



Scientific Research Monitoring on COVID-19

04 March 2020

Reported by: *(Public Health Research Section)*

WHAT WE KNOW SO FAR



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.
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. **Trial on animals have shown multiple drug candidates to be effective. Trials in humans are ongoing.**



WHAT WE KNOW SO FAR

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 sever 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.



WHAT WE KNOW SO FAR:

13. Children have mild symptoms compared with adults. **Further studies of this population is needed.**
14. 80% of infected patients have mild symptoms and 1.2% may present without symptoms.
15. People with mild disease, recovery time is about two weeks, while people with severe or critical disease recover within 3 to 6 weeks.



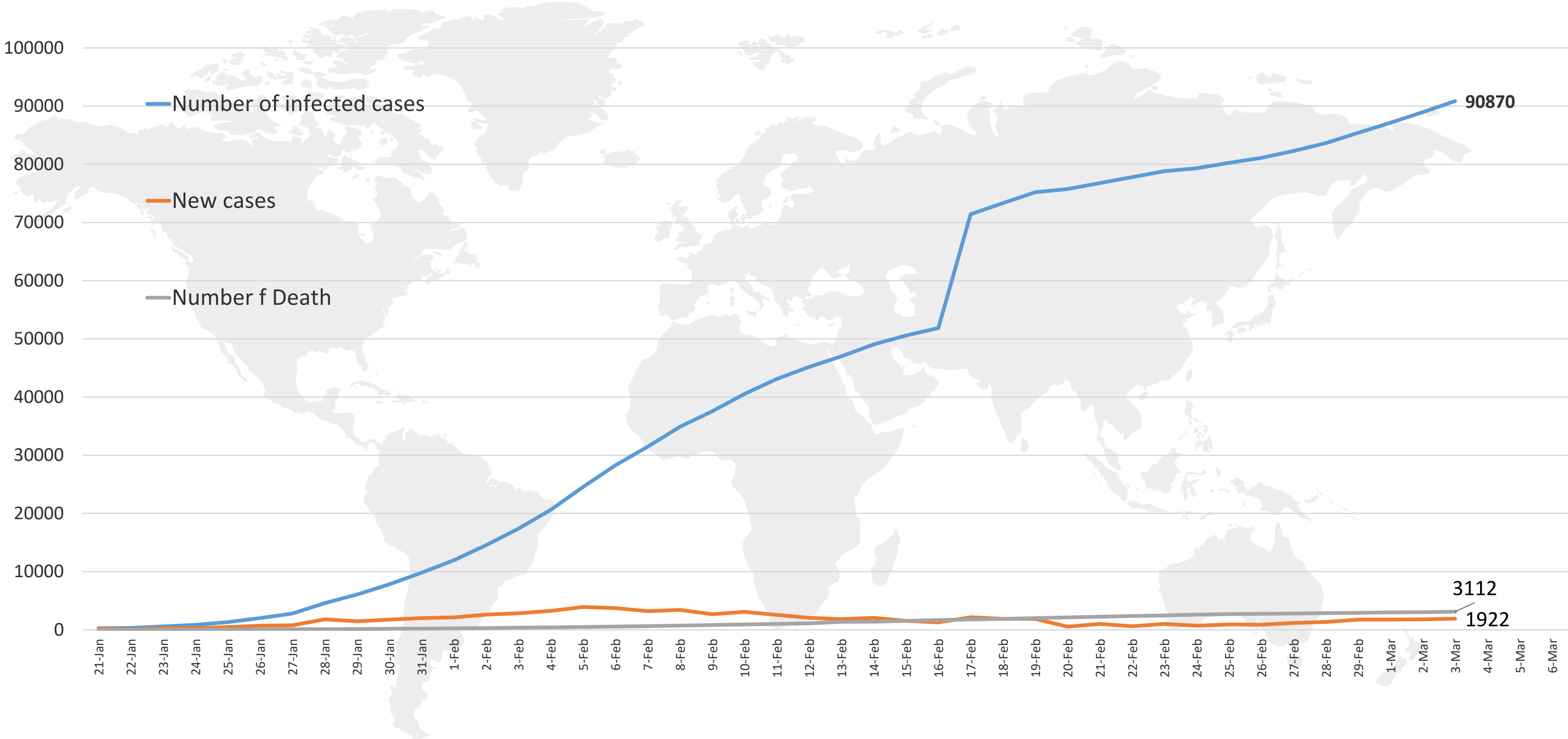
NEW UPDATES FROM TODAY'S REPORT:

- **Clinical feature and transmission section:** if the suspected cases are excluded based on two consecutively negative RT-PCR Swab test results (the sampling time is at least one day apart), some patient will be missed.
- **Diagnosis :** There is potential role of viral load indicator (Ct value) to predict disease progression in COVID19 (*further studies are needed to confirm*)



EPIDEMIOLOGY:

Figure 1: Total number of infected, new, and death cases (January 21st to March 3rd, 2020)



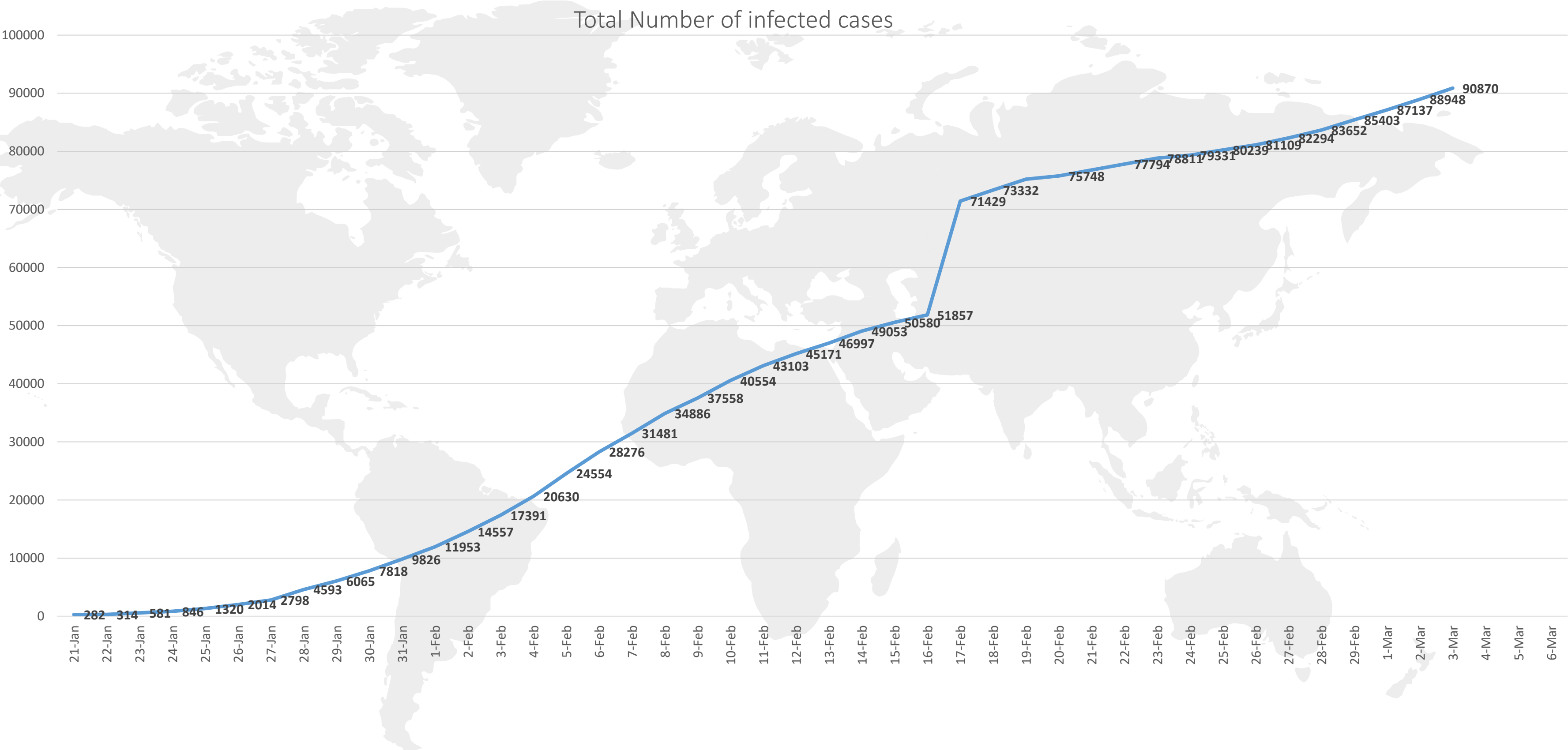
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



EPIDEMIOLOGY:

Figure 2: Number of infected cases (January 21st to March 3rd, 2020)



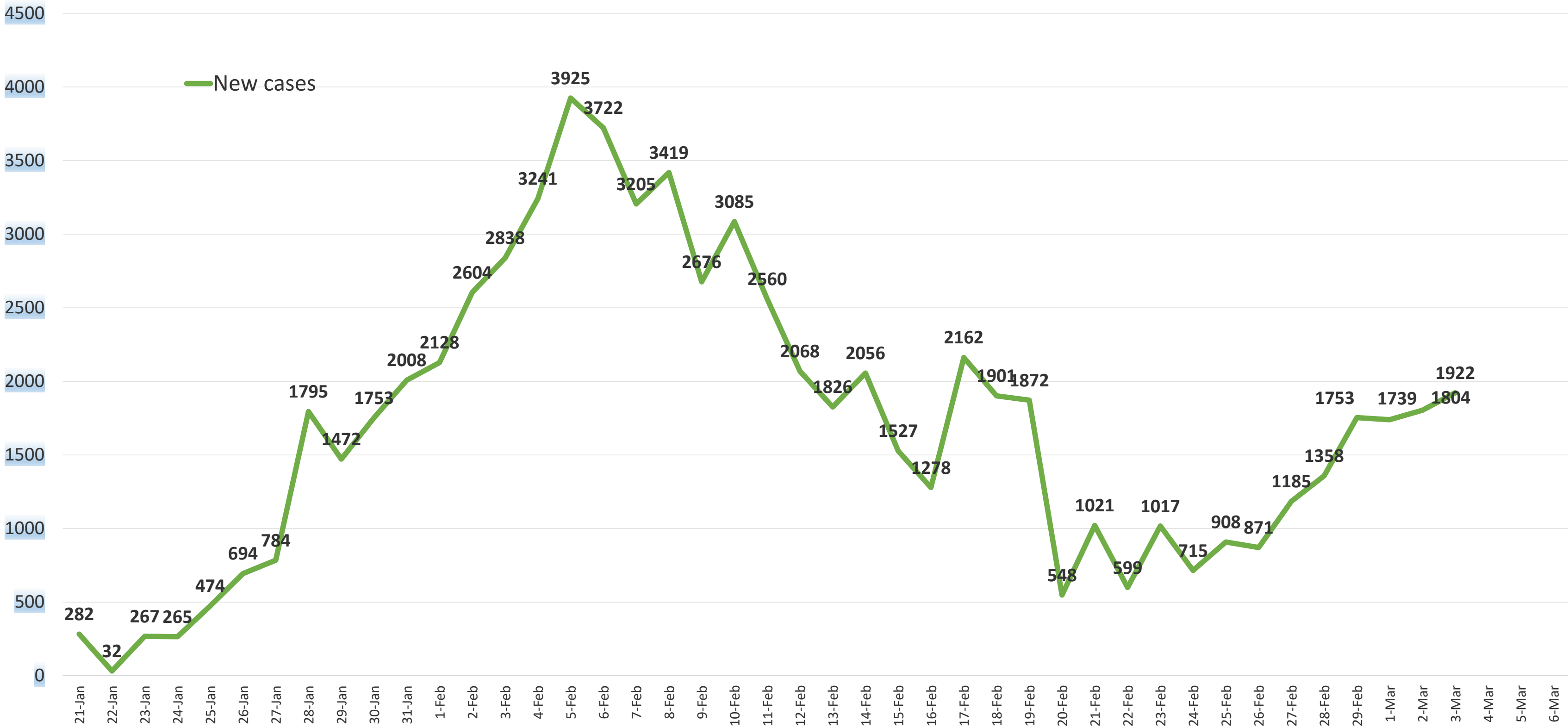
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

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



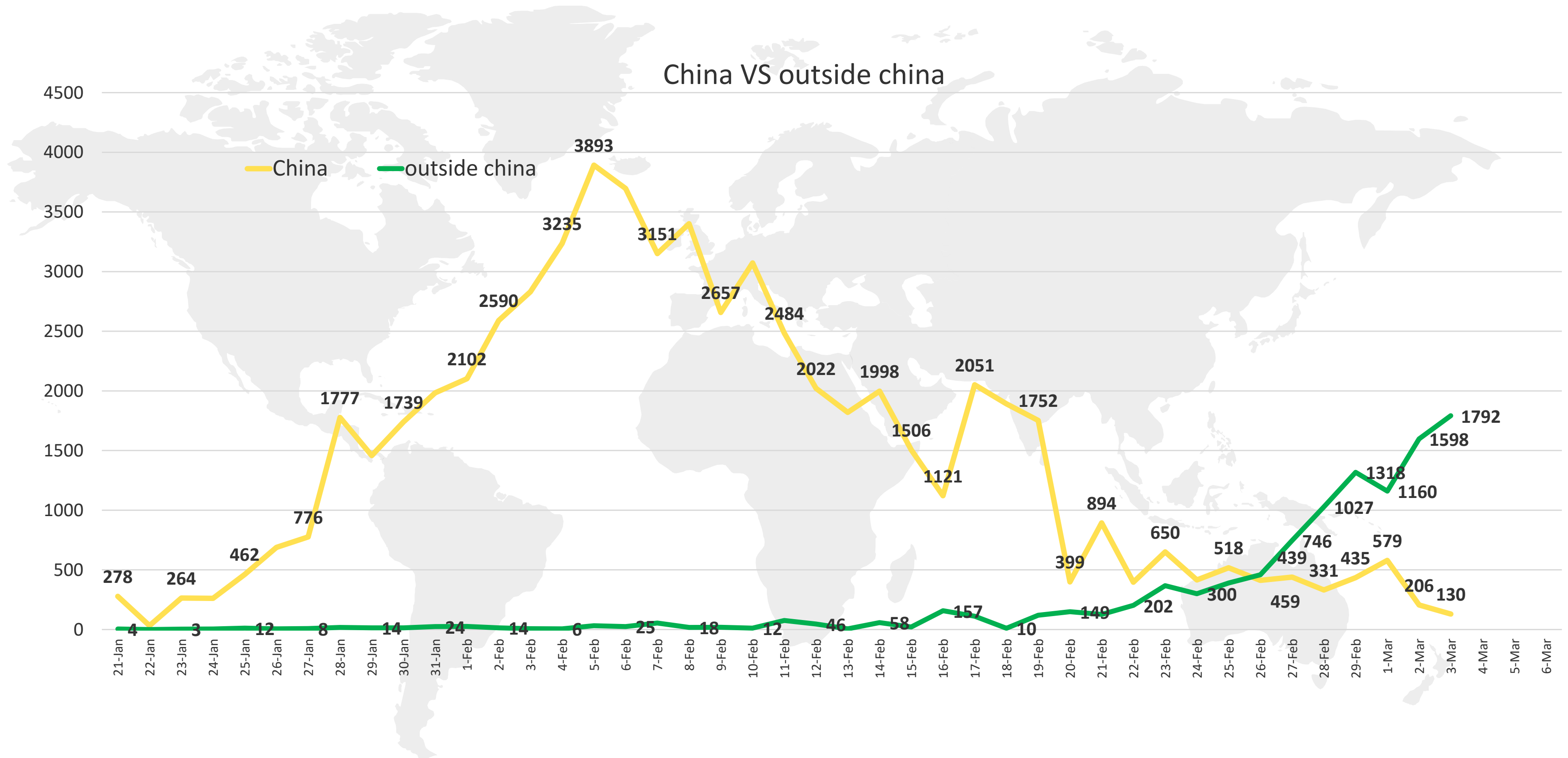
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

Figure 4: Number of new cases in China versus outside China (January 21st to March 3rd, 2020)



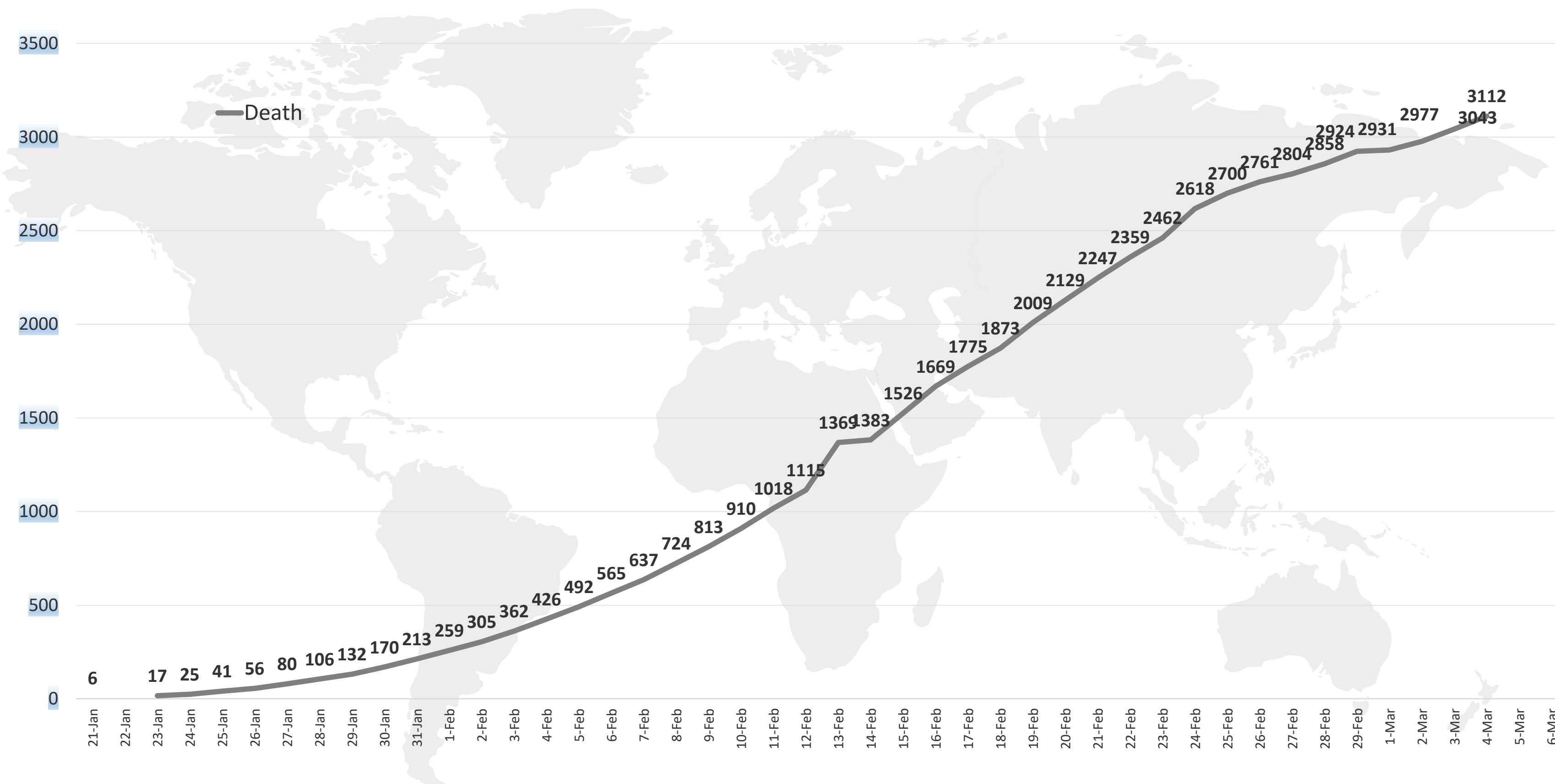
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

Figure 5: Number of total deaths (January 21st to March 3rd, 2020)



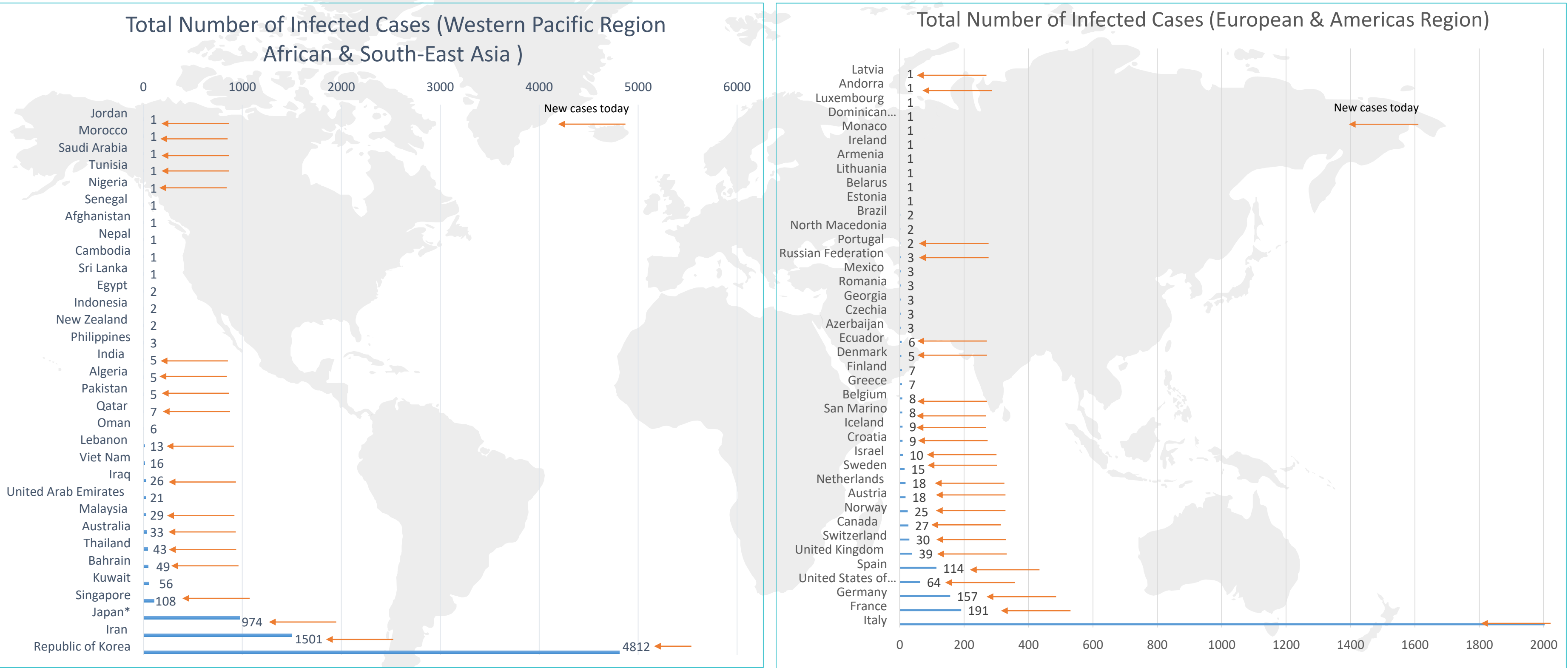
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

Figure 6: Total number of cases outside China per country (January 21st to March 3rd, 2020)



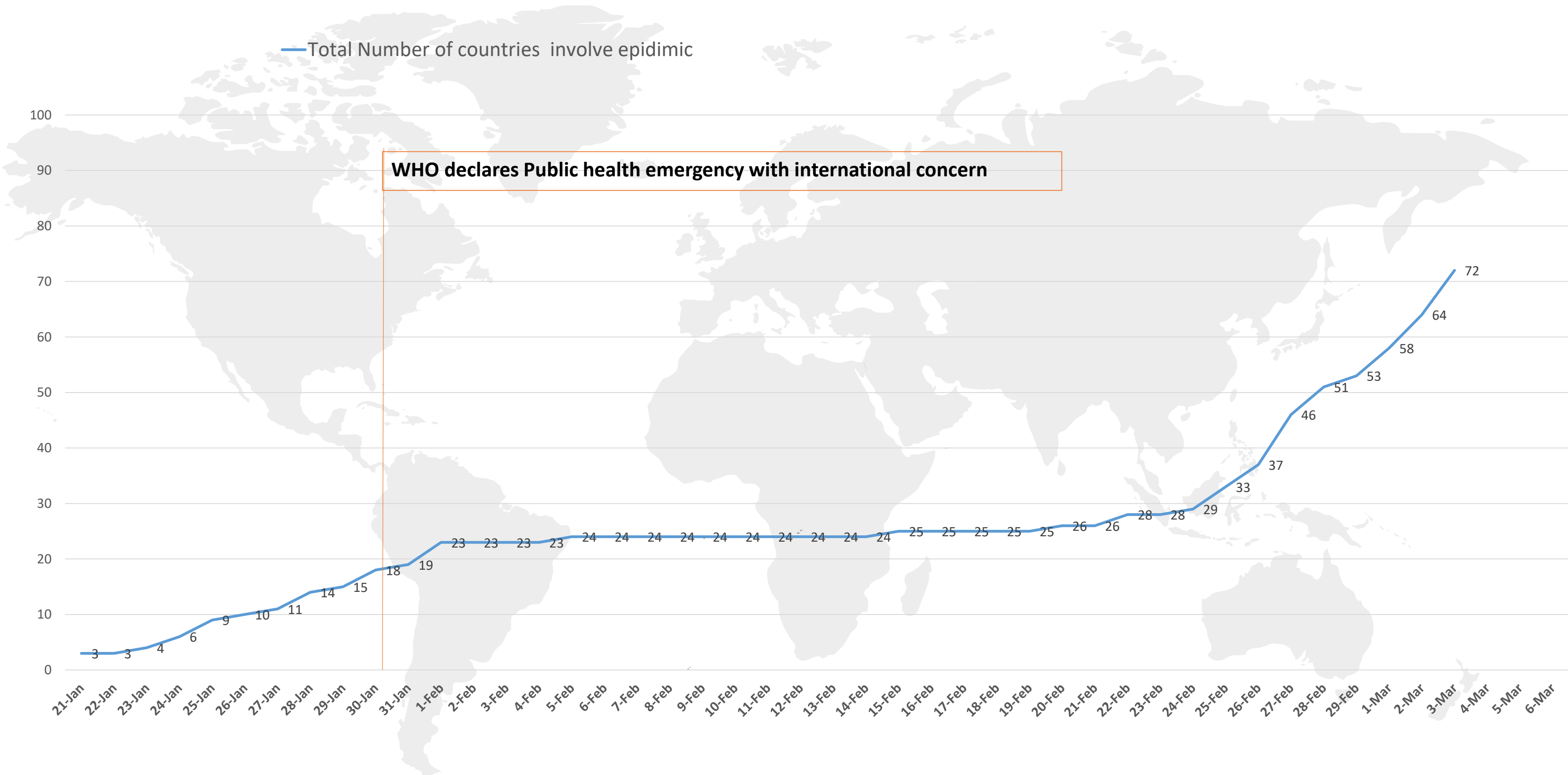
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

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



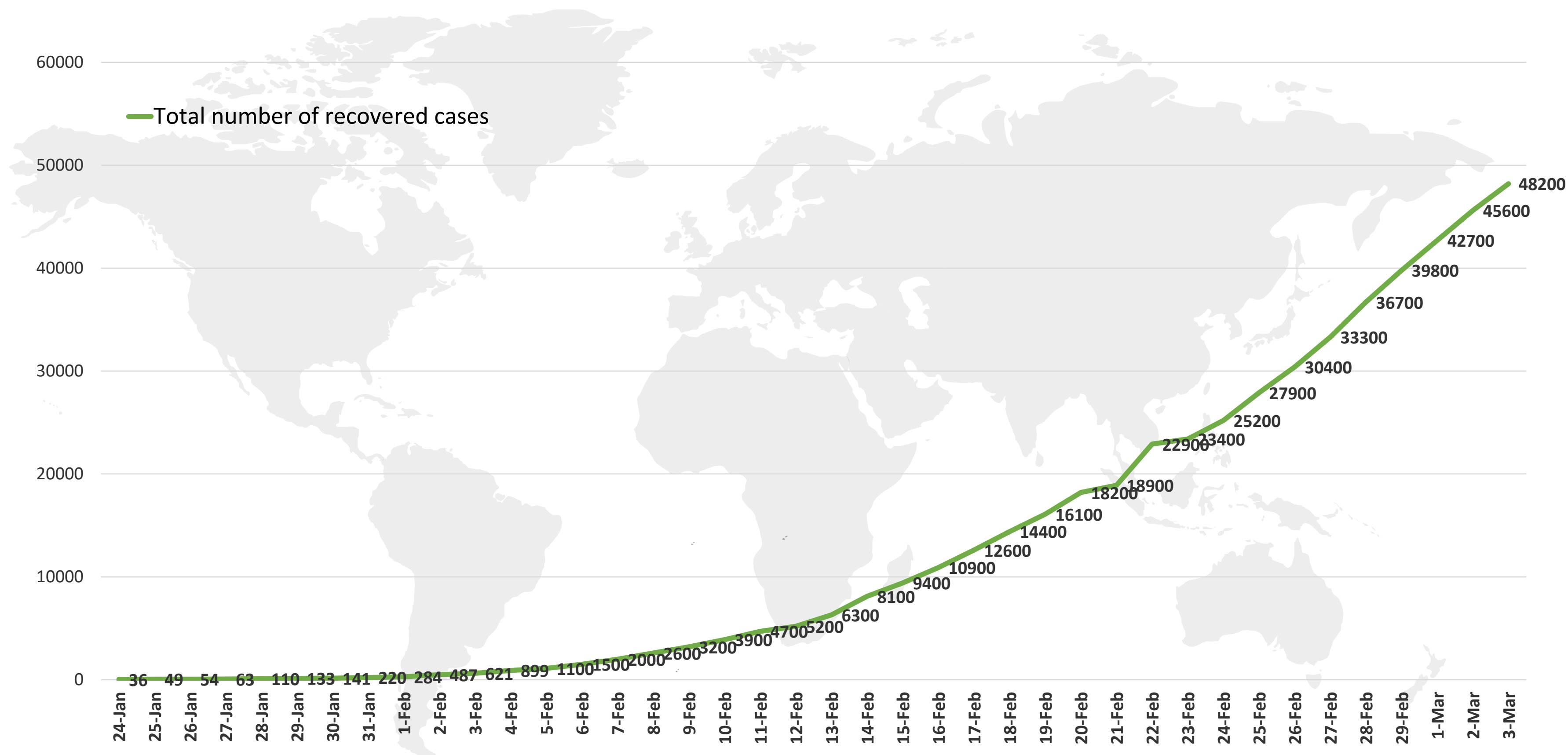
Line graph published by Abu Dhabi Public Health Center 2020.

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



EPIDEMIOLOGY:

Figure 8: Total recovered cases of COVID-19. (January 21st to March 3rd, 2020)



Line graph published by Abu Dhabi Public Health Center 2020.

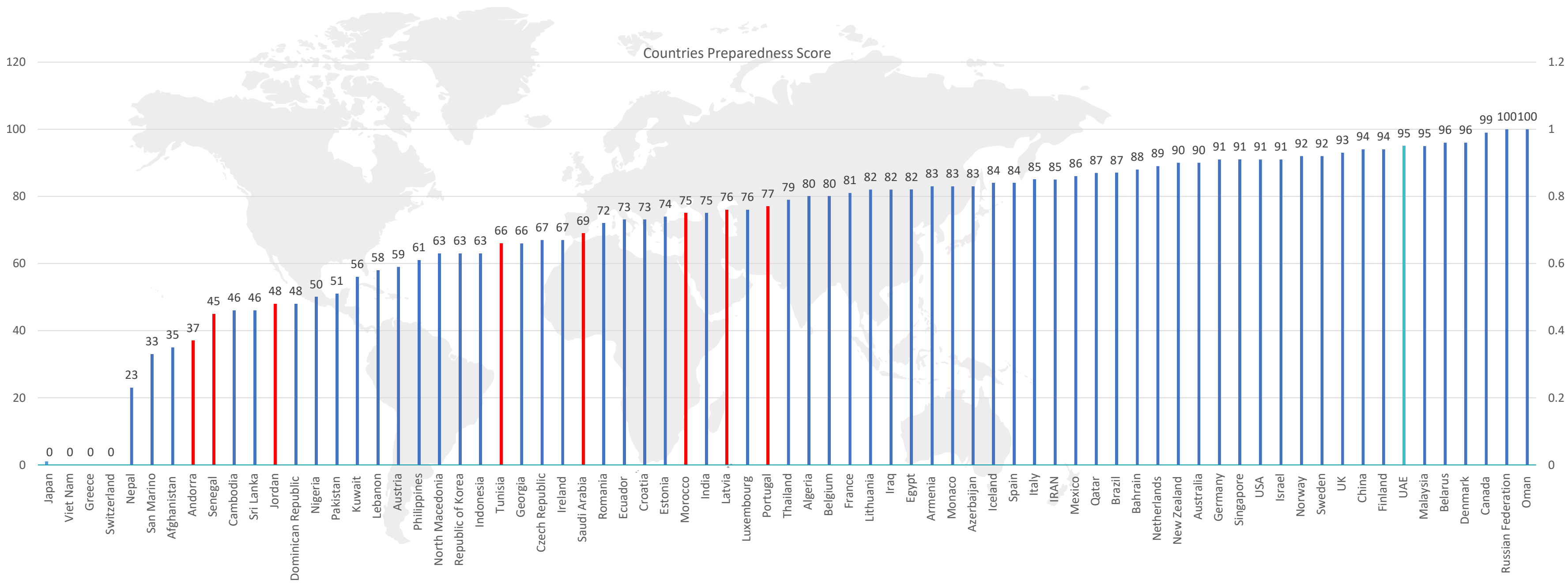
Data resources: [John Hopkins University](https://www.jhu.edu/)



EPIDEMIOLOGY:

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.

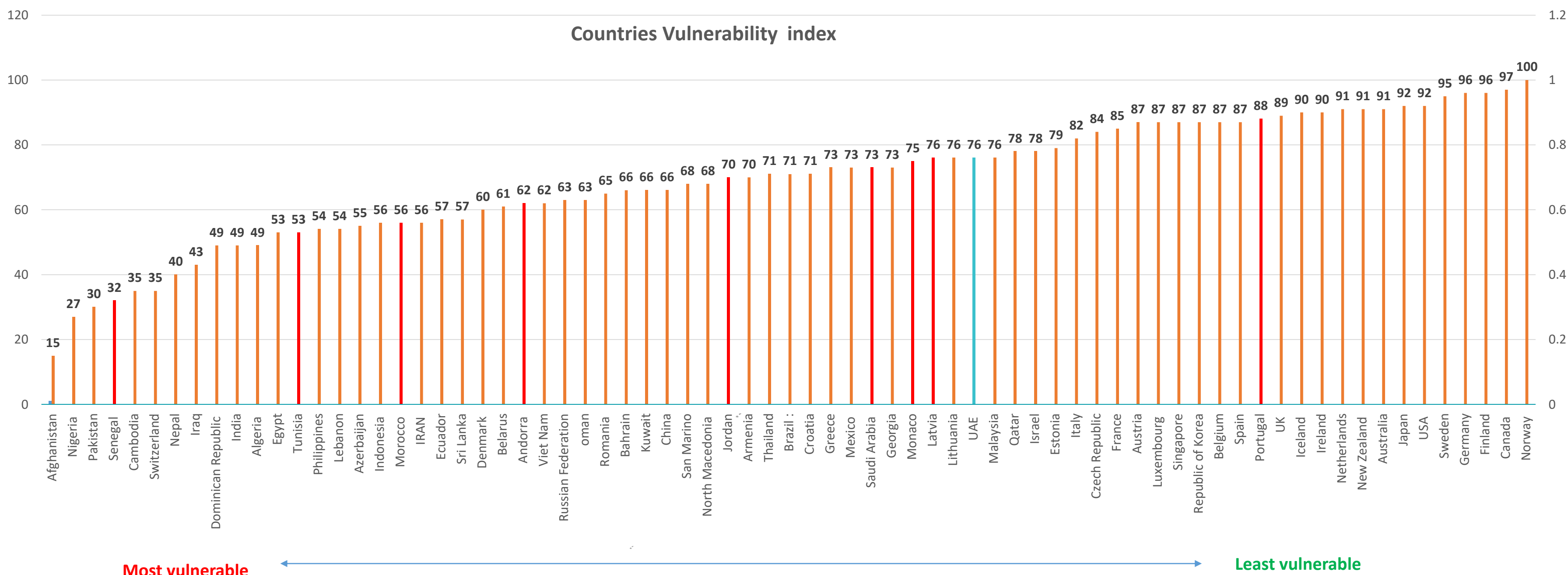
Data resources : [SPAR score](#) , [IDVI score](#)



EPIDEMIOLOGY:

Figure 10 : Capacities of countries reporting COVID19 cases

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



Most vulnerable

Least vulnerable

Line graph published by Abu Dhabi Public Health Center 2020.

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

EPIDEMIOLOGY:



WHO report 03/03/2020 important points :

- Eight new Member States (Andorra, Jordan, Latvia, Morocco, Portugal, **Saudi Arabia**, Senegal, and Tunisia) reported cases of COVID-19 in the past 24 hours.
- The increase of COVID-19 cases in the Eastern Mediterranean Region is of **great concern**. The WHO Regional Director of the Eastern Mediterranean region reiterated the need to enhance surveillance and response activities, and share **critical information**, as being essential to containing the outbreak and strengthening health systems.
- The Pan American Health Organization (PAHO) is implementing a comprehensive plan to support country preparedness and containment efforts for COVID-19. Barbados was one of the first Caribbean countries to acquire test kits and reagents for COVID-19 detection, and receive training on how to use them.
- Real-time training is critical for effective preparedness and response. WHO has several COVID-19 online resources for **health professionals, decision-makers and the public in multiple languages**.



CLINICAL FEATURES AND TRANSMISSION

ABU DHABI PUBLIC
HEALTH CENTRE

مركز أبوظبي
للصحة العامة



Article : Clinical Characteristics of Imported Cases of COVID-19 in Jiangsu Province:

A Multicenter Descriptive Study

Published: 29 February 2020

Summary:

- A Retrospective study investigate 80 imported cases of COVID-19 in Jiangsu Province to study whether cases outside Wuhan have a different clinical features than the patient in Wuhan . Study duration (*Jan 22 to Feb 14, 2020*).
- **Finding:** The 80 cases presented with **mild or moderate symptoms** and **no obvious gender susceptibility**, **lower proportion of liver dysfunction** and abnormal CT imaging and higher frequency nucleic acid detection Compared with the cases in Wuhan, the cases in **Jiangsu exhibited mild or moderate symptoms and no obvious gender susceptibility**.
- The proportion of patients having liver dysfunction and abnormal CT imaging was relatively lower than that of Wuhan.
- Notably, **9 patients passed three tests** before they **got positive results**. Therefore, we consider that if the suspected cases are excluded based on two consecutively negative respiratory pathogenic nucleic acid test results (the sampling time is at least one day apart), **about 10% of the infected patients will be missed**.

Note : This is paper is not yet peer-reviewed , therefore, it should not be used for clinical decision making or reporting of research to a lay audience.

[Link : here](#)



DIAGNOSIS



Article : The Viral Load of 2019 Novel Coronavirus (COVID-19) has the Potential to Predict the Clinical Outcomes

Published: 02 March 2020

Summery:

- The study included 56 confirmed COVID-19 cases From Jan 16 2020 to Feb 6 2020,
- The study aim to investigate clinical characteristics, initial imaging features and follow-up CT changes and their correlation with the viral load. .
- **Finding:** no significant correlation between viral load and laboratory markers. However some finding in CT imaging was significant. There was a number of cases were patients have initial normal CT imaging at the diagnosis and low Cycle threshold value (Ct value) * Those patients had a CT finding later suggested the progression of the imaging findings. Overall finding is that, Ct value is correlated to progression of CT findings in this study.
- **Recommendation by the author :**
 - **The Ct value should be reported when we give the diagnosis of COVID-19.**
 - **Follow-up CT scans is necessary for patients with normal CT findings at initial diagnose, especially for that with a low Ct value.**
 - The study is a reminder for physicians of the importance of follow-up CT scans for patients with normal CT findings at initial diagnose, **especially for that with a low Ct value** has the potential to predict a progress CT follow-up CT changes.
 - **Note the Study have a limitations and one of them is the small sample size**
 - *Ct value is an indicator for viral load, viral load inversely correlated with cycle threshold (Ct) value, and it is considered as a parameter to reflect the disease severity.

Note : This is paper is not yet peer-reviewed , therefore, it should not be used for clinical decision making or reporting of research to a lay audience.

[Link : here](#)