疫情報導
TAIWAN EPIDEMIOLOGY BULLETIN
January 9, 2018 Vol.34 No.1
Outbreak Investigation

Investigation of A Norovirus Outbreak in A College, Kaohsiung City, 2016

Kung-Ching Wang[1 *], Wan- Chin Chen[1], Min-Nan Hung[2], Fang-Tzy Wu[3], Hui-Chen Lin[2], Mei-Man Hsu[2], Tzu-Chieh Chang[2]

Abstract

On December 11 and 12, 2016, the Department of Health of Kaohsiung City was notified of a foodborne outbreak in a college, involving 19 students. Initial investigation showed that among 123 teachers and students participating in a field trip, 54 suffered from symptoms including diarrhea, abdominal pain, nausea and vomiting (attack rate: 43.9%). After investigation, Taiwan Centers for Disease Control confirmed this foodborne outbreak that caused by norovirus GII.2. However, none of the 24 food items was significantly associated with illness. About 60% cases showed symptoms lasting longer than 72 hours. We suggested genotyping analysis to evaluate new norovirus variant if the illness duration was longer than usual in a norovirus outbreak.

Keywords: Diarrhea, Outbreak, Norovirus GII.2

[1]Office of Preventive Medicine, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
[2]Kaohsiung-Pingtung Regional Center, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
[3]Center for Research, Diagnostics and Vaccine Development, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
Corresponding author: Kung-Ching Wang[1*]
E-mail: kcwang35@cdc.gov.tw
Received: Jun. 28, 2017
Accepted: Nov. 17, 2017
DOI: 10.6525/TEB.201801_34(1).0001

A *Clostridium perfringens* associated Foodborne Outbreak on a Campsite — Northern Taiwan, 2016

Hsin-I Huang[1 *], Wan-Chin Chen[1], Hao-Hsin Wu[2],
Fang-Tzy Wu[3], Hsiao-Lun Wei[3]

Abstract

On September 25, 2016, 57 college students were reported having acute diarrhea after a gathering event on a campsite in Northern Taiwan. We conducted an investigation to identify the etiology and associated factors. We identified and interviewed event attendees and collected information on foods consumed and symptoms through questionnaire. Of the 115 students interviewed, we identified 56 cases. The median incubation period was 11 hours (range: 7–35 hours). All event attendees ate boxed lunch at noon on September 24. Illness was associated with eating stir-fry vegetable (OR: 2.38; 95% CI: 1.02–5.54) and simmered bean curd (OR: 2.17; 95% CI: 1.03–4.60) at lunch according to the bivariate analysis. *C. perfringens* were isolated from stool specimens of two students, and the isolates were *cpe*-positive. Leftovers were culture negative so testing for *C. perfringens* was not performed. Based on the clinical manifestations, epidemiologic characteristics, and having isolates with same toxin type, we concluded that this outbreak was caused by *C. perfringens*. *C. perfringens* related foodborne disease is mostly self-limiting and resolves within 48 hours, thus frequently neglected. We suggest proper food heating and storage practices in food service establishments.

Keywords: *Clostridium perfringens*, Diarrhea, Foodborne

[1]Preventive Medicine Office, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
[2]Northern Regional Center, Centers for Disease Control, Ministry of Health and Welfare, Taiwan
[3]Center for Research, Diagnostics and Vaccine Development, Centers for Disease Control, Ministry of Health and Welfare, Taiwan

Corresponding author: Hsin-I Huang[1*]
E-mail: littleka@cdc.gov.tw
Received: Jul. 03, 2017
Accepted: Nov. 13, 2017
DOI: 10.6525/TEB.201801_34(1).0002

week 50– 52(Dec. 10–Dec. 30 , 2017)

OI: 10.6525/TEB.201801_34(1).0003

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

Case diagnosis year		Week 50★		Week 1–50			
				2017		2016	
Classification	Disease Diagnosed	2017	2016	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	5	2	50	0	39	0
	Acute Viral Hepatitis type A	4	13	375	48	1091	76
	Amoebiasis	14	5	360	184	303	157
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	1	11	11	11	11
	Cholera	0	0	2	1	9	0
	Dengue Fever	7	4	335	324	792	349
	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	1	0	3	0
	Malaria	0	0	7	7	14	14
	Measles	0	0	5	5	13	7
	Meningococcal Meningitis	1	0	12	0	8	0
	Paratyphoid Fever	0	0	5	4	5	2
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	3	2	4	3
	Shigellosis	1	4	161	55	212	106
	Typhoid fever	0	2	17	14	11	6
	West Nile Fever	0	0	0	0	0	0
Category III	Acute Viral Hepatitis type B	3	3	151	9	109	5
	Acute Viral Hepatitis type C	16	6	310	2	195	3
	Acute Viral Hepatitis type D	0	0	1	0	1	0
	Acute Viral Hepatitis type E	0	0	15	3	16	5
	Acute Viral Hepatitis untype	0	0	0	0	0	0
	Congential Rubella Syndrome	0	0	1	1	0	0
	Enteroviruses Infection with Severe Complications	3	1	14	0	31	0
	Haemophilus Influenza type b Infection	0	0	6	0	14	0
	Japanese Encephalitis	0	0	25	0	23	0
	Legionellosis	5	1	177	14	114	3
	Mumps	8	11	622	9	587	7
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	34	0	18	0
	Tetanus	0	1	10	0	14	0
Category IV	Botulism	0	1	0	0	6	0
	Brucellosis	0	0	0	0	0	0
	Complicated Influenza	5	15	1316	6	2060	2
	Complicated Varicella	0	0	28	1	42	0
	Endemic Typhus Fever	1	0	36	1	14	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Invasive Pneumococcal Disease	11	11	437	3	559	1
	Leptospirosis	2	1	101	1	118	2
	Lyme Disease	0	0	1	1	2	2
	Melioidosis	0	1	25	1	50	1
	Q Fever	0	0	18	0	43	3
	Scrub Typhus	7	9	409	0	491	4
	Toxoplasmosis	0	0	20	0	10	0
	Tularremia	0	0	0	0	0	0
Category V	Ebola Virus Disease	0	0	0	0	0	0
	Marburg Hemorrhagic Fever	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	1	1	0	0
	Lassa Fever	0	0	0	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
	Middle East Respiratory Syndrome Coronavirus	0	0	0	0	0	0
	Yellow Fever	0	0	0	0	0	0
	Zika Virus Infection	0	0	4	4	13	13

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. The following 8 chronic diseases are excluded from the table: MDR-TB, Tuberculosis, Syphilis, Gonorrhea, HIV Infection, AIDS, Hansen Disease and Creutzfeldt-Jakob Disease.
3. Numbers of mumps and tetanus cases are summed up by the week of report.
4. Since 2016/1/22, "Zika Virus Infection" was listed as a Notifiable Infectious Disease.

Suspected Clusters

●Thirty-four clusters were reported, including 11 tuberculosis clusters, 9 diarrhea clusters, 8 upper respiratory tract infection clusters, 3 influenza-like illness clusters and 3 varicella clusters.

Imported Infectious Diseases

Disease \ Country	Indonesia	Vietnam	Philippines	Japan	Thailand	Total
DF		3	1		2	6
Amoebiasis	4		1			5
Legionellosis				1		1
Shigellosis	1					1
Total	5	3	2	1	2	13

Note: The statistics listed in this table include imported cases that were either **confirmed** or **updated** in the previous week.

●13 confirmed cases were imported from 5 countries during Week 50 of 2017.

●A total of 703 confirmed cases were imported from 37 countries in 2017, the top 3 countries are：Indonesia (232), Vietnam (119), Philippines (86).

●Top 3 imported diseases：Dengue fever (324), Amoebiasis (184), Shigellosis (55).

Summary of Epidemic

●**Enterovirus D68**：Sporadic cases continued to occur in the community.

●**Influenza**：The epidemic activity increased. The most frequently isolated influenza virus in the community was influenza B.

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

Case diagnosis year		Week 51★		Week 1–51			
				2017		2016	
Classification	Disease Diagnosed	2017	2016	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	4	1	54	0	40	0
	Acute Viral Hepatitis type A	2	16	377	48	1107	78
	Amoebiasis	10	5	370	187	308	161
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	1	11	11	12	12
	Cholera	0	0	2	1	9	0
	Dengue Fever	4	5	339	328	797	354
	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	1	0	3	0
	Malaria	0	0	7	7	14	14
	Measles	0	1	5	5	14	8
	Meningococcal Meningitis	0	0	12	0	8	0
	Paratyphoid Fever	0	0	5	4	5	2
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	3	2	4	3
	Shigellosis	1	3	162	55	215	107
	Typhoid fever	0	2	17	14	13	8
	West Nile Fever	0	0	0	0	0	0
Category III	Acute Viral Hepatitis type B	2	4	153	9	113	6
	Acute Viral Hepatitis type C	11	8	321	2	203	3
	Acute Viral Hepatitis type D	0	0	1	0	1	0
	Acute Viral Hepatitis type E	0	0	15	3	16	5
	Acute Viral Hepatitis untype	0	0	0	0	0	0
	Congential Rubella Syndrome	0	0	1	1	0	0
	Enteroviruses Infection with Severe Complications	4	1	18	0	32	0
	Haemophilus Influenza type b Infection	0	0	6	0	14	0
	Japanese Encephalitis	0	0	25	0	23	0
	Legionellosis	3	1	180	14	115	3
	Mumps	7	10	629	9	597	7
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	34	0	18	0
	Tetanus	0	0	10	0	14	0
Category IV	Botulism	0	0	0	0	6	0
	Brucellosis	0	0	0	0	0	0
	Complicated Influenza	13	10	1329	6	2070	2
	Complicated Varicella	3	0	31	1	42	0
	Endemic Typhus Fever	0	1	36	1	15	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Invasive Pneumococcal Disease	4	17	441	3	576	1
	Leptospirosis	0	2	101	1	120	2
	Lyme Disease	0	0	1	1	2	2
	Melioidosis	0	1	25	1	51	1
	Q Fever	1	0	19	0	43	3
	Scrub Typhus	7	5	416	0	496	4
	Toxoplasmosis	1	1	21	0	11	0
	Tularremia	0	0	0	0	0	0
Category V	Ebola Virus Disease	0	0	0	0	0	0
	Marburg Hemorrhagic Fever	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	1	1	0	0
	Lassa Fever	0	0	0	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
	Middle East Respiratory Syndrome Coronavirus	0	0	0	0	0	0
	Yellow Fever	0	0	0	0	0	0
	Zika Virus Infection	0	0	4	4	13	13

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. The following 8 chronic diseases are excluded from the table: MDR-TB, Tuberculosis, Syphilis, Gonorrhea, HIV Infection, AIDS, Hansen Disease and Creutzfeldt-Jakob Disease.
3. Numbers of mumps and tetanus cases are summed up by the week of report.
4. Since 2016/1/22, "Zika Virus Infection" was listed as a Notifiable Infectious Disease.

Suspected Clusters

●Thirty clusters were reported, including 12 tuberculosis clusters, 9 diarrhea clusters, 2 upper respiratory tract infection clusters, 4 influenza-like illness clusters and 3 varicella clusters.

Imported Infectious Diseases

Disease \ Country	Indonesia	Singapore	Mexico	India	Vietnam	Total
DF		1	1	1	1	4
Amoebiasis	3					3
Total	3	1	1	1	1	7

Note: The statistics listed in this table include imported cases that were either **confirmed** or **updated** in the previous week.

●7 confirmed cases were imported from 5 countries during Week 51 of 2017.

●A total of 710 confirmed cases were imported from 37 countries in 2017, the top 3 countries are：Indonesia (235), Vietnam (120), Philippines (86).

●Top 3 imported diseases：Dengue fever (328), Amoebiasis (187), Shigellosis (55).

Summary of Epidemic

●**Enterovirus D68**：Sporadic cases continued to occur in the community.

●**Influenza**：The epidemic activity has increased. It will soon be above the epidemic threshold. The most frequently isolated influenza virus in the community was influenza B.

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

Case diagnosis year		Week 52★		Week 1–52			
				2017		2016	
Classification	Disease Diagnosed	2017	2016	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	3	1	57	0	41	0
	Acute Viral Hepatitis type A	2	15	379	50	1122	79
	Amoebiasis	4	10	374	188	318	168
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	2	11	11	14	14
	Cholera	0	0	2	1	9	0
	Dengue Fever	9	6	348	337	803	360
	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	1	0	3	0
	Malaria	0	0	7	7	14	14
	Measles	0	0	5	5	14	8
	Meningococcal Meningitis	0	0	12	0	8	0
	Paratyphoid Fever	0	0	5	4	5	2
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	3	2	4	3
	Shigellosis	2	5	164	57	220	108
	Typhoid fever	0	0	17	14	13	8
	West Nile Fever	0	0	0	0	0	0
Category III	Acute Viral Hepatitis type B	1	0	154	9	113	6
	Acute Viral Hepatitis type C	9	5	330	3	208	3
	Acute Viral Hepatitis type D	0	0	1	0	1	0
	Acute Viral Hepatitis type E	0	0	15	3	16	5
	Acute Viral Hepatitis untype	0	0	0	0	0	0
	Congential Rubella Syndrome	0	0	1	1	0	0
	Enteroviruses Infection with Severe Complications	2	2	20	0	34	0
	Haemophilus Influenza type b Infection	0	0	6	0	14	0
	Japanese Encephalitis	0	0	25	0	23	0
	Legionellosis	6	1	186	14	116	3
	Mumps	6	16	635	9	613	8
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	34	0	18	0
	Tetanus	0	0	10	0	14	0
Category IV	Botulism	0	0	0	0	6	0
	Brucellosis	0	0	0	0	0	0
	Complicated Influenza	23	14	1352	6	2084	3
	Complicated Varicella	1	1	32	1	43	0
	Endemic Typhus Fever	1	0	37	1	15	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Invasive Pneumococcal Disease	10	16	451	3	592	1
	Leptospirosis	3	2	104	1	122	2
	Lyme Disease	0	0	1	1	2	2
	Melioidosis	1	1	26	1	52	1
	Q Fever	0	3	19	0	46	3
	Scrub Typhus	6	9	422	0	505	4
	Toxoplasmosis	0	0	21	0	11	0
	Tularremia	0	0	0	0	0	0
Category V	Ebola Virus Disease	0	0	0	0	0	0
	Marburg Hemorrhagic Fever	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	1	1	0	0
	Lassa Fever	0	0	0	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
	Middle East Respiratory Syndrome Coronavirus	0	0	0	0	0	0
	Yellow Fever	0	0	0	0	0	0
	Zika Virus Infection	0	0	4	4	13	13

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. The following 8 chronic diseases are excluded from the table: MDR-TB, Tuberculosis, Syphilis, Gonorrhea, HIV Infection, AIDS, Hansen Disease and Creutzfeldt-Jakob Disease.
3. Numbers of mumps and tetanus cases are summed up by the week of report.
4. Since 2016/1/22, "Zika Virus Infection" was listed as a Notifiable Infectious Disease.

Suspected Clusters

●Twenty-six clusters were reported, including 2 tuberculosis clusters, 12 diarrhea clusters, 4 upper respiratory tract infection clusters, 5 influenza-like illness clusters, 1 fever of unknown origin cluster and 2 varicella clusters.

Imported Infectious Diseases

Country / Disease	Indonesia	Malaysia	Philippines	Vietnam	Thailand	Total
DF	1	3	3	1	1	9
Hepatitis A	1	1				2
Shigellosis	2					2
Hepatitis C	1					1
Amoebiasis	1					1
Total	6	4	3	1	1	15

Note: The statistics listed in this table include imported cases that were either **confirmed** or **updated** in the previous week.

●15 confirmed cases were imported from 5 countries during Week 52 of 2017.

●A total of 725 confirmed cases were imported from 37 countries in 2017, the top 3 countries are：Indonesia (241), Vietnam (121), Philippines (89).

●Top 3 imported diseases：Dengue fever (337), Amoebiasis (188), Shigellosis (57).

Summary of Epidemic

●**Enterovirus D68**：Sporadic cases continued to occur in the community.

● **Influenza**：As the epidemic season has begun, influenza activity has been continuously increasing. The most frequently isolated influenza virus in the community was influenza B.

The Taiwan Epidemiology Bulletin series of publications is published by Centers for Disease Control, Ministry of Health and Welfare, Taiwan (R.O.C.) since Dec. 15, 1984.
Publisher: Jih-Haw Chou
Editor-in-Chief: Yung-Ching Lin
Executive Editor: Hsueh-Ju Chen, Hsin-Lun Lee
Address: No.6, Linsen S. Rd, Jhongjheng District, Taipei City 10050, Taiwan (R.O.C.)
Telephone No: +886-2-2395-9825 **Website:** http://www.cdc.gov.tw/rwd/english
Suggested Citation:
[Author].[Article title].Taiwan Epidemiol Bull 2018;34:[inclusive page numbers]. [DOI]