



# Scientific Research Monitoring on COVID-19

02 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. 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.**



## 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.



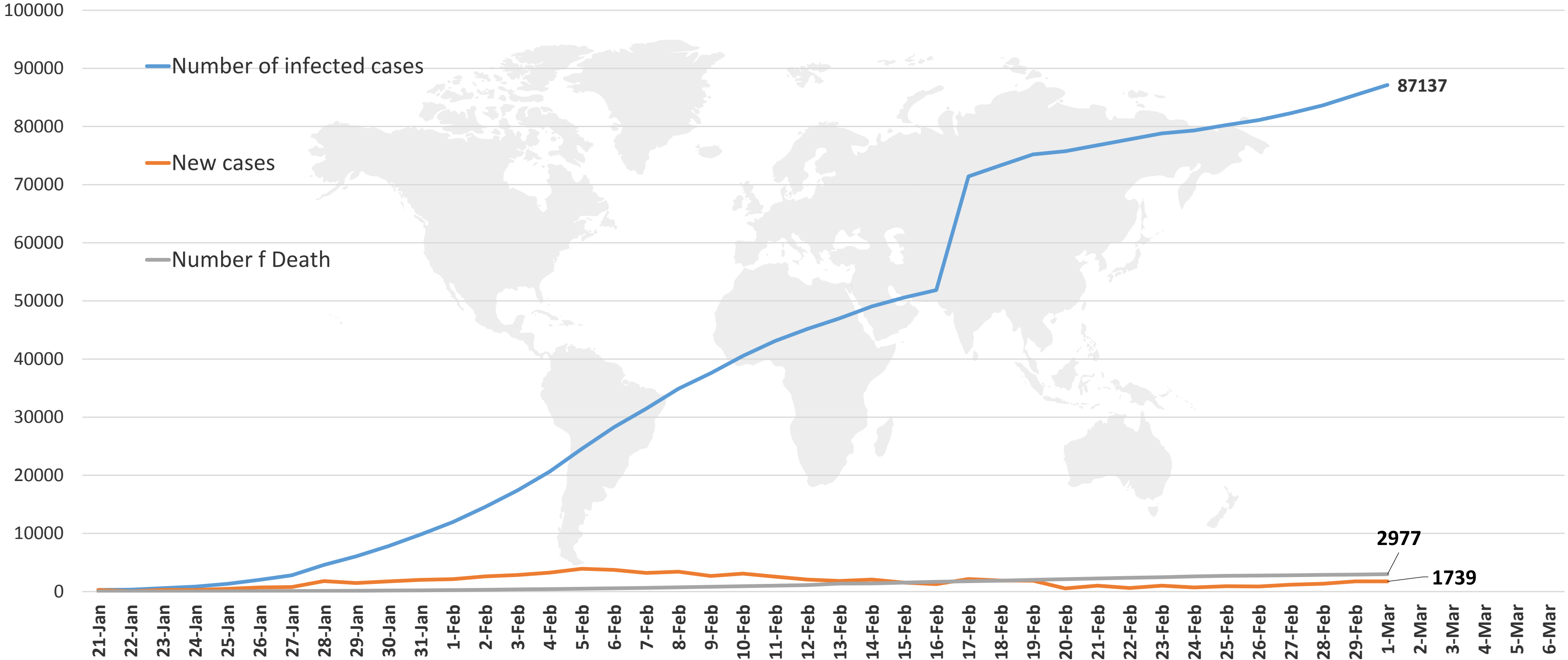
## NEW UPDATES FROM TODAY'S REPORT:

- **Epidemiology section:** WHO have released recommendations for international traffic in relation to COVID-19 outbreak.
- **Clinical feature and transmission section:** a study on 1099 patients showed that Patients often presented without fever, and many did not have abnormal radiologic findings
- **Public Health Response:** According to modeling study highly effective contact tracing and case isolation is enough to control a new outbreak of COVID-19 within 3 months.



# EPIDEMIOLOGY:

### Figure 1: Total number of infected, new, and death cases (January 24<sup>st</sup> to March 1<sup>st</sup>, 2020)



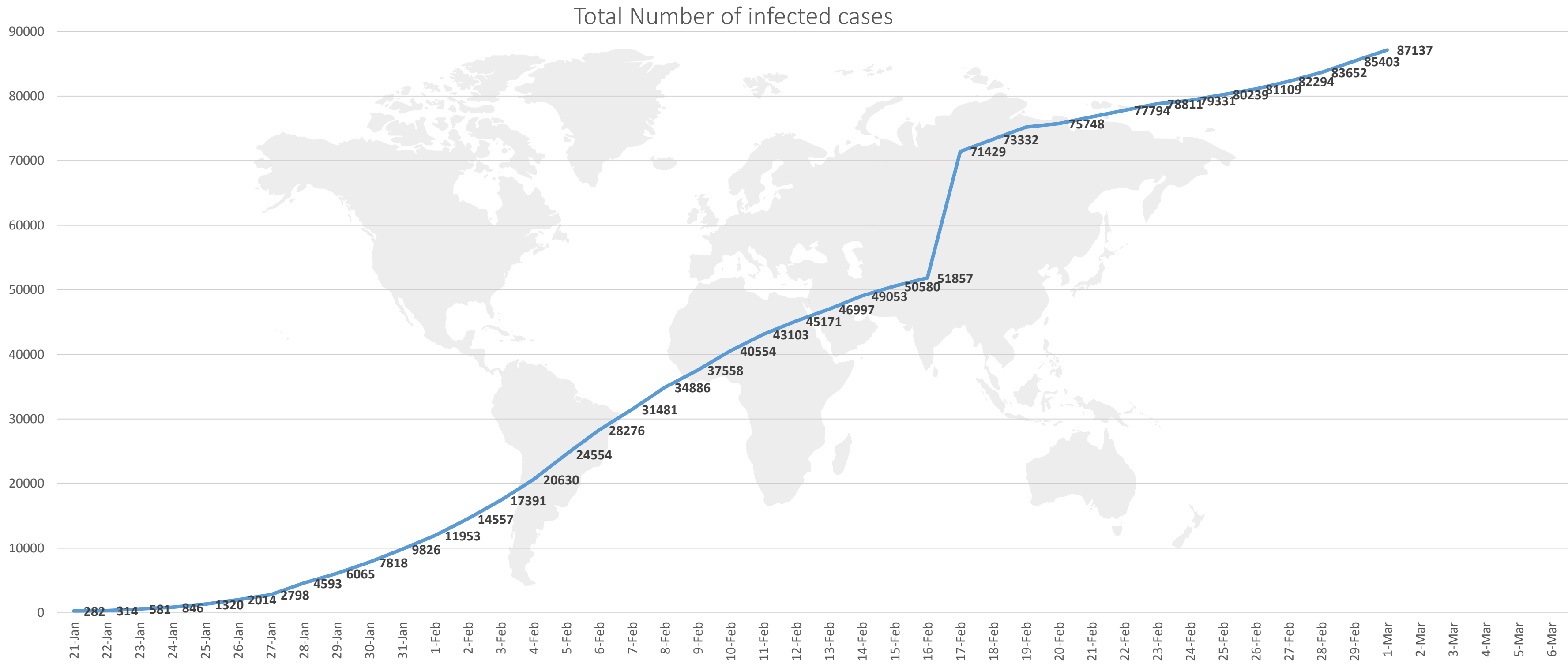
Line graph published by Abu Dhabi Public Health Center 2020.

Data resources: [WHO](#)



# EPIDEMIOLOGY:

## Figure 2: Number of infected cases (January 22<sup>st</sup> to March 1<sup>st</sup>, 2020)



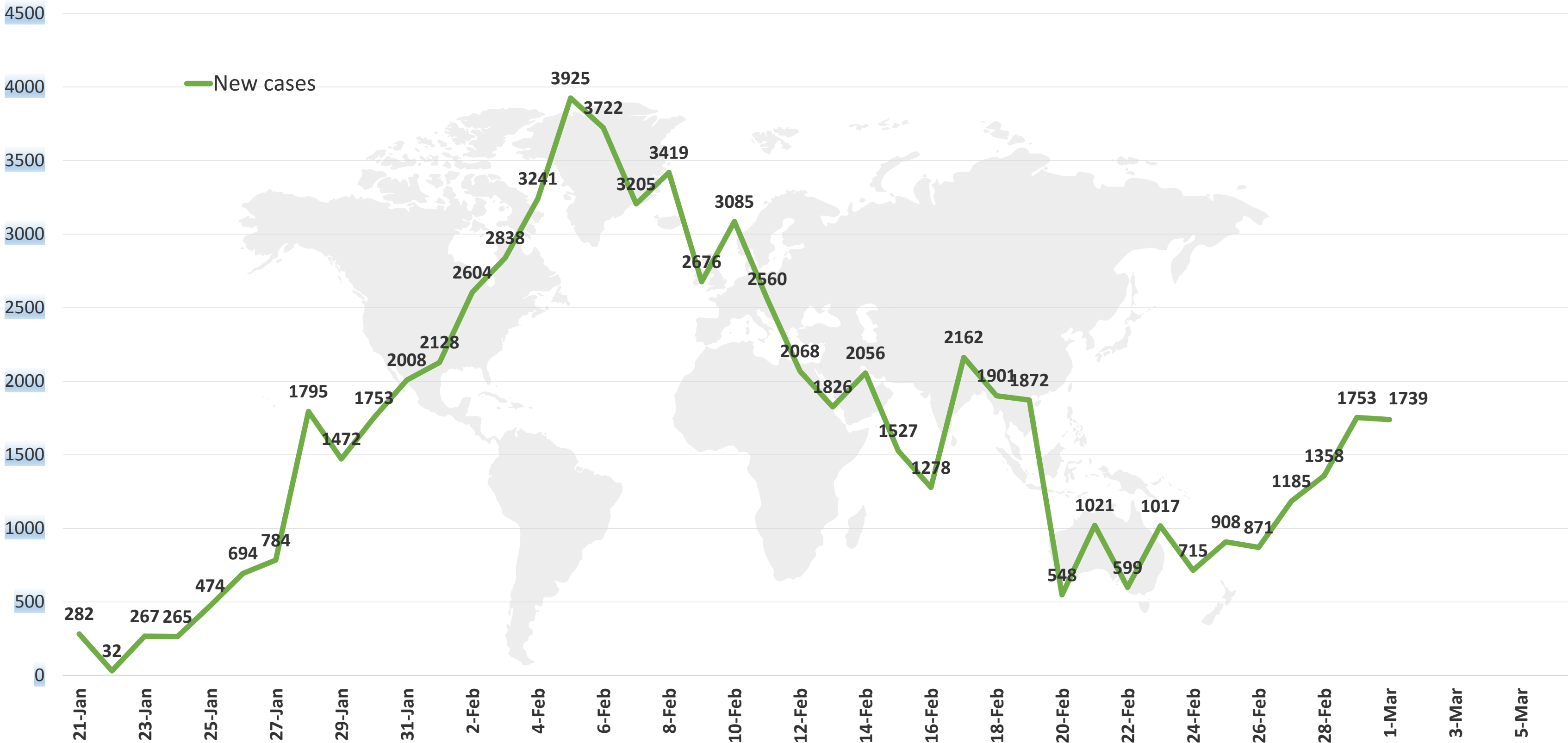
Line graph published by Abu Dhabi Public Health Center 2020.

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



# EPIDEMIOLOGY:

Figure 3: Number of new cases (January 21<sup>st</sup> to March 1<sup>st</sup>, 2020)



Line graph published by Abu Dhabi Public Health Center 2020.

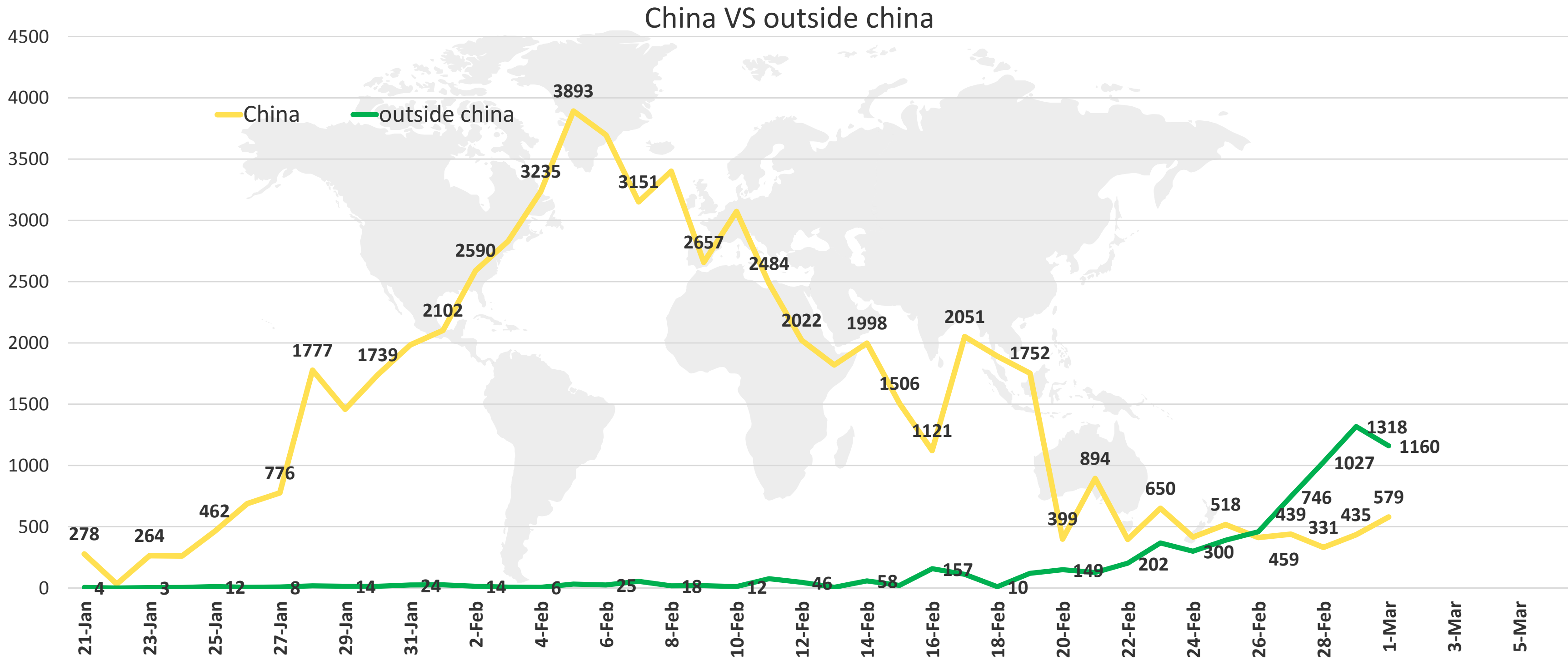
Data resources: [WHO](http://www.who.int)





# EPIDEMIOLOGY:

**Figure 4: Number of new cases in China versus outside China (January 22<sup>st</sup> to March 1<sup>st</sup>, 2020)**



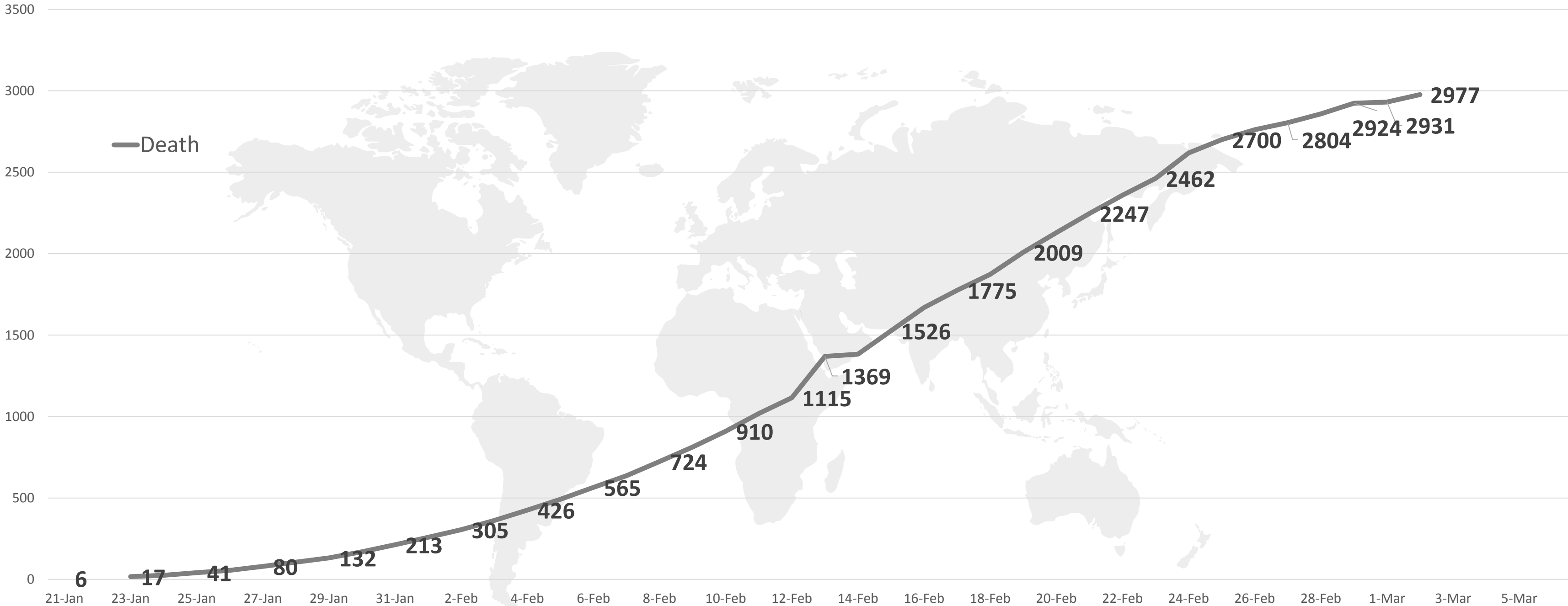
Line graph published by Abu Dhabi Public Health Center 2020.

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



# EPIDEMIOLOGY:

Figure 5: Number of total deaths (January 21<sup>st</sup> to March 1<sup>st</sup>, 2020)



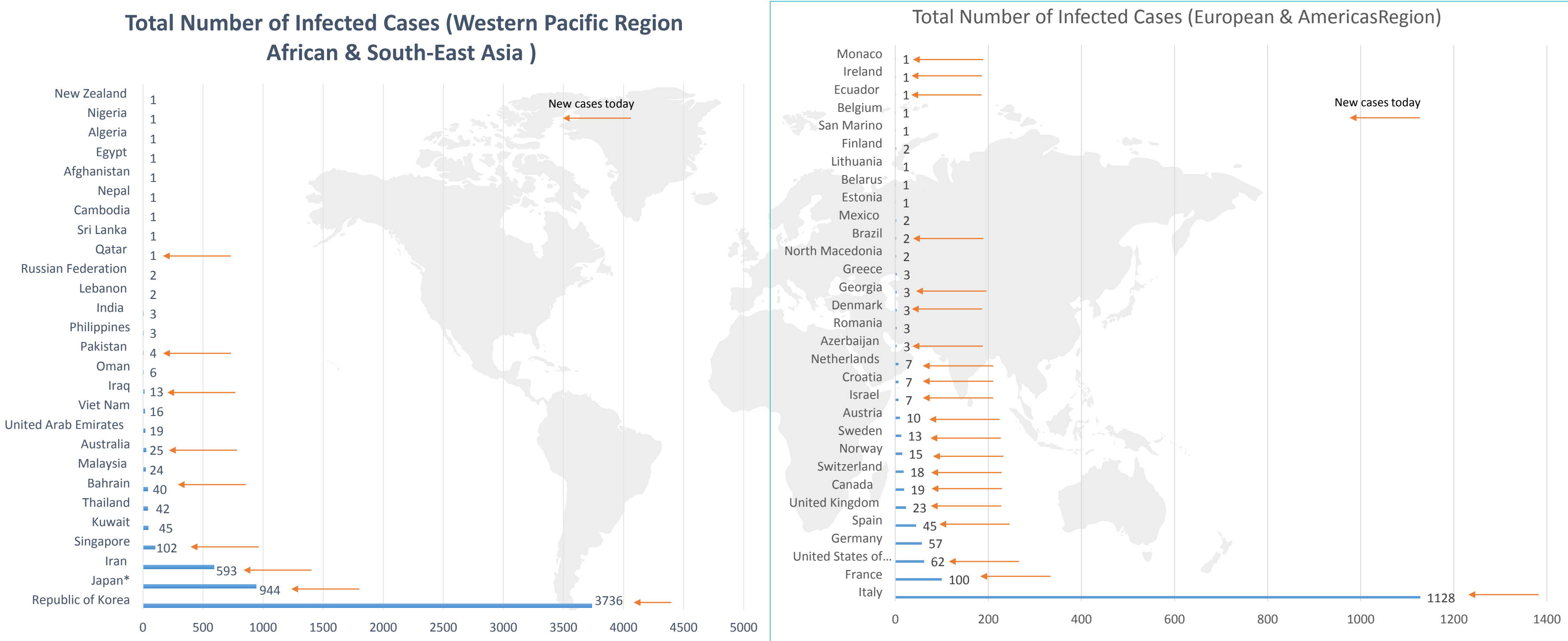
Line graph published by Abu Dhabi Public Health Center 2020.

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



# EPIDEMIOLOGY:

**Figure 6: Total number of cases outside China per country (January 21<sup>st</sup> to March 1<sup>st</sup> , 2020)**



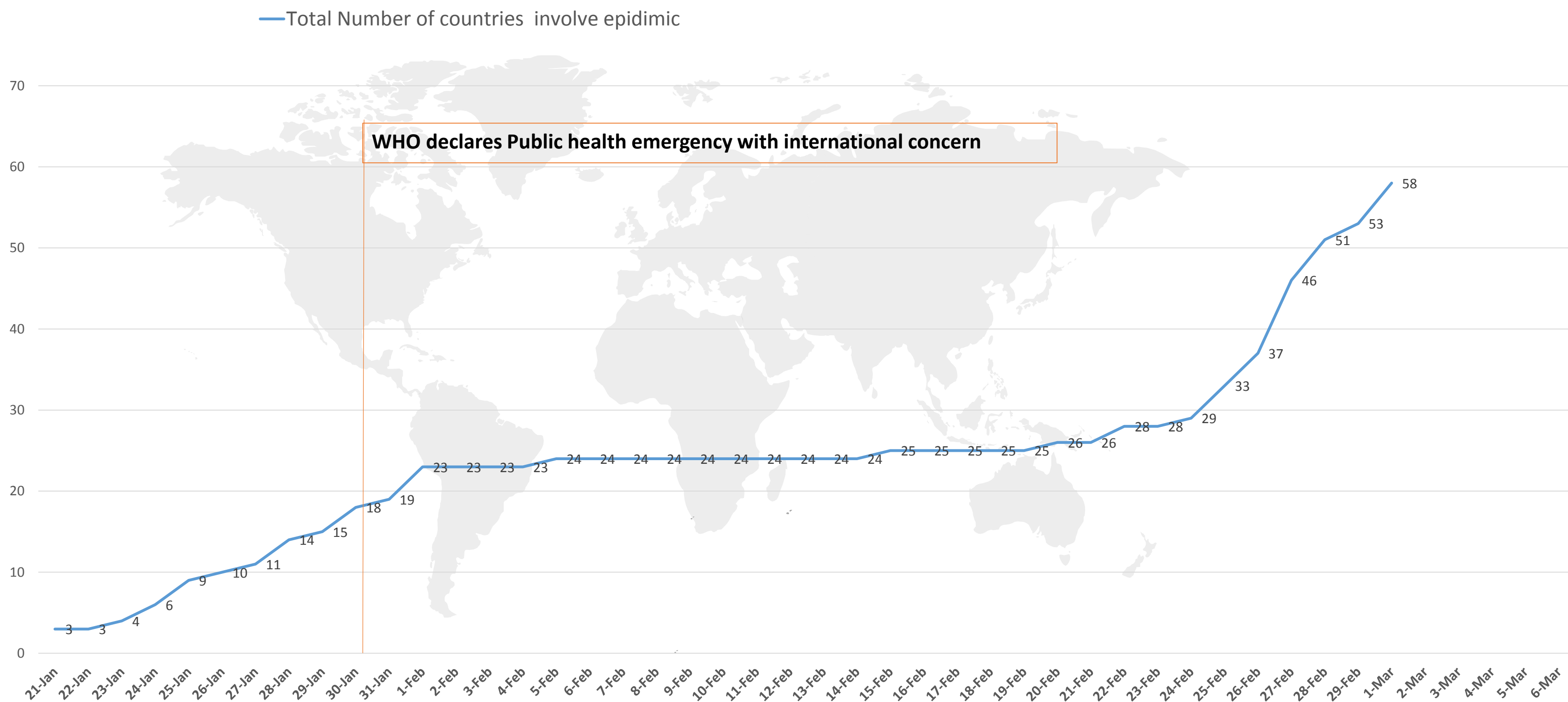
Line graph published by Abu Dhabi Public Health Center 2020.

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



# EPIDEMIOLOGY:

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



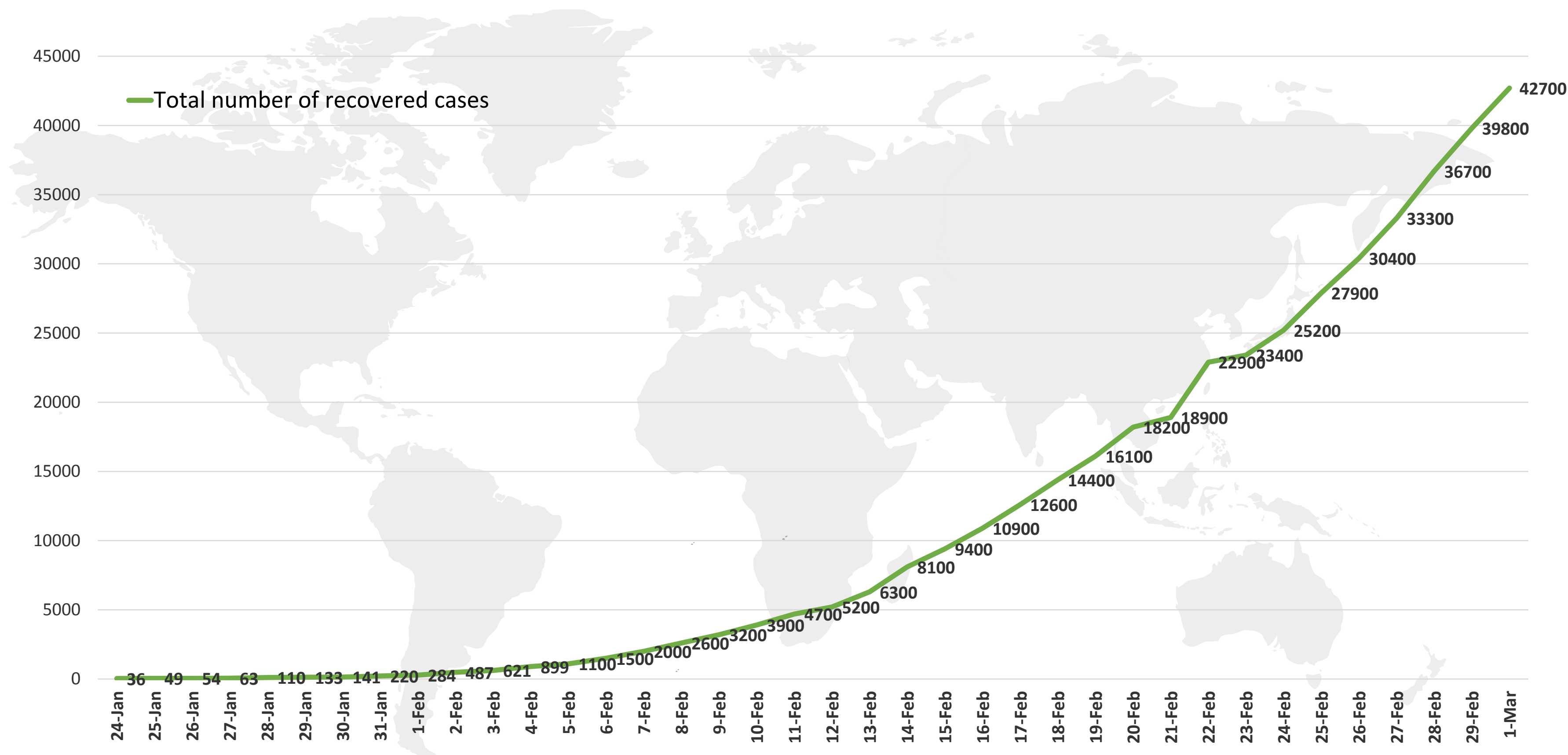
Line graph published by Abu Dhabi Public Health Center 2020.

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



# EPIDEMIOLOGY:

**Figure 8: Total recovered cases of COVID-19. (January 24<sup>st</sup> to March 1<sup>st</sup>, 2020)**



Line graph published by Abu Dhabi Public Health Center 2020.

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

Retrieved at

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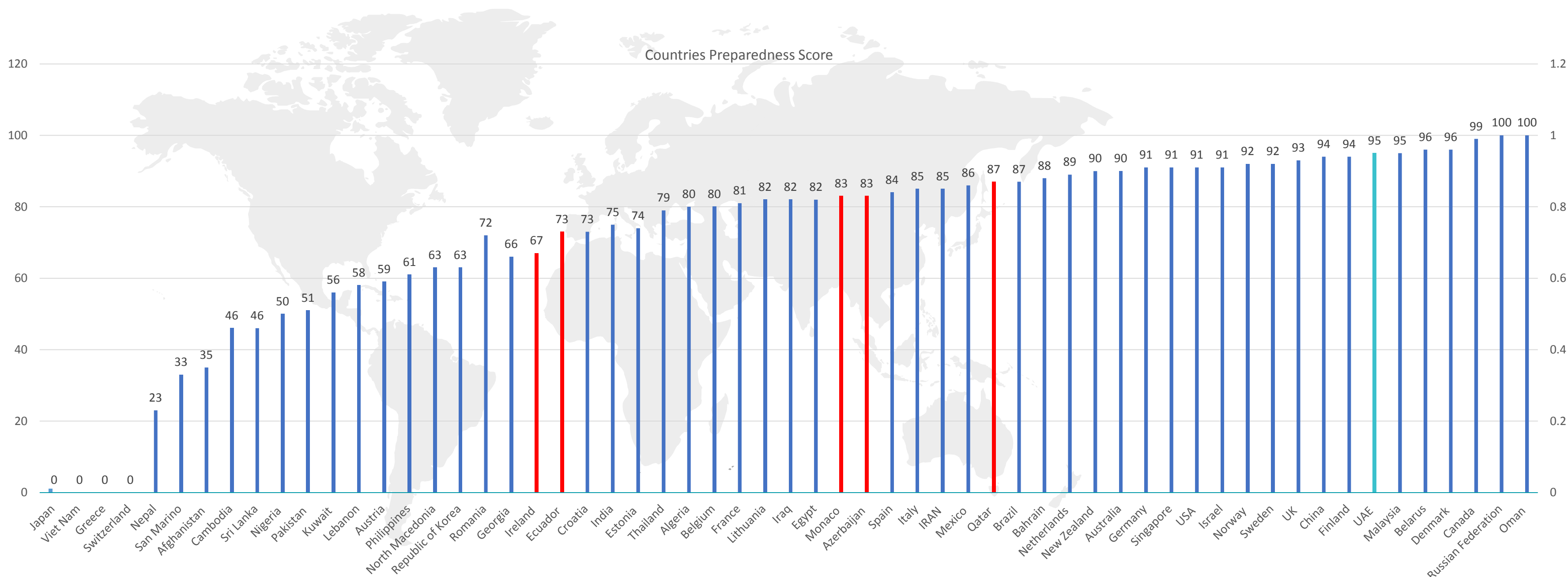
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# EPIDEMIOLOGY:

## 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.

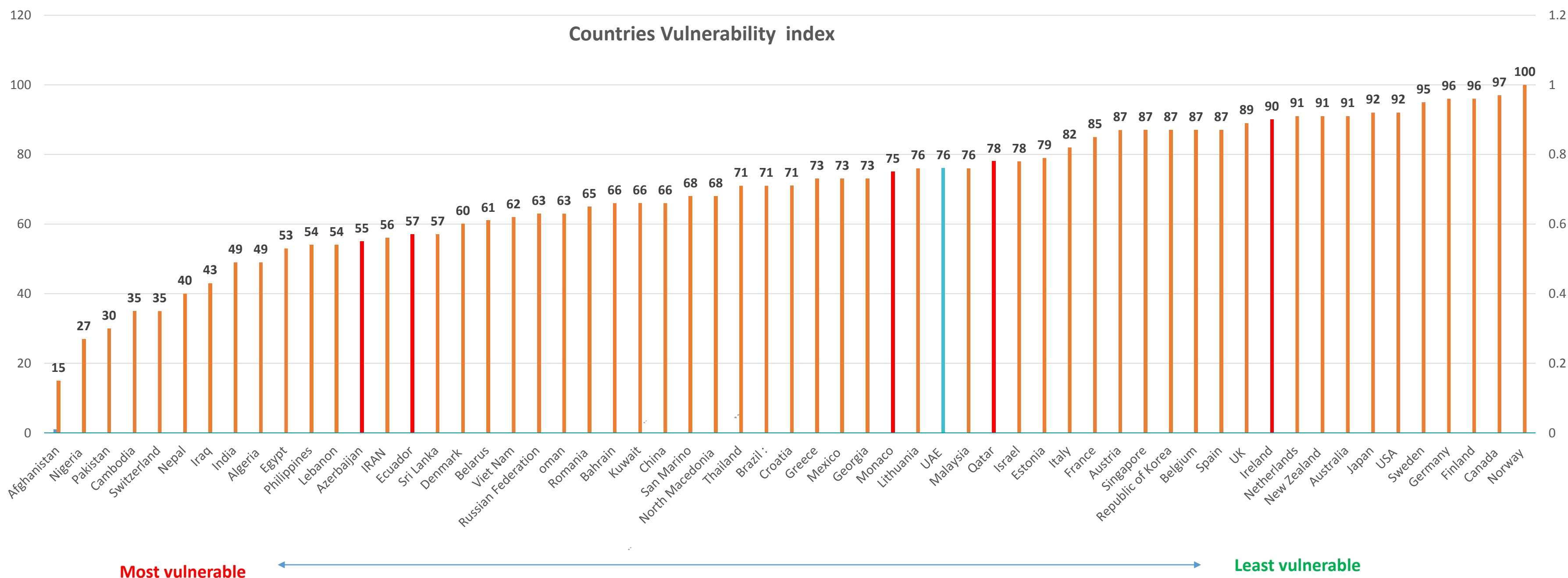
Data resources : [SPAR score](#) , [IDVI score](#)



# 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 01/03/2020 important points (1/2)

- Five new Member States (**Azerbaijan, Ecuador, Ireland, Monaco and Qatar**) reported cases of COVID-19 in the past 24 hours.
- Working with clinicians is crucial to understanding the clinical presentation, natural history and treatment interventions for COVID-19. WHO has published **interim clinical guidance, clinical training materials** and has launched a global clinical data platform to gather data and improve care for COVID-19 patients with an emphasis on:
  - **Oxygen therapy is the major treatment intervention for patients with severe COVID-19.**
  - **All countries** should work to optimize the availability of **pulse oximeters and medical oxygen systems.**
  - **Mortality in those with critical illness has been reported as over 50%**, thus implementation of proven critical care interventions such as lung protective ventilation should be optimized.
- The first regional COVID-19 Clinical Case Management training was conducted in **Brazzaville from 25-28 February 2020** with representatives from **18 countries of the WHO African region.** WHO will continue to **conduct** such trainings to increase global knowledge on the management and care of patients with COVID-19.
- The number of confirmed cases in Hubei province, China, has **increased for two successive days after a period of decline.** WHO is monitoring the situation and working **to understand its possible significance.**



# EPIDEMIOLOGY:



## WHO report 01/03/2020 important points (2/2)

- WHO has published updated recommendations for **international traffic** in relation to COVID-19 outbreak:
- WHO continues to **advise against** the application of travel or trade restrictions to countries experiencing COVID-19 outbreaks.
  - In general, evidence shows that **restricting the movement of people and goods during public health emergencies is ineffective** in most situations and **may divert resources from other interventions**.
  - However, in certain circumstances, **measures that restrict the movement of people may prove temporarily useful**, such as in settings with **few international connections** and **limited response capacities**.
  - **Restrictions may interrupt needed aid and technical support**, may disrupt businesses, and may have negative social and economic effects on the affected countries
  - Travel measures that significantly interfere with international traffic may **only be justified at the beginning of an outbreak**, as they may **allow countries to gain time**.
  - **Temperature screening alone, at exit or entry, is not an effective way to stop international spread**
  - **Recommendation:**
    - Elderly travelers and people with chronic diseases or underlying health conditions are advised to avoid travel.
    - Cough etiquette, personal hygiene and food hygiene is advised for all travels.
    - Also additional recommendation for countries to decide to quarantine or repatriate nationals from affected areas



# PUBLIC HEALTH RESPONSE

**Article : Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts**

**Published :**February 28, 2020

## **Summery:**

- The study used a mathematical model to assess if isolation and contact tracing are able to control onwards transmission from imported cases of COVID-19.
- In most scenarios, **highly effective contact tracing and case isolation is enough to control** a new outbreak of **COVID-19 within 3 months**. The probability of control decreases with long delays (8 day delay) from symptom onset to isolation, fewer cases ascertained by contact tracing, and increasing transmission before symptoms.
- This model can be modified to **reflect updated transmission characteristics** and more specific **definitions of outbreak control** to assess the potential success of local response efforts.

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



# CLINICAL FEATURES AND TRANSMISSION

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



## Article 1: Secondary attack rate and super spreading events for SARS-CoV-2

Published :February 27, 2020

### Summary:

The secondary attack rate (SAR), defined as the probability that an infection occurs among susceptible people within a specific group (i.e., household or close contacts).

- SAR can provide an **indication of how social interactions relate to transmission risk.**
- Data from nine recent reports of secondary transmission associated with a specific event such as a meal or holiday visit **suggests that 35% SAR were generated by a single primary case** after contact in large gatherings.

Link : [here](#)



# CLINICAL FEATURES AND TRANSMISSION

ABU DHABI PUBLIC  
HEALTH CENTRE

مركز أبوظبي  
للصحة العامة



## Article 2: Clinical Characteristics of Coronavirus Disease 2019 in China

**Published :** February 28, 2020

### Summery:

- Data regarding 1099 patients with laboratory-confirmed Covid-19 from 552 hospitals in 30 provinces were randomly selected for analysis.
- Fever found in (43.8% on admission and 88.7% during hospitalization)
- No radiographic or CT abnormality was found in 157 out of 877 patients (17.9%) with non-severe disease and in 5 out of 173 patients (2.9%) with severe disease.
- Lymphocytopenia was present in 83.2% of the patients on admission.
- Patients often presented without fever, and many did not have abnormal radiologic findings
- Extracorporeal membrane oxygenation was performed in 5 patients (0.5%) with severe disease. Among others like mechanical ventilation , anti-viral and antibiotic.

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