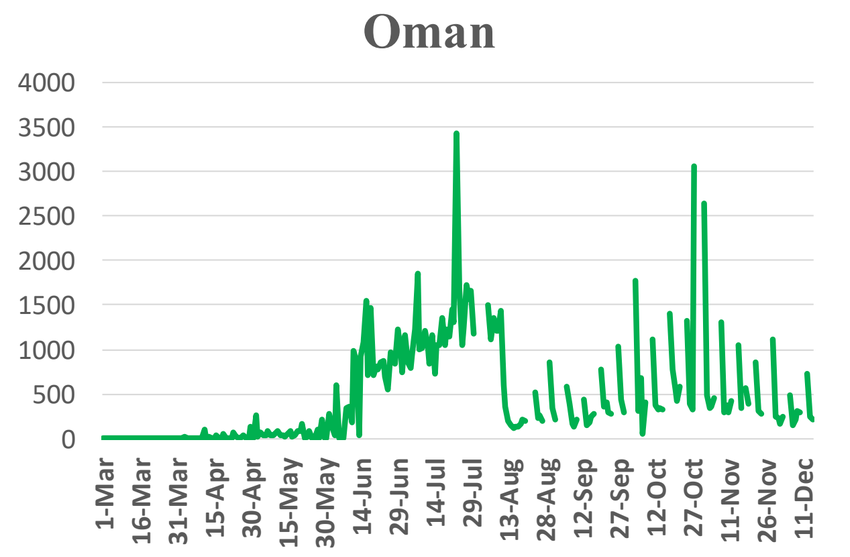
Source : National Emergency Crisis and Disaster Management Authority



Source : KSA ministry of health



Source : Bahrain ministry of health



Source :Oman ministry of health

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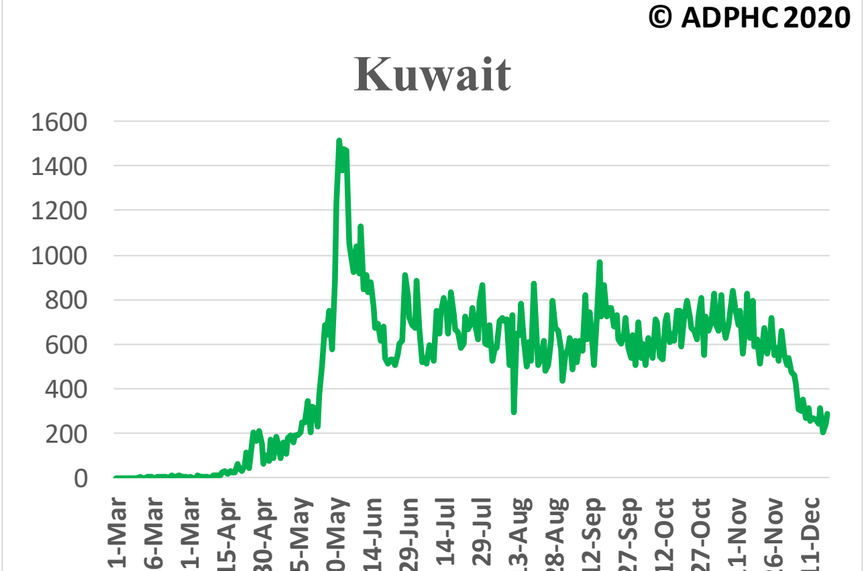
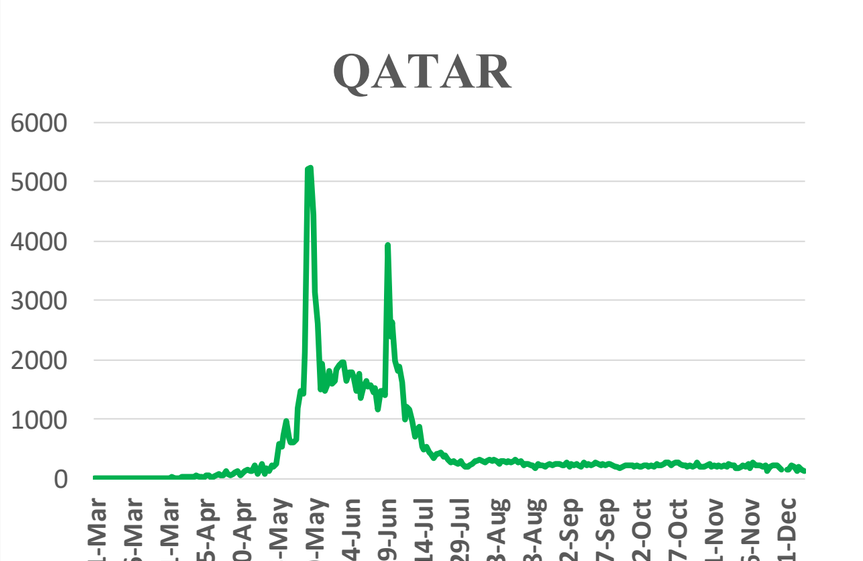
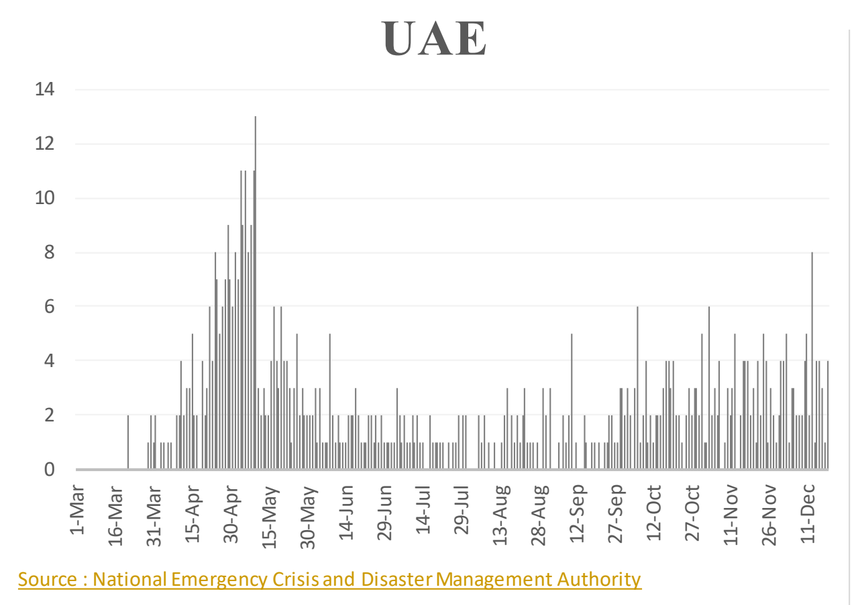


Source : Kuwait ministry of health

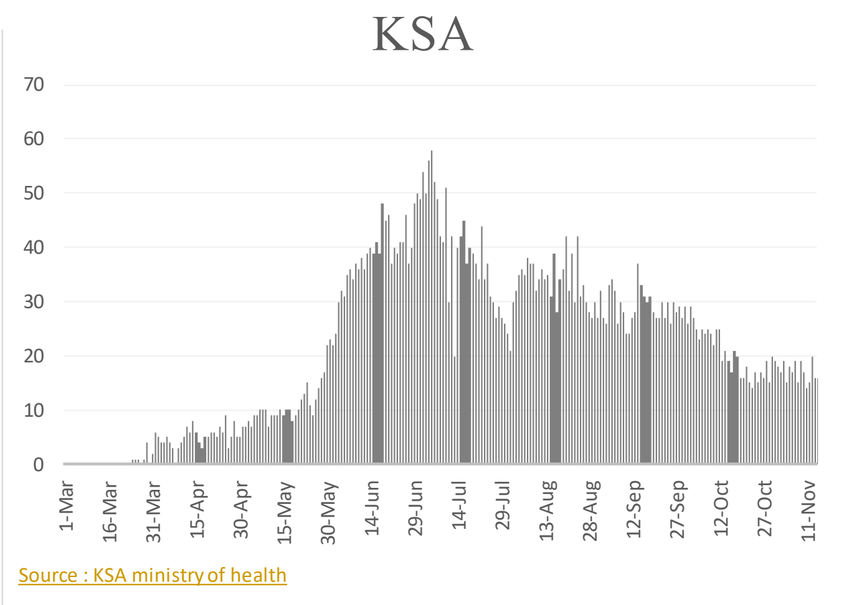


Source : Qatar ministry of health

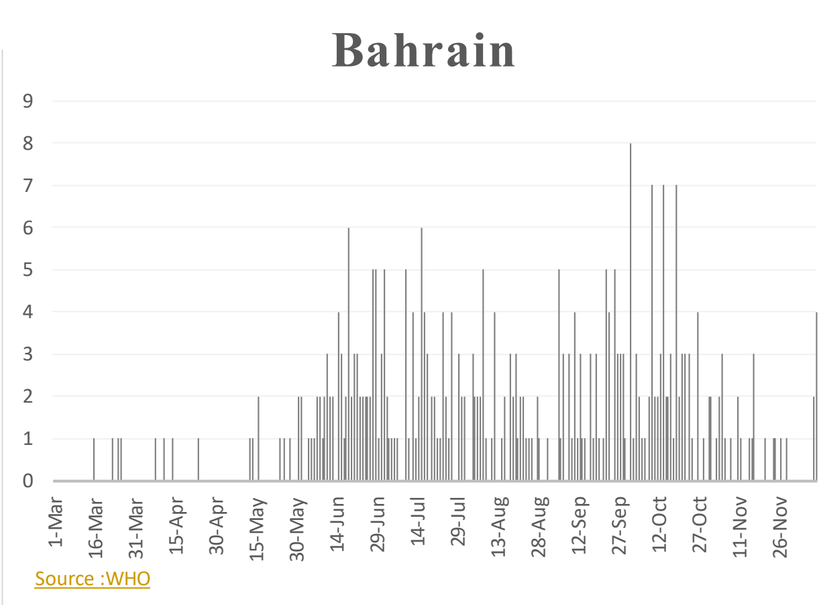
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries



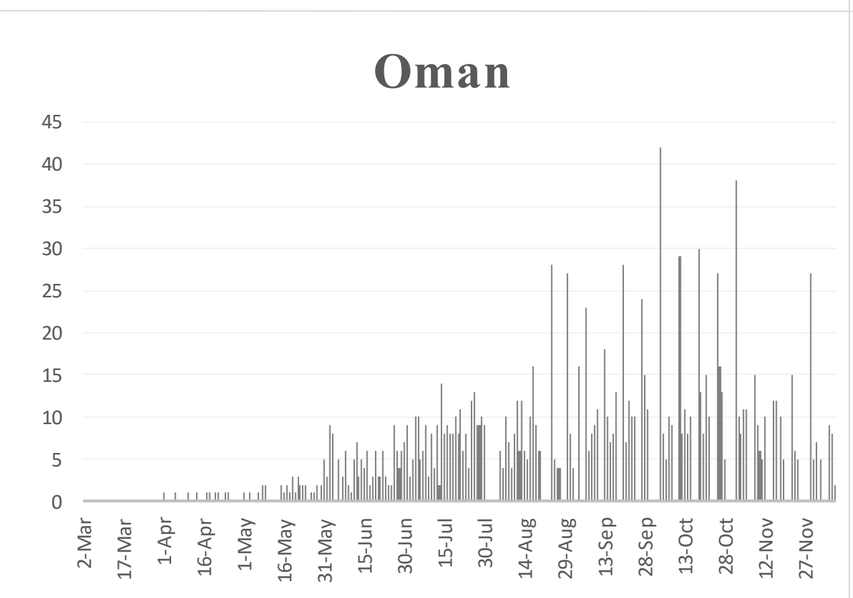
Source : National Emergency Crisis and Disaster Management Authority



Source : KSA ministry of health



Source :WHO



Source :Oman ministry of health

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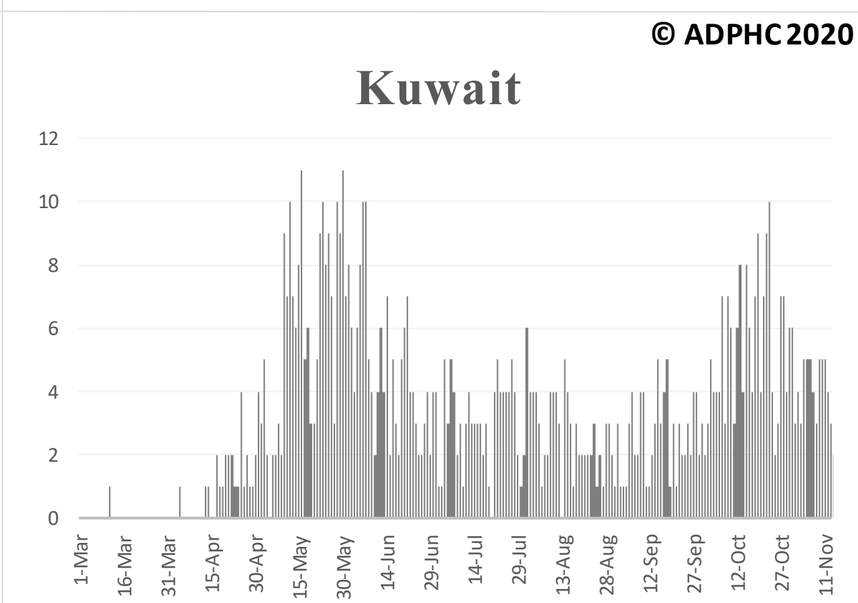
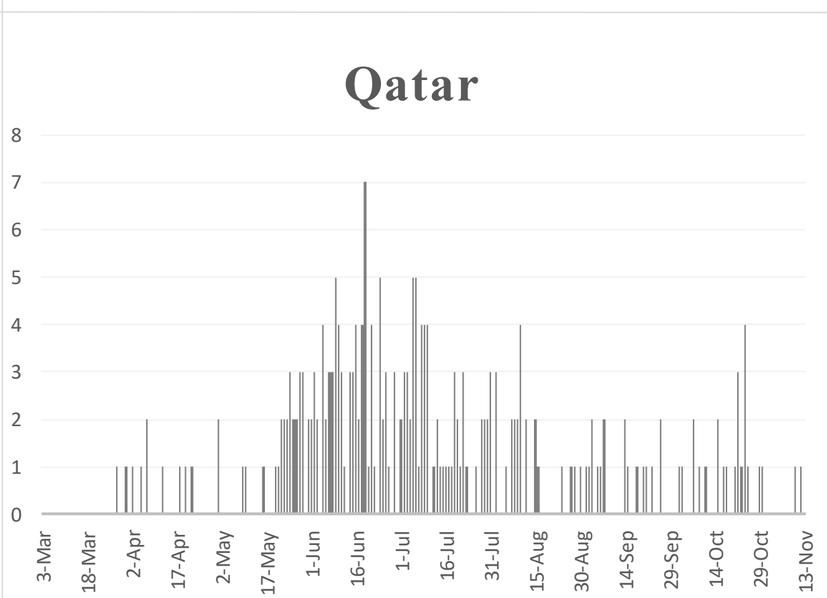


Source : Kuwait ministry of health



Source : Qatar ministry of health

Article 1

Published

December 7, 2020, the LANCET

Population preferences for inclusive COVID-19 policy responses

- In France, a web-based survey was conducted (May 4-16, 2020) at the end of the first lockdown to assess acceptance of measures among the main anti-COVID-19 strategies (by the French Government) with a representative sample of population (n=1,154). Using a discrete choice experiment, population preferences were obtained regarding various combinations of COVID-19 epidemic control policies.
- Masks, public transport restrictions, and digital tracking were considered acceptable by the general population.
- Vulnerable people (those had chronic conditions) reported better tolerance to lockdown, more acceptance of mask wearing, and rejected less the closures of restaurants and bars as compared with the general population. Young adults (18-24 years) were clearly in favor of financial compensation for control policies that was rejected by other groups.
- How people rank various COVID-19 prophylactic measures is a prerequisite for designing specific programs. These findings indicated the need for more inclusive anti-COVID-19 policies and suggested routes to match control policies with the preferences of subgroups with the aim of improving adherence.

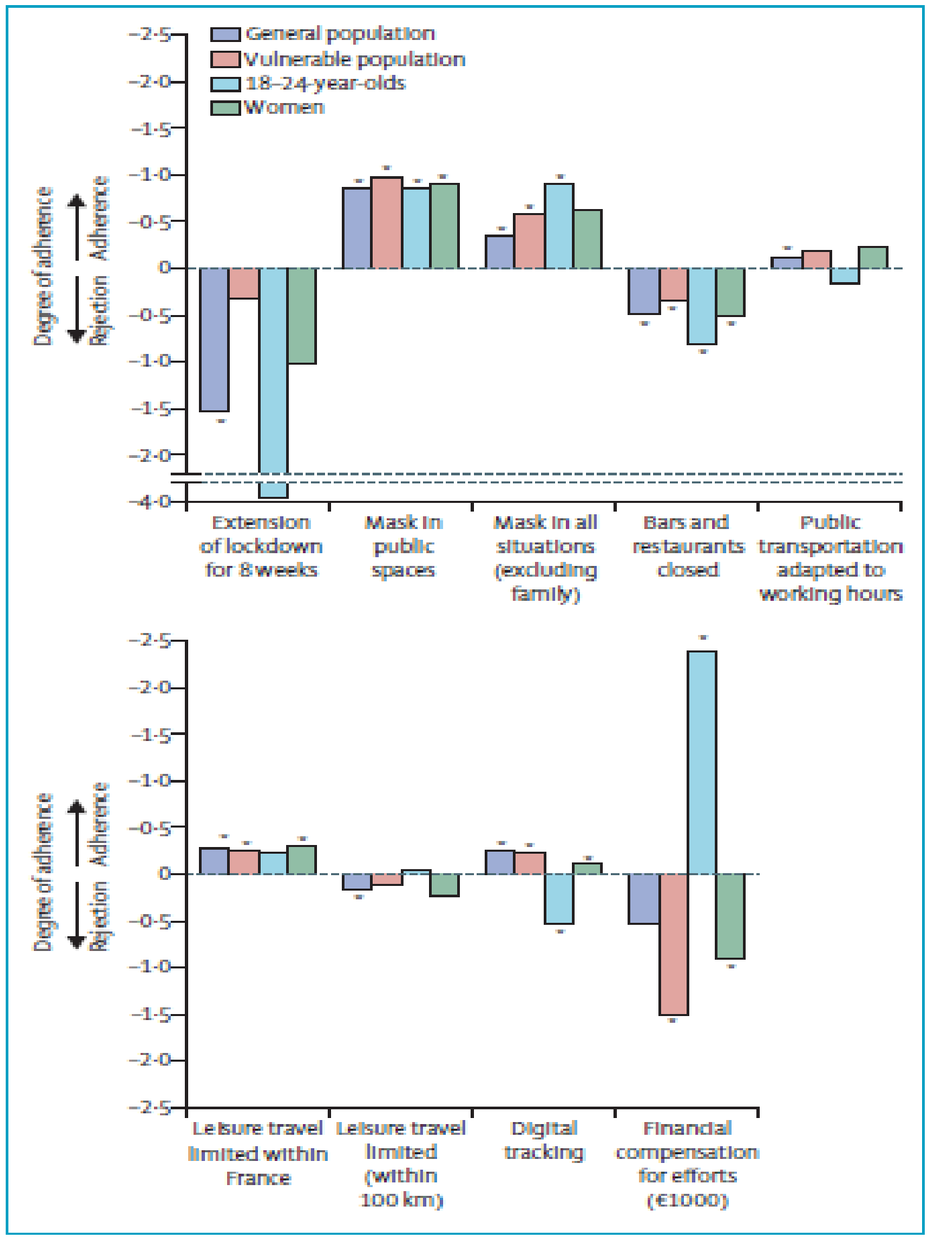


Figure: Degree of adherence of the population to prophylactic measures

Article 2

Published

December 7, 2020, THE LANCET

COVID-19 in Spain: view from the eye of the storm

- After the first wave of COVID-19, response capacities have been increased substantially in Spain. An improved test-trace-isolate strategy has been implemented. PCR capacities have been strengthened and public health workforce has increased by three times. However, weaknesses persist in the system, with chronic underinvestment in primary health care, public health, digitalization, research and innovation, bureaucratic procedures, and little availability of trained professionals.
- Difficult decisions are being made, weighing scientific evidence, uncertainties, feasibility, and costs. There are multiple interterritorial working groups at levels from technical to highly political, meet at least once per week, and coordinated decision making. There is transparent information for epidemic monitoring based on individual case information received daily at the national level. Availability of comprehensive data can help to strengthen scientific community engagement and increase public trust.
- Comprehensive evaluation and epidemiological research can explain the factors influence the progression of the epidemic and the short and long-term changes that are mostly needed. Factors including existing susceptible and hard to reach groups, structural inequalities, population age, limits in welfare policies, cultural and social interactions, and high mobility rates should be accounted for to explain the epidemic.
- Further strengthening response capacities are challenges for all who are involved, community engagement and the effective implementation of control measures need to overcome pandemic fatigue. Politicization and an unfortunate situation of confrontation permeating different sectors makes effective crisis communication challenging and is likely to impair response efforts.

TREATMENT

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Article 3

Published

December 11, 2020, JAMA

An EUA for Bamlanivimab—A Monoclonal Antibody for COVID-19

- The investigational neutralizing IgG1 monoclonal antibody bamlanivimab (LY-CoV555; Lilly) has been granted an FDA Emergency Use Authorization (EUA) for treatment of recently diagnosed mild to moderate COVID-19 in patients who are ≥12 years old, weigh at least 40 kg, and are at high risk for progressing to severe disease and/or hospitalization.
- The drug needs to be infused over 1 hour in a facility equipped to manage anaphylaxis. Bamlanivimab has not been beneficial in hospitalized patients.
- Bamlanivimab will be allocated to state health departments by the US Department of Health and Human Services (HHS) based on case counts and severity of outbreaks.
- These state health departments will be responsible for allocating the antibody to local health facilities.
- Finding facilities equipped to administer an IV infusion and capable of managing anaphylaxis while not exposing uninfected patients to SARS-CoV-2 may be difficult.

Article 4

Published

A Data-Driven Rationale for High-Throughput SARS-CoV-2 Mass Screening Programs

December 10, 2020 The JAMA

- A greatly expanded capacity for mass screening will be essential to managing life and economic activity in an ongoing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic.
- Identifying asymptomatic people with acute SARS-CoV-2 infection requires frequent testing and results that are available quickly enough to act.
- A parallel and complementary approach promises to immediately expand existing capacity in regional or national central laboratories by using high-speed automated pooling and polymerase chain reaction (PCR) to screen many specimens quickly.
- Multistage algorithms will perform with different sensitivity when testing different specimens.
- Laboratory speed will not translate to fast turnaround times for individual clients unless programs can receive, log, and prepare a massive volume of new specimens for them to test.
- With reliable data to guide implementation of highly efficient algorithms, the laboratories that already have pooled testing capability need only the right directives, funding, support, and regulation.

Article 5

Published

Simplifying Policy and Operational Considerations for COVID-19 Surge Planning: The 5S Framework

December 11, 2020 JAMA

- The 5S Framework developed by HCA Healthcare's multistate health system facilitates informed and productive interactions between health system operators and policy makers when making critical decisions about meeting community demand for health care resources for COVID-19 and non-COVID-19 patients during surge conditions.

1) Surge

- The first "S"—Surge (in the relevant catchment area of service)—constitutes the fact base of community-level rates of COVID-19 transmission and surge projections upon which policy and health system operating decisions should be made.

2) Space and 3) Life Support

- Adapting postsurgical, telemetry, or other environments can enhance ICU capacity .
- Consolidating care for patients with COVID-19 can reduce aggregate use of PPEs and increase staff proficiency.
- Understanding rates of ventilation and community incidence of COVID-19 is critical to projecting ICU needs.
- Volume is affected not only by the number of simultaneous patients receiving care, but also by their average length of stay (LOS) which has been seen to be linearly associated with increasing age.

4) Staffing

- Rehiring retirees to serve as resource clinicians to provide guidance and oversight to relocated staff.

5) Supplies

- The federally imposed discipline of reporting supply stocks has formalized considerations of patient capacity in the context of fluctuations in community COVID-19 rates.

EPIDEMIOLOGY

Article 6

Published

December 7, 2020, the LANCET

Effect of internationally imported cases on internal spread of COVID-19: a mathematical modelling study

- In this study, analysis combined estimates of SARS-CoV-2 prevalence and incidence (using statistical modelling methods) for countries in May and September, 2020 with detailed flight data to produce risk ratings for each country (i.e., the ratio of imported cases to total incidence, expressed as a proportion). Different travel scenarios were considered (for May and September, 2020) - an upper bound with estimated travel volumes at the same levels as May and September, 2019, and a lower bound with estimated travel volumes adjusted downwards according to expected reductions in May and September, 2020.
- Imported case in May, 2020, would have accounted for >10% of total incidence in 102 of 136 countries when anticipating no reduction in travel volumes (same levels as 2019 travel volumes) and in 74 countries when anticipating estimated 2020 travel volumes. In September, 2020, imported case would have accounted for <10% of total incidence in 106 of 162 countries and <1% in 21 countries when anticipating no reduction in travel volumes. When anticipating estimated 2020 travel volumes, imported cases in September, 2020, accounted for <10% of total incidence in 125 countries and <1% in 44 countries.
- These findings highlighted that strict untargeted travel restrictions are probably unjustified in many countries other than those that have both good international travel connections and very low local SARS-CoV-2 incidence. Governments need to make detailed decisions about travel restrictions or quarantine white lists can use the methods presented here combined with the available current and accurate local data.

EPIDEMIOLOGY

Continued

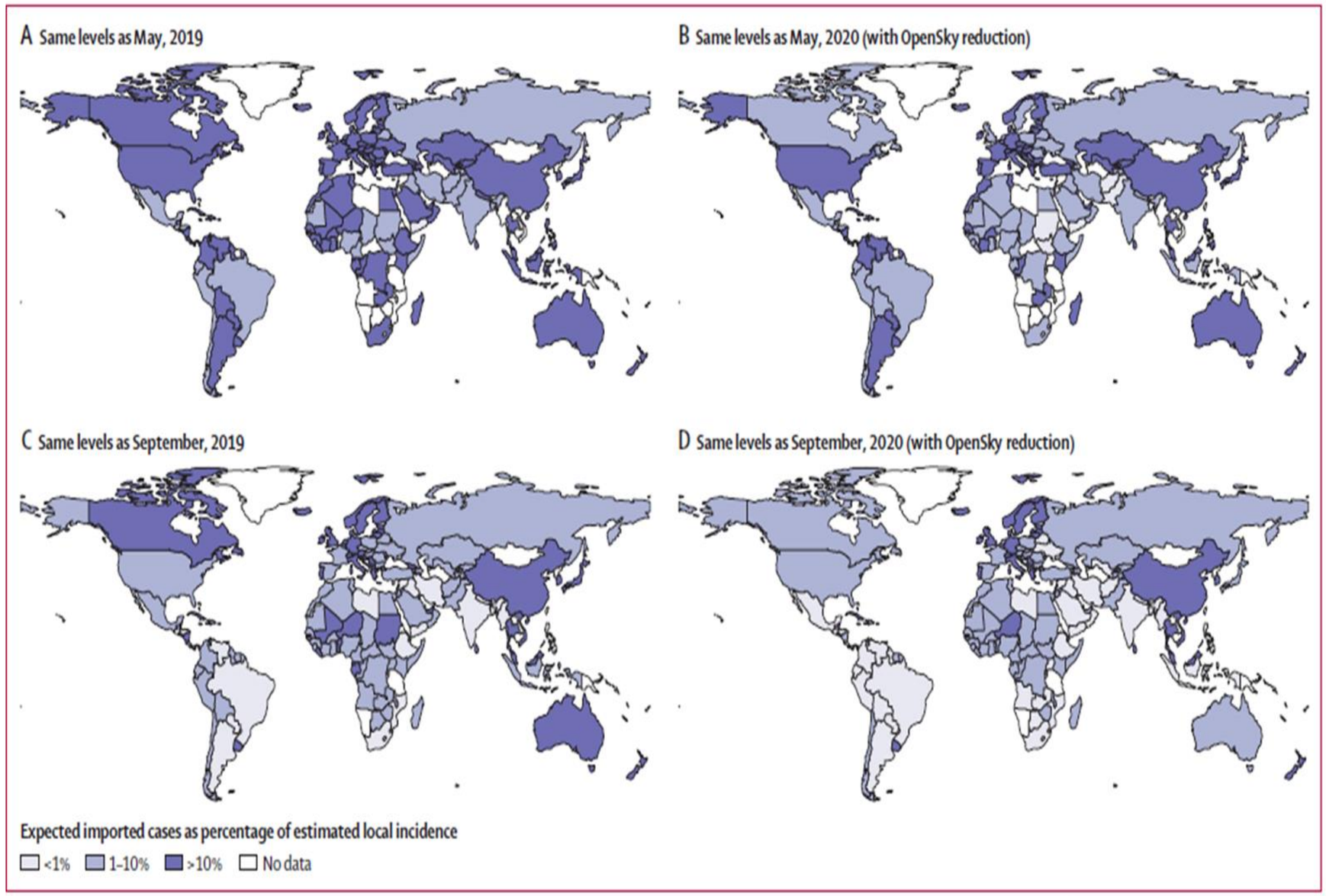

Figure 2: Risk rating by country, in the absence of international travel restrictions, in each of the four scenarios about international travellers in May and September, 2020

DIAGNOSTIC

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

Article 7

Published

Real-life validation of the PanbioTM COVID-19 antigen rapid test (Abbott) in community-dwelling subjects with symptoms of potential SARS-CoV-2 infection

December 5, 2020, the LANCET

- In this prospective evaluation, individuals (≥16 years) visiting COVID-19 community testing centers in Utrecht, the Netherlands (between September 22 and October 6, 2020) and in Aruba (between September 23 and October 9, 2020) were asked to participate. 1,367 and 208 individuals were enrolled in Utrecht and Aruba respectively. The diagnostic value of the PanbioTM COVID-19 antigen rapid test was determined in comparison to RT-qPCR in community dwelling mildly symptomatic individuals in Utrecht (medium endemic area) and Aruba (high endemic area) using two concurrently obtained nasopharyngeal swabs.
- In Utrecht and Aruba, based on RT-qPCR, SARS-CoV-2 prevalence was 10.2% (139/1,367) and 30.3% (63/208) respectively. In both settings, specificity of the PanbioTM COVID-19 antigen rapid test was 100%. **Sensitivity was 72.6% in Utrecht and 81.0% in Aruba.**
- **The likelihood of false negative results was associated with RT-qPCR Ct-values but not with duration of symptoms. Restricting RT-qPCR test positivity to Ct-values <32 provided test sensitivities of 95.2% in Utrecht and 98.0% in Aruba.**
- .

DIAGNOSTIC

Continued

Table 2
Test characteristics of the LFA compared to the RT-qPCR for the Utrecht study site and the Aruba study site.

Study site	LFA result	PCR result			Specificity	Sensitivity
		Positive (Ct<32)	Positive (Ct ≥32)	Negative		
Utrecht	Positive	101	0	0	100% (99.7–100)	Overall: 72.6% (64.5–79.9)
	Negative	5	33	1228		Ct<32: 95.2% (89.3–98.5)
Aruba	Positive	48	3	0	100% (97.5–100)	Overall: 81.0% (69.0–89.9)
	Negative	1	11	145		Ct<32: 98.0% (89.2–99.95)

Sensitivity and specificity are reported with 95% CI.

Conclusion

- Due to the lower sensitivity of the PanbioTM COVID-19 antigen rapid test, RT-qPCR would be the preferred diagnostic test of choice for clinical purposes. However, for surveillance of SARS-CoV-2 within the community, this rapid antigen test reliably and rapidly identifies individuals with high potential of further transmission. Therefore, it could be an essential new tool in the testing strategies to control transmission of SARS-CoV-2

Article 8

Published

December 3, 2020, the LANCET

Detecting COVID-19 infection hotspots in England using large-scale self-reported data from a mobile application: a prospective, observational study

- In this study, data were collected (between March 24 and September 29, 2020) using the COVID Symptom Study app in England that guided the users through a set of questions. Users (n=2,842,732) were asked to record each day if they feel physically normal, and if not, to log any symptoms and keep a record of any COVID-19 tests and the results. Incidence of COVID-19 was estimated using the invited RT-PCR tests reported in the app and prevalence was estimated using a symptom based method and a method based on both symptoms and RT-PCR test results. Three datasets were used to validate the models - a) the Office for National Statistics (ONS) Community Infection Survey; b) the Real time Assessment of Community Transmission (REACT-1) study; and c) United Kingdom (UK) Government testing data.

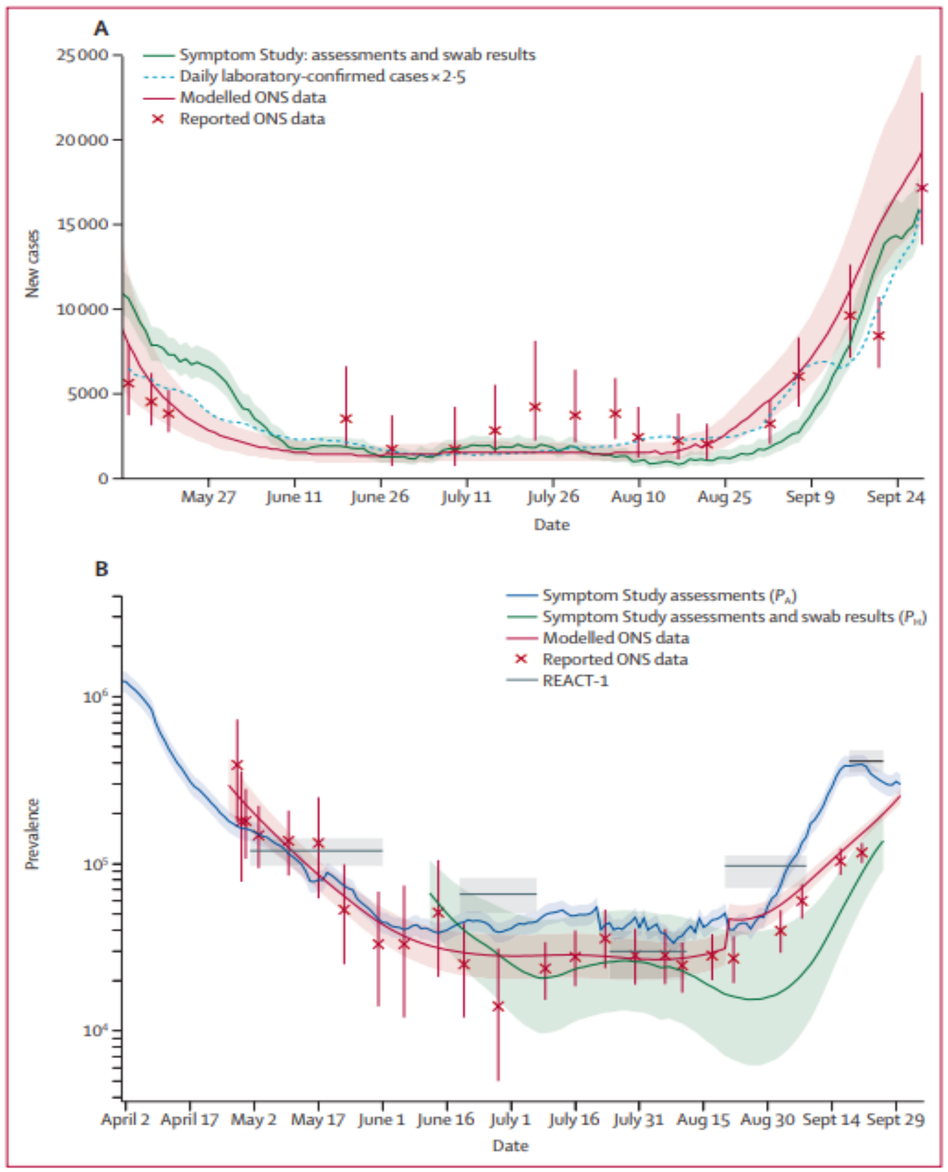

Figure 1: **Daily incidence in the UK since May 12, 2020, compared with daily laboratory-confirmed cases and the ONS study (A) and daily prevalence in the UK compared with the ONS and REACT-1 studies (B)**

DIGITAL HEALTH

Continued

- During the study period, the users provided 120,192,306 daily reports of symptoms and recorded the results of 169,682 RT-PCR tests. The estimates of incidence and prevalence indicated a similar sensitivity to changes to those reported in the ONS and REACT-1 studies. The results predict a steep decline in incidence until the mid-July, a trend in agreement with the government data and ONS estimates. All three estimates show an increase in the number of daily cases from mid-August throughout September. On September 28, 2020, the estimated daily cases were 15,841, a prevalence of 0.53%, and the R(t) in England was 1.17.

Conclusion

- This is the first demonstration of mobile technology to provide national level disease surveillance in England. These findings indicated that mobile technology can be used to provide real time data on the national and local state of the pandemic, enabling policy makers to make informed decisions in a quickly moving pandemic.

Article 9

Published

December 8, 2020, the LANCET

SARS-CoV-2 infection and transmission in educational settings: a prospective, cross-sectional analysis of infection clusters and outbreaks in England

- In England, Public Health England (PHE) initiated national surveillance in educational settings from June 1 to July 17, 2020. Educational settings were categorized into early years settings, primary schools, secondary schools, and mixed age settings. Individuals with confirmed SARS-CoV-2 infection were included in the analysis if they had physically attended their educational setting during their infectious period that was defined as from 48 hours before symptom onset to 10 days after symptom onset. Events were classified as single cases, co-primary cases (at least two confirmed cases within 48 hours typically within the same household), and outbreaks (at least two epidemiologically linked cases with sequential cases diagnosed within 14 days in the same educational setting).
- During the study period, there were 113 single cases, 9 co-primary cases, and 55 outbreaks. There was a strong association between outbreaks and regional COVID-19 incidence with the risk of an outbreak increasing by 72% for every five cases per 100,000 population increase in community incidence ($p<0.0001$). Staff (27 cases per 100,000 per day) had higher incidence than students (18 in early years students, 6.0 in primary schools students, and 6.8 in secondary school students) and most cases linked to outbreaks were in staff members (154 staff vs. 56 children). Probable direction of transmission was staff to staff in 26 outbreaks, staff to student in 8 outbreaks, student to staff in 16 outbreaks, and student to student in 5 outbreaks.
- **These findings highlighted a need to improve awareness and infection control measures for staff members both within and outside the educational setting. The strong association between COVID-19 outbreaks and regional incidence and the proportion of cases in school settings resulting in outbreaks also highlighted the importance of controlling the disease in the community to protect staff and students in the educational settings.**

Continued

	Number of settings open per day			Number of confirmed events			Confirmed event rate per 1000 settings per month (95% CI)			
	Minimum	Maximum	Median (IQR)	Single case	Coprimary cases	Outbreak	Single case*	Coprimary cases	Outbreak	Total
Early years	28 000	43 000	38 000 (35 500–41 500)	21	3	16	0·63 (0·40–0·94)	0·079 (0·016–0·23)	0·42 (0·24–0·68)	1·1 (0·75–1·4)
Primary	6900	18 100	15 600 (13 450–17 300)	69	6	27	4·8 (3·8–6·0)	0·38 (0·14–0·84)	1·7 (1·1–2·5)	6·5 (5·3–7·9)
Secondary	2900	4400	4000 (3700–4200)	11	0	7	2·7 (1·4–4·9)	0	1·8 (0·70–3·6)	4·5 (2·7–7·1)

Events rates are given to two significant figures and are reported for all early years, primary, and secondary school settings, including those for students with special educational needs or disabilities, but not for settings for mixed age groups spanning multiple primary and secondary years. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. *Includes coprimary events.

Table 1: **SARS-CoV-2 infection rates for single cases, coprimary cases, and outbreak events in educational settings in England, June 1–July 17, 2020**

	Numbers attending per day			Number of cases			Confirmed case rates per 100 000 individuals per day (95% CI)			
	Minimum	Maximum	Median (IQR)	Single case	Coprimary cases	Outbreak	Single case	Coprimary cases	Outbreak	Total
Students										
Early years	108 000	417 000	265 000 (207 000–366 500)	15	6	28	5·7 (3·2–9·3)	2·3 (0·83–4·9)	11 (7·0–15)	18 (14–24)
Primary	195 000	830 000	680 000 (447 500–755 700)	21	8	12	3·1 (1·9–4·7)	1·2 (0·51–2·3)	1·8 (0·91–3·1)	6·0 (4·3–8·2)
Secondary	78 000	126 000	103 000 (91 000–118 000)	4	0	3	3·9 (1·1–9·9)	0	2·9 (0·60–8·5)	6·8 (2·7–14)
Staff members										
Primary and secondary schools*	369 000	681 000	593 000 (479 500–647 500)	50	0	112	8·4 (6·3–11)	0	19 (16–23)	27 (23–32)

Case rates are given to two significant figures. For students, confirmed case rates are calculated for early years settings, for primary school students in years 1 and 6, and for secondary school students in years 10 and 12 (by age). For staff, confirmed case rates are calculated for primary and secondary schools in aggregate only (excluding early years settings). SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. *Includes teachers (median 245 000 [IQR 201 000–271 500]) and non-teaching staff including teaching assistants (median 348 000 [278 500–376 000]).

Table 2: **Confirmed SARS-CoV-2 case rates among students and staff in educational settings in England, June 1–July 17, 2020**

Article 10

Published

December 8, 2020, the LANCET

The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts

- In the Netherlands, this study was conducted (between April 1 and May 13, 2020) with participants [with (n=1181) and without (n=336) depressive, anxiety, or obsessive-compulsive disorders] from three cohort studies - the Netherlands Study of Depression and Anxiety (NESDA), Netherlands Study of Depression in Older Persons (NESDO), and Netherlands Obsessive Compulsive Disorder Association Study (NOCDA). Online questionnaire included questions on perceived mental health impact, fear of COVID-19, coping, and four validated scales assessing depressive symptoms, anxiety, worry, and loneliness used in previous waves during 2006-2016.
- Two variables for mental health disorder burden (number and chronicity of disorders) showed a graded dose response relation indicated that individuals with more severe or chronic mental health disorders reported a greater impact on their mental health, more fear of COVID-19, and less positive coping with the pandemic. People with depressive, anxiety, or obsessive compulsive disorders scored higher in all four symptom scales (depressive symptoms, anxiety, worry, and loneliness) compared to those without these disorders (before and during the COVID-19 pandemic); however, they did not report a substantial increase in symptoms during the pandemic.
- These findings indicated the importance of providers maintaining access to mental health care services for people with pre-existing disorders. Since development of the COVID-19 pandemic is constantly changing, it is necessary to continue monitoring its long term effect on mental health among people with and without these disorders along with the effect of strategies that aim to reduce the spread of COVID-19.

Mass testing for COVID-19

Article 11

Published

December 1, 2020, the LANCET

- In Slovakia, 3.6 million individuals were tested from October 31 to November 1, 2020 using lateral flow tests. This test is associated with a false negative rate of around 30%. However, the test is very effective to detect those with a high viral load. It misses some people with lower viral loads, but these people are not so infectious.
- This country offers accommodation for those who cannot self isolate in their homes. Furthermore, it compensates workers who have to take time off after a positive test result. This is an important incentive, especially given the possibility of false positives. Testing 3.6 million individuals with a test with a specificity of 99.7%, for example, would result in 10,800 individuals being wrongly advised to self isolate.
- According to Mike Gill (former regional director of public health in the southeast region of England), the aim of screening peoples has to be to reduce transmission. Finding more cases will not do anything to reduce the burden of disease. It may even make things worse, if it is not done systematically. However, the government clearly disagrees. The prime minister disclosed plans to start mass testing in parts of England where COVID-19 is widespread.

Article 12

Published

December 11, 2020, the LANCET

Rapid triage for COVID-19 using routine clinical data for patients attending hospital: development and prospective validation of an artificial intelligence screening test

- In the United Kingdom (UK), linear and non-linear machine learning classifiers were trained to differentiate patients with COVID-19 from pre-pandemic controls using electronic health record data for patients presenting to the emergency department (ED) and admitted to hospitals. Patients (>18 years) presenting to hospital before December 1, 2019 (i.e. before the COVID-19 pandemic) were included in the COVID-19 negative cohort (n=114,957). Between December 1, 2019, and April 19, 2020, those presenting to hospital with PCR confirmed SARS-CoV-2 were included in the COVID-19 positive cohort (n=437).
- With a sensitive configuration of 80%, ED model achieved 77.4% sensitivity and 95.7% specificity [area under the receiver operating characteristic curve (AUROC) - 0.939] for COVID-19 among all patients attending hospital. The admissions model achieved 77.4% sensitivity and 94.8% specificity (AUROC - 0.940) for the patients admitted to hospital. Both models achieved high negative predictive values (NPV) >98.5% across a range of prevalence (≤5%). The ED model achieved 92.3% accuracy [NPV - 97.6%; AUROC - 0.881], and the admissions model achieved 92.5% accuracy [NPV - 97.7%; AUROC - 0.871] in comparison with PCR results.
- These findings indicated that an artificial intelligence driven screening test can effectively triage patients presenting to hospital for COVID-19 while confirmatory laboratory testing is pending. This approach is rapidly scalable, fitting within the existing laboratory testing infrastructure and standard of care, and serves as proof of concept for a rapidly deployable software tool in future pandemics. Prospective clinical trials would further assess model generalizability and real world performance.

Article 13

Published

December 10, 2020, the LANCET

Impact of the Covid-19 pandemic on the frequency of primary care-recorded mental illness and self-harm episodes in the UK: population-based cohort study of 14 million individuals

- In the United Kingdom (UK), data on self-harm in emergency department are insufficient. An examination of clinical records in one provider of mental health services reported a 40% decrease in self-harm referrals to liaison psychiatry in the six weeks after the lockdown that was followed by an increase in referrals to previous levels. A study of general practices using the Clinical Practice Research Datalink showed that the incidence of self-harm was 38% lower during April, 2020 than the rate expected on the basis of previous years. The decrease was specifically marked among people <45 years and women.
- The reduction in self-harm presentations to health care services could be a result of public health messages to protect the National Health Service (NHS), anxieties about contracting the virus, or reduced access to services. Reports from the UCL COVID-19 Social Study indicated that rates of self-harm have remained constant since the lockdown with 2% - 4% of people reporting they had self-harmed in the previous week.
- There is no indication that the pandemic has caused self-harm rates to increase in the UK. These results are consistent with international data on suicidal behavior. The rates of self-harm might increase as the wellbeing of many people has been affected. Health care services need to be made accessible, high quality assessments should be made available, and people who self-harm should be able to access the interventions they need.

EPIDEMIOLOGY

Article 14

Published

December 10, 2020, the LANCET

Community prevalence of SARS-CoV-2 in England from April to November, 2020: results from the ONS Coronavirus Infection Survey

- Data were collected (between April, 26 and November 1, 2020) from individuals aged ≥2 years in private households randomly selected from the address lists and previous Office for National Statistics (ONS) surveys to provide a representative sample of the population of England. Participants completed a questionnaire and did nose and throat self-swabs. The samples were couriered directly to the national lighthouse laboratories where samples were tested as part of the national testing program.
- During the study period, overall 5,231 samples were positive, from 3,923 individuals in 3,056 households. The percentage of people testing positive changed significantly over time with an initial decrease between April 26 and June 28, 2020, from 0.40% to 0.06%, followed by low levels during July and August, 2020, before significant increases at the end of August, 2020 with percentages testing positive >1% from the end of October, 2020.
- Having a patient facing role and working outside were the important risk factors for testing positive at the end of the first wave (April 26 to June 28, 2020); however, not during the second wave (end of August to November 1, 2020). Age (young adults) was an important risk factor of increased positivity rates in the second wave. A significant proportion (45%-68%) of individuals who tested positive did not report any symptoms on the day of the visit or at visits before or after the swab was taken.
- These findings indicated that community supervised self swabbing RT-PCR based surveillance is achievable and practical. This survey could serve as a model for other countries and potential future pandemics. This study provided early warnings that specific regions such as North West of England were probably going to experience increases in hospital admissions and deaths.

EPIDEMIOLOGY

Continued

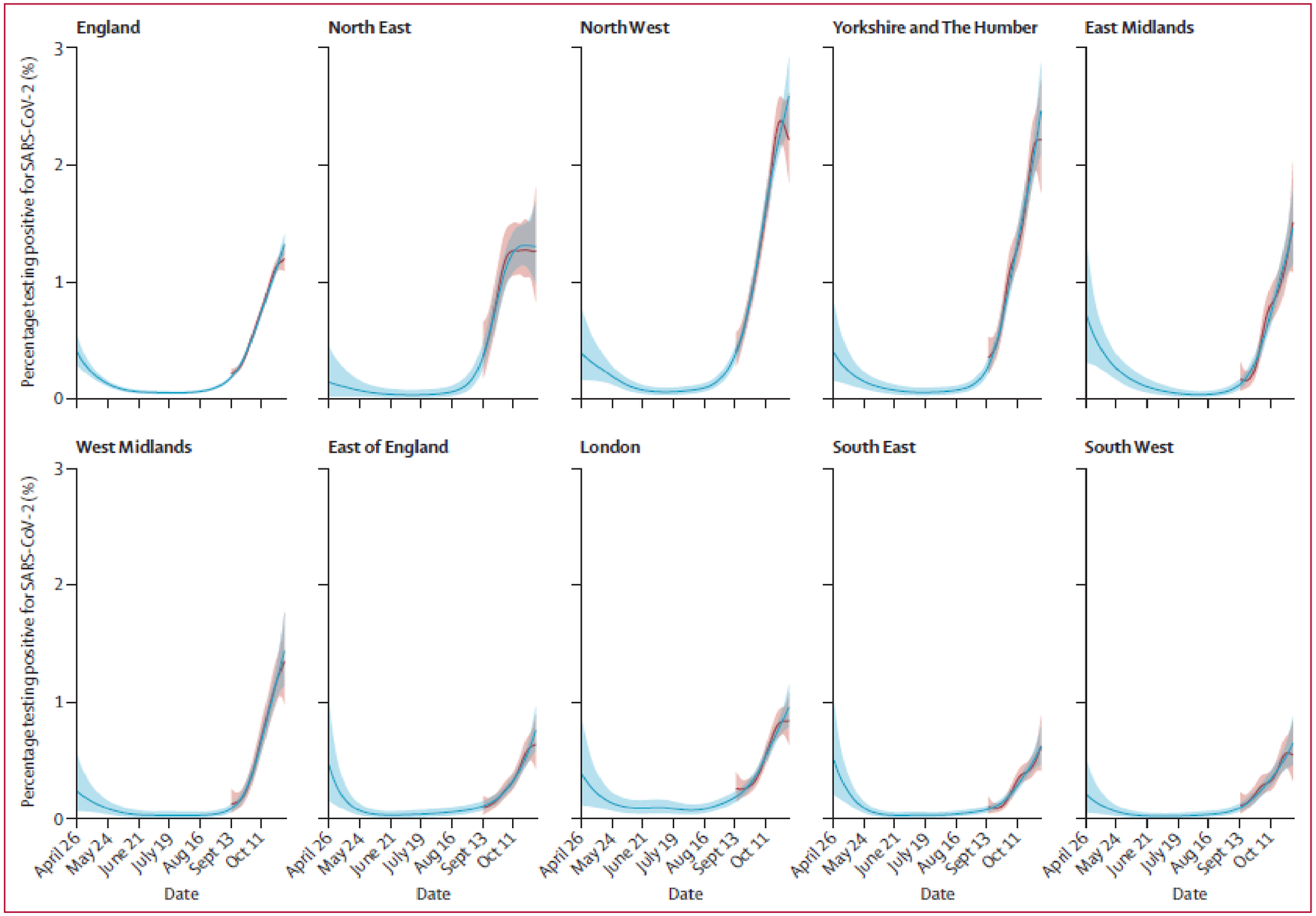

Figure 1: **Percentage of population living in private households testing positive for SARS-CoV-2 over time in England and the nine regions of England**

Article 15

Published

December 9, 2020, the LANCET

Trajectories of anxiety and depressive symptoms during enforced isolation due to COVID-19 in England: a longitudinal observational study

- In this longitudinal observational study, data were analyzed from the UCL COVID-19 Social Study (in the United Kingdom; n= >70,000) that collected information on anxiety and depressive symptoms weekly since March 21, 2020. In this study, data were included from adults living in England (n=36,520) who had at least three repeated measures between March 23 and August 9, 2020.

- In week 1, the mean anxiety and depression scores were 5.7±5.6 and 6.6±6.0 respectively. Anxiety and depression levels declined over the first 20 weeks following the introduction of lockdown. The fastest decreases were reported between weeks 2 and 5 (strict lockdown) with symptoms plateauing as further lockdown easing measures were introduced (between weeks 16 and 20). Being a woman or younger, low income and education, pre-existing mental health conditions, and living alone or with children were the risk factors for higher levels of anxiety and depressive symptoms at the start of lockdown.

- These findings emphasize the importance of supporting individuals to try to reduce distress early in a pandemic. Many inequalities in mental health experiences persisted and emotionally vulnerable groups have remained at risk throughout lockdown and its aftermath. These groups could benefit from more targeted mental health support as the pandemic continues.

MENTAL HEALTH

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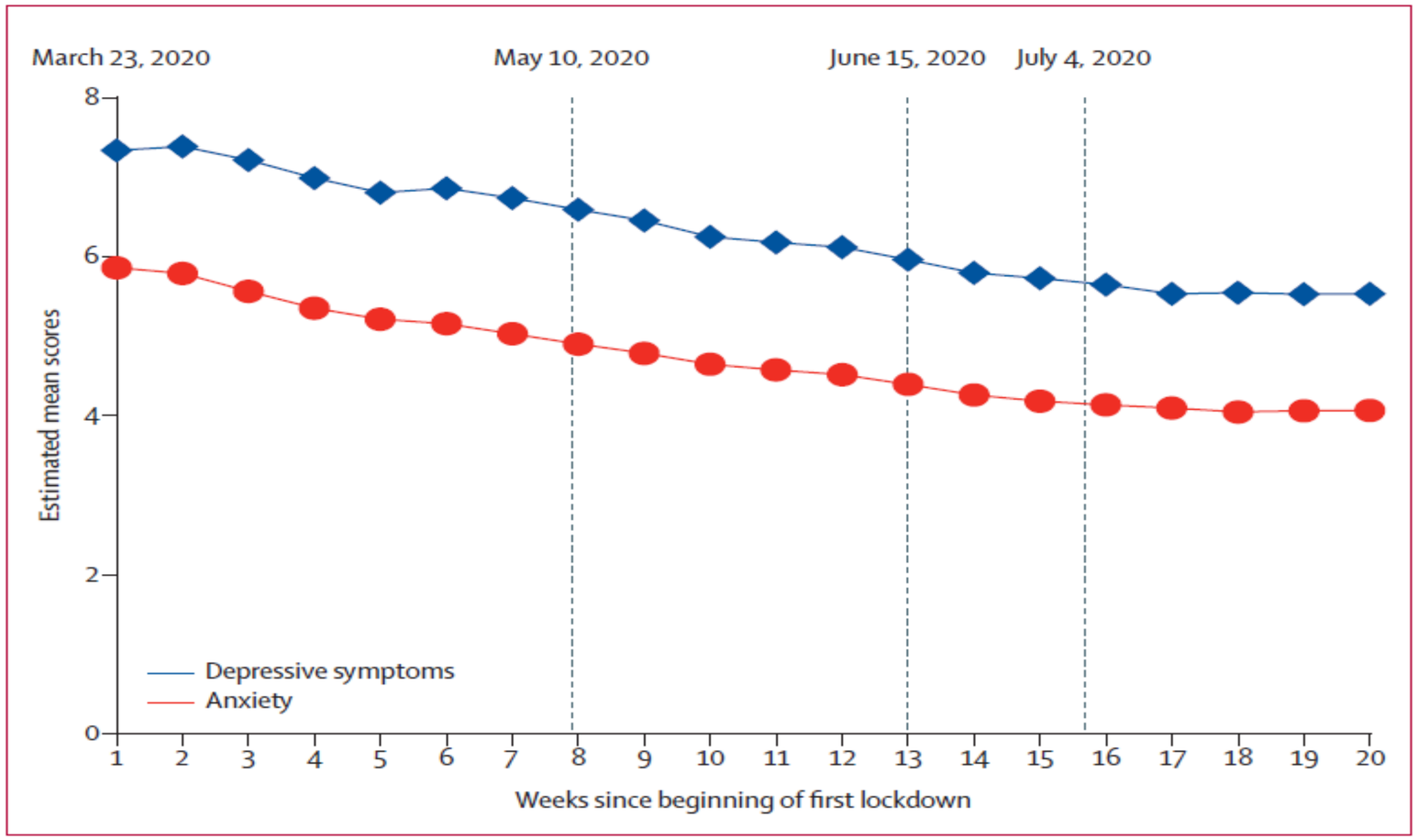

Figure 1: **Predicted growth trajectories of estimated mean anxiety and depressive symptom scores**

THANK YOU

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