

### The Experience of Utilizing International Health Regulations Core Capacities Responding to COVID-19 Pandemic at Points of Entry, Taoyuan International Airport

Hsiao-Hsuan Chiang\*, Min-Ping Hsu, Mei-Jung Chen, Yu-Wen Yang, Kun-Bin Wu

#### Abstract

At the end of December 2019, the COVID-19 outbreak occurred in Wuhan City, China, and quickly spread across the world. To prevent the importation of COVID-19 cases from abroad, the Taiwan Centers for Disease Control established the "Central Epidemic Command Center (CECC)" on January 20, 2020. The World Health Organization (WHO) also declared the COVID-19 outbreak as a Public Health Emergency of International Concern (PHEIC) on January 31, 2020. As a result, the Taoyuan Airport Health and Safety Working Group held a meeting and converted the Working Group into the "Taoyuan Airport Response Center for Central Epidemic Command Center" on January 22, 2020, then took stock of the preparation situation of each unit in the airport. They worked together to implement the important border quarantine measures of the CECC, including the on-board inspection or anchorage quarantine for chartered flights or similar charter flights from high-risk countries, health declaration of inbound passengers through the "entry and quarantine system" website via smartphones, collecting deep throat saliva samples for PCR testing for inbound passengers, and implementing landing on-site inspections for specific arrival flights. The pandemic lasted more than three years, and the restrictions at borders have been lifted since October 13, 2022. During the pandemic, the Taoyuan International Airport

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utilized the core capabilities as designated ports under the International Health Regulations (IHR 2005). When facing threats and challenges such as emerging infectious diseases or major public health events in the future, such experiences in implementing multiple innovative border quarantine measures and contingency plans may be the reference to prevent overseas infectious diseases from threatening public health.

**Keywords:** Taoyuan International Airport, COVID-19, IHR core capacities at points of entry, border quarantine

# The Experience of On-site Testing of Passengers on Arrival Flights at Taoyuan International Airport in Response to the COVID-19 Pandemic, Taiwan, 2022

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## Abstract

Taiwan Taoyuan International Airport has brought epidemic prevention to the frontline in response to the increasing number of COVID-19 outbreaks and confirmed cases of airport workers infected with Omicron variants. From 0:00 on January 11, 2022 (flight scheduled arrival time), all passengers from long-haul flights were required to undergo a government-funded rapid RT-PCR test on arrival. Passengers with a negative test proceeded to customs and immigration clearance, and then took quarantine vehicles to quarantine hotels or government facilities to complete quarantine. Those who tested positive were transferred to a designated hospital by ambulance on the airside of the airport. The measures aimed to reduce the risks of entry clearance for overseas positive cases and entering the community, and to preserve the community's epidemic prevention and medical capacity.

Taoyuan International Airport had implemented the testing on arrival for specific flights from January 11 to May 31, 2022. The measures were carried out on 2,534 flights. Among 148,918 people inspected, 6,254 (4.2%) were tested positive. In response to the slowdown of the epidemic situation in specific flight countries, the inspections on arrival were terminated on June 1, 2022. All incoming travelers from abroad only required a saliva test at the airport. We look forward to utilizing the experience of handling responses to the on-site inspections at Taoyuan International Airport as a reference for future epidemic control measures.

**Keywords:** COVID-19, landing on-site inspections, border Quarantine, Taoyuan International Airport

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week 20–week 21, 2023 (May.14, 2023–May.27, 2023)

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Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 20★		Week 1–20			
Classification	Disease Diagnosed	2023	2022	2023		2022	
				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	Cholera	0	0	0	0	0	0
	Typhoid fever	1	0	2	2	1	0
	Paratyphoid Fever	1	0	4	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Shigellosis	2	3	23	7	35	0
	Amoebiasis	11	1	117	50	76	26
	Enterohemorrhagic E. coli Infection	0	0	0	0	0	0
	Anthrax	0	0	0	0	0	0
	Diphtheria	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	1	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Acute Flaccid Paralysis	1	0	20	0	10	0
	Measles	0	0	1	1	0	0
	Rubella	0	0	0	0	0	0
	Dengue Fever	4	0	44	44	2	2
	West Nile Fever	0	0	0	0	0	0
	Acute Viral Hepatitis type A	1	0	36	2	92	0
	Malaria	0	0	1	1	2	2
	Chikungunya Fever	0	0	4	4	0	0
	Hantavirus syndrome	0	0	2	0	1	0
Zika virus infection	0	0	2	2	0	0	
Mpox	16	-	101	8	-	-	
Category III	Acute Viral Hepatitis type B	4	3	58	4	44	0
	Acute Viral Hepatitis type C	11	6	226	0	180	1
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	7	2	6	0
	Acute Viral Hepatitis, untyped	0	0	1	1	0	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	6	0	0	0
	Haemophilus Influenza type b Infection	0	0	0	0	1	0
	Japanese Encephalitis	0	0	1	0	0	0
	Legionnaires' Disease	6	1	102	1	116	0
	Mumps	4	4	98	2	80	0
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0
Tetanus	0	0	3	0	1	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	1	20	0	12	0
	Endemic Typhus Fever	1	1	4	0	3	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	14	0	161	3	0	0
	Invasive Pneumococcal Disease	3	1	121	1	67	0
	Leptospirosis	1	0	15	0	14	0
	Listeriosis	6	1	82	1	50	0
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	0	0	6	0	1	0
	Q Fever	0	0	2	0	2	0
	Scrub Typhus	6	8	37	0	54	0
	Toxoplasmosis	1	0	14	2	11	0
	Tularemia	0	0	0	0	0	0
	Severe Fever with Thrombocytopenia Syndrome	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	1388	551,784	1,374,270	18,106	1,302,864	10,089	
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
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. "Mpox" has been listed as a Notifiable Infectious Disease since June 23, 2022.  
 5. "Severe Pneumonia with Novel Pathogens": The case definition has been revised to include patients who have both a positive test for SARS-CoV-2 and associated complications since March 20, 2023. Additionally, it has been modified from Category V to Category IV since May 1, 2023.

## Suspected Clusters

- Fifty-four clusters related to Upper respiratory tract infection (29), Diarrhea (14), Tuberculosis (6), Enterovirus (4) and Varicella (1) were reported during week 20.

## Imported Infectious Diseases

- There were 13 imported cases from at least 7 countries/areas during week 20.
  - Dengue Fever:** 4 cases from Indonesia, Vietnam, Malaysia and Maldives.
  - Amoebiasis:** 3 cases from Indonesia (2) and Unknown (1).
  - Severe Pneumonia with Novel Pathogens:** 2 cases from Vietnam and Cambodia.
  - Mpox:** 2 cases from Thailand and Japan.
  - Typhoid fever:** 1 case from Indonesia.
  - Shigellosis:** 1 case from Unknown.
- During week 1–20, there were 18,244 imported cases of notifiable diseases. The top three were Severe Pneumonia with Novel Pathogens (18,106), Amoebiasis (50) and Dengue Fever (44).
- During week 1–20, imported cases of notifiable diseases were from at least 45 countries/areas. The top three were China (3,156), Japan (713) and Korea (182).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens:** The epidemic increases.
- **Mpox:** The risk of epidemic transmission remains.
- **Enterovirus:** It is currently in an epidemic phase, and the epidemic is on the rise.
- **Japanese Encephalitis:** In the midst of the epidemic season, the number of new cases is expected to rise in all counties.
- **Influenza:** The epidemic is rising.

### Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 21★		Week 1–21			
Classification	Disease Diagnosed	2023	2022	2023		2022	
				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
	Cholera	0	0	0	0	0	0
Category II	Typhoid fever	0	0	2	2	1	0
	Paratyphoid Fever	0	0	4	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Shigellosis	0	0	23	7	35	0
	Amoebiasis	2	5	119	50	81	29
	Enterohemorrhagic E.coli Infection	0	0	0	0	0	0
	Anthrax	0	0	0	0	0	0
	Diphtheria	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	1	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Acute Flaccid Paralysis	1	0	21	0	10	0
	Measles	0	0	1	1	0	0
	Rubella	0	0	0	0	0	0
	Dengue Fever	0	0	44	44	2	2
	West Nile Fever	0	0	0	0	0	0
	Acute Viral Hepatitis type A	3	0	39	2	92	0
	Malaria	0	0	1	1	2	2
	Chikungunya Fever	1	0	5	5	0	0
	Hantavirus syndrome	0	0	2	0	1	0
	Zika virus infection	0	0	2	2	0	0
Mpox	19	-	120	8	-	-	
Category III	Acute Viral Hepatitis type B	3	0	61	4	44	0
	Acute Viral Hepatitis type C	15	8	241	0	188	1
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	7	2	6	0
	Acute Viral Hepatitis, untyped	0	0	1	1	0	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	6	0	0	0
	Haemophilus Influenza type b Infection	0	0	0	0	1	0
	Japanese Encephalitis	0	0	1	0	0	0
	Legionnaires' Disease	8	14	110	1	130	1
	Mumps	9	3	107	2	83	0
	Neonatal Tetanus	0	0	0	0	0	0
Pertussis	0	0	0	0	0	0	
Tetanus	0	0	3	0	1	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	0	21	0	12	0
	Endemic Typhus Fever	1	2	5	0	5	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	27	0	188	3	0	0
	Invasive Pneumococcal Disease	4	4	125	1	71	0
	Leptospirosis	2	1	17	0	15	0
	Listeriosis	1	2	83	1	52	0
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	1	0	7	0	1	0
	Q Fever	0	0	2	0	2	0
	Scrub Typhus	3	4	40	0	58	0
	Toxoplasmosis	0	1	14	2	12	0
	Tularemia	0	0	0	0	0	0
Severe Fever with Thrombocytopenia Syndrome	0	0	0	0	0	0	
Severe Pneumonia with Novel Pathogens	1,441	571,619	1,375,708	18,109	1,874,483	10,432	
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	1	0	1	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
	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.  
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## Suspected Clusters

- Fifty-four clusters related to Upper respiratory tract infection (34), Diarrhea (7), Enterovirus (6), Varicella (4) and Tuberculosis (3) were reported during week 21.

## Imported Infectious Diseases

- There were 4 imported cases from at least 4 countries/areas during week 21.  
**Severe Pneumonia with Novel Pathogens:** 3 cases from China, Turkey, and USA.  
**Chikungunya Fever:** 1 case from Indonesia.
- During week 1–21, there were 18,248 imported cases of notifiable diseases. The top three were Severe Pneumonia with Novel Pathogens (18,109), Amoebiasis (50) and Dengue Fever (44).
- During week 1–21, imported cases of notifiable diseases were from at least 45 countries/areas. The top three were China (3,157), Japan (713) and Korea (182).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens:** The epidemic is increasing.
- **Mpox:** The risk of epidemic transmission rises.
- **Enterovirus:** It is currently in an epidemic phase, and the epidemic is rising slightly.
- **Japanese Encephalitis:** In the midst of the epidemic season, the number of new cases is expected to rise in all counties.
- **Influenza:** The epidemic is rising.

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