

### Investigation of An Infant Botulism Case, 2020

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#### Abstract

In June 2020, the Taiwan Centers for Disease Control (TCDC) received a case of suspected infant botulism in a 4-month-old boy. The boy experienced constipation, loss of appetite and decreased activity 10 days after the first non-staple food consumption. The diagnosis was confirmed after the botulinum nucleic acid was detected in the stool. Infant botulism cases are extremely rare in Taiwan. This is the second case of infant botulism since 2015.

In regard to treatment, botulinum antitoxin can be used to neutralize the free toxins in the serum to prevent further damage to the receptors of neuromuscular junction. The Botulinum Antitoxin Receipt Precautions updated by TCDC in 2018 contains the recommended dose for infants under 1 year old, which can be applied for after careful evaluation by clinicians. This article summarized the findings of the investigation. The purpose of the article was to remind parents that preparing non-staple food must be heated at a high temperature to destroy the botulinum toxin and spores, and to provide clinicians with reference for diagnosis and treatment of similar cases.

**Keywords:** Infant botulism, botulinum antitoxin, spores of *Clostridium botulinum*, SIADH, non-staple food preparation

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

Case diagnosis year		Week 46★		Week 1–46			
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	27	0	27	0
	Acute Viral Hepatitis type A	3	0	65	0	72	8
	Amoebiasis	5	7	177	59	219	117
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	3	3
	Cholera	0	0	0	0	1	0
	Dengue Fever	0	1	11	11	137	67
	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	0	9	0	11	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	0	0	3	0	6	0
	Paratyphoid Fever	0	0	2	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	1	3	114	0	138	24	
Typhoid fever	0	0	2	0	7	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	5	124	2	98	2
	Acute Viral Hepatitis type C	10	12	497	0	531	4
	Acute Viral Hepatitis type D	0	0	1	0	0	0
	Acute Viral Hepatitis type E	0	0	5	0	8	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	3	0
	Japanese Encephalitis	0	0	27	0	21	0
	Legionnaires' Disease	2	6	311	1	257	8
	Mumps	4	13	372	1	441	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	0	3	0	7	0	
Category IV	Botulism	0	0	0	0	1	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	8	47	0	48	0
	Endemic Typhus Fever	0	0	30	0	19	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	548	6
	Invasive Pneumococcal Disease	2	2	180	0	212	0
	Leptospirosis	3	2	80	0	78	0
	Listeriosis	1	0	152	0	121	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	19	0	16	1
	Q Fever	0	0	8	0	13	0
	Scrub Typhus	3	11	273	0	370	1
Toxoplasmosis	1	1	13	0	14	0	
Tularemia	0	0	1	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	1	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	42	27	15721	1187	600	545	
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-two clusters related to diarrhea (11), tuberculosis (8), varicella (2) and upper respiratory tract infection (1) were reported during week 46.

## Imported Infectious Diseases

- There were 42 imported cases from 17 countries during week 46.  
**Severe Pneumonia with Novel Pathogens** : 42 ( Indonesia 14, USA 3, Cambodia 3, Vietnam 3, Poland 2, Saint Christopher and Nevis 2, Lithuania 2, Singapore 2, the Philippines 2, Germany 2, Kenya 1, Mongolia 1, India 1, Denmark 1, Uzbek 1, Myanmar 1, Ireland 1 )
- During week 1–46, there were 1264 imported cases from 82 countries. The top three countries are Indonesia (255), the Philippines (209), and USA (185).
- During week 1–46, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (1187), Amoebiasis (59), and Dengue Fever (11).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The domestic epidemic of COVID-19 is in the low level. Due to the COVID-19 pandemic remaining serious globally, imported cases continue to be confirmed. The risk of locally-acquired of SARS-CoV-2 infection in Taiwan is persistence.

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

Case diagnosis year		Week 47★		Week 1–47			
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	1	27	0	28	0
	Acute Viral Hepatitis type A	2	0	67	0	72	8
	Amoebiasis	3	4	180	59	223	119
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	3	3
	Cholera	0	0	0	0	1	0
	Dengue Fever	0	1	11	11	138	67
	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	0	9	0	11	0
	Malaria	0	1	1	1	2	2
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	0	0	3	0	6	0
	Paratyphoid Fever	0	0	2	0	0	0
	Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	0	0	0	0	
Shigellosis	0	4	114	0	142	24	
Typhoid fever	0	1	2	0	8	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	5	3	128	2	101	2
	Acute Viral Hepatitis type C	7	9	503	0	540	4
	Acute Viral Hepatitis type D	0	0	1	0	0	0
	Acute Viral Hepatitis type E	0	0	5	0	8	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	3	0
	Japanese Encephalitis	1	0	28	0	21	0
	Legionnaires' Disease	11	1	322	1	258	8
	Mumps	7	11	379	1	452	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	0	3	0	7	0	
Category IV	Botulism	0	0	0	0	1	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	2	0	49	0	48	0
	Endemic Typhus Fever	0	0	30	0	19	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	548	6
	Invasive Pneumococcal Disease	2	5	182	0	217	0
	Leptospirosis	0	0	80	0	78	0
	Listeriosis	2	2	154	0	123	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	1	19	0	17	1
	Q Fever	0	0	8	0	13	0
	Scrub Typhus	6	10	279	0	380	1
Toxoplasmosis	1	0	14	0	14	0	
Tularemia	0	0	1	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	1	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	59	11	15780	1246	611	556	
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

- Twenty clusters related to tuberculosis (9), diarrhea (5), varicella (4) and upper respiratory tract infection (2) were reported during week 47.

## Imported Infectious Diseases

- There were 59 imported cases from 15 countries during week 47.  
**Severe Pneumonia with Novel Pathogens** : 59 ( Indonesia 21, Vietnam 12, USA 6, Korea 3, Ethiopia 3, the Philippines 2, Germany 2, Cambodia 2, China 2, Turkey 1, UAE 1, Myanmar 1, Malaysia 1 , India 1, Singapore 1 )
- During week 1–47, there were 1323 imported cases from 83 countries. The top three countries are Indonesia (276), the Philippines (211), and USA (191).
- During week 1–47, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (1246), Amoebiasis (59), and Dengue Fever (11).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The domestic epidemic of COVID-19 is in the low level. Due to the COVID-19 pandemic remaining serious globally and many countries have reported SARS-CoV-2 variant of Omicron (B.1.1.529) cases recently. The risk of imported cases of SARS-CoV-2 infection in Taiwan is persistent.

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