

SCIENTIFIC RESEARCH MONITORING ON COVID-19

27 JULY 2020

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(ISSUE 176)

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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Transmission

Outcomes of Universal COVID-19 Testing Following Detection of Incident Cases in 11 Long-Term Care Facilities

Clinical Features

Risk Factors Associated With Mortality Among Patients With COVID-19 in Intensive Care Units in Lombardy, Italy



- WHO has published interim guidance on safe [Eid Al Adha Practices](#) in the context of COVID-19. The document highlights public health advice for social gatherings and religious practices that can be applied across different national contexts.
- In Lao People's Democratic Republic, Monks and health officials are working together to keep communities safe from COVID-19. The Ministry of Health, Lao Front for National Development and the Central Buddhist Fellowship, with technical support from the WHO Regional Office for the Western Pacific and financial support from the United States via USAID, organized a two-day engagement event to discuss community-level action to prevent COVID-19 and combat the fear, stigma and discrimination outbreaks can bring.
- On 23 July, the WHO Regional Office for Africa warned of the threat posed by COVID-19 to health workers across Africa. More than 10 000 health workers in the 40 countries are reported to be infected with COVID-19, a sign of the challenges medical staff on the frontlines of the outbreak face.





- WHO has published a draft landscape of COVID-19 candidate vaccines. As of 24 July, twenty-five candidate vaccines are under clinical evaluation.

25 candidate vaccines in clinical evaluation

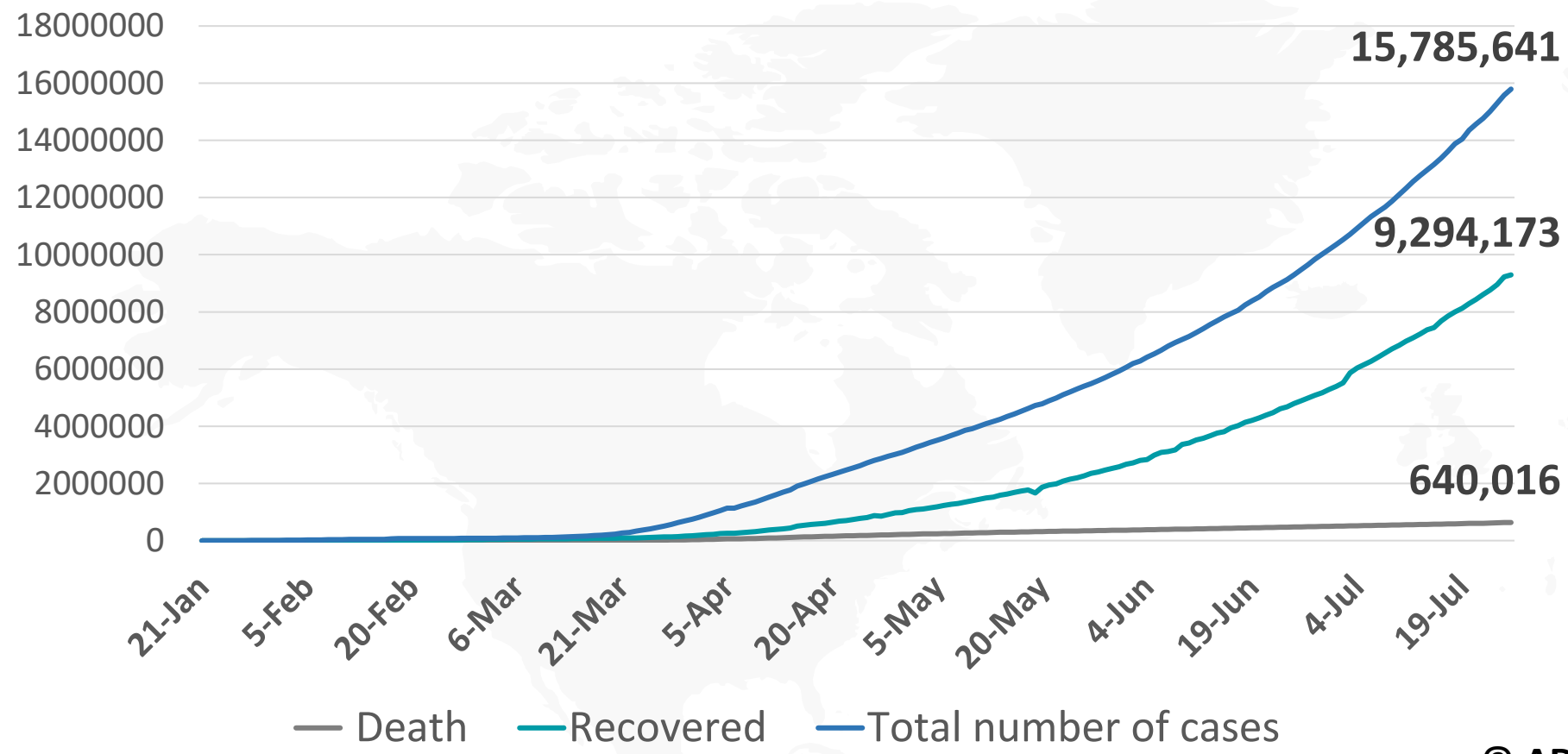
Platform	Type of candidate vaccine	Developer	Coronavirus target	Current stage of clinical evaluation/regulatory status- Coronavirus candidate	Same platform for non-Coronavirus candidates
Inactivated	Inactivated + alum	Sinovac	SARS-CoV2	Phase 3 NCT04456595 Phase 1/2 NCT04383574 NCT04352608	SARS
Inactivated	Inactivated	Wuhan Institute of Biological Products/Sinopharm	SARS-CoV2	Phase 3 ChiCTR2000034780 Phase 1/2 ChiCTR2000031809	
Inactivated	Inactivated	Beijing Institute of Biological Products/Sinopharm	SARS-CoV2	Phase 3 ChiCTR2000034780 Phase 1/2 ChiCTR2000032459	
Non-Replicating Viral Vector	ChAdOx1-S	University of Oxford/AstraZeneca	SARS-CoV2	Phase 3 ISRCTN89951424 Phase 2b/3 2020-001228-32 Phase 1/2 PACTR202006922165132 2020-001072-15	MERS, influenza, TB, Chikungunya, Zika, MenB, plague
Non-Replicating Viral Vector	Adenovirus Type 5 Vector	CanSino Biological Inc./Beijing Institute of Biotechnology	SARS-CoV2	Phase 2 ChiCTR2000031781 Phase 1 ChiCTR2000030906	Ebola

A Phase III clinical trial for inactivated novel coronavirus pneumonia (COVID-19) vaccine (Vero cells)	
download	
Registration number :	ChiCTR2000034780
Date of Last Refreshed on :	2020-07-19
Date of Registration :	2020-07-18
Registration Status :	Prospective registration
Public title :	A Phase III clinical trial for inactivated novel coronavirus pneumonia (COVID-19) vaccine (Vero cells)
English Acronym :	
Scientific title :	Randomized, Double Blind, Parallel Placebo Controlled, Phase III Clinical Trial to Evaluate the Safety and Protective Efficacy of Inactivated SARS-CoV-2 Vaccine in Healthy Population Aged 18 Years and above
The registration number of the Partner Registry or other register :	
Applicant :	Wei Chen
Study leader :	Dr. Nawal Al Kaabi
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Study leader's E-mail :	nalkaabi@seha.ae
Applicant website(voluntary supply) :	
Study leader's website(voluntary supply) :	
Applicant address :	1 Golden Industrial Park Road, Zhengdian, Jiangxia District, Wuhan, Hubei, China
Study leader's address :	Shaikh Khalifa Medical City, SEHA. P.O. Box 51900, Abu Dhabi, UAE
Applicant postcode :	
Study leader's postcode :	
Applicant's institution :	Wuhan Institute of Biological Products co., LTD.

To see the full list of the candidate please [visit the link](#)

[Link](#)

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



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

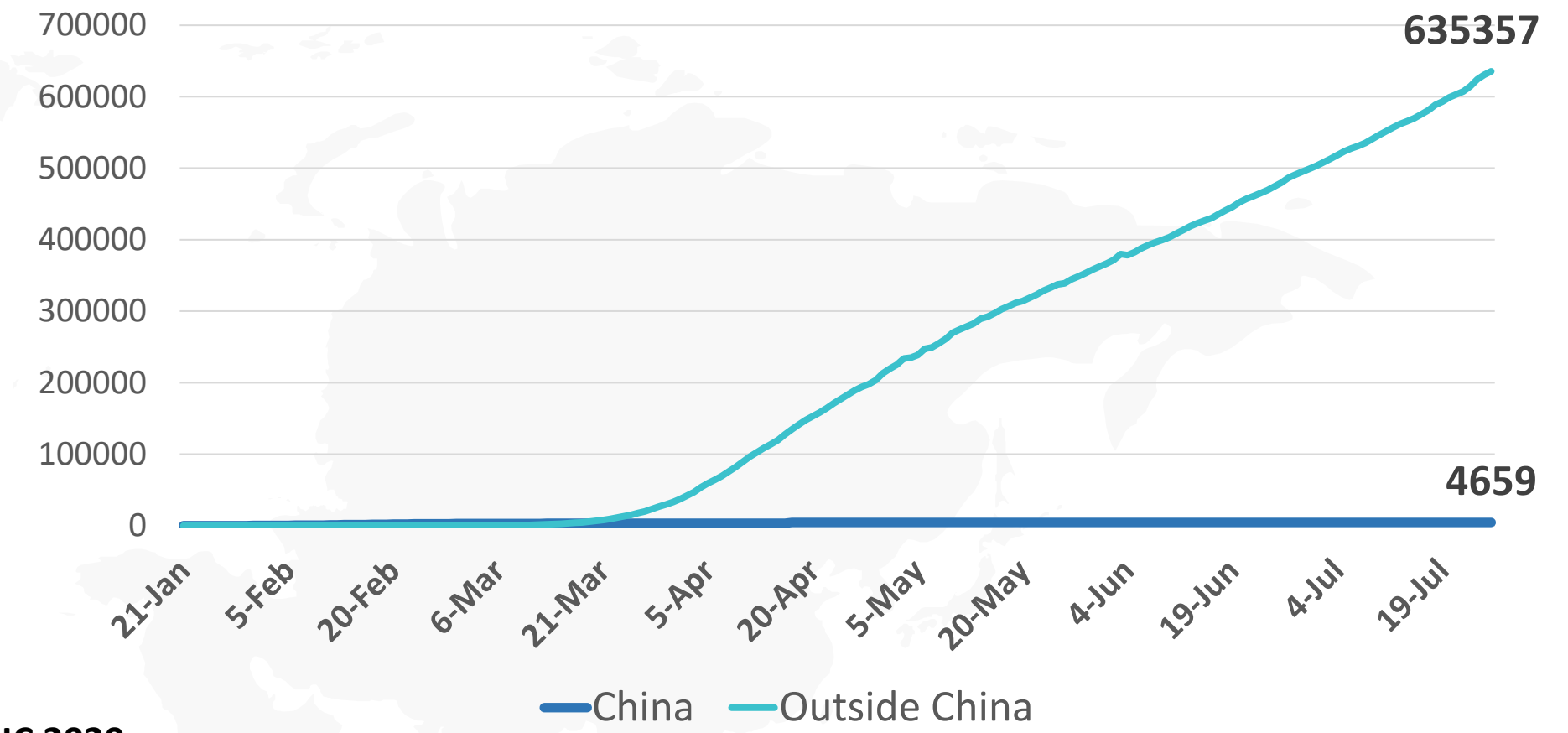


Figure 2: Daily New Infected COVID-19 Cases (China and rest of the world)

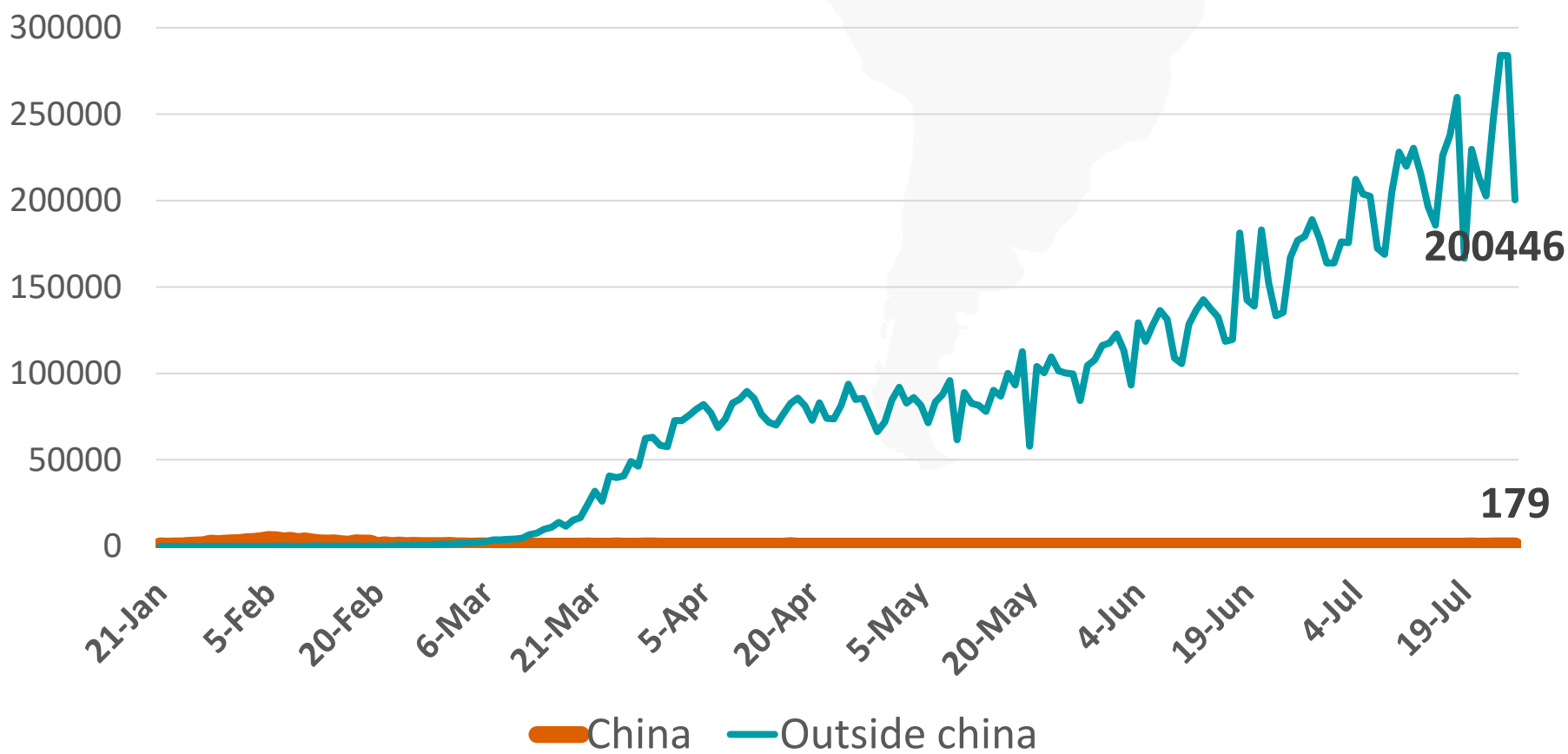


Figure 4: Global Daily New Deaths Due to COVID-19 (china and rest of the world)

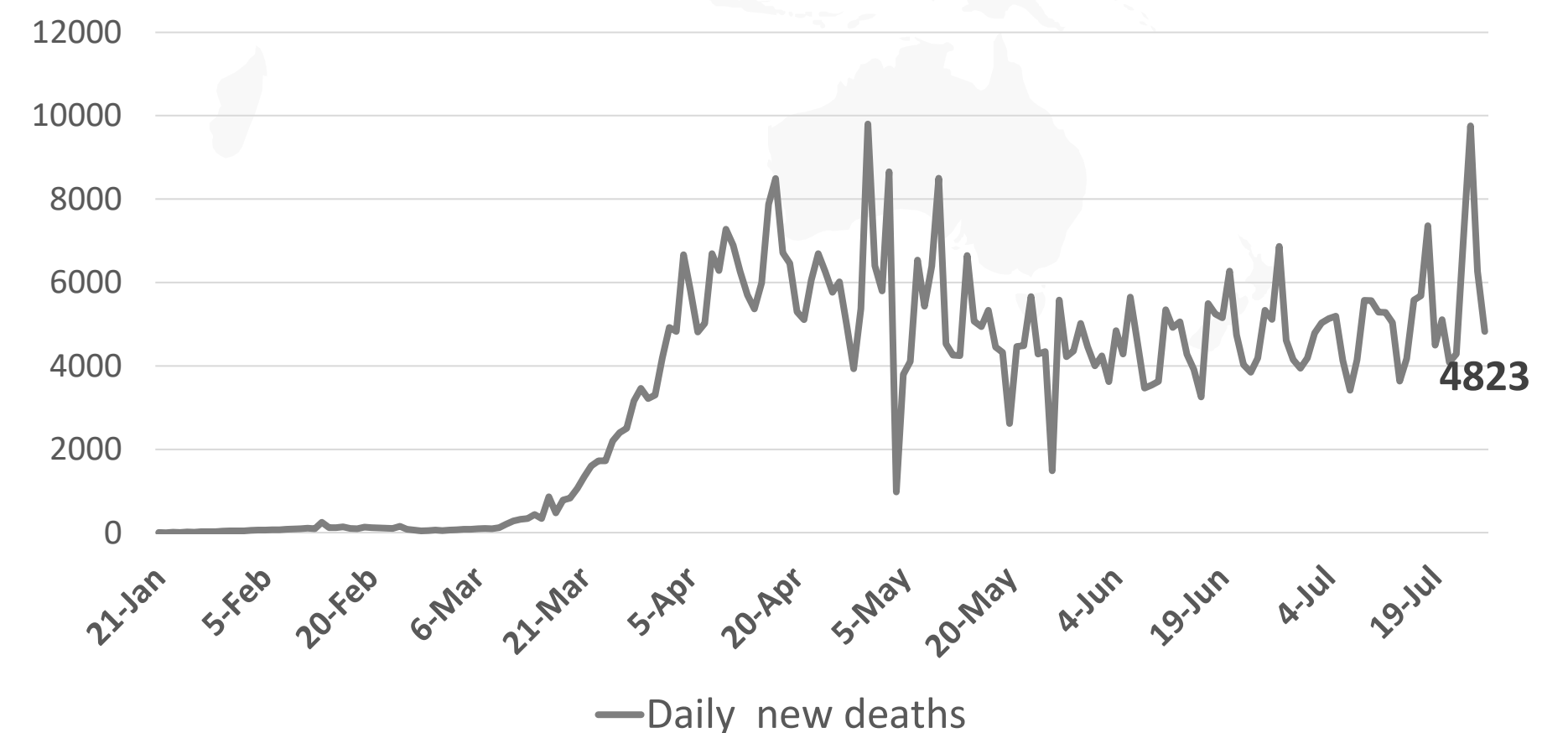
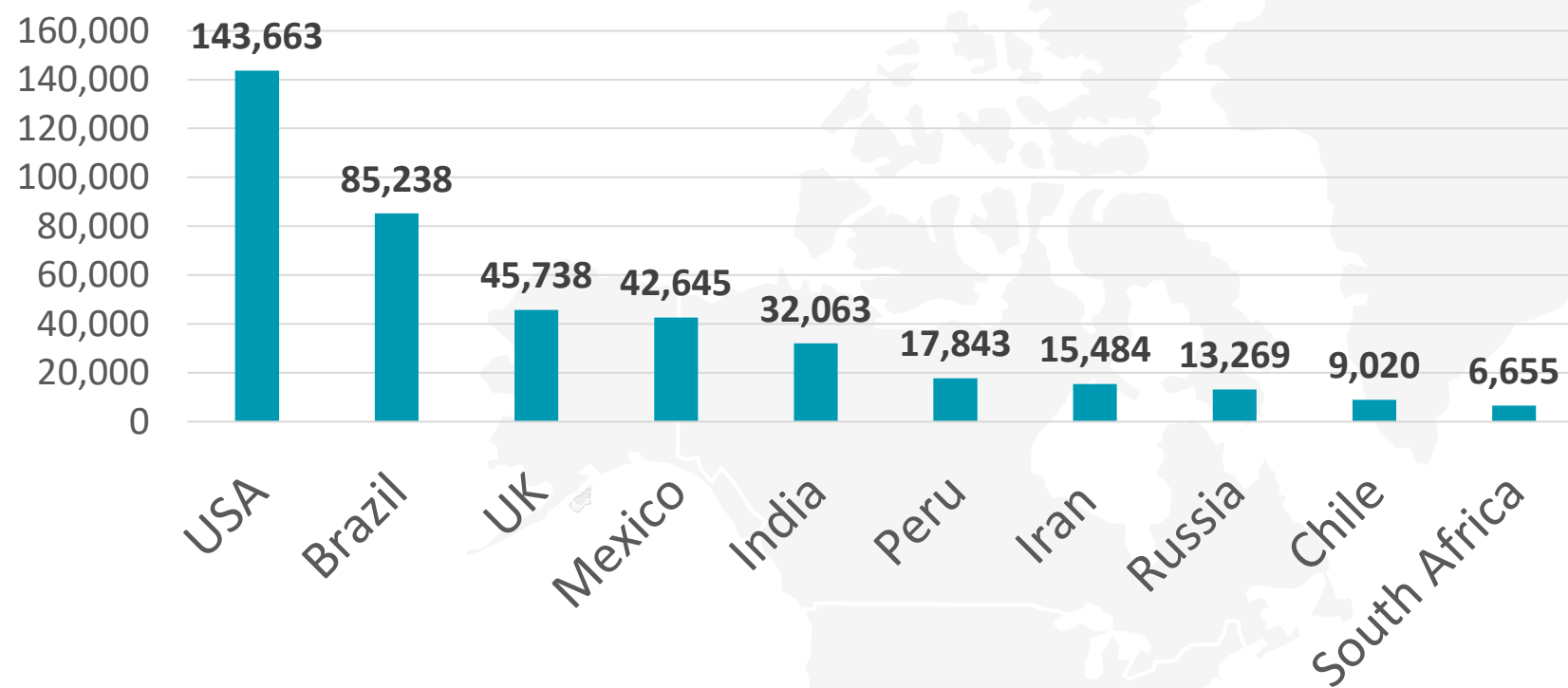
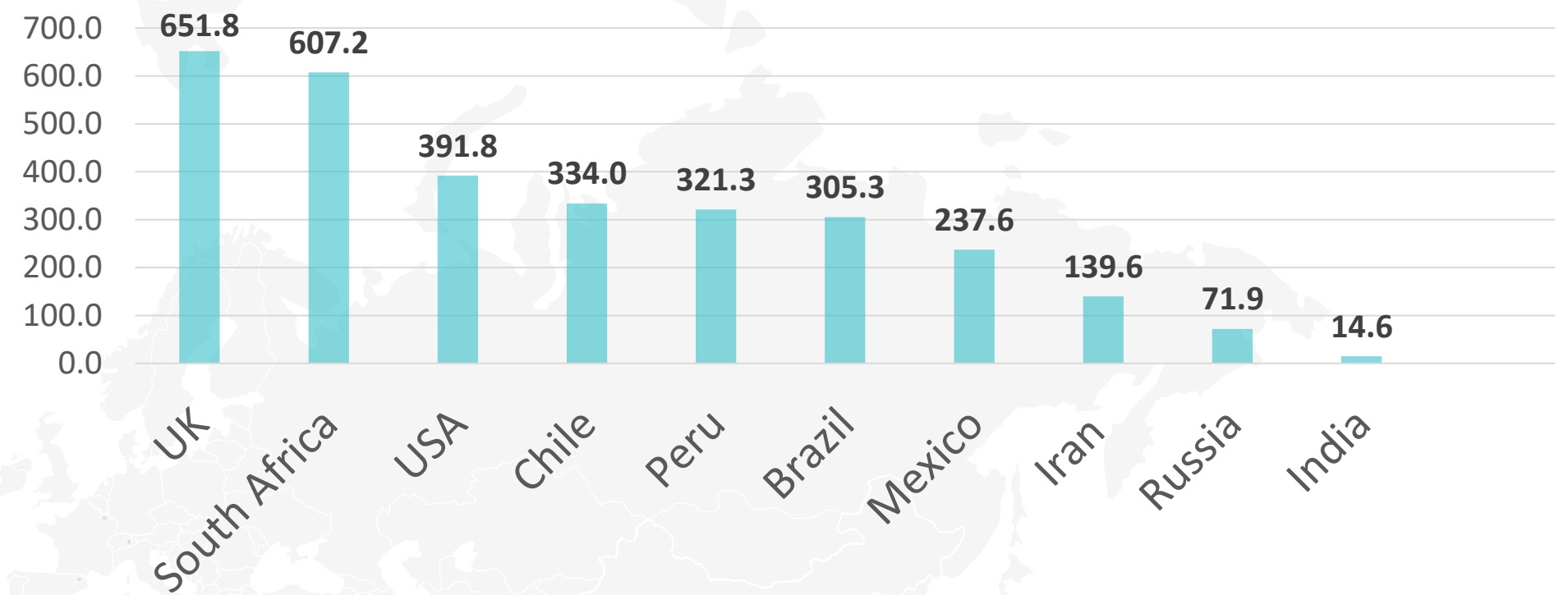


Figure 3: Top 10 Countries in the Total Number of Cases Due to COVID-19

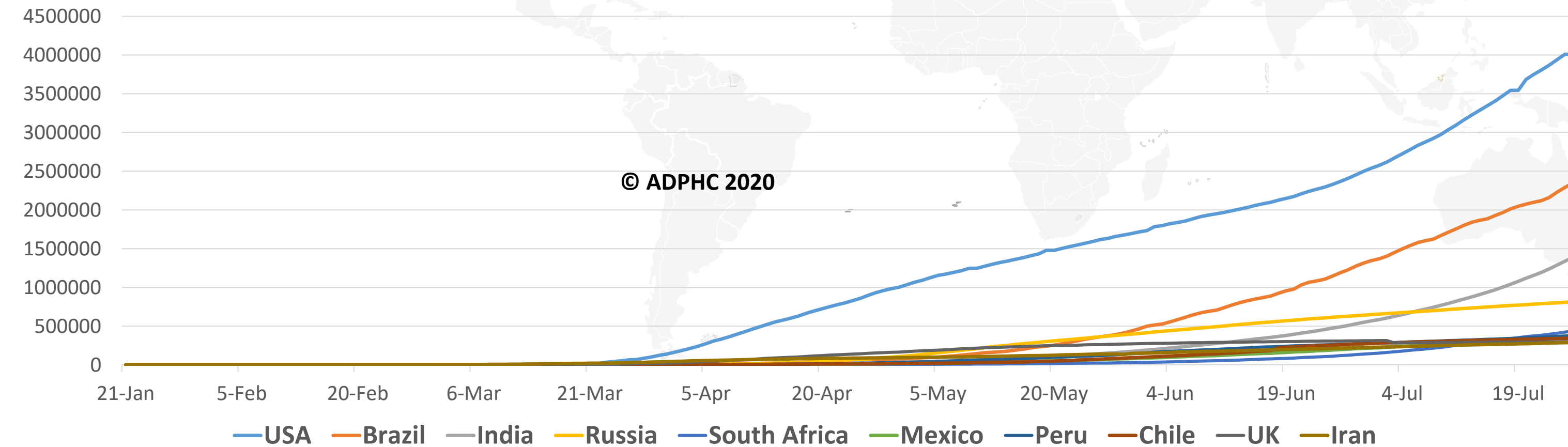
TOTAL DEATHS



DEATHS PER MILLION



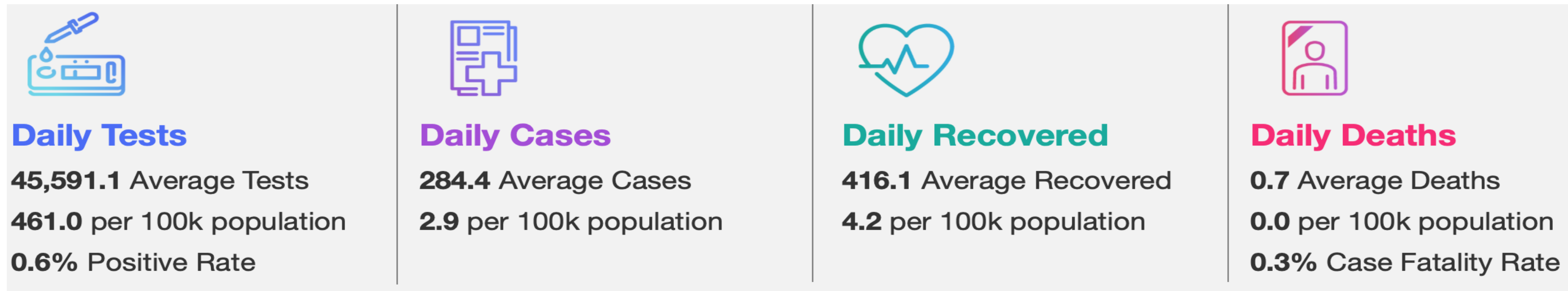
TOTAL INFECTED CASES



USA	4,009,808
Brazil	2,343,366
India	1,385,522
Russia	812,485
South Africa	434,200
Mexico	378,285
Peru	375,961
Chile	343,592
UK	298,685
Iran	288,839



Figure 5: COVID-19 Status in the UAE (Federal Competitiveness and Statistics Authority Dashboard)



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

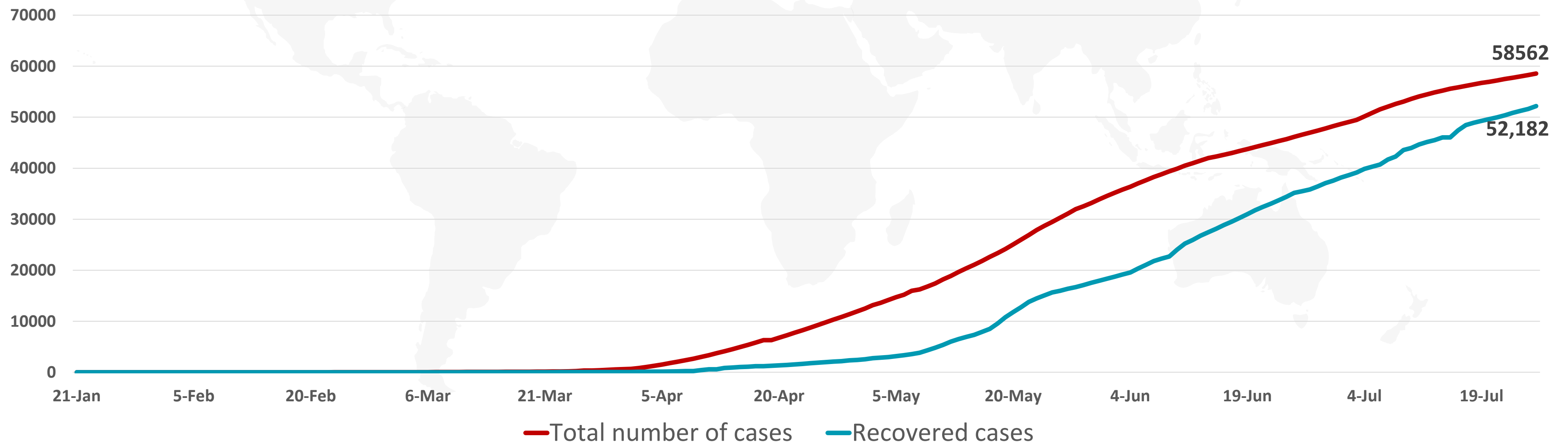
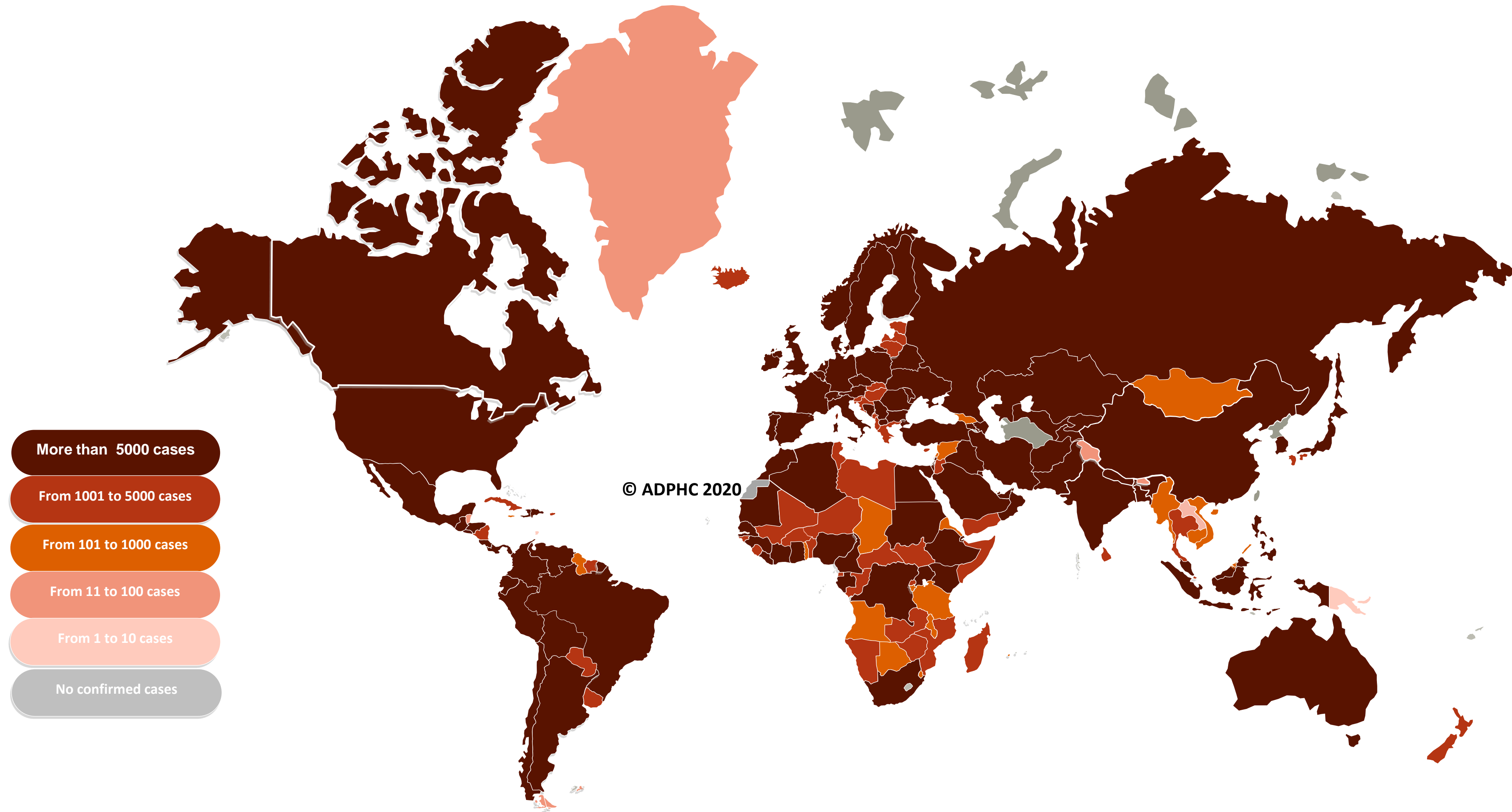


Figure 7A : Global Distribution of COVID-19 Cases



More than 5000 cases

From 1001 to 5000 cases

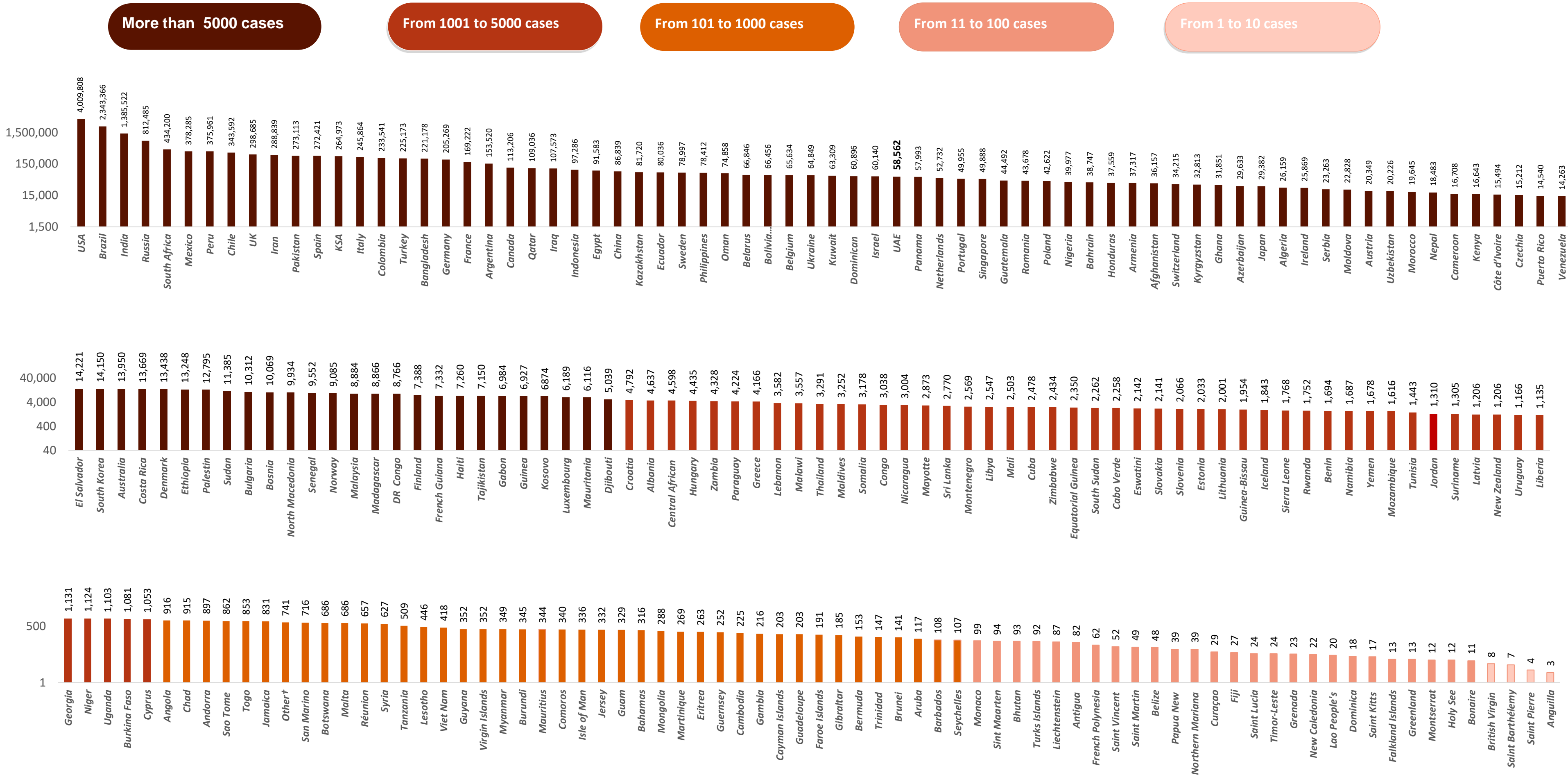
From 101 to 1000 cases

From 11 to 100 cases

From 1 to 10 cases

No confirmed cases

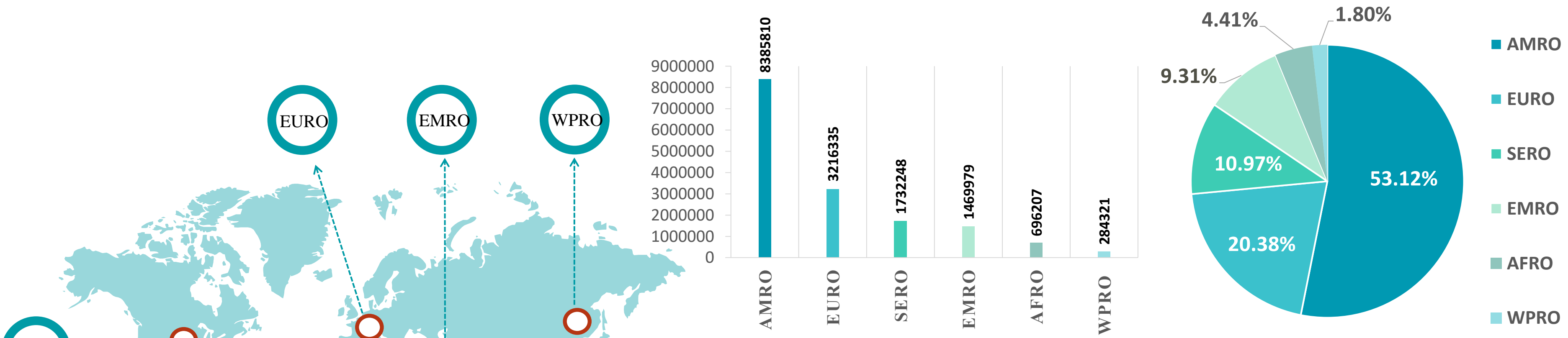
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



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

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

INFECTED



DEATH

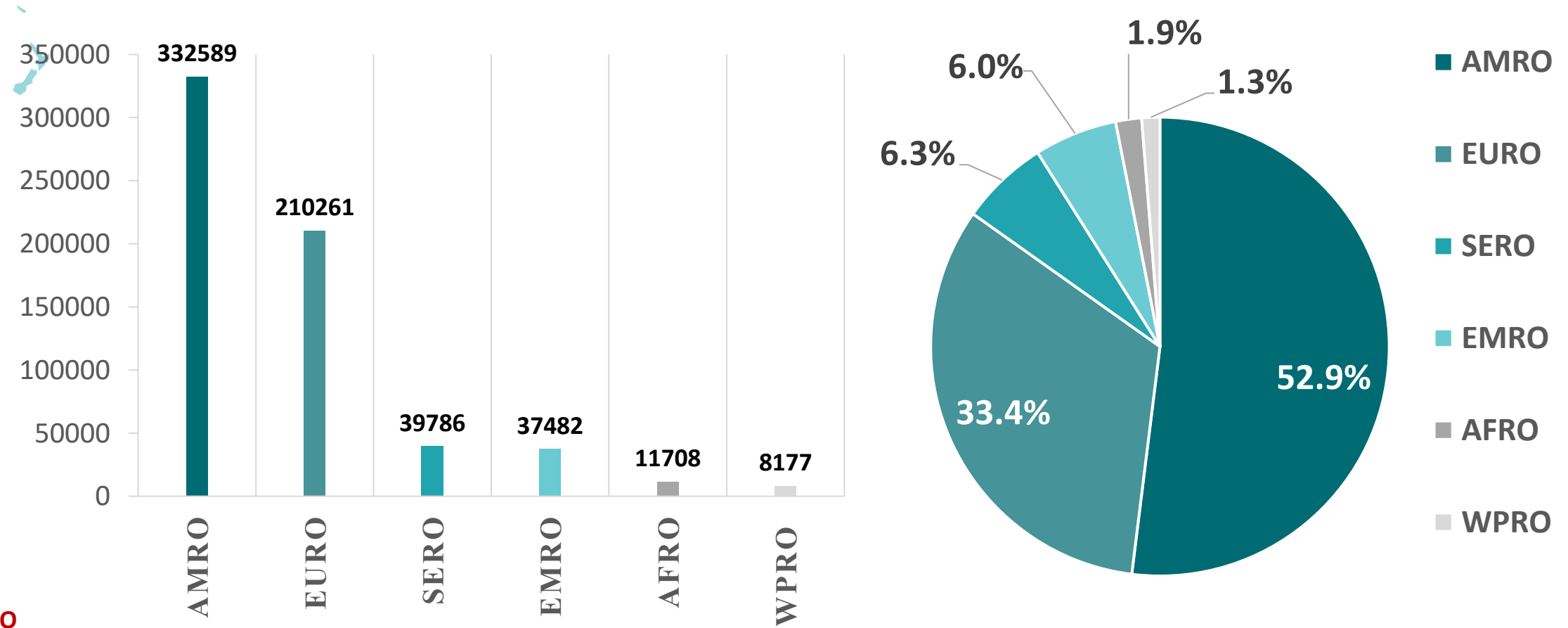
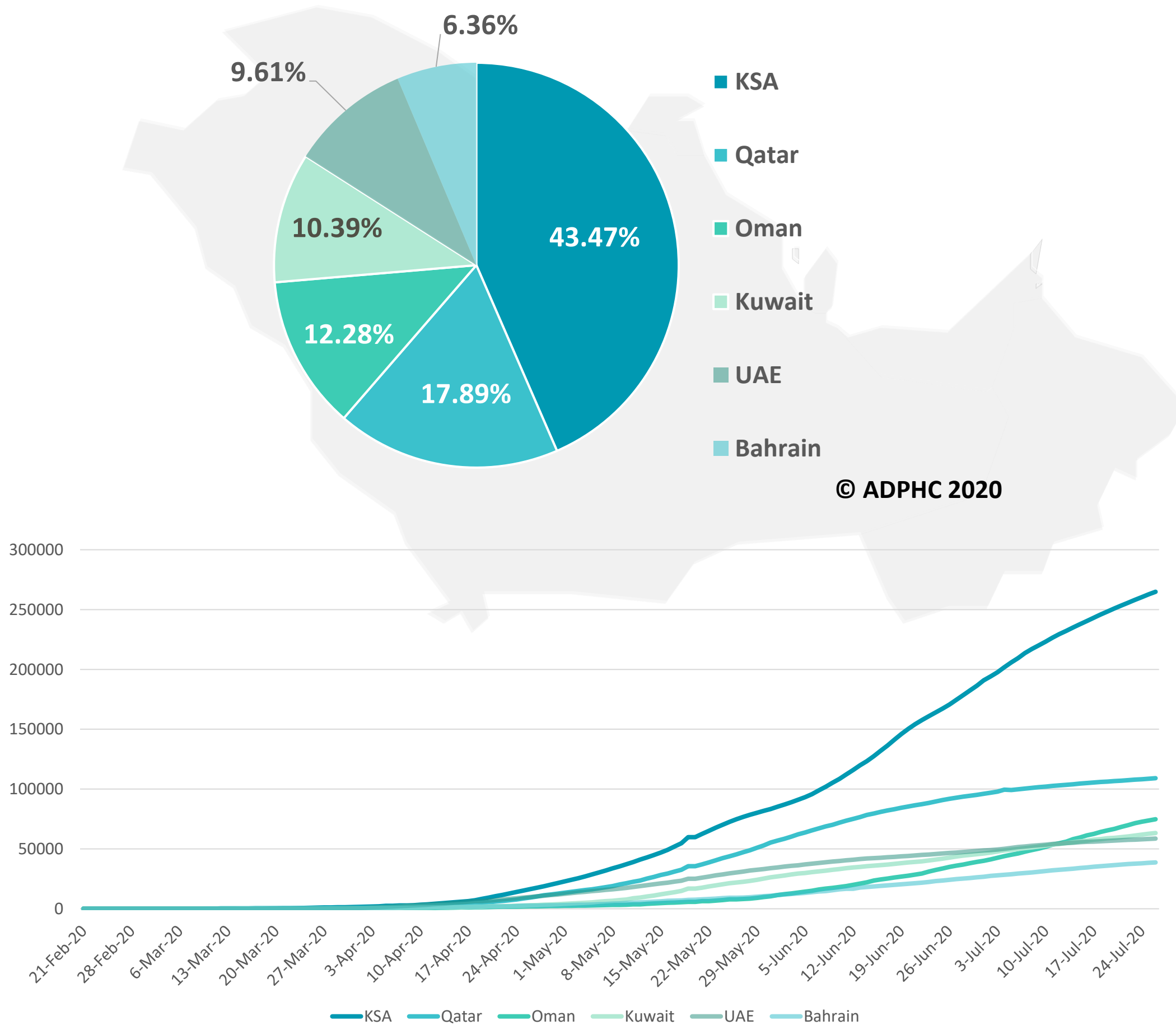
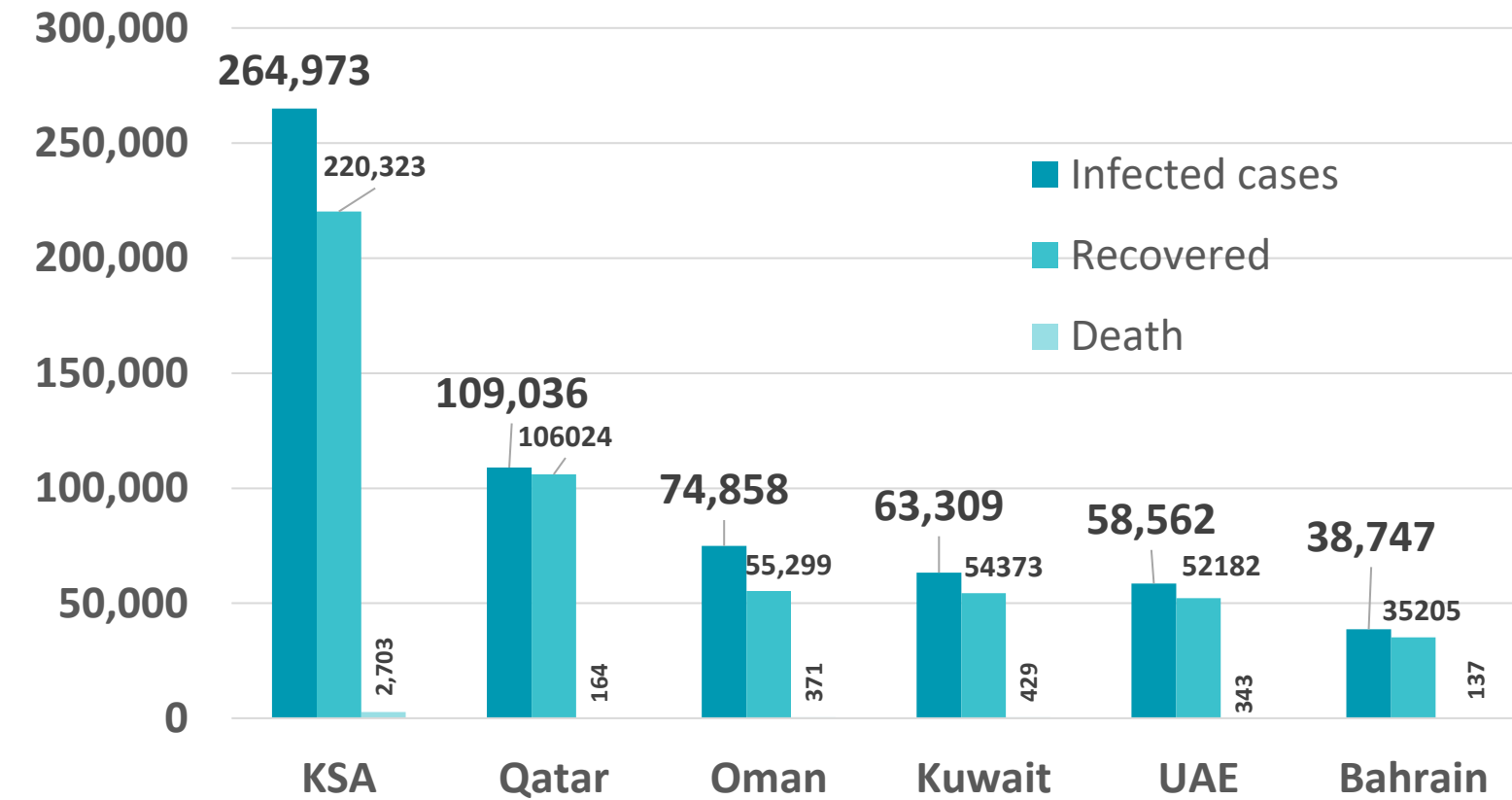


Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

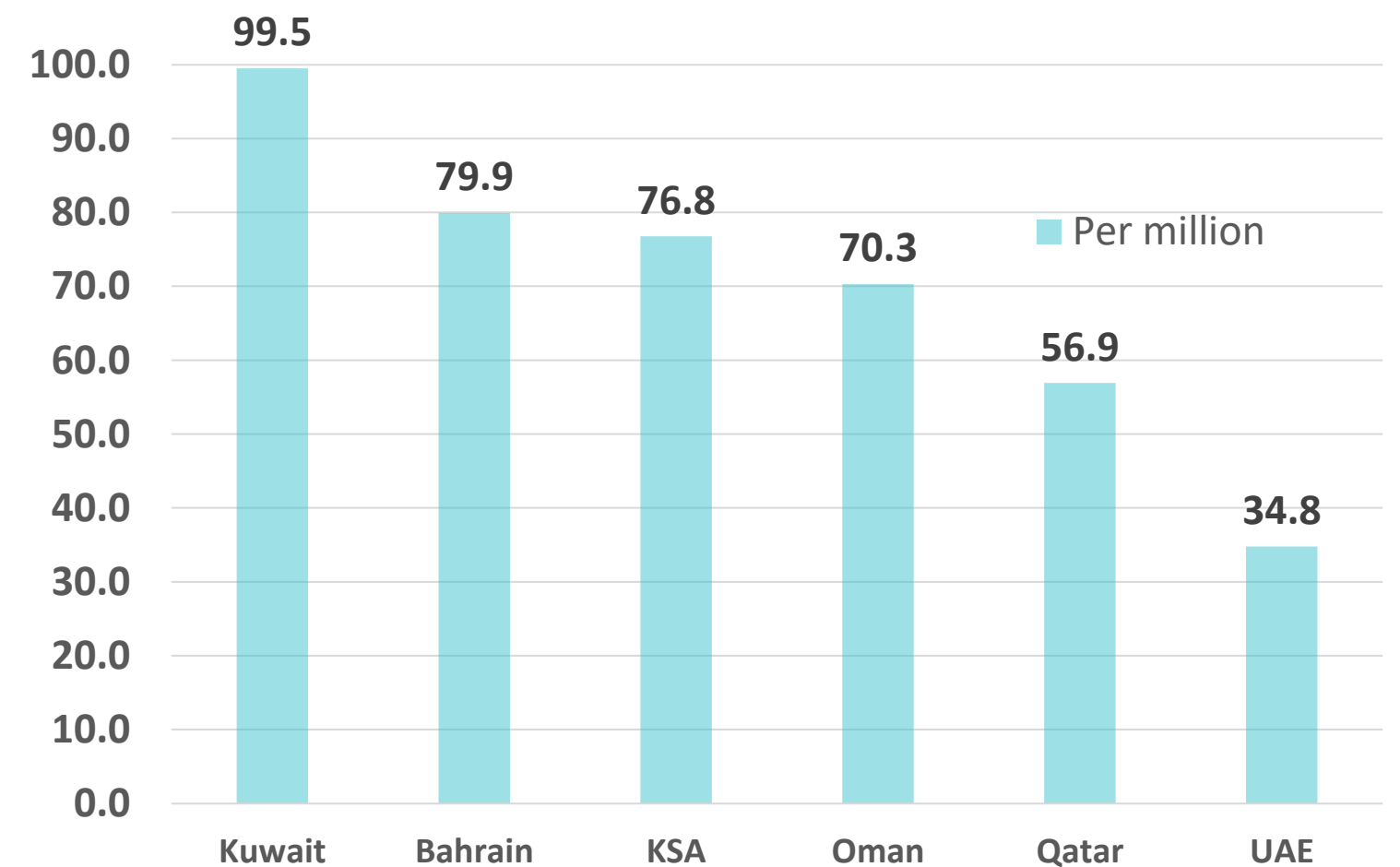
TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATH PER MILLION



Graphs published by Abu Dhabi Public Health Center 2020 | Data resources: [WHO](#)

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

UAE



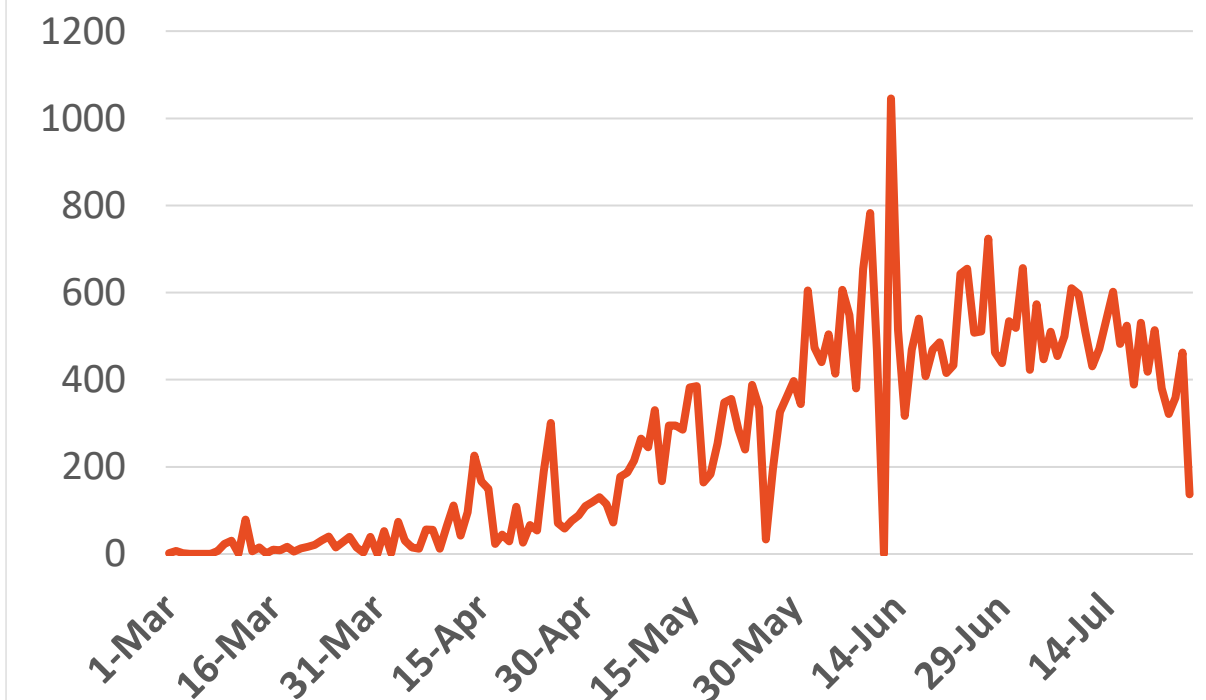
Source : National Emergency Crisis and Disaster Management Authority

KSA



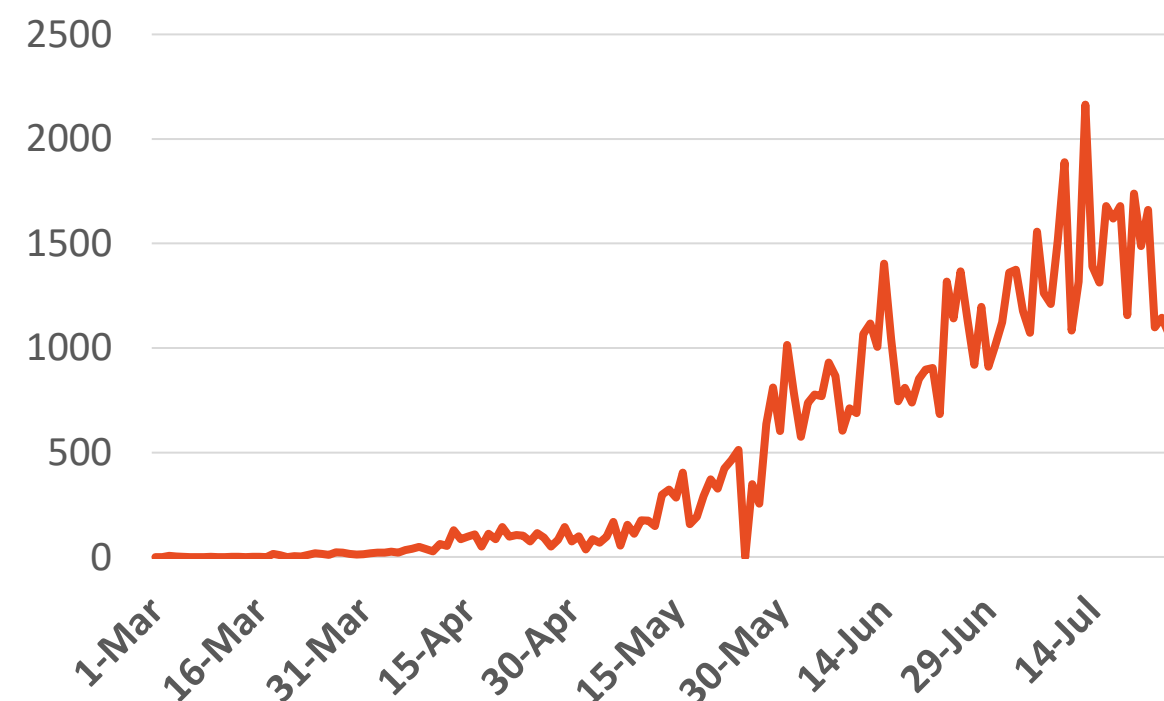
Source : KSA ministry of health

Bahrain



Source :WHO

Oman



Source :Oman ministry of health

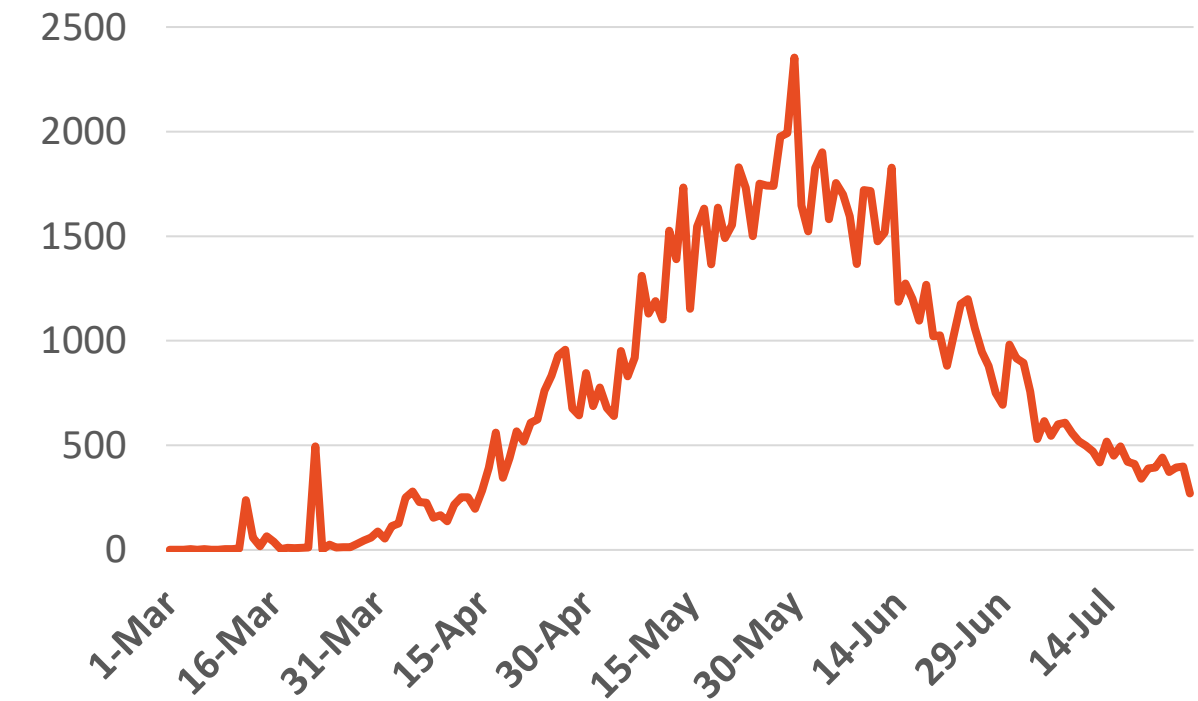
Kuwait

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Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

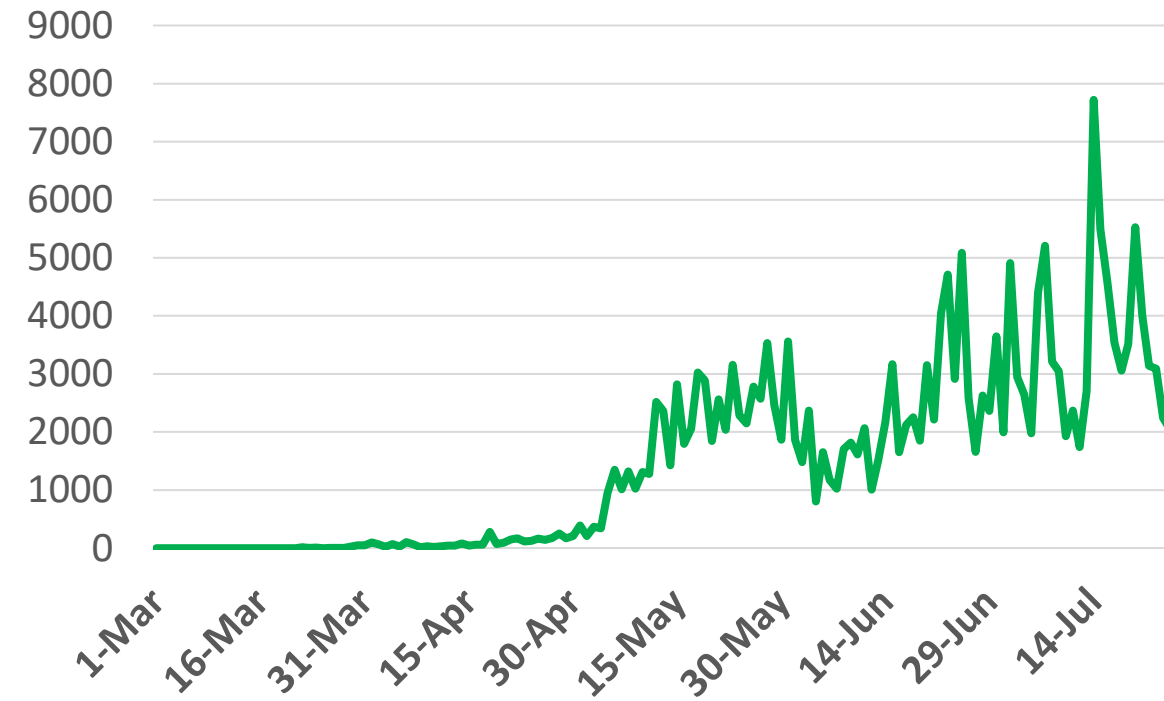
Figure 11: Comparative Analysis of the Distribution of COVID-19 Newly Recovered Cases in GCC Countries

UAE



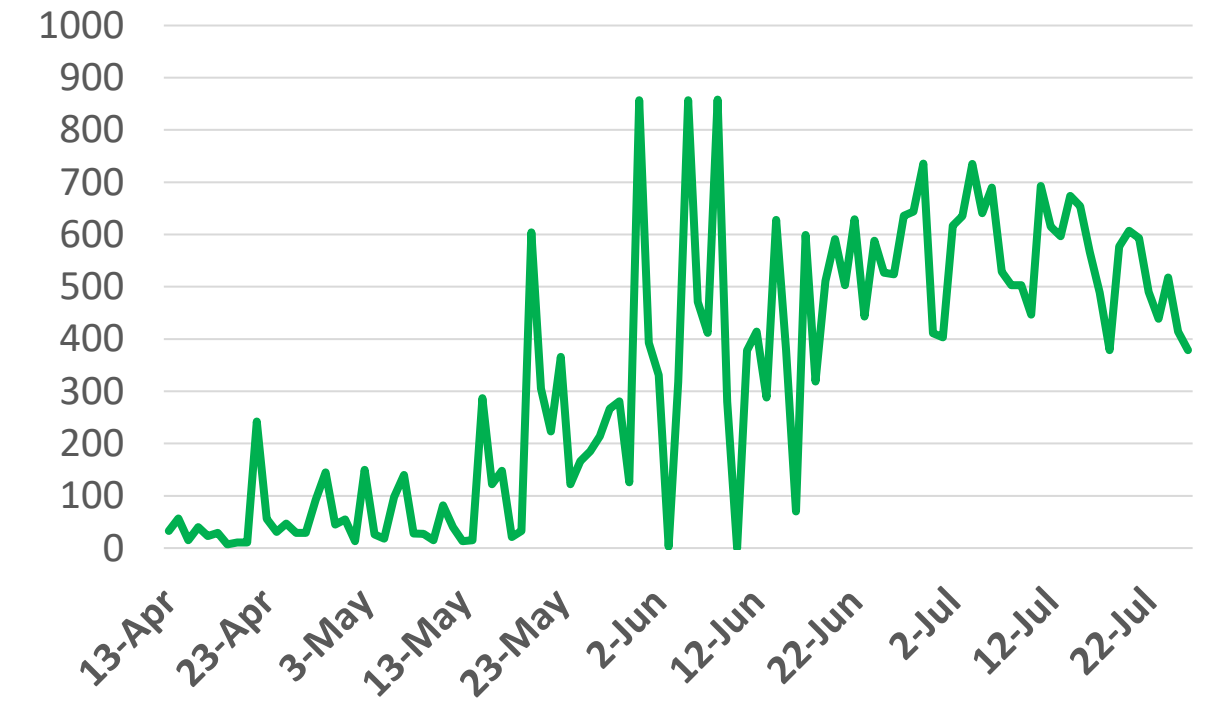
Source : National Emergency Crisis and Disaster Management Authority

KSA



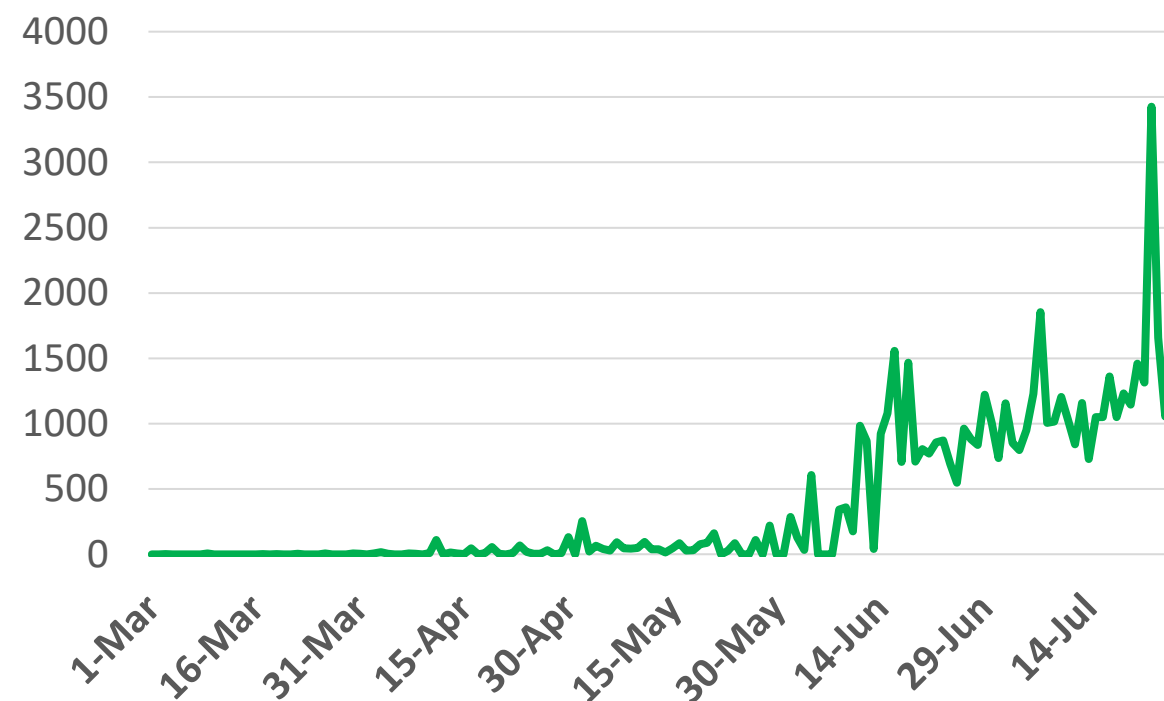
Source : KSA ministry of health

Bahrain



Source : GCCStat

Oman



Source : Oman ministry of health

Kuwait

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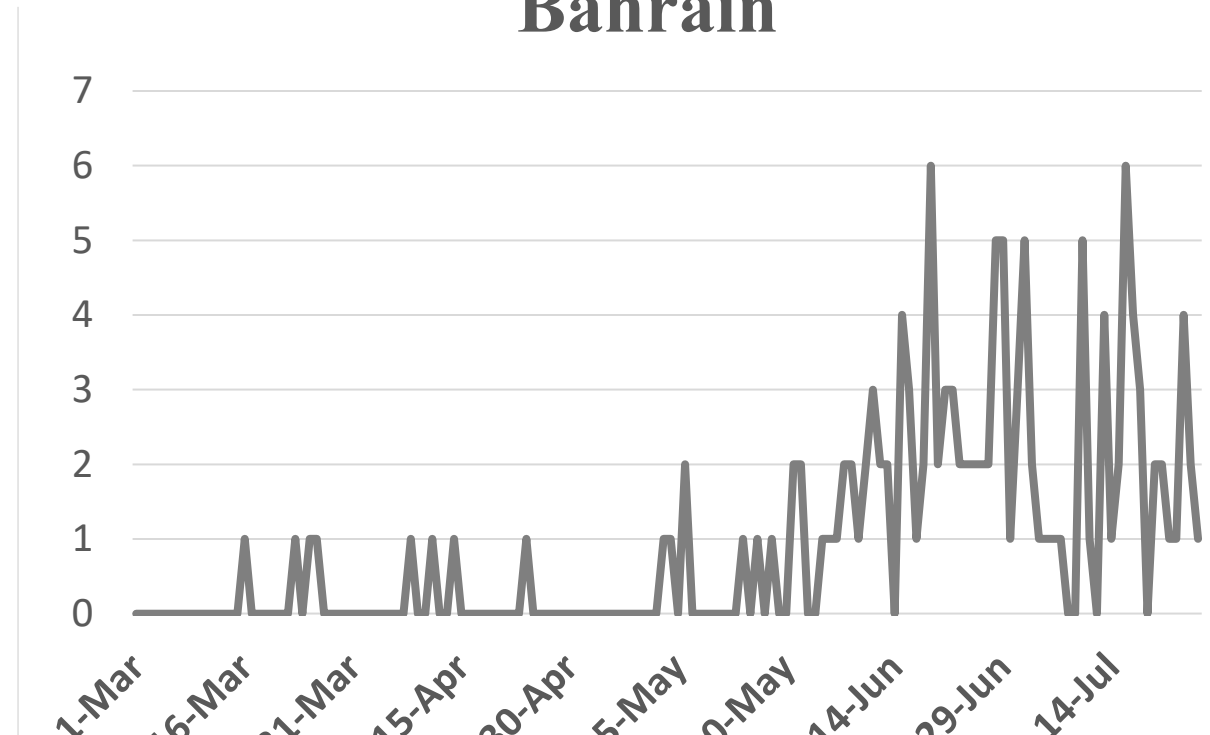
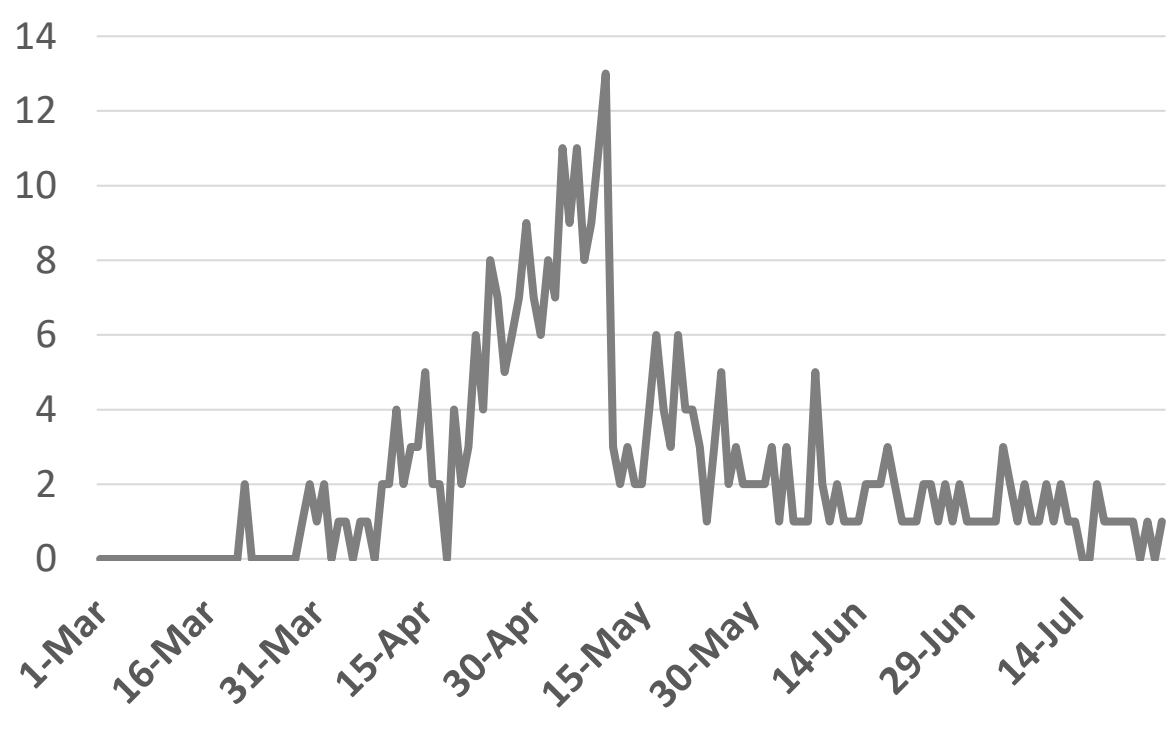
Source : Kuwait ministry of health

Qatar



Source : Qatar ministry of health

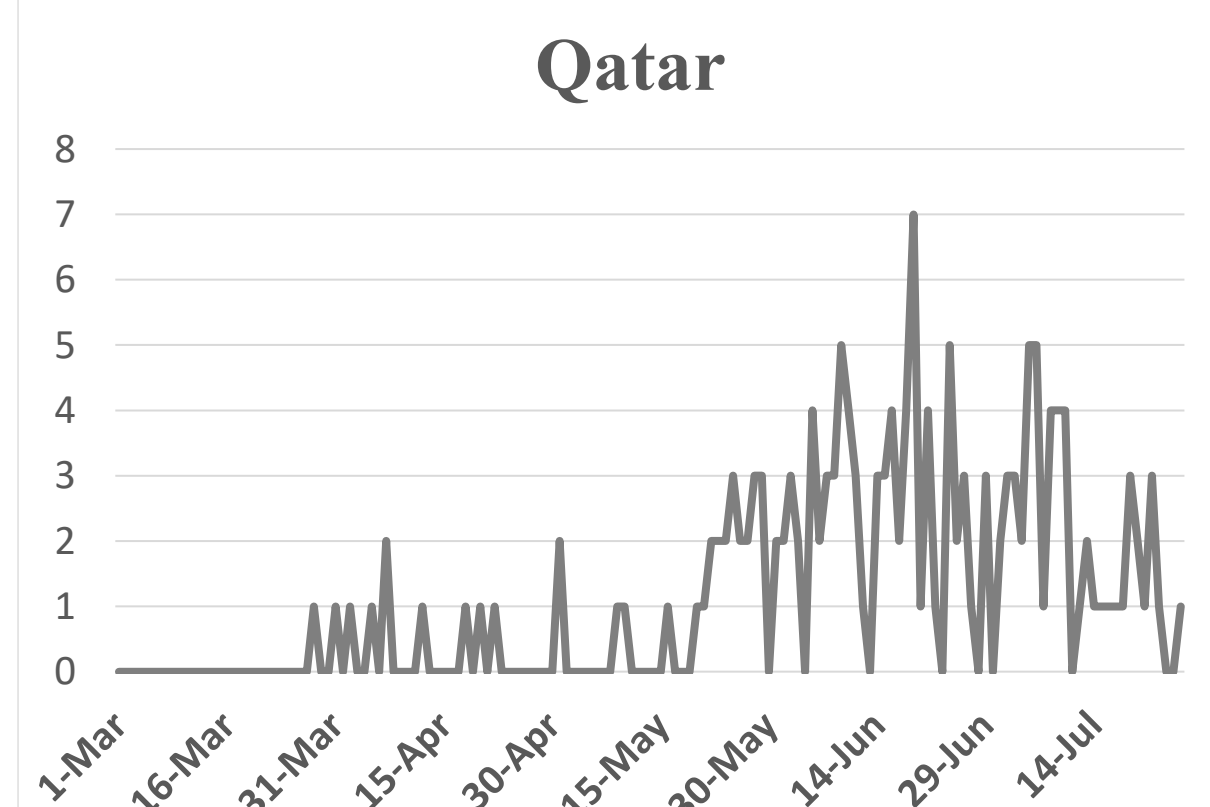
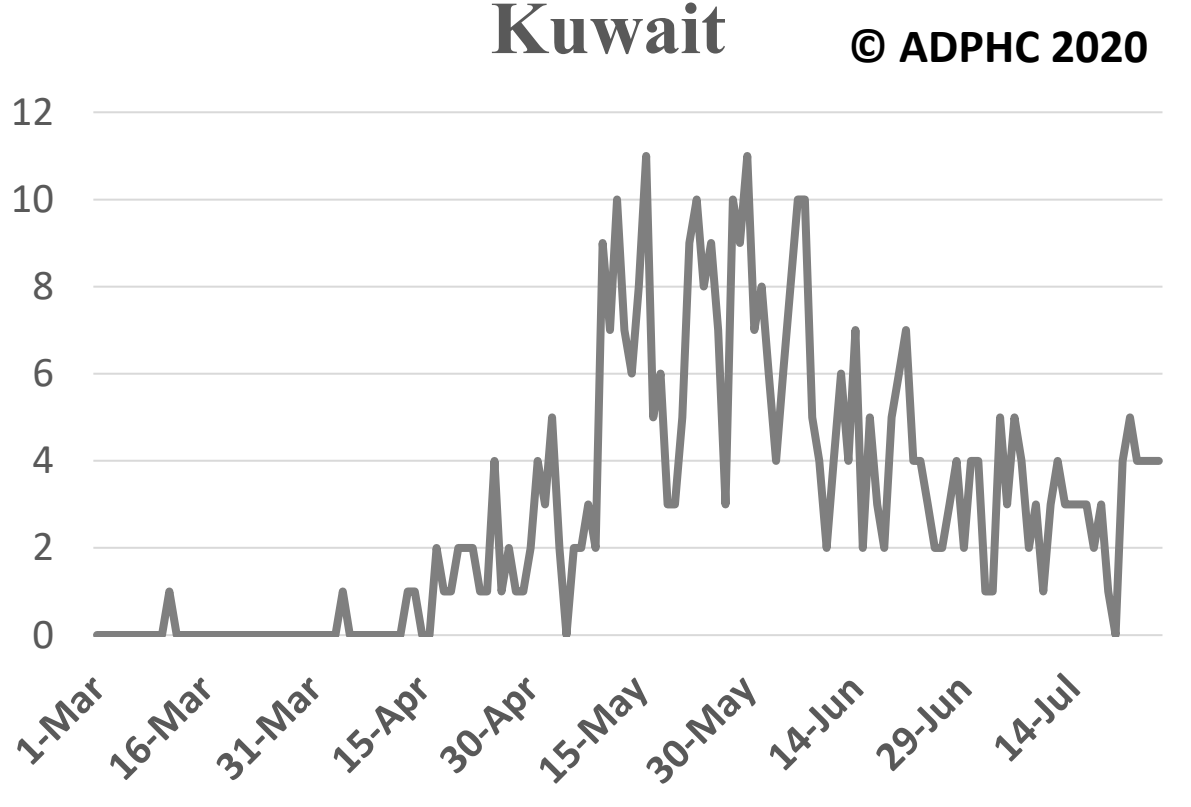
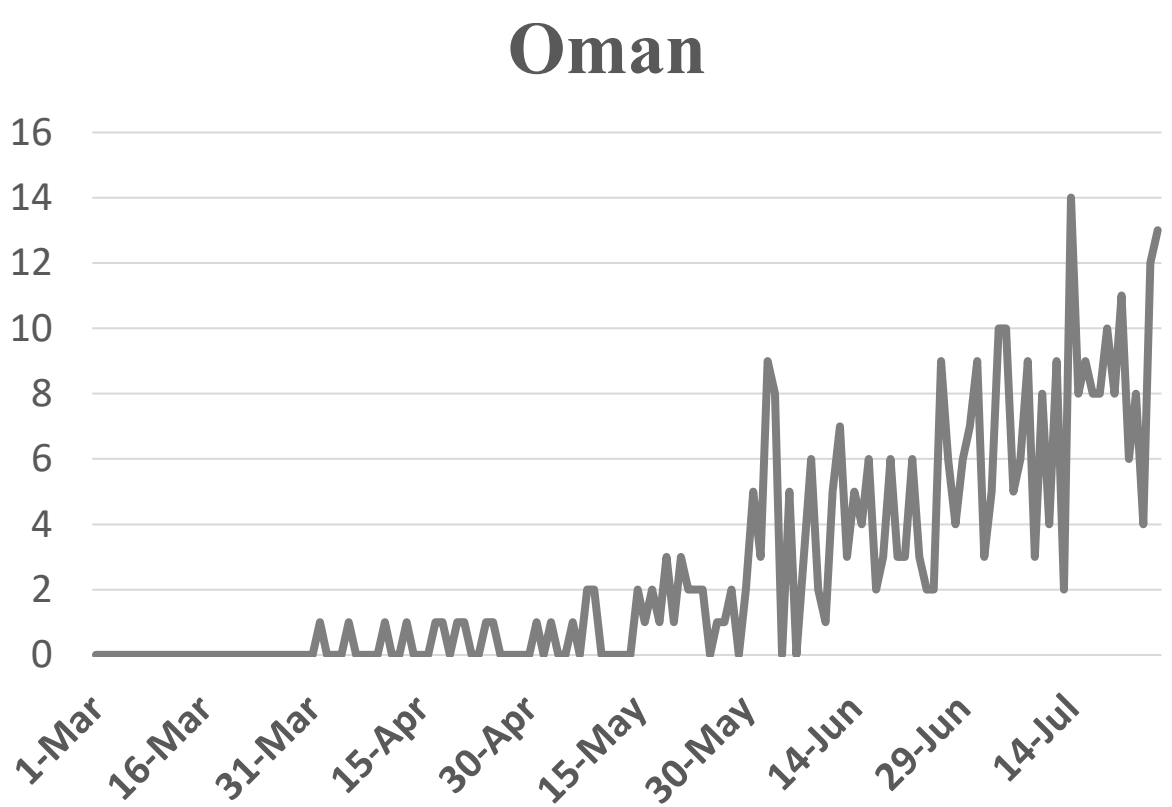
Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries



Source : National Emergency Crisis and Disaster Management Authority

Source : KSA ministry of health

Source :WHO



Source :Oman ministry of health

Source : Kuwait ministry of health

Source : Qatar ministry of health



Article 1:

Outcomes of Universal COVID-19 Testing Following Detection of Incident Cases in 11 Long-Term Care Facilities

Published

14 July 2020 [JAMA](#)

- This study performed **universal testing** of residents across 11 Maryland long-term care facilities that:
 - Had previously undergone targeted testing through the local health department based on individual residents' symptoms
 - Were known positive cases.
- Symptom status (any fever >99 °F, cough, diarrhea, respiratory decompensation, or other acute clinical status changes) at the time of universal testing was recorded.
- Two-week telephone follow-up was conducted following point-prevalence testing to obtain information regarding hospitalization and mortality status of all tested residents.

Results

- Among the 893 residents who were universally tested, 354 (39.6%) tested positive for SARS-CoV-2 RNA.
- The universal testing increased the total number of detected COVID-19 cases across all sites from 153 to 507; of these, 281 (55.4%) were **asymptomatic** (see [Table 1](#)).
- Of the tested 893 residents (see [Table 2](#)):
 - 426 residents were followed up to two weeks (177 positive for COVID-19, 249 negative). Among the 177 positive cases, 87.0% were **asymptomatic**.
 - Among those who tested positive and were **asymptomatic** at testing, 20 (13.0%) were hospitalized, and 7 (4.6%) died within 14 days of testing.
 - Among the 23 residents who tested positive and were symptomatic at testing, 4 (17.4%) were hospitalized, and 2 (8.7%) died within 14 days of testing

Conclusion

- An additional 354 cases (39.6% of those tested) were identified with universal testing, despite initial targeted, symptom-based testing.
- The results **underscore the importance of universal testing** because symptom-based approaches may miss a substantial number of cases.
- Unrecognized asymptomatic cases among residents could perpetuate transmission within facilities. So, additional testing resources are urgently needed to identify the true burden of COVID-19 and curb transmission in long-term care settings.

Continued:

Table 1. Results, Known Case Burden, and Timing of Testing by Facility

Facility	NH/ALF	Days between index case and testing	No. positive/ No. tested (% positive)	Known resident cases prior to testing	Total No. of cases	No. (%) of asymptomatic cases
A	NH	5	114/151 (79.1)	26	140	65 (46.4)
B	NH	3	42/58 (72.4)	22	64	25 (39.1)
C	NH	12	29/39 (74.4)	34	63	29 (46.0)
D	NH	6	6/51 (11.8)	2	8	5 (62.5)
E	NH	10	53/104 (51.0)	34	87	53 (60.9)
F	NH	4	15/135 (11.1)	4	19	15 (78.9)
G	NH	4	16/105 (15.2)	13	29	16 (55.2)
H	NH	19	42/76 (55.3)	11	53	39 (73.6)
I	NH	9	14/143 (9.8)	3	17	14 (82.4)
J	ALF	7	6/12 (50.0)	2	8	4 (50.0)
K	ALF	7	17/19 (89.5)	2	19	16 (84.2)
Overall	81.8% NH		354/893 (39.6)	153	507	281 (55.4)

Abbreviations: ALF, assisted living facility; NH, nursing home.

Table 2. Two-Week Cumulative Hospitalization or Mortality Among Long-term Care Residents With Follow-up Data^a

Characteristic	Overall	Test result		
		Negative	Positive at testing	
			Asymptomatic	Symptomatic
Total, No.	426	249	154	23
Hospitalized	33 (7.7)	9 (3.6)	20 (13.0)	4 (17.4)
Death	14 (3.3)	5 (2.0)	7 (4.6)	2 (8.7)





Article 2:

Risk Factors Associated With Mortality Among Patients With COVID-19 in Intensive Care Units in Lombardy, Italy

Published

15 July 2020 [JAMA Internal Medicine](#)

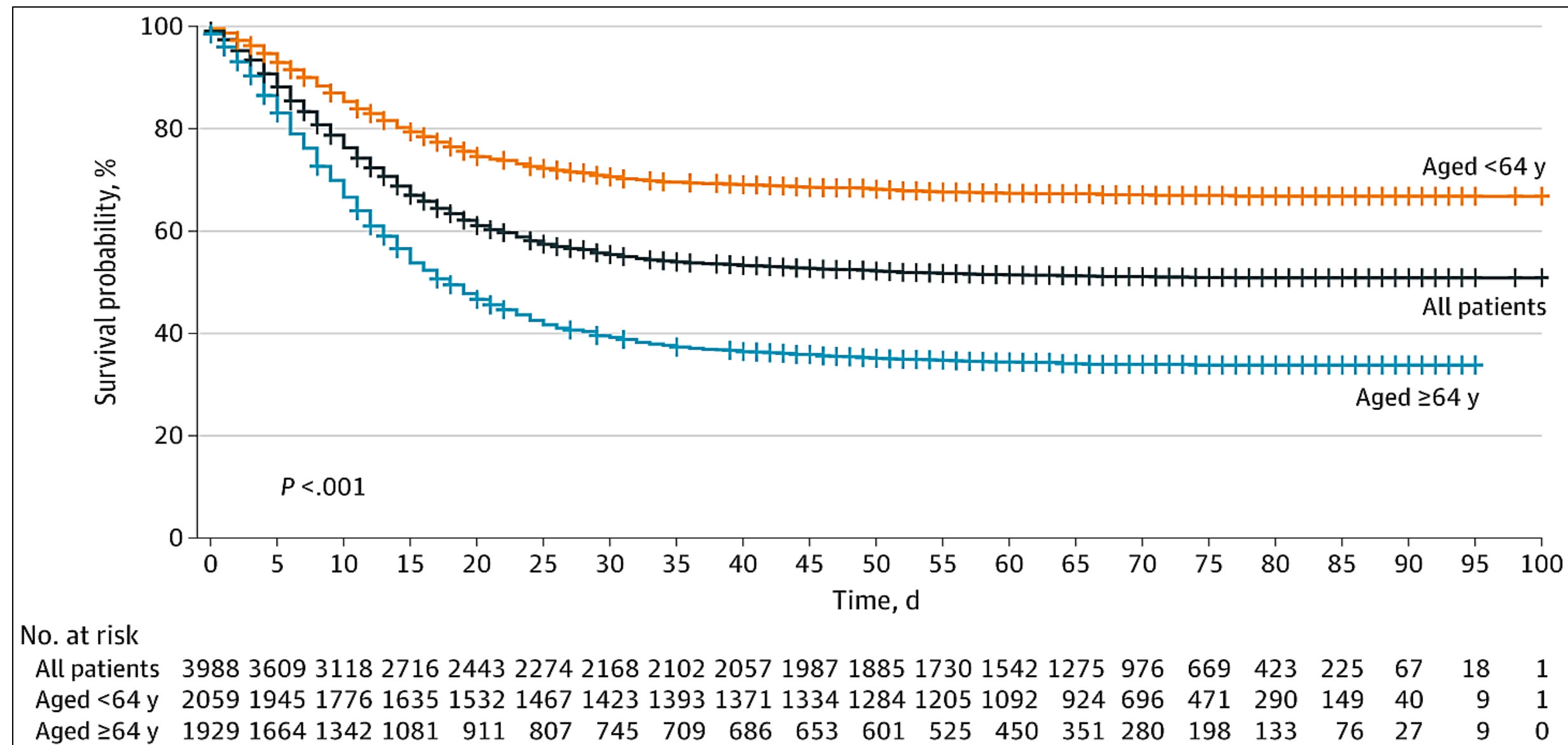
- The study identified risk factors associated with mortality among 3988 consecutive critically ill patients with laboratory-confirmed COVID-19 admitted to intensive care units in Lombardy, Italy, from February 20 to April 22, to May 30, 2020.
- **Studied exposures:** Baseline characteristics, comorbidities, long-term medications, and ventilatory support at ICU admission.
- **Main Outcomes and Measures:** Time to death in days from ICU admission to hospital discharge. The independent risk factors associated with mortality were evaluated with a multivariable Cox proportional hazards regression.

Results

- At ICU admission, 2929 patients (87.3%) required invasive mechanical ventilation (IMV), median length of ICU stay was 12 days; and median length of IMV was 10 days.
- The ICU mortality rate was 12 per 1000 patients-days.
- **In the subgroup of 1643 patients with a history of hypertension, long-term home treatment with ACE inhibitors, β -blockers, statins, and diuretics was associated with higher mortality at univariable analysis**
- **Independent risk factors associated with mortality included:**
 - **Older age (adjusted hazard ratio, 1.75)** and male sex (**HR, 1.57**). A 10-year increase in age was significantly associated with mortality (crude HR: 1.86; $P < .001$). Patients 64 years or older had significantly decreased survival probability compared with younger patients. (see **Figure 1**)
 - High fraction of inspired oxygen (FiO_2) (aHR, 1.14)
 - High positive end-expiratory pressure (aHR, 1.04)
 - Low $\text{PaO}_2:\text{FiO}_2$ ratio (aHR, 0.80) on ICU admission,
 - **History of chronic obstructive pulmonary disease (COPD)**
 - **Hypercholesterolemia** (aHR, 1.25)
 - **Type 2 diabetes** (aHR, 1.18)
- **No medication was independently associated with mortality (angiotensin-converting enzyme inhibitors HR, 1.17; angiotensin receptor blockers aHR, 1.05.**
- The mortality of the patients undergoing subsequent intubation was similar to that for the patients who were treated with mechanical ventilation for ICU admission (aHR for IMV vs NIV failure, 1.20; 95% CI, 0.95-1.53; $P = 0.12$).

Continued

Figure 1. Kaplan-Meier Analysis of Survival of Patients Admitted to the Intensive Care Unit
Survival is reported for the overall group and stratified by median age
(<64 or ≥ 64 years).



Conclusion

- Mortality was high among critically ill COVID-19 patients in Italy, and it was associated with older ages, male sex, and history of DM or COPD.
- Until effective and specific therapies are available, supportive care is the mainstay of treatment for critically ill patients.



THANK YOU

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