

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Scientific Research Monitoring on COVID-19

08 March 2020

SUMMARY ABOUT COVID19 (1/2)



1. 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.
2. New designation for the disease and the virus: **COVID-19** and **SARS-COV2** .
3. Transmission from human to human has been confirmed. Incubation period ranges from 3–7 days and can reach up to 14 days. Transmission during the incubation period is not yet confirmed (further studies are required).
4. Suggested human-to-human transmission occurs through droplets, contact and fomites, similar to Severe Acute Respiratory Syndrome (SARS).
5. Efforts currently in developing therapies for this virus focus on previously known medications and vaccination for MERS-CoV and SARS-CoV.
6. Most studies mention multiple antiviral medications are involved but treatment outcomes are yet to be published. One study in the US reported recovery after 1 day of treatment with Remdesivir.
Trial on animals have shown multiple drug candidates to be effective. Trials in humans are ongoing.



SUMMARY ABOUT COVID19 (2/2)

7. WHO forum held 11-12 Feb 2020 to mobilize research on COVID19 vaccinations and therapies.
8. WHO issued a response budget for three month starting from February 2020.
9. Human coronavirus remains on inanimate surfaces such as metal or glass for up to 9 days, but can be efficiently inactivated by disinfection, suggesting that effects on SARS-CoV2 could be similar.
10. 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.
11. Isolation is the best measure to control transmission. The epidemic is expected to peak in early March 2020.
12. Transmission of SARS occurs most often when a patient develops severe symptoms, which make it easier to contain an outbreak. But with COVID-19/ SARS-CoV2, a patient can present with mild symptoms and still have the potential to spread the disease.



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 section:** Antihypertensive medication as a tentative treatment for COVID19.
- **Clinical feature and transmission:** cases of positive PCR after two negative PCR. The study suggest to take home quarantine for 14days after discharge and to take swab from different location to confirm results.
- **Treatment :** Managing neonates with respiratory failure due to SARS-CoV-2

*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

- . Identification of COVID-19 Can be Quicker through Artificial Intelligence framework using a Mobile Phone-Based Survey in the Populations when Cities/Towns Are Under Quarantine. [Link](#)
- Are high-performing health systems resilient against the COVID-19 epidemic? [Link](#)
- Clinical and CT Imaging Features of the COVID-19 Pneumonia: Focus on Pregnant Women and Children. [Link](#)
- First cases of coronavirus disease 2019 (COVID-19) in France: surveillance, investigations and control measures, January 2020 . [Link](#)

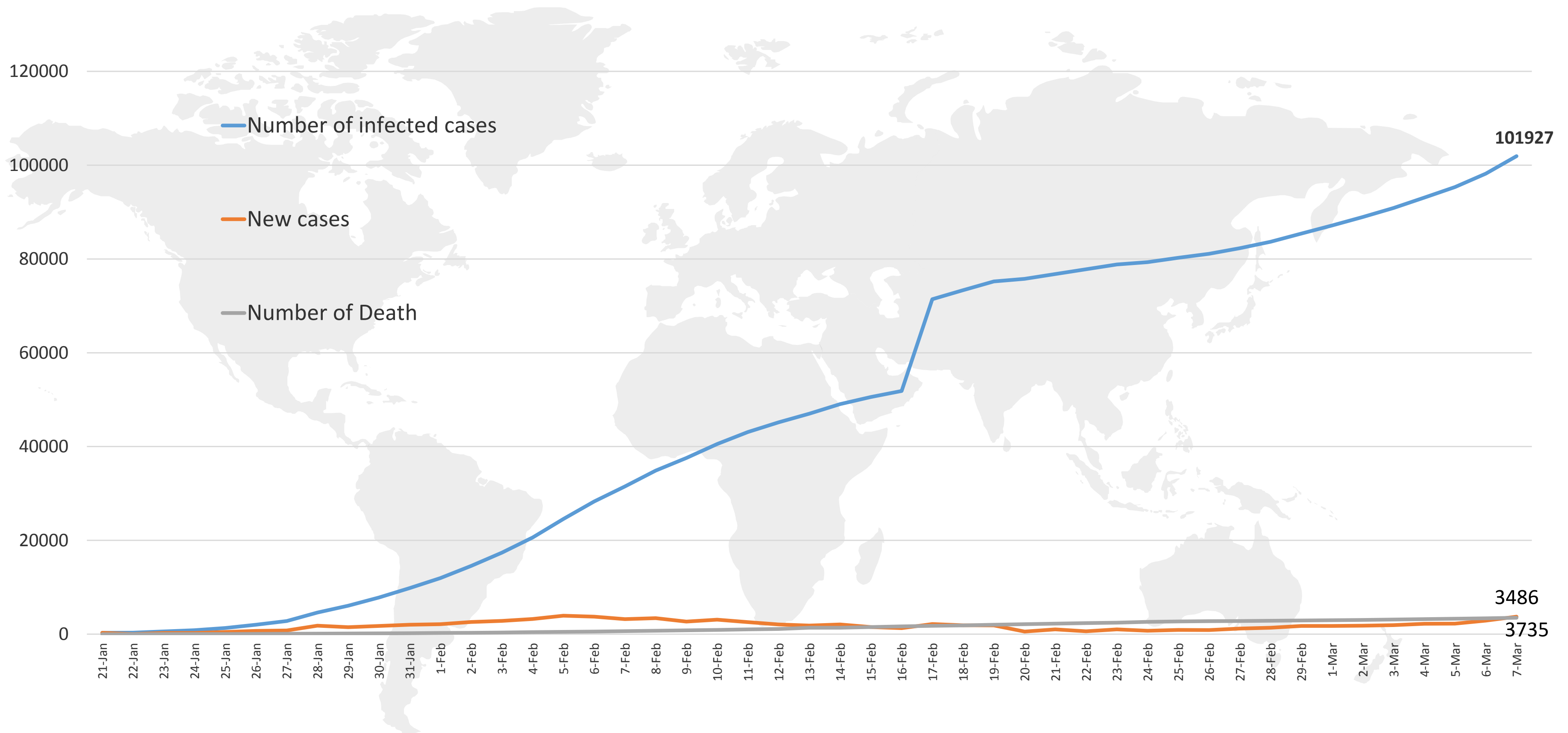


7th March 2020

- 5 new countries/territories/areas (Colombia, Holy See, Peru, Serbia, and Togo) have reported cases of COVID-19 in the past 24 hours.
- The global number of reported cases of COVID-19 has surpassed 100,000.



Figure 1: Total number of infected, new, and death cases (January 21st to March 7th, 2020)

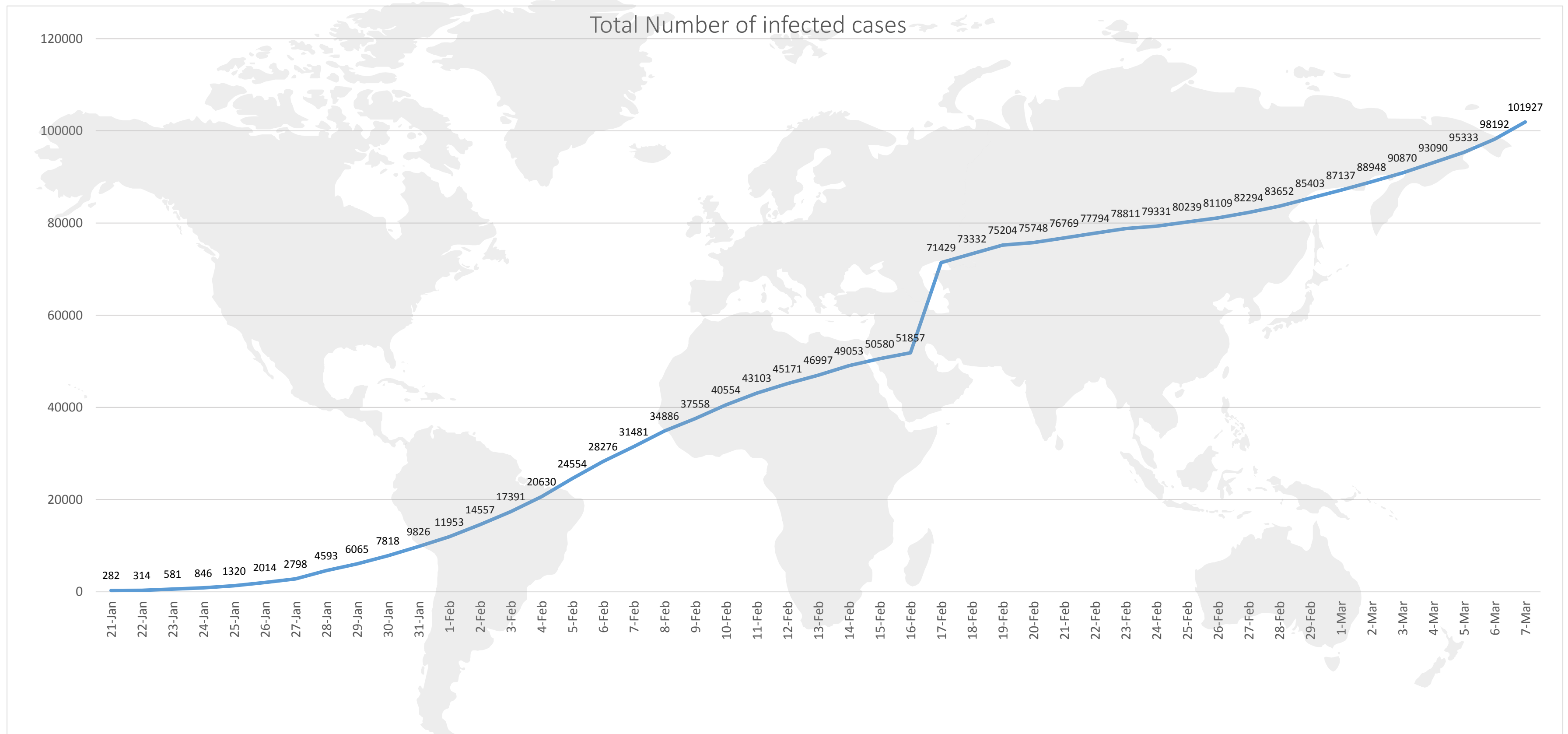


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Number of infected cases (January 21st to March 7th, 2020)

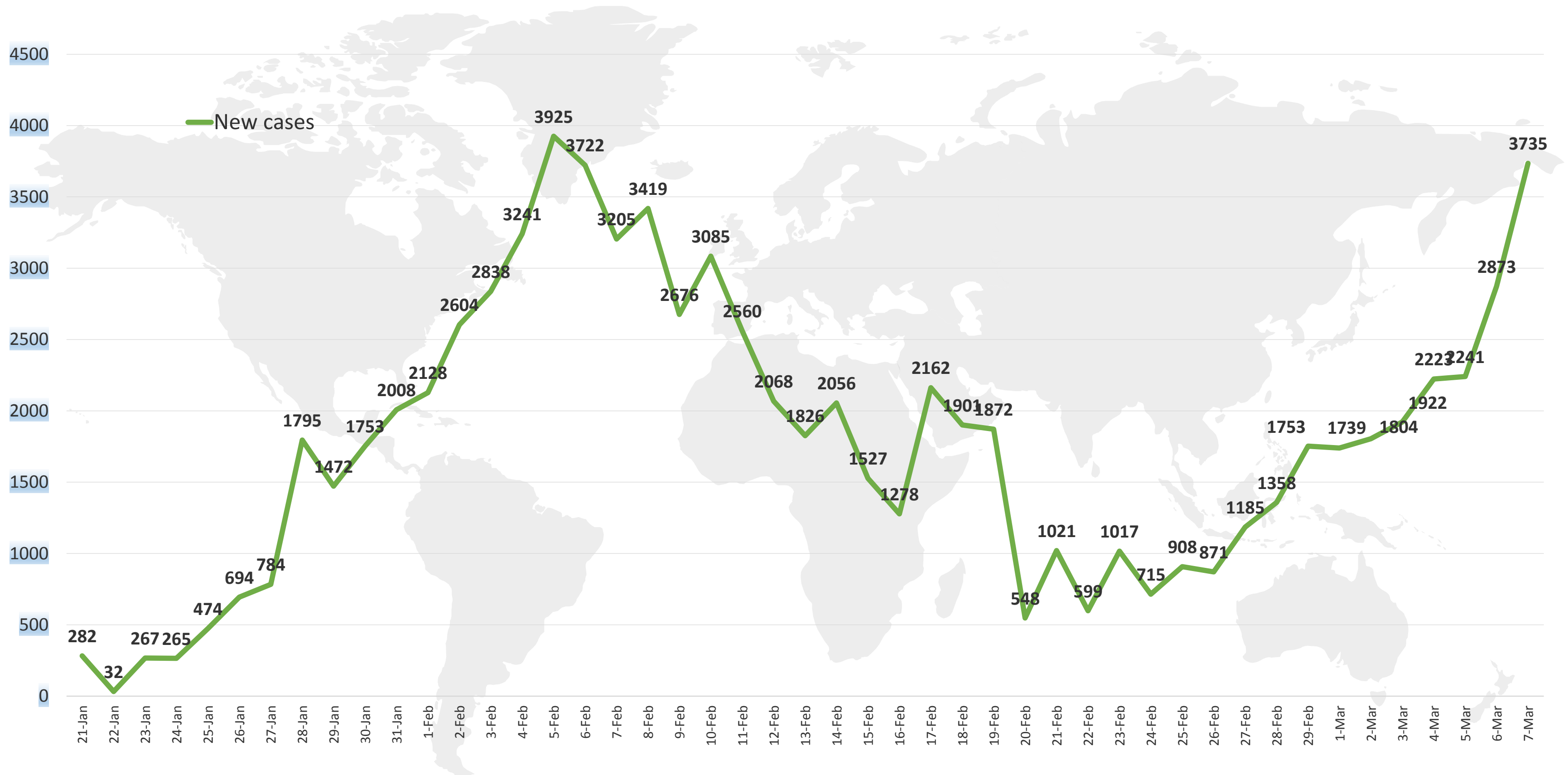


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 3: Number of new cases (January 21st to March 7th, 2020)

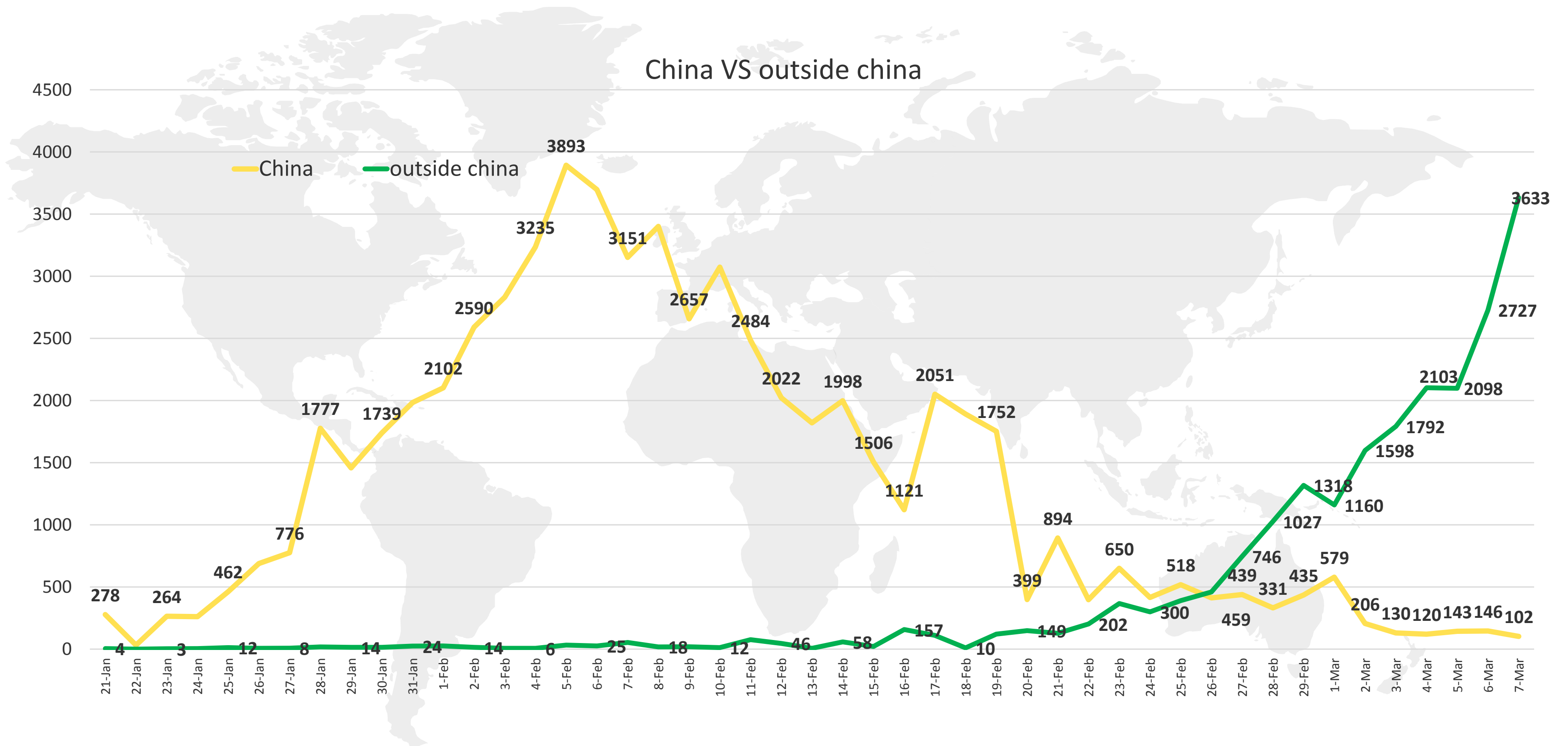


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 4: Number of new cases in China versus outside China (January 21st to March 7th, 2020)

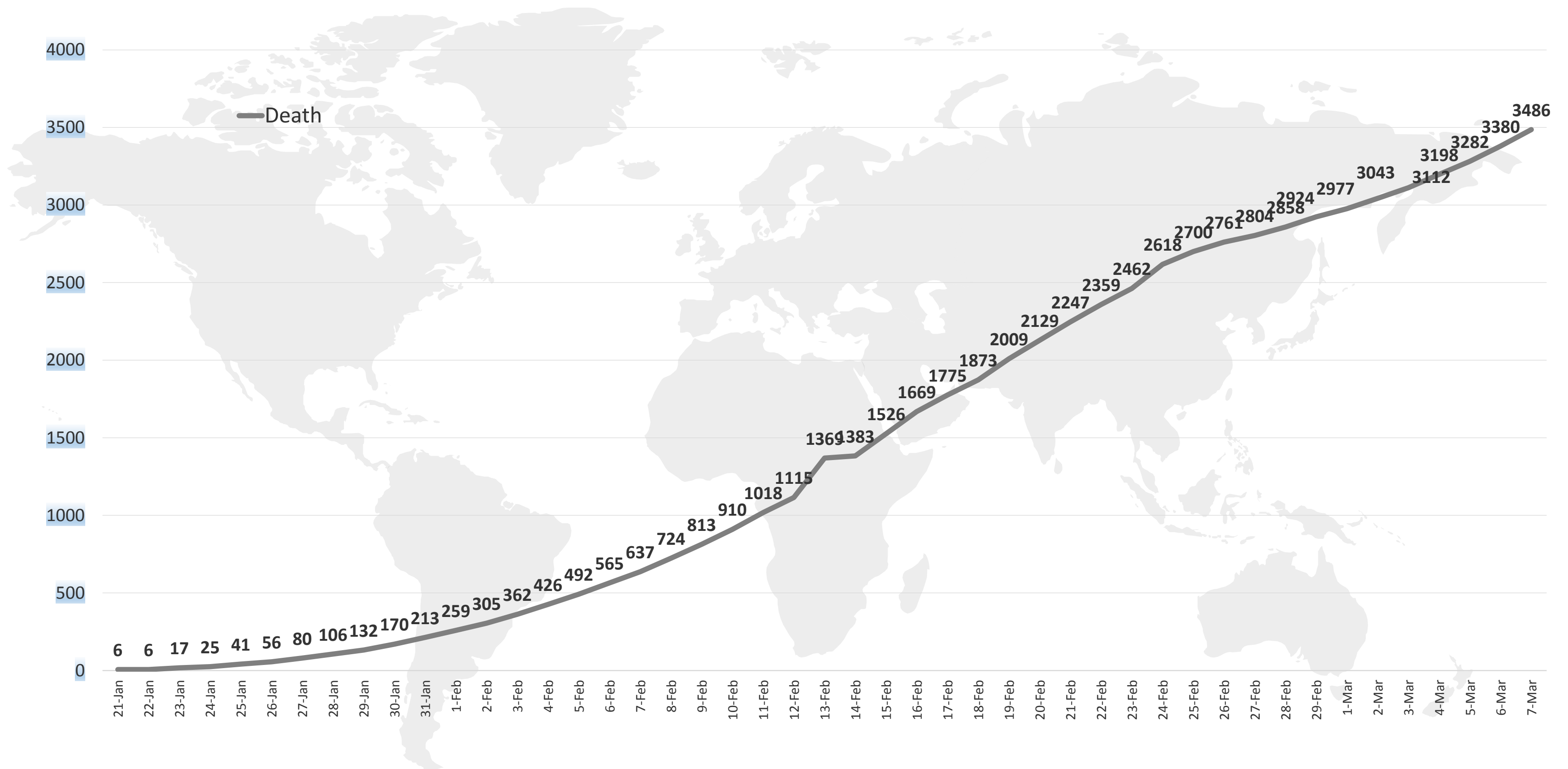


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 5: Number of total deaths (January 21st to March 7th, 2020)



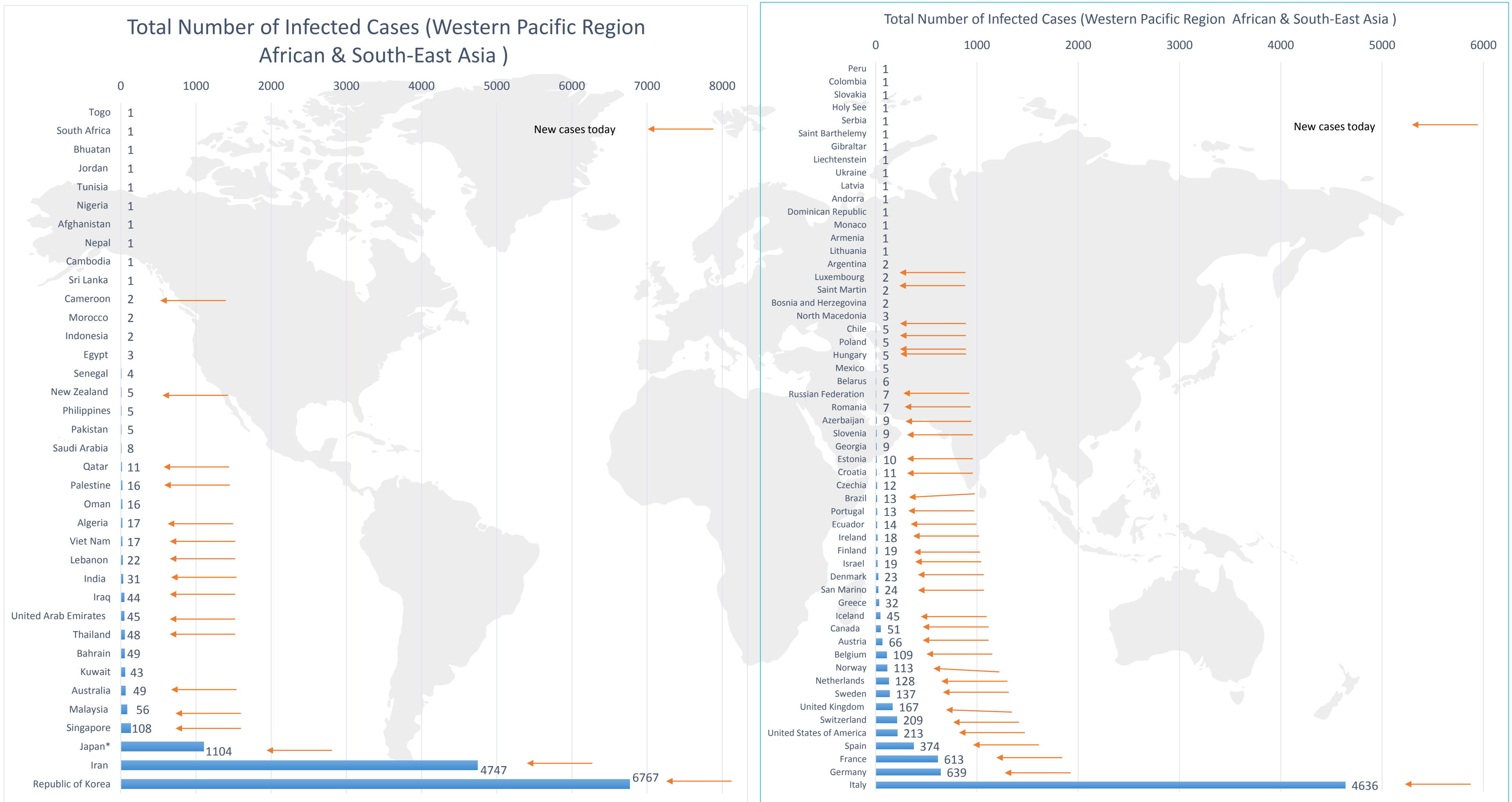
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 6: Total number of cases outside China per country (January 21st to March 7th, 2020)



Line graph published by Abu Dhabi Public Health Center 2020.

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

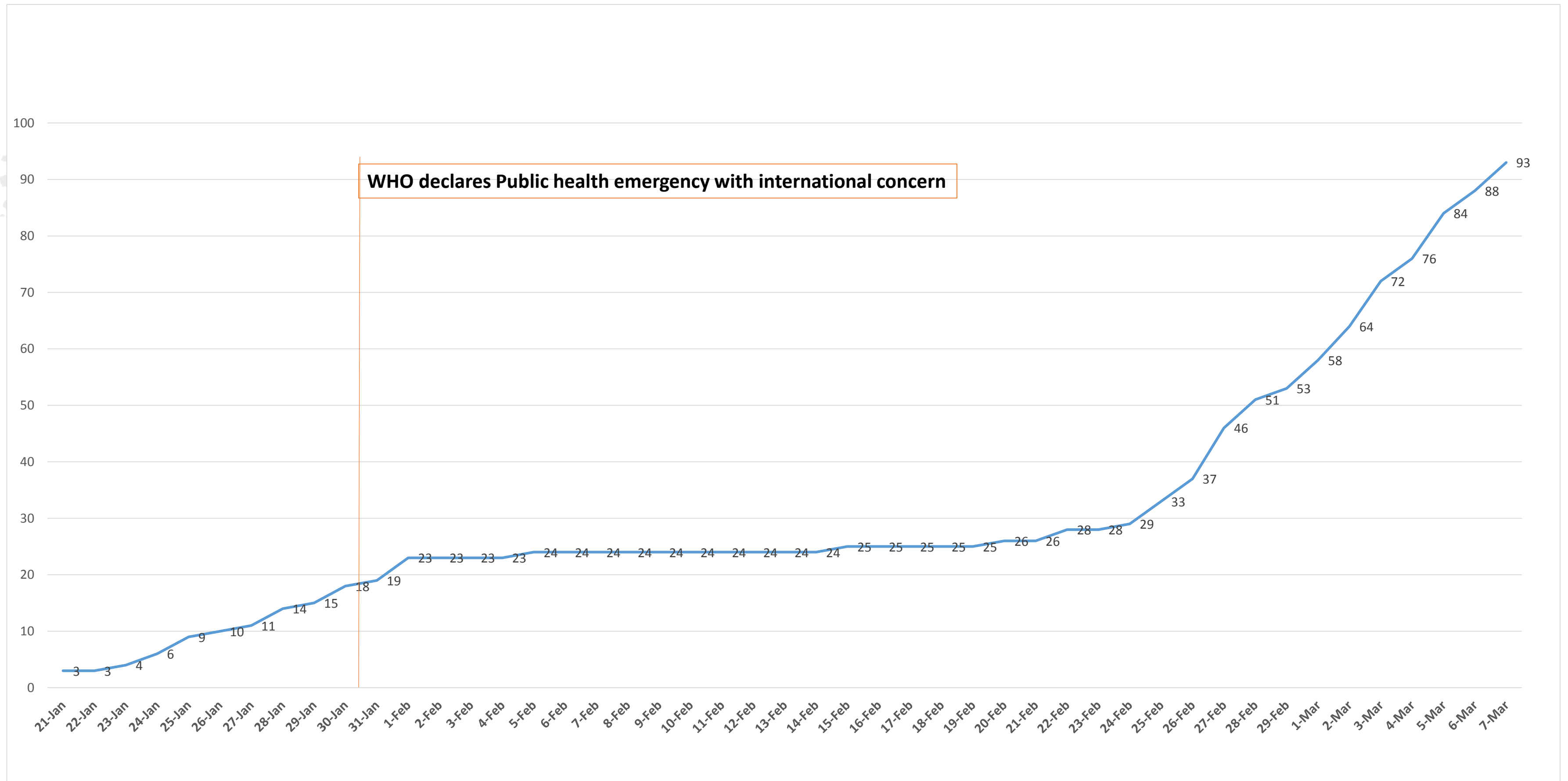
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Figure 7: Total number of countries reporting cases of COVID-19 outside China over time



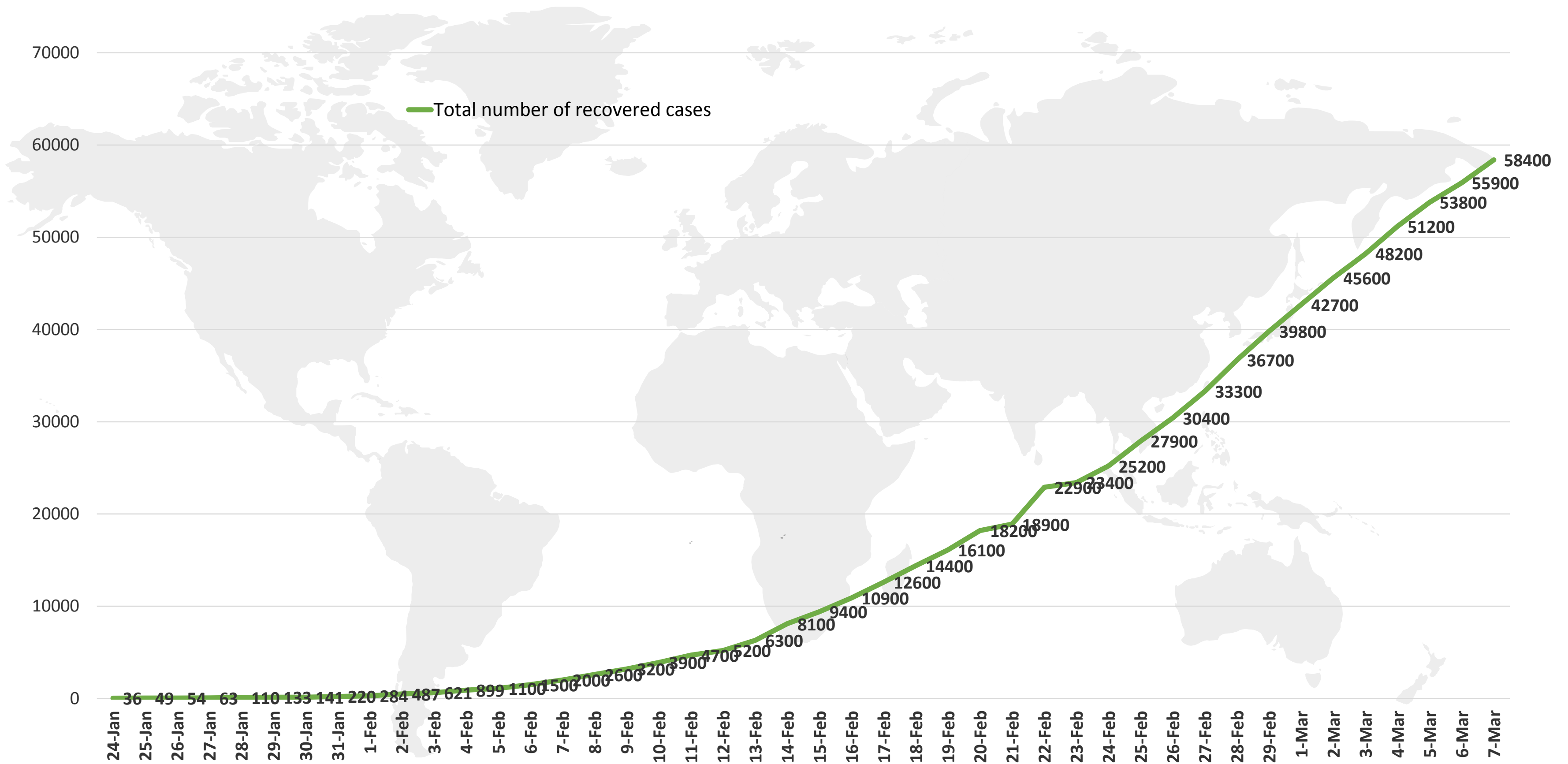
Line graph published by Abu Dhabi Public Health Center 2020.

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

Epidemiology



Figure 8: Total recovered cases of COVID-19. (January 21st to March 7th, 2020)



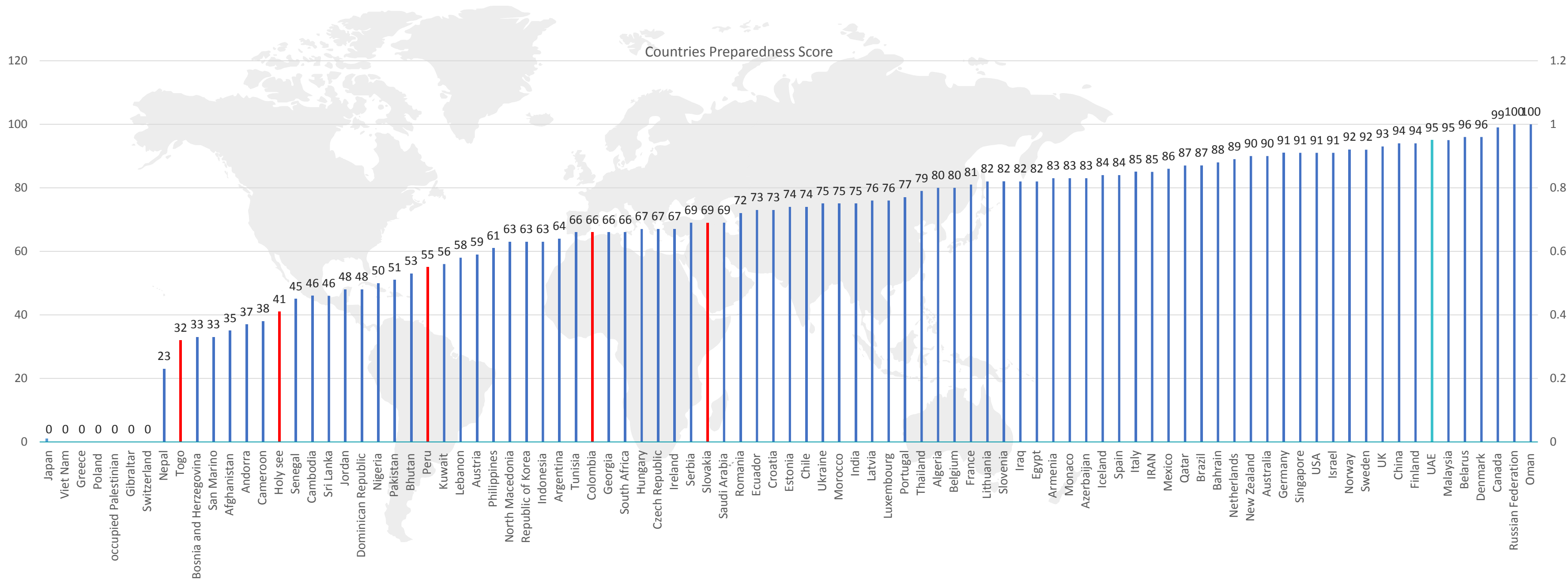
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [John Hopkins University](https://www.jhu.edu/)



Figure 9 : Capacities of countries reporting COVID19 cases

Figure 9A: Countries' preparedness score in responding to Public health risks and acute events. Published in 2018



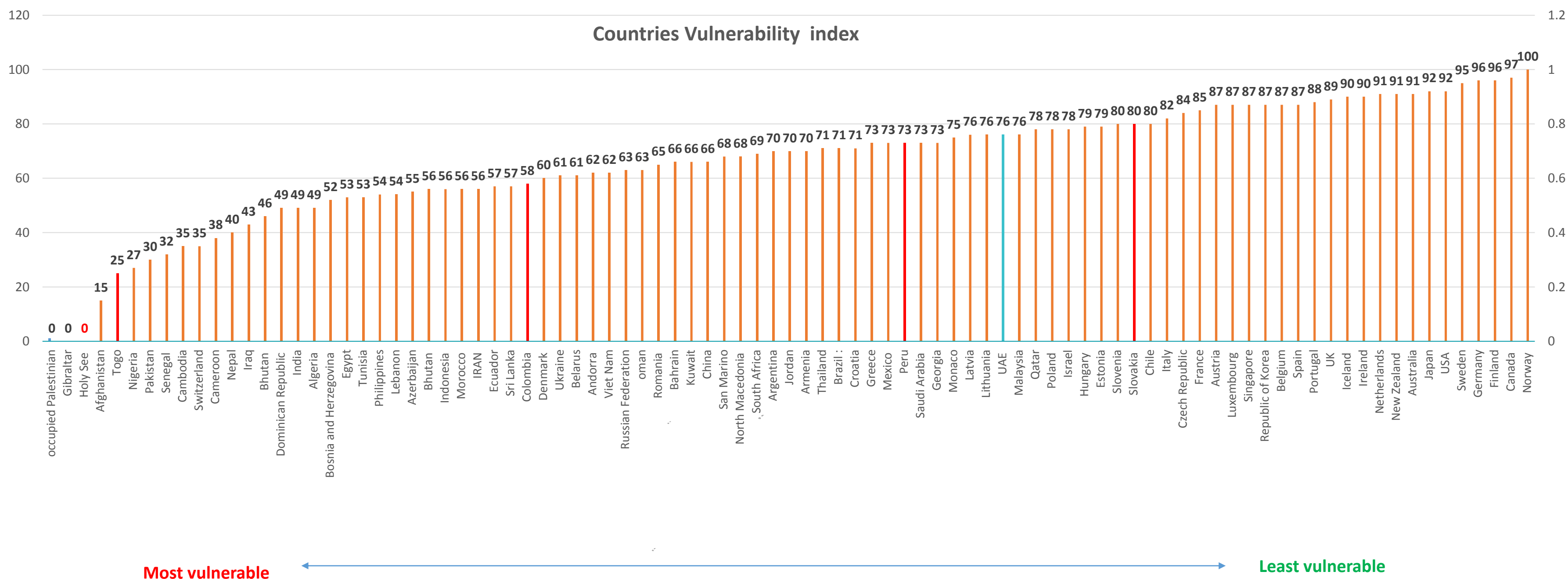
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources : [SPAR score](#), [IDVI score](#)



Figure 10 : Capacities of countries reporting COVID19 cases

Figure 9B: Countries' vulnerability index to spread infectious disease. Published in 2016



Line graph published by Abu Dhabi Public Health Center 2020.

Data resources : [SPAR score](#) , [IDVI score](#)



Clinical feature and transmission

Article : Recurrence of positive SARS-CoV-2 RNA in COVID-19: A case report

Published: 5th March 2020

Summery: a patient develop symptoms in 17 February. She had **positive PCR after two consecutive negative results as in table1**. Patient discharged on 9th Feb and advised to have quarantine for 14 days. Had a f/u on 17 February and PCR was negative.

Author suggestion:

- (1) both **nasopharyngeal** and **oropharyngeal** swabs test of SARS-CoV-2 RNA should be performed to reduce the false negative rate. More tests, more specimens, and more methods could be considered. (e.g IgM)
- (2) Patients in convalescence should also be regularly tested for infectivity assessment. And all the discharged patients should take home quarantine for at least 14

Table 1. The dynamics of oropharyngeal swab test of SARS-CoV-2 RNA

Date	1-24	1-28	1-30	2-2	2-5	2-7	2-17
Day after onset	Day 8	Day 12	Day 14	Day 17	Day 20	Day 22	Day 32
SARS-CoV-2 RNA (copies/mL)	Positive	Negative	Negative	4.56x10 ²	Negative	Negative	Negative
Body temperature	normal	normal	normal	normal	normal	normal	normal

SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2; RNA, ribonucleic acid

Link: [click here](#)



Article : Angiotensin receptor (AT1R) blockers as tentative SARS-CoV-2 therapeutics

Published: 04 March 2020

Summery:

- This is a commentary article that discusses the potential role of one of the medications that are used to treat hypertension (also Diabetes , Chronic kidney disease) in COVID19 therapy .
- These anti-hypertension medication are part of a family called AT1R antagonist (losartan and telmisartan and others) , they act on ACE enzyme which found to play a role in SARS-COV2 pathogenicity.
- The author suggest , in order to see the feasibility of such medications, there is a need to check on the data of those patients with (Hypertension , Diabetes , Chronic kidney disease) who have been infected with COVID19 and then see their outcomes.

Link: [Click Here](#)



Article : Managing neonates with respiratory failure due to SARS-CoV-2

Published: 06 March 2020

Summery:

- **This is a timely reflection This is a timely reflection, given the public health problem represented by this infection and the need to anticipate any critical care issue, irrespective of patients' ages.**
 1. **Tests** should be done for infants from families infected by SARS-CoV-2 or exposed to other infected people, irrespective of their symptoms.
 2. Neonates positive for SARS-CoV-2 must be **isolated and clinically monitored**, but this does not necessarily require NICU admission. It might be done in a single room, without full NICU capabilities, according to local settings.
 3. **Therapeutics** (surfactant, inhaled nitric oxide, various ventilation methods, and extracorporeal life support) should be used on a case-by-case basis. Respiratory support policy should be guided by a physiology-driven approach and follow the best evidence available in paediatric critical care, according to international guidelines.
 4. **Antiviral drugs** suggested to be active against SARS-CoV-2 (ie, remdesivir or lopinavir–ritonavir) can be considered as compassionate treatment, as done in adults, after careful consideration of the risk-benefit ratio and technical issues.
 5. Finally, older children (aged >1 month) are not affected or present with mild symptoms, which could be due to a reduced inflammatory response and a relatively low viral cytotoxicity. Thus, these pathogenetic mechanisms could also apply to neonates and might lead to **consideration of steroid therapy for refractory respiratory failure** upon evaluation of the risk-benefit ratio

Link: [Click Here](#)