

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
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Scientific Research Monitoring on COVID-19

20 March 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:** a Trial showed that the drug lopinavir–ritonavir was not associated with a difference from standard care .
- **Public health response:** article discuss the challenges in Spanish Health care system in COIVD19 outbreak.
- **Public health response:** Article discuss the needed action from countries to respond to COVID19.

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.

Listed articles may represent information that has been previously shared in the report and/or may target specific technical audience.

Others

[Platelet-to-lymphocyte ratio is associated with prognosis in patients with Corona Virus Disease-19](#)

[A guideline for homology modeling of the proteins from newly discovered betacoronavirus, 2019 novel coronavirus \(2019-nCoV\)](#)

[Diagnostic Utility of Clinical Laboratory Data Determinations for Patients with the Severe COVID-19](#)

[Under the epidemic situation of COVID-19, should special attention to pregnant women be given?](#)

[Anal swab findings in an infant with COVID-19](#)

[Successful recovery of COVID-19 pneumonia in a renal transplant recipient with long-term immunosuppression](#)

[The spread of the COVID-19 coronavirus](#)

[Is novel coronavirus disease \(COVID-19\) transmitted through conjunctiva?](#)



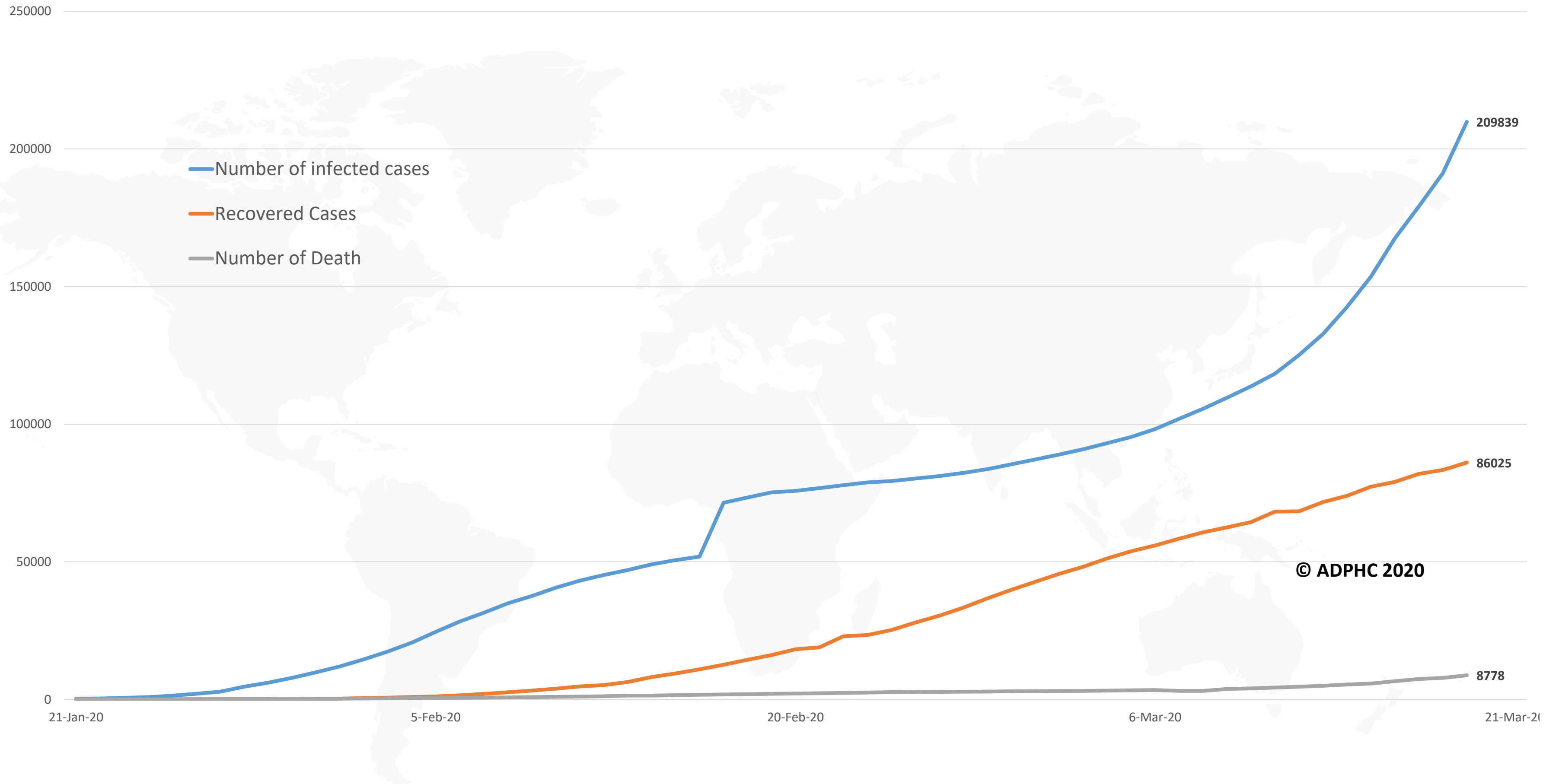
19th March 2020

- Seven new countries/territories/areas (African Region [3], Eastern Mediterranean Region [1], European Region [1], and Region of the Americas [2]) have reported cases of COVID-19.
- The number of confirmed cases worldwide has exceeded 200 000. It took over three months to reach the first 100 00 confirmed cases, and only 12 days to reach the next 100 000.
- A new protocol to investigate the extent of COVID-19 infection in the population, as determined by positive antibody tests in the general population has been developed. The protocol is titled the Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection.

Epidemiology



Figure 1: Total number of infected, recovered, and death cases (January 21st to March 19th, 2020)



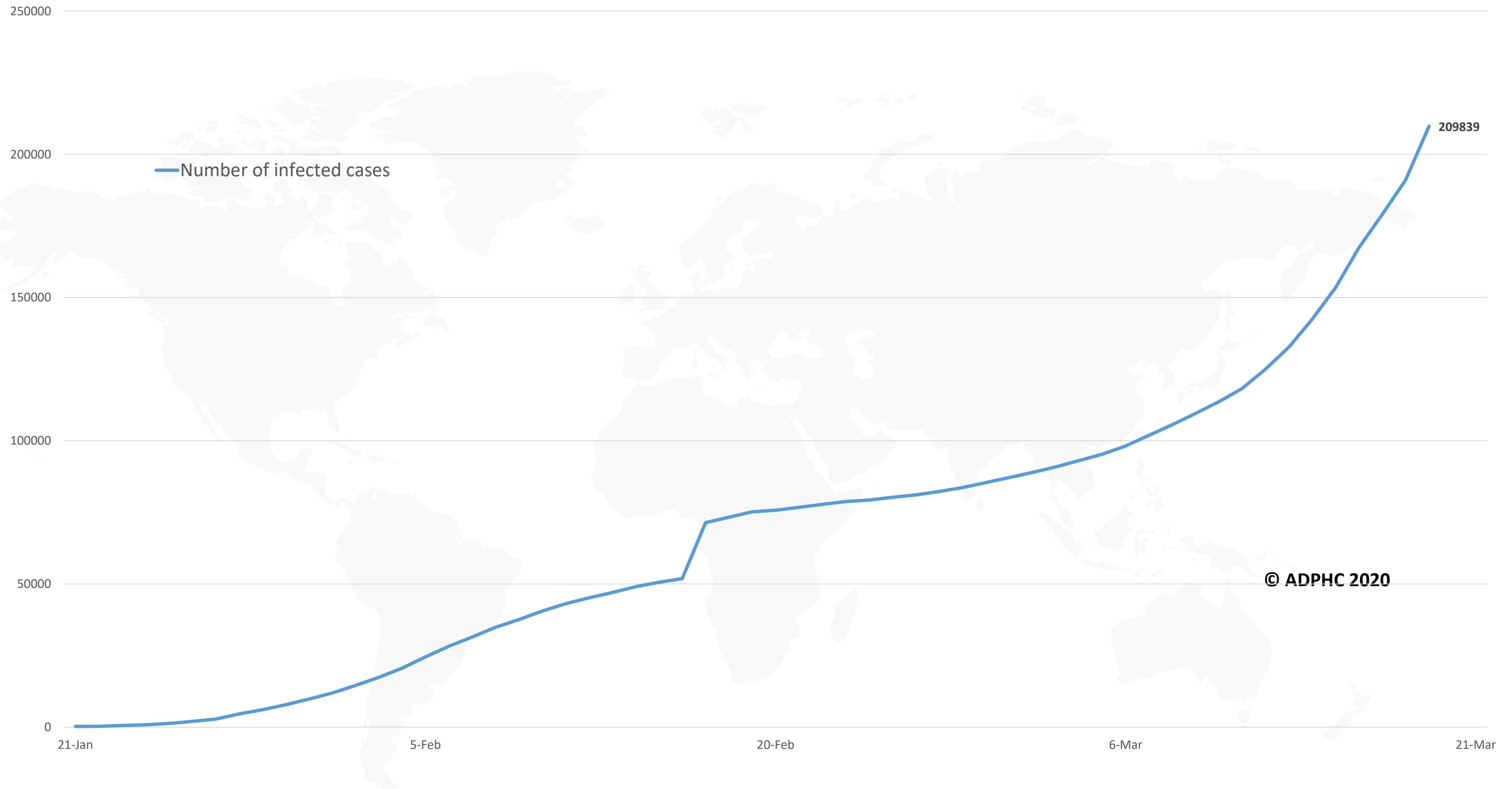
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 2: Number of infected COVID-19 cases worldwide (January 21 to March 19, 2020).



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 3: Daily new infected COVID-19 cases worldwide (January 21 to March 19, 2020).

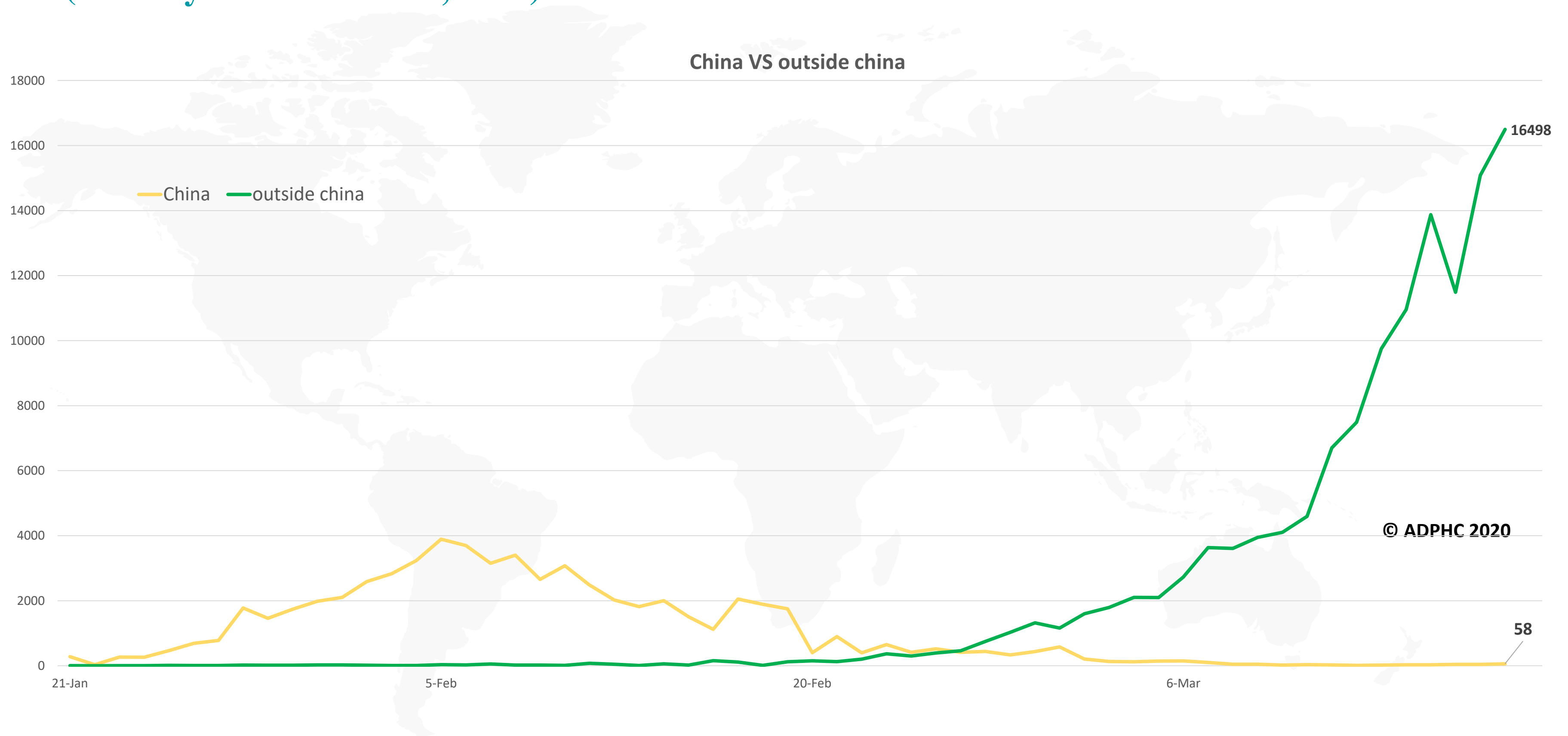


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 4: Daily new infected COVID-19 cases reported by China and the rest of the world (January 21 to March 19, 2020).



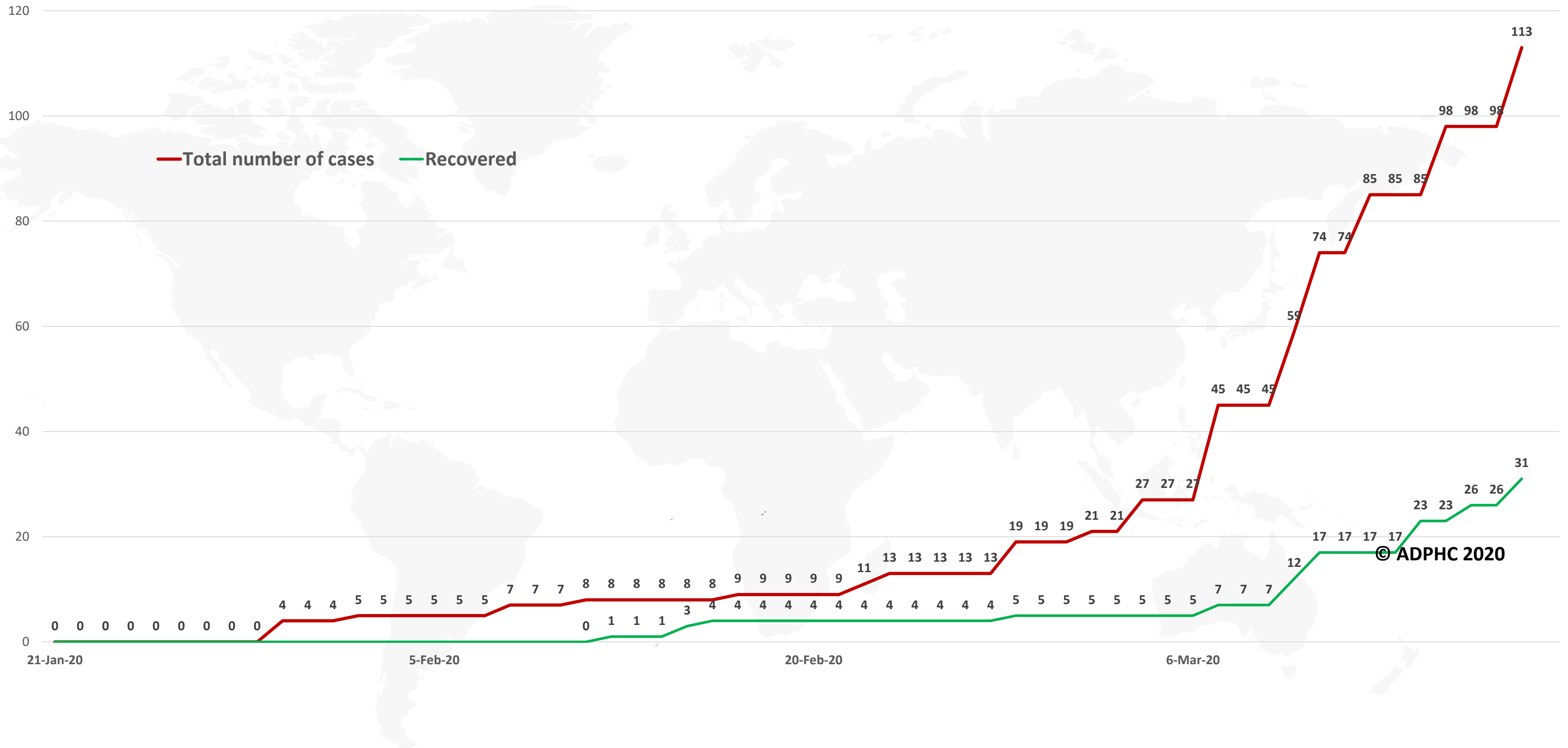
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Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 5: Total number of COVID-19 infected and recovered cases in UAE over time



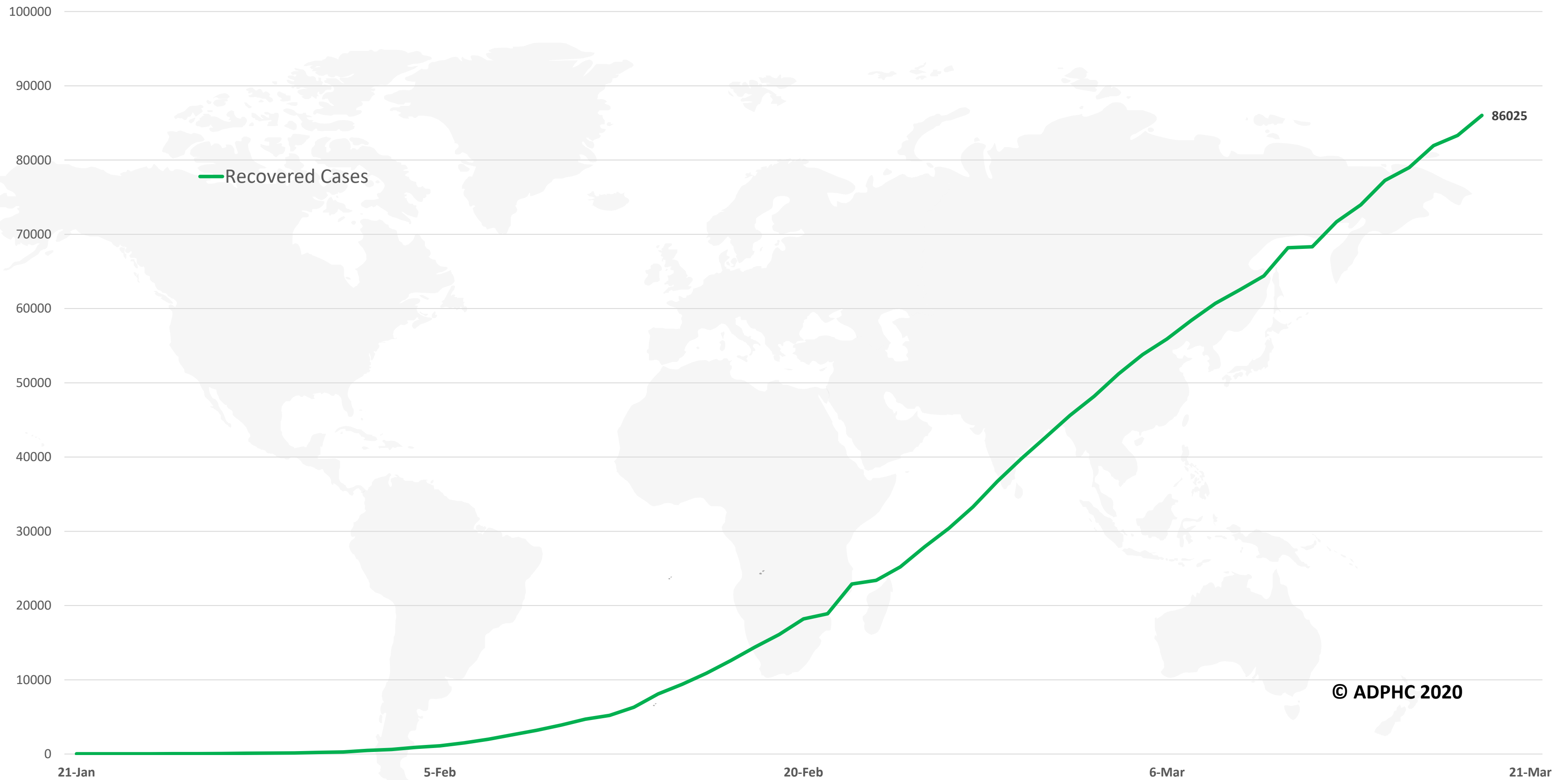
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 6: Number of recovered COVID-19 cases worldwide (January 21 to March 19, 2020).

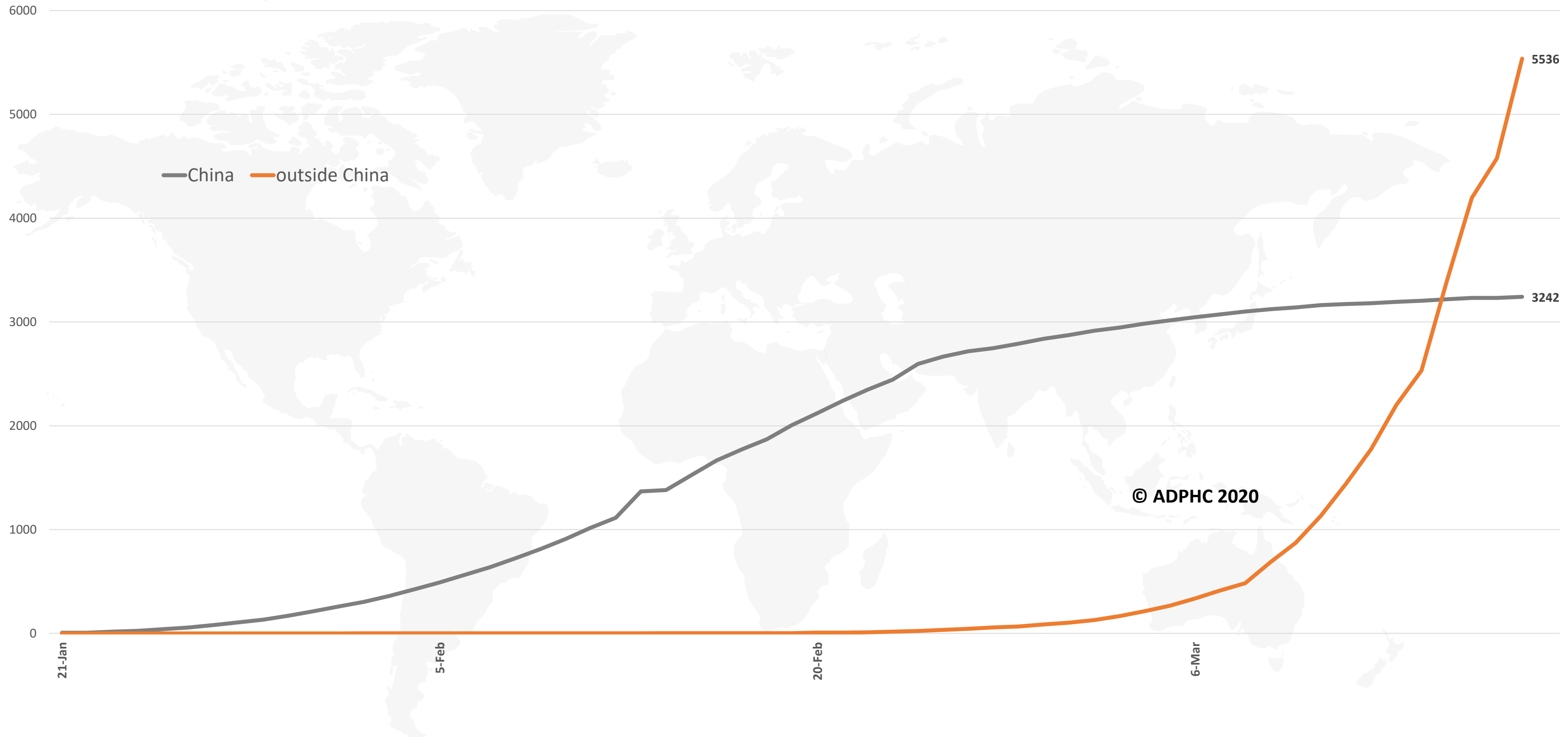


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [John Hopkins University](#)



Figure 7: Daily number of death due to COVID-19 reported by China and the rest of the world (January 21 to March 19, 2020).

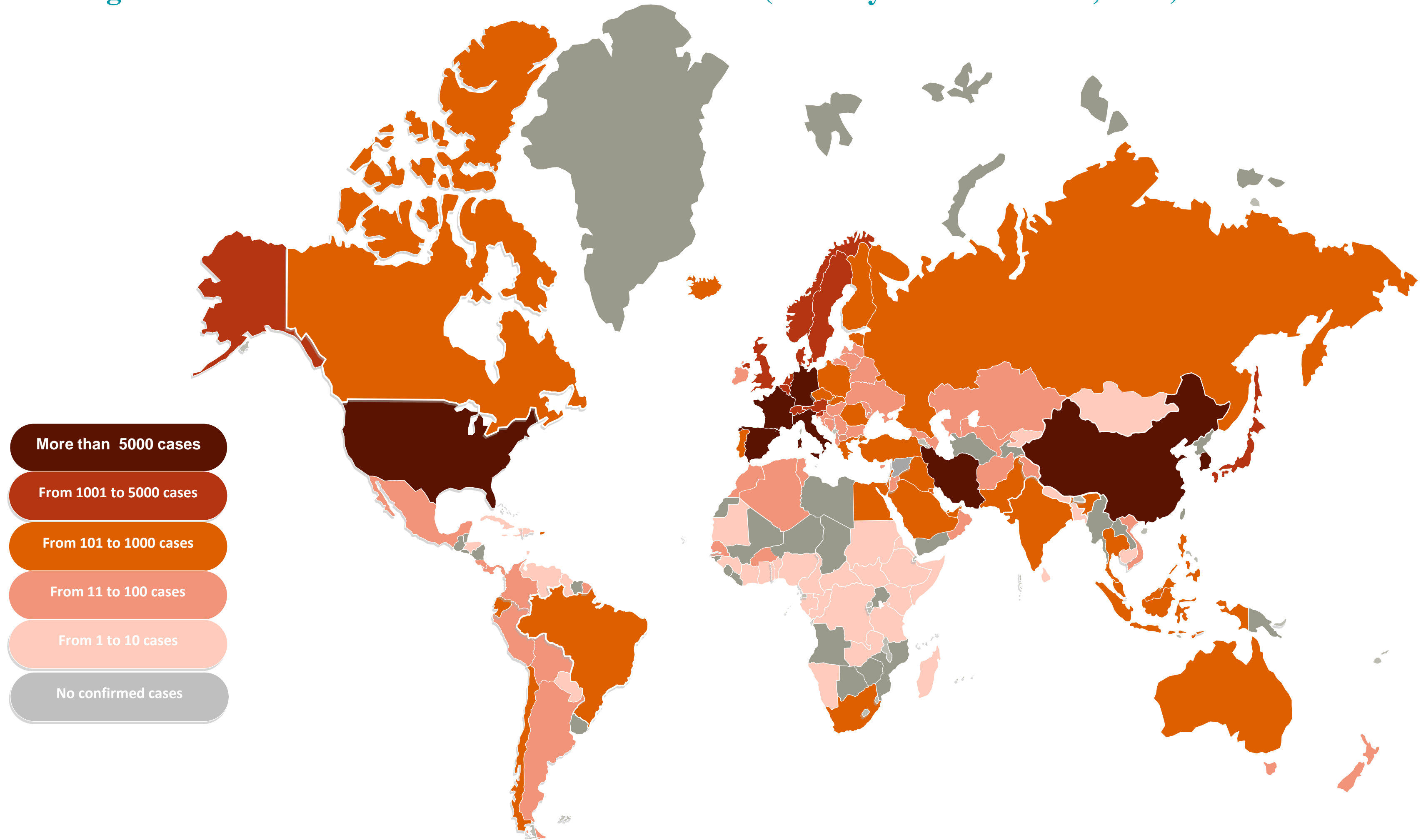


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 8A: Global distribution of COVID-19 cases (January 21 to March 19, 2020).



Map chart published by Abu Dhabi Public Health Center 2020.

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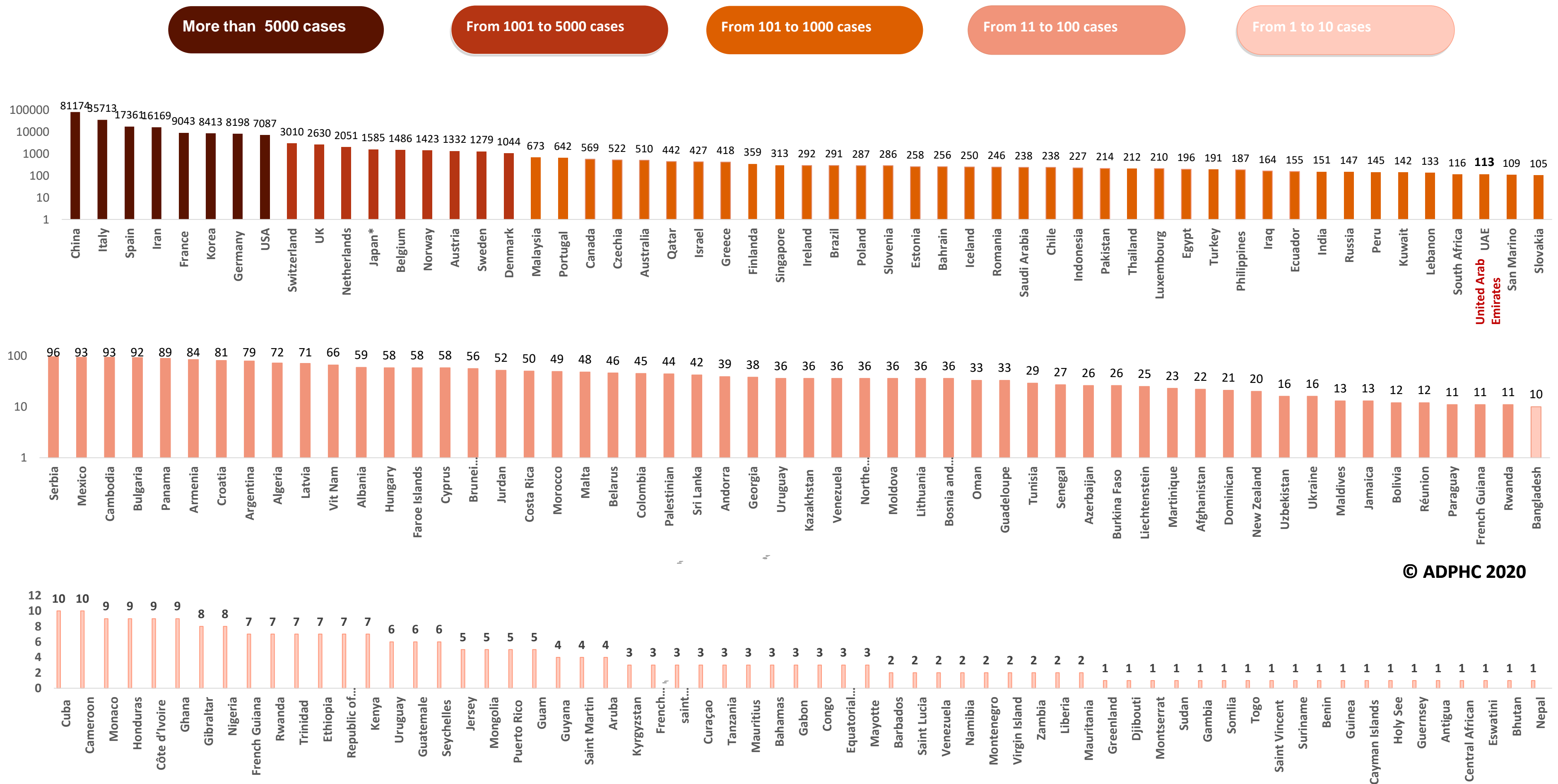
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Epidemiology



Figure 8B: Bar chart illustrate the global distribution of COVID19 cases (January 21st to March 19th, 2020)



Map chart published by Abu Dhabi Public Health Center 2020.

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



Treatment

Article 1: A Trial of Lopinavir–Ritonavir in Adults

Hospitalized with Severe COVID-19

Published: 18 March 2020

Link: [Click Here](#)

Summary:

A total of 199 patients with laboratory-confirmed SARS-CoV-2 infection underwent randomization; 99 were assigned to the lopinavir–ritonavir group, and 100 to the standard-care group

Finding:

Treatment with lopinavir–ritonavir was not associated with a difference from standard care in the time to clinical improvement

In hospitalized adult patients with severe COVID-19, no benefit was observed with lopinavir–ritonavir treatment beyond standard care.

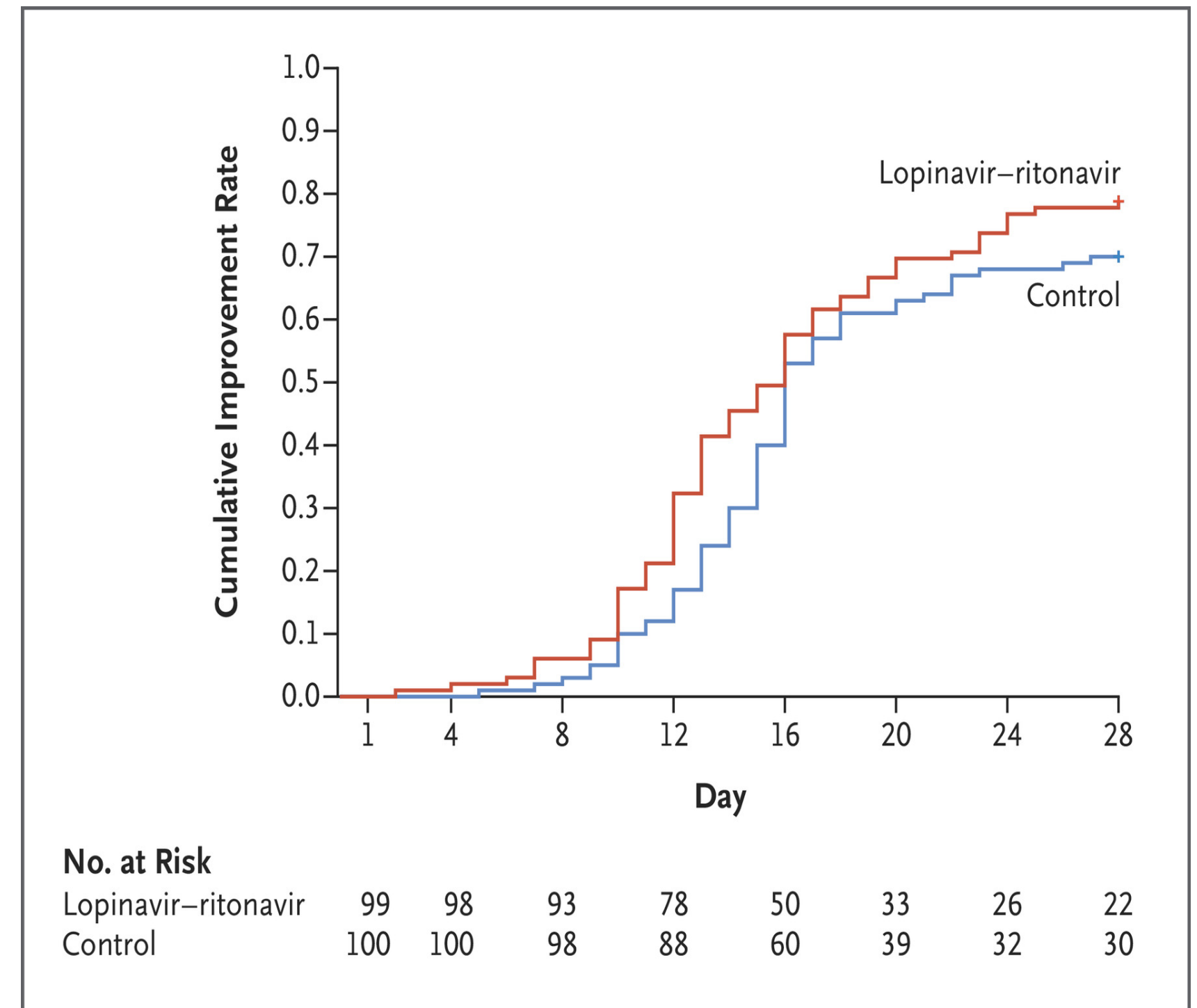


Figure: Improvement rate between lopinavir-ritonavir and control over 28 days.

Note that *ritonavir/lopinavir and remdesivir were previously mentioned as a priority therapeutic agent for COVID19 in WHO 1st of March situational report* .



Public health response

Article 2: The resilience of the Spanish health system against the COVID-19 pandemic

Published: 18 March 2020

Link: [Click Here](#)

Summary:

The article discuss how much the crisis of COVID19 have pressured the building blocks of the Spanish health care system:

1-Governance: coordination using their national emergency center did not ensure that this is done as it is expected. Each region have developed their own banning and restriction measures and in different timings.

2- Financing: Spain had allocated €2800 million to all regions for health services and created a new fund with €1000 million for priority health interventions. However, these amounts need to be seen against the background of almost a decade of austerity from which the health system has yet to recover.

3-Service delivery: Clinical protocols have been published ; Daily update has been delivered . Facilities lacking intensive care capacity and ventilators. Cancellation of non-emergency surgery have been done. COVID-19 telephone help lines have long delays or have simply collapsed in some regions.

4-Medicines and equipment: So far, no serious shortages. Concerns only on mask supply. **The government has centralized purchasing and introduced price controls on medicines.**

5- Health workers:

- They are stretched and exhausted.
- There was a Need to recruit retired health care professionals.
- Government Released a decree that permits hiring graduates without specialization, final year medical and nursing students, and extending contracts of medical residents.
- Shortage of health care workers exacerbated by the quarantining of a growing number of health workers exposed to patients who are infected.



Article 3: Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries

Published: 18 March 2020

Link: [Click Here](#)

Summary: This paper analyzed State Party Annual Reporting (SPAR) submissions of 182 countries to review health security capacities in light of the COVID-19 outbreak and identified opportunities for further strengthening of International Health Regulations (IHR) implementation.

Panel 2: Criteria and definitions for levels in this study

Level 1: ≤20%

Very little functional capacity is in place to prevent and control the risk or event.

Level 2: ≤40%

Little functional capacity available on an ad-hoc basis with the support of external resources.

Level 3: ≤60%

The country is functionally capable at the national level; however, effectiveness is low at the subnational levels.

Level 4: ≤80%

The country is functionally capable of dealing with various events at the national and subnational levels.

Level 5: >80%

The country's functional capacity is well advanced and sustainable at all levels of health systems.

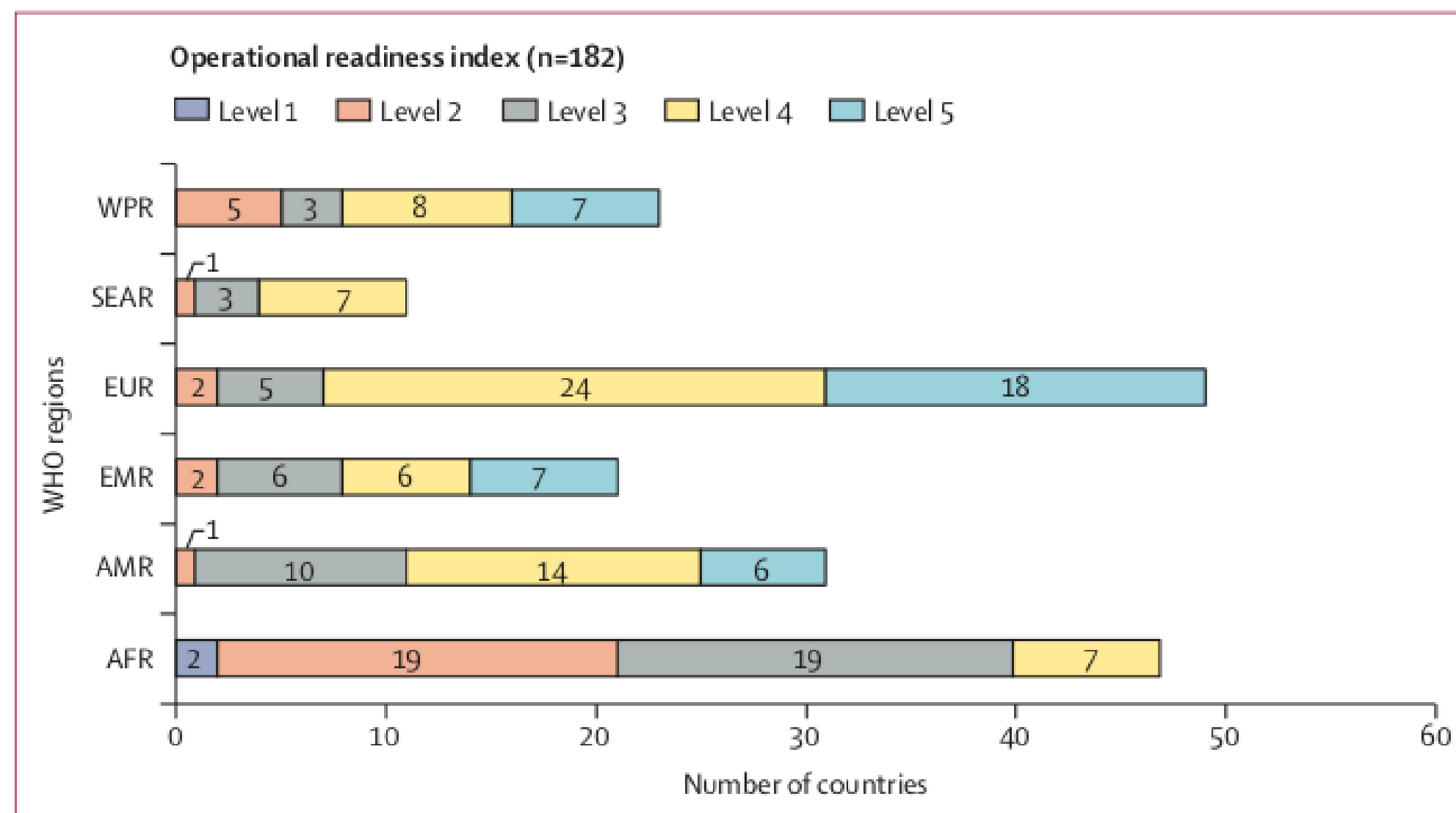


Figure 2: Operational readiness index by WHO regions

Level 1 represents the lowest capacity and level 5 the highest. WPR=Western Pacific region. SEAR=South-East Asia region. EUR=European region. EMR=Eastern Mediterranean region. AMR=Region of the Americas. AFR=African region.



Public health response

Article 4: The global community needs to swiftly ramp up the response to contain COVID-19

Published: 18 March 2020

Link: [Click Here](#)

Summary: This paper explained a differentiated risk-based containment strategy based on the different stages of the outbreak

Stage of the outbreak	Containment strategy
❖ Countries with no or few identified cases and only limited local transmission	<ul style="list-style-type: none"> • Aggressive case detection by testing for COVID-19 in all atypical pneumonias and all cases of acute respiratory infection. • A wide net should be cast on contact tracing with legally enforced implementation.
❖ Countries with widespread community transmission	<ul style="list-style-type: none"> • Mobility restrictions, limited social interaction, and cancelled gatherings.
❖ Vulnerable countries	<ul style="list-style-type: none"> • Need extraordinarily intensified support from other countries. • WHO freely provides online training courses, downloadable standardized case report forms, guidance on clinical management and infection control, and protection of health-care workers.
❖ In general, all countries -	<ul style="list-style-type: none"> • Immediately activate the highest level of National Response Management protocols - <ul style="list-style-type: none"> ➤ Fully engaging the general population on the seriousness of, and their responsibilities. ➤ Policy makers need to ensure that trained epidemiology teams are in place, along with quarantine facilities, revised hospital workflows, and laboratory processes. ➤ Surveillance needs to be expanded to test all patients with atypical pneumonias for COVID-19. ➤ COVID-19 testing needs to be added to existing surveillance systems for influenza like illness and severe acute respiratory infections.