

### **Improving Capability in Dengue Fever Prevention at The Local Level by The Breeding Site Elimination Mentoring Project And Outdoor Block Joint Prevention And Control Project: Dengue Fever Outbreak in Xinzhuang District of New Taipei City as An Example, 2018**

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#### **Abstract**

In July 2018, a dengue fever outbreak occurred in Xinzhuang District, New Taipei City. In responding to the increasing cases, the Taiwan Centers for Disease Control then organized a Dengue Fever Response Task Force and planned the “Breeding site elimination mentoring project” for training frontline prevention personnel to pass down the skills and experience to eliminate vector breeding sites. Furthermore, the Taskforce also planned the “Outdoor block joint prevention and control project” in order to assist the New Taipei City Government. This project used chemical spray to stop the transmission chain within the community and control the epidemic. A total of 296 persons were trained through the mentoring project. These trainees came from the Department of Health and Department of Civil Affairs of New Taipei City, and were trained to apply the Container Index and Adult Index to assess the risk of dengue transmission in the high-risk areas of Xinzhuang District. The results showed that the villages with the highest Container Index were Quan'an village and Taifeng village. In addition, the Qionglin village had the highest Adult Index. The project aimed at three blocks in Xinzhuang District, included 12 high-risk areas. We used Adult Index to

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compare the effectiveness before and after the implementation of the project. The results showed that the project might prevent the occurrence of cases in community. The dengue fever epidemic was under control by the implementation of these two major projects and active prevention and control strategies by New Taipei City government.

**Keywords:** Dengue fever, cluster, breeding site elimination, New Taipei City

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

Case diagnosis year		Week 25★		Week 1-25			
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	1	15	0	27	0
	Acute Viral Hepatitis type A	3	2	41	7	43	13
	Amoebiasis	5	3	118	64	163	86
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	3	3	7	7
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	11	60	60	208	185
	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	1	0	8	0	0	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	2	2	101	36
	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	17	14
	Shigellosis	1	5	80	20	68	23
	Typhoid fever	0	0	5	3	11	11
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	2	4	46	2	53	1
	Acute Viral Hepatitis type C	13	11	299	2	296	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	0	7	0	12	1
	Haemophilus Influenza type b Infection	0	0	3	0	0	0
	Japanese Encephalitis	3	2	3	0	8	0
	Legionnaires' Disease	5	4	124	7	126	10
	Mumps	15	6	231	6	297	2
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	1	8	0	20	0
Tetanus	0	0	6	0	0	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	7	1	30	0	29	1
	Endemic Typhus Fever	2	0	7	0	3	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	46	547	6	1019	6
	Invasive Pneumococcal Disease	6	4	151	0	231	2
	Leptospirosis	0	2	19	0	27	0
	Listeriosis	3	4	65	0	98	1
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	1	0	8	1	4	0
	Q Fever	3	0	8	0	9	2
	Scrub Typhus	19	13	135	1	170	2
Toxoplasmosis	0	0	2	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	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	-	446	391	-	-	
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

- Twenty-three clusters were reported during week 25, including 5 tuberculosis clusters, 8 diarrhea clusters, 7 upper respiratory tract infection clusters, 2 varicella clusters, 1 enterovirus cluster.

## Imported Infectious Diseases

- There were 5 imported cases from 2 countries during week 25 of 2020.

Diseases	Countries		
	Bangladesh	Indonesia	Total
Severe Pneumonia with Novel Pathogens	3		3
Amoebiasis		2	2
Total	3	2	5

- As of week 25 in 2020, there were 572 imported cases from 45 different countries. The top 3 countries are Indonesia (105), USA (92), UK (72).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (391), Amoebiasis (64), Dengue Fever (60).

## 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. New cases are primarily in southern Taiwan.
- **Scrub Typhus** : Taiwan is in the midst of Scrub Typhus season, most new cases were affected in the eastern Taiwan.

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

Case diagnosis year		Week 26★		Week 1-26			
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	4	15	0	31	0
	Acute Viral Hepatitis type A	1	3	42	7	46	13
	Amoebiasis	4	6	122	67	169	91
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	3	3	7	7
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	16	60	60	224	195
	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	1	1
	Measles	0	1	2	2	102	36
	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	17	14
	Shigellosis	2	4	82	20	72	26
Typhoid fever	0	1	5	3	12	12	
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	0	1	46	2	54	1
	Acute Viral Hepatitis type C	14	15	313	2	311	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	1	7	0	13	1
	Haemophilus Influenza type b Infection	0	0	3	0	0	0
	Japanese Encephalitis	1	3	4	0	11	0
	Legionnaires' Disease	3	6	127	7	132	10
	Mumps	12	9	243	6	306	2
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	2	8	0	22	0
Tetanus	0	0	6	0	0	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	0	30	0	29	1
	Endemic Typhus Fever	1	1	8	0	4	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	31	547	6	1050	6
	Invasive Pneumococcal Disease	1	4	152	0	235	2
	Leptospirosis	2	3	21	0	30	0
	Listeriosis	5	1	70	0	99	1
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	0	0	8	1	4	0
	Q Fever	0	2	8	0	11	2
	Scrub Typhus	9	22	144	1	192	2
Toxoplasmosis	0	0	2	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	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	1	-	447	392	-	-	
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 (7), tuberculosis (3) and upper respiratory tract infection (1) were reported during week 26.

## Imported Infectious Diseases

- There were 4 imported cases from 2 countries during week 26.

Diseases	Countries		Total
	Indonesia	Guatemala	
Amoebiasis	3		3
Severe Pneumonia with Novel Pathogens		1	1
Total	3	1	4

- As of week 26, there were 576 imported cases from 46 different countries. The top 3 countries are Indonesia (108), USA (92), UK (72).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (392), Amoebiasis (67), Dengue Fever (60).

## 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. New cases are primarily in southern Taiwan.
- **Scrub Typhus** : Taiwan is in the midst of Scrub Typhus season, the highest risk area is in eastern Taiwan.
- **Enterovirus** : The epidemic status of enterovirus infection is low.

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