

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



# Scientific Research Monitoring on COVID-19

09 March 2020

# SUMMERY 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 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.



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

## Scientific Research

- **Public health response:** individual behaviours are more effective in controlling spread of the disease than governmental control. School closure though to be unlikely effective.
- **Clinical feature and transmission:** a study suggest extending the quarantine period up to three weeks.

*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

- ❑ [Mitigate the effects of home confinement on children during the COVID-19 outbreak](#)
- ❑ [To ease anxiety over coronavirus, leaders prescribe dose of common sense](#)
- ❑ [Escalating infection control response to the rapidly evolving epidemiology of the Coronavirus disease 2019 \(COVID-19\) due to SARS-CoV-2 in Hong Kong.](#)
- ❑ [How Much of China and World GDP has the Coronavirus Reduced?](#)



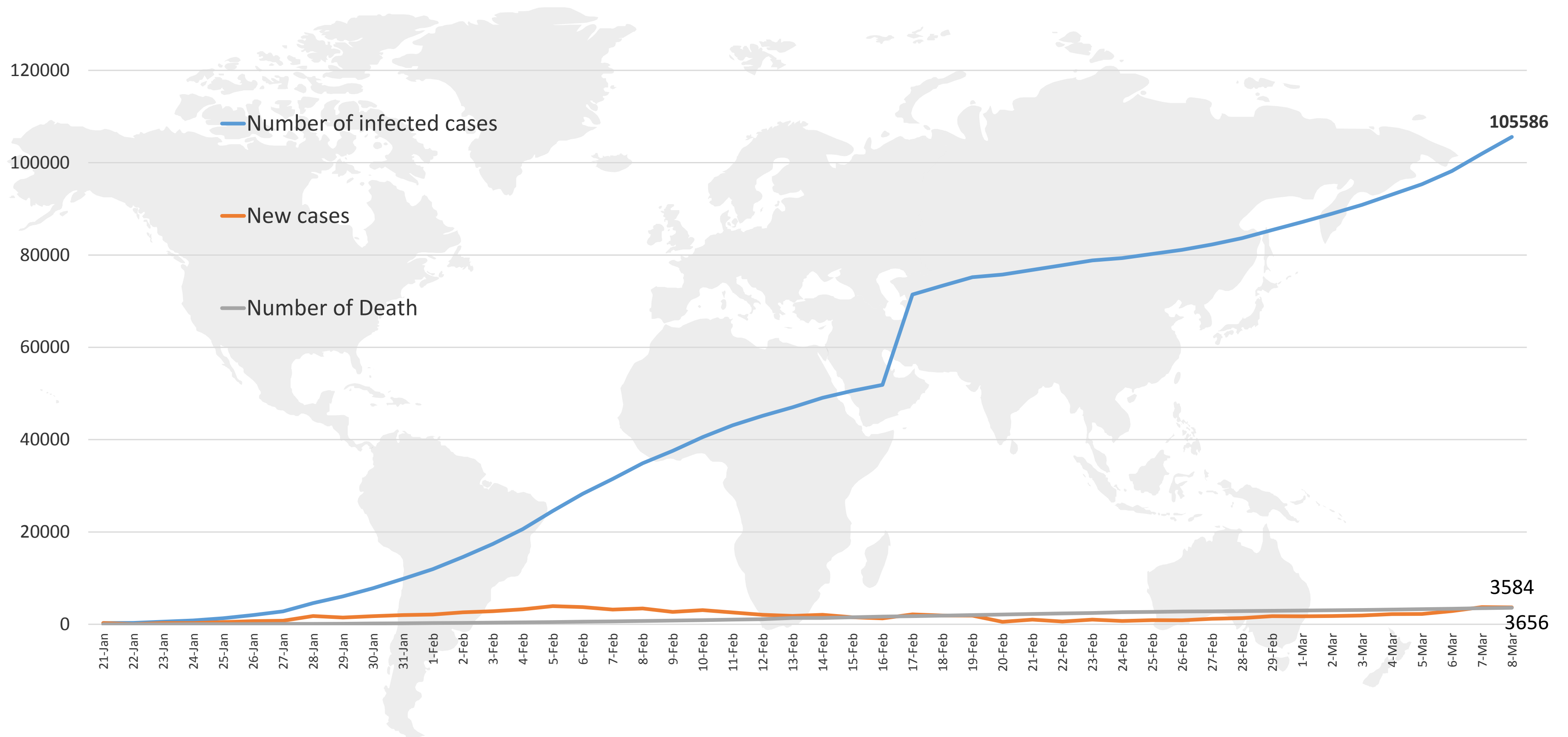
8th March 2020

- 8 new countries/territories/areas (Bulgaria, Costa Rica, Faroe Islands, French Guiana, Maldives, Malta, Martinique, and Republic of Moldova) have reported cases of COVID-19 in the past 24 hours.
- Over 100 countries have now reported laboratory-confirmed cases of COVID-19.
- WHO has issued a (consolidated package of existing preparedness and response guidance) for countries to enable **them to slow and stop** COVID-19 transmission and save lives. WHO is urging all countries to **prepare** for the potential arrival of COVID-19 by readying emergency response systems; **increasing capacity** to detect and **care for patients; ensuring hospitals** have the **space, supplies** and necessary **personnel**; and developing **life-saving medical interventions**.
- The guidance include scenarios for:
  1. Countries with no cases (No cases); defined four transmission scenarios for COVID-19
  2. Countries with 1 or more cases, imported or locally detected (Sporadic cases);
  3. Countries experiencing cases clusters in time, geographic location and/or common exposure (Clusters of cases);
  4. Countries experiencing larger outbreaks of local transmission (Community transmission).

# Epidemiology



Figure 1: Total number of infected, new, and death cases (January 21<sup>st</sup> to March 8<sup>th</sup>, 2020)

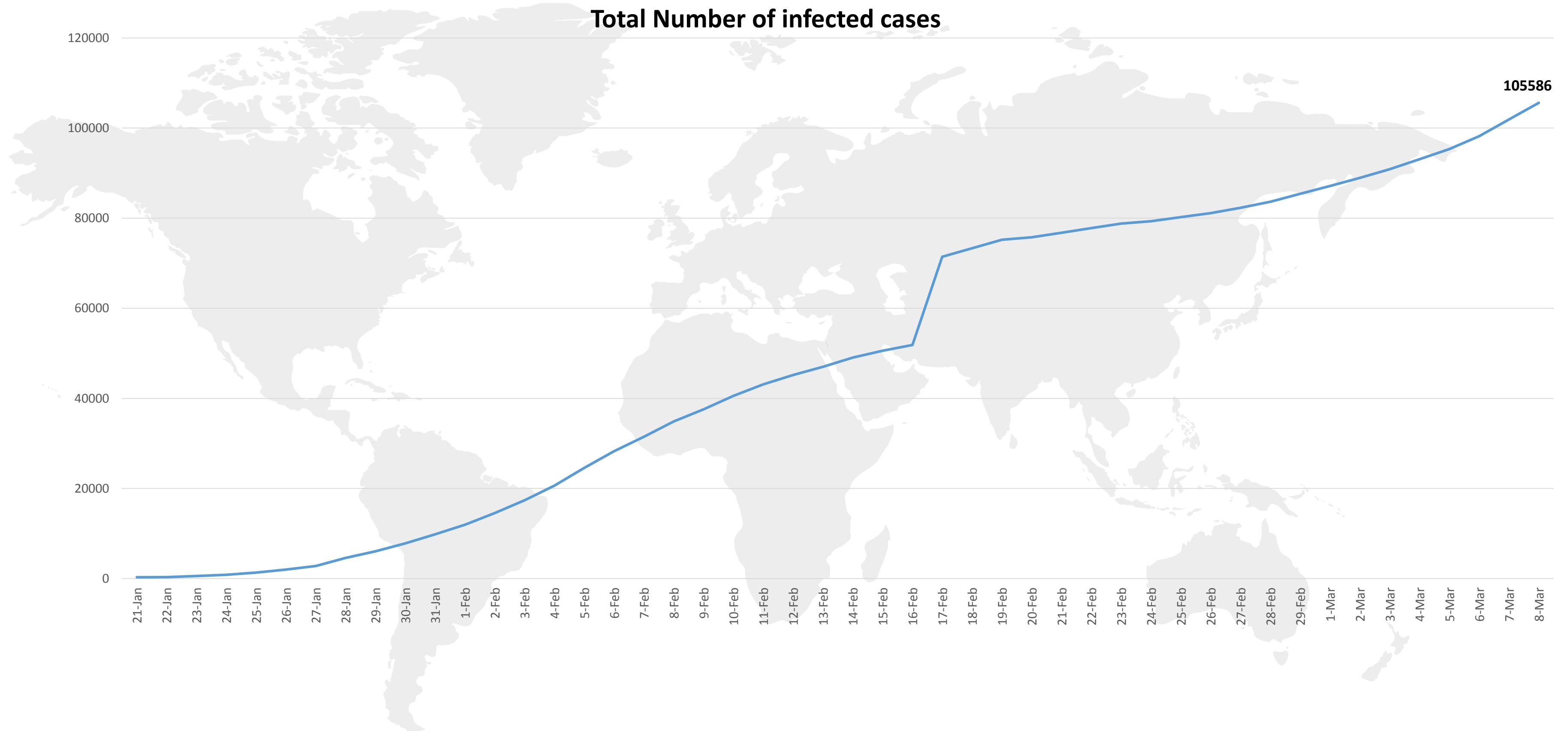


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 2: Number of infected cases (January 21<sup>st</sup> to March 8<sup>th</sup>, 2020)

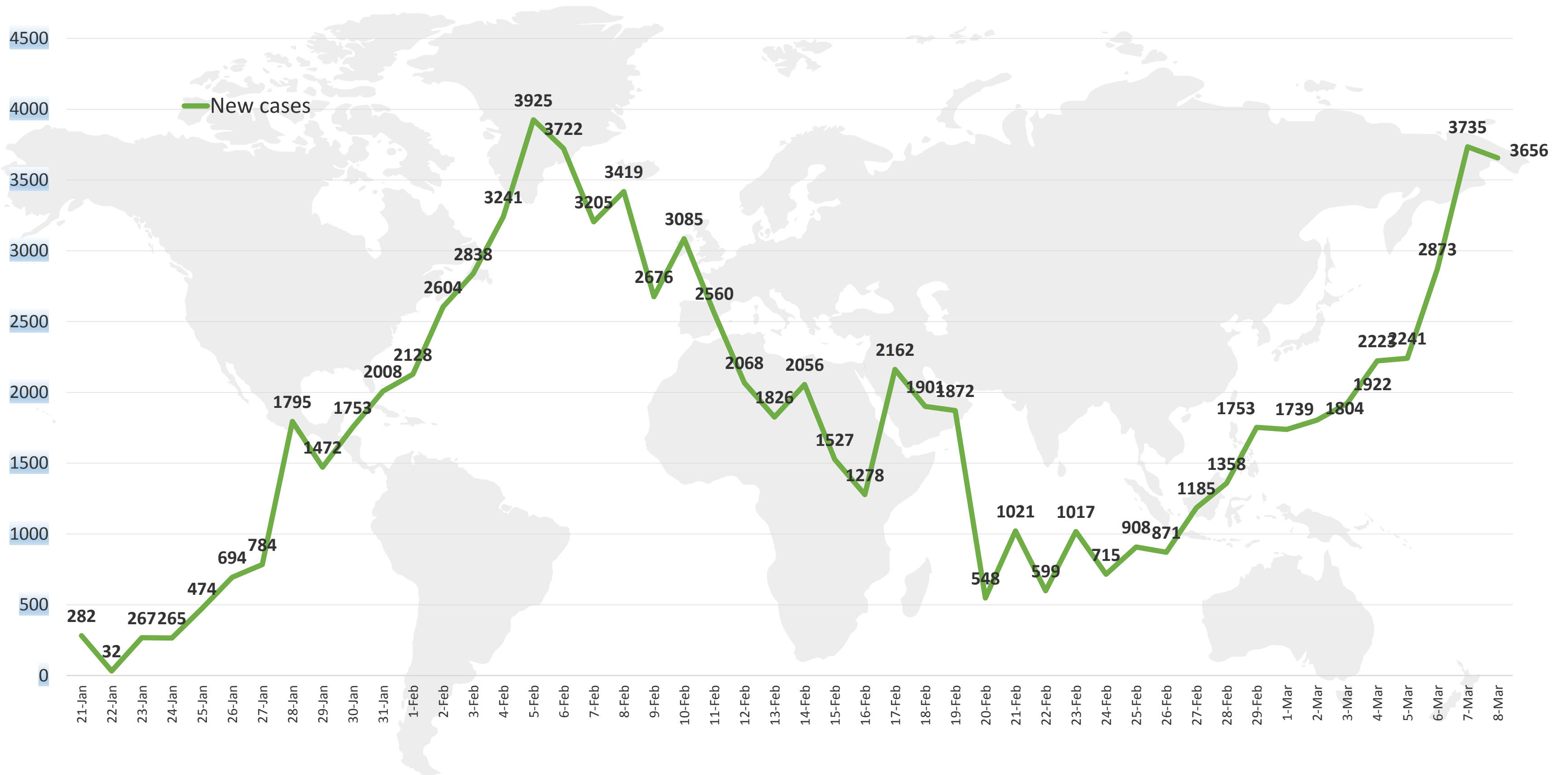


Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



Figure 3: Number of new cases (January 21<sup>st</sup> to March 8<sup>th</sup>, 2020)



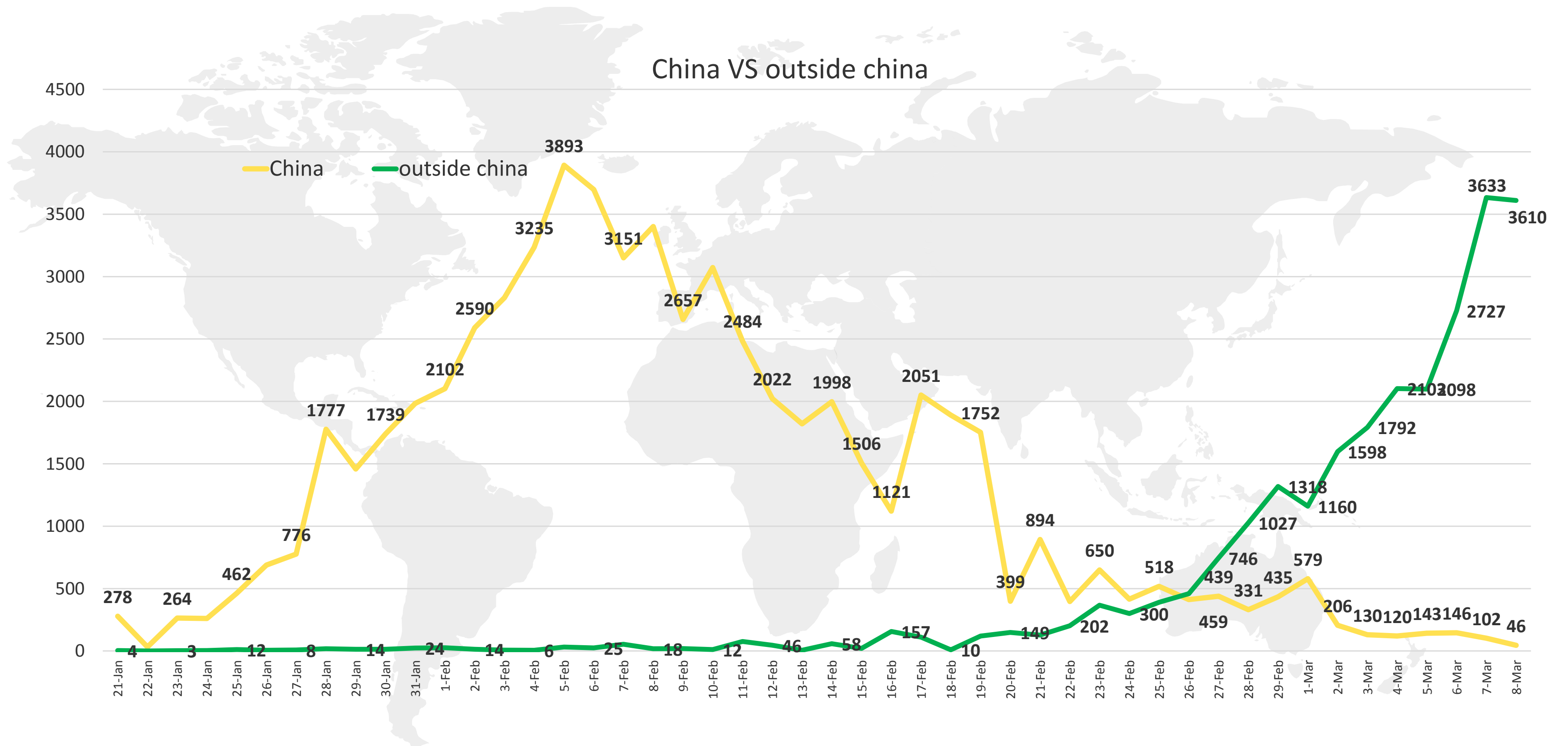
Line graph published by Abu Dhabi Public Health Center 2020.

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





Figure 4: Number of new cases in China versus outside China (January 21<sup>st</sup> to March 8<sup>th</sup> , 2020)

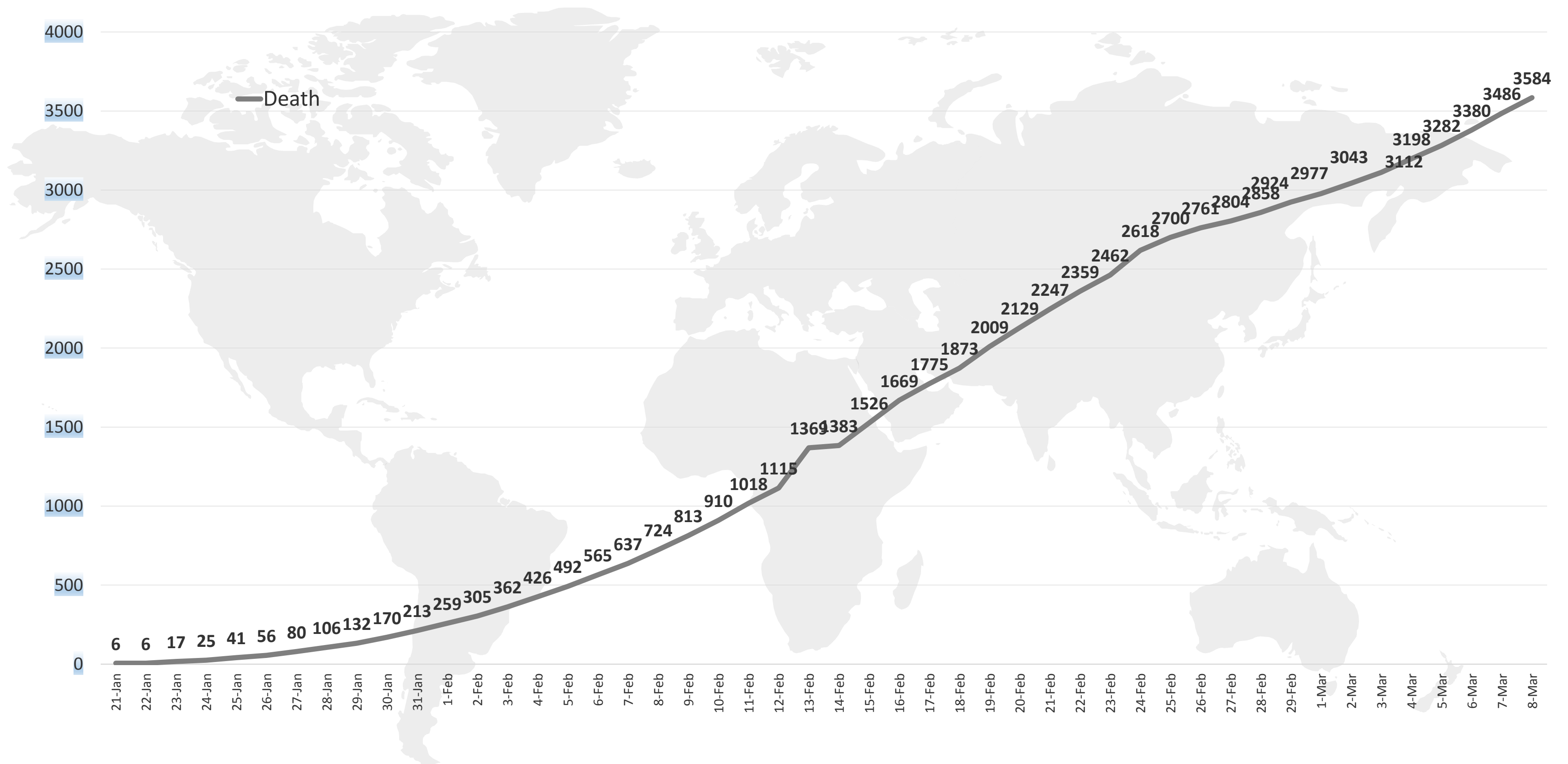


Line graph published by Abu Dhabi Public Health Center 2020.

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



Figure 5: Number of total deaths (January 21<sup>st</sup> to March 8<sup>th</sup>, 2020)



Line graph published by Abu Dhabi Public Health Center 2020.

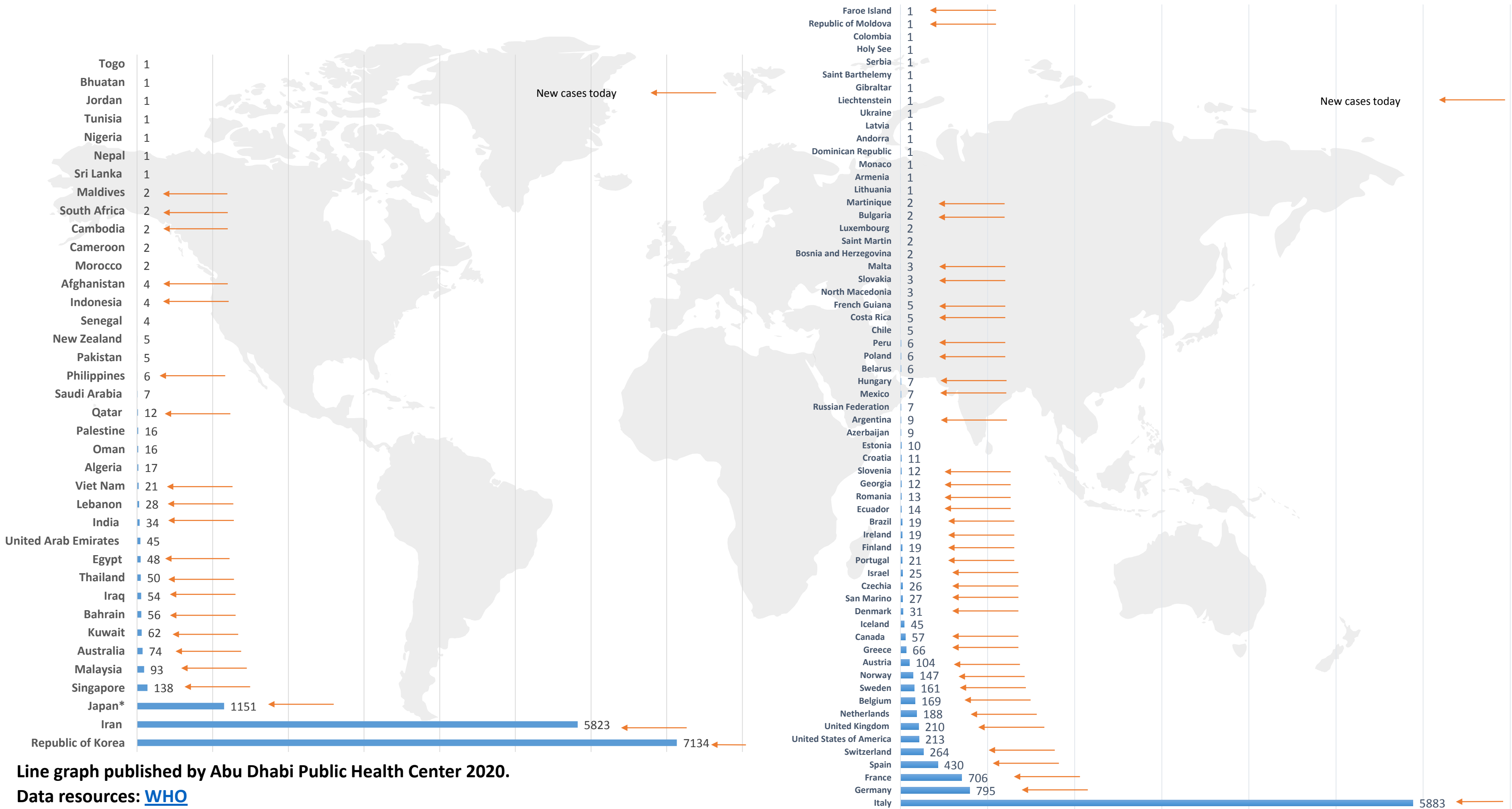
Data resources: [WHO](https://www.who.int/)



**Figure 6: Total number of cases outside China per country (January 21<sup>st</sup> to March 8<sup>th</sup>, 2020)**

Total Number of Infected Cases (Western Pacific Region African & South-East Asia )

Total Number of Infected Cases (Western Pacific Region African & South-East Asia )

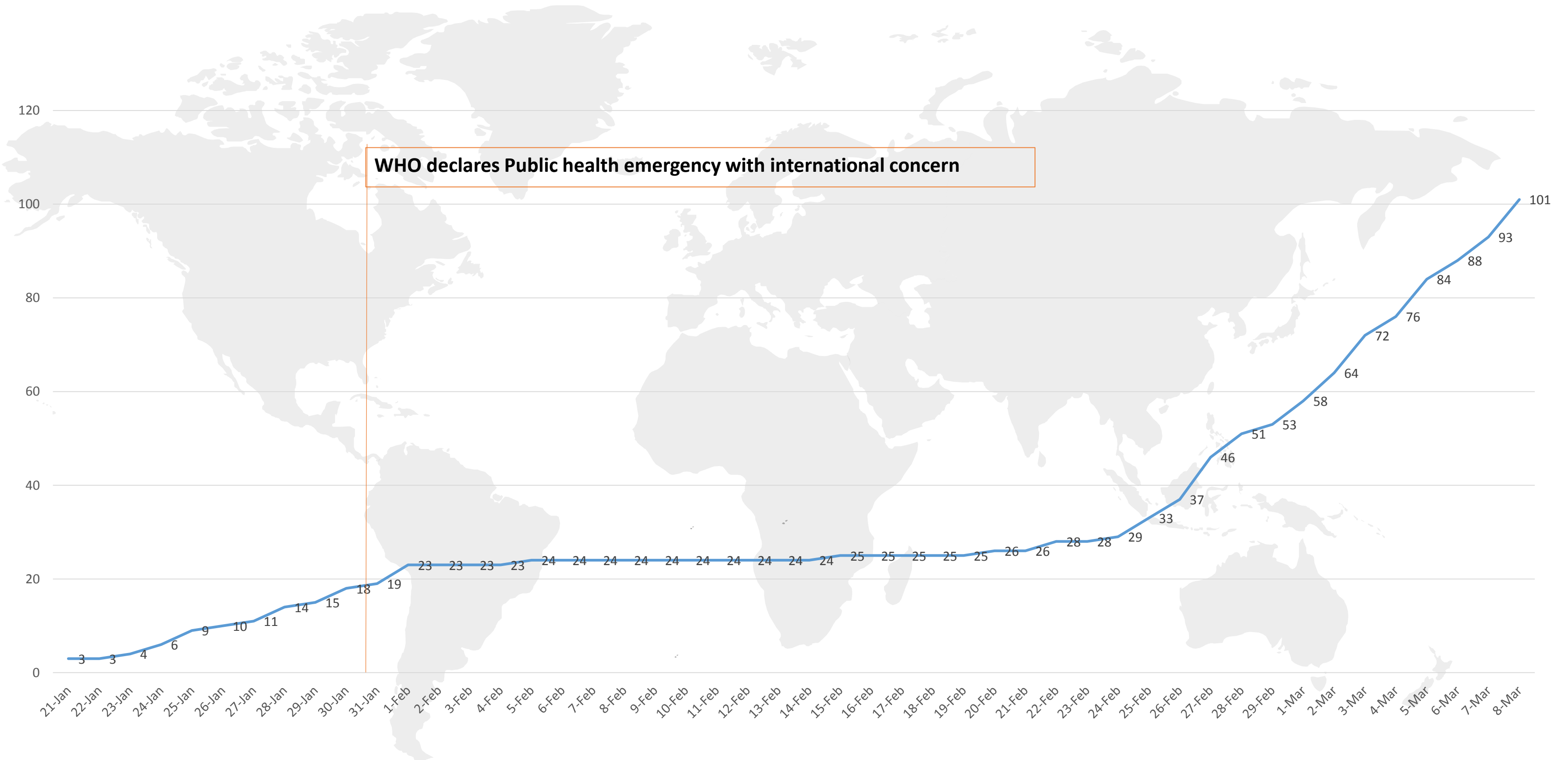


Line graph published by Abu Dhabi Public Health Center 2020.

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



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



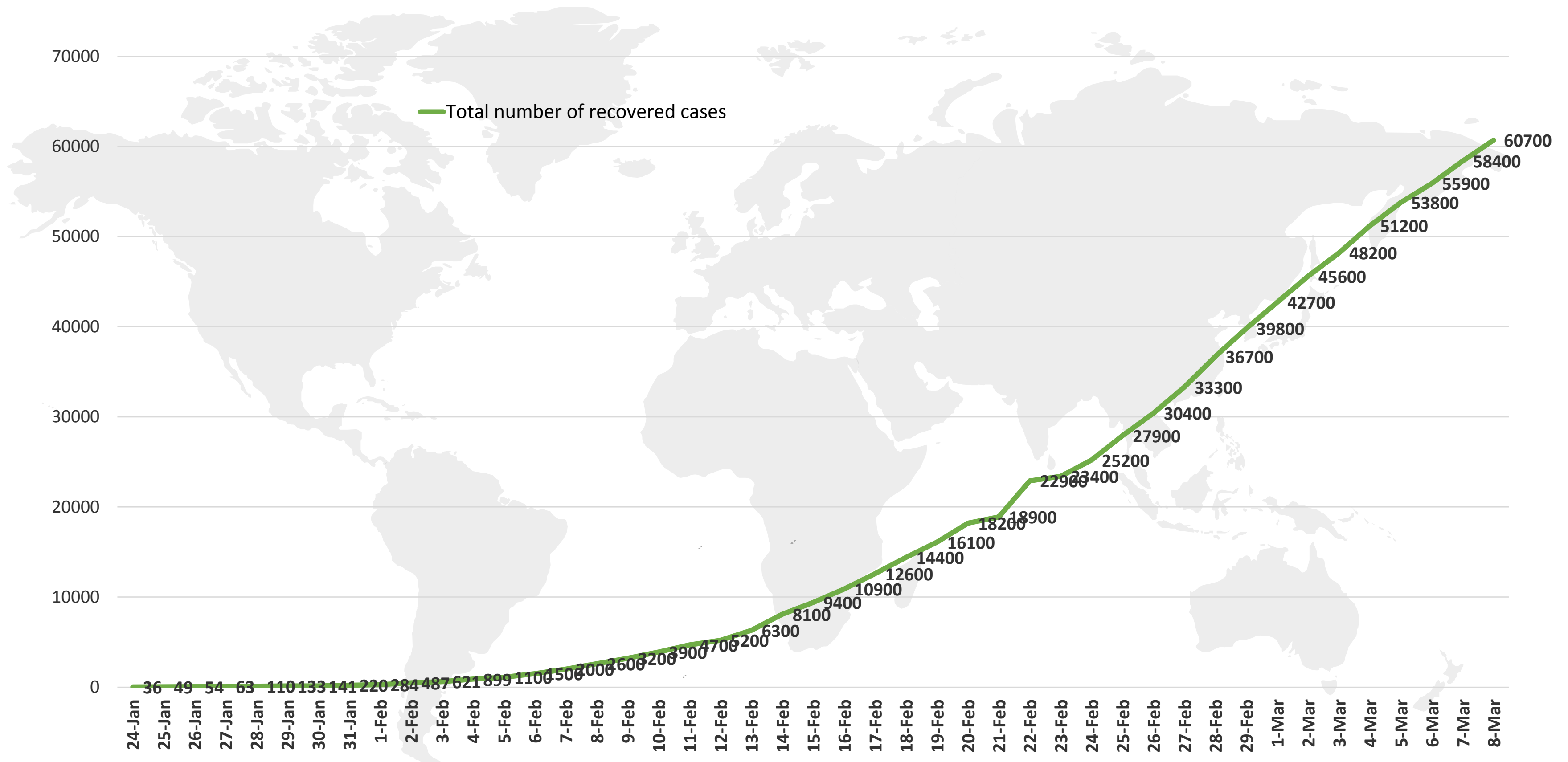
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)

# Epidemiology



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



Line graph published by Abu Dhabi Public Health Center 2020.

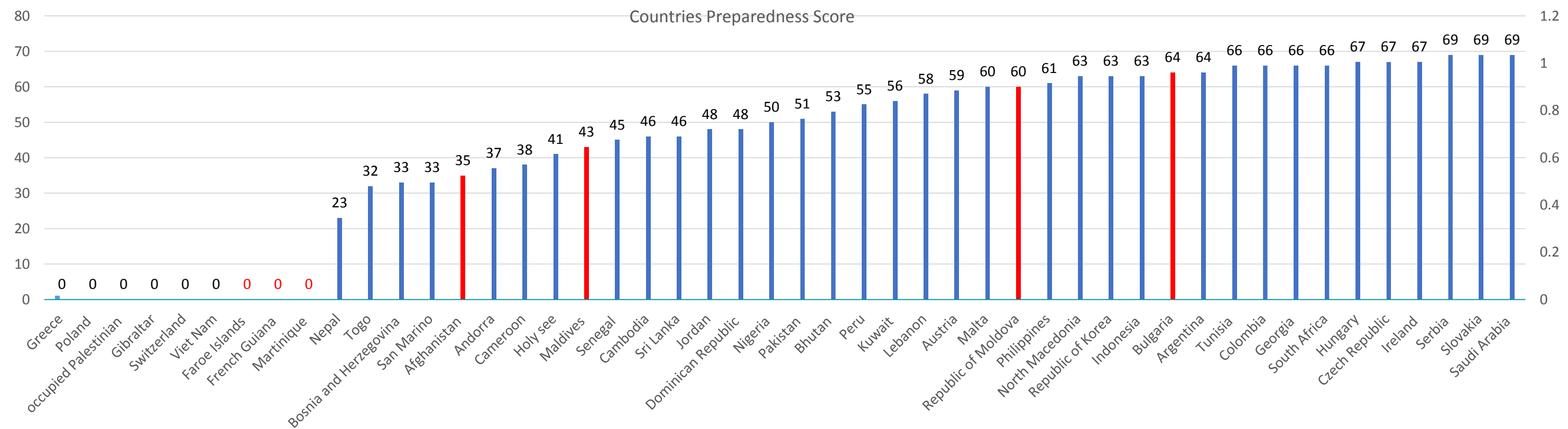
Data resources: [John Hopkins University](https://www.jhu.edu/)



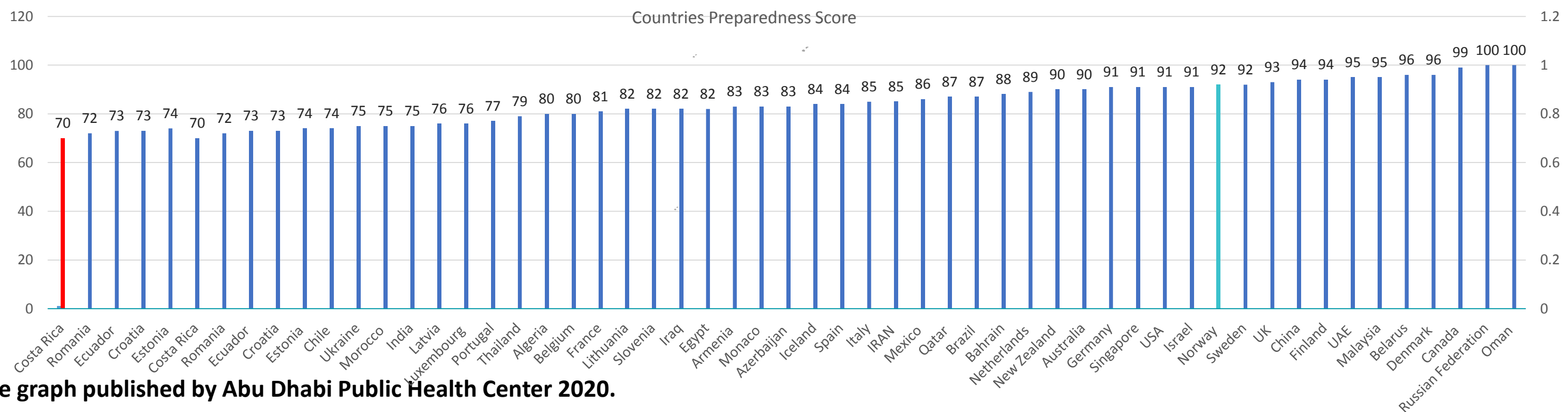
## Figure 9 : Capacities of countries reporting COVID19 cases

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

### Countries with preparedness score less than 70



### Countries with preparedness score more than 70



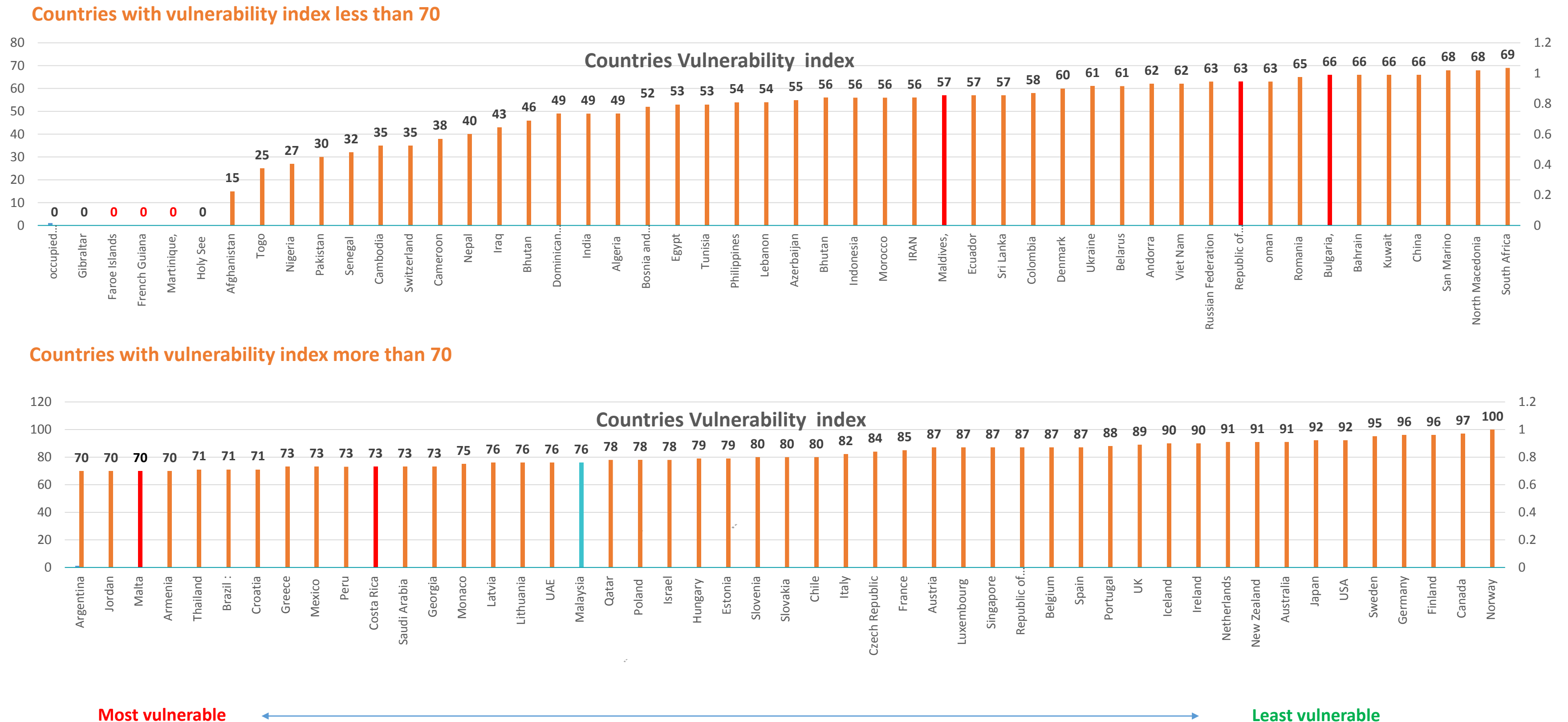
Line graph published by Abu Dhabi Public Health Center 2020.

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](#)

# Public health response



**Article :** How will country-based mitigation measures influence the course of the COVID-19 epidemic?

**Published:** 6<sup>th</sup> March 2020

## Summery:

- This article comments on some important mitigation measures to contain the COVID-19 infection.
- Chinese government measures; **quarantine, social distancing** and **isolation** of infected individuals thought to **show positive influence** if adopted by other countries to contain the epidemic though the Chinese adopted **measures were very stringent**.
- **Individual behavior**, rather than **governmental control**, is believed to be the **crucial element in controlling the spread of the disease**.
- **Early self-isolation, seeking medical attention remotely** unless severe symptoms and social distancing are the key.
- **Government recommended action** is to:
  - **Ban mass gatherings, provide diagnostic facilities** and **remote health advice** as well as provide the best care possible for severely infected cases.
  - **Reduce household transmission, support home treatment** and **dealing with economic consequences**.
  - **Measures like school closure** thought to **unlikely be effective** due to the **apparent low rate of infection among children**.

**Link :** [Click here](#)





# Clinical feature and transmission

**Article :** Estimation of Incubation Period Distribution of COVID-19 Using Disease Onset Forward Time: A Novel Cross-Sectional and Forward Follow-Up Study

**Published:** 6<sup>th</sup> March 2020

## Summery:

This cross-sectional study aimed to study the incubation period for 1211 cases of asymptomatic individuals at their time of departure from Wuhan and then following them until their **symptoms developed**. It used information retrieved from publicly available data as of February 15, 2020. The cases were followed-up for 25 days from date of departure of Wuhan until the development of symptoms.

## Results:

The estimated median of incubation period is:

- Average is 8.13 days.
- The **90th percentile is 14.65 days.**
- **The 95th percentile is 16.6 days.**
- **The 99th percentile is 20.59 days.**

## Conclusion:

- First article to consider the incubation period for COVID-19 virus as a renewal process which is a well-studied methodology and has a solid theoretical foundation.
- Our results suggest that a longer quarantine period (recommends up to **3 weeks quarantine period** ) than the **current one (14 days)** may be needed. **Under current policy, about 10% of patients** with COVID-19 would not develop symptoms during the quarantine period.

**Link:** [Click Here](#)

***Note : this article is preliminary and have not been peer-reviewed, therefore, it should not be used in clinical decision making or reporting of research to a lay audience***