

Prevention And Control of Imported Vector-Borne Diseases in A University Summer Camp—Northern Taiwan, 2019

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Abstract

On July 28th, 2019, four students from Myanmar with fever were identified by quarantine officers at Taoyuan Airport fever screening station. All of them were to join a two-week campus activity from July 28th to August 10th held by a university in Northern Taiwan. A total of 55 Myanmar students attended the campus activity. The dengue NS1 antigen rapid test of the four students were all negative. The serum of the four students were then sent to Taiwan Centers for Disease Control for further examination, and results revealed that one specimen was positive for dengue fever (DF) PCR, two positive for Chikungunya PCR, and one positive for Zika IgM. In recent years, international student exchange programs become more popular. We recommend that schools should make infectious disease prevention and control plans and implement relevant measures based on the epidemics of countries where exchanged students are from before the commencement of programs. If students are from countries with endemics of vector-borne diseases, prevention and control measures should include personnel health monitoring, education of anti-mosquito measures, removal of breeding sources, and reduction of standing water containers.

Keywords: Dengue fever, chikungunya, Zika, vector-borne diseases, imported

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

Case diagnosis year		Week 18★		Week 1-18			
Classification	Disease Diagnosed	2021	2020	2021		2020	
				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	11	0	12	0
	Acute Viral Hepatitis type A	2	1	27	0	29	7
	Amoebiasis	3	4	83	31	87	48
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	2	2
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	1	5	5	56	56
	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 Pulmonary Syndrome	0	0	0	0	0	0
	Hemorrhagic Fever with Renal Syndrome	0	1	4	0	4	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	0	0	0	0	4	0
	Paratyphoid Fever	0	0	1	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	2	4	69	0	64	21	
Typhoid fever	0	0	1	0	5	3	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	2	2	
Category III	Acute Viral Hepatitis type B	3	3	54	2	33	2
	Acute Viral Hepatitis type C	11	11	221	0	218	2
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	4	0	6	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	1	0	7	0
	Haemophilus Influenza type b Infection	0	0	1	0	2	0
	Japanese Encephalitis	0	0	0	0	0	0
	Legionnaires' Disease	5	3	117	0	86	7
	Mumps	10	11	171	1	155	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	1	2	0	5	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	3	0	25	0	16	0
	Endemic Typhus Fever	1	0	10	0	3	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	546	6
	Invasive Pneumococcal Disease	4	0	111	0	134	0
	Leptospirosis	1	1	14	0	16	0
	Listeriosis	1	4	63	0	41	0
	Lyme Disease	0	0	0	0	0	0
	Melioidosis	0	1	6	0	5	1
	Q Fever	0	0	5	0	2	0
	Scrub Typhus	3	2	64	0	69	1
Toxoplasmosis	0	0	6	0	0	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	51	3	375	335	432	377	
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

- Fourteen clusters related to diarrhea (8), Enterovirus (2), upper respiratory tract infection (2), tuberculosis (1) and varicella (1) were reported during week 18.

Imported Infectious Diseases

- There were 45 imported cases from 10 countries during week 18.

Diseases \ Countries	Philippines	Indonesia	India	Vietnam	Netherlands	UK	Syria	Thailand	Japan	USA	Total
Severe Pneumonia with Novel Pathogens	18	12	7	2	1	1	1	1	1	1	45
Total	18	12	7	2	1	1	1	1	1	1	45

- During week 1–18, there were 374 imported cases from 43 countries. The top three countries are the Philippines (112), Indonesia (100), and USA (39).
- During week 1–18, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (335), Amoebiasis (31), and Dengue Fever (5).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : There have been new cases linked to the airline company and hotel COVID-19 cluster. It is worrisome that some cases have visited public spaces, and newly confirmed cases with unknown-source of infection while they were infectious. The risk of acquiring SARS-CoV-2 infection in Taiwan is expected to raise, and CECC raises epidemic warning to level 2.

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

Case diagnosis year		Week 19★		Week 1-19			
Classification	Disease Diagnosed	2021	2020	2021		2020	
				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	11	0	12	0
	Acute Viral Hepatitis type A	3	1	30	0	30	7
	Amoebiasis	3	6	86	31	93	52
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	2	2
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	0	5	5	56	56
	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 Pulmonary Syndrome	0	0	0	0	0	0
	Hemorrhagic Fever with Renal Syndrome	1	2	5	0	6	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	2	0	2	0	4	0
	Paratyphoid Fever	1	0	2	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	2	6	71	0	70	21	
Typhoid fever	0	0	1	0	5	3	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	2	2	
Category III	Acute Viral Hepatitis type B	2	3	56	2	36	2
	Acute Viral Hepatitis type C	14	15	234	0	233	2
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	4	0	6	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	1	0	7	0
	Haemophilus Influenza type b Infection	0	1	1	0	3	0
	Japanese Encephalitis	1	0	1	0	0	0
	Legionnaires' Disease	6	4	123	0	90	7
	Mumps	12	12	183	1	167	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	0	2	0	5	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	1	25	0	17	0
	Endemic Typhus Fever	1	0	11	0	3	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	546	6
	Invasive Pneumococcal Disease	6	5	117	0	139	0
	Leptospirosis	0	0	14	0	16	0
	Listeriosis	12	1	75	0	42	0
	Lyme Disease	0	0	0	0	0	0
	Melioidosis	0	1	6	0	6	1
	Q Fever	0	1	5	0	3	0
	Scrub Typhus	10	11	74	0	80	1
Toxoplasmosis	1	0	7	0	0	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	292	8	667	379	440	385	
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

- Eleven clusters related to diarrhea (6), varicella (2), upper respiratory tract infection (1), tuberculosis (1) and Enterovirus (1) were reported during week 19.

Imported Infectious Diseases

- There were 33 imported cases from 9 countries during week 19.

Countries \ Diseases	India	Philippines	Paraguay	Indonesia	Haiti	Italian	USA	Uganda	Vietnam	Total
Severe Pneumonia with Novel Pathogens	13	11	2	2	1	1	1	1	1	33
Total	13	11	2	2	1	1	1	1	1	33

- During week 1–19, there were 408 imported cases from 46 countries. The top three countries are the Philippines (123), Indonesia (102), and USA (40).
- During week 1–19, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (368), Amoebiasis (31), and Dengue Fever (5).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : Taiwan has entered the community transmission stage of COVID-19, and some cases detected SARS-CoV-2 variant of concern(B.1.1.7). The epidemic is expected to increase in the community.

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