

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Scientific Research Monitoring on COVID-19

8 May 2020

Summary on COVID19



SARS-COV2 virus

- The virus have been sequenced and found to be similar to MERS-CoV and SARS-CoV. Research revealed that the virus originated in a bat reservoir.
- New designation for the disease and the virus: COVID-19 and SARS-COV2.
- SARS-COV2 stay viable in aerosol for hours and in surface up to 3 days.
- Two strain have been identified for SARS-COV2 (L type (more aggressive) and S type .

Transmission

- Transmission from human to human has been confirmed. Incubation period ranges from 5 days and can reach up to 14 days.
- Suggested human-to-human transmission occurs through droplets, contact and fomites, similar to Severe Acute Respiratory Syndrome (SARS).
- Isolation is the best measure to control transmission.

Clinical features and outcome

- Non-specific and the disease presentation can range from no symptoms (asymptomatic) to severe pneumonia and death.
- Highest risk for severe disease and death include people aged over 60 years and those with underlying conditions
- Pregnant women infected with SARS-COV2 may experience symptoms similar to those of non-pregnant adults. No evidence suggests transmission from mother to newborn if infected late in pregnancy. No evidence of transmission through breast milk.

Therapies and vaccination

- Efforts currently in developing therapies for this virus focus on previously known medications and vaccination for MERS-CoV and SARS-CoV. In addition to other type of medication.
- WHO forum held 11-12 Feb 2020 to mobilize research on COVID19 vaccinations and therapies.

Summary on COVID19 (Cont.)

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COVID19 in figure

- 80% of laboratory confirmed patients have had mild to moderate disease
- 13.8% have severe disease.
- 6.1% are critical
- Children account for 2.4% of all reported cases.(less than 19 years)



Todays' Highlights

All articles presented in this report represents the authors' views and not necessarily represents Abu Dhabi Public Health Center views or directions.

Scientific Research

- **Treatment:** Review on Anti-malarial drugs publications and trials as well as chemoprophylaxis candidate for COVID19.
- **Public health response:** article describe how the new normal will be in health care system after the COVID19 pandemics.

Due to abundant COVID19 information resources and given the urgent need to keep up with the updates .Below is a cluster of other academic articles for interested reviewer.

Others

- [Global Spread of SARS-CoV-2 Subtype with Spike Protein Mutation D614G is Shaped by Human Genomic Variations that Regulate Expression of TMPRSS2 and MX1 Genes](#)
- [SARS-CoV-2 and influenza virus co-infection](#)
- [The art of medicine Has COVID-19 subverted global health?](#)



WHO daily report 7 May 2020

- More than 3.5 million cases of COVID-19 and 250,000 deaths have now been reported to WHO.
- WHO Director-General Dr Tedros Adhanom Ghebreyesus, in his briefing referred to the fact that crises can exacerbate existing inequalities, reiterated that he said, ‘We cannot end the pandemic until we address the inequalities that are fueling it.’
- WHO, UNICEF and the International Federation of the Red Cross have published **guidance for countries on how to maintain community-based healthcare in the context of COVID-19**. It complements the **United Nations framework for the socio-economic response to COVID-19**.
- **WHO and the Delegation of the European Union (EU) have announced a new collaboration in Somalia** to strengthen operational response activities for COVID-19.
- In the **table**, WHO lists eight key criteria for the ethical acceptability of COVID-19 human challenge studies.

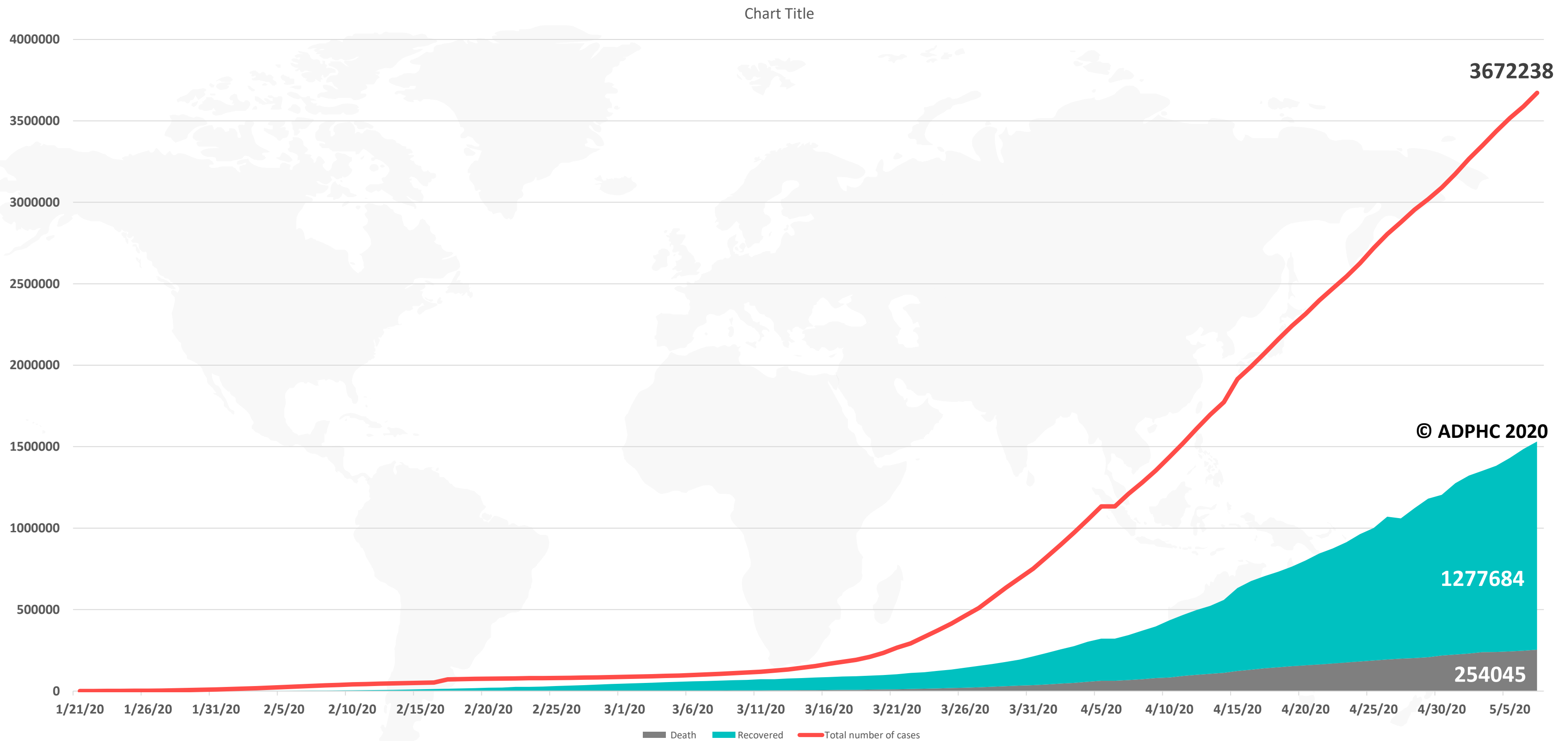
Table 1. Eight criteria for SARS-CoV-2 challenge studies

Scientific and ethical assessments		
Criterion 1	Scientific justification	SARS-CoV-2 challenge studies must have strong scientific justification
Criterion 2	Assessment of risks and potential benefits	It must be reasonable to expect that the potential benefits of SARS-CoV-2 challenge studies outweigh risks
Consultation and coordination		
Criterion 3	Consultation and engagement	SARS-CoV-2 challenge research programmes should be informed by consultation and engagement with the public as well as relevant experts and policy-makers
Criterion 4	Coordination	SARS-CoV-2 challenge study research programmes should involve close coordination between researchers, funders, policy-makers and regulators
Selection criteria		
Criterion 5	Site selection	SARS-CoV-2 challenge studies should be situated where the research can be conducted according to the highest scientific, clinical and ethical standards
Criterion 6	Participant selection	SARS-CoV-2 challenge study researchers should ensure that participant selection criteria limit and minimize risk
Review and consent		
Criterion 7	Expert review	SARS-CoV-2 challenge studies should be reviewed by a specialized independent committee
Criterion 8	Informed consent	SARS-CoV-2 challenge studies must involve rigorous informed consent

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to May 7, 2020)

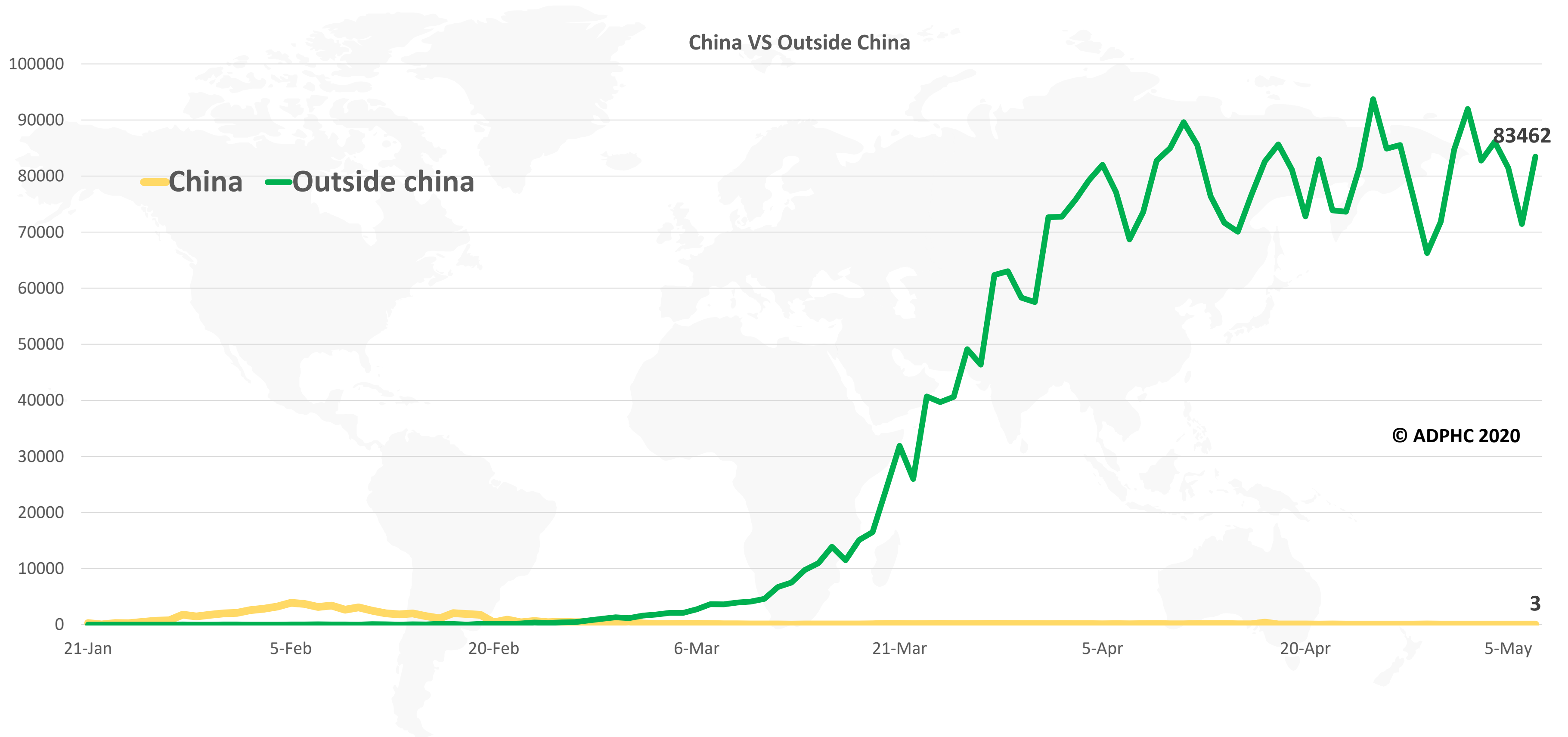


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#), [John Hopkins University](#)



Figure 2: Daily new infected COVID-19 cases reported between (January 21 to May 7, 2020).



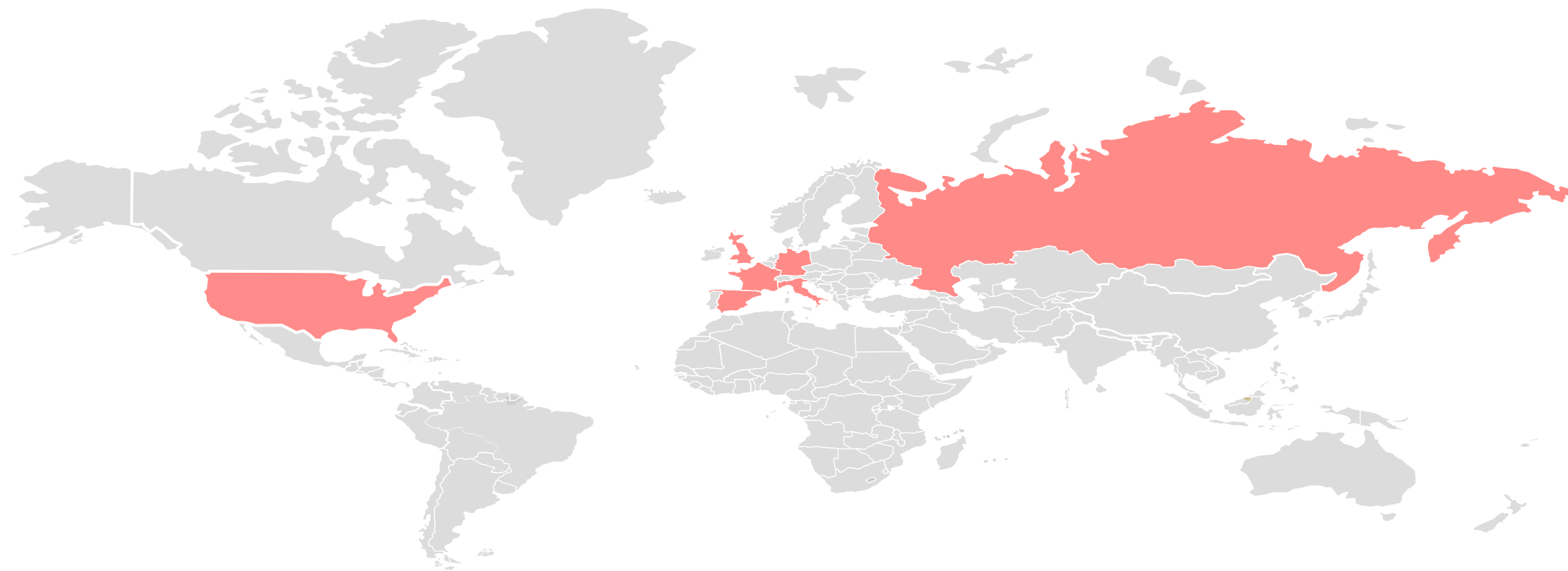
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

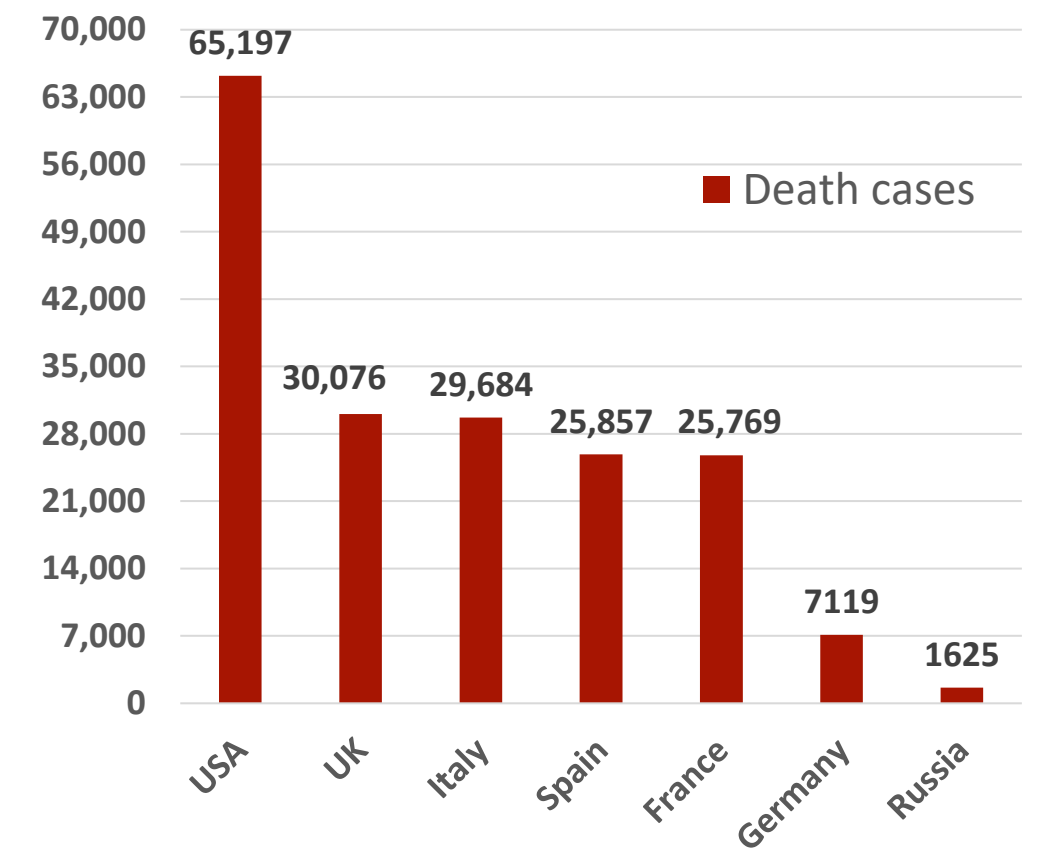
Epidemiology



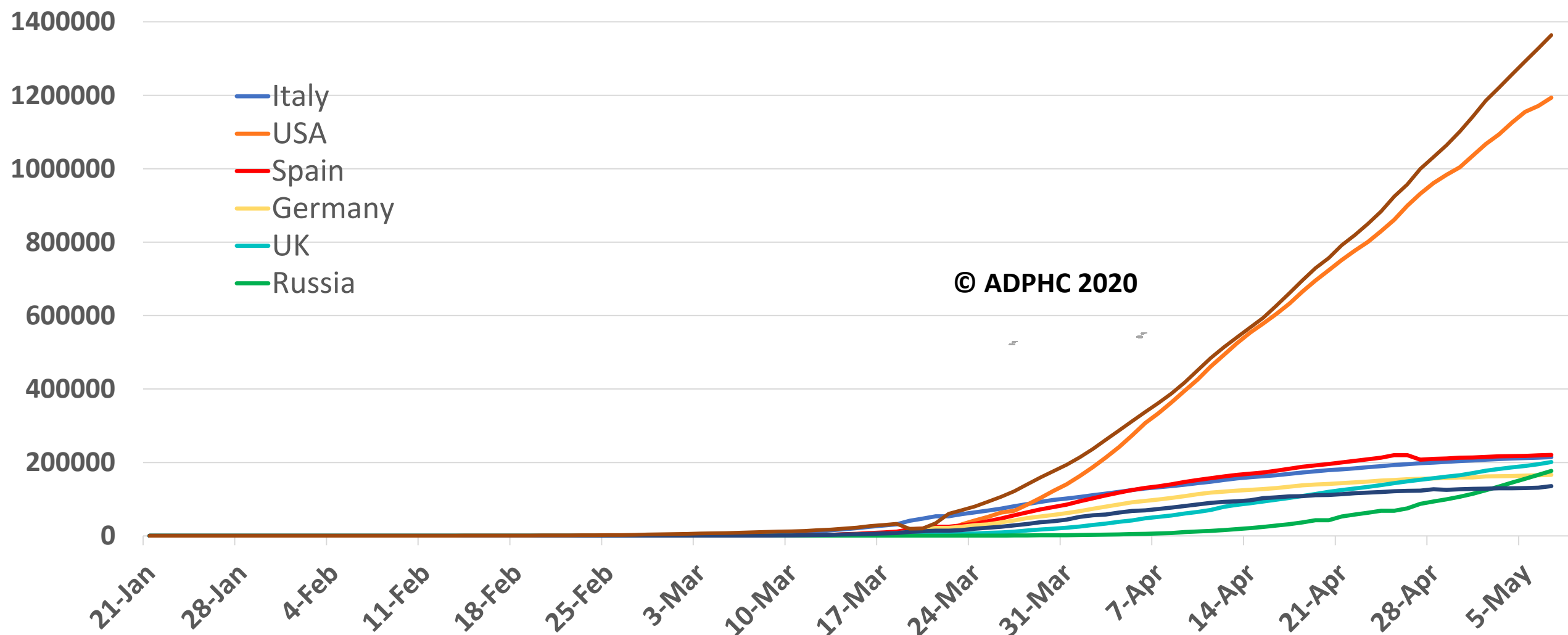
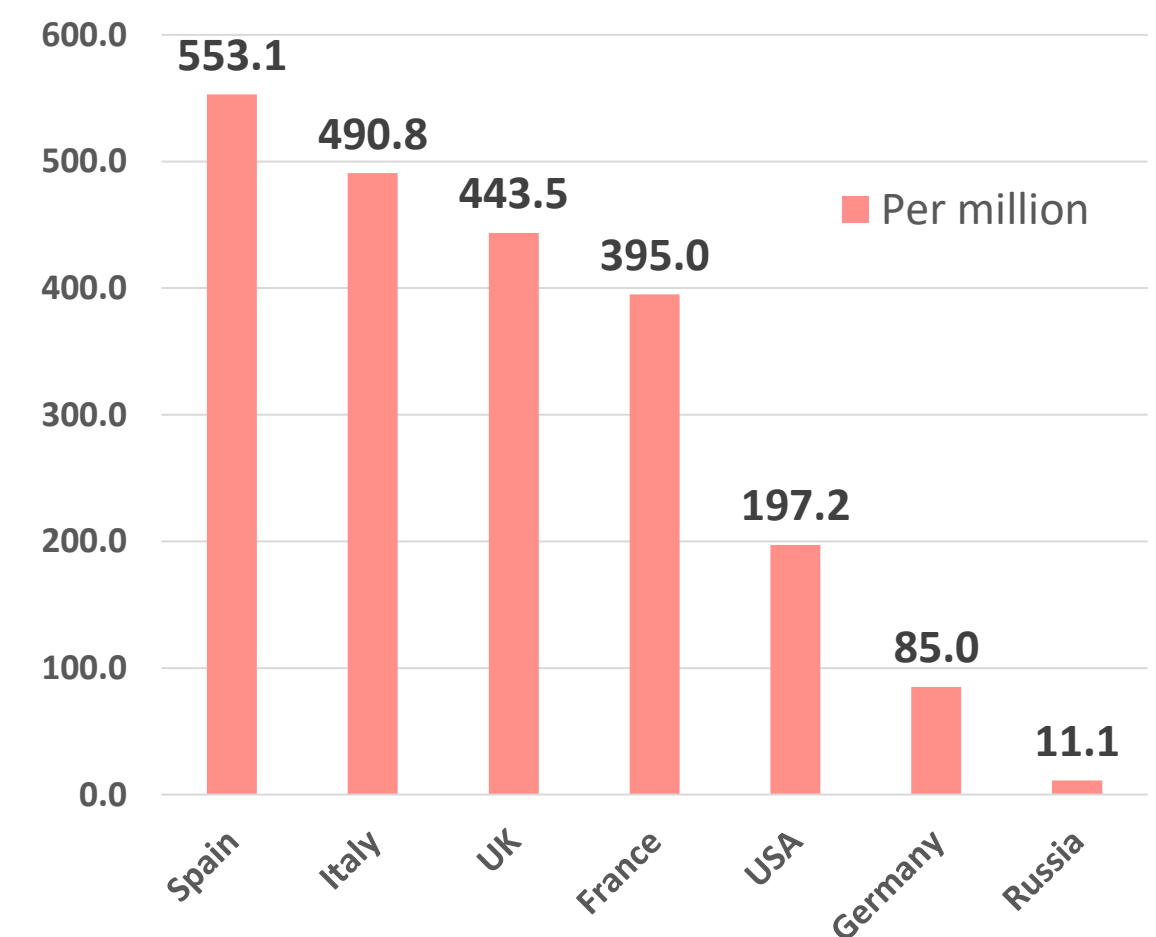
Figure 3 : Top 7 countries in the total number of cases due to COVID-19 (January 21 to May 7, 2020).



TOTAL DEATHS



DEATHS PER MILLION

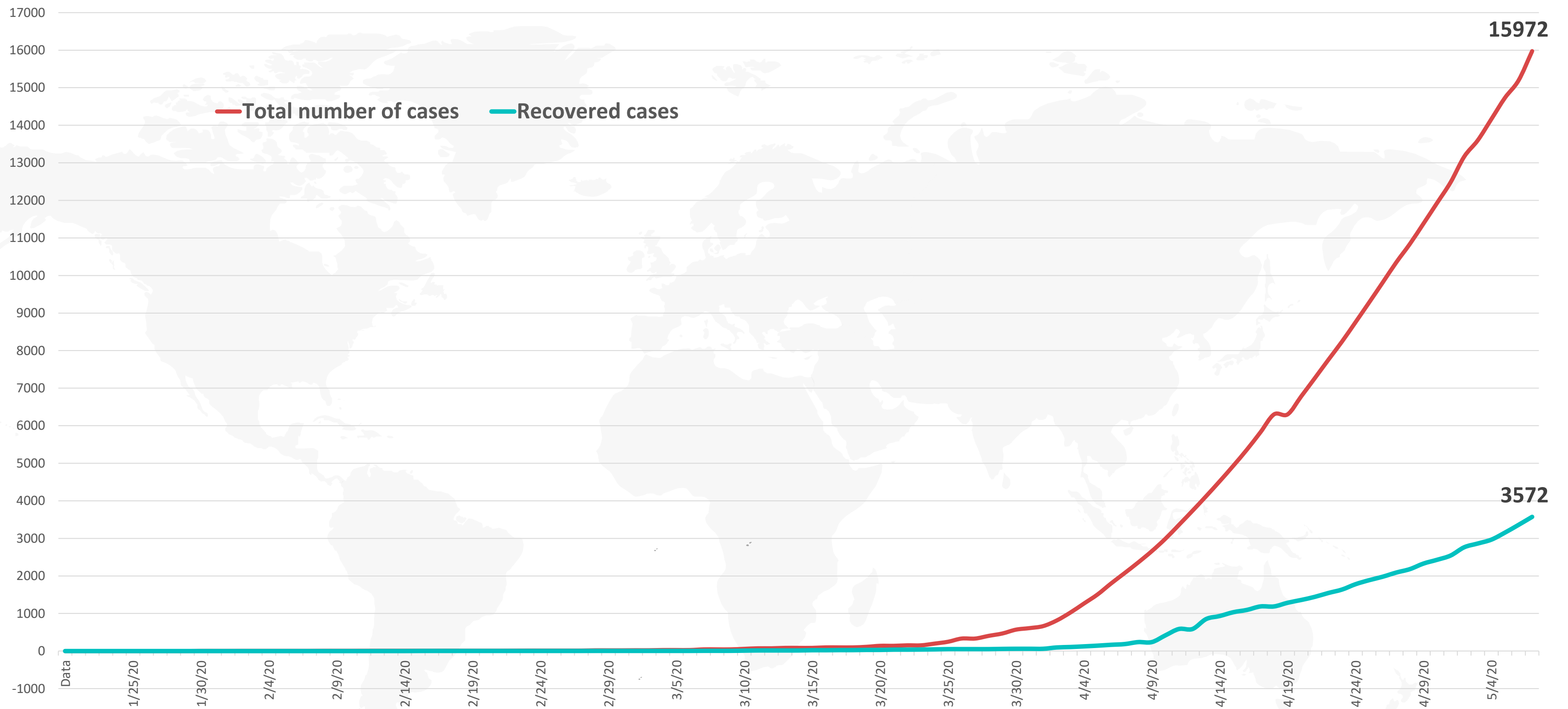


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int)



Figure 4: Total number of COVID-19 infected and recovered cases in UAE over time



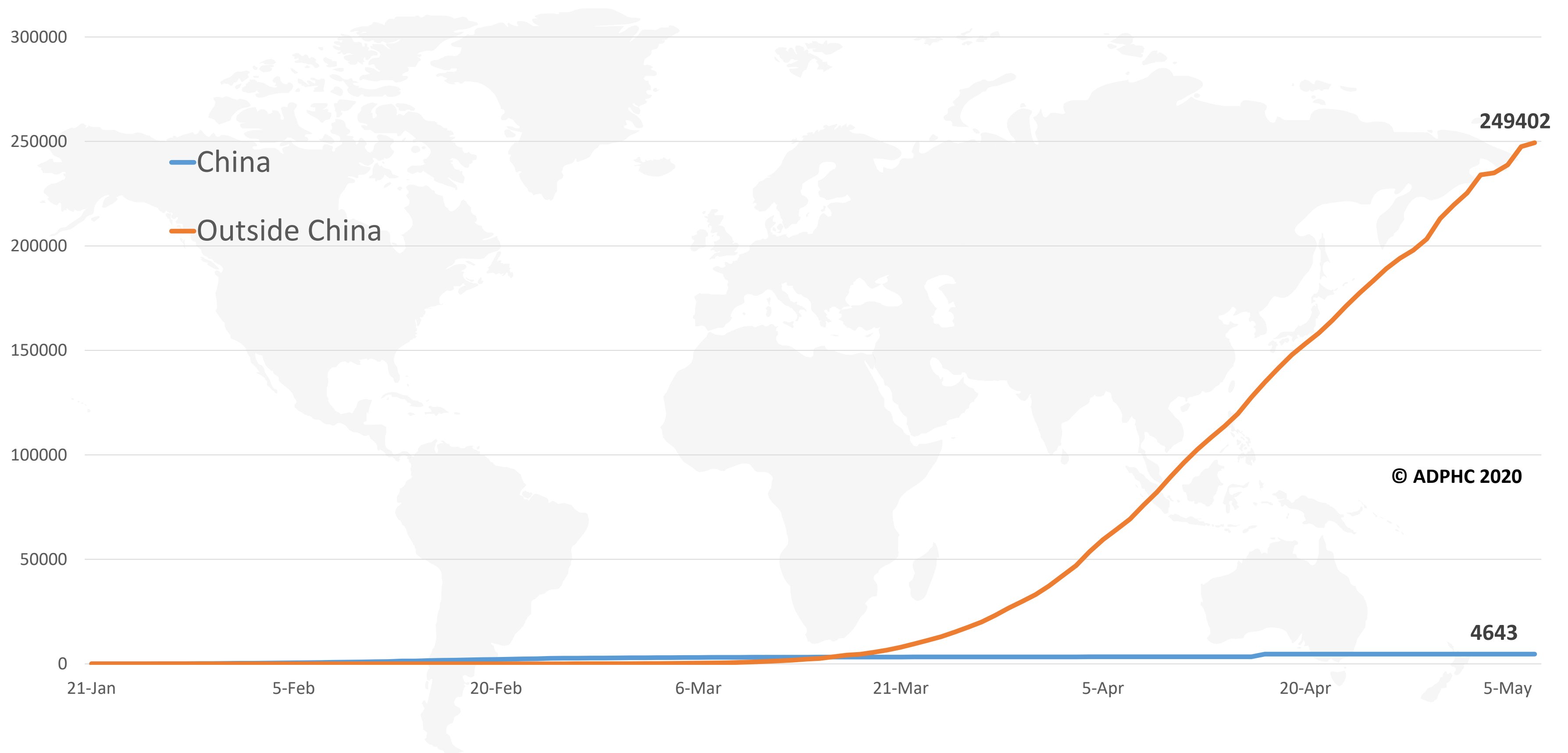
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#), [John Hopkins University](#)

Epidemiology



Figure 5: Total number of death due to COVID-19 reported by China and the rest of the world (January 22 to May 7, 2020).



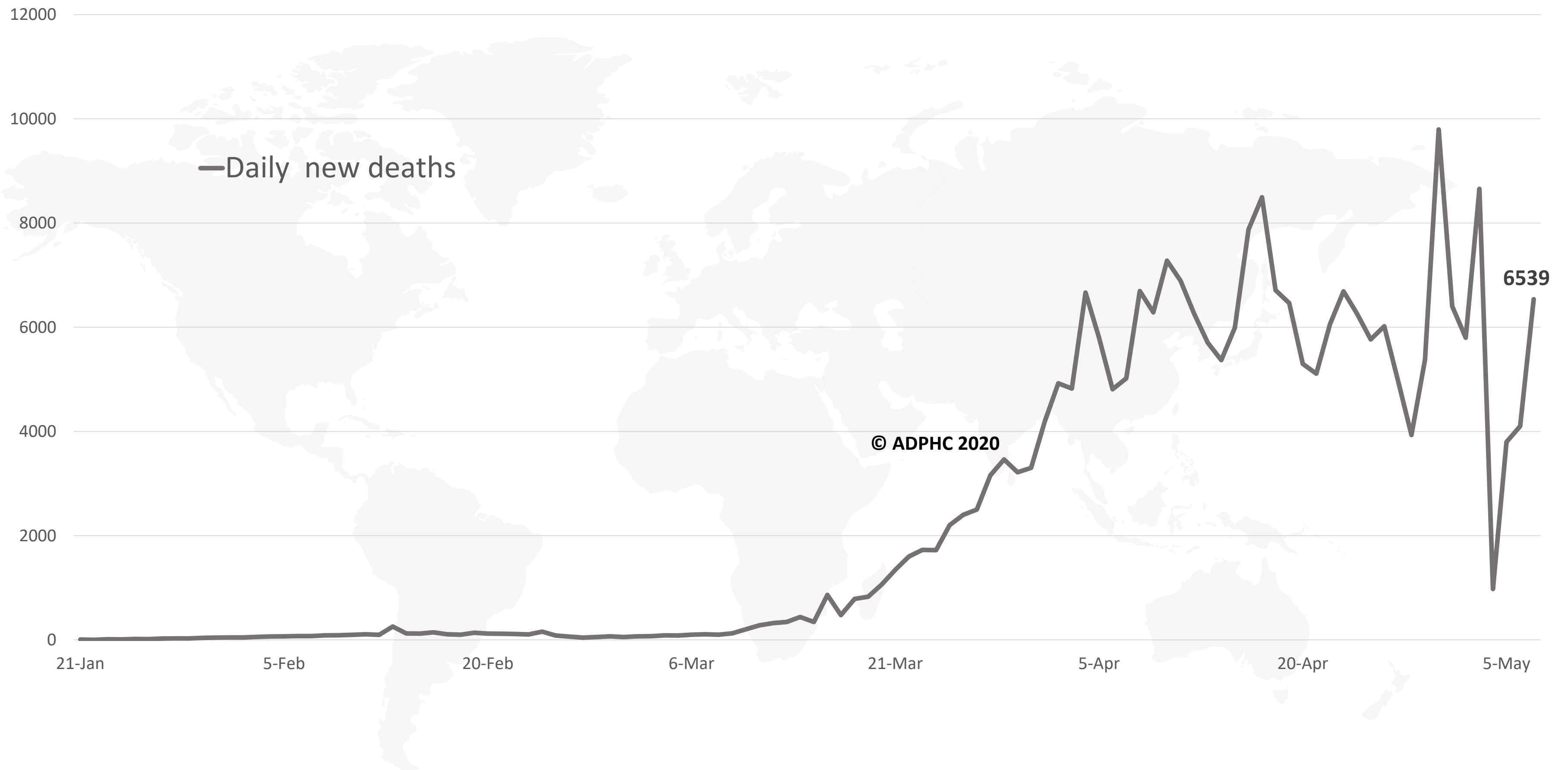
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Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 6: Global daily new deaths due to COVID-19 (January 22 to May 7, 2020).



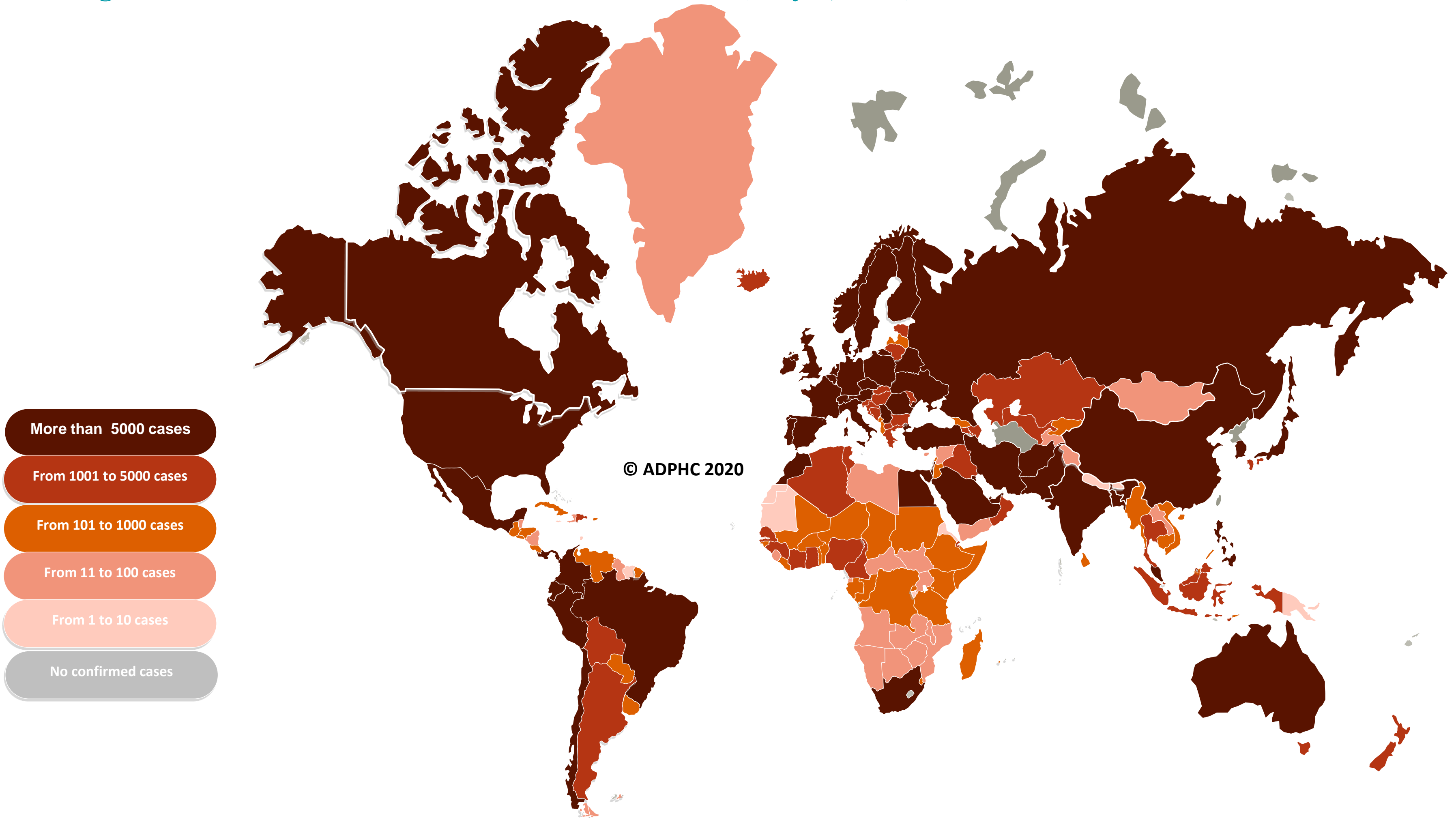
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int/)

Epidemiology



Figure 7a : Global distribution of COVID-19 cases (May 7, 2020).

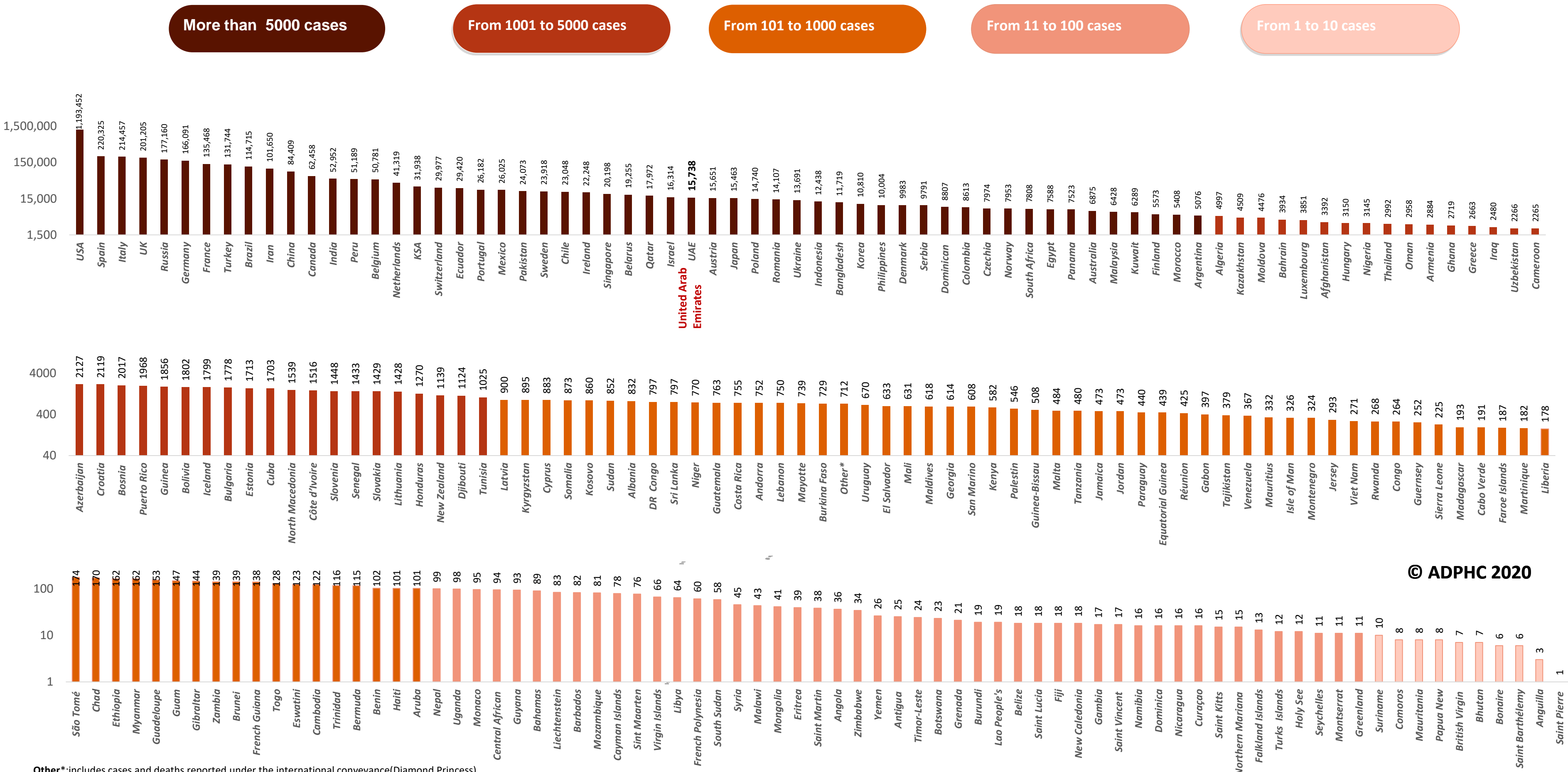


Map chart published by Abu Dhabi Public Health Center 2020.

Epidemiology



Figure 7B: Bar chart illustrate the global distribution of COVID19 cases May 7, 2020)



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

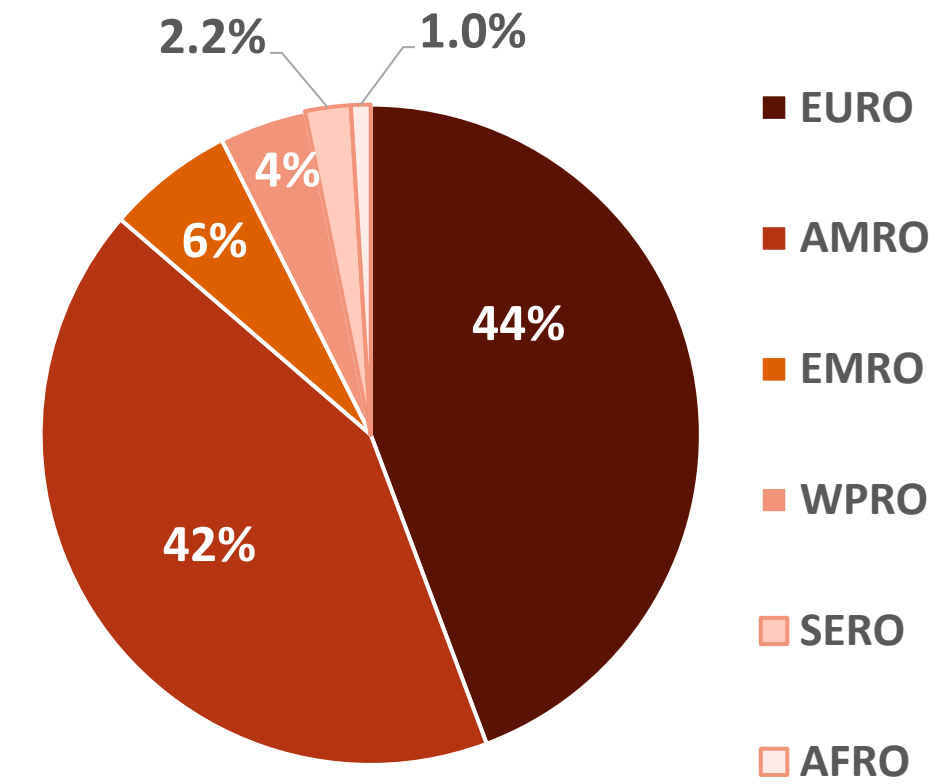
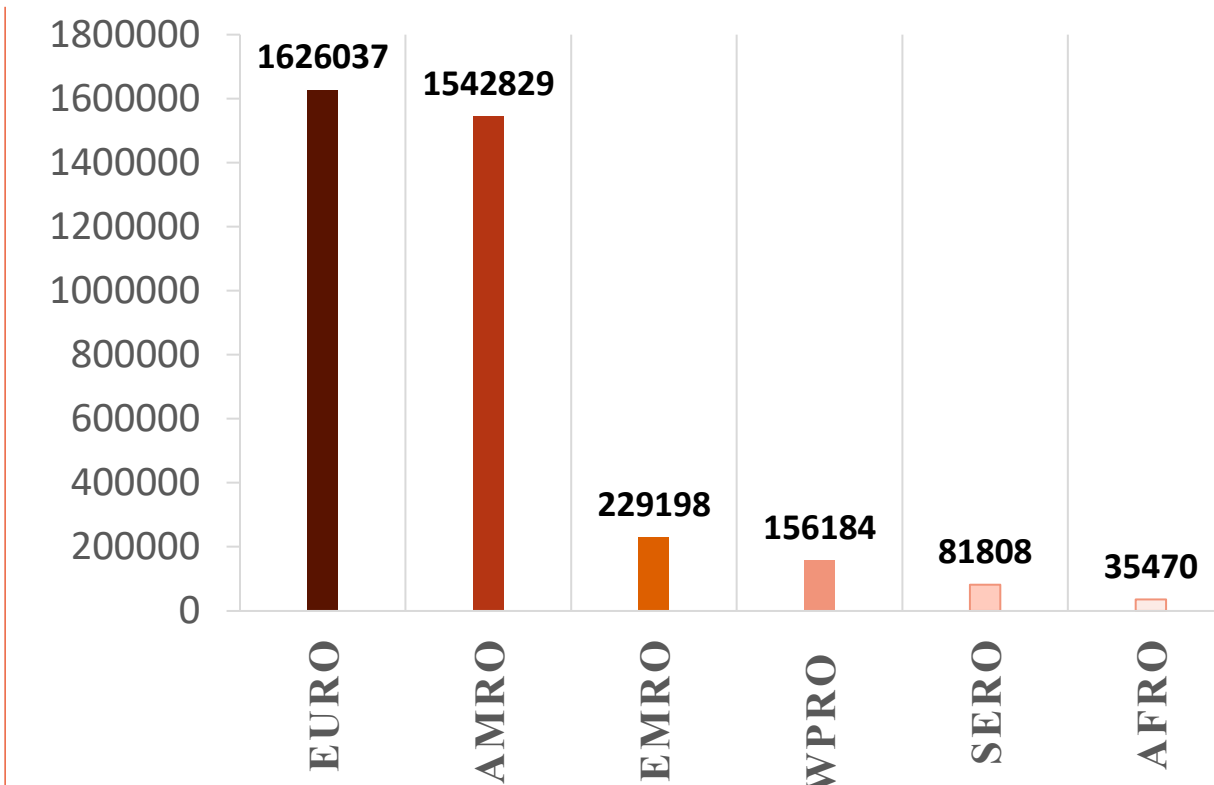
Map chart published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int/)



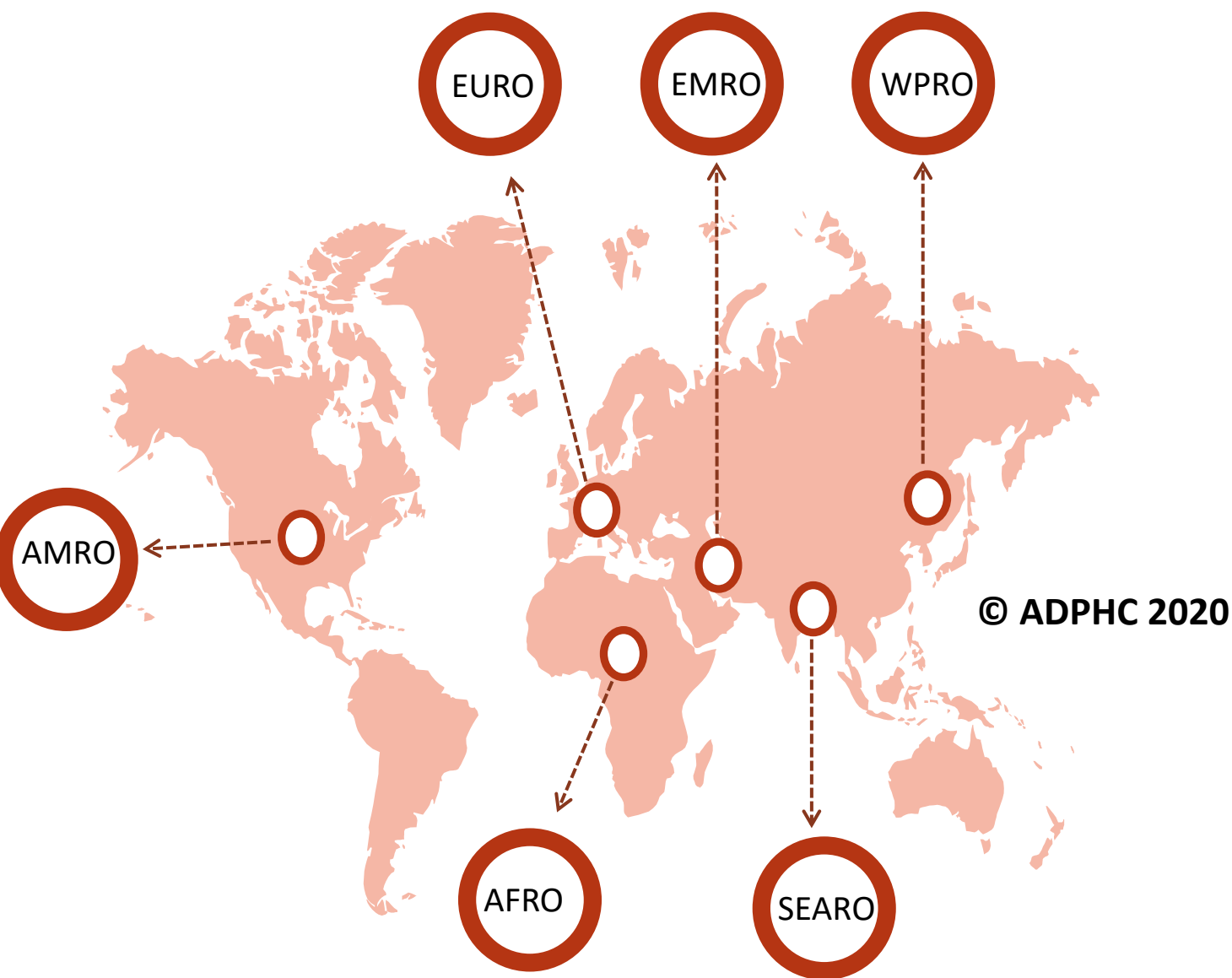
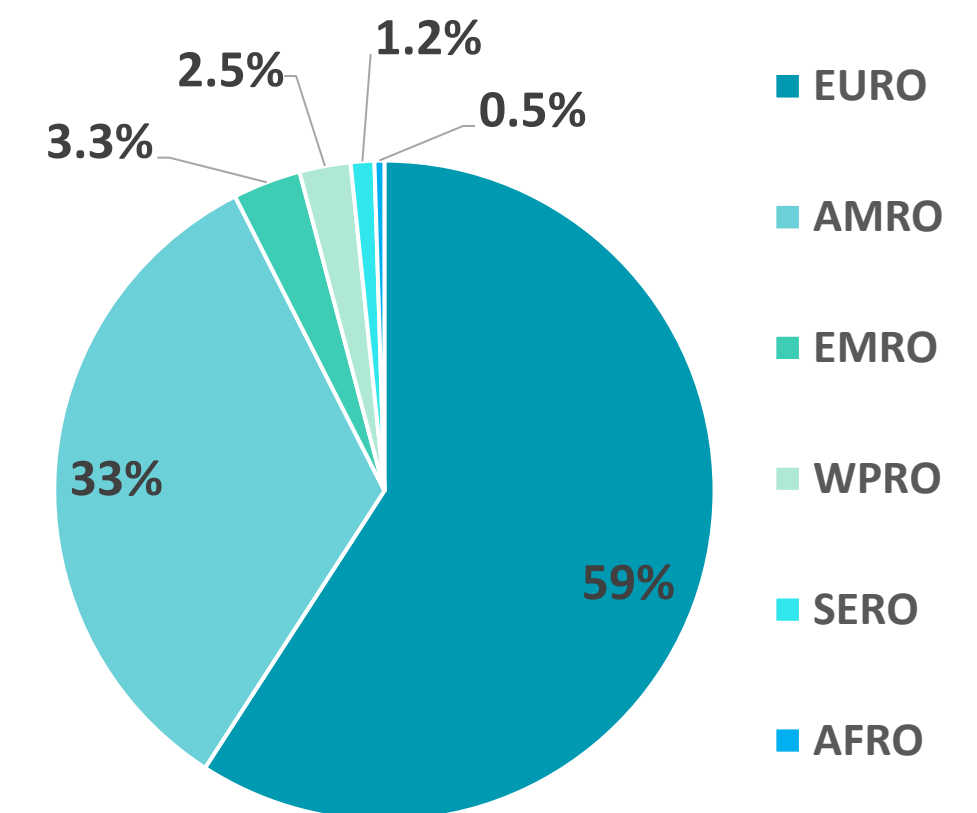
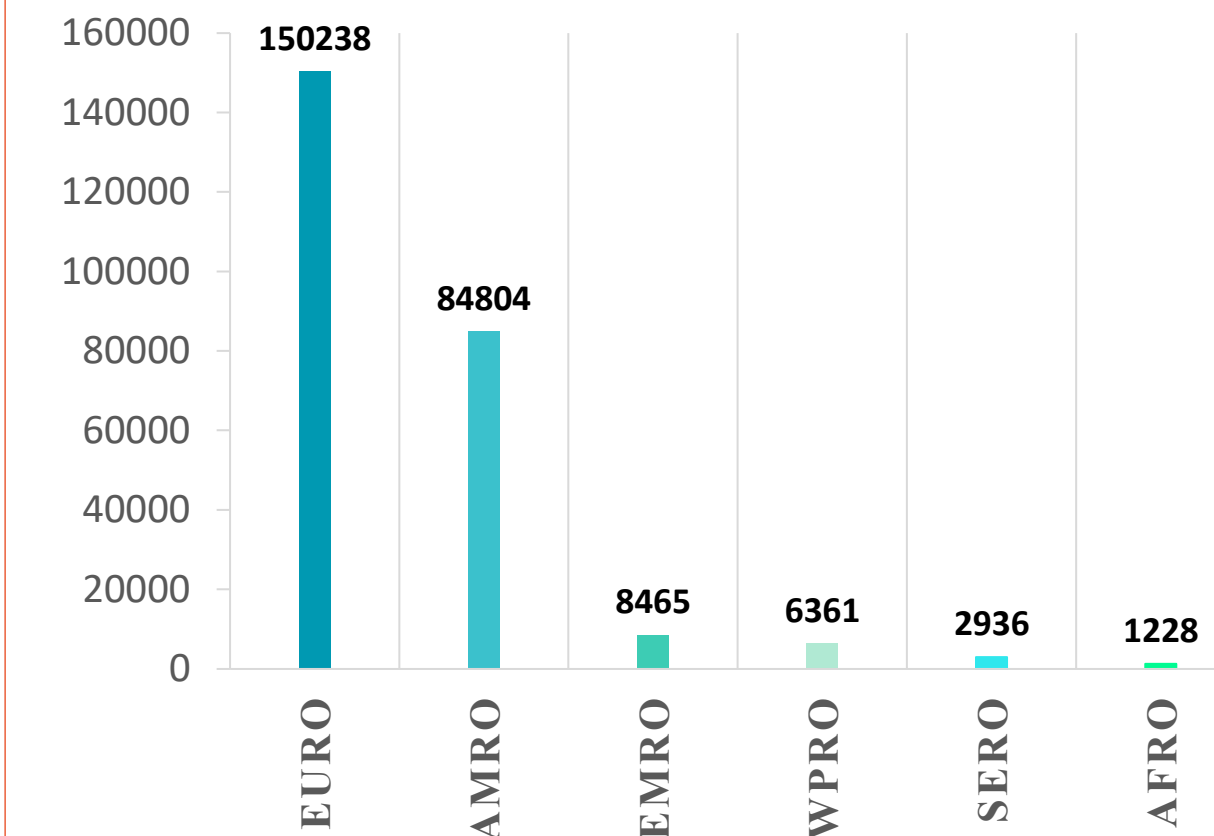
Figure 8: illustrate the Global distribution of COVID19 cases per region (May 7, 2020)

INFECTED



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DEATH



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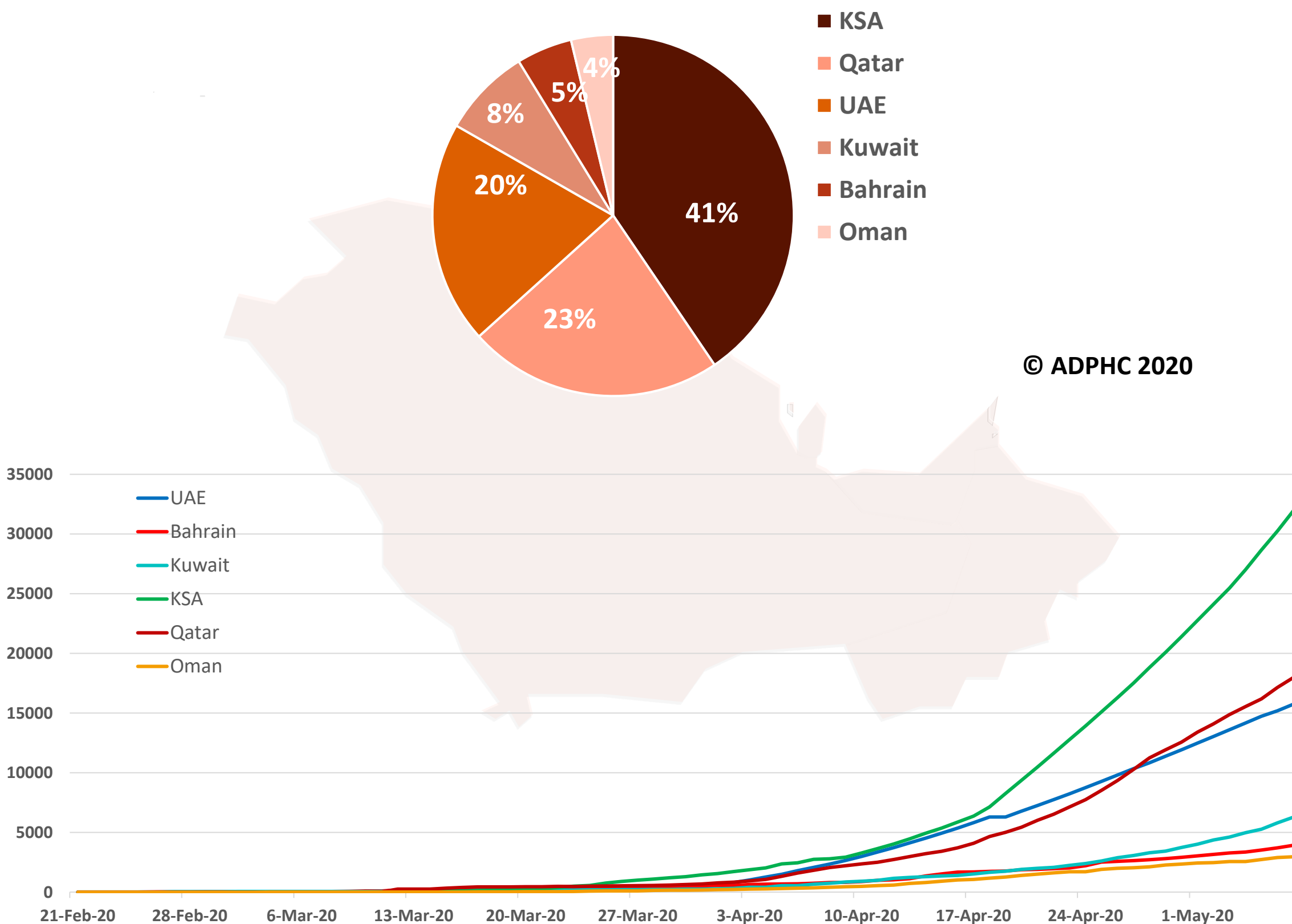
Map chart published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int)

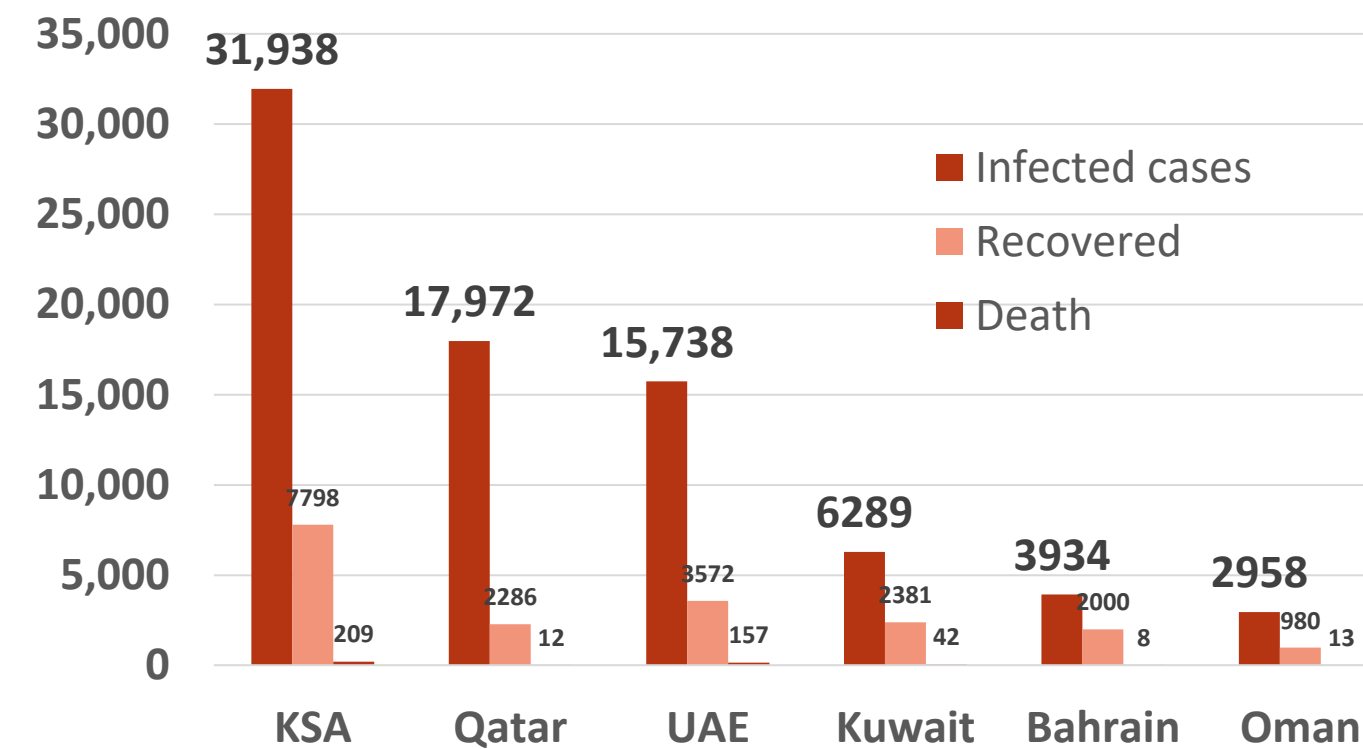


Figure 9: Comparative analysis of the distribution of COVID19 cases in GCC countries (May 7, 2020)

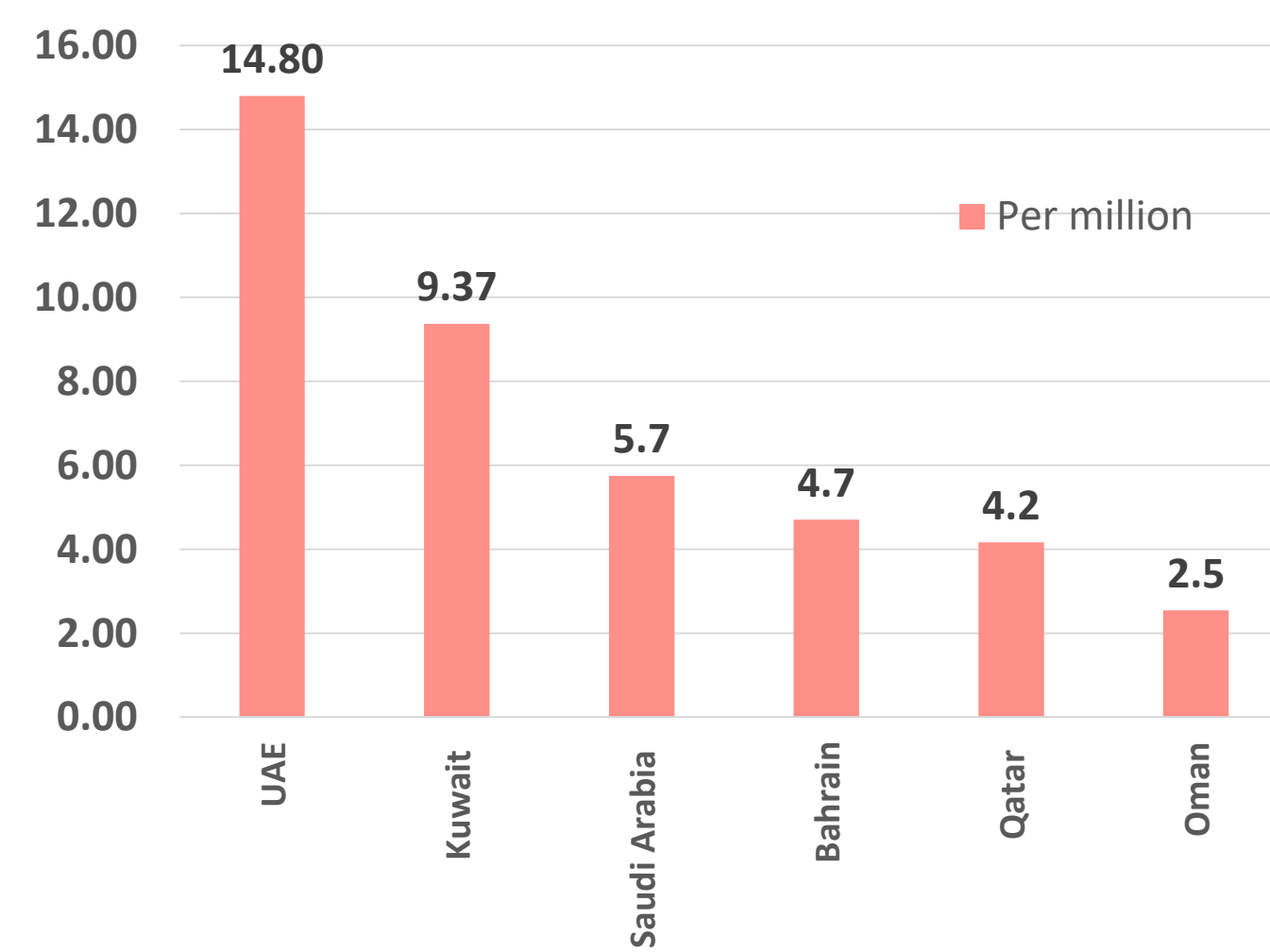
TOTAL NUMBER OF INFECTED CASES



Total number of infected, recovered and Deaths



Death per million



charts published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](https://www.who.int/)



Clinical Trials and Publications on anti-malarial Therapy for Treatment and chemoprophylaxis in COVID-19 Patients (1/2)

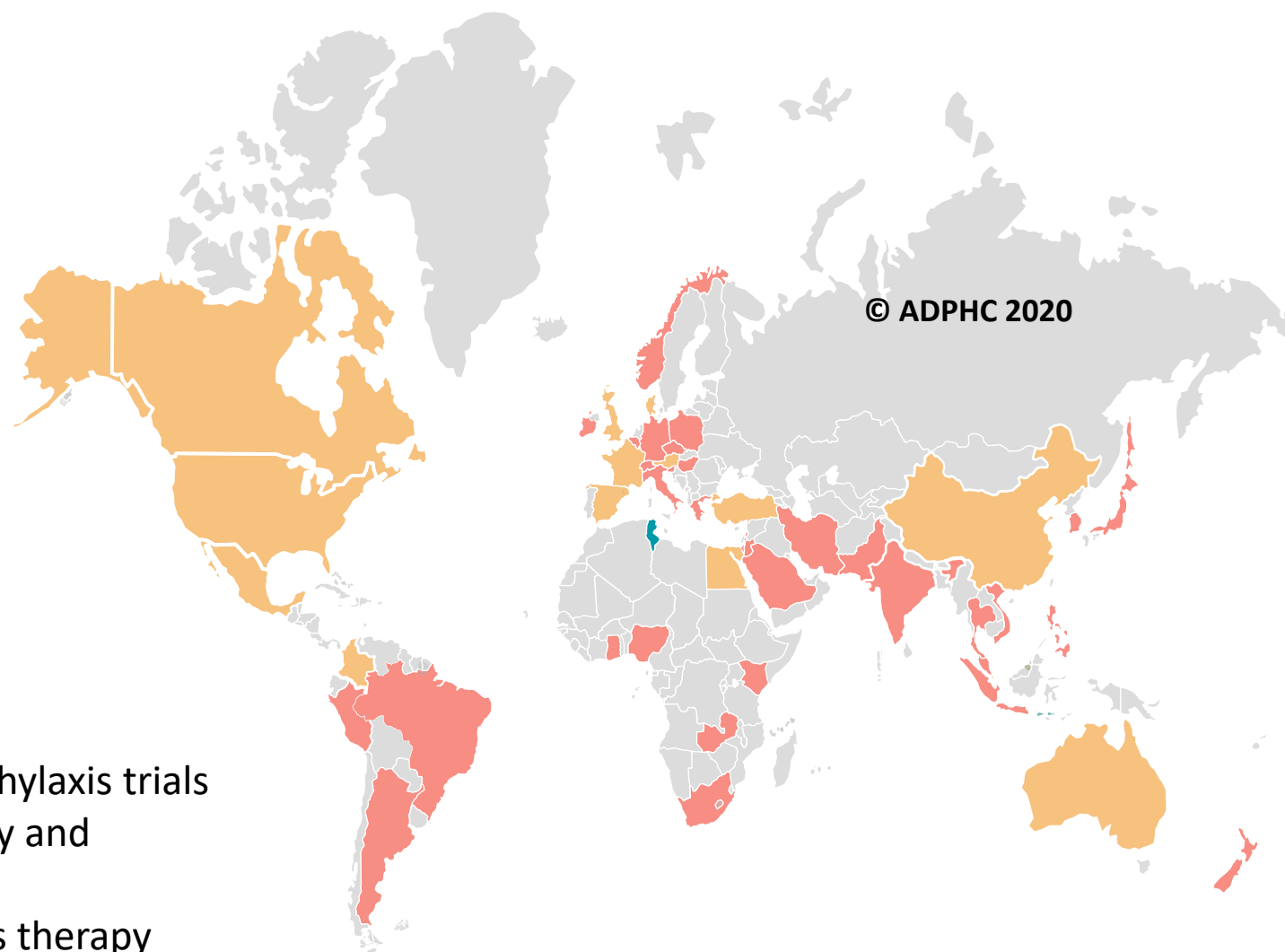
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Clinical trials on chemoprophylaxis

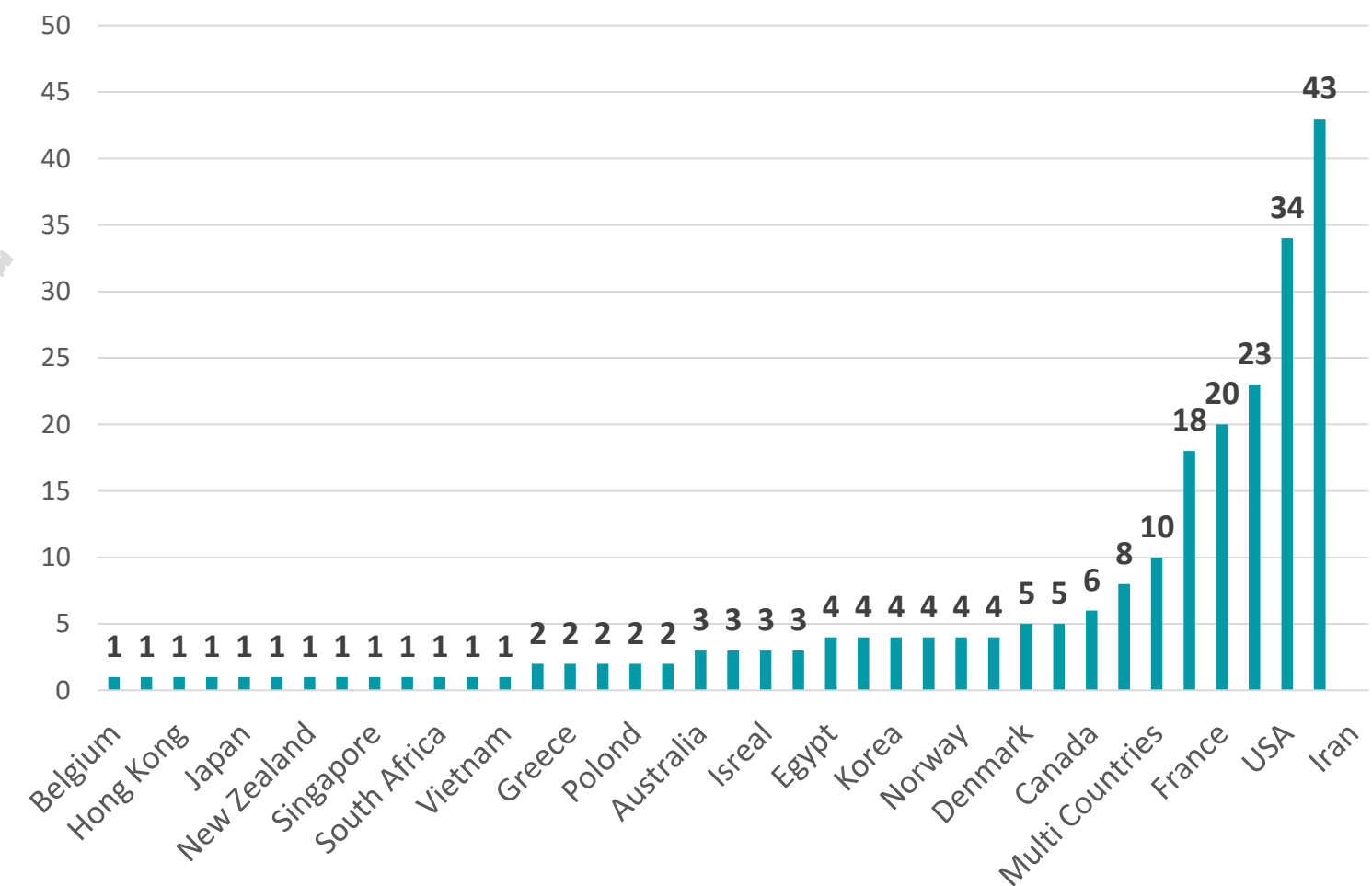
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Clinical trials on Antimalarial therapy

- Covid19 Chemoprophylaxis trials
- Both (trial on therapy and chemoprophylaxis)
- Anti-malarial trials as therapy



Ongoing Trial on Anti-malarial therapy for Covid19 treatment



Publications

Here we highlight most studies that address the efficacy of anti-malarial drugs for treatment of Covid19

Publication 1: Positive results (17.3.2020)

Gautret, Philippe, et al in France: A non-randomized control* trial of 36 patients (20 I: 16 C). had HCQ + azithromycin (6pt). Results : viral clearance in 6 days (70% HCQ & 100% in HCQ/AZT). (unclear severity staging some patient were asymptomatic)
*Untreated patients were used as control

Previously summarized in [ADPHC sc. Report in 23 March 2020](#)

Publication 2: Positive results (31.3.2020)

Chen, Zhaowei, et al in China; A randomized controlled trial in 62 patients (1:1) on HCQ. results: time to clinical recovery with 5 days (60% in tx compared to 16 % in control). Both group received (O2, antiviral agents, antibacterial agents, immunoglobulin, with or without corticosteroids)

Previously summarized in [ADPHC Sc. Report 5 April 2020](#)

Publication 3 : Positive results (27.3. 2020)

Gautret, Philippe, et al, retrospective, observational study in France in 80 pt with at least a six-day follow up received HCQ/AZT. Results: viral clearance 83% at Day7. Clinical improvement in all except 2. (most of the cases in this study were mild)

Previously summarized in [ADPHC Sc. report in 30 March 2020](#)

This work is done in collaboration with the UAE University Research office

Clinical Trials and Publications on anti-malarial Therapy for Treatment and chemoprophylaxis in COVID-19 Patients (2/2)

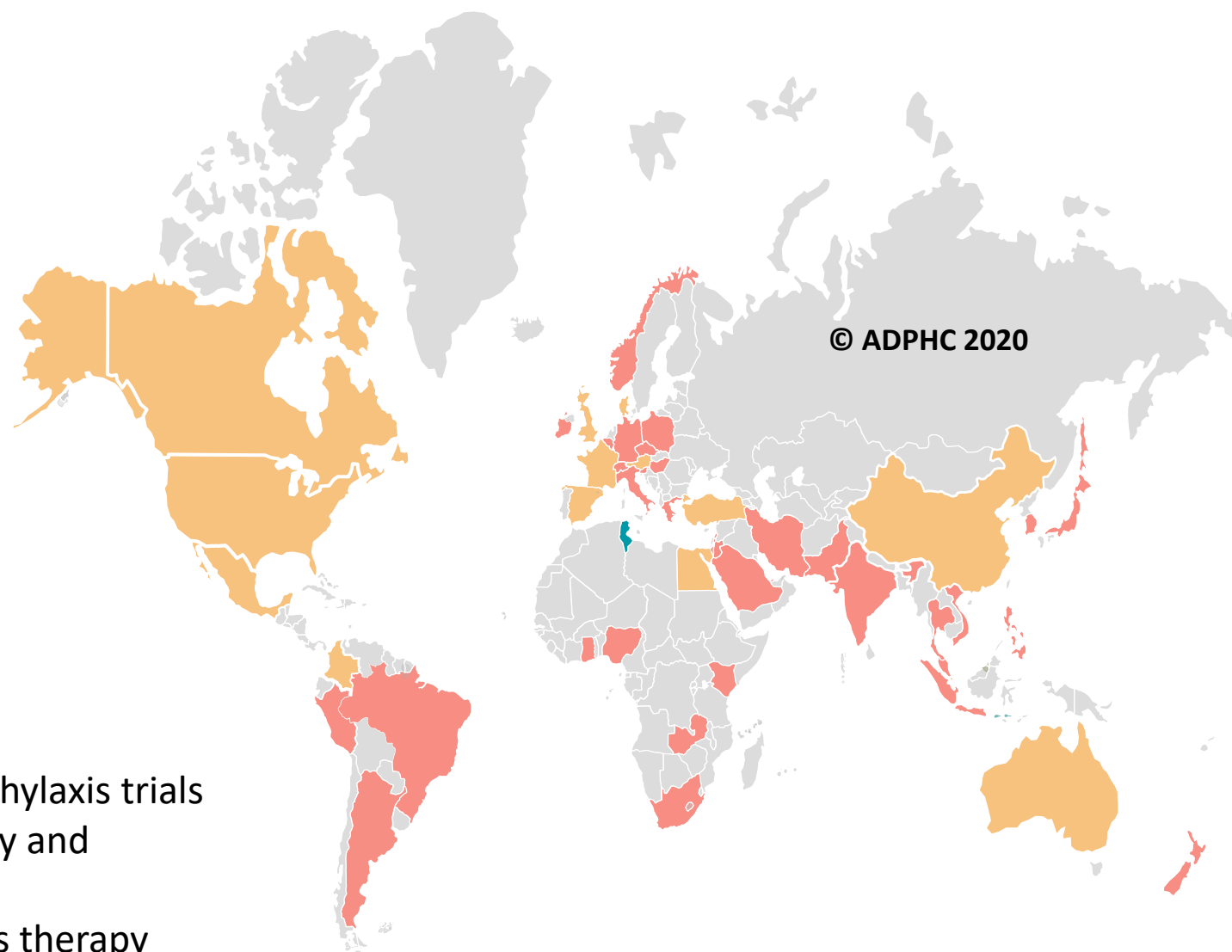
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Clinical trials on chemoprophylaxis

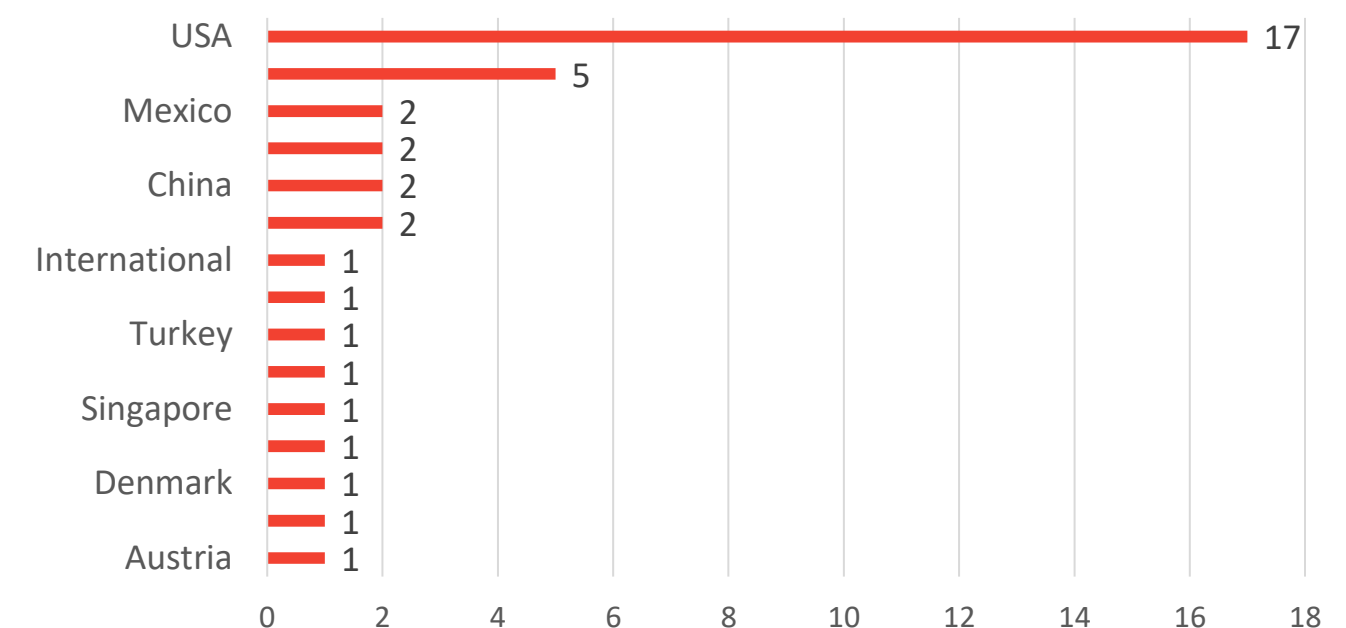
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Clinical trials on Antimalarial drug as therapy

- Covid19 Chemoprophylaxis trials
- Both (trial on therapy and chemoprophylaxis)
- Anti-malarial trials as therapy



Chemoprophylaxis Clinical Trials on COVID19*



***CHLOROQUINE AND HYDROXYCHLORQUINE** are the top candidates for Covid19 chemoprophylaxis.
OTHER CANDIDATES are; BCG vaccine, LPN/TNV combined with anti-malaria, vitamin C , Zinc and others.

Publications

Here we highlight most studies that address the efficacy of anti-malarial drugs for treatment of Covid19

Publication 4: Negative results (March 2020)

Chen Jun, et al in China: a randomised controlled trial in 30 patients (1:1) on HCQ . Results: **no** difference in length of stay , viral clearance , time to clinical improvement in 7 days (cases were moderate to severe)

Previously summarized in [ADPHC Sc. Report 3 April 2020](#)

Publication 5: Negative results (22.4.2020)

Magagnoli, Joseph, et al, in USA, Retrospective analysis of 368 hospitalized pts in veterans hospital treated with HCQ (n=97); treated with HCQ and AZ (n=113); or not treated with HCQ (n=158). results: HCQ with/out AZT did not improve mortality or reduce the need for mechanical ventilation in hospitalized patient.

Previously summarized in [ADPHC Sc. Report 27 April 2020](#)

Publication 6 : Negative (14.4.2020)

Wei Tang, et all. open label randomized controlled trial- of 150 patients (1:1) treated with HCQ with SOC and SOC alone. Results showed no different in viral clearance in 28 days and no difference in clinical improvement of treatment arm. (cases were mild to moderate)

Previously summarized in [ADPHC Sc. Report 23 April 2020](#)

This work is done in collaboration with the UAE University Research office

Public Health Response



Article 2 : COVID-19: BEYOND TOMORROW Choices for the “New Normal”

Published: May 4, 2020 in the JAMA

Summary:

- This paper reported that at this early stage, it is more honest to frame the new, post–COVID-19 normal not as predictions, but as a series of choices. Specifically, the pandemic nominates at least 6 properties of care for durable change: tempo, standards, working conditions, proximity, preparedness, and equity.
- **Tempo (Speed of learning)** A concept in health services research is that proven, favorable innovations take average 17 years to reach scale. However, this is not related to this pandemic. Biomedical companies, start-up entrepreneurs, and universities are on a fast track toward new diagnostics, antivirals, and vaccines.
- **The Value of Standards,** Physicians may be less tolerant of unwarranted variation in health care practices. The atypicality of the COVID-19 clinical territory leaves experts looking for instruction from trusted sources. Physicians want guidelines on how to deal with ethical dilemmas they may experience when resources reach their limits.
- **Protecting the Workforce,** COVID-19 placed health care workers at very high risk. Attention to health care worker safety has deteriorated at far too low a level of priority for decades. Millions of workers encounter personal risks that they would not experience if protective equipment had been arranged in advance.
- **Virtual care,** COVID-19 has disclosed many clinical visits as unnecessary and unwise. There was slow progress toward regularizing virtual care and self care at home. Virtual care would release face to face time in clinical practice to be used for the patients who truly benefit from it.
- **Preparedness for Threats,** Foundations of preparedness (public health system) have never been put in the first place. Previous reports have tried to call attention to the lack of preparedness; however, the response was minimum. The COVID-19 toll may be the largest paid for this failure.
- **Inequity,** It is not a surprise about unequal toll of COVID-19 on the poor, underrepresented minorities, marginalized, incarcerated, and indigenous peoples. Anyone who studies the toll of vast inequality could have predicted the disproportionate deaths with absolute certainty long before they occurred.