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The Establishment And Implementation of COVID-19 Entry Quarantine System in Taiwan, 2020

Ching-Min Lu*, Ji-Jia Huang, Shin-Wei Su, Yung-Ching Lin, Wang-Ping Lee, Li-Li Ho

Abstract

At the beginning of the outbreak of coronavirus disease (COVID-19) in December 2019, Taiwan was the first country in the world to take border quarantine in response to the pandemic. With the rapid spread of outbreak from China, Hong Kong and Macau to other countries, Taiwan Centers for Disease Control monitored the pandemic trend in real time and implemented quarantine measures according to different risk levels, including issuing "Entry Health Declaration", "Home Quarantine Notice", and "Self-health Management Notice".

In the early stage of the pandemic, the health status of inbound passengers and their contact information in Taiwan were collected using paper-based format, which required extremely time-consuming manual data entry. Because such procedure was prone to typing error and unfavorable for archiving and inquiries, the Information Security Division of the Executive Yuan, worked with the Information Department of the Ministry of Health and Welfare, established an "Entry Quarantine System" to overcome the aforementioned difficulties. The system sends a text message of quarantine issues through mobile phone to inbound passengers to confirm the contact, and to provide follow-up care in communities. In addition, the system improves the efficiency of collaborations between border quarantine measures and community epidemic prevention, as well as the data quality and accuracy. Such cross-system data sharing and a complete management mechanism effectively reduce the exposure risks of COVID-19 to the public.

Division of Quarantine, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
Corresponding author: Ching-Min Lu*
E-mail: lujm@cdc.gov.tw

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Since the Entry Quarantine System was implemented on February 16, 2020, it has been continuously optimized to respond to pandemic situations accordingly. From March 19, 2020, the entry of foreigners was restricted, and from June 29, inbound foreigners must present a COVID-19 test-negative certificate and comply with quarantine regulations. Use of electronic devices enable quarantine measures respond quickly to the pandemic and the utilization rate approached to 100% by September. Then the application of Entry Quarantine System was further expanded to include seaports. In the future, the system will be adjusted in accordance with border control policies to ensure the protection of border health security.

Keywords: COVID-19, quarantine system for entry, system applications

week 20–21 (May.15–May.28, 2022)

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Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 20★		Week 1–20			
				2022		2021	
Classification	Disease Diagnosed	2022	2021	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	1	10	0	12	0
	Acute Viral Hepatitis type A	0	1	92	0	31	0
	Amoebiasis	0	1	48	19	87	38
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	1	1
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	0	2	2	5	5
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus syndrome	0	0	0	0	5	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	0	0	2	0
	Paratyphoid Fever	0	0	0	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	3	1	35	0	72	0
	Typhoid fever	0	0	1	0	1	0
	West Nile Fever	0	0	0	0	0	0
	Zika virus infection	0	0	0	0	0	0
Category III	Acute Viral Hepatitis type B	3	3	44	0	59	2
	Acute Viral Hepatitis type C	6	5	181	1	236	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	1	6	0	5	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	0	0	0	1	0
	Haemophilus Influenza type b Infection	0	0	1	0	1	0
	Japanese Encephalitis	0	0	0	0	1	0
	Legionnaires' Disease	1	5	116	0	128	0
	Mumps	4	3	80	0	186	1
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0
	Tetanus	0	0	1	0	2	0
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	0	12	0	25	0
	Endemic Typhus Fever	1	0	3	0	11	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	0	0	1	0
	Invasive Pneumococcal Disease	1	6	67	0	124	0
	Leptospirosis	0	0	14	0	14	0
	Listeriosis	1	2	50	0	77	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	0	0	0	0
	Q Fever	0	0	0	0	0	0
	Scrub Typhus	8	4	54	0	78	0
	Toxoplasmosis	0	0	11	0	7	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 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	552015	2383	1303226	10099	3049	409
	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, Gonorrhea, 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.

Suspected Clusters

●Three clusters related to diarrhea (1), tuberculosis (2) were reported during week 20.

Imported Infectious Diseases

●There were 333 imported cases from 22 countries during week 20.

Severe Pneumonia with Novel Pathogens: 333 cases from Vietnam 27, USA 22, Thailand 14 and the remaining 19 countries have less than 10 cases, 224 unknown.

●During week 1–20, there were 10124 imported cases from 114 countries. The top three countries are Vietnam (2251), USA (1167), Indonesia (1039) and 2161 unknown.

●During week 1–20, the notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (10099).

Summary of Epidemic

●**Severe Pneumonia with Novel Pathogens**：Taiwan is in the stage of widespread transmission of COVID-19. The epidemic's growth is expected to gradually flat. After a week of stabilization, global COVID-19 cases are declining, maybe duo to decreased testing and surveillance in several countries.

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

Case diagnosis year		Week 21★		Week 1–21			
				2022		2021	
Classification	Disease Diagnosed	2022	2021	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	0	10	0	12	0
	Acute Viral Hepatitis type A	0	0	92	0	31	0
	Amoebiasis	0	4	0	19	91	39
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	1	1
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	0	2	2	5	5
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus syndrome	0	1	0	0	6	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	0	0	2	0
	Paratyphoid Fever	0	0	0	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	0	1	35	0	73	0
	Typhoid fever	0	0	1	0	1	0
	West Nile Fever	0	0	0	0	0	0
	Zika virus infection	0	0	0	0	0	0
Category III	Acute Viral Hepatitis type B	0	6	44	0	65	2
	Acute Viral Hepatitis type C	8	6	189	1	242	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	6	0	5	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	0	0	0	1	0
	Haemophilus Influenza type b Infection	0	0	1	0	1	0
	Japanese Encephalitis	0	1	0	0	2	0
	Legionnaires' Disease	14	4	130	1	132	0
	Mumps	3	4	83	0	190	1
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0
	Tetanus	0	0	1	0	2	0
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	0	12	0	25	0
	Endemic Typhus Fever	2	0	5	0	11	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	0	0	1	0
	Invasive Pneumococcal Disease	4	6	71	0	130	0
	Leptospirosis	1	0	15	0	14	0
	Listeriosis	2	1	52	0	78	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	0	0	0	0
	Q Fever	0	0	0	0	0	0
	Scrub Typhus	4	4	58	0	82	0
	Toxoplasmosis	1	0	12	0	7	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 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	571871	3934	1875116	10441	6983	434
	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, Gonorrhea, 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.

Suspected Clusters

●Nine clusters related to diarrhea (2), tuberculosis (7) were reported during week 21.

Imported Infectious Diseases

●There were 344 imported cases from 18 countries during week 21.

Severe Pneumonia with Novel Pathogens: 343 cases from USA 34, Vietnam 28 and the remaining 16 countries have less than 10 cases, 230 unknowns.

Legionnaires' Disease: 1 case, 1 unknown.

●During week 1–21, there were 10467 imported cases from 114 countries. The top three countries are Vietnam (2280), USA (1201), Indonesia (1044).

●During week 1–21, the notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (10441).

Summary of Epidemic

●**Severe Pneumonia with Novel Pathogens**：Taiwan is in the stage of widespread transmission of COVID-19. The number of newly cases is similar to previous week. Global COVID-19 cases are declining; however, the epidemic is rising in some countries. The risk of COVID-19 transmission remains high.

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