

An Overview of the COVID-19 Pandemic and Risk Assessment, July, 2020

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Abstract

In late 2019, the novel coronavirus 2019 (COVID-19) outbreak was first identified in Wuhan, China, and subsequently spread worldwide. By July 11, 2020, the number of confirmed COVID-19 cases reached 12,881,555 (including 599,146 deaths) in 187 countries/ territories. The pandemic has not reach its peak yet. The situations of epidemics in the United States, Central and South Americas, and South Asia were still serious. Some countries faced re-surgng epidemic after lifting restrictions. In Taiwan, the first imported case and the indigenous case were reported on January 21, and 28, respectively. As of July 12, the cumulative number of confirmed cases was 451, including 360 imported cases, 55 indigenous cases, and another 36 cases of naval crew members aboard the Panshi fast combat support ship. Currently the COVID-19 cases in Taiwan were still sporadic imported cases. No locally-acquired case was found for more than 8 weeks. Based on the current epidemic status, the risks of imported cases are still high. The high transmissibility of the virus and the potential of community outbreak remained as a threat to Taiwan's health system and society. Therefore, the overall risk of COVID-19 is considered high domestically.

Keywords: COVID-19, SARS-CoV-2, Risk assessment

Border Quarantine Measures and Achievement of COVID-19 Control in Taiwan

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Abstract

Since December 21, 2019, on-board inspection had been implemented on direct flights from Wuhan, China, marking the beginning of boarder quarantine challenges in respond to COVID-19 pandemic. In line with the development of the international epidemic, the Central Epidemic Command Center gradually expanded entry restrictions and post-entry quarantine requirements. Since March 19, 2020, all foreign nationals had been prohibited from entering Taiwan. Passengers eligible for entry were required to undergo home quarantine for 14 days. Upon arrival, passengers were required to declare their symptoms and travel history, and to receive fever screening and health assessment. Throat swab specimens were collected from those who presented symptoms at the airport or in the hospital, and then these passengers stayed in a centralized quarantine facility to wait for testing results. In addition, aiming at reducing risks originated from crowds and frequent movement, only aircrafts from five airports in China were allowed to enter Taiwan. Also, all connecting flights were suspended, and cruises and cross-strait passenger liners were banned from calling at ports of Taiwan. For front-line officers at ports of entry, health monitoring and protection guidelines were developed to protect their safety. In order to ensure safety and security of air and sea transport, the competent authorities in charge of transportation have established an epidemic prevention and management mechanism for air and sea transport respectively.

Over 184,000 home quarantine notices had been issued by border quarantine authorities. More than 80% of the inbound travelers completed the declaration via Entry Quarantine System, greatly improving timeliness and accuracy of information required for further epidemic prevention and control in community. With on-board quarantine and health surveillance system for entry, not only the first confirmed case in Taiwan, but also more than one-third of imported cases were detected through border quarantine,

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DOI: 10.6525/TEB.202008_36(15).0002

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Received: Jul. 22, 2020
Accepted: Jul. 22, 2020

sparing more capacity for domestic response and preparedness for medical resources and medical systems and therefore alleviating pressure on epidemic prevention and control in the community. Despite continuous and serious epidemic and significant challenges ahead, Taiwan keeps on implementing various quarantine measures in accordance with the principle of “strict risk control at border “to comprehensively protect border security.

Keywords: COVID-19, Border Quarantine, Onboard Quarantine, Home Quarantine, Quarantine System for Entry

The Measures and Achievement of Community Epidemic Prevention against COVID-19 in Taiwan

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Abstract

COVID-19 is an emerging infectious disease occurred in Wuhan, China at the end of 2019. The epidemic began to spread in early 2020 and had become a global pandemic. In order to prevent the disease from entering the community and causing continuous transmission, Taiwan had successfully curbed the spread of COVID-19 through rigid community defense lines. Relevant measures included strengthening the notification of suspected cases, launching an expanded community surveillance program, detecting submerged cases effectively, and following by prompt isolation and adequate treatment, monitoring cases progression throughout the whole medical process. Furthermore, to implement home isolation and home quarantine policy, the Central Epidemic Command Center (CECC) established appropriate tracking and following up systems on persons at risk of infection with smart technology and inter-ministerial cooperation. In addition, the CECC published epidemic prevention guidelines and provided advices for crowded places or activities to strengthen epidemic prevention at those with high risks of infection. Moreover, through multiple channels and platforms, the CECC established communication with the public regarding risks of infection and raised the public's awareness of epidemic prevention among our people. Thanks to the collective efforts of the public and strict border controls, the epidemic was under stable situation. The CECC substantially lifted the restrictions since June 7, so that the public and industries could return to normalcy. Lastly, to be prepared for the future border controls adjustments, personal health behaviors must be cultivated and rooted deeply in our daily lives. In addition to closely monitoring the epidemic situations and trends, The CECC continues to encourage our people to implement the "Epidemic New Life Movement" and timely adjust the epidemic prevention strategies according to the epidemic status of COVID-19. Most importantly, the CECC will make every efforts to reduce the risks of community transmission and protect the health of our people.

Keywords: COVID-19, Community Epidemic Prevention, home isolation, home quarantine

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DOI: 10.6525/TEB.202008_36(15).0003

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Received: Jul. 22, 2020
Accepted: Jul. 22, 2020

week 29–30(Jul.12–Jul.25, 2020)

DOI: 10.6525/TEB.202008_36(15).0004

Weekly Data of Notifiable Infectious Diseases (by week of diagnosis)

| Case diagnosis year | | Week 29★ | | Week 1-29 | | | |
|---------------------------------------|---|----------|------|--------------|----------------|--------------|----------------|
| Classification | Disease Diagnosed | 2020 | 2019 | 2020 | | 2019 | |
| | | | | Total cases★ | Imported cases | Total cases★ | Imported cases |
| Category I | Plague | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rabies | 0 | 0 | 0 | 0 | 0 | 0 |
| | SARS | 0 | 0 | 0 | 0 | 0 | 0 |
| | Smallpox | 0 | 0 | 0 | 0 | 0 | 0 |
| Category II | Acute Flaccid Paralysis | 0 | 3 | 18 | 0 | 35 | 0 |
| | Acute Viral Hepatitis type A | 2 | 2 | 48 | 7 | 52 | 14 |
| | Amoebiasis | 6 | 8 | 136 | 75 | 193 | 106 |
| | Anthrax | 0 | 0 | 0 | 0 | 0 | 0 |
| | Chikungunya Fever | 0 | 3 | 3 | 3 | 13 | 13 |
| | Cholera | 0 | 0 | 0 | 0 | 0 | 0 |
| | Dengue Fever | 0 | 22 | 61 | 61 | 291 | 236 |
| | Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enterohemorrhagic E. coli Infection | 0 | 0 | 0 | 0 | 1 | 0 |
| | Epidemic Typhus Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Hantavirus Pulmonary Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Hemorrhagic Fever with Renal Syndrome | 0 | 0 | 8 | 0 | 0 | 0 |
| | Malaria | 0 | 1 | 1 | 1 | 2 | 2 |
| | Measles | 0 | 0 | 2 | 2 | 106 | 40 |
| | Meningococcal Meningitis | 0 | 0 | 5 | 0 | 2 | 0 |
| | Paratyphoid Fever | 0 | 0 | 0 | 0 | 2 | 1 |
| | Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rubella | 0 | 0 | 0 | 0 | 19 | 15 |
| | Shigellosis | 2 | 5 | 91 | 21 | 81 | 29 |
| | Typhoid fever | 0 | 0 | 5 | 3 | 17 | 13 |
| West Nile Fever | 0 | 0 | 0 | 0 | 0 | 0 | |
| Zika virus infection | 0 | 0 | 2 | 2 | 1 | 1 | |
| Category III | Acute Viral Hepatitis type B | 1 | 1 | 52 | 2 | 58 | 1 |
| | Acute Viral Hepatitis type C | 14 | 12 | 358 | 3 | 342 | 2 |
| | Acute Viral Hepatitis type D | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type E | 0 | 0 | 6 | 0 | 7 | 3 |
| | Congenital Syphilis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Congenital Rubella Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enteroviruses Infection with Severe Complications | 0 | 3 | 7 | 0 | 21 | 1 |
| | Haemophilus Influenza type b Infection | 0 | 0 | 3 | 0 | 0 | 0 |
| | Japanese Encephalitis | 2 | 2 | 13 | 0 | 14 | 0 |
| | Legionnaires' Disease | 8 | 6 | 144 | 8 | 153 | 11 |
| | Mumps | 14 | 7 | 270 | 6 | 334 | 3 |
| | Neonatal Tetanus | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pertussis | 0 | 0 | 8 | 0 | 22 | 0 |
| Tetanus | 0 | 0 | 6 | 0 | 1 | 0 | |
| Category IV | Botulism | 0 | 0 | 1 | 0 | 0 | 0 |
| | Brucellosis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Complicated Varicella | 0 | 1 | 30 | 0 | 34 | 1 |
| | Endemic Typhus Fever | 0 | 1 | 9 | 0 | 8 | 1 |
| | Herpesvirus B Infection | 0 | 0 | 0 | 0 | 0 | 0 |
| | Influenza Case with Severe Complications | 0 | 53 | 548 | 6 | 1182 | 6 |
| | Invasive Pneumococcal Disease | 0 | 10 | 157 | 0 | 254 | 2 |
| | Leptospirosis | 1 | 6 | 25 | 0 | 40 | 0 |
| | Listeriosis | 2 | 4 | 80 | 0 | 112 | 1 |
| | Lyme Disease | 0 | 0 | 0 | 0 | 1 | 1 |
| | Melioidosis | 0 | 1 | 8 | 1 | 7 | 0 |
| | Q Fever | 0 | 0 | 9 | 0 | 12 | 2 |
| | Scrub Typhus | 15 | 9 | 195 | 1 | 238 | 3 |
| Toxoplasmosis | 0 | 0 | 2 | 0 | 8 | 0 | |
| Tularemia | 0 | 0 | 0 | 0 | 0 | 0 | |
| Category V | Ebola Virus Disease | 0 | 0 | 0 | 0 | 0 | 0 |
| | Lassa Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Marburg Hemorrhagic Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Middle East Respiratory Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Coronavirus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Novel Influenza A Virus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rift Valley Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| Severe Pneumonia with Novel Pathogens | 3 | - | 454 | 399 | - | - | |
| Yellow Fever | 0 | 0 | 0 | 0 | 0 | 0 | |

- ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
- MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
- Numbers of mumps and tetanus cases are summed up by the week of report.
- Since 2020/1/15, "Severe Pneumonia with Novel Pathogens" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Sixteen clusters related to diarrhea (8), tuberculosis (6), upper respiratory tract infection (1) and varicella (1) were reported during week 29.

Imported Infectious Diseases

- There were 10 imported cases from 4 countries during week 29.

| Diseases | Countries | | | | Total |
|---------------------------------------|-----------|-------------|-------|-------|-------|
| | Indonesia | Philippines | Palau | Japan | |
| Amoebiasis | 5 | | | | 5 |
| Severe Pneumonia with Novel Pathogens | | 3 | | | 3 |
| Acute Hepatitis C | | | 1 | | 1 |
| Shigellosis | | | | 1 | 1 |
| Total | 5 | 3 | 1 | 1 | 10 |

- As of week 29, there were 595 imported cases from 48 different countries. The top 3 countries are Indonesia (116), USA (93), UK (72).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (399), Amoebiasis (75), Dengue Fever (61).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The risk of acquiring SARS-CoV-2 infection in Taiwan is low. However, due to the severe international epidemic, the sporadic imported cases are expected.
- **Japanese Encephalitis** : Taiwan is in the midst of Japanese Encephalitis season. Every county in Taiwan is at risk of infection.
- **Scrub Typhus** : Taiwan is in the midst of Scrub Typhus season, both eastern Taiwan and outlying islands are high risk area.
- **Enterovirus** : The epidemic status of enterovirus infection is low.

Weekly Data of Notifiable Infectious Diseases (by week of diagnosis)

| Case diagnosis year | | Week 30★ | | Week 1–30 | | | |
|---------------------------------------|---|----------|------|--------------|----------------|--------------|----------------|
| Classification | Disease Diagnosed | 2020 | 2019 | 2020 | | 2019 | |
| | | | | Total cases★ | Imported cases | Total cases★ | Imported cases |
| Category I | Plague | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rabies | 0 | 0 | 0 | 0 | 0 | 0 |
| | SARS | 0 | 0 | 0 | 0 | 0 | 0 |
| | Smallpox | 0 | 0 | 0 | 0 | 0 | 0 |
| Category II | Acute Flaccid Paralysis | 0 | 2 | 18 | 0 | 37 | 0 |
| | Acute Viral Hepatitis type A | 2 | 1 | 49 | 7 | 53 | 15 |
| | Amoebiasis | 6 | 5 | 142 | 78 | 198 | 107 |
| | Anthrax | 0 | 0 | 0 | 0 | 0 | 0 |
| | Chikungunya Fever | 0 | 6 | 3 | 3 | 19 | 18 |
| | Cholera | 0 | 0 | 0 | 0 | 0 | 0 |
| | Dengue Fever | 3 | 37 | 64 | 61 | 328 | 267 |
| | Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enterohemorrhagic E. coli Infection | 0 | 0 | 0 | 0 | 1 | 0 |
| | Epidemic Typhus Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Hantavirus Pulmonary Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Hemorrhagic Fever with Renal Syndrome | 0 | 0 | 8 | 0 | 0 | 0 |
| | Malaria | 0 | 0 | 1 | 1 | 2 | 2 |
| | Measles | 0 | 2 | 2 | 2 | 108 | 42 |
| | Meningococcal Meningitis | 0 | 0 | 5 | 0 | 2 | 0 |
| | Paratyphoid Fever | 0 | 1 | 0 | 0 | 3 | 2 |
| | Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rubella | 0 | 0 | 0 | 0 | 19 | 15 |
| | Shigellosis | 3 | 4 | 94 | 21 | 85 | 31 |
| Typhoid fever | 0 | 0 | 5 | 3 | 17 | 13 | |
| West Nile Fever | 0 | 0 | 0 | 0 | 0 | 0 | |
| Zika virus infection | 0 | 0 | 2 | 2 | 1 | 1 | |
| Category III | Acute Viral Hepatitis type B | 1 | 1 | 53 | 2 | 59 | 2 |
| | Acute Viral Hepatitis type C | 9 | 9 | 365 | 3 | 351 | 2 |
| | Acute Viral Hepatitis type D | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type E | 1 | 0 | 7 | 0 | 7 | 3 |
| | Congenital Syphilis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Congenital Rubella Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enteroviruses Infection with Severe Complications | 0 | 3 | 7 | 0 | 24 | 1 |
| | Haemophilus Influenza type b Infection | 0 | 0 | 3 | 0 | 0 | 0 |
| | Japanese Encephalitis | 3 | 3 | 16 | 0 | 17 | 1 |
| | Legionnaires' Disease | 7 | 6 | 151 | 8 | 159 | 12 |
| | Mumps | 6 | 15 | 276 | 6 | 349 | 4 |
| | Neonatal Tetanus | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pertussis | 0 | 0 | 8 | 0 | 22 | 0 |
| Tetanus | 0 | 0 | 6 | 0 | 1 | 0 | |
| Category IV | Botulism | 0 | 0 | 1 | 0 | 0 | 0 |
| | Brucellosis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Complicated Varicella | 0 | 2 | 30 | 0 | 36 | 1 |
| | Endemic Typhus Fever | 1 | 4 | 10 | 0 | 12 | 1 |
| | Herpesvirus B Infection | 0 | 0 | 0 | 0 | 0 | 0 |
| | Influenza Case with Severe Complications | 0 | 63 | 548 | 6 | 1245 | 6 |
| | Invasive Pneumococcal Disease | 3 | 6 | 160 | 0 | 260 | 2 |
| | Leptospirosis | 2 | 0 | 27 | 0 | 40 | 0 |
| | Listeriosis | 5 | 3 | 85 | 0 | 115 | 1 |
| | Lyme Disease | 0 | 0 | 0 | 0 | 1 | 1 |
| | Melioidosis | 0 | 0 | 8 | 1 | 7 | 0 |
| | Q Fever | 1 | 2 | 10 | 0 | 14 | 2 |
| | Scrub Typhus | 10 | 15 | 205 | 1 | 253 | 3 |
| Toxoplasmosis | 0 | 0 | 2 | 0 | 8 | 0 | |
| Tularemia | 0 | 0 | 0 | 0 | 0 | 0 | |
| Category V | Ebola Virus Disease | 0 | 0 | 0 | 0 | 0 | 0 |
| | Lassa Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Marburg Hemorrhagic Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Middle East Respiratory Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Coronavirus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Novel Influenza A Virus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rift Valley Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| Severe Pneumonia with Novel Pathogens | 4 | - | 458 | 403 | - | - | |
| Yellow Fever | 0 | 0 | 0 | 0 | 0 | 0 | |

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
3. Numbers of mumps and tetanus cases are summed up by the week of report.
4. Since 2020/1/15, "Severe Pneumonia with Novel Pathogens" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Sixteen clusters related to diarrhea (1), tuberculosis (11), upper respiratory tract infection (1) and varicella (3) were reported during week 30.

Imported Infectious Diseases

- There were 7 imported cases from 4 countries/areas during week 30.

| Diseases | Countries/Areas | | | | Total |
|---------------------------------------|-----------------|-----------|-----------|---------|-------|
| | Philippines | Indonesia | Hong Kong | Vietnam | |
| Severe Pneumonia with Novel Pathogens | 3 | | 1 | | 4 |
| Amoebiasis | | 2 | | 1 | 3 |
| Total | 3 | 2 | 1 | 1 | 7 |

- As of week 30, there were 602 imported cases from 48 different countries. The top 3 countries are Indonesia (118), USA (93), UK (72).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (403), Amoebiasis (78), Dengue Fever (61).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The risk of acquiring SARS-CoV-2 infection in Taiwan is low. However, due to the severe international epidemic, the sporadic imported cases are expected.
- **Dengue Fever** : There has been one indigenous cluster in northern Taiwan, the risk of dengue fever is expected to raise.
- **Japanese Encephalitis** : Taiwan is in the midst of Japanese Encephalitis season. Every county in Taiwan is at risk of infection.
- **Scrub Typhus** : Taiwan is in the midst of Scrub Typhus season, both eastern Taiwan and outlying islands are high risk area.

The Taiwan Epidemiology Bulletin series of publications is published by Centers for Disease Control, Ministry of Health and Welfare, Taiwan (R.O.C.) since Dec. 15, 1984.

Publisher: Jih-Haw Chou

Editor-in-Chief: Yung-Ching Lin

Executive Editor: Hsueh-Ju Chen, Hsin-Lun Lee

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Telephone No: +886-2-2395-9825

Website: <https://www.cdc.gov.tw/En>

Suggested Citation:

[Author].[Article title].Taiwan Epidemiol Bull 2020;36:[inclusive page numbers]. [DOI]