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Statistics of Communicable Diseases and Surveillance Report

2018

Annual
November 2019

Centers for Disease Control,
Ministry of Health and Welfare,
R.O.C. (Taiwan)

Statistics of Communicable Diseases and Surveillance Report Republic of China

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Contents

Explanatory Notes

1. Taiwan in this Report includes Taiwan Island, Penghu, Kinmen and Matsu.
2. The Report includes the notifiable diseases* and other relevant communicable diseases. Individual cases were reported by medical care institutions and physicians through the case reporting system for communicable diseases. Alternatively, medical care institutions and physicians also reported cases by submitting a “Report of cases of communicable and emerging infectious disease, include suspected cases”** by post/fax to the local health authority that then completed the case reporting process online.
3. Definitions of terms used in the Report:
   (1) Notifiable diseases: Communicable diseases listed in Article 3, Communicable disease Control Act.
   (2) Reported cases: Cases of communicable disease or suspected cases detected by physicians while diagnosing and treating patients, and statistic of reported cases using the “Report of cases of communicable and emerging infectious disease, include suspected cases” form.
   (3) Confirmed cases: For most notifiable diseases, reported cases that are diagnosed or found positive by Taiwan CDC’s laboratory or other verified institutions are determined as confirmed cases. For some notifiable diseases, confirmation of infection should meet the clinical symptoms and epidemiological criteria. For a few notifiable diseases, confirmation of infection should be determined by an expert meeting. Please refer to the “Case definition for Notifiable Communicable Diseases” to see the case definition of each disease.
   (4) Unspecified hepatitis: Cases that are non-A / non-B hepatitis and that can neither be classified as hepatitis C, D or E.
4. Analysis standards:
   (1) By locality: The actual residential locality of the confirmed case. For the tables of analysis of time intervals, the statistics is based on the reporting locality.
   (2) By age group: The actual age of the confirmed case. The ages of the syphilis, congenital syphilis, gonorrhea, HIV infection, AIDS, Hansen’s disease and Creutzfeldt-Jakob disease cases were calculated based on the day of diagnosis. The ages of the TB and MDR-TB (multi-drug resistant tuberculosis) cases were calculated based on the day the case was reported and the day the case was registered with Taiwan CDC respectively.
   (3) By month: The actual disease onset month of the confirmed case. The disease onset months of the syphilis, congenital syphilis, gonorrhea, HIV infection, AIDS, Hansen’s disease and Creutzfeldt-Jakob disease cases were calculated based on the month of diagnosis. The disease onset months of the TB and MDR-TB cases

were calculated based on the month the case was reported and the month the case was registered with Taiwan CDC respectively.

(4) By year: The actual disease onset year of the confirmed case. The disease onset years of the syphilis, congenital syphilis, gonorrhea, HIV infection, AIDS, Hansen's disease and Creutzfeldt-Jakob disease cases were calculated based on the year of diagnosis. The disease onset years of the TB and MDR-TB cases were calculated based on the year the case was reported and the year the case was registered with Taiwan CDC respectively.

(5) By week: The epidemiological week. Please refer to Appendix 3 for further details.

(6) In the 1999 annual statistics report, the tuberculosis statistics included only confirmed cases of open (active) and non-open (non-active) pulmonary tuberculosis, but not cases of pulmonary tuberculosis complicated with non-pulmonary tuberculosis. In compliance with the amendment made to the Communicable Diseases Control Act in 1999 and the intensified control of open pulmonary tuberculosis, CDC began to include and tabulate open pulmonary tuberculosis (including open pulmonary tuberculosis and open pulmonary tuberculosis with pulmonary and non-pulmonary complications) and other tuberculosis (all tuberculosis cases except the aforementioned open pulmonary tuberculosis) in the tuberculosis statistics. For international comparison, Tuberculosis has been categorized as smear positive and others in 2006. As WHO modified the definition, we have generated the statistical data without category to make consistent baseline over the years.

(7) Starting from 2002, only Taiwanese HIV infection and AIDS cases are analyzed.

(8) From 2000 to 2005, Mumps and Varicella had been reported with secondary data; and had been reported with detailed information since January 1, 2006.

(9) Mid-Year Population: The mid-year population comes from the Ministry of the Interior and which is used to calculate the incidence rate of diseases.

(10) Beginning in 2002, the historical information will not be amended. Any correction made to such information will be listed in the appendix. The analysis baseline in 2018 was based on the data before May 1, 2019.

5. Symbols: "-" for no reported cases; "…" for not under surveillance.
6. Figures may not sum up to the total due to rounding.

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* Please see Appendix 1 for classification of communicable diseases.

** Please see Appendix 2 for the form of "Report of cases of communicable and emerging infectious disease, include suspected cases".

PART I

Summary Tables and Graphs for Confirmed Cases

◎ **Abbreviations and Symbols Used in Table**

– No reported cases

… Not under surveillance

Table 1 Number of confirmed cases of notifiable diseases — by locality, 2018

Unit: Person

Area / Locality	Midyear population	Category I				Category II	
		Smallpox	Plague	SARS	Rabies	Diphtheria	Typhoid[1] Fever
Total	23,580,080	-	-	-	-	-	17
Taipei Area							
Taipei City	2,675,915	-	-	-	-	-	-
New Taipei City	3,991,203	-	-	-	-	-	3
Keelung City	370,807	-	-	-	-	-	-
Yilan County	455,914	-	-	-	-	-	-
Kinmen County	138,365	-	-	-	-	-	-
Lienchiang County	12,968	-	-	-	-	-	-
Northern Area							
Taoyuan City	2,204,445	-	-	-	-	-	6
Hsinchu City	443,384	-	-	-	-	-	1
Hsinchu County	554,590	-	-	-	-	-	2
Miaoli County	551,335	-	-	-	-	-	-
Central Area							
Taichung City	2,795,482	-	-	-	-	-	2
Changhua County	1,280,141	-	-	-	-	-	-
Nantou County	499,041	-	-	-	-	-	-
Southern Area							
Yunlin County	688,198	-	-	-	-	-	-
Chiayi City	269,010	-	-	-	-	-	1
Chiayi County	509,125	-	-	-	-	-	-
Tainan City	1,885,177	-	-	-	-	-	1
Kao-Ping Area							
Kaohsiung City	2,775,223	-	-	-	-	-	1
Pingtung County	827,673	-	-	-	-	-	-
Penghu County	104,257	-	-	-	-	-	-
Eastern Area							
Hualien County	328,603	-	-	-	-	-	-
Taitung County	219,230	-	-	-	-	-	-
Others	-	-	-	-	-	-	-

Note: [1]13 cases of typhoid fever were imported.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Category II						
	Dengue[1] Fever	Meningococcal[1] Meningitis	Paratyphoid [1] Fever	Poliomyelitis	Acute[2] Flaccid Paralysis	Shigellosis[1]	Amoebiasis[1]
Total	533	6	8	-	66	172	334
Taipei Area							
Taipei City	71	3	2	-	9	33	45
New Taipei City	103	2	1	-	5	40	60
Keelung City	2	-	1	-	1	-	5
Yilan County	2	-	-	-	1	2	7
Kinmen County	1	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	29	-	-	-	8	26	31
Hsinchu City	7	-	1	-	1	10	6
Hsinchu County	7	-	-	-	-	2	1
Miaoli County	10	-	-	-	1	2	9
Central Area							
Taichung City	152	-	1	-	7	21	46
Changhua County	31	-	-	-	2	11	11
Nantou County	9	-	-	-	1	7	7
Southern Area							
Yunlin County	7	-	-	-	-	1	10
Chiayi City	4	-	-	-	-	-	5
Chiayi County	3	-	-	-	1	2	8
Tainan City	26	1	-	-	18	10	26
Kao-Ping Area							
Kaohsiung City	56	-	2	-	8	2	39
Pingtung County	5	-	-	-	2	-	4
Penghu County	3	-	-	-	-	-	3
Eastern Area							
Hualien County	2	-	-	-	1	3	7
Taitung County	3	-	-	-	-	-	4
Others	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59) and amoebiasis (171).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Midyear population	Category II						
		Malaria[1]		Measles[1]	Acute [1] Hepatitis A	Enterohaemorrhagic E. coli Infection	Hantavirus Syndrome	
		Indigenous	Imported				Hemorrhagic Fever with Renal Syndrome	Hantavirus Pulmonary Syndrome
Total	23,580,080	-	7	40	88	-	1	-
Taipei Area								
Taipei City	2,675,915	-	2	9	20	-	-	-
New Taipei City	3,991,203	-	2	11	15	-	1	-
Keelung City	370,807	-	-	-	3	-	-	-
Yilan County	455,914	-	-	-	2	-	-	-
Kinmen County	138,365	-	-	-	-	-	-	-
Lienchiang County	12,968	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	2,204,445	-	-	11	8	-	-	-
Hsinchu City	443,384	-	-	1	3	-	-	-
Hsinchu County	554,590	-	-	2	3	-	-	-
Miaoli County	551,335	-	-	-	3	-	-	-
Central Area								
Taichung City	2,795,482	-	1	1	5	-	-	-
Changhua County	1,280,141	-	-	-	1	-	-	-
Nantou County	499,041	-	-	3	-	-	-	-
Southern Area								
Yunlin County	688,198	-	-	-	1	-	-	-
Chiayi City	269,010	-	-	-	1	-	-	-
Chiayi County	509,125	-	-	-	4	-	-	-
Tainan City	1,885,177	-	-	-	7	-	-	-
Kao-Ping Area								
Kaohsiung City	2,775,223	-	2	2	6	-	-	-
Pingtung County	827,673	-	-	-	1	-	-	-
Penghu County	104,257	-	-	-	-	-	-	-
Eastern Area								
Hualien County	328,603	-	-	-	2	-	-	-
Taitung County	219,230	-	-	-	3	-	-	-
Others	-	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: malaria (7), measles (12), and acute hepatitis A (33).

Table 1 ***(Continued)*** **Number of confirmed cases of notifiable diseases— by locality, 2018**

Unit: Person

Area / Locality	Category II						
	Cholera	Rubella[1]	MDR-TB[3]	Chikungunya[1] Fever	West Nile Fever	Epidemic Typhus Fever	Anthrax
Total	7	10	120	7	-	-	-
Taipei Area							
Taipei City	-	2	6	2	-	-	-
New Taipei City	-	-	23	1	-	-	-
Keelung City	-	-	5	-	-	-	-
Yilan County	-	-	4	-	-	-	-
Kinmen County	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	1	1	13	1	-	-	-
Hsinchu City	-	1	2	-	-	-	-
Hsinchu County	2	-	2	2	-	-	-
Miaoli County	-	-	2	-	-	-	-
Central Area							
Taichung City	-	2	10	-	-	-	-
Changhua County	1	-	6	-	-	-	-
Nantou County	1	-	5	-	-	-	-
Southern Area							
Yunlin County	1	-	1	-	-	-	-
Chiayi City	-	-	-	-	-	-	-
Chiayi County	1	-	5	-	-	-	-
Tainan City	-	1	7	1	-	-	-
Kao-Ping Area							
Kaohsiung City	-	3	11	-	-	-	-
Pingtung County	-	-	8	-	-	-	-
Penghu County	-	-	-	-	-	-	-
	-	-	-	-			
Eastern Area	-	-	-	-			
Hualien County	-	-	9	-	-	-	-
Taitung County	-	-	1	-	-	-	-
Others	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: rubella (9) and chikungunya fever (7).

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Midyear population	Category III					
		Pertussis[1]	Tetanus[4]	Japanese Encephalitis	Tuberculosis[3]	Congenital Rubella Syndrome	Acute[1] Hepatitis B
Total	23,580,080	30	4	37	9,179	-	143
Taipei Area							
Taipei City	2,675,915	7	-	-	727	-	14
New Taipei City	3,991,203	7	1	3	1,509	-	29
Keelung City	370,807	-	1	-	164	-	3
Yilan County	455,914	3	-	1	193	-	3
Kinmen County	138,365	-	-	-	18	-	-
Lienchiang County	12,968	-	-	-	2	-	-
Northern Area							
Taoyuan City	2,204,445	6	-	4	662	-	23
Hsinchu City	443,384	-	-	-	103	-	5
Hsinchu County	554,590	-	-	2	153	-	2
Miaoli County	551,335	-	-	-	154	-	3
Central Area							
Taichung City	2,795,482	-	-	2	1,007	-	13
Changhua County	1,280,141	1	-	3	546	-	7
Nantou County	499,041	-	1	4	256	-	-
Southern Area							
Yunlin County	688,198	-	-	2	372	-	3
Chiayi City	269,010	-	-	-	90	-	1
Chiayi County	509,125	-	-	3	198	-	4
Tainan City	1,885,177	3	-	3	720	-	17
Kao-Ping Area							
Kaohsiung City	2,775,223	-	-	8	1,430	-	8
Pingtung County	827,673	-	-	1	547	-	4
Penghu County	104,257	-	-	-	17	-	1
Eastern Area							
Hualien County	328,603	-	1	1	182	-	3
Taitung County	219,230	3	-	-	129	-	-
Others	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: pertussis (2) and acute hepatitis B (10).

[3]The caseload calculation of tuberculosis was based on notification date.

[4]Calculation for tetanus was based on reported cases only.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Category III						
	Acute Hepatitis				Mumps[4]	Legionnaires'[1] Disease	Invasive Haemophilus Influenzae Type b Infection
	C[1]	D	E	Un-specified			
Total	510	-	10	-	600	211	5
Taipei Area							
Taipei City	87	-	1	-	50	37	-
New Taipei City	109	-	3	-	91	36	-
Keelung City	12	-	-	-	6	2	-
Yilan County	11	-	-	-	22	7	-
Kinmen County	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	39	-	-	-	59	29	3
Hsinchu City	8	-	-	-	8	2	-
Hsinchu County	23	-	1	-	11	3	-
Miaoli County	13	-	-	-	27	-	-
Central Area							
Taichung City	63	-	-	-	49	8	-
Changhua County	10	-	-	-	16	12	-
Nantou County	7	-	-	-	32	4	-
Southern Area							
Yunlin County	16	-	-	-	6	6	-
Chiayi City	5	-	-	-	4	1	-
Chiayi County	5	-	-	-	1	4	1
Tainan City	33	-	3	-	50	15	-
Kao-Ping Area							
Kaohsiung City	38	-	2	-	102	22	-
Pingtung County	12	-	-	-	27	14	-
Penghu County	-	-	-	-	13	-	-
Eastern Area							
Hualien County	16	-	-	-	18	6	-
Taitung County	3	-	-	-	8	3	1
Others	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: acute hepatitis C (7) and Legionnaires' disease (11).

[4]Calculation for mumps was based on reported cases only.

Table 1 ***(Continued)*** **Number of confirmed cases of notifiable diseases— by locality, 2018**

Unit: Person

Area / Locality	Midyear population	Category III							
		Syphilis[5]	Congenital[5] syphilis	Gonorrhea[5]	Neonatal Tetanus	Enteroviruses Infection with Severe Complications	HIV[6] Infection	AIDS[6]	Hansen's[5] Disease
Total	23,580,080	9,808	-	4,209	-	36	1,992	1,091	7
Taipei Area									
Taipei City	2,675,915	1,421	-	767	-	1	306	132	-
New Taipei City	3,991,203	2,026	-	1,041	-	10	432	260	-
Keelung City	370,807	191	-	174	-	2	36	21	-
Yilan County	455,914	221	-	28	-	1	19	15	-
Kinmen County	138,365	17	-	3	-	-	1	2	-
Lienchiang County	12,968	-	-	-	-	-	-	-	-
Northern Area									
Taoyuan City	2,204,445	1,119	-	515	-	4	195	107	-
Hsinchu City	443,384	155	-	65	-	-	45	22	-
Hsinchu County	554,590	171	-	137	-	-	36	14	-
Miaoli County	551,335	105	-	70	-	1	18	6	1
Central Area									
Taichung City	2,795,482	1,109	-	283	-	6	257	130	1
Changhua County	1,280,141	348	-	87	-	2	48	34	-
Nantou County	499,041	156	-	76	-	-	26	19	-
Southern Area									
Yunlin County	688,198	183	-	57	-	-	30	19	-
Chiayi City	269,010	83	-	23	-	-	18	9	-
Chiayi County	509,125	136	-	37	-	-	21	13	1
Tainan City	1,885,177	606	-	184	-	2	135	74	-
Kao-Ping Area									
Kaohsiung City	2,775,223	1,100	-	475	-	3	263	145	3
Pingtung County	827,673	379	-	73	-	-	63	40	1
Penghu County	104,257	36	-	4	-	-	1	1	-
Eastern Area									
Hualien County	328,603	146	-	57	-	3	22	13	-
Taitung County	219,230	100	-	53	-	1	20	15	-
Others	-	-	-	-	-	-	-	-	-

Note: [5]The caseload calculation of syphilis, congenital syphilis, gonorrhea and Hansen's disease were based on diagnosis date.

[6]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Category IV								
	Herpesvirus B Infection	Leptospirosis[1]	Melioidosis[1]	Botulism	Invasive Pneumococcal Disease	Q[1] Fever	Endemic[1] Typhus Fever	Lyme[1] Disease	Tularemia
Total	-	96	23	-	459	20	22	3	-
Taipei Area									
Taipei City	-	9	-	-	38	-	-	1	-
New Taipei City	-	17	-	-	104	-	1	-	-
Keelung City	-	3	-	-	9	-	-	-	-
Yilan County	-	1	-	-	12	-	-	-	-
Kinmen County	-	-	-	-	2	-	-	-	-
Lienchiang County	-	-	1	-	-	-	-	-	-
Northern Area									
Taoyuan City	-	8	-	-	32	-	-	-	-
Hsinchu City	-	1	-	-	5	-	-	-	-
Hsinchu County	-	3	-	-	15	-	-	-	-
Miaoli County	-	2	1	-	5	-	-	-	-
Central Area									
Taichung City	-	11	-	-	35	1	2	-	-
Changhua County	-	2	1	-	34	3	4	-	-
Nantou County	-	3	-	-	11	-	-	-	-
Southern Area									
Yunlin County	-	1	1	-	18	-	-	-	-
Chiayi City	-	-	-	-	5	-	-	1	-
Chiayi County	-	-	1	-	7	1	-	-	-
Tainan City	-	2	5	-	28	2	1	-	-
Kao-Ping Area									
Kaohsiung City	-	12	10	-	49	12	10	1	-
Pingtung County	-	14	3	-	27	1	3	-	-
Penghu County	-	-	-	-	2	-	-	-	-
Eastern Area									
Hualien County	-	7	-	-	8	-	-	-	-
Taitung County	-	-	-	-	13	-	1	-	-
Others	-	-	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1) and Lyme disease (3).

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Midyear population	Category IV						
		Scrub[1] Typhus	Complicated Varicella	Toxoplasmosis[1]	Severe[1] Complicated Influenza	Creutzfeldt-[5] Jakob Disease	Brucellosis	Listeriosis[1,7]
Total	23,580,080	386	54	17	1,196	-	-	168
Taipei Area								
Taipei City	2,675,915	12	9	1	152	-	-	18
New Taipei City	3,991,203	17	12	4	136	-	-	23
Keelung City	370,807	-	-	1	10	-	-	5
Yilan County	455,914	6	3	-	39	-	-	3
Kinmen County	138,365	16	2	-	7	-	-	1
Lienchiang County	12,968	8	-	-	-	-	-	-
Northern Area								
Taoyuan City	2,204,445	10	6	-	81	-	-	19
Hsinchu City	443,384	1	-	-	15	-	-	4
Hsinchu County	554,590	6	2	-	19	-	-	4
Miaoli County	551,335	6	1	1	32	-	-	4
Central Area								
Taichung City	2,795,482	20	4	2	78	-	-	32
Changhua County	1,280,141	7	-	-	77	-	-	7
Nantou County	499,041	29	2	-	36	-	-	2
Southern Area								
Yunlin County	688,198	1	-	1	32	-	-	1
Chiayi City	269,010	1	1	-	11	-	-	-
Chiayi County	509,125	1	1	-	29	-	-	1
Tainan City	1,885,177	2	4	4	159	-	-	18
Kao-Ping Area								
Kaohsiung City	2,775,223	44	3	1	145	-	-	17
Pingtung County	827,673	12	-	1	73	-	-	3
Penghu County	104,257	31	1	-	5	-	-	1
Eastern Area								
Hualien County	328,603	70	-	-	26	-	-	1
Taitung County	219,230	86	3	1	34	-	-	4
Others	-	-	-	-	-	-	-	-

Note:[1]The total case number of the following diseases includes imported cases: scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5) and listeriosis(1).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[7]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

Table 1 *(Continued)* Number of confirmed cases of notifiable diseases— by locality, 2018

Unit: Person

Area / Locality	Category V							
	Rift Valley Fever	Marburg Haemorrhagic Fever	Yellow Fever	Ebola Virus Disease	Lassa Fever	Middle East Respiratory Syndrome Coronavirus Infections	Novel Influenza A Virus Infections	Zika Virus[1] Infection
Total	-	-	-	-	-	-	-	3
Taipei Area								
Taipei City	-	-	-	-	-	-	-	2
New Taipei City	-	-	-	-	-	-	-	-
Keelung City	-	-	-	-	-	-	-	-
Yilan County	-	-	-	-	-	-	-	-
Kinmen County	-	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	-	-	-	-	-	-	-	-
Hsinchu City	-	-	-	-	-	-	-	-
Hsinchu County	-	-	-	-	-	-	-	-
Miaoli County	-	-	-	-	-	-	-	-
Central Area								
Taichung City	-	-	-	-	-	-	-	-
Changhua County	-	-	-	-	-	-	-	1
Nantou County	-	-	-	-	-	-	-	-
Southern Area								
Yunlin County	-	-	-	-	-	-	-	-
Chiayi City	-	-	-	-	-	-	-	-
Chiayi County	-	-	-	-	-	-	-	-
Tainan City	-	-	-	-	-	-	-	-
Kao-Ping Area								
Kaohsiung City	-	-	-	-	-	-	-	-
Pingtung County	-	-	-	-	-	-	-	-
Penghu County	-	-	-	-	-	-	-	-
Eastern Area								
Hualien County	-	-	-	-	-	-	-	-
Taitung County	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-

Note: [1]The total case number of the following diseases includes imported cases: Zika virus infection (3).

Table 2 Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	＜1 yr		1-4 yrs		5-14 yrs		15-24 yrs		25-39 yrs	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category I										
Smallpox	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	-	-	-	-	-
Category II										
Diphtheria	-	-	-	-	-	-	-	-	-	-
Typhoid Fever [1]	-	-	-	-	-	-	5	0.17	10	0.19
Dengue Fever [1]	-	-	3	0.36	26	1.27	78	2.67	170	3.20
Meningococcal Meningitis [1]	-	-	1	0.12	-	-	-	-	-	-
Paratyphoid Fever [1]	-	-	-	-	-	-	1	0.03	3	0.06
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis[2]	-	-	42	5.01	24	1.17	-	-	-	-
Shigellosis[1]	-	-	-	-	-	-	32	1.10	104	1.96
Amoebiasis[1]	-	-	-	-	-	-	41	1.40	207	3.90
Malaria[1]										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	-	-	-	-	-	-	4	0.14	1	0.02
Measles[1]	2	1.13	-	-	1	0.05	3	0.10	28	0.53
Acute Hepatitis A[1]	-	-	1	0.12	2	0.10	4	0.14	35	0.66
Enterohaemorrhagic *E. coli* Infection	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome										
Hemorrhagic Fever with Renal Syndrome	-	-	-	-	-	-	-	-	-	-
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-
Cholera	-	-	-	-	-	-	-	-	-	-
Rubella[1]	-	-	-	-	1	0.05	3	0.10	5	0.09
MDR-TB[3]	-	-	-	-	-	-	7	0.20	12	0.20

Note: [1]The total case number of the following diseases includes imported cases: typhoid fever (13), dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59), amoebiasis (171), malaria (7), measles (12), acute hepatitis A (33) and rubella (9).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category I								
Smallpox	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	-	-	-
Category II								
Diphtheria	-	-	-	-	-	-	-	-
Typhoid Fever [1]	2	0.02	-	-	-	-	17	0.07
Dengue Fever [1]	196	2.19	60	1.79	-	-	533	2.26
Meningococcal Meningitis [1]	4	0.04	1	0.03	-	-	6	0.03
Paratyphoid Fever [1]	2	0.02	2	0.06	-	-	8	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis[2]	-	-	-	-	-	-	66	0.28
Shigellosis[1]	31	0.35	5	0.15	-	-	172	0.73
Amoebiasis[1]	75	0.84	11	0.33	-	-	334	1.42
Malaria[1]								
Indigenous	-	-	-	-			-	-
Imported	1	0.01	1	0.03	-	-	7	0.03
Measles[1]	6	0.07	-	-	-	-	40	0.17
Acute Hepatitis A[1]	26	0.29	20	0.60	-	-	88	0.37
Enterohaemorrhagic *E. coli* Infection	-	-	-	-	-	-	-	-
Hantavirus Syndrome								
Hemorrhagic Fever with Renal Syndrome	1	0.01	-	-	-	-	1	0.00
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-
Cholera	3	0.03	4	0.12			7	0.03
Rubella[1]	1	0.01	-	-	-	-	10	0.04
MDR-TB[3]	54	0.60	47	1.40	-	-	120	0.50

Note: [1]The total case number of the following diseases includes imported cases: typhoid fever (13), dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59), amoebiasis (171), malaria (7), measles (12), acute hepatitis A (33) and rubella (9).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	＜1 yr		1-4 yrs		5-14 yrs		15-24 yrs		25-39 yrs	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II										
Chikungunya Fever[1]	-	-	-	-	-	-	-	-	5	0.09
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-
Category III										
Pertussis[1]	22	12.43	2	0.24	1	0.05	1	0.03	2	0.04
Tetanus[4]	-	-	-	-	-	-	-	-	1	0.02
Japanese Encephalitis	-	-	-	-	-	-	1	0.03	6	0.11
Tuberculosis[3]	6	3.40	2	0.20	31	1.50	280	9.60	676	12.70
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis										
B[1]	-	-	-	-	-	-	8	0.27	53	1.00
C[1]	1	0.56	-	-	-	-	23	0.79	199	3.75
D	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	1	0.02
Unspecified	-	-	-	-	-	-	-	-	-	-
Mumps[4]	6	3.39	109	13.00	228	11.10	53	1.81	69	1.30
Legionnaires' Disease[1]	-	-	-	-	-	-	2	0.07	6	0.11
Invasive Haemophilus Influenzae Type b Infection	-	-	-	-	-	-	-	-	-	-
Syphilis[5]	-	-	-	-	2	0.10	1,301	44.55	4,367	82.32
Congenital Syphilis[5]	-	-	-	-	-	-	-	-	-	-
Gonorrhea[5]	-	-	-	-	12	0.58	1,265	43.31	2,273	42.85
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	12	6.78	18	2.15	6	0.29	-	-	-	-
HIV Infection[6]	-	-	-	-	-	-	510	17.46	1,106	20.85
AIDS[6]	-	-	-	-	-	-	122	4.18	623	11.74
Hansen's Disease[5]	-	-	-	-	-	-	2	0.07	4	0.08

Note: [1]The total case number of the following diseases includes imported cases: chikungunya fever (7), pertussis (2), acute hepatitis B (10), acute hepatitis C (7) and Legionnaires' disease (11).
[3]The caseload calculation of tuberculosis was based on notification date.
[4]Calculation for tetanus and mumps were based on reported cases only.
[5]The caseload calculation of syphilis, congenital syphilis, gonorrhea, and Hansen's Disease were based on diagnosis date.
[6]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.
[8] Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II								
Chikungunya Fever[1]	2	0.02	-	-	-	-	7	0.03
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-
Category III								
Pertussis[1]	2	0.02	-	-	-	-	30	0.13
Tetanus[4]	2	0.02	1	0.03	-	-	4	0.02
Japanese Encephalitis	26	0.29	4	0.12	-	-	37	0.16
Tuberculosis[3]	2,843	31.80	5,341	159.40	-	-	9,179	38.90
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B[1]	61	0.68	21	0.63	-	-	143	0.61
C[1]	191	2.14	96	2.87	-	-	510	2.16
D	-	-	-	-	-	-	-	-
E	4	0.04	5	0.15	-	-	10	0.04
Unspecified	-	-	-	-	-	-	-	-
Mumps[4]	100	1.12	35	1.04			600	2.54
Legionnaires' Disease[1]	86	0.96	117	3.49	-	-	211	0.89
Invasive Haemophilus Influenzae Type b Infection	1	0.01	4	0.12	-	-	5	0.02
Syphilis[5]	2,108	23.60	2,030	60.58	-	-	9,808	41.59
Congenital Syphilis[5]	-	-	-	-	-	-	-	-
Gonorrhea[5]	617	6.91	42	1.25	-	-	4,209	17.85
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	-	-	-	-	-	-	36	0.15
HIV Infection[6]	366	4.10	10	0.30	-	-	1,992	8.45
AIDS[6]	332	3.72	14	0.42	-	-	1,091	4.63
Hansen's Disease[5]	1	0.01	-	-	-	-	7	0.03

Note: [1]The total case number of the following diseases includes imported cases: chikungunya fever (7), pertussis (2), acute hepatitis B (10), acute hepatitis C (7) and Legionnaires' disease (11).

[3]The caseload calculation of tuberculosis was based on notification date.

[4]Calculation for tetanus and mumps were based on reported cases only.

[5]The caseload calculation of syphilis, congenital syphilis, gonorrhea, and Hansen's Disease were based on diagnosis date.

[6]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

[8] Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	＜1 yr		1-4 yrs		5-14 yrs		15-24 yrs		25-39 yrs	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV										
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-
Leptospirosis[1]	-	-	-	-	-	-	7	0.24	14	0.26
Melioidosis[1]	-	-	-	-	-	-	-	-	1	0.02
Botulism	-	-	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	1	0.56	43	5.13	13	0.63	5	0.17	39	0.74
Q Fever[1]	-	-	-	-	-	-	-	-	4	0.08
Endemic Typhus Fever[1]	-	-	-	-	-	-	1	0.03	2	0.04
Lyme Disease[1]	-	-	-	-	-	-	-	-	2	0.04
Tularemia	-	-	-	-	-	-	-	-	-	-
Scrub Typhus[1]	-	-	-	-	14	0.68	32	1.10	79	1.49
Complicated Varicella	1	0.56	1	0.12	6	0.29	5	0.17	16	0.30
Toxoplasmosis[1]	-	-	-	-	-	-	1	0.03	8	0.15
Severe Complicated Influenza[1]	11	6.21	25	2.98	34	1.66	13	0.45	50	0.94
Creutzfeldt-Jakob Disease[5]	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-
Listeriosis[1,7]	2	1.13	-	-	-	-	3	0.10	12	0.23
Category V										
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections	-	-	-	-	-	-	-	-	-	-
Novel Influenza A Virus Infections	-	-	-	-	-	-	-	-	-	-
Zika Virus Infection[1]	-	-	-	-	-	-	-	-	1	0.02

Note: [1]The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1), Lyme disease (3), scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5), listeriosis(1) and Zika virus infection (3).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[7]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by age group, 2018

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis[1]	53	0.59	22	0.66	-	-	96	0.41
Melioidosis[1]	13	0.15	9	0.27	-	-	23	0.10
Botulism	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	162	1.81	196	5.85	-	-	459	1.95
Q Fever[1]	13	0.15	3	0.09	-	-	20	0.08
Endemic Typhus Fever[1]	14	0.16	5	0.15	-	-	22	0.09
Lyme Disease[1]	1	0.01	-	-	-	-	3	0.01
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus[1]	202	2.26	59	1.76	-	-	386	1.64
Complicated Varicella	17	0.19	8	0.24	-	-	54	0.23
Toxoplasmosis[1]	7	0.08	1	0.03	-	-	17	0.07
Severe Complicated Influenza[1]	346	3.87	717	21.40	-	-	1,196	5.07
Creutzfeldt-Jakob Disease[5]	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
Listeriosis[1,7]	56	0.63	95	2.84	-	-	168	0.71
Category V								
Rift Valley Fever	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections	-	-	-	-	-	-	-	-
Novel Influenza A Virus Infections	-	-	-	-	-	-	-	-
Zika Virus Infection[1]	2	0.02	-	-	-	-	3	0.01

Note: [1]The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1), Lyme disease (3), scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5), listeriosis(1) and Zika virus infection (3).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[7]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 3 Number of confirmed cases of notifiable diseases — by month, 2018

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category I													
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	-	-	-	-	-	-	-	-
Category II													
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhoid Fever [1]	3	1	1	1	1	-	-	4	2	-	1	3	17
Dengue Fever [1]	5	16	5	16	23	34	42	124	108	66	49	45	533
Meningococcal Meningitis [1]	1	1	2	1	-	-	-	-	-	-	-	1	6
Paratyphoid Fever [1]	-	-	-	1	1	1	1	2	-	2	-	-	8
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis[2]	8	9	9	3	7	4	5	2	3	8	4	4	66
Shigellosis[1]	12	10	15	12	17	14	12	15	18	18	13	16	172
Amoebiasis[1]	22	18	31	31	25	22	15	40	33	31	38	28	334
Malaria[1]													
Indigenous	-	-	-	-	-	-	-	-	-	-	-	-	-
Imported	-	-	-	-	-	1	-	1	1	3	-	1	7
Measles[1]	-	-	7	17	2	3	1	3	1	1	-	5	40
Acute Hepatitis A[1]	6	5	8	10	10	5	12	8	3	5	8	8	88
Enterohaemorrhagic *E. coli* Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome													
Hemorrhagic Fever with Renal Syndrome	-	-	1	-	-	-	-	-	-	-	-	-	1
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-	-	-	-
Cholera	-	-	-	-	-	-	3	2	2	-	-	-	7
Rubella[1]	-	-	-	2	2	1	2	2	-	-	1	-	10
MDR-TB[3]	10	7	13	9	9	5	16	7	8	11	15	10	120

Note: [1]The total case number of the following diseases includes imported cases: typhoid fever (13), dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59), amoebiasis (171), malaria (7), measles (12), acute hepatitis A (33) and rubella (9).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

Table 3 *(Continued)* Number of confirmed cases of notifiable diseases — by month, 2018

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category II													
Chikungunya Fever[1]	1	-	-	-	-	1	-	2	1	1	-	1	7
West Nile Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	-
Category III													
Pertussis[1]	1	2	6	1	2	1	5	5	3	3	1	-	30
Tetanus[4]	-	1	1	1	-	-	-	1	-	-	-	-	4
Japanese Encephalitis	-	-	-	-	10	15	9	1	1	-	1	-	37
Tuberculosis[3]	822	568	808	807	852	810	797	816	717	776	717	689	9,179
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis													
B[1]	9	10	13	14	7	5	17	14	18	14	10	12	143
C[1]	37	29	55	38	44	29	52	39	29	47	50	61	510
D	-	-	-	-	-	-	-	-	-	-	-	-	-
E	2	-	1	1	-	-	1	1	-	1	1	2	10
Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-
Mumps[4]	47	31	52	55	57	54	40	55	65	52	49	43	600
Legionnaires' Disease[1]	19	15	8	9	13	20	19	25	23	24	16	20	211
Invasive Haemophilus Influenzae Type b Infection	-	1	-	1	2	-	-	1	-	-	-	-	5
Syphilis[5]	823	602	914	810	922	829	821	870	730	810	831	846	9,808
Congenital Syphilis[5]	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonorrhea[5]	361	319	410	285	344	320	358	346	342	416	379	329	4,209
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	1	3	-	1	10	5	6	3	1	3	1	2	36
HIV Infection[6]	158	119	189	165	202	170	153	193	148	180	153	162	1,992
AIDS[6]	96	77	90	90	103	94	77	86	93	86	96	103	1,091
Hansen's Disease[5]	-	-	-	3	2	-	-	-	2	-	-	-	7

Note: [1]The total case number of the following diseases includes imported cases: chikungunya fever (7), pertussis (2), acute hepatitis B (10), acute hepatitis C (7) and Legionnaires' disease (11).

[3]The caseload calculation of tuberculosis was based on notification date.

[4]Calculation for tetanus and mumps were based on reported cases only.

[5]The caseload calculation of syphilis, congenital syphilis, gonorrhea, and Hansen's disease were based on diagnosis date.

[6]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

Table 3 ***(Continued)*** **Number of confirmed cases of notifiable diseases — by month, 2018**

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category IV													
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis[1]	3	-	3	5	3	11	9	12	28	10	6	6	96
Melioidosis[1]	1	-	-	2	-	1	3	5	7	1	2	1	23
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	42	59	49	53	34	29	31	33	30	27	26	46	459
Q Fever[1]	1	1	-	3	3	-	1	3	5	2	1	-	20
Endemic Typhus Fever[1]	2	1	1	-	6	7	1	1	2	1	-	-	22
Lyme Disease[1]	-	-	-	-	-	-	1	1	1	-	-	-	3
Tularemia	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrub Typhus[1]	54	11	6	13	32	33	57	40	29	41	27	43	386
Complicated Varicella	1	5	3	8	5	1	5	9	6	7	2	2	54
Toxoplasmosis[1]	1	2	1	2	2	1	1	2	2	-	1	2	17
Severe Complicated Influenza[1]	217	246	121	40	40	46	109	99	84	51	46	97	1,196
Creutzfeldt-Jakob Disease[5]	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	-
Listeriosis[1,7]	8	5	19	19	21	18	19	12	12	14	12	9	168
Category V													
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections	-	-	-	-	-	-	-	-	-	-	-	-	-
Novel Influenza A Virus Infections	-	-	-	-	-	-	-	-	-	-	-	-	-
Zika Virus Infection[1]	-	-	-	-	-	-	1	-	1	-	1	-	3

Note: [1]The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1), Lyme disease (3), scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5), listeriosis(1) and Zika virus infection (3).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[7]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

Table 4 Number of confirmed cases and incidence[8] rate of notifiable diseases — by sex, 2018

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category I								
Smallpox	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	-	-	-
Category II								
Diphtheria	-	-	-	-	-	-	-	-
Typhoid Fever [1]	9	0.08	8	0.07	-	-	17	0.07
Dengue Fever [1]	235	1.98	298	2.54	-	-	533	2.26
Meningococcal Meningitis [1]	4	0.03	2	0.02	-	-	6	0.03
Paratyphoid Fever [1]	4	0.03	4	0.03	-	-	8	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis[2]	31	0.26	35	0.30	-	-	66	0.28
Shigellosis[1]	61	0.51	111	0.95	-	-	172	0.73
Amoebiasis[1]	138	1.16	196	1.67	-	-	334	1.42
Malaria[1]								
Indigenous	-	-	-	-	-	-	-	-
Imported	2	0.02	5	0.04	-	-	7	0.03
Measles[1]	16	0.13	24	0.20	-	-	40	0.17
Acute Hepatitis A[1]	28	0.24	60	0.51	-	-	88	0.37
Enterohaemorrhagic *E. coli* Infection	-	-	-	-	-	-	-	-
Hantavirus Syndrome								
Hemorrhagic Fever with Renal Syndrome	-	-	1	0.01	-	-	1	0.00
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-
Cholera	1	0.01	6	0.05	-	-	7	0.03
Rubella[1]	4	0.03	6	0.05	-	-	10	0.04
MDR-TB[3]	26	0.20	94	0.80	-	-	120	0.50

Note: [1]The total case number of the following diseases includes imported cases: typhoid fever (13), dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59), amoebiasis (171), malaria (7), measles (12), acute hepatitis A (33) and rubella (9).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 4 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by sex, 2018

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II								
Chikungunya Fever[1]	2	0.02	5	0.04	-	-	7	0.03
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-
Category III								
Pertussis[1]	22	0.19	8	0.07	-	-	30	0.13
Tetanus[4]	-	-	4	0.03	-	-	4	0.02
Japanese Encephalitis	17	0.14	20	0.17	-	-	37	0.16
Tuberculosis[3]	2,740	23.10	6,439	55.00	-	-	9,179	38.90
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B[1]	57	0.48	86	0.73	-	-	143	0.61
C[1]	136	1.15	374	3.19	-	-	510	2.16
D	-	-	-	-	-	-	-	-
E	1	0.01	9	0.08	-	-	10	0.04
Unspecified	-	-	-	-	-	-	-	-
Mumps[4]	256	2.16	344	2.94	-	-	600	2.54
Legionnaires' Disease[1]	51	0.43	160	1.37	-	-	211	0.89
Invasive Haemophilus Influenzae Type b Infection	2	0.02	3	0.03	-	-	5	0.02
Syphilis[5]	1,737	14.64	8,071	68.89	-	-	9,808	41.59
Congenital Syphilis[5]	-	-	-	-	-	-	-	-
Gonorrhea[5]	303	2.55	3,906	33.34	-	-	4,209	17.85
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	13	0.11	23	0.20	-	-	36	0.15
HIV Infection[6]	43	0.36	1,949	16.64	-	-	1,992	8.45
AIDS[6]	43	0.36	1,048	8.94	-	-	1,091	4.63
Hansen's Disease[5]	3	0.03	4	0.03	-	-	7	0.03

Note: [1]The total case number of the following diseases includes imported cases: chikungunya fever (7), pertussis (2), acute hepatitis B (10), acute hepatitis C (7) and Legionnaires' disease (11).

[3]The caseload calculation of tuberculosis was based on notification date.

[4]Calculation for tetanus and mumps were based on reported cases only.

[5]The caseload calculation of syphilis, congenital syphilis, gonorrhea, and Hansen's disease were based on diagnosis date.

[6]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 4 *(Continued)* Number of confirmed cases and incidence[8] rate of notifiable diseases — by sex, 2018

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis[1]	16	0.13	80	0.68	-	-	96	0.41
Melioidosis[1]	6	0.05	17	0.15	-	-	23	0.10
Botulism	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	162	1.37	297	2.53	-	-	459	1.95
Q Fever[1]	2	0.02	18	0.15	-	-	20	0.08
Endemic Typhus Fever[1]	7	0.06	15	0.13	-	-	22	0.09
Lyme Disease[1]	1	0.01	2	0.02	-	-	3	0.01
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus[1]	129	1.09	257	2.19	-	-	386	1.64
Complicated Varicella	23	0.19	31	0.26	-	-	54	0.23
Toxoplasmosis[1]	6	0.05	11	0.09	-	-	17	0.07
Severe Complicated Influenza[1]	532	4.48	664	5.67	-	-	1,196	5.07
Creutzfeldt-Jakob Disease[5]	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
Listeriosis[1,7]	86	0.72	82	0.70	-	-	168	0.71
Category V								
Rift Valley Fever	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections	-	-	-	-	-	-	-	-
Novel Influenza A Virus Infections	-	-	-	-	-	-	-	-
Zika Virus Infection[1]	1	0.01	2	0.02	-	-	3	0.01

Note: [1]The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1), Lyme disease (3), scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5), listeriosis(1) and Zika virus infection (3).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[7]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

[8]Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 5 Number of confirmed cases of notifiable diseases — by year, 2009-2018

Unit: Person

Disease	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Category I										
Smallpox	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-	-	-
Rabies	-	-	-	1	1	-	-	-	-	-
Category II										
Diphtheria	-	-	-	-	-	-	-	-	-	-
Typhoid Fever [1]	80	33	49	26	19	25	29	14	16	17
Dengue Fever [1]	1,052	1,896	1,702	1,478	860	15,732	43,784	743	343	533
Meningococcal Meningitis [1]	2	7	5	6	6	3	3	8	12	6
Paratyphoid Fever [1]	6	12	6	8	9	8	3	6	4	8
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis[2]	45	49	45	51	25	29	19	41	61	66
Shigellosis[1]	91	172	203	155	155	132	186	225	162	172
Amoebiasis[1]	190	262	256	258	270	300	350	314	378	334
Malaria[1]										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	11	21	17	12	13	19	8	13	7	7
Measles[1]	48	12	33	9	8	26	29	14	6	40
Acute Hepatitis A[1]	234	110	104	99	139	117	171	1,133	369	88
Enterohaemorrhagic *E. coli* Infection	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome										
Hemorrhagic Fever with Renal Syndrome	-	1	-	1	-	2	2	4	-	1
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-
Cholera	3	5	3	5	7	4	10	9	2	7
Rubella[1]	23	21	60	12	7	7	7	4	3	10
MDR-TB[3]	176	156	154	140	129	112	117	112	103	120

Note: [1]The total case number of the following diseases in 2018 includes imported cases: typhoid fever (13), dengue fever (350), meningococcal meningitis (1), paratyphoid fever (7), shigellosis (59), amoebiasis (171), malaria (7), measles (12), acute hepatitis A (33), and rubella (9).

[2]No wild poliovirus was detected since 1984. Nationwide surveillance of acute flaccid paralysis has been used for detecting cases of poliomyelitis after implementing the “Eradication Program for Measles, Congenital Rubella Syndrome, Poliomyelitis and Neonatal Tetanus” since 1992.

[3]The caseload of MDR-TB was calculated based on CDC's registration date.

Table 5 *(Continued)* Number of confirmed cases of notifiable diseases — by year, 2009-2018

Unit: Person

Disease	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Category II										
Chikungunya Fever[1]	9	13	1	5	29	7	4	14	11	7
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-
Category III										
Pertussis[1]	90	61	77	54	51	78	70	17	34	30
Tetanus[4]	12	12	10	17	24	9	12	14	11	4
Japanese Encephalitis	18	33	22	32	16	18	30	23	25	37
Tuberculosis[3]	13,336	13,237	12,634	12,338	11,528	11,326	10,711	10,328	9,759	9,179
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	1	-
Acute Hepatitis										
B[1]	152	172	163	97	97	120	125	118	151	143
C[1]	131	41	34	34	10	205	217	207	325	510
D	1	1	-	-	-	1	2	2	-	-
E	9	7	12	9	9	9	8	16	13	10
Unspecified	18	13	10	10	5	1	2	-	-	-
Mumps[4]	1,068	1,125	1,171	1,061	1,170	880	773	616	636	600
Legionnaires' Disease[1]	84	102	97	88	115	135	153	114	188	211
Invasive Haemophilus Influenzae Type b Infection	14	12	9	3	10	4	3	14	6	5
Syphilis[5]	6,668	6,482	6,372	5,896	6,346	6,986	7,471	8,725	9,835	9,808
Congenital Syphilis[5,6]	…	…	…	…	…	…	…	1	-	-
Gonorrhea[5]	2,137	2,265	1,978	1,983	2,155	2,622	3,587	4,469	4,601	4,209
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	29	16	59	153	12	6	6	33	24	36
HIV Infection[7]	1,648	1,796	1,967	2,224	2,244	2,236	2,327	2,396	2,514	1,992
AIDS[7]	930	1,087	1,075	1,280	1,430	1,387	1,440	1,412	1,390	1,091
Hansen's Disease[5]	7	5	5	13	7	9	16	10	10	7

Note: [1]The total case number of the following diseases in 2018 includes imported cases: chikungunya fever (7), pertussis (2), acute hepatitis B (10), acute hepatitis C (7) and Legionnaires' disease (11).

[3]The caseload calculation of tuberculosis was based on notification date.

[4]Calculation for tetanus and mumps were based on reported cases only.

[5]The caseload calculation of syphilis, congenital syphilis, gonorrhea, and Hansen's disease were based on diagnosis date.

[6]Congenital Syphilis has been included in the list of notifiable diseases since April 1, 2016.

[7]The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

Table 5 *(Continued)* Number of confirmed cases of notifiable diseases — by year, 2009-2018

Unit: Person

Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Category IV										
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-
Leptospirosis[1]	203	77	55	91	82	98	81	130	101	96
Melioidosis[1]	44	45	45	29	19	37	32	55	26	23
Botulism	1	11	6	-	1	-	2	6	-	-
Invasive Pneumococcal Disease	690	737	837	749	625	587	524	592	454	459
Q Fever[1]	89	89	35	53	48	42	43	45	18	20
Endemic Typhus Fever[1]	40	42	26	37	27	21	35	13	38	22
Lyme Disease[1]	-	-	-	1	-	2	2	2	1	3
Tularemia	-	-	1	-	-	-	-	-	-	-
Scrub Typhus[1]	353	402	322	460	538	414	494	488	422	386
Complicated Varicella[8]	…	…	…	…	…	55	54	40	32	54
Toxoplasmosis[1]	7	5	5	12	15	12	13	10	21	17
Severe Complicated Influenza[1,9]	1,134	882	1,481	1,595	965	1,721	857	2084	1,359	1,196
Creutzfeldt-Jakob Disease[5]	3	-	-	-	-	-	-	-	-	-
Brucellosis[10]	…	…	…	-	-	-	1	-	-	-
Listeriosis[1,11]	…	…	…	…	…	…	…	…	…	168
Category V										
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections[12]	…	…	…	-	-	-	-	-	-	-
Novel Influenza A Virus Infections[13]	…	…	…	…	…	-	-	-	1	-
Zika Virus Infection[1,14]	…	…	…	…	…	…	…	13	4	3

Note: [1]The total case number of the following diseases in 2018 includes imported cases: leptospirosis (1), melioidosis (2), Q fever (2), endemic typhus fever (1), Lyme disease (3), scrub typhus (2), toxoplasmosis (1), severe complicated influenza (5), listeriosis(1) and Zika virus infection (3).

[5]The caseload calculation of Creutzfeldt-Jakob disease was based on diagnosis date.

[8]"Varicella" was revised the notifiable condition into "complicated varicella", and has been validated since January 1, 2014.

[9]"Complicated influenza" was revised the notifiable condition into "severe complicated influenza", and has been validated since August 1, 2014.

[10]Brucellosis has been included in the list of notifiable diseases since February 7, 2012.

[11]Listeriosis has been included in Category IV notifiable disease since January 1, 2018.

[12]"Severe acute respiratory infections associated with novel coronavirus" has been included in the list of notifiable diseases since October 3, 2012 which has been renamed as "Middle East respiratory syndrome coronavirus infections" since June 7, 2013.

[13]Novel Influenza A Virus Infections has been included in the list of notifiable diseases since July 1, 2014.

[14]Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

Table 6 Analysis of time intervals between diagnosis and reporting for notifiable diseases — by locality, 2018

Unit: Day

Locality	2017			2018						
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	7,876	0.3	0	9,984	0.3	0	9,944	99.6	40	0.4
Taipei City	1,035	0.1	0	759	0.2	0	747	98.4	12	1.6
New Taipei City	537	0.2	0	1,334	0.2	0	1,328	99.6	6	0.4
Keelung City	41	0.3	0	61	0.1	0	61	100.0	-	-
Yilan County	63	0.2	0	76	0.1	0	76	100.0	-	-
Kinmen County	6	1.0	1	12	0.2	0	12	100.0	-	-
Lienchiang County	-	-	-	1	0.0	0	1	100.0	-	-
Taoyuan City	666	0.2	0	521	0.2	0	514	98.7	7	1.3
Hsinchu City	118	0.1	0	96	0.2	0	96	100.0	-	-
Hsinchu County	24	0.2	0	101	0.2	0	99	98.0	2	2.0
Miaoli County	60	0.1	0	132	0.2	0	131	99.2	1	0.8
Taichung City	676	0.3	0	1,396	0.4	0	1,393	99.8	3	0.2
Changhua County	162	0.1	0	262	0.2	0	262	100.0	-	-
Nantou County	40	0.1	0	151	0.2	0	151	100.0	-	-
Yunlin County	85	0.2	0	120	0.3	0	118	98.3	2	1.7
Chiayi City	98	0.3	0	35	0.1	0	35	100.0	-	-
Chiayi County	38	0.2	0	112	0.3	0	111	99.1	1	0.9
Tainan City	609	0.2	0	618	0.2	0	614	99.4	4	0.6
Kaohsiung City	3,015	0.4	0	3,386	0.3	0	3,385	100.0	1	0.0
Pingtung County	257	0.3	0	415	0.4	0	414	99.8	1	0.2
Penghu County	23	0.3	0	44	0.3	0	44	100.0	-	-
Hualien County	292	0.3	0	270	0.5	1	270	100.0	-	-
Taitung County	31	0.1	0	82	0.3	0	82	100.0	-	-

Note: Listed infectious diseases should be reported within 24 hours, which was not included MDR-TB, HIV infection and AIDS.

Table 7 Analysis of time intervals between reporting and reports received from local health bureaus for notifiable diseases — by locality, 2018

Unit: Day

Locality	2017			2018						
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	7,876	0.0	0	9,984	0.1	0	9,983	100.0	1	0.0
Taipei City	1,035	0.1	0	759	0.1	0	759	100.0	-	-
New Taipei City	537	0.1	0	1,334	0.1	0	1,333	99.9	1	0.1
Keelung City	41	0.2	0	61	0.1	0	61	100.0	-	-
Yilan County	63	0.0	0	76	0.1	0	76	100.0	-	-
Kinmen County	6	0.0	0	12	0.3	0	12	100.0	-	-
Lienchiang County	-	-	-	1	0.0	0	1	100.0	-	-
Taoyuan City	666	0.0	0	521	0.1	0	521	100.0	-	-
Hsinchu City	118	0.0	0	96	0.1	0	96	100.0	-	-
Hsinchu County	24	0.0	0	101	0.1	0	101	100.0	-	-
Miaoli County	60	0.0	0	132	0.0	0	132	100.0	-	-
Taichung City	676	0.1	0	1,396	0.1	0	1,396	100.0	-	-
Changhua County	162	0.0	0	262	0.1	0	262	100.0	-	-
Nantou County	40	0.0	0	151	0.0	0	151	100.0	-	-
Yunlin County	85	0.0	0	120	0.0	0	120	100.0	-	-
Chiayi City	98	0.0	0	35	0.0	0	35	100.0	-	-
Chiayi County	38	0.0	0	112	0.0	0	112	100.0	-	-
Tainan City	609	0.1	0	618	0.1	0	618	100.0	-	-
Kaohsiung City	3,015	0.0	0	3,386	0.0	0	3,386	100.0	-	-
Pingtung County	257	0.0	0	415	0.0	0	415	100.0	-	-
Penghu County	23	0.0	0	44	0.1	0	44	100.0	-	-
Hualien County	292	0.0	0	270	0.0	0	270	100.0	-	-
Taitung County	31	0.2	0	82	0.3	0	82	100.0	-	-

Note: Listed infectious diseases should be reported within 24 hours, which was not included MDR-TB, HIV infection and AIDS.

Table 8 Analysis of time intervals between reports received from local health bureaus to Taiwan CDC for notifiable diseases — by locality, 2018

Unit: Day

Locality	2017			2018						
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	7,876	0.0	0	9,984	0.0	0	9,983	100.0	1	0.0
Taipei City	1,035	0.0	0	759	0.0	0	759	100.0	-	-
New Taipei City	537	0.0	0	1,334	0.0	0	1,334	100.0	-	-
Keelung City	41	0.0	0	61	0.0	0	61	100.0	-	-
Yilan County	63	0.0	0	76	0.0	0	76	100.0	-	-
Kinmen County	6	0.0	0	12	0.0	0	12	100.0	-	-
Lienchiang County	-	-	0	1	0.0	0	1	100.0	-	-
Taoyuan City	666	0.0	0	521	0.0	0	521	100.0	-	-
Hsinchu City	118	0.0	0	96	0.0	0	96	100.0	-	-
Hsinchu County	24	0.0	0	101	0.0	0	101	100.0	-	-
Miaoli County	60	0.1	0	132	0.0	0	132	100.0	-	-
Taichung City	676	0.0	0	1,396	0.0	0	1,395	99.9	1	0.1
Changhua County	162	0.0	0	262	0.0	0	262	100.0	-	-
Nantou County	40	0.0	0	151	0.0	0	151	100.0	-	-
Yunlin County	85	0.0	0	120	0.0	0	120	100.0	-	-
Chiayi City	98	0.0	0	35	0.0	0	35	100.0	-	-
Chiayi County	38	0.0	0	112	0.0	0	112	100.0	-	-
Tainan City	609	0.0	0	618	0.0	0	618	100.0	-	-
Kaohsiung City	3,015	0.0	0	3,386	0.0	0	3,386	100.0	-	-
Pingtung County	257	0.0	0	415	0.0	0	415	100.0	-	-
Penghu County	23	0.0	0	44	0.0	0	44	100.0	-	-
Hualien County	292	0.0	0	270	0.0	0	270	100.0	-	-
Taitung County	31	0.0	0	82	0.0	0	82	100.0	-	-

Note: Listed infectious diseases should be reported within 24 hours, which was not included MDR-TB, HIV infection and AIDS.

Table 9 National Immunization coverage — by counties/cities

Unit: person, person, %

Vaccines	Hepatitis B						DTaP-Hib-IPV					
Birth cohort	2017			2017			2017			2016		
Dose	2nd dose			3rd dose			3rd dose			4th dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	197,503	195,223	98.85	197,503	193,682	98.07	197,503	193,606	98.03	210,429	200,401	95.23
New Taipei City	30,763	30,309	98.52	30,763	30,159	98.04	30,763	30,144	97.99	32,060	30,584	95.40
Taipei City	26,338	25,971	98.61	26,338	25,799	97.95	26,338	25,809	97.99	29,021	27,521	94.83
Taoyuan City	23,880	23,690	99.20	23,880	23,423	98.09	23,880	23,402	98.00	24,687	23,582	95.52
Taichung City	26,530	26,209	98.79	26,530	25,987	97.95	26,530	25,983	97.94	29,163	27,632	94.75
Tainan City	14,499	14,283	98.51	14,499	14,254	98.31	14,499	14,253	98.30	15,694	14,984	95.48
Kaohsiung City	20,877	20,685	99.08	20,877	20,494	98.17	20,877	20,467	98.04	22,148	21,179	95.62
Yilan County	3,300	3,271	99.12	3,300	3,229	97.85	3,300	3,227	97.79	3,609	3,473	96.23
Hsinchu County	5,439	5,383	98.97	5,439	5,332	98.03	5,439	5,326	97.92	6,074	5,759	94.81
Miaoli County	3,789	3,760	99.23	3,789	3,709	97.89	3,789	3,709	97.89	4,228	4,025	95.20
Changhua County	11,362	11,294	99.40	11,362	11,224	98.79	11,362	11,224	98.79	11,345	10,974	96.73
Nantou County	3,129	3,056	97.67	3,129	3,009	96.16	3,129	3,008	96.13	3,221	3,009	93.42
Yunlin County	4,630	4,617	99.72	4,630	4,590	99.14	4,630	4,587	99.07	4,653	4,503	96.78
Chiayi County	2,834	2,811	99.19	2,834	2,791	98.48	2,834	2,794	98.59	2,753	2,622	95.24
Pingtung County	5,179	5,141	99.27	5,179	5,068	97.86	5,179	5,068	97.86	5,416	5,077	93.74
Taitung County	1,516	1,496	98.68	1,516	1,486	98.02	1,516	1,487	98.09	1,575	1,499	95.17
Hualien County	2,383	2,357	98.91	2,383	2,301	96.56	2,383	2,297	96.39	2,633	2,421	91.95
Penghu County	985	976	99.09	985	973	98.78	985	973	98.78	936	894	95.51
Keelung City	2,190	2,170	99.09	2,190	2,160	98.63	2,190	2,159	98.58	2,510	2,428	96.73
Hsinchu City	4,663	4,572	98.05	4,663	4,542	97.41	4,663	4,538	97.32	5,127	4,849	94.58
Chiayi City	1,979	1,956	98.84	1,979	1,936	97.83	1,979	1,937	97.88	2,365	2,228	94.21
Kinmen County	1,108	1,090	98.38	1,108	1,090	98.38	1,108	1,088	98.19	1,080	1,030	95.37
Lienchiang County	130	126	96.92	130	126	96.92	130	126	96.92	131	128	97.71

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2018.

3. Data was calculated in April 2019.

Table 9 *(Continued)* National Immunization coverage － by counties/cities

Unit: person, person, %

Vaccines	PCV13						BCG		
Birth cohort	2017			2016			2017		
Dose	2nd dose			3rd dose			single dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	197,504	193,392	97.92	210,422	201,509	95.76	197,503	193,456	97.95
New Taipei City	30,760	30,054	97.70	32,056	30,614	95.50	30,763	30,066	97.73
Taipei City	26,341	25,731	97.68	29,024	27,820	95.85	26,338	25,471	96.71
Taoyuan City	23,878	23,372	97.88	24,683	23,688	95.97	23,880	23,486	98.35
Taichung City	26,529	25,986	97.95	29,160	27,970	95.92	26,530	26,028	98.11
Tainan City	14,505	14,222	98.05	15,702	14,969	95.33	14,499	14,237	98.19
Kaohsiung City	20,875	20,459	98.01	22,150	21,244	95.91	20,877	20,480	98.10
Yilan County	3,298	3,221	97.67	3,607	3,478	96.42	3,300	3,220	97.58
Hsinchu County	5,444	5,352	98.31	6,076	5,867	96.56	5,439	5,342	98.22
Miaoli County	3,790	3,709	97.86	4,228	4,071	96.29	3,789	3,734	98.55
Changhua County	11,357	11,203	98.64	11,339	10,952	96.59	11,362	11,216	98.72
Nantou County	3,130	3,039	97.09	3,220	3,006	93.35	3,129	3,044	97.28
Yunlin County	4,629	4,563	98.57	4,651	4,519	97.16	4,630	4,585	99.03
Chiayi County	2,832	2,783	98.27	2,753	2,634	95.68	2,834	2,793	98.55
Pingtung County	5,180	5,079	98.05	5,414	5,153	95.18	5,179	5,087	98.22
Taitung County	1,517	1,486	97.96	1,576	1,501	95.24	1,516	1,494	98.55
Hualien County	2,384	2,315	97.11	2,634	2,473	93.89	2,383	2,344	98.36
Penghu County	984	974	98.98	935	893	95.51	985	974	98.88
Keelung City	2,191	2,152	98.22	2,512	2,384	94.90	2,190	2,153	98.31
Hsinchu City	4,662	4,551	97.62	5,127	4,867	94.93	4,663	4,548	97.53
Chiayi City	1,981	1,939	97.88	2,368	2,249	94.97	1,979	1,937	97.88
Kinmen County	1,107	1,077	97.29	1,076	1,029	95.63	1,108	1,089	98.29
Lienchiang County	130	125	96.15	131	128	97.71	130	128	98.46

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2018.

3. Data was calculated in April 2019.

Table 9 *(Continued)* National Immunization coverage － by counties/cities

Unit: person, person, %

Vaccines	Varicella			MMR			Japanese encephalitis, live chimeric					
Birth cohort	2016			2016			2016			2015		
Dose	single dose			1st dose			1st dose			2nd dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	210,429	206,700	98.23	210,429	207,425	98.57	210,429	204,302	97.09	216,206	179,197	82.88
New Taipei City	32,060	31,472	98.17	32,060	31,605	98.58	32,060	31,165	97.21	32,927	27,521	83.58
Taipei City	29,021	28,445	98.02	29,021	28,546	98.36	29,021	27,975	96.40	30,024	25,250	84.10
Taoyuan City	24,687	24,248	98.22	24,687	24,302	98.44	24,687	24,023	97.31	23,813	19,895	83.55
Taichung City	29,163	28,628	98.17	29,163	28,722	98.49	29,163	28,246	96.86	30,323	25,289	83.40
Tainan City	15,694	15,416	98.23	15,694	15,480	98.64	15,694	15,263	97.25	17,091	14,023	82.05
Kaohsiung City	22,148	21,795	98.41	22,148	21,898	98.87	22,148	21,562	97.35	23,262	19,771	84.99
Yilan County	3,609	3,548	98.31	3,609	3,559	98.61	3,609	3,510	97.26	3,525	2,960	83.97
Hsinchu County	6,074	5,994	98.68	6,074	6,006	98.88	6,074	5,912	97.33	6,361	5,162	81.15
Miaoli County	4,228	4,165	98.51	4,228	4,176	98.77	4,228	4,112	97.26	4,661	3,871	83.05
Changhua County	11,345	11,201	98.73	11,345	11,226	98.95	11,345	11,112	97.95	10,896	8,680	79.66
Nantou County	3,221	3,120	96.86	3,221	3,154	97.92	3,221	3,095	96.09	3,133	2,346	74.88
Yunlin County	4,653	4,609	99.05	4,653	4,616	99.20	4,653	4,577	98.37	4,809	4,049	84.20
Chiayi County	2,753	2,719	98.76	2,753	2,726	99.02	2,753	2,690	97.71	2,915	2,288	78.49
Pingtung County	5,416	5,313	98.10	5,416	5,322	98.26	5,416	5,231	96.58	5,681	4,500	79.21
Taitung County	1,575	1,553	98.60	1,575	1,557	98.86	1,575	1,535	97.46	1,607	1,291	80.34
Hualien County	2,633	2,567	97.49	2,633	2,582	98.06	2,633	2,512	95.40	2,723	2,046	75.14
Penghu County	936	923	98.61	936	925	98.82	936	911	97.33	772	683	88.47
Keelung City	2,510	2,479	98.76	2,510	2,486	99.04	2,510	2,461	98.05	2,556	2,236	87.48
Hsinchu City	5,127	5,005	97.62	5,127	5,020	97.91	5,127	4,964	96.82	5,662	4,574	80.78
Chiayi City	2,365	2,320	98.10	2,365	2,322	98.18	2,365	2,274	96.15	2,366	1,884	79.63
Kinmen County	1,080	1,050	97.22	1,080	1,064	98.52	1,080	1,042	96.48	980	783	79.90
Lienchiang County	131	130	99.24	131	131	100.00	131	130	99.24	119	95	79.83

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2018.

3. Data was calculated in April 2019.

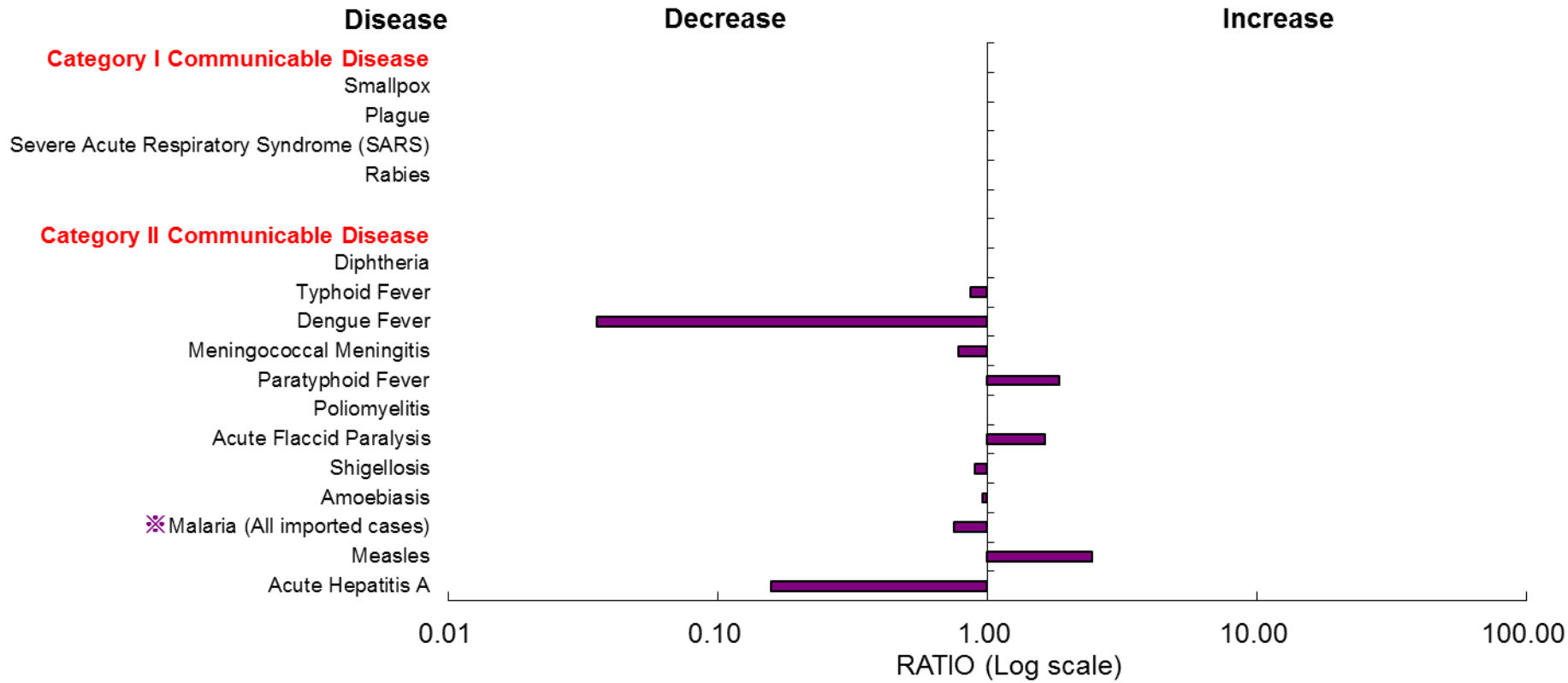
4. Due to the transition from mouse brain-derived inactivated Japanese encephalitis (JE) vaccine to JE live chimeric vaccine, children who have received 3 doses of inactivated JE vaccine should receive 1 dose of JE live chimeric vaccine after age of 5 to complete the series.

Table 9 *(Continued)* National Immunization coverage － by counties/cities

Unit: person, person, %

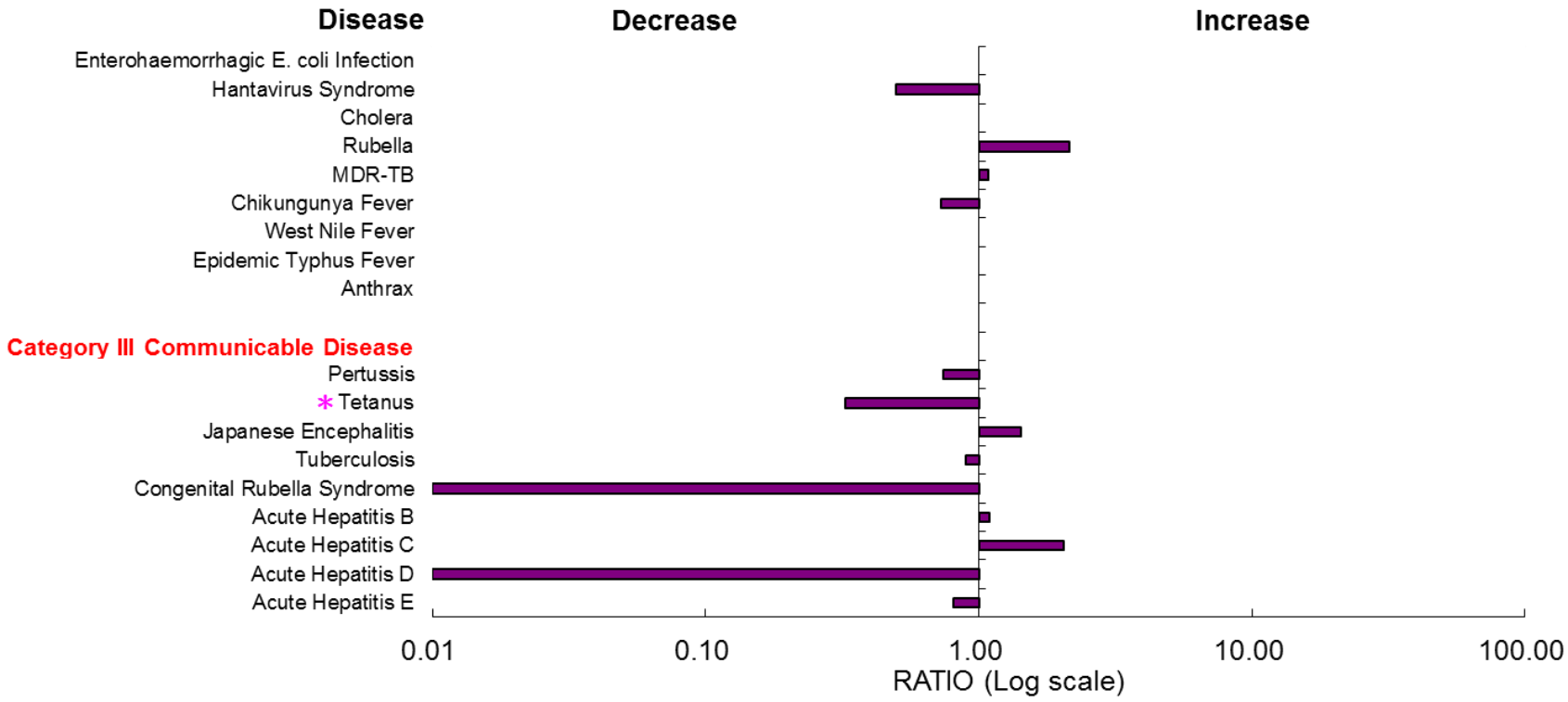
Vaccines	DTaP-IPV			MMR		
Birth cohort	First grade of elementary school					
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	220,908	211,024	95.53	220,908	213,423	96.61
New Taipei City	37,310	35,430	94.96	37,310	35,865	96.13
Taipei City	24,844	23,685	95.33	24,844	23,932	96.33
Taoyuan City	23,920	22,856	95.55	23,920	23,098	96.56
Taichung City	29,682	28,324	95.42	29,682	28,628	96.45
Tainan City	17,138	16,328	95.27	17,138	16,504	96.30
Kaohsiung City	24,143	23,283	96.44	24,143	23,504	97.35
Yilan County	3,879	3,664	94.46	3,879	3,703	95.46
Hsinchu County	7,225	6,979	96.60	7,225	7,039	97.43
Miaoli County	5,235	5,009	95.68	5,235	5,067	96.79
Changhua County	11,413	10,988	96.28	11,413	11,142	97.63
Nantou County	3,791	3,540	93.38	3,791	3,657	96.47
Yunlin County	5,440	5,256	96.62	5,440	5,317	97.74
Chiayi County	3,114	3,028	97.24	3,114	3,061	98.30
Pingtung County	6,253	5,955	95.23	6,253	6,023	96.32
Taitung County	1,765	1,708	96.77	1,765	1,716	97.22
Hualien County	2,685	2,453	91.36	2,685	2,524	94.00
Penghu County	669	654	97.76	669	657	98.21
Keelung City	2,789	2,745	98.42	2,789	2,749	98.57
Hsinchu City	5,998	5,628	93.83	5,998	5,707	95.15
Chiayi City	2,694	2,625	97.44	2,694	2,632	97.70
Kinmen County	818	788	96.33	818	797	97.43
Lienchiang County	103	98	95.15	103	101	98.06

Note 1. Source: National Immunization Information System.
2. Vaccination period: Before December 2018.
3. Data was calculated in April 2019.



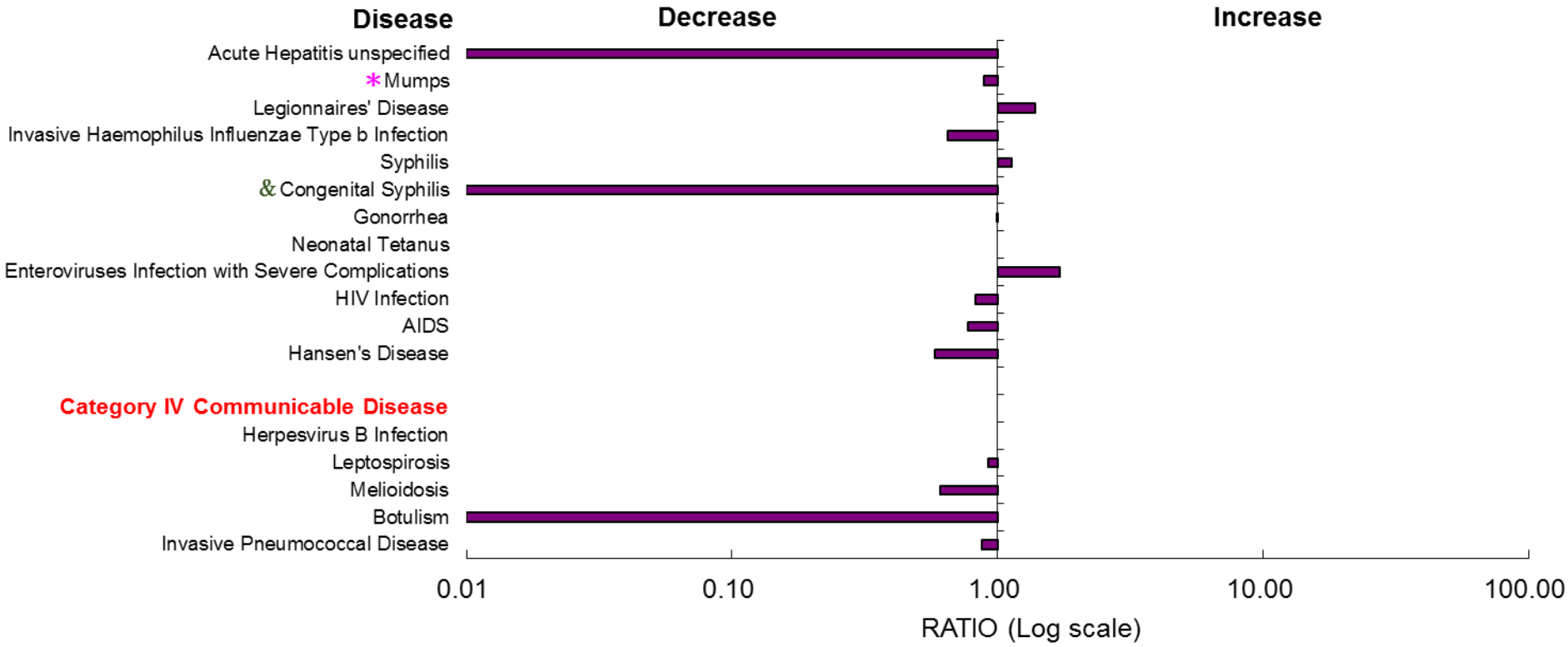
Note: 1. Analysis unit: confirmed cases and onset year.
2. Ratio = 2018 cases / means of 2015-2017.
3. The default value is 100 when denominator is zero and numerator is not zero.
The default value is 0.01 when denominator is not zero and numerator is zero.
4. ※ The World Health Organization (WHO) has declared Taiwan as a malaria eradication region in 1965.

Figure 1　Comparison of 2018 total confirmed cases of notifiable diseases with historical data



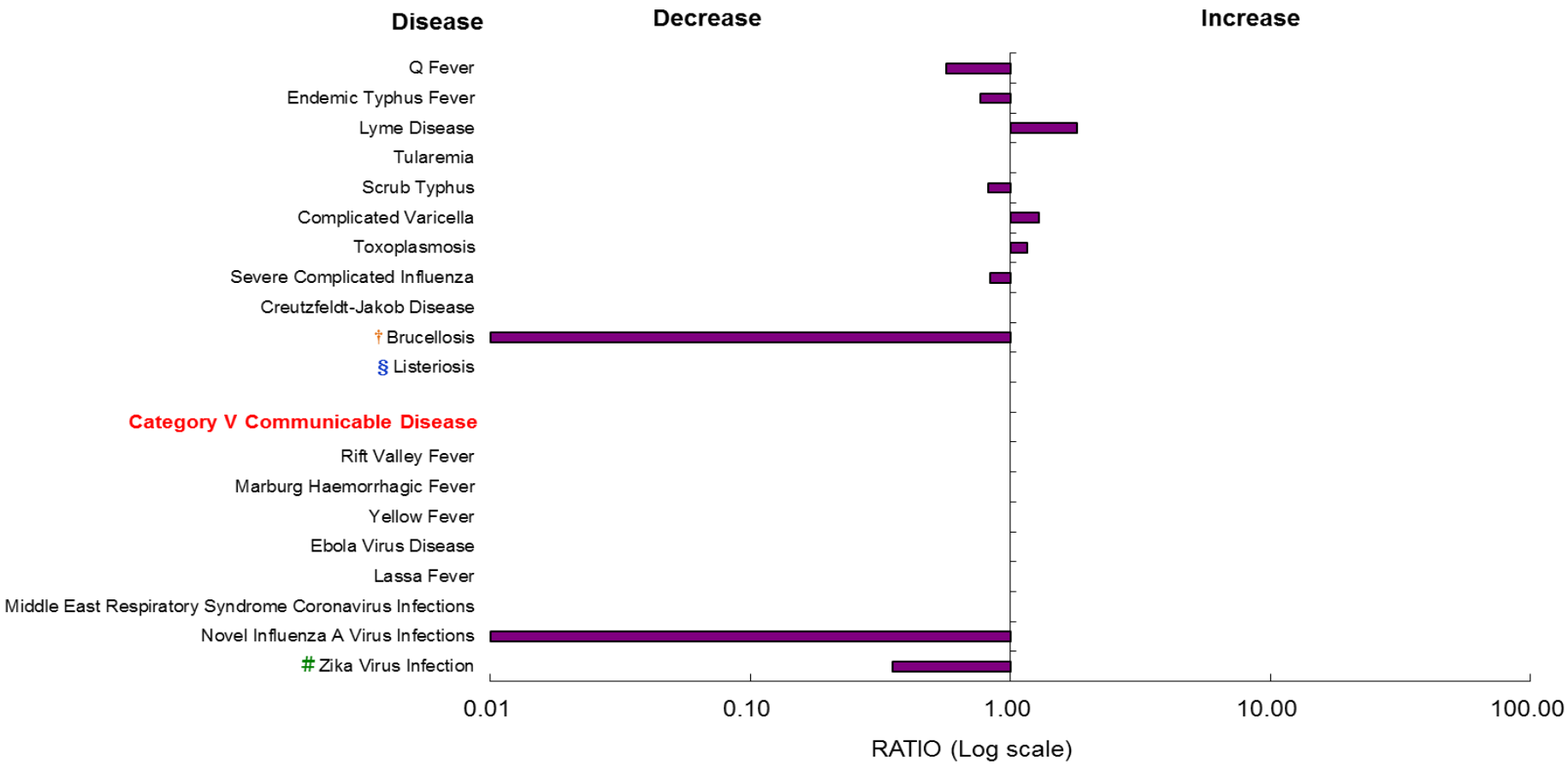
Note: 1. Analysis unit: confirmed cases and onset year.
2. Ratio = 2018 cases / means of 2015-2017.
3. The default value is 100 when denominator is zero and numerator is not zero. The default value is 0.01 when denominator is not zero and numerator is zero.
4. * For tetanus: based on reported cases.
5. For MDR-TB and tuberculosis: based on CDC's registration year and notification year respectively.

Figure 1 Comparison of 2018 total confirmed cases of notifiable diseases with historical data *(Continued)*



Note: 1. Analysis unit: confirmed cases and onset year.
2. Ratio = 2018 cases / means of 2015-2017.
3. The default value is 100 when denominator is zero and numerator is not zero.
The default value is 0.01 when denominator is not zero and numerator is zero.
4. * For mumps: based on reported cases.
5. For syphilis, congenital syphilis, gonorrhea, and Hansen's disease: based on diagnosis year.
6. The numbers of HIV infection and AIDS were calculated based on diagnosis date, and the foreign nationality cases were excluded.
7. & The statistics of congenital syphilis was validated since April 1, 2016. The analysis results were year 2018 compared with previous two years.

Figure 1 Comparison of 2018 total confirmed cases of notifiable diseases with historical data *(Continued)*



Note: 1. Analysis unit: confirmed cases and onset year.
2. Ratio = 2018 cases / means of 2015-2017.
3. The default value is 100 when denominator is zero and numerator is not zero. The default value is 0.01 when denominator is not zero and numerator is zero.
4. For Creutzfeldt-Jakob disease: based on diagnosis date.
5. † In 2012, brucellosis was first classified as a notifiable disease in Taiwan. The first ever case confirmed in Taiwan was an imported one in 2015, there was no case in 2016-2018.
6. § The statistics of LIsteriosis was validated since January 1, 2018, hence there was no comparative result with historical data.
7. # The statistics of Zika virus infection was validated since January 22, 2016. The analysis results were year 2018 compared with previous two years.

Figure 1 Comparison of 2018 total confirmed cases of notifiable diseases with historical data *(Continued)*

PART II

Specific Surveillance Systems

◎ **Abbreviations and Symbols Used in Table**

– No reported cases

… Not under surveillance

Taiwan Nosocomial Infections Surveillance System

I. Preface

The "nosocomial infection" is limited to describing infections that acquired in hospitals, while the "healthcare-associated infection" (HAI) generally refers to infections that patients acquire while receiving treatment for medical or surgical conditions. HAIs may occur in all settings of care, including hospitals, long-term care facilities, homecare facilities, or outpatient departments. In order to respond to continuous evolving in the contents of medical services and the expansion of surveillance range, "healthcare-associated infection" instead of "nosocomial infection" was commonly used internationally as well as in the definition of infection surveillance in the acute care settings that published by the US CDC in 2008. To monitor the occurrence of HAIs effectively, to evaluate the epidemiologic trend of HAIs in Taiwan, and to analyze surveillance data using well-recognized indicators, so that all the information could be made use of collectively to serve as important references for policy making, Taiwan CDC had revised and launched the Taiwan Nosocomial Infections Surveillance System (TNIS System) in 2007. Moreover, strengthening in functions and the utility of the surveillance system is continuously going on. TNIS system not only helps to gather demographic data as well as laboratory results of pathogen identified and antimicrobial susceptibility test for each HAI case, but also provides simple analytical function, so that reporting hospitals can analyze their own data on line as a reference in developing quality improvement initiatives.

II. Objectives

1. Establish the epidemiological database of HAI in Taiwan
2. Discovery of HAI trends
3. Facilitation of inter- and intra-hospital comparisons that can be used for quality improvement activities
4. Assistance for hospitals in developing the appropriate surveillance mechanism that permits timely recognition of infection control problems

III. Reporting methods, data analysis, and feedback

TNIS system adopts voluntary reporting, and each hospital may provide their data either through web-based entry or convey their data electronically through interchange platform. The web-based report mechanism mainly serves for the

hospitals which lack HAI surveillance system of their own. Hospital staff enters the HAI data on the TNIS system website directly. The other mechanism, conveying surveillance data electronically through interchange platform, serves for the hospitals which had built their own HAI surveillance system. However, to enable interoperability between hospital information systems (HIS) and TNIS system, infection control practitioner has to work on vocabularies mapping from local to standard codes and hospital information technology staff has to bridge the connection between the two systems and make the electronic data pack in a standard format according to the working instruction issued by Taiwan CDC. Through this mechanism, surveillance data could be routinely transferred from hospital information systems to the TNIS system automatically. This can save the hospital staff a lot of time because they would not need to repeatedly enter the data to both of hospital surveillance system and TNIS system. At present, more than 500 hospitals enrolled in TNIS system. Hospitals may use TNIS system to manage HAI cases and generate individual hospital reports. Also, Taiwan CDC periodically feedback hospitals with national report as a reference for inter- and intra-hospital comparisons, hope to facilitate hospitals to improve their quality in controlling HAIs and to safeguard the wellbeing of healthcare workers and the general public.

IV. Healthcare-associated infection surveillance data analysis content

1. Number of medical centers and regional hospitals contributing ICU HAI data in this report in 2018.
2. Distribution of HAI rates by type of location in the ICUs of medical centers and regional hospitals in 2018.
3. Distribution of device-associated infection rates in the ICUs of medical centers and regional hospitals in 2018.
4. Distribution of major sites of HAI in ICU patients from medical centers and regional hospitals in 2018.
5. Common pathogens of HAI for patients in the ICUs of medical centers in 2018.
6. Common pathogens of HAI for patients in the ICUs of regional hospitals in 2018.
7. Antimicrobial resistance proportions of selected pathogens of HAI in the ICUs of medical centers and regional hospitals in 2018.

V. Surveillance method and main results

All the analytical results in this report were derived from TNIS system database with data updated to June 20, 2019. In 2018, there were 21 medical centers (195 ICU

units) and 83 regional hospitals (278 ICU units) reported both HAI cases and the number of patient-days to TNIS system for at least one calendar month (Table 10). The distributions of HAI rate ((number of HAIs/number of patient-days) ×1000‰) in ICUs of medical centers and regional hospitals are shown in Table 11. There were 4,813 episodes of HAI events occurred during 811,410 patient-days in the ICUs of 21 medical centers; the rate of infections was 5.9‰. However, in the ICUs of the 83 regional hospitals, there were 3,838 episodes of HAI events occurred during 856,297 patient-days; the rate of infections was 4.5‰. The HAI rates of ICUs were higher in medical centers than those in regional hospitals by corresponding types of ICU. The distributions of device-associated infection rate in ICUs ((number of device-associated infections/ number of device-days) ×1000‰) are shown in Figure 2. The pooled mean of central line-associated bloodstream infection (CLABSI) rates was 3.7‰ in medical centers and 2.6‰ in regional hospitals, and the pooled mean of catheter-associated urinary tract infection (CAUTI) rates were 3.0‰ and 2.4‰ respectively, the rate of CAUTI and the rate of CLABSI in ICUs of medical centers are higher than those in regional hospitals; the pooled mean of ventilator-associated pneumonia (VAP) rates in regional hospitals is higher than that in medical centers, which are 0.9‰ and 0.6‰ respectively.

The distribution of site-specific HAIs in ICUs is shown in Table 12, with the bloodstream infections topped the list in medical centers (41.8%), followed by urinary tract (33.7%), and pneumonia (8.7%). In regional hospitals, the urinary tract infections topped the list (38.8%), followed by bloodstream infections (33.9%), and pneumonia (15.4%).The common pathogens for HAIs in ICUs are shown in Table 13 and Table 14. The top three pathogens in the ICUs were *Klebsiella pneumoniae*, *Escherichia coli*, *Enterococcus faecium* in medical centers and *Escherichia coli*, *Klebsiella pneumoniae*, *Candida albicans* in regional hospitals. The proportions of antimicrobial resistance among selected pathogens identified from patients in the ICUs with HAIs are shown in Figure 3. In the ICUs of medical centers, the proportion of *Acinetobacter baumannii* isolates those were resistant to carbapenem (CRAB) is 70.2%, the proportion of *K. pneumoniae* isolates those were resistant to carbapenem (CRKP) is 41.5%, the proportion of *Pseudomonas aeruginosa* isolates those were resistant to carbapenem (CRPA) is 23.7%, the proportion of *Enterococci* isolates those were resistant to vancomycin (VRE) is 44.5%, and the proportion of *Staphylococcus aureus* isolates those were resistant to oxacillin (MRSA) is 64.1%. Meanwhile, the antimicrobial resistance proportions of selected pathogens isolated from patients acquired HAIs in the ICUs of regional hospitals were 68.8%, 28.2%, 12.5%, 42.4% and 66.7% for CRAB, CRKP, CRPA, VRE and MRSA, respectively.

VI. 2018 Data analysis of HAI in the ICUs of medical centers and regional hospitals

Table 10 Number of medical centers and regional hospitals contributing ICU HAI data in this report, 2018

Hospital level	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs
Medical center	21	1,188	21	1,180	21	1,213	21	1,237
Regional hospital	83	1,008	82	956	82	921	82	961

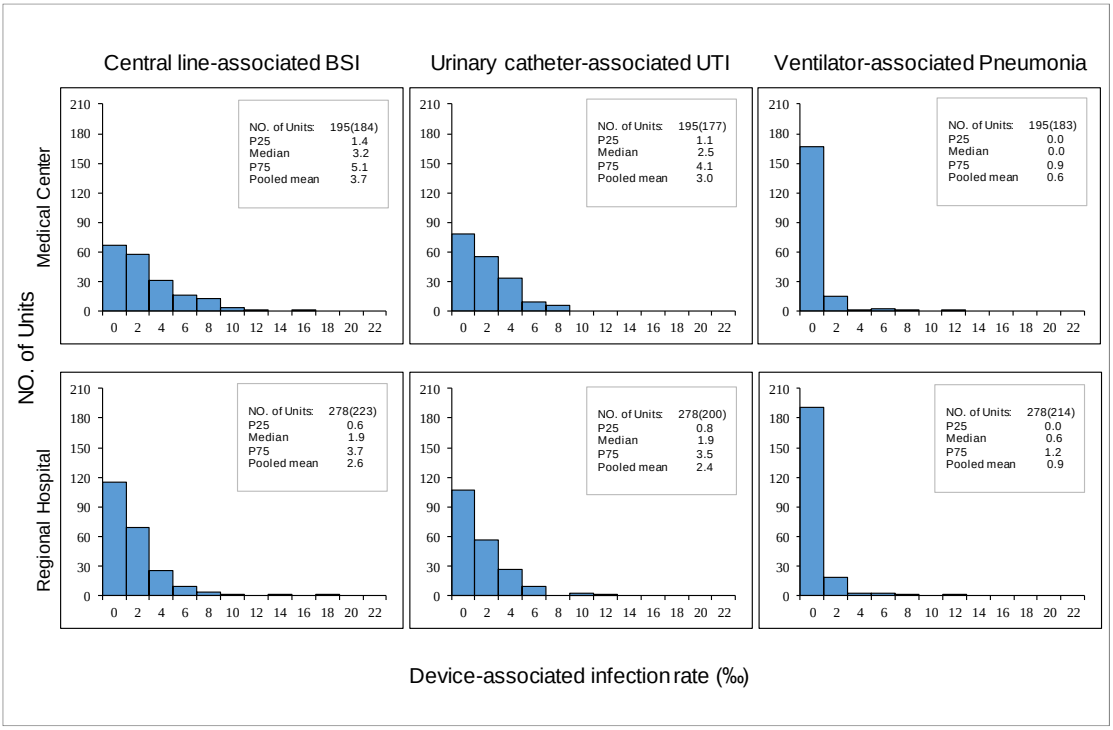
Note: Data updated to 2019/06/20

Table 11 Distribution of healthcare-associated infection rates by type of locations in the ICUs of medical centers and regional hospitals, 2018

Hospital level	Type of locations	No. of units[1]	No. of HAIs	Patient -days	HAI Rate[2] (‰)	Percentile		
						25th	50th	75th
Medical center	Medical ICU	51 (49)	1,671	237,717	7.0	4.8	6.3	8.5
	Surgical ICU	71 (67)	1,846	262,995	7.0	5.6	6.7	9.2
	Cardiology ICU	16 (15)	363	61,594	5.9	4.5	6.4	7.0
	Pediatric ICU	40 (40)	370	150,383	2.5	1.1	2.0	3.4
	Medical/surgical ICU	24 (23)	563	98,721	5.7	2.8	5.5	7.4
	Total	195 (187)	4,813	811,410	5.9	3.1	5.9	7.7
Regional hospital	Medical ICU	60 (54)	976	248,850	3.9	2.4	3.6	5.9
	Surgical ICU	50 (47)	1,032	168,116	6.1	3.7	5.6	8.6
	Cardiology ICU	12 (10)	131	32,868	4.0	2.4	3.8	5.5
	Pediatric ICU	71 (62)	57	54,658	1.0	0.0	0.0	1.5
	Medical/surgical ICU	88 (83)	1,642	351,805	4.7	2.7	3.9	6.0
	Total	278 (253)	3,838	856,297	4.5	1.4	3.4	5.6

Note: 1. Units with patient-days<50 are not included in percentile distribution; the number in parentheses is the number of units meeting minimum requirement for percentile distribution.

2. Healthcare-associated infection rate= (number of HAIs/number of patient-days) ×1000‰.
For every unit, monthly data was included for analysis only when the patient days and number of HAI cases were both available.



Note: 1. device-associated infection rate= (number of HAIs/number of device-days) ×1000‰;

2. UTI, urinary tract infection; BSI, bloodstream infection;

3. Units with device-days<50 are not included in percentile distribution; the number in parentheses is the number of units meeting minimum requirement for percentile distribution.

Figure 2 Distribution of device-associated infection rates in the ICUs of medical centers and regional hospitals, 2018

Table12 Distribution of major types of healthcare-associated infection in the ICU patients from medical centers and regional hospitals, 2018

Types of infection	Medical center		Regional hospital	
	No.	%	No.	%
Urinary tract	1,625	33.7	1,494	38.8
Bloodstream	2,016	41.8	1,304	33.9
Pneumonia	420	8.7	594	15.4
Surgical site	228	4.7	206	5.4
Other	529	11.0	248	6.4
Total	4,818	100	3,846	100

Note: proportion of specific infection type= (number of specific infection type /number of overall infection)×100%

Table 13 Common pathogens of healthcare-associated infections in the ICUs of medical centers, 2018

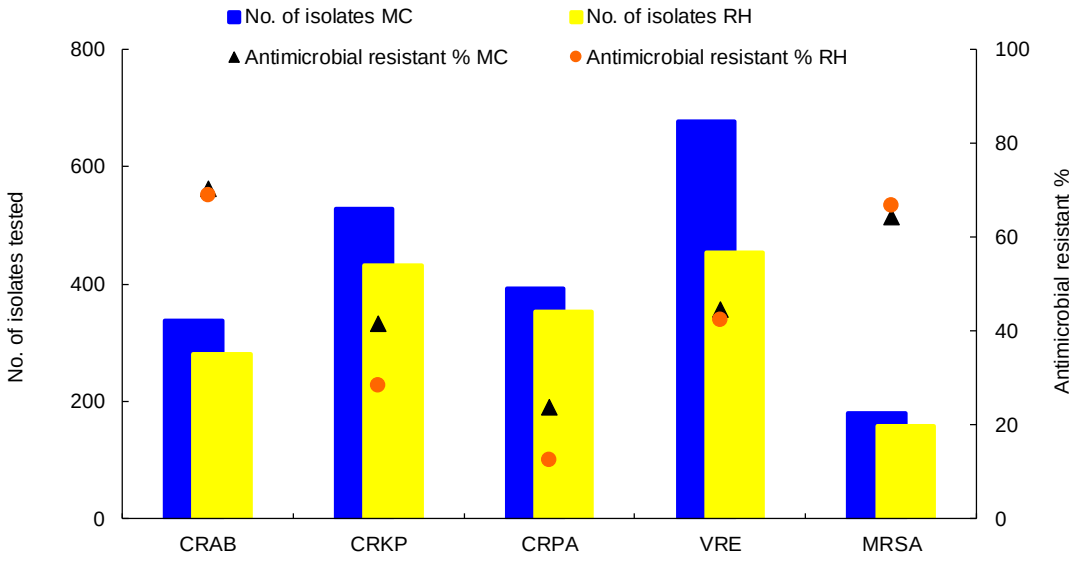
Pathogens	Total		Types of Infection									
			Urinary tract		Bloodstream		Pneumonia		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
Klebsiella pneumoniae	1	540	6	144	1	271	2	60	6	31	4	34
Escherichia coli	2	520	1	338	8	102	6	17	1	41	7	22
Enterococcus faecium	3	443	5	159	2	220			5	33	5	31
Candida albicans	4	396	3	222	5	134	23	1	7	25	9	14
Other Candida spp. or NOS	5	394	4	183	4	185	12	4	10	10	11	12
Pseudomonas aeruginosa	5	394	7	135	7	121	1	75	4	35	6	28
Yeast-like	7	348	2	277	17	46	15	3	10	10	11	12
Acinetobacter baumannii	8	343	10	37	3	215	3	54	9	15	7	22
Enterobacter species	9	251	9	51	5	134	6	17	3	37	11	12
E.cloacae		171		31		101		10		20		9
Other Enterobacter spp. or NOS		80		20		33		7		17		3
Enterococcus faecalis	10	222	8	98	13	73			2	38	10	13
Others		1,647		140		910		141		136		320
Total		5,498		1,784		2,411		372		411		520

Note: 1. Isolates of the same species of bacteria, regardless of antimicrobial susceptibility pattern, are counted only once per patient per infection. That is, no duplicate isolates are included.
2. NOS: not otherwise specified.

Table 14 Common pathogens of healthcare-associated infections in the ICUs of regional hospitals, 2018

Pathogens	Total		Types of Infection									
			Urinary tract		Bloodstream		Pneumonia		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
Escherichia coli	1	479	1	328	8	77	6	26	2	36	11	12
Klebsiella pneumoniae	2	473	5	157	1	169	3	93	4	29	2	25
Candida albicans	3	419	2	285	9	75	8	15	5	26	6	18
Pseudomonas aeruginosa	4	408	6	151	5	94	2	98	1	42	4	23
Acinetobacter baumannii	5	316	9	39	2	129	1	103	8	19	1	26
Enterococcus faecium	6	314	3	172	3	100	23	1	7	23	6	18
Other Candida spp. or NOS	7	278	4	171	7	90	14	4	14	5	13	8
Enterobacter species	8	173	11	31	10	71	7	25	3	32	10	14
E.cloacae		120		20		52		15		26		7
Other Enterobacter spp. or NOS		53		11		19		10		6		7
Staphylococcus aureus	8	173	18	6	5	94	5	48	9	10	8	15
Yeast-like	10	157	7	116	17	21	10	7	15	4	12	9
Others		1,141		255		553		112		116		105
Total		4,331		1,711		1,473		532		342		273

Note: 1. Isolates of the same species of bacteria, regardless of antimicrobial susceptibility pattern, are counted only once per patient per infection. That is, no duplicate isolates are included.
2. NOS: not otherwise specified.



Note: 1. "Antimicrobial resistant %" indicates the % of Isolates with susceptibility tested to be intermediate or resistant to the antimicrobial specified.

2. CRAB: carbapenem (imipenem or meropenem)-resistant *Acinetobacter baumannii*;
CRKP: carbapenem (imipenem, meropenem, or ertapenem)-resistant *Klebsiella pneumoniae*;
CRPA: carbapenem (imipenem or meropenem)-resistant *Pseudomonas aeruginosa*;
VRE: vancomycin-resistant *enterococci* (*Enterococcus faecalis*, *Enterococcus faecium*...etc.);
MRSA: oxacillin-resistant *Staphylococcus aureus*.

Figure 3 Antimicrobial resistances of selected pathogens of healthcare-associated infections in the ICUs of medical centers(MC) and regional hospitals(RH), 2018

School-based Surveillance System

I. Introduction

School children, who are in close contact with each other and pass infections around, are more susceptible to the communicable diseases. This is one of the main ways microorganisms circulate in campuses and communities, causing outbreaks of infectious diseases. To monitor the trends of communicable diseases in a multifaceted way, Taiwan Centers for Disease Control (Taiwan CDC) launched a pilot program for elementary schools to monitor and report symptoms and infectious diseases in February 2001. As of 2018, a total of 713 elementary schools voluntarily enrolling students from kindergarten to 6th grade participated in the system.

The school-based surveillance system is a simple, flexible, specific and sensitive communicable disease reporting system that can effectively reflect epidemic trends, detect possible outbreaks and facilitate timely adoption of control measures, in order to contain the spread of communicable diseases in elementary schools.

In addition, these data are used to analyze and estimate the scope and magnitude of diseases at the school and regional levels, which can aid the early detection of disease clusters in communities. As a result, the school-based surveillance system serves the dual purposes of safeguarding the health of school children and achieving control of communicable diseases.

II. Objectives of surveillance system

1. Understand and establish the long-term trends of communicable diseases in schools and detect aberration in surveillance data.
2. Detect early epidemic trends in communities.
3. Provide references for assessing the disease burden.

III. Diseases under surveillance

Diseases and symptoms reported under the school-based surveillance system include influenza like illness, hand-foot-and-mouth disease or herpangina, diarrhea, fevers, acute hemorrhagic conjunctivitis, varicella and other internal medicine diseases on a weekly basis.

IV. Reporting method, data analysis and data feedback

Schools participate in the surveillance system on a voluntary basis. The health care workers of public elementary schools report weekday data online by every Monday during each semester. Assigned officers at the Regional Centers of CDC observe the data completion and whether there are possible clusters of other communicable diseases. The weekly data are compiled, analyzed, and displayed as figures and periodically post on the CDC official website. In addition, the “Sentinel Surveillance Weekly Report” released on the website of the school-based surveillance system disseminate to the reporting schools, relevant health and education facilities.

V. Selective analysis of reportable diseases

1. Influenza-like illness

■ Case definition:

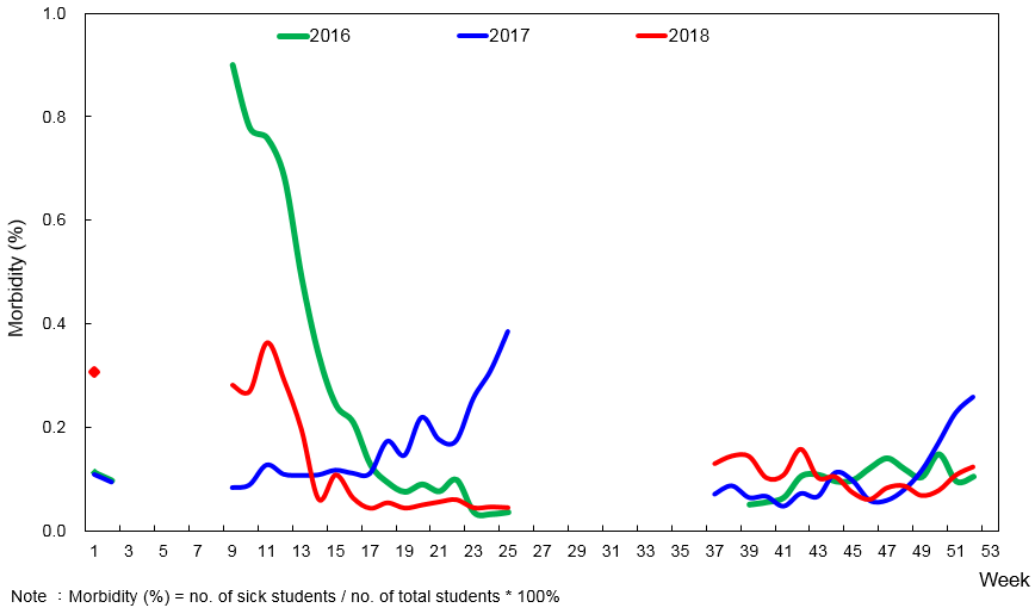
Acute respiratory infection with the following symptoms:

(1) Sudden onset, with fever (ear temperature≧38°C) and respiratory infection; and

(2) Muscular soreness or headache or extreme fatigue.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of influenza-like illness among schools were between 0.04% and 0.36% in 2018.The morbidities of week 1, week 9 to week 12 and week 37 to week 43 in 2018 were slightly higher than the same period of 2017. Overall, the trend in 2018 was lower than that in 2016 and 2017.



Note ：Morbidity (%) = no. of sick students / no. of total students * 100%

Figure 4　ILI morbidity reported by the School-based Surveillance System, 2016-2018

2. Hand-foot-and-mouth disease (HFMD) or herpangina

■ Case definition:

(1) Case definition of hand-foot-and-mouth disease: Vesicular lesions or rashes appear on mouth, palms, soles, and/or knees and buttocks.

(2) Case definition of herpangina: Fever and vesicular lesions or ulcer in pharyngeal area.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of hand-foot-mouth disease or herpangina among schools were between 0.02% and 0.19% in 2018.Overall, the trend in 2018 was lower than that in 2016, but higher than that in 2017.

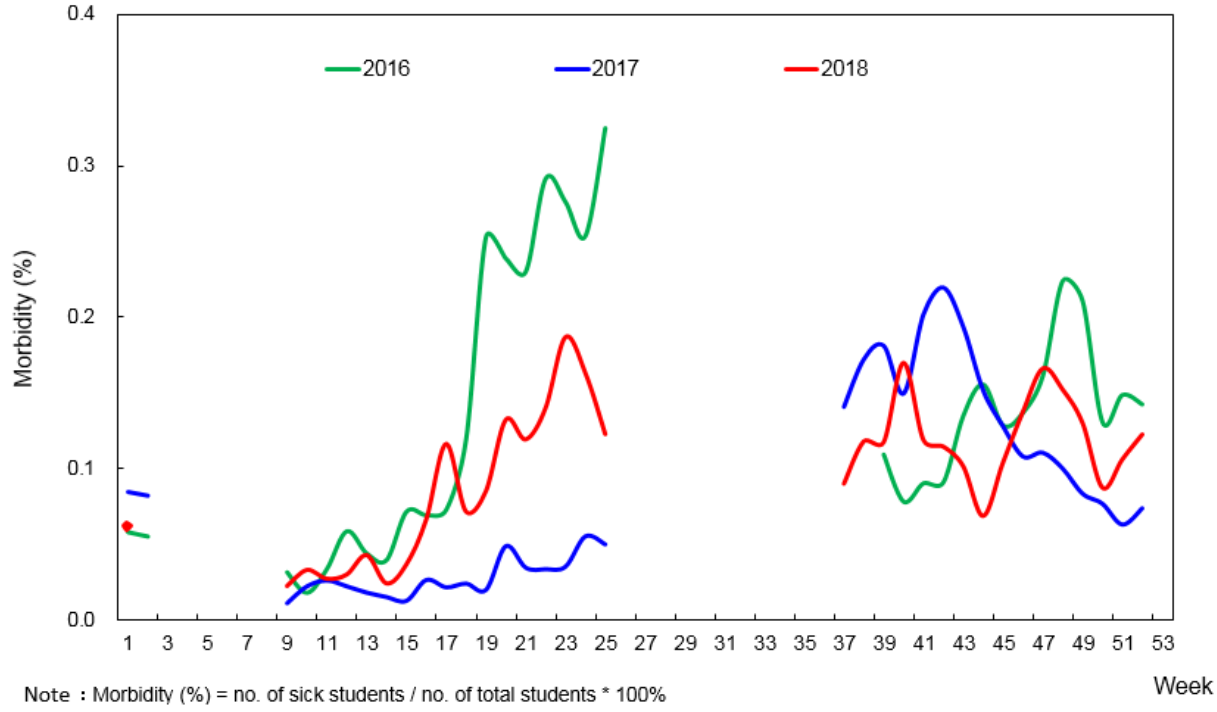


Figure 5 Hand-foot-mouth disease (HFMD) or herpangina morbidity reported by the School-based Surveillance System, 2016-2018

3. Diarrhea

■ Case definition:

Diarrhea three times or more per day, and accompanied by more than one of following symptoms:

(1) Vomiting

(2) Fever

(3) Mucous stool or hematochezia

(4) Watery diarrhea.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of diarrhea among schools were between 0.03% and 0.18% in 2018. The trend was similar to the last two years.

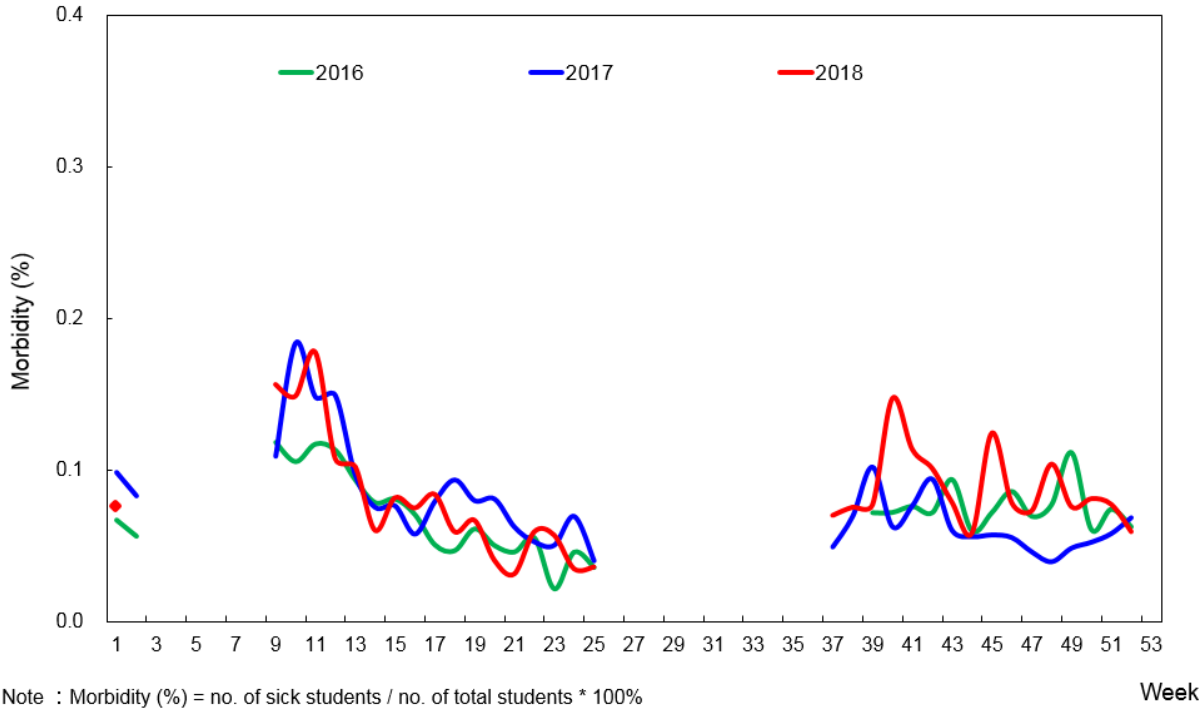


Figure 6 Diarrhea morbidity reported by the School-based Surveillance System, 2016-2018

4. Fever

■ Case definition:

Fever (ear temperature≧38°C) but free of the illness or symptoms of influenza-like illness, diarrhea, hand-foot-mouth disease or herpangina.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of fever among schools were between 0.24% and 0.65% in 2018. Overall, the trend in 2018 was lower than that in 2016 and similar to that in 2017.

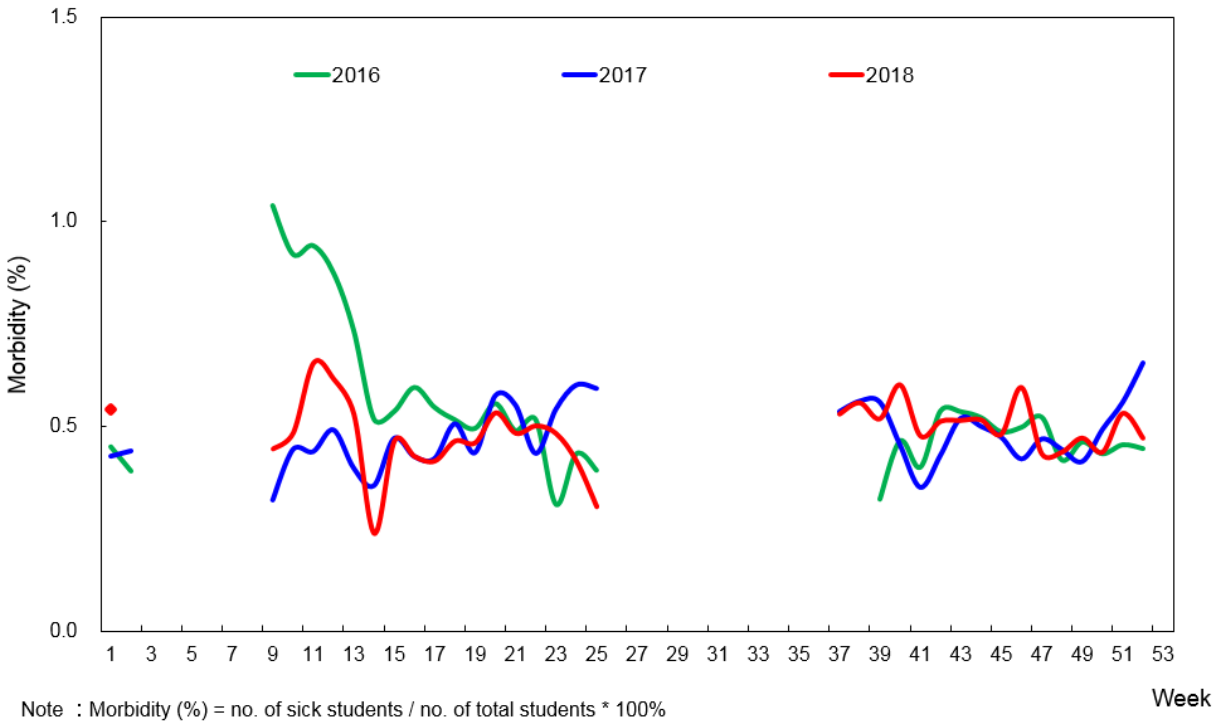


Figure 7 Fever Morbidity Reported by the School-based Surveillance System, 2016-2018

5. Acute hemorrhagic conjunctivitis (AHC)

■ Case definition:

Prickly, burning sensation of eyes, increased sensitivity to light, increased amount of tears, foreign body sensation, blurred vision; conjunctivas in bright redness, sometimes with subconjunctival hemorrhage; large amount of viscous discharge from the eyes; sometimes preauricular lymph node swelling and tenderness.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of Acute hemorrhagic conjunctivitis (AHC) among schools were between 0.00‰ and 0.25‰ in 2018. The trend of AHC in 2018 was similar to the past two years.

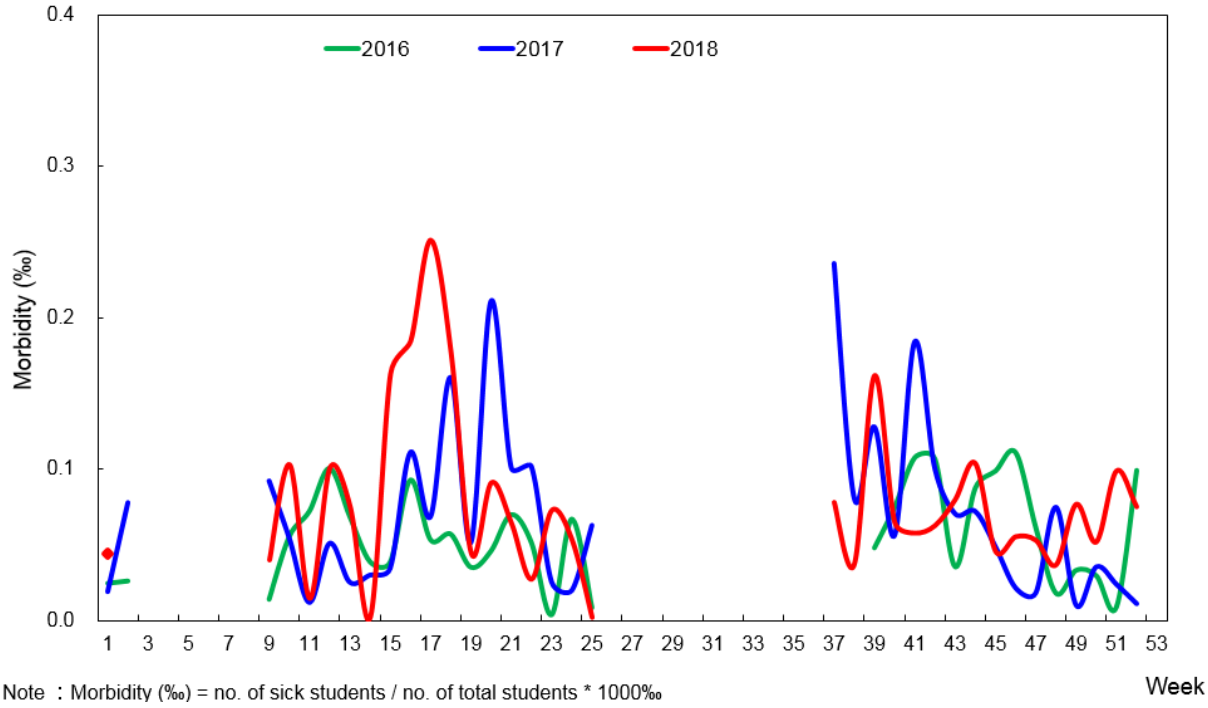


Figure 8 AHC morbidity reported by the School-based Surveillance System, 2016-2018

6. Varicella:

■ Case definition:

Appearance of blisters of all sizes throughout the whole body and may go along with fever as a potential clinical symptom.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of varicella among schools were between 0.003% and 0.022% in 2018. The trend of Varicella in 2018 was similar to the past two years.

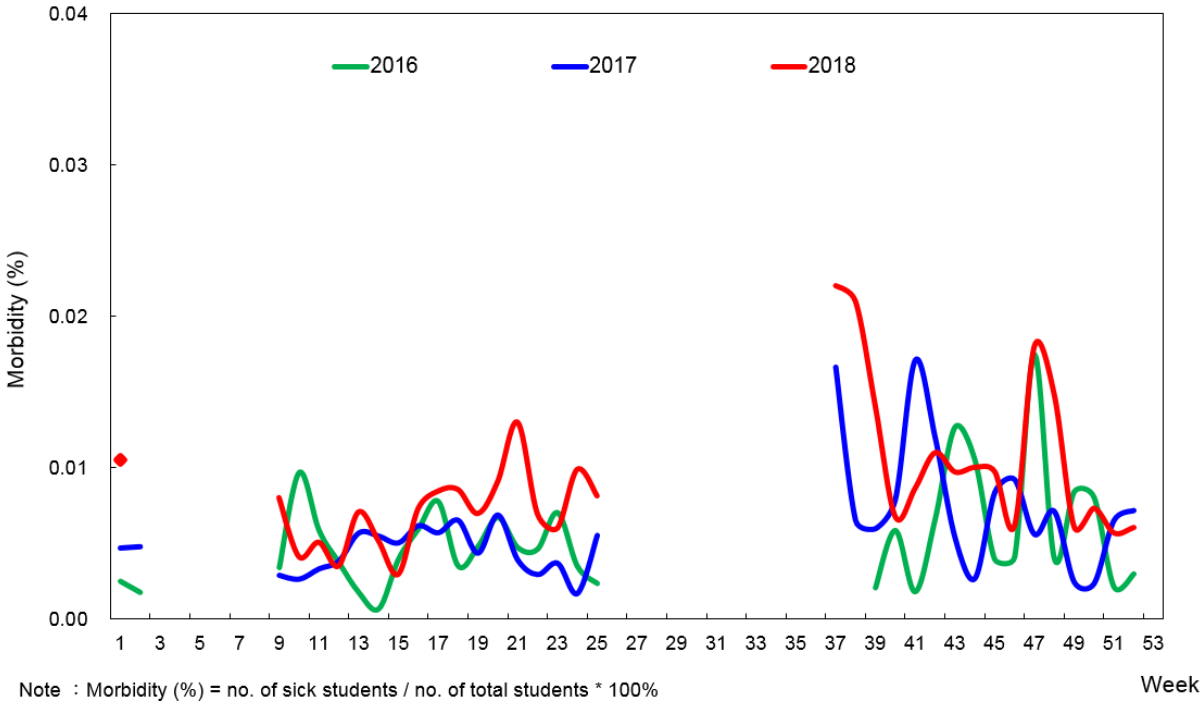


Figure 9 Varicella morbidity reported by the School-based Surveillance System, 2016-2018

Laboratory Surveillance System

I. Origin

The island-wide outbreak of enterovirus epidemic in Taiwan in 1998 exposed the inadequacy of our virology laboratories in both quality and quantity. Thus the Department of Health (DOH) has been establishing contract virology laboratories across Taiwan since March 1999 and endeavors to improve Taiwan's capacity for virus testing and cultivate professionals in the field. Currently, contract laboratories are playing an important role in the monitoring of enterovirus and influenza viruses in communities. The laboratory surveillance targets mainly the prevalent types of enterovirus and influenza viruses to shed light on the activities of important virus strains in different seasons. Such information provides useful references in the formulation of epidemic prevention policies, and moreover, contributes to the construction of a valuable native viral genome database and a biomaterial database in Taiwan.

II. Distribution and responsibility areas of contracted laboratories

In 2018, there were a total of eight contracted laboratories for viral diseases across the country. Their locations and coverage areas are as follows: In northern Taiwan, National Taiwan University (coverage area: Taipei City, Kinmen County, and Lienchiang County), Chang Gung University (coverage area: Taoyuan City, Hsinchu County, Hsinchu City and Miaoli County), Tri-Service General Hospital (coverage area: New Taipei City, Keelung City, Yilan County, and specimens from military hospitals); in central Taiwan, Taichung Veterans General Hospital (coverage area: Taichung City), Changhua Christian Hospital (coverage area: Changhua County, Yunlin County and Nantou County); in southern Taiwan, National Cheng Kung University Hospital (coverage area: Chiayi County, Chiayi City and Tainan City), Kaohsiung Medical University Chung-Ho Memorial Hospital (coverage area: Kaohsiung City, Pingtung County, and Penghu County); and in eastern Taiwan, Hualien Tzu Chi Hospital (coverage area: Hualien County and Taitung County).

III. Sources of specimens and testing process

Sources of specimens at the contracted laboratories come mainly from outpatients, emergency and inpatients patients at medical centers within the areas covered by the laboratories, as well as from 150 specimen collection stations nationwide. Specimens are collected from patients with suspected influenza or enteroviral infections. The former should meet the criteria for influenza-like illness (symptoms including fever above 38°C, cough, sore throat or muscular pain; patients with mild rhinitis, tonsillitis, and bronchitis are excluded). The latter should be patients with hand-foot-mouth disease or herpangina, and their specimens should be collected within three days after the onset of illness. Generally, specimen collection stations send two specimens to the regional contracted laboratories every week.

1. Collection of specimens

Specimens collected by contract laboratories in 2018 totaled 10,421, which represents an average of 868 per month. The contracted laboratories in northern Taiwan received the largest number of specimens with 4,344 cases, followed by central Taiwan with 2,324 cases, southern Taiwan with 2,650 cases, whereas laboratories in eastern Taiwan received the fewest specimens with 1,103 cases.

2. Prevalence of enterovirus

In 2018, 1,447 strains of enterovirus were isolated. After typing by immunofluorescence assay (IFA), it was found the dominant type was Coxsackie virus A (960 strains or 66.3%), the majority constituted type CVA10 374 strains, CVA4 266 strains and CVA16 236 strains; Echovirus (231 strains or 16.0%), the majority constituted type Echovirus11 224 strains; Coxsackie virus B (174 strains or 12.0%), the majority constituted type CVB5 129 strains; Enterovirus Type 71 (46 strains or 3.2%) and 36 isolates (2.5%) were non-polio enterovirus (NPEV). After typing of NPEV by gene sequencing, it was found the majority of NPEV were Rhinovirus, followed by CVA21, CVA10 and Echovirus18 in sequence. (See Figure 10 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2018).

To sum up, the top five types of enterovirus isolated in 2018 were CVA10 (25.8%), CVA4 (18.4%), CVA16 (16.3%), Echovirus11(15.5%), and CVB5 (8.9%). (See Figure 11 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2018).

3. Prevalence of influenza virus

In 2018, 1,728 strains of influenza virus were isolated, including 606 strains of influenza A subtype H3 (35.1%), 811 strains (46.9%) of type B and 311 strains of H1N1 (18.0%). Influenza B was the most prevalent strain in 2018; during weeks 1-21 of the year, influenza B was the most prevalent strains, followed by influenza A, whereas after week 22, influenza A subtype H3 became the most prevalent. (see Figure 12 Isolation situations of influenza viruses from specimens collected by the sentinel physicians, 2018).

After typing of isolated virus strains by gene sequencing, it was found that of seasonal influenza A viruses, all H1N1 subtype viruses were predominantly A/Michigan/45/2015, and H3N2 subtype were predominantly A/Hong Kong/4801/2014, while the rest were A/Singapore/INFIMH-16-0019/2016 and A/Switzerland/8060/2017. Of the influenza B viruses, B/Phuket/3073/2013 (B/Yam) was the dominant type and some were B/Brisbane/60/2008 (B/Vic), B/Colorado/06/2017(B/Vic) and B/Massachusetts/02/2012 (B/Yam).

To sum up, influenza virus types isolated in 2018 were in sequence INFB (46.9%), INFAH3 (35.1%), and H1N1（18.0%）(see Figure 13 Strain ratios of influenza virus isolates from specimens collected by the sentinel physicians, 2018).

4. Epidemic situations of other respiratory tract viruses

Respiratory tract viruses other than influenza virus isolated totaled 1,320 cases, including Adenovirus 794 strains (60.2%), Parainfluenza virus 191 strains (14.5%), Herpes simplex virus (HSV) 217 strains (16.4%), Respiratory syncytial virus (RSV) 83 strains (6.3%), and Cytomegalovirus (CMV) 35 strains (2.7%) (see Figure 14 Positive isolation rates for respiratory tract viruses from specimens collected by the sentinel physicians, 2018).

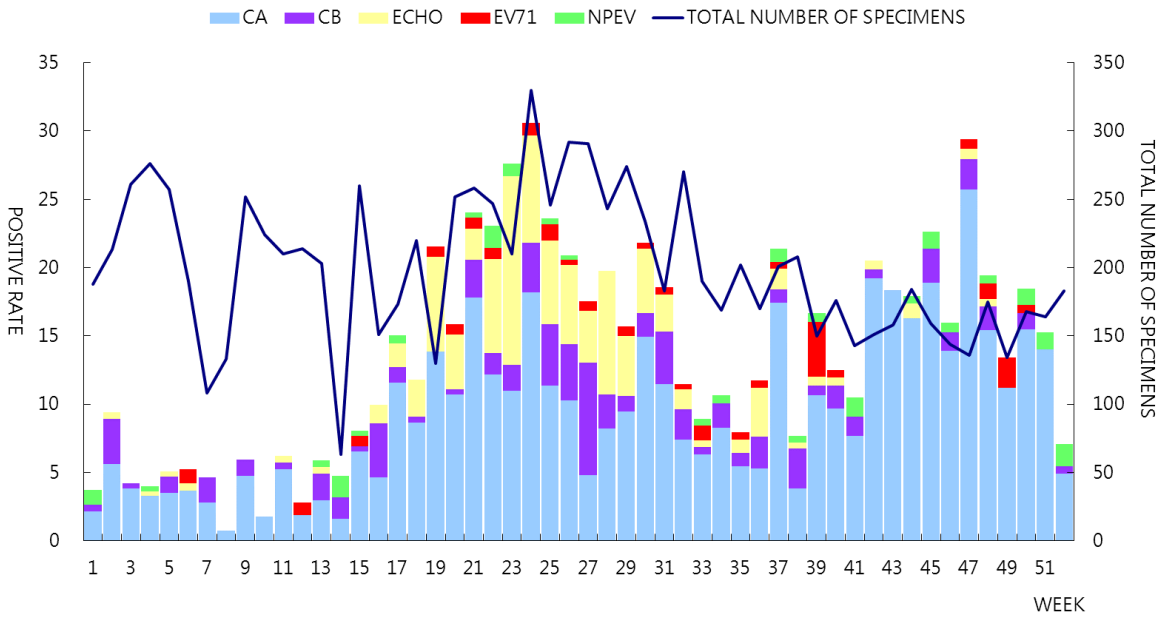


Figure 10 Enterovirus positive isolation rates in specimens collected by the sentinel physicians, 2018

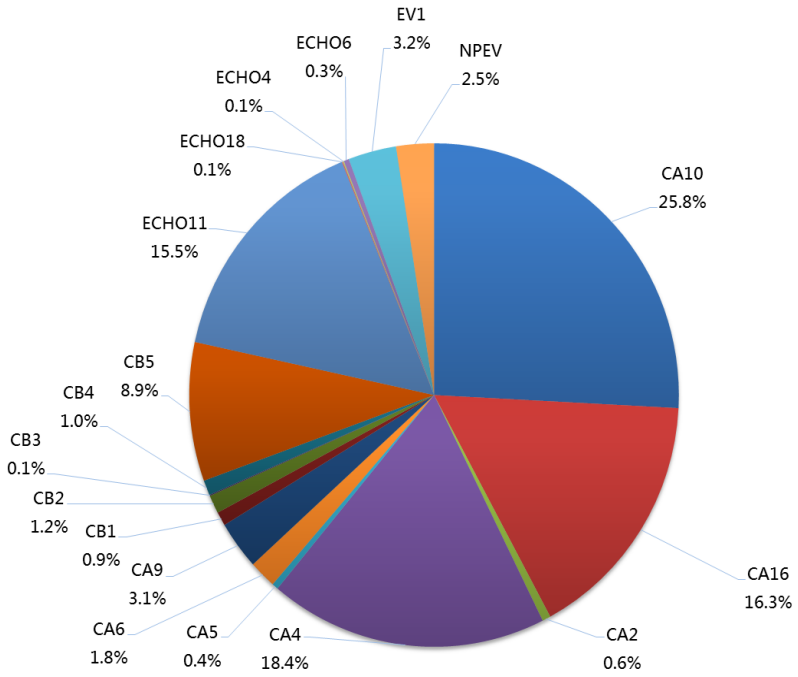


Figure 11 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2018

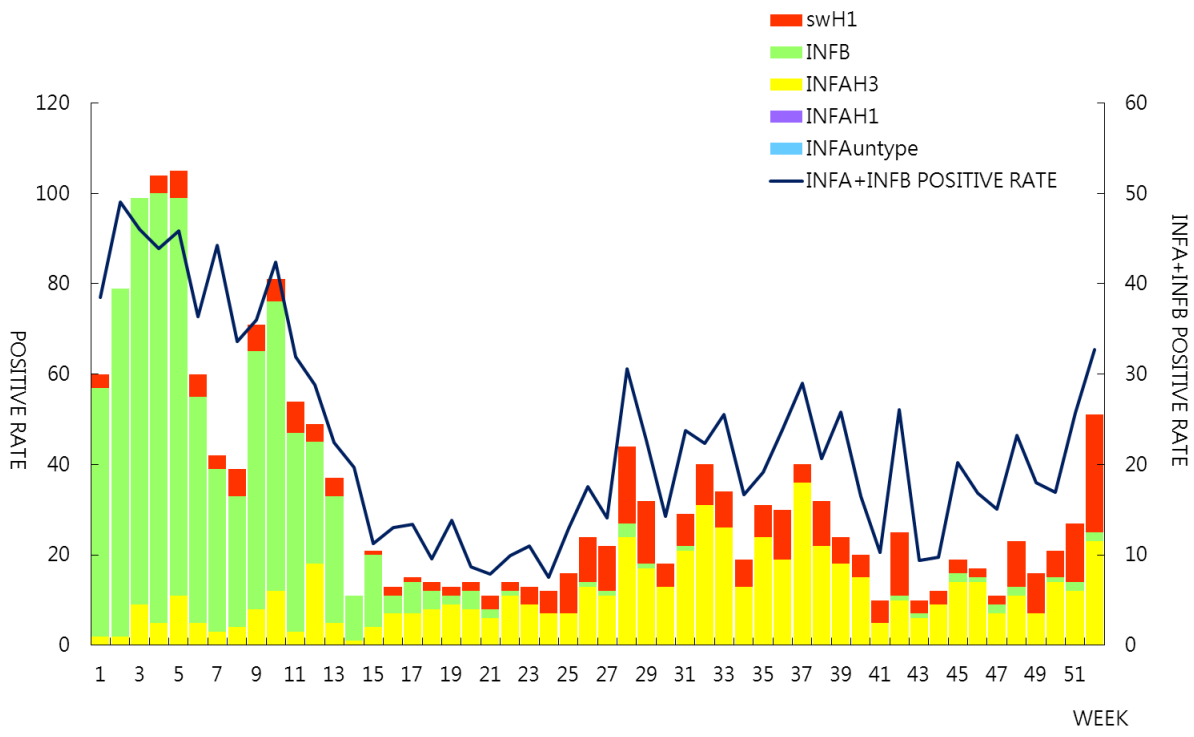


Figure 12 Isolation situations of influenza viruses from specimens collected by the sentinel physicians, 2018

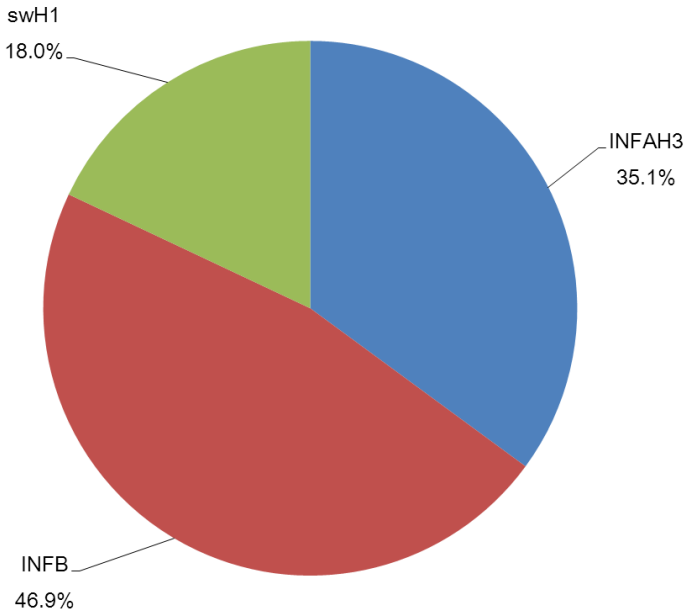


Figure 13 Strain ratios of influenza virus isolates from specimens collected by the sentinel physicians, 2018

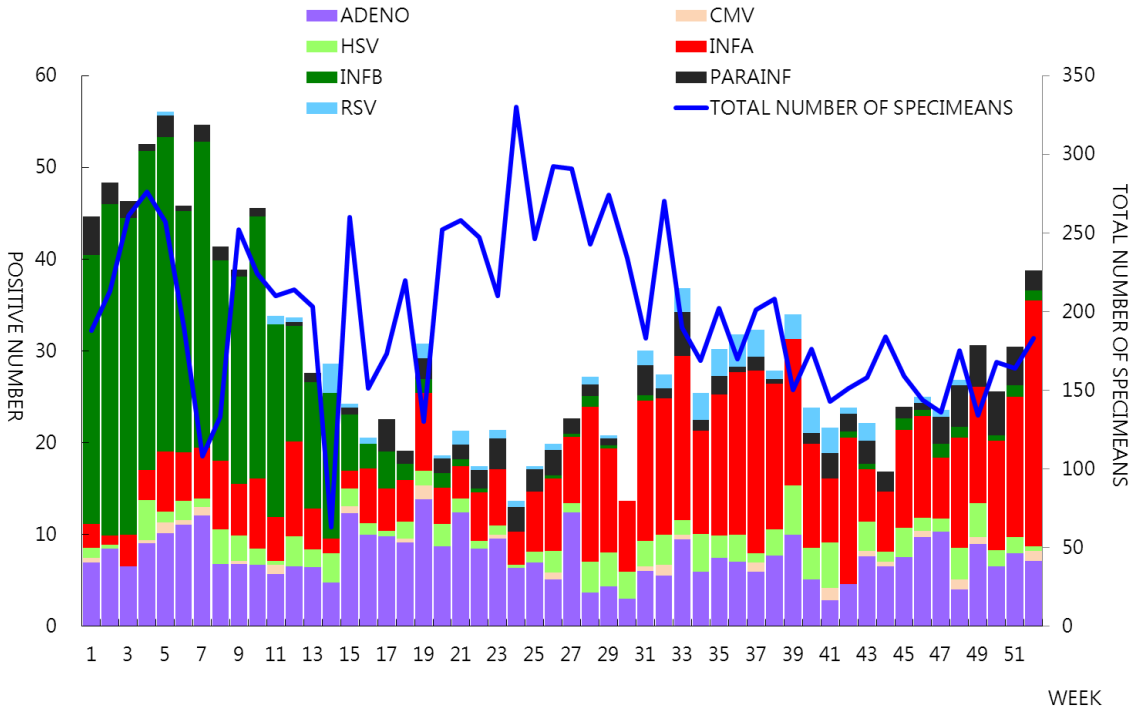


Figure 14 Positive isolation rates for respiratory tract viruses from specimens collected by the sentinel physicians, 2018

Quarantine Surveillance

I. Health examination of migrant workers

To prevent the importation of infectious diseases by migrant workers affecting the health of the population, all legally imported workers are required to submit a health certificate issued by an authorized foreign hospital before applying for an entry visa. They are also required to undergo health examination at a designated hospital within 3 working days after entry and within 30 days before or after the days of 6, 18 and 30 months of the employment permit effective date in order to ensure their health condition. The designated items of health examination for migrant workers in 2018 include chest X-ray examination for tuberculosis, examination for Hansen's disease, serological test for syphilis, stool examination for intestinal parasites, and physical examination. In addition, either proof of positive antibody or vaccination certificate for measles and rubella is required in the health examination conducted in the authorized hospitals.

To prevent the importation of typhoid fever by Indonesian workers, symptoms query of typhoid fever has been included in the health examination before entry since October 15, 2009. Besides, symptoms query and stool culture examination of typhoid fever have also been included in the health examination within 3 working days after entry in the meanwhile.

Within 791,215 person-times health examinations for migrant workers conducted in Taiwan in 2018, 5,224 person-times were failed, representing a failed rate of 0.66%. Stool examination for intestinal parasite accounted for the highest failed rate with 0.59% (4,701 person-times), followed by chest X-ray examination for tuberculosis with 0.05% (388 person-times) (Table 15).

II. Health declaration of inbound passengers

To prevent the imported infectious disease through aircrafts and ships into Taiwan, Taiwan CDC in accordance with the “Communicable Diseases Control Act” and “Regulations Governing Quarantine at Ports” implements necessary quarantine measures--in particular, the follow-up and surveillance of suspect passengers with symptoms. On December 1, 2004, new regulations took effect that all inbound passengers with suspected symptoms of communicable diseases should fill in the “Communicable Disease Survey Form.”

From January to December of 2018, the person times of inbound passengers was 27,623,223 in total and 26,404 of them showing symptoms were then subject to follow-up and surveillance by local health authority. The “Communicable Disease Survey Form” and body temperature screening measures have identified 148 cases of dengue fever and 7 cases of chikungunya fever (Table 16).

Table 15 Physical examinations status of migrant workers, 2018

Unit：Number of Persons, Person Time, %

Country	Number of Persons		Failed	X-ray	Syphilis	Parasites	Hansen's disease	Mental condition	Others
Thailand	At Entry	19,708	159	3	3	155	-	-	-
			0.81%	0.02%	0.02%	0.79%	-	-	-
	Periodic	59,530	353	20	4	329	-	-	-
			0.59%	0.03%	0.01%	0.55%	-	-	-
Indonesia	At Entry	54,823	668	23	15	631	-	-	-
			1.22%	0.04%	0.03%	1.15%	-	-	-
	Periodic	226,044	1,008	144	50	811	3	-	-
			0.45%	0.06%	0.02%	0.36%	0.001%	-	-
Philippines	At Entry	32,484	563	8	4	552	-	-	-
			1.73%	0.02%	0.01%	1.70%	-	-	-
	Periodic	146,891	638	82	37	519	-	-	-
			0.43%	0.06%	0.03%	0.35%	-	-	-
Vietnam	At Entry	65,225	889	37	14	844	-	-	-
			1.36%	0.06%	0.02%	1.29%	-	-	-
	Periodic	186,501	946	71	15	860	-	-	-
			0.51%	0.04%	0.01%	0.46%	-	-	-
Others	At Entry	3	-	-	-	-	-	-	-
			-	-	-	-	-	-	-
	Periodic	6	-	-	-	-	-	-	-
			-	-	-	-	-	-	-
Total	At Entry	172,243	2,279	71	36	2,182	-	-	-
			1.32%	0.04%	0.02%	1.27%	-	-	-
	Periodic	618,972	2,945	317	106	2,519	3	-	-
			0.48%	0.05%	0.02%	0.41%	0.001%	-	-
Total (Person Time)		791,215	5,224	388	142	4,701	3	-	-
			0.66%	0.05%	0.02%	0.59%	0.001%	-	-

Note: The data of physical examination at entry was provided by the Ministry of Labor; the data of periodic physical examination was provided by the local health competent authorities.

Table 16 Statistic of CDC "Communicable Diseases Survey Form" in 2018

Unit：Number of Person Time

Month	Person time of inbound passengers	Cases with symptom		Cases sample taking			Traveling country
		Case No.	Case percentage (%)	Case No.	Notifiable disease	Notifiable disease Case No.	
Jan.	1,990,610	3,641	0.18	319	Chikungunya fever	1	Philippines
					Dengue fever	3	Indonesia, Cambodia
Feb.	2,250,304	3,729	0.17	442	Dengue fever	8	Indonesia, Malaysia, Philippines, Vietnam
Mar.	2,324,285	2,548	0.11	405	Dengue fever	3	Thailand, Vietnam, Malaysia
Apr.	2,420,343	2,100	0.09	385	Dengue fever	5	Indonesia, Philippines
May.	2,252,719	1,796	0.08	319	Dengue fever	10	Indonesia, Nigeria, Cambodia, Thailand, Philippines, Vietnam
Jun.	2,317,111	1,767	0.08	292	Chikungunya fever	1	Philippines
					Dengue fever	9	Indonesia, Cambodia, Thailand, Maldives, Philippines, Vietnam
Jul.	2,445,849	2,095	0.09	399	Dengue fever	13	Cambodia, Thailand, Philippines, Vietnam, Myanmar
Aug.	2,445,316	1,823	0.07	367	Chikungunya fever	2	Philippines
					Dengue fever	17	Indonesia, Cambodia, Thailand, Malaysia, Philippines, Vietnam, Myanmar
Sep.	2,187,054	1,553	0.07	351	Chikungunya fever	1	India
					Dengue fever	17	Indonesia, India, Cambodia, Malaysia, Philippines, Vietnam, Laos, Myanmar
Oct.	2,298,588	1,529	0.07	363	Chikungunya fever	1	Indonesia
					Dengue fever	25	Indonesia, India, Cambodia, Malaysia, Sri Lanka, Philippines, Vietnam, Singapore
Nov.	2,314,715	1,444	0.06	304	Dengue fever	14	India, Malaysia, Philippines, Vietnam, Singapore Cambodia,
Dec.	2,376,329	2,379	0.10	384	Chikungunya fever	1	Thailand
					Dengue fever	24	Cuba, Indonesia, Cambodia, Thailand, Malaysia, Philippines, Vietnam, Singapore
Total	27,623,223	26,404	0.10	4,330		155	

Note : 1. The data of inbound passenger number was provided by Taiwan National Immigration Agency.

2. The data of cases with symptom was provided by Taiwan CDC National Symptom Surveillance System.

Mosquito Surveillance

Taiwan is located in tropical and subtropical climate zone with hot and humid weather, and hence a fertile ground for mosquito breeding. Major mosquito vectors in Taiwan include Aedes aegypti and Aedes albopictus that can spread dengue fever and Anopheles minimus that can spread malaria.

I. Dengue fever carrying mosquito

The dengue fever carrying mosquito surveillance has been set up since the outbreak of dengue fever in the south of Taiwan in 1988. An analysis of the surveys of mosquito vectors conducted in 2018 finds the following: the health bureaus of all counties and cities conducted 86,484 wards/villages, including 48,670 wards/villages in Level 0, 28,280 wards/villages in Level I, 8,350 wards/villages in Level II, 511 wards/villages in Level III, 511 wards/villages in Level IV, 132 wards/villages in Level V, 27 wards/villages in Level VI, 1 wards/village in Level VII, and 2 wards/villages in Level VIII (Table 17). The number of wards/villages above Level II in the range of 3.3~30.0% displayed one peak from July to September (Figure 15).

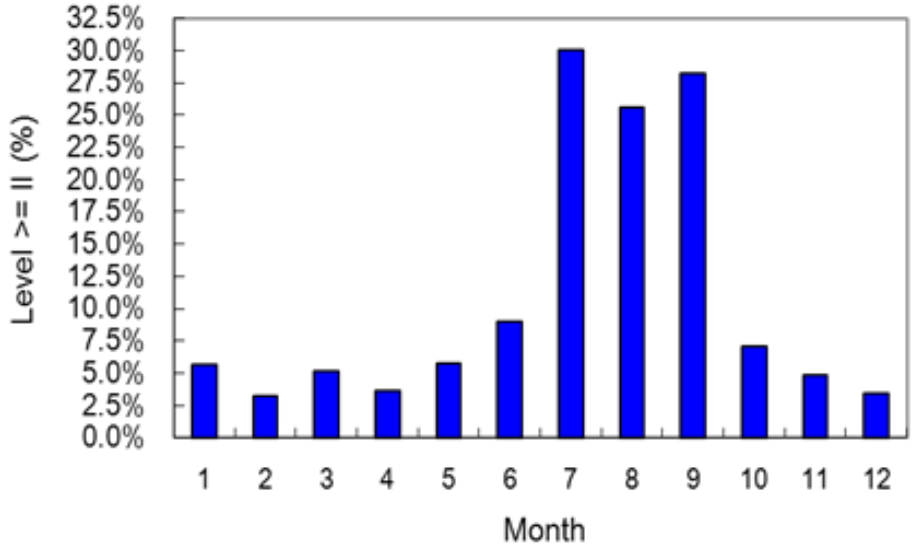


Figure 15 The percentage of wards/villages with Dengue fever vector by month in 2018

Table 17 Distribution of Breteua index, 2018

Locality	Villages (No. of times)	Breteua Index								
		0	1	2	3	4	5	6	7	8
Taichung City	1,332	440	776	83	14	14	3	2		
Taipei City	1,750	1,135	582	33						
Taitung County	905	625	233	31	5	5	3	3		
Tainan City	56,792	30,378	18,788	6,673	414	414	107	18		
Yilan County	1,183	942	239	2						
Hualien County	1,091	934	112	44				1		
Kinmen County	120	99	21							
Nantou County	920	435	479	6						
Pingtung County	4,027	2,101	1,384	491	23	23	5			
Miaoli County	548	136	342	66	2	2				
Taoyuan County	1,076	448	595	27	3	3				
Kaohsiung City	3,460	1,179	1,728	526	12	12	3			
Keelung City	327	266	31	30						
Yunlin County	764	652	112							
New Taipei City	3,537	2,374	1,146	16			1			
Hsinchu City	388	291	90	7						
Hsinchu County	728	621	100	7						
Chiayi City	2,544	1,485	794	191	29	29	10	3	1	2
Chiayi County	2,135	1,894	201	34	3	3				
Changhua County	1,160	835	293	32						
Penghu County	1,697	1,400	234	51	6	6				
Total	86,484	48,670	28,280	8,350	511	511	132	27	1	2

II. Malaria vector mosquitoes

In 2018 mosquito light traps were hanged for collection of adult mosquitoes in 8 Counties, 53 townships and 169 villages, including Zuozhen Dist., Nanhua Dist., Xinhua Dist., Nanxi Dist., Longqi Dist. and Guanmiao Dist. in Tainan City; Checheng Township, Shizi Township and Manzhou Township in Pingtung County; Sanxin Township, Datong Township, Wujie Township, Dongshan Township, Zhuangwei Township, Yilan city, Nanao Township, Yuanshan Township, Toucheng Township, Jiaoxi Township, Luodong Township and Suao Township in Yilan County; Dawu Township, Taimali Township, Taitung City, Chenggong Township, Chishang Township, Beinan Township, Yanping Township, Donghe Township, Jingfeng Township, Changbing Township, Hairui Township, Daren Township, Luyeh Township, Ludao Township, Guanshan Township and Lanyu Township in Taitung County; Guangfu Township, Hualien Township, Fenglin Township and Zhuoxi Township in Hualien County; Dalin Township, Taibao City, Shuishang Township, Budai Township, Minxiong Township, Alishan Township, Lucao Township and Xikou Township in Chiayi County; Daliao Dist. And Linyuan Dist. in Kaohsiung City; Dayuan Dist. And Fuxing Dist. in Taoyuan City. The survey result showed that 3 counties, 4 townships and 6 villages had collected adult An. minimus (Table 18 and Figure 16). Wengquan Village of Checheng Township in Pingdong County had the highest density with the record of catching 6 An. minimus per trap-night in October.

Table 18 The number of adult mosquitoes of *Anopheles minimus* collected in 2018

County / Township		*An. minimus* （No.）	Villages （No.）	Villages with *An. minimus*
Pingtung County	Checheng	11	2	Tongpu Wenquan
Tainan City	Longqi	4	2	Qiding、Niupu
	Zuozhen	2	1	Caoshan
Taitung County	Chenggong	1	1	Heping
Total	**4 townships**	**18**	**6**	

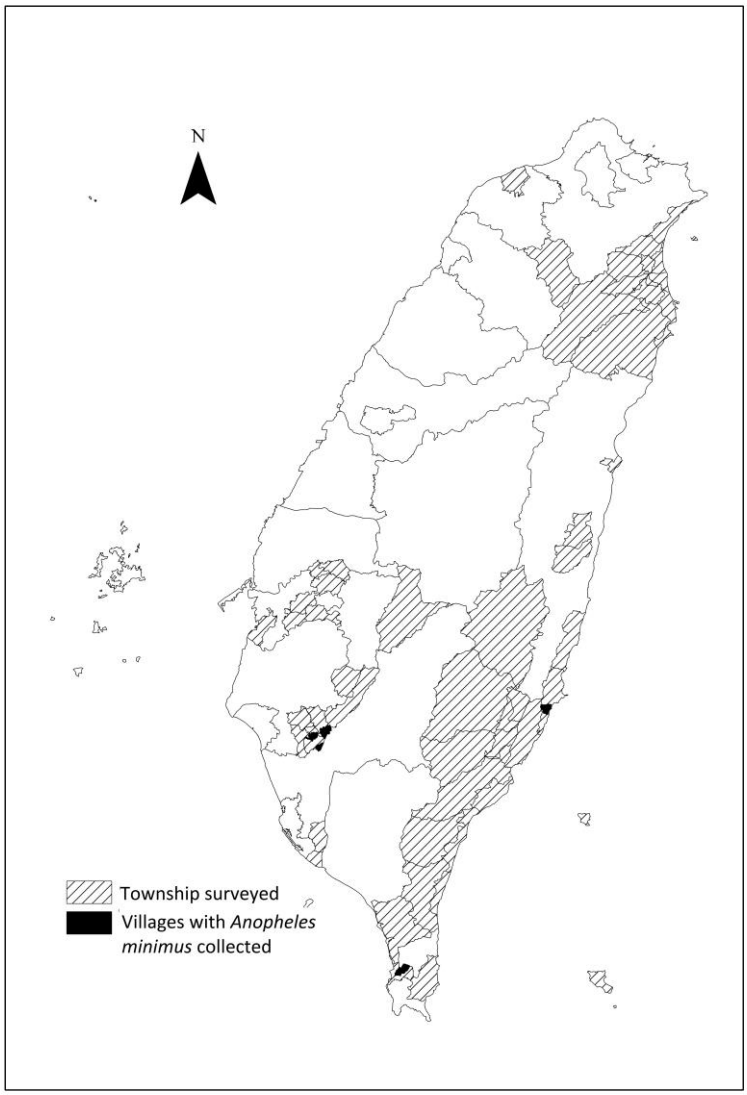


Figure 16 Distribution of *Anopheles minimus*, 2018

Symptom Surveillance System

I. Introduction

Severe acute respiratory syndrome (SARS), a global health alert beginning in March 2003, also affected Taiwan and caused public panic and unprecedentedly crippled the economy. In December of the same year, avian influenza had spread across Korea, Japan and Vietnam. Since then, countries around the world reported several high/low pathogenic avian influenza (HPAI/LPAI) outbreaks. Based on the concept of disease clusters with similar clinical symptoms, Centers for Disease Control implemented the Symptom Surveillance System in 2003, in order to detect the emergence or unusual trends of infectious diseases, and take control measures promptly. Health authorities report to the system while individuals of a cluster develop similar symptoms that follow the reporting criteria. In addition, the system boosted the capacity for monitoring imported diseases and report symptomatic cases by quarantine stations at ports of entry.

The occurrence of emerging outbreaks of the 2009 H1N1 influenza pandemic, human infections with novel influenza viruses such as influenza A(H7N9) and A(H5N1), and Middle East Respiratory Syndrome Coronavirus attracted worldwide concerns and caused considerable panic worldwide. We update the monitored symptoms if needed. The followings are the symptoms of diseases to be reported currently: influenza-like illness, diarrhea, upper respiratory infection, fever of unknown origin, patients with coughing lasting for more than three weeks, enterovirus, and varicella.

II. Objectives of surveillance system

1. To step up the surveillance of inbound travelers at airports and ports to achieve the goal of fighting communicable diseases outside the country.
2. Effectively control cluster events and activate related prevention programs in a timely manner.

III. Reporting method and data analysis

Public health authorities or quarantine officers of the CDC should report these suspected cluster events within their jurisdictions. In addition, the quarantine officers of the CDC should report individual suspected case who meets the case definitions. Internet is the main way to report. If it is not available, reporting in paper form and faxing to the CDC divisions is acceptable.

Public health officers of local authorities and CDC are able to access data of reports, specimen submission forms and test results in the system through BO (Business Objects) for analysis.

IV. Description of reportable diseases

■ Influenza-like illness (ILI) clustering

1. Case definition: Patients with influenza-like illness and includes criteria for person, time and place that are suspected as a cluster with spreading concern.

※ Definition of influenza-like illness for reporting purpose: The patients should meet all the following conditions:

(1) Sudden onset, with fever (tympanic temperature≧38°C) and respiratory tract infection;

(2) Muscular soreness, headache or extreme fatigue; and

(3) Runny nose, tonsillitis and bronchitis (common cold) should be excluded.

2. Epidemic analysis of ILI clusters: In 2018, a total of 229 clusters of influenza-like illness were reported. Laboratory confirmed clusters included 11 event of A (H1N1) infection, 32 events of A (H3N2) infection, 17 events of influenza B infection, 130 events of Influenza viruses (RIDTs) and 1 events of other pathogens infection (1 event of adenovirus infection). The other events were negative or had no specimens taken. Schools had the highest number of influenza-like illness clusters, followed by populous institutions, hospitals, military camps, and others.

Table 19 Test results for influenza-like illness clustering incidents in 2018

No. of Clusters	Test results						
	Influenza A (H1N1) viruses	Influenza A (H3N2) viruses	Influenza B viruses	Influenza viruses (RIDTs*)	Others**	Negative	No specimen
229	11	32	17	130	1	12	26

Note:* Rapid influenza diagnostic tests, include 79 events of influenza A (RIDTs), 49 events of influenza B (RIDTs), 2 event of influenza A and influenza B (RIDTs).

** Include 1 event of adenovirus infection.

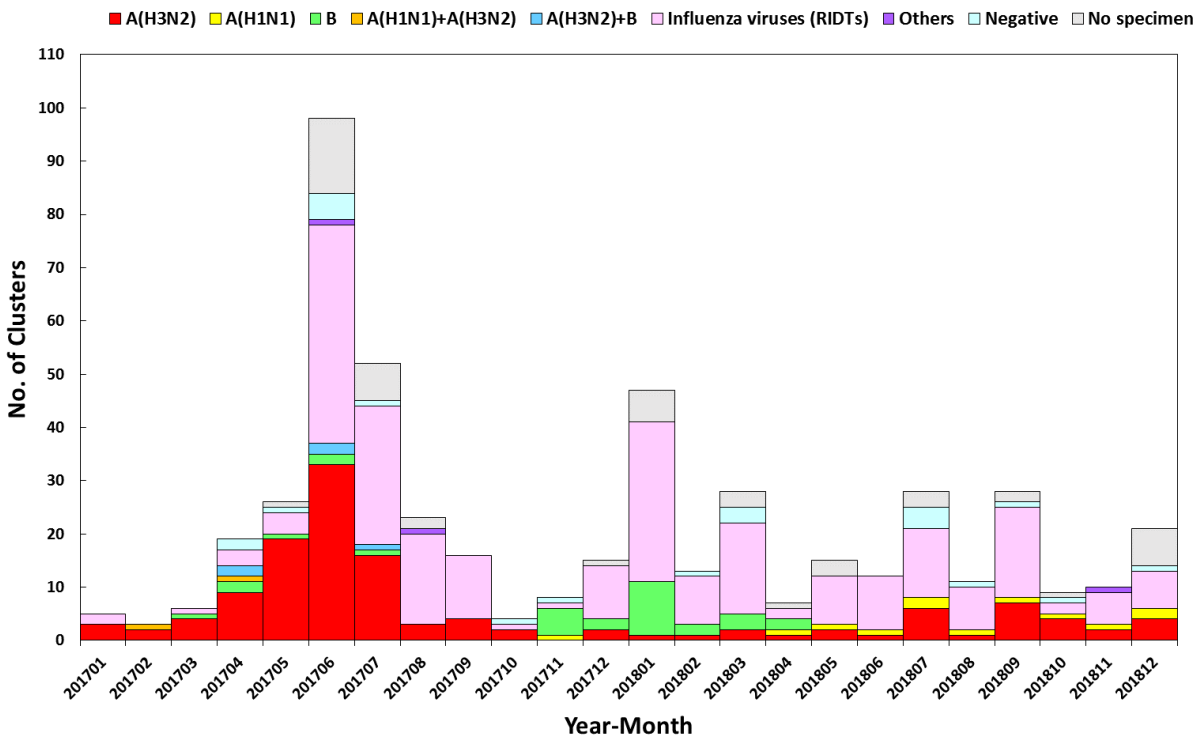


Figure 17 Evolutional trends of influenza-like illness clustering incidents in 2017-2018

Table 20 Distribution of clusters of influenza-like illness cases (by location) in 2018

Institution categories	No. of Clusters
schools	126
populous institutions	73
hospitals	28
military camps	2
Total	229

■ Diarrhea clustering

1. Case definition : Excluding patients with diarrhea associated with notifiable diseases; including patients with intestinal symptoms and criteria for person, time and place that are suspected as cluster infection with the concern of spreading.

※ Intestinal symptoms: Diarrhea three times or more a day, and accompanied by vomiting or fever, or mucus or blood-tinged in stools, or watery diarrhea

※ Patients of suspected food poisoning events that report to product management distribution system (PMDS) and obtained the event ID, are able to submit specimens through reporting to the Symptom Surveillance System.

※ Up to eight specimens collected from patients in the same event are accepted, unless it is an unusual event.

2. Epidemic analysis of diarrhea clusters : In 2018, a total of 424 diarrhea cluster events were reported. Clusters that were tested positive include 202 events of Norovirus infection, 22 events of Norovirus and Rotavirus co-infection, 22 events of Rotavirus infection, and 62 events of other pathogens infection (the major causes were *Salmonella, Bacillus cereus, Vibrio parahaemolyticus* and *Staphylococcus aureus*). The other events were negative or had no specimens taken. Schools had the highest number of diarrheal clusters, followed by hospitality industry, populous institutions, others (including business places, family, dormitory and camp), tour groups, hospitals, and military bases.

Table 21 Test results for diarrhea clustering incidents in 2018

No. of Clusters	Test results					
	Norovirus	Norovirus and Rotavirus	Rotavirus	Others*	Negative	No specimen
424	202	22	22	62	110	6

Note:*Include 26 events of Staphylococcus aureus infection,13 events of Bacillus cereus infection, 8 events of Salmonella infection, 5 events of Vibrio parahaemolyticus infection, 3 events of Staphylococcus aureus and Bacillus cereus co-infection, 2 events of Bacillus cereus and Salmonella co-infection, 2 events of Bacillus cereus、Salmonella and Staphylococcus aureus co-infection, 1 event of Vibrio cholera Non-O1, Non-O139 infection, 1 event of Vibrio cholera Non-O1, Non-O139 and Staphylococcus aureus co-infection; 1 event of Vibrio cholera Non-O1, Non-O139 and Bacillus cereus co-infection.

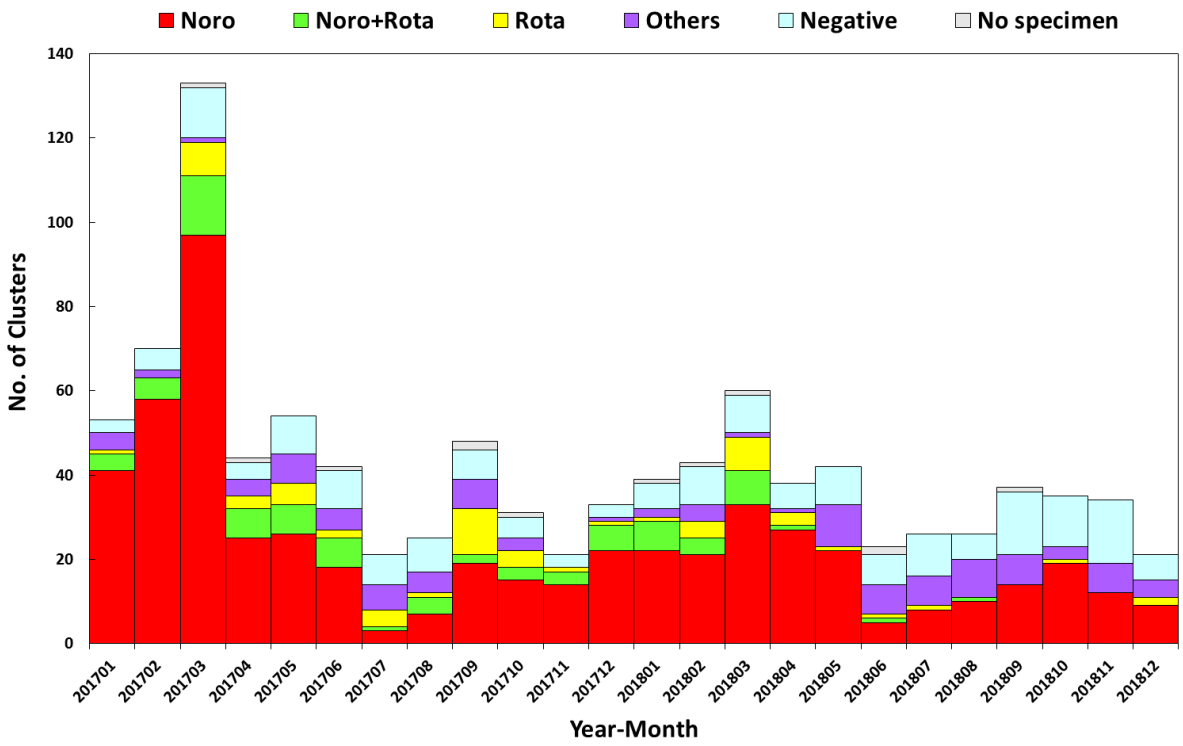


Figure 18 Evolutional trends of diarrhea clustering incidents in 2017-2018

Table 22 Distribution of clusters of diarrhea cases (by location) in 2018

Institution categories	No. of Clusters
schools	193
hospitality industry	119
populous institutions	41
others	31
tour groups	24
military camps	13
hospitals	3
total	424

■ Upper respiratory tract infection (URI) clustering

1. Case definition : Patients with symptoms of upper respiratory tract infection and includes criteria for person, time and place that are suspected as cluster infection with the concern of spreading.

2. Epidemic analysis of URI clusters : In 2018, a total of 255 URI cluster events were reported. Clusters that were tested positive include 16 events of A (H1N1) infection, 76 events of A (H3N2) infection, 41 events of influenza B infection, 1 event of A (H1N1) and A (H3N2) co-infection, 1 event of A (H3N2) and influenza B co-infection, 33 events of influenza viruses (RIDTs) infection, and 31 events of other pathogens infection (the major causes were RSV and adenovirus infection). The other events were negative or had no specimens taken. Schools had the highest number of URI clusters, followed by populous institutions, hospitals, military camps, others and tour groups.

Table 23 Test results for upper respiratory tract infection clustering incidents in 2018

No. of Clusters	Test results								
	Influenza A (H1N1) viruses	Influenza A (H3N2) viruses	Influenza B viruses	Influenza A (H1N1) + A (H3N2) viruses	Influenza A (H3N2) + B viruses	Influenza viruses (RIDTs*)	Others**	Negative	No specimen
255	16	76	41	1	1	33	31	52	4

Note:* Rapid influenza diagnostic tests, include 23 events of influenza A (RIDTs), 10 events of influenza B (RIDTs).

**Include 11 events of adenovirus infection, 8 events of RSV infection, 3 events of enterovirus infection, and the other events were co-infection.

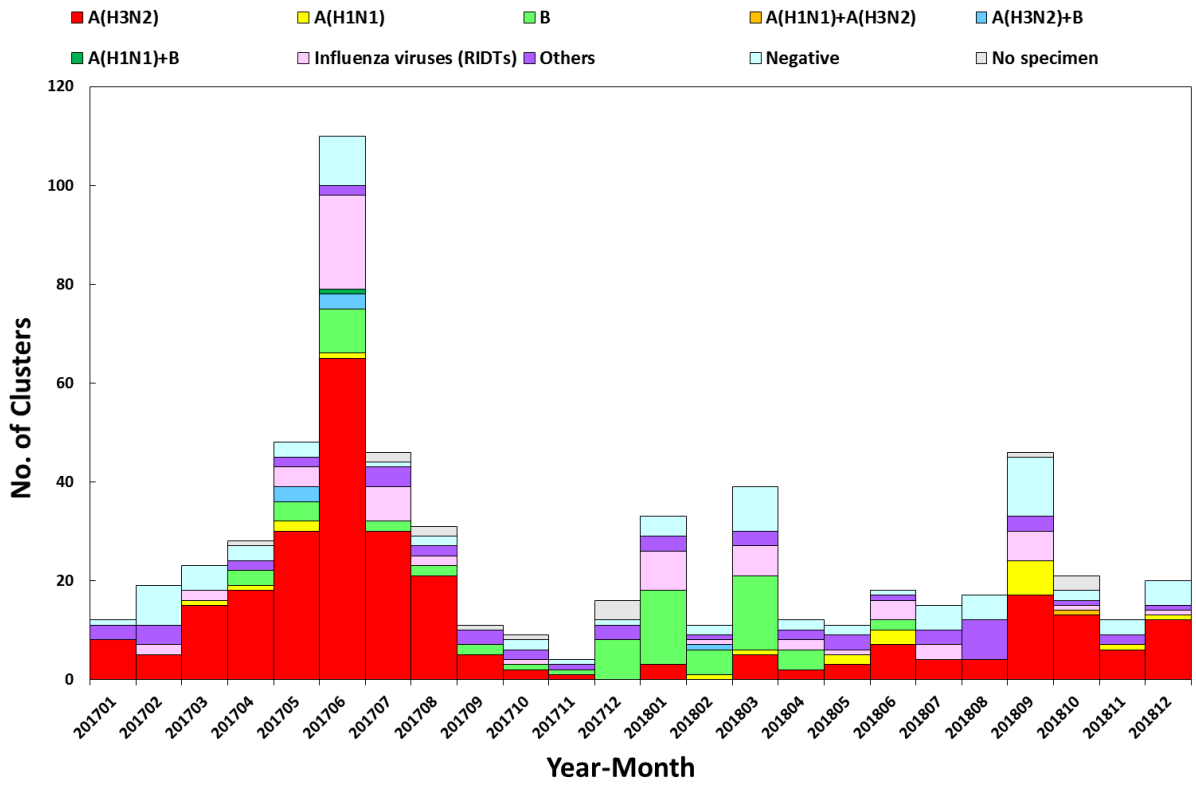


Figure 19 Evolutional trends of upper respiratory tract infection clustering incidents in 2017-2018

Table 24 Distribution of clusters of upper respiratory tract infection cases (by location) in 2018

Institution categories	No. of Clusters
schools	127
populous institutions	86
hospitals	38
military camps	2
others	2
total	255

■ Fever of unknown origin (FUO) clustering

1. Case definition: Patients with fever of unknown cause and includes criteria for person, time and place that are suspected as cluster infection with the concern of spreading.
2. Epidemic analysis of FUO clusters: In 2018, a total of 10 events of fever of unknown origin cluster were reported. Clusters that were tested positive include 2 events of influenza A (H3N2) infection, 3 events of influenza B, 1 event of norovirus infection, 1 event of norovirus and RSV co-infection, 1 event of adenovirus and RSV co-infection, 1 event of RSV infection, and 1 event of enterovirus infection. The other events were negative. Populous institutions had the highest number of FUO clusters, followed by populous institutions and schools.

■ Clustering of patients with coughing lasting more than three weeks

1. Case definition: Patients with coughing lasting more than three weeks and includes criteria for person, time and place that are suspected as cluster infection with the concern of spreading.
2. Epidemic analysis of clusters of patients with coughing lasting more than three weeks: There was no cluster of patients with coughing lasting more than three weeks reported in 2018.

■ Enterovirus clustering

1. Case definition: Patients and their contacts who are among high risk groups for enterovirus infection with severe complications, involved in a suspected cluster of enterovirus infection in places such as nurseries and neonatal wards in hospitals, baby care centers and homes of puerperal care, excepting schools. Officers at local Department of Health and Regional Center of CDC are responsible for collecting specimens from selected patients and submit to Research and Diagnostic Center, CDC.
2. Epidemic analysis of enterovirus clusters: In 2018, a total of 13 events of enterovirus clusters were reported. Cluster that was tested positive include 3 events of Coxsackie A6 infection, 2 events of Coxsackie A10 infection, and 1 events of Coxsackie A4 infection. The other events were negative or had no specimens taken. Populous institutions had the highest number of Enterovirus clusters, followed by hospitals.

■ Varicella clustering

1. Case definition: A suspected varicella cluster of patients developing acute exacerbation of papules and blisters symptoms that occurs in populous institutions such as ships, aircraft, preschools, schools, barracks, prisons, etc. and includes criteria for person, time and place that with the concern of spreading.
2. Epidemic analysis of varicella clusters: In 2018, a total of 146 events of varicella cluster were reported. Schools had the highest number of varicella clusters, followed by others (including business places and tutoring center), populous institutions, hospitals, and military camps.

Table 25 Distribution of clusters of varicella cases (by location) in 2018

Institution categories	No. of Clusters
schools	119
others	16
populous institutions	5
hospitals	4
military camps	2

Real-time Outbreak and Disease Surveillance System

I. Purpose of surveillance

Through the “Real-time Outbreak and Disease Surveillance (RODS)” system, 181 responsibility hospitals nationwide automatically transfer ICD-10-CM (International Classification of Diseases, Clinical Modification, Tenth Revision) coded diagnostic information of patients seen on an emergency basis to Taiwan CDC to help early and rapid analysis of irregularities in the prevalence of diseases or syndromes.

The RODS system aims to detect early possible outbreak of communicable diseases in the communities, and track the trends and predict the prevalence of diseases. The reportable diseases under RODS included influenza-like illness, enterovirus infection and acute diarrhea in 2007. The reportable diseases in 2008 through 2018 include routine surveillance of acute hemorrhagic conjunctivitis in addition to the reportable items in 2007.

II. Data analysis methods

The 181 responsibility hospitals across the country provide daily real-time information of emergency patients via the Internet directly. The format of the report contains the fields of patient’s basic data, ID of reporting hospital, time of admission, chief complaint, ICD-9-CM and ICD-10-CM medical diagnosis code. Taiwan CDC compiles and analyzes RODS data weekly, determines the trends in the prevalence of diseases, produces statistical charts and posts them on the website

III. Findings

■ Enterovirus

Epidemic analysis:

In 2018, Taiwan saw a spike in enterovirus infection prevalence. Based on the 2018 emergency enterovirus infection surveillance data, the permillage of enterovirus visits throughout the year ranged from 0.52 ‰ to 6.67 ‰. The overall trend of prevalence in 2018 is slightly lower compared with 2017 (0.70 ‰ to 10.67 ‰). The epidemic condition picking up starting in early May and reaching its peak of prevalence on July. The high spike in enterovirus infection prevalence is lower than last year, the epidemic slowed down until September.【Note: permillage of enterovirus visits= (person-time of emergency room enterovirus cases / total person-time of emergency room cases) *1000‰】

■ Influenza-like illness

Epidemic analysis:

In 2018, the percentage of influenza-like illness visits reported by emergence rooms ranged from 7.45 % to 23.61%. The overall trend of prevalence in 2018 was higher in comparison with the surveillance figures in 2017 (from 7.63 % to 19.25%). The epidemic condition picking up starting in January to end of February, and peaking around the Chinese New Year holiday of 2018, which hospitals and clinics were closed. That was probably why percentage of influenza-like illness visits displayed an apparent peak. Afterwards, the epidemic slowed down from early March, and slowly grown on December. 【Note: percentage of influenza-like illness = (person-time of emergency room influenza-like illness cases / total person-time of emergency room cases) *100%】

■ Acute diarrhea

Epidemic analysis:

In 2018, the percentage of acute diarrhea visits reported by emergence rooms ranged from 2.94 % to 9.28%. The peak in 2018 was higher in comparison with the surveillance figures in 2017 (3.07% to 8.62%). Diarrhea epidemic typically reaches the peak of prevalence in the Chinese New Year. Based on the 7-day moving average of percentage of diarrhea visits, the surveillance trend rose gradually starting on January and high peaked at the end of February. Afterwards, the epidemic slowed down in late April. There was another small peak on October, and revealed the descending trend.【Note: percentage of acute diarrhea visits= (person-time of emergency room acute diarrhea cases / total person-time of emergency room cases) *100%】

■ Acute Hemorrhagic Conjunctivitis

Epidemic analysis:

In 2018, the permillage of acute hemorrhagic conjunctivitis visits reported by emergence rooms ranged from 0.56‰ to 6.83‰. The overall trend is similar with 2017 (permillage of visits ranged from 0.60‰ to 6.26‰). Based on the 7-day moving average of percentage of acute hemorrhagic conjunctivitis, the surveillance trend typically reaches the peak of prevalence in the Chinese New Year, and the peak close to last year. After Chinese New Year, the overall epidemic condition obviously declined and similar to 2017.【Note: permillage of acute hemorrhagic conjunctivitis visits = (person-time of emergency room acute hemorrhagic conjunctivitis cases / total person-time of emergency room cases) *1000‰】

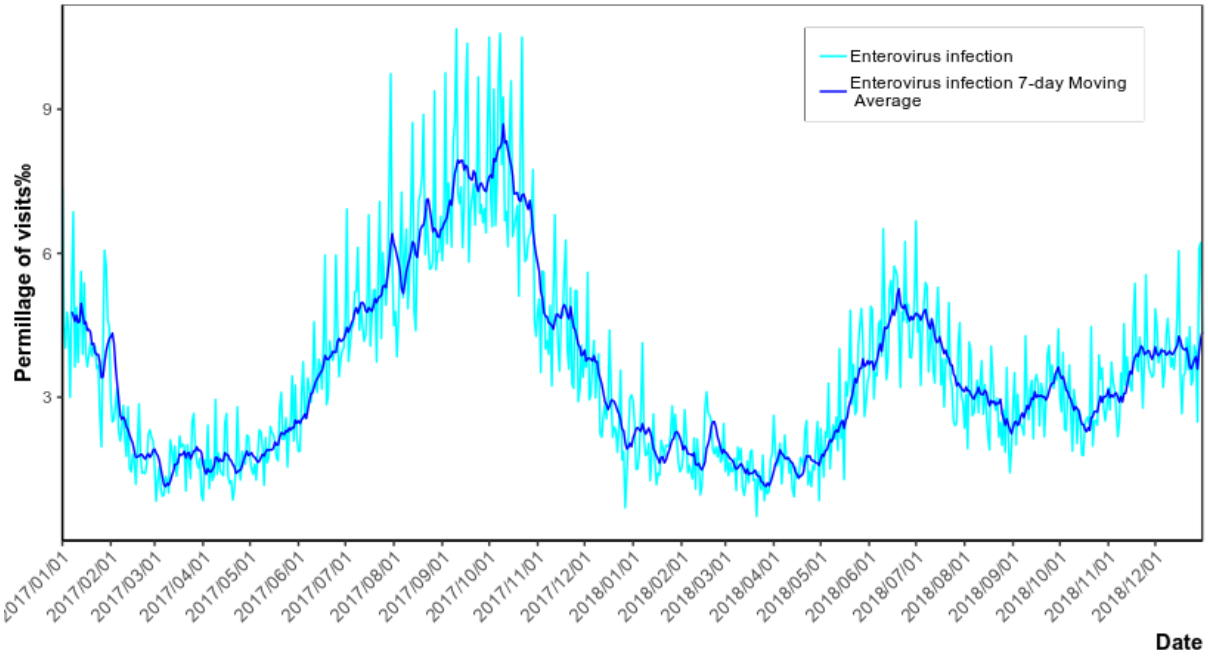


Figure 20 Daily Permillage of Emergency Department of Enterovirus Visits & 7-day Moving Average

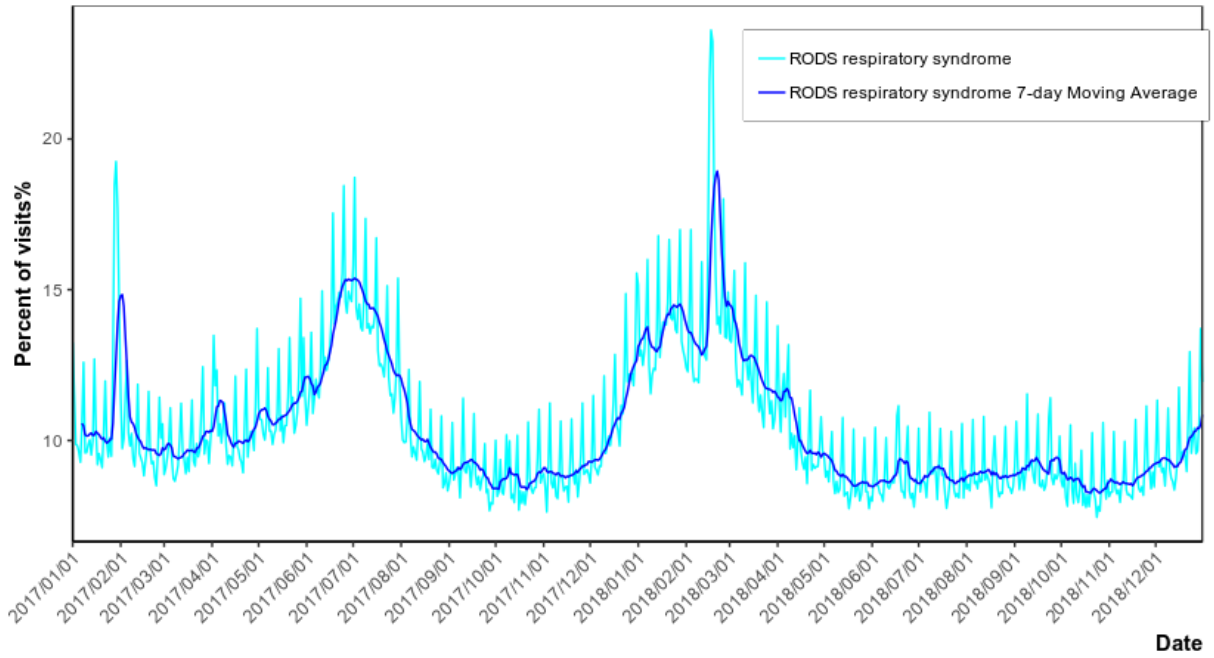


Figure 21 Daily Percentage of Emergency Department of Respiratory Visits & 7-day Moving Average

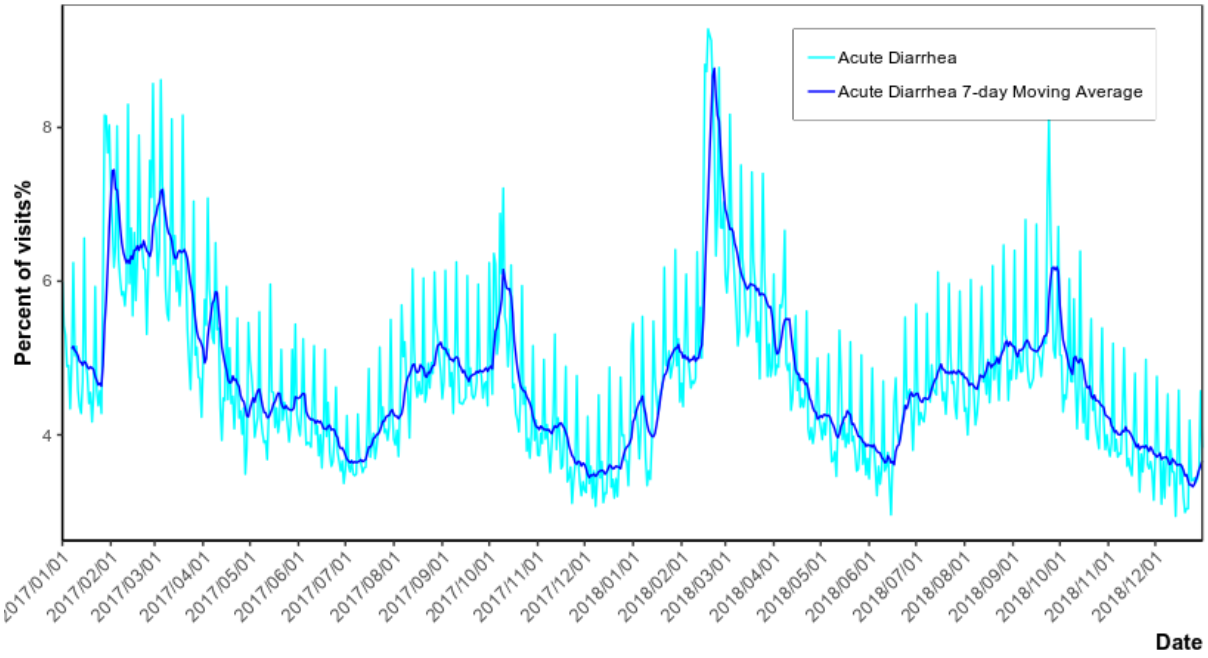


Fig 22 Daily Percentage of Emergency Department of Acute Diarrhea Visits & 7-day Moving Average

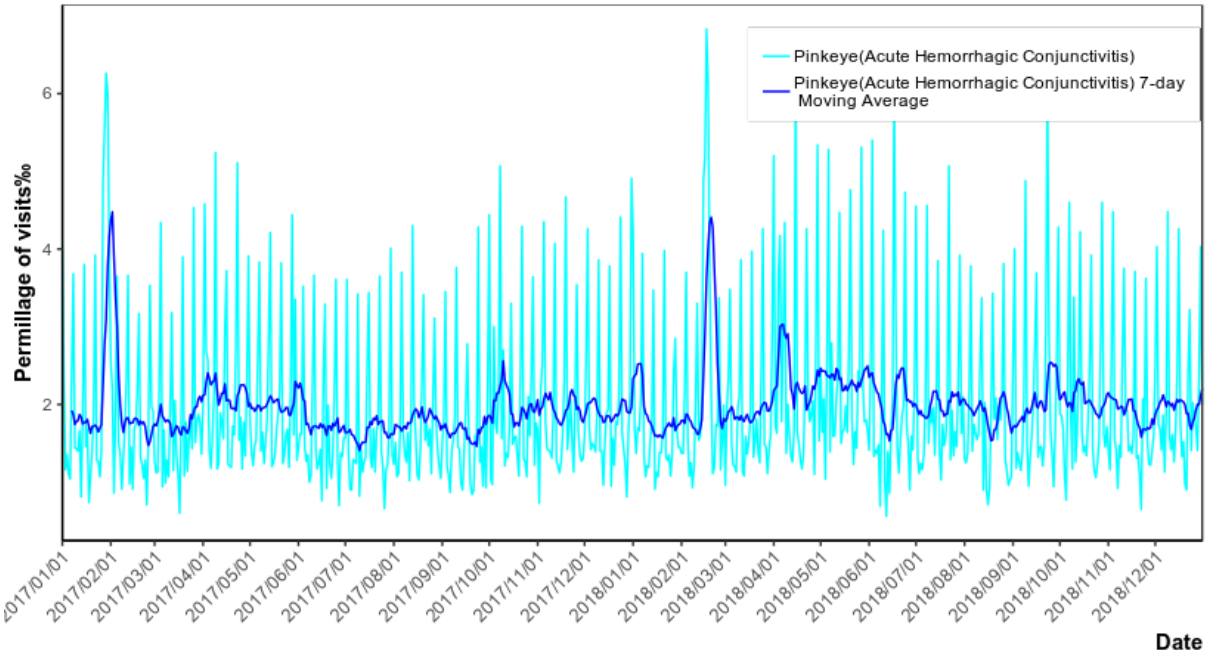


Fig 23 Daily Permillage of Emergency Department of Acute Hemorrhagic Conjunctivitis Visits & 7-day Moving Average

Disease Surveillance using National Health Insurance Data

I. Introduction

To strength Taiwan’s surveillance capacity for specific diseases, Taiwan CDC and the Bureau of National Health Insurance (BNHI) embark on horizontal cooperation, under which, the BNHI compiles the outpatient, inpatient and emergency room data uploaded by hospitals and clinics through the National Health Insurance (NHI) IC cards. Taiwan CDC conducts daily, routine surveillance of specific diseases based on the comprehensive and highly representative secondary statistical data compiled by BNHI to assess the magnitude of an epidemic condition.

II. Purpose of surveillance

The NHI data routine surveillance monitors diseases that are commonly seen in Taiwan every year, including influenza and enterovirus infection. Surveillance and analysis of NHI outpatient information helps grasp readily the state of an epidemic. This routine surveillance, together with the "Real-time Outbreak and Disease Surveillance (RODS)" system, construct and play the role of “mild symptoms surveillance” of influenza-like illness and enterovirus infection to facilitate full assessment of epidemics and grasp the trends of prevalence.

III. Data analysis method

From the surveillance data received daily, Taiwan CDC extracts representative ICD-10-CM (International Classification of Diseases, Clinical Modification, Tenth Revision) coded diagnostic data, including secondary data on admission date, hospital districts, age groups, and codes of outpatient/inpatient/emergency department. Due to the bigger fluctuation seen in daily inpatient/outpatient visit data following analysis, the routine disease surveillance is carried out by calculating the 7-day moving average to obtain a relatively gentle prevalence curve.

IV. Findings

1. Influenza-like illness (ILI)

In 2018, between 809 and 24,719 person-times visited the hospitals for influenza-like illness on an outpatient basis every day, which was higher than the number of outpatient visits (ranging between 308 and 22,297 person-times a day) in 2017. Observing the trends in epidemic prevalence based on the 7-day moving average curve of outpatient visits due to influenza-like illness, the overall epidemic condition of influenza-like illness had a peak in end-January. Afterwards, the epidemic slowed down from end-February, and slowly grown on December. The epidemic occurred earlier than 2017, mainly in January and February, and there was non-significant epidemic in June and July in 2018.

2. Enterovirus infections

In 2018, between 30 and 2,670 person-times visited the hospitals for enterovirus infection on an outpatient basis every day, which was lower in comparison with the number of outpatient visits in 2017 (ranging between 48 and 3,888 person-times a day). Observing the trends in epidemic prevalence based on the 7-day moving average curve of outpatient visits due to enterovirus infection, it is found the epidemic condition picked up quickly in May, reach a spike during mid-June, and then dropped off suddenly in July. After that gradually grown in September, and had another peak in December .

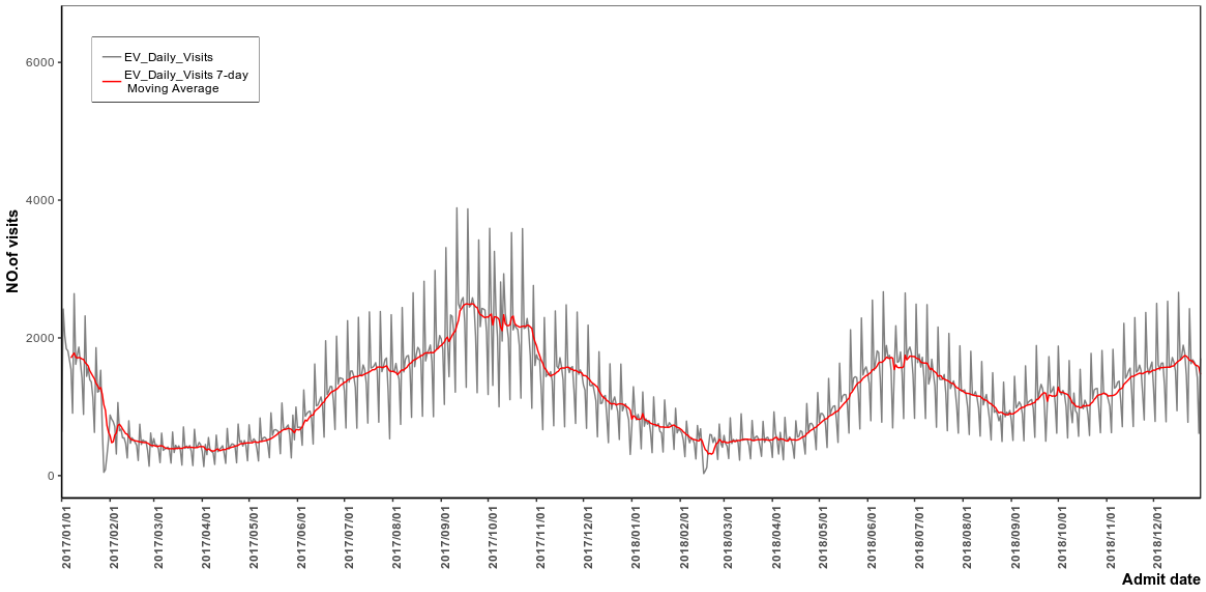


Figure 24 Daily influenza-like illness visits and the 7-day moving average trend, 2017-2018

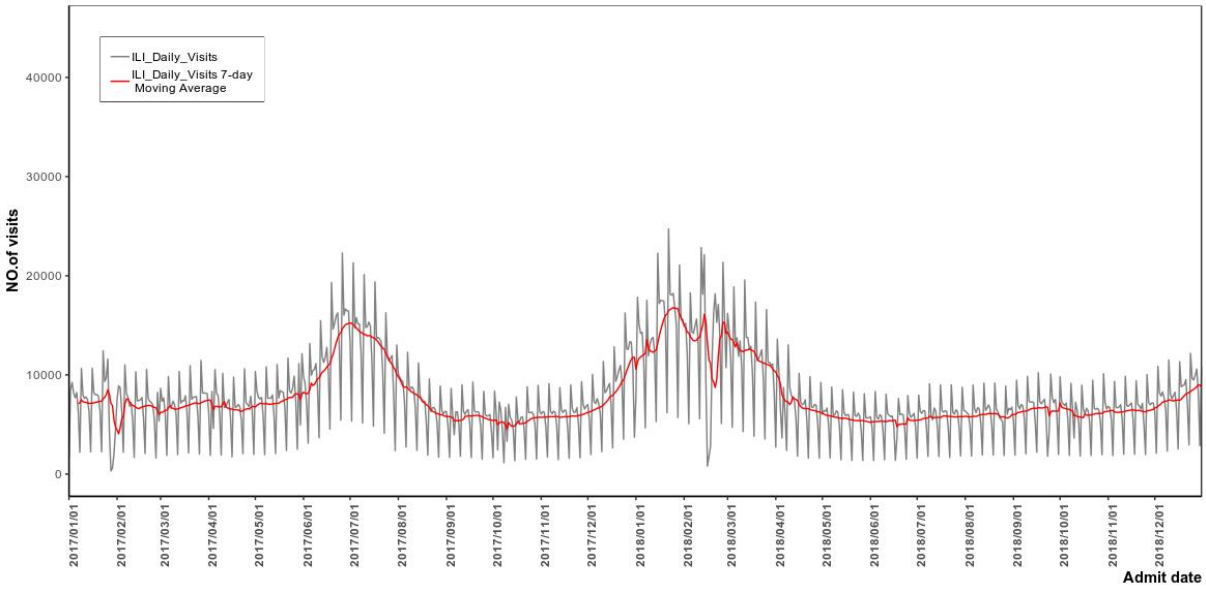


Figure 25 Daily enterovirus visits and the 7-day moving average trend, 2017-2018

Pneumonia and Influenza Mortality Surveillance

I. Introduction

Many parts of the world reported outbreaks of pandemic influenza A (H1N1) starting from April 2009. Based on the purpose of real-time surveillance and early warning for communicable diseases, Taiwan CDC embarks on inter-agency collaboration with the Department of Statistics, Ministry of Health and Welfare (MOHW). Taiwan CDC receives daily mortality data electronically from the Department of Statistics to analyze the number of deaths with underlying cause listed as pneumonia or influenza (P&I).

II. Purpose of surveillance

Pneumonia is a common complication of influenza infection. The great majority of influenza mortality is caused by secondary bacterial pneumonia or viral pneumonia. Thus, pneumonia should be included in influenza related mortality surveillance for analysis. The P&I mortality surveillance system was established in response to the H1N1 epidemic in 2009. In addition to the P&I mortality surveillance system, there are other systems including "Real-Time Outbreak and Disease Surveillance System (RODS)", "Disease surveillance using National Health Insurance data", "Contracted Laboratory Surveillance System", and "Notifiable Disease Surveillance System" in Taiwan CDC. These surveillance data all together provide information on influenza surveillance. It is expected that with routine operations, Taiwan CDC collects, compiles, and analyzes information on influenza epidemic to achieve the objectives and effects of real-time control and early warning.

III. Data analysis methods

Taiwan CDC conducts weekly surveillance of the trends in P&I mortality by searching cause of death with keywords "pneumonia, common cold or flu" in combination with cause of death determination rules. Due to the bigger fluctuation seen in weekly P&I mortality data, routine surveillance is carried out by using 4-week moving average values that include the current week and the preceding three weeks to obtain better data stability and remove wide fluctuation.

IV. Findings

Based on the P&I mortality surveillance data of Taiwan CDC, the weekly deaths in 2018 and 2017 attributed to P&I ranged from 330 to 600 and from 320 to 500, respectively. The majority of P&I deaths occurred in 65 years old and above, accounting for 89.2% of P&I deaths both in 2018 and 2017. According to the 4-week moving average curve of P&I deaths, it is found that the overall mortality of P&I deaths started to rise at the beginning of 2018, and peaked during weeks 1-19, and then declined. In comparison with the trend in 2018, there were two peaks during weeks 4-11 and weeks 26-36 in 2017.

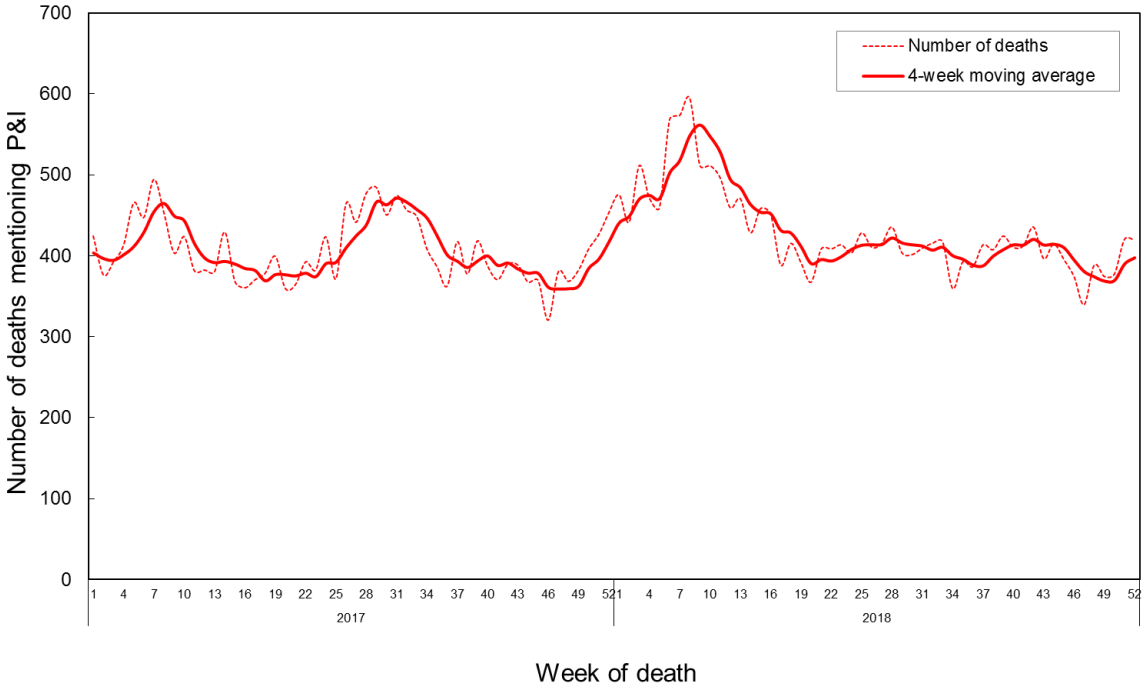


Figure 26 The surveillance trend of pneumonia and influenza mortality, 2017-2018

PART III

Surveillance Reports of Selected Diseases

◎ **Abbreviations and Symbols Used in Table**

– No reported cases

… Not under surveillance

Measles

In 2018, 40 confirmed cases of measles (incidence rate: 0.17 per 100,000 population) were reported, which represented a decrease compared to 6 confirmed cases (incidence rate: 0.03 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 24 male cases (60%) and 16 female cases (40%) with male to female ratio of 1.5:1.0.

(2) By age group

There were 28 cases in 25-39 years age group, 6 cases in 40-64 years age group, 3 cases in 15-24 years age group, 2 cases in 0-1 years age group, and 1 case each in 5-14 years age group.

(3) By month

There were 17 cases in April, 7 cases in March, 5 cases in December, 3 cases each in June and August, 2 cases each in May, 1 case each in July, September and October.

(4) By residential region

New Taipei City and Taoyuan City each had 11 cases reported, followed by Taipei City with 9 cases, Nantou County with 3 cases, Hsinchu County and Kaohsiung City each with 2 case, Hsinchu City and Taichung City each with 1 case, while the other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Nantou County (0.60), followed by Taoyuan City (0.50) and Hsinchu County (0.36).

(5) Imported cases and countries of infection

There were 12 imported cases of measles in 2018, including 6 cases from Thailand, 2 cases from Indonesia, and 1case each came from Cambodia, Philippines, Vietnam and United Kingdom.

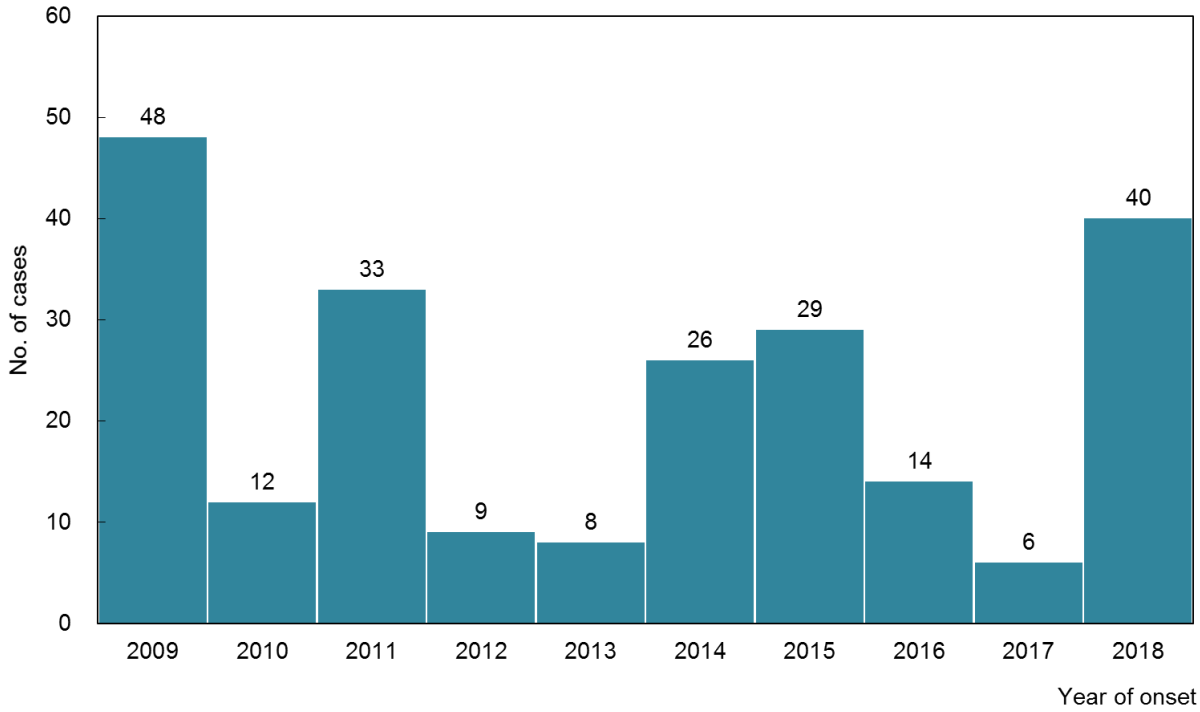


Figure 27 Number of confirmed measles cases, 2009-2018

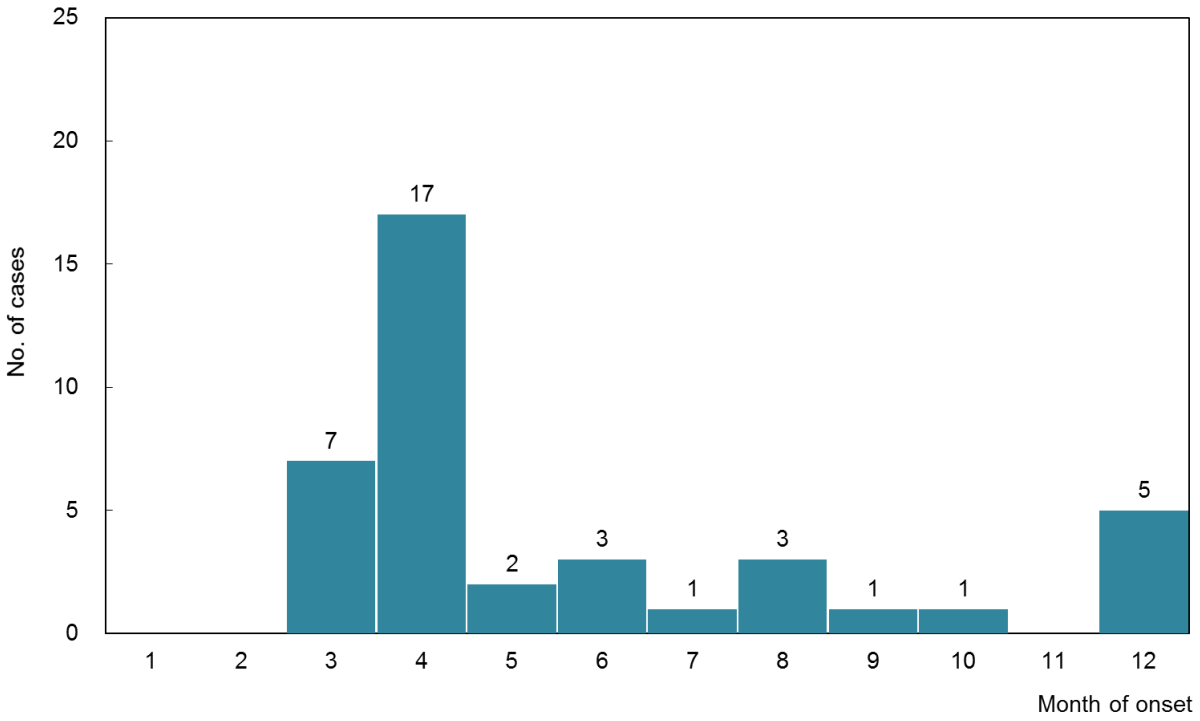


Figure 28 Number of confirmed measles cases, 2018

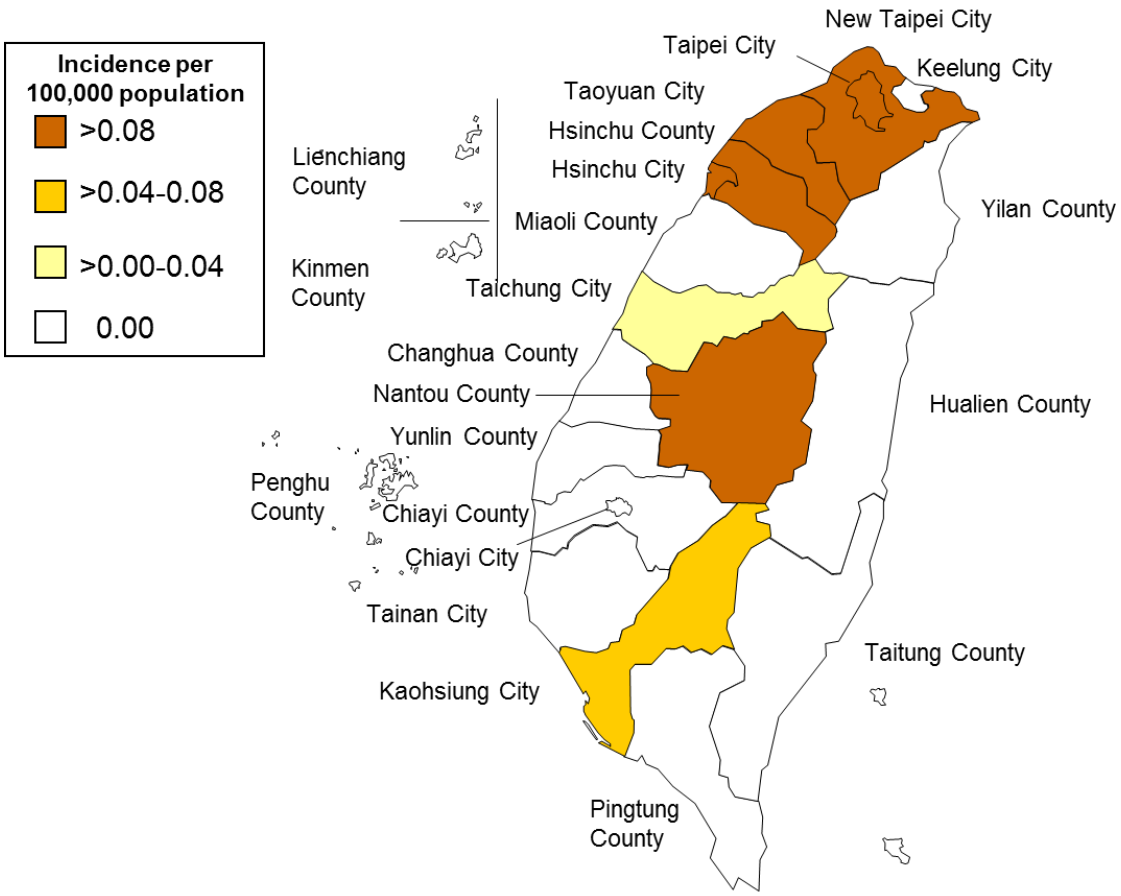


Figure 29 Geographical distribution by incidence of confirmed measles cases, 2018

Pertussis

In 2018, 30 confirmed cases of pertussis (incidence rate: 0.13 per 100,000 population) were reported, which represented an decrease compared to 34 confirmed cases (incidence rate: 0.14 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 8 male cases (26.7%) and 22 female cases (73.3%) with male to female ratio of 0.4:1.0.

(2) By age group

There were 22 cases in 0-1 years age group, 2 cases each in 1-4, 25-39 and 40-64 years age group, and 1 case each in 5-14 and 15-24 years age group.

Of the 22 cases in 0-1 years age group, 8 cases were 1 month old, 6 cases were 2 months old, 4 cases were 3 months, 1 case each was 0, 4, 6 and 10 months old.

(3) By month

There were 6 cases in March, 5 cases each in July and August, 3 cases each in September and October, 2 cases each in February and May, and 1 case each in January, April, June and November. There were no cases in December.

(4) By residential region

Taipei City and New Taipei City had the highest number of incidents with 7 cases reported, followed by Taoyuan City with 6 cases, Yilan County, Tainan City and Taitung County each with 3 cases, and Changhua County with 1 case. The other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taitung County (1.37), followed by Yilan County (0.66) and Taoyuan City (0.27).

(5) Imported cases and countries of infection

There were 2 imported cases of pertussis in 2018, all of 2 cases from China.

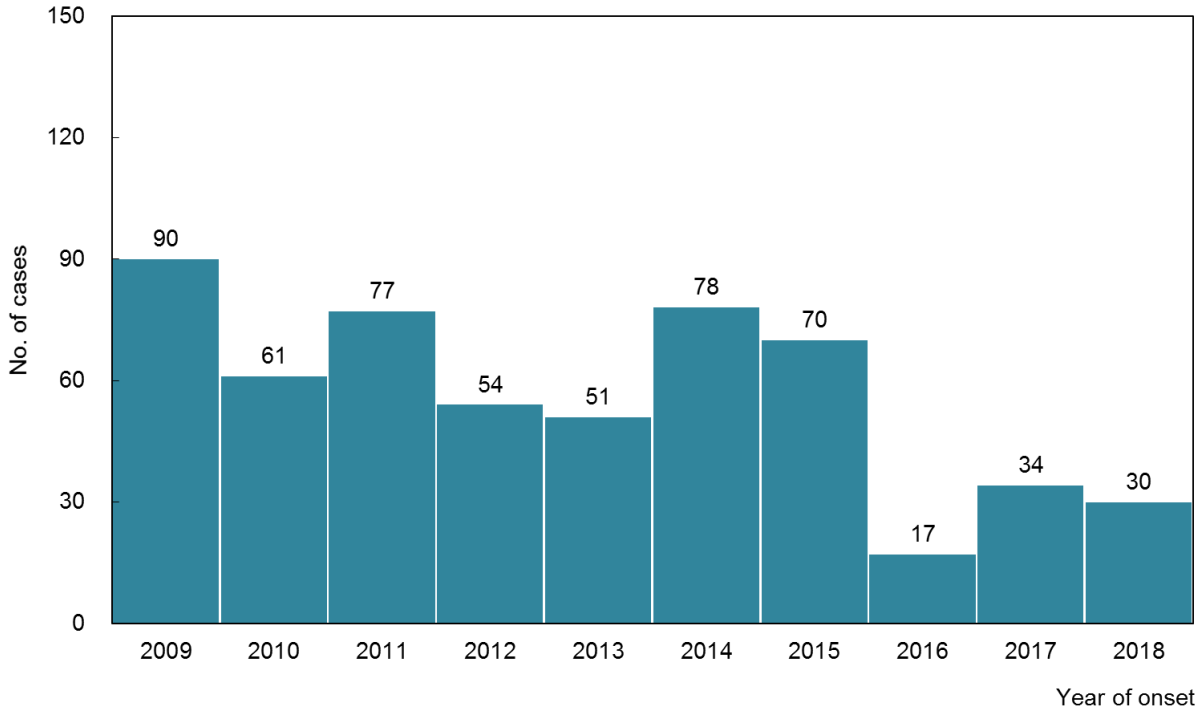


Figure 30 Number of confirmed pertussis cases, 2009-2018

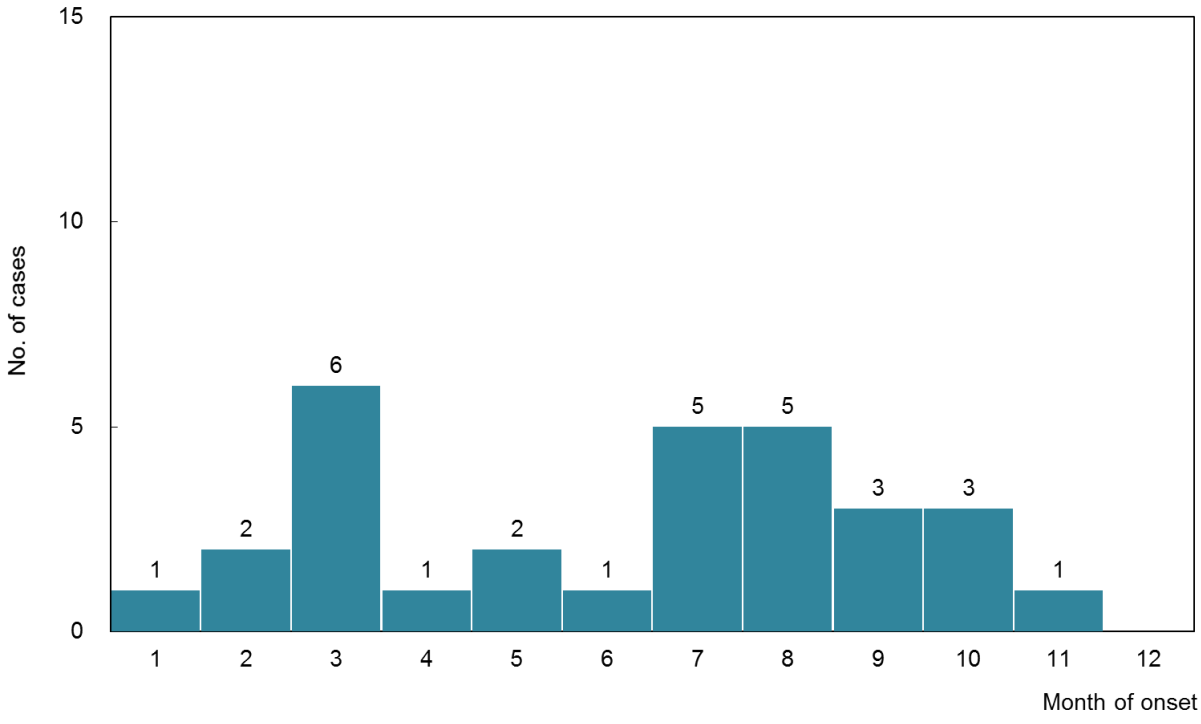


Figure 31 Number of confirmed pertussis cases, 2018

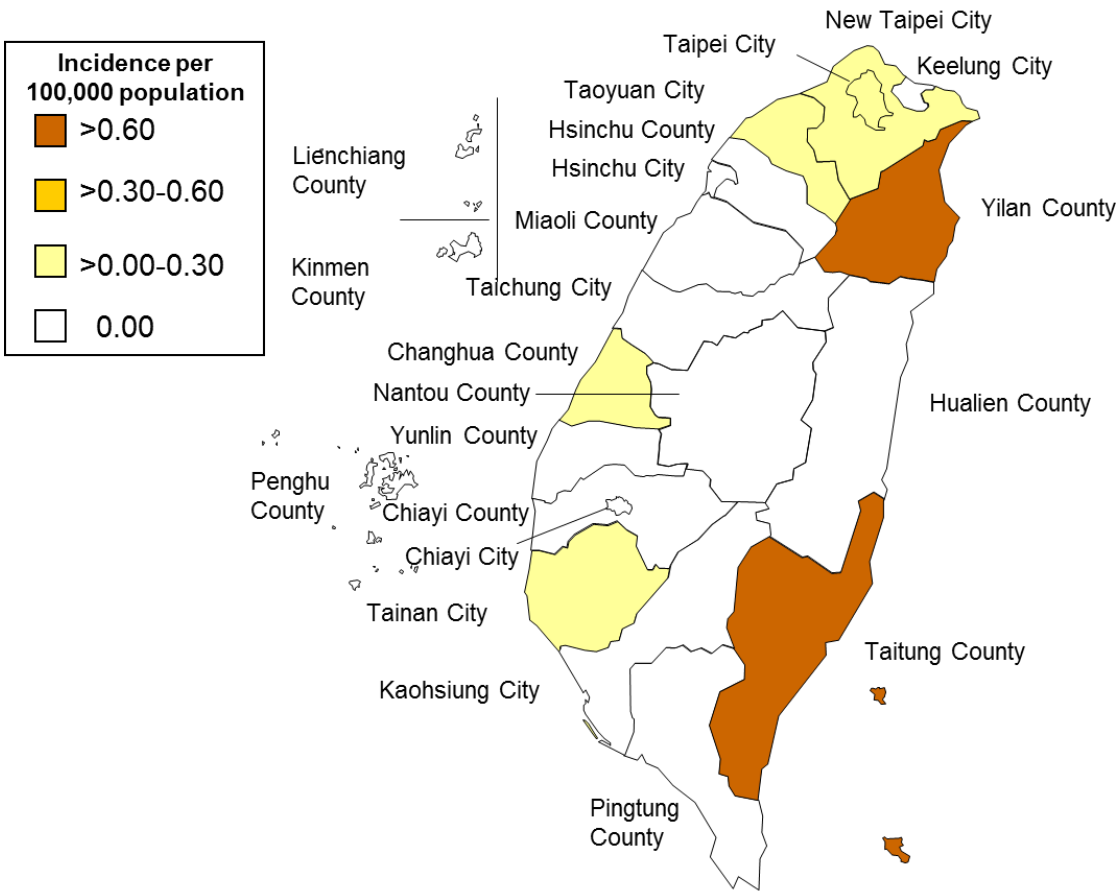


Figure 32 Geographical distribution by incidence of confirmed pertussis cases, 2018

Meningococcal Meningitis

In 2018, 6 confirmed cases of meningococcal meningitis (incidence rate: 0.03 per 100,000 population) were reported, which represented an decrease compared to 12 confirmed cases (incidence rate: 0.05 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 2 male cases (33.3%) and 4 female cases (66.7%) with male to female ratio of 0.5:1.0.

(2) By age group

There were 4 cases in 40-64 years age group, and 1 case each in 1-4 and 65 years and over age groups.

(3) By month

There were 2 cases in March, and 1 case each in January, February, April and December.

(4) By residential region

Confirmed cases were reported in 3 cities and counties, including Taipei City with 3 cases, New Taipei City with 2 cases, and Tainan City with 1 case. The other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taipei City (0.11), followed by New Taipei City and Tainan City (0.05 respectively).

(5) Imported cases and countries of infection

There was 1 imported cases of meningococcal meningitis in 2018, the case from Japan.

(6) By serogroup

Following laboratory confirmation, all of 6 confirmed cases were identified as serogroup B meningococcal infection.

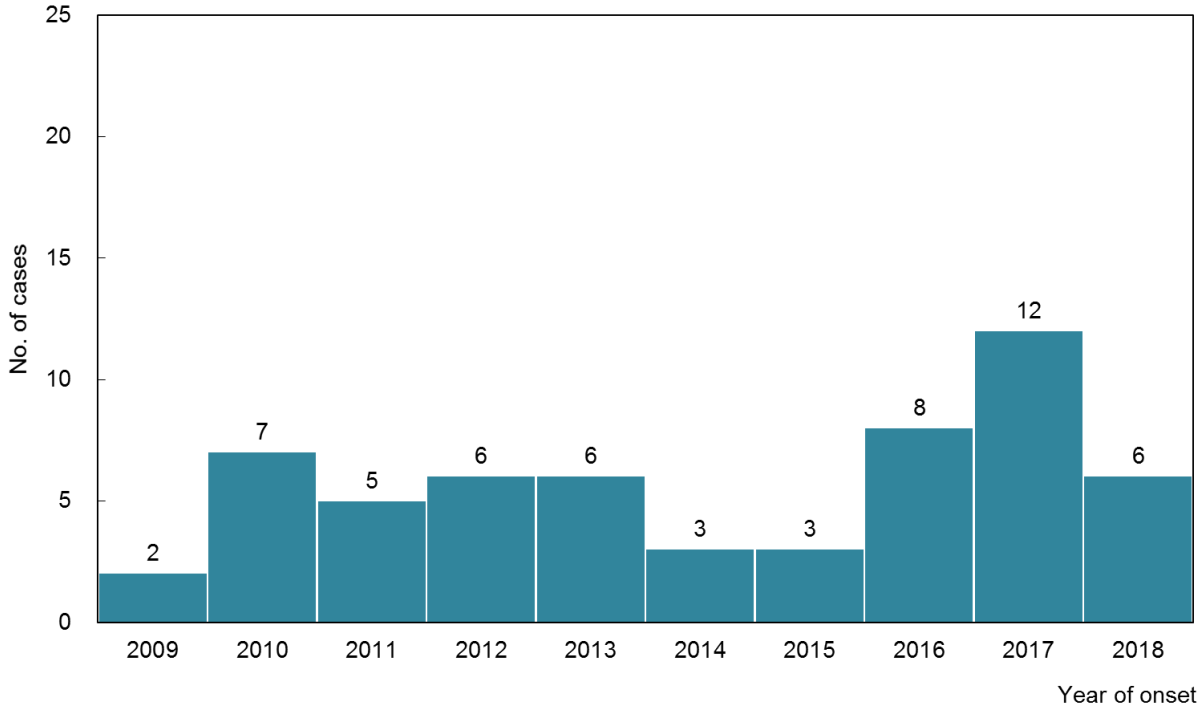


Figure 33 Number of confirmed meningococcal meningitis cases, 2009-2018

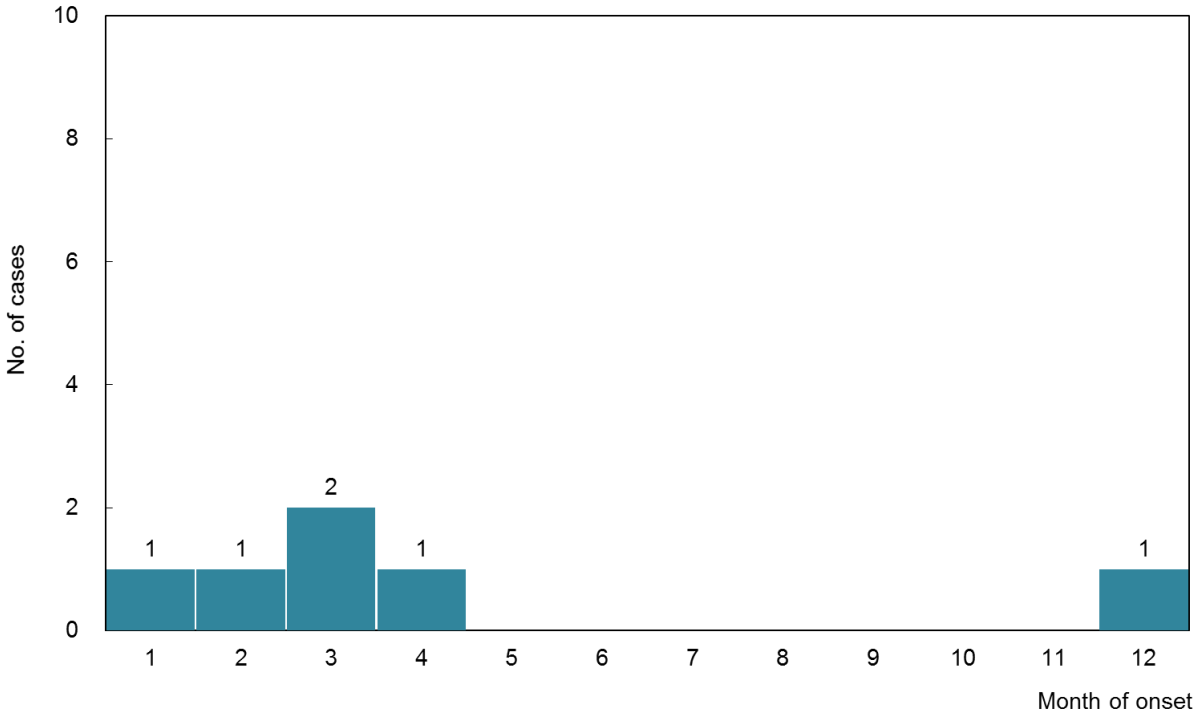


Figure 34 Number of confirmed meningococcal meningitis cases, 2018

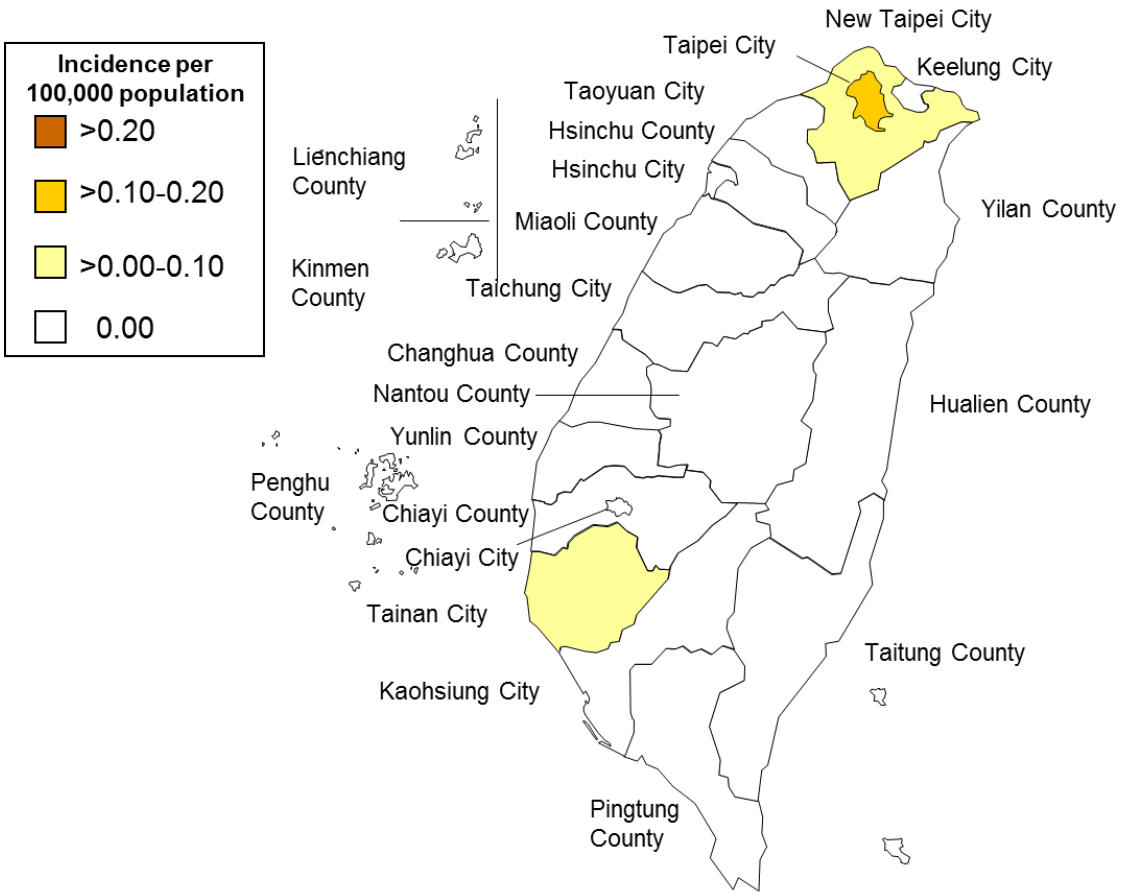


Figure 35 Geographical distribution by incidence of confirmed meningococcal meningitis cases, 2018

Japanese Encephalitis

In 2018, 37 confirmed cases of Japanese encephalitis (incidence rate: 0.16 per 100,000 population) were reported, which represented an increase compared to 25 confirmed cases (incidence rate: 0.11 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 20 male cases (54.1%) and 17 female cases (45.9%) with male to female ratio of 1.2:1.0.

(2) By age group

By age group, there were 26 cases in 40-64 years age group, 6 cases in 25-39 years age group, 4 cases in 65 years and over age group, and 1 case in 15-24 years age group.

(3) By month

The cases occurred mostly in warm seasons, with 15 cases in June, 10 cases in May, 9 cases in July, and 1 case each in August, September and November.

(4) By residential region

Kaohsiung City had the highest number of incidents with 8 confirmed cases reported, followed by Taoyuan City and Nantou County each with 4 cases, New Taipei City, Changhua County, Chiayi County, and Tainan City each with 3 cases, Hsinchu County, Taichung City and Yunlin County each with 2 cases, and Yilan County, Pingtung County and Hualien County each with 1 case, whereas the other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Nantou County (0.80), followed by Chiayi County (0.59) and Hsinchu County (0.36).

(5) Imported cases and countries of infection

There were no imported cases of Japanese encephalitis in 2018.

(6) By clinical symptoms

Among the confirmed cases, 33 cases had fever, 20 cases had disorder of consciousness, 15 cases had psychological symptoms (delirium, unconsciousness, etc.), 14 cases had headache, 11 cases had stiff necks, 8 cases had vomiting, 2 cases each had muscle cramps or encephalitic stimulation symptom and 1 case had dystonia.

(7) Residential condition or neighboring environment

Among the confirmed cases, 26 cases lived nearby paddy fields, 25 cases lived nearby pigpens, 19 cases lived nearby pigeonries, 12 cases lived nearby duck or chicken farms, and 3 case lived nearby ponds.

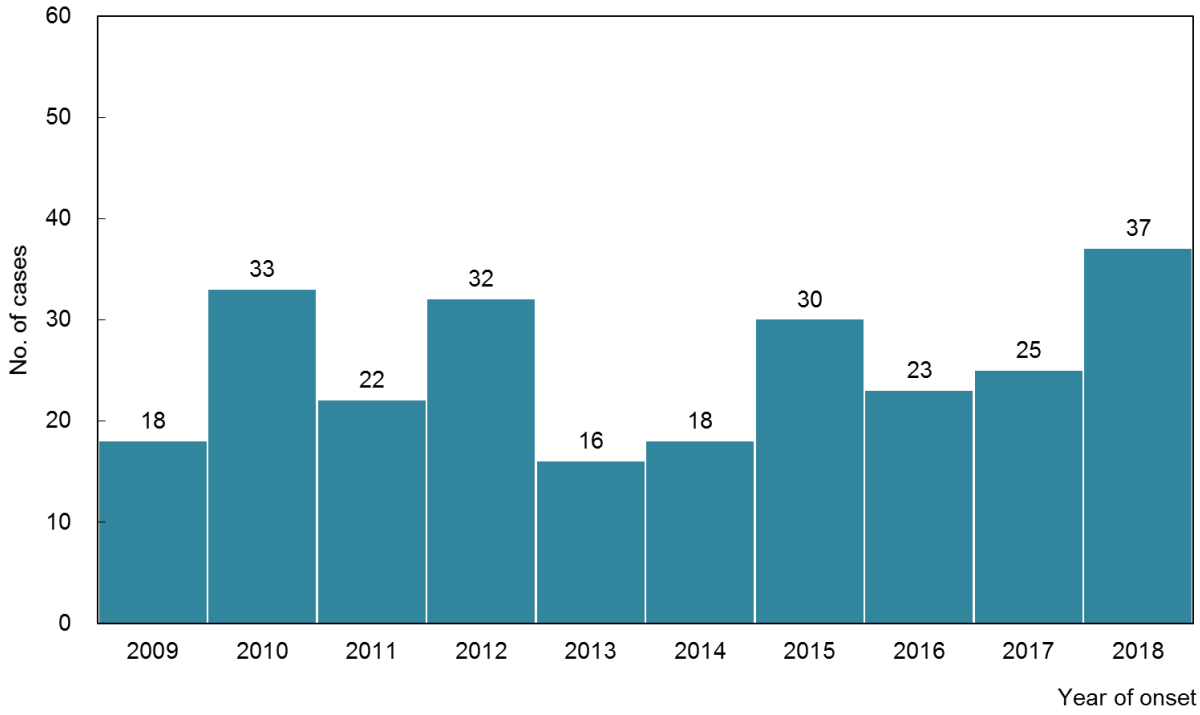


Figure 36 Number of confirmed Japanese encephalitis cases, 2009-2018

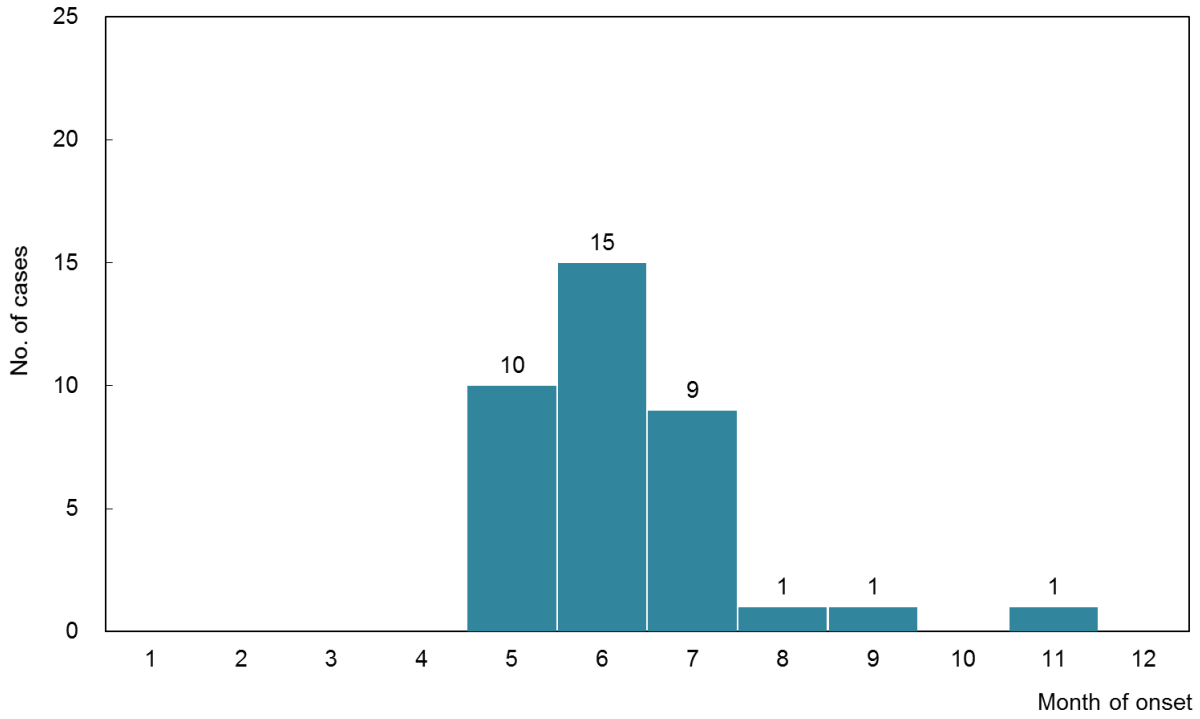


Figure 37 Number of confirmed Japanese encephalitis cases, 2018

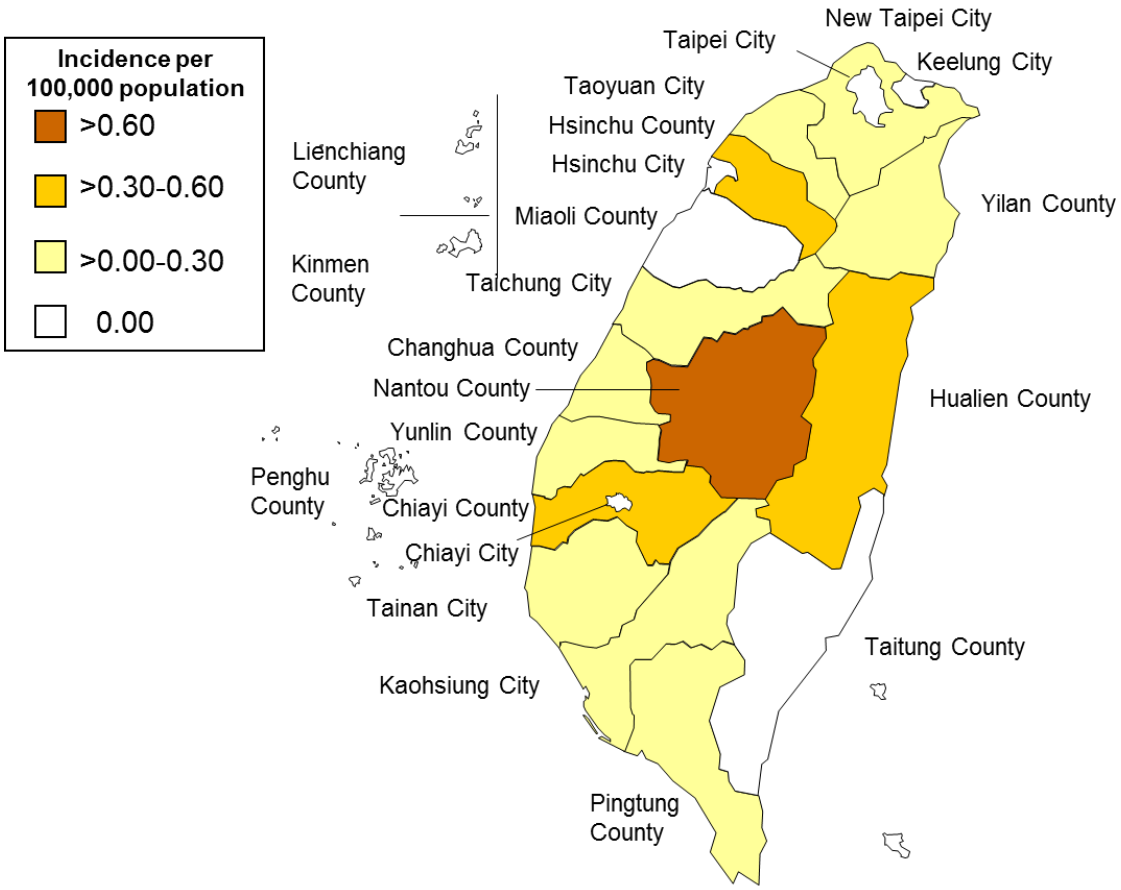


Figure 38 Geographical distribution by incidence of confirmed Japanese encephalitis cases, 2018

Acute Hepatitis A

In 2018, 88 confirmed cases of acute hepatitis A (incidence rate: 0.37 per 100,000 population) were reported, which represented a decrease compared to 369 confirmed cases (incidence rate: 1.57 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 60 male cases (68.2%) and 28 female cases (31.8%) with male to female ratio of 2.1:1.0.

(2) By age group

There were 35 cases in 25-39 years age group, 26 cases in 40-64 years age group, 20 cases in 65 years and over age group, 4 cases in 15-24 years age group, 2 cases in 5-14 years age group, and 1 cases in 1-4 years age group.

(3) By month

Acute hepatitis A cases were reported in each month of the year. The highest number of cases (12) were reported in July, followed by 10 cases each in April and May, 8 cases each in March, August, November and December, 6 cases in January, 5 cases each in February, June and October, and 3 cases in September.

(4) By residential region

Except Kinmen County, Lienchiang County, Nantou County and Penghu County, all cities and counties had confirmed cases in 2018. Taipei City had the highest number of incidents with 20 cases reported, followed by New Taipei City with 15 cases, Taoyuan City with 8 cases, Tainan City with 7 cases, and Kaohsiung City with 6 cases. The other cities and counties all had less than 5 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Taitung County(1.37), followed by Keelung City (0.81) and Chiayi County (0.79).

(5) Imported cases and countries of infection

There were 33 imported cases of acute hepatitis A in 2018, including 8 cases from Malaysia, 6 cases from Indonesia, 3 cases each from Thailand and Morocco, 2 cases each from China and Cambodia, 1 case each from Japan, Philippines, Singapore, Nepal, United States, Chile, Belgium, Solomon Islands and Madagascar.

(6) By clinical symptoms

An epidemiological survey of 88 confirmed cases showed that in cases with symptoms (multiple answers are allowed), 46.6% each (41 cases each) had jaundice or poor appetite, 45.5% (40 cases) had tiredness, 38.6% (34 cases) had tawny urine, 37.5% each (33 cases each) had abdominal pain or stomach discomfort, 31.8% each (28 cases each) had fever or nausea, and 22.7% (20 cases) had vomiting.

(7) Source of drinking water and dietary habits

The epidemiological investigation of 88 confirmed cases showed that the major sources of drinking water (multiple answers are allowed) were tap water in 52.3% of cases (46 person-times), filtered water in 38.6% of cases (34 person-times), packaged water in 21.6% of cases (19 person-times), and spring water or self-service water in 3.4% of cases (3 person-times). As for dietary habits (multiple answers allowed), eating in home were identified in the largest percentage of cases, accounting for 36.4% (32 person-times), followed by in restaurants in 28.4% of cases (25 person-times) and from street vendors in 21.6% of cases (19 person-times).

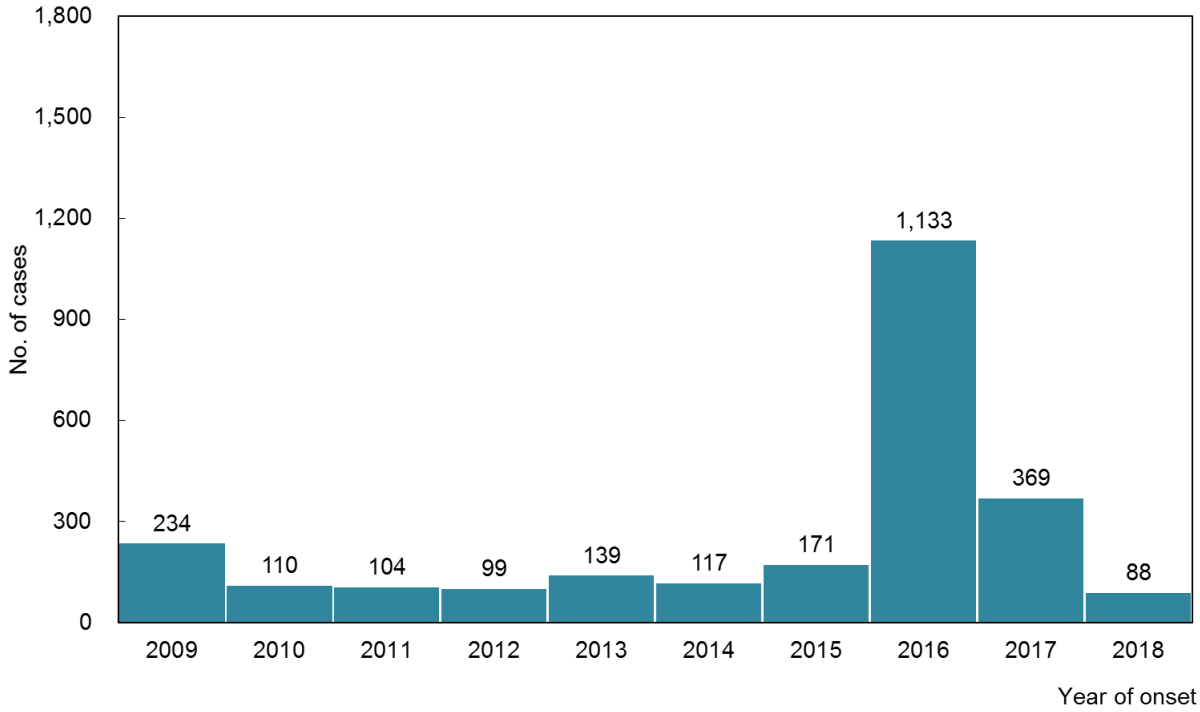


Figure 39 Number of confirmed acute hepatitis A cases, 2009-2018

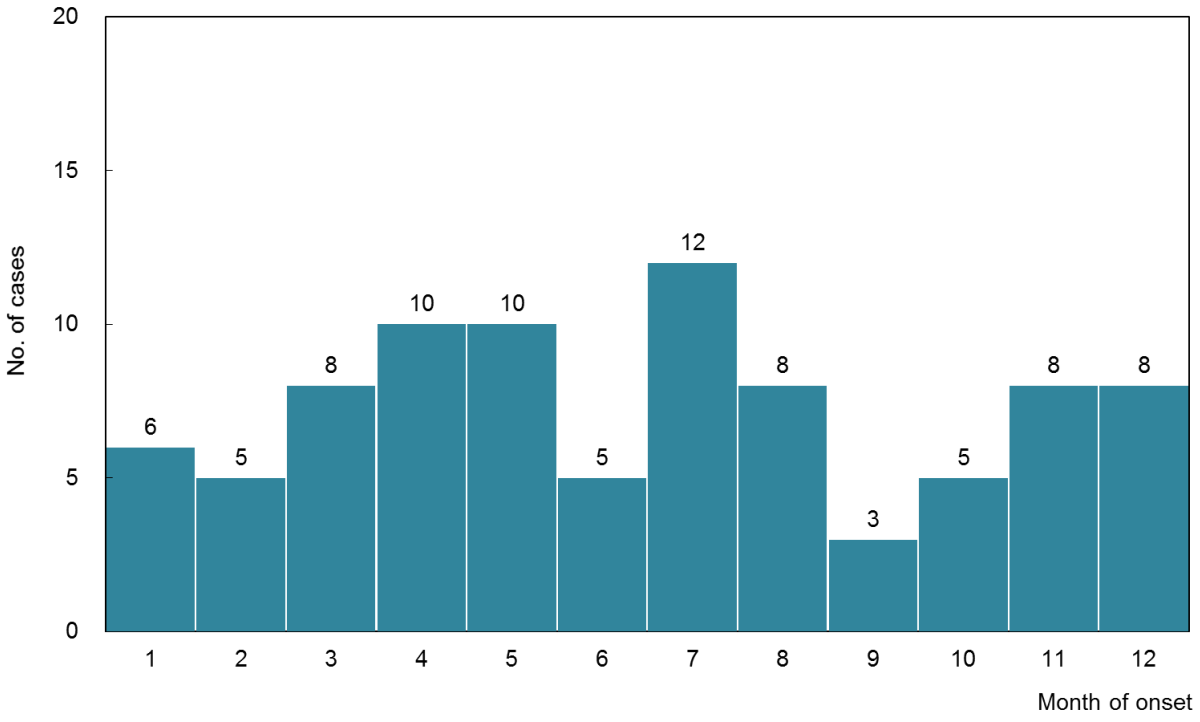


Figure 40 Number of confirmed acute hepatitis A cases, 2018

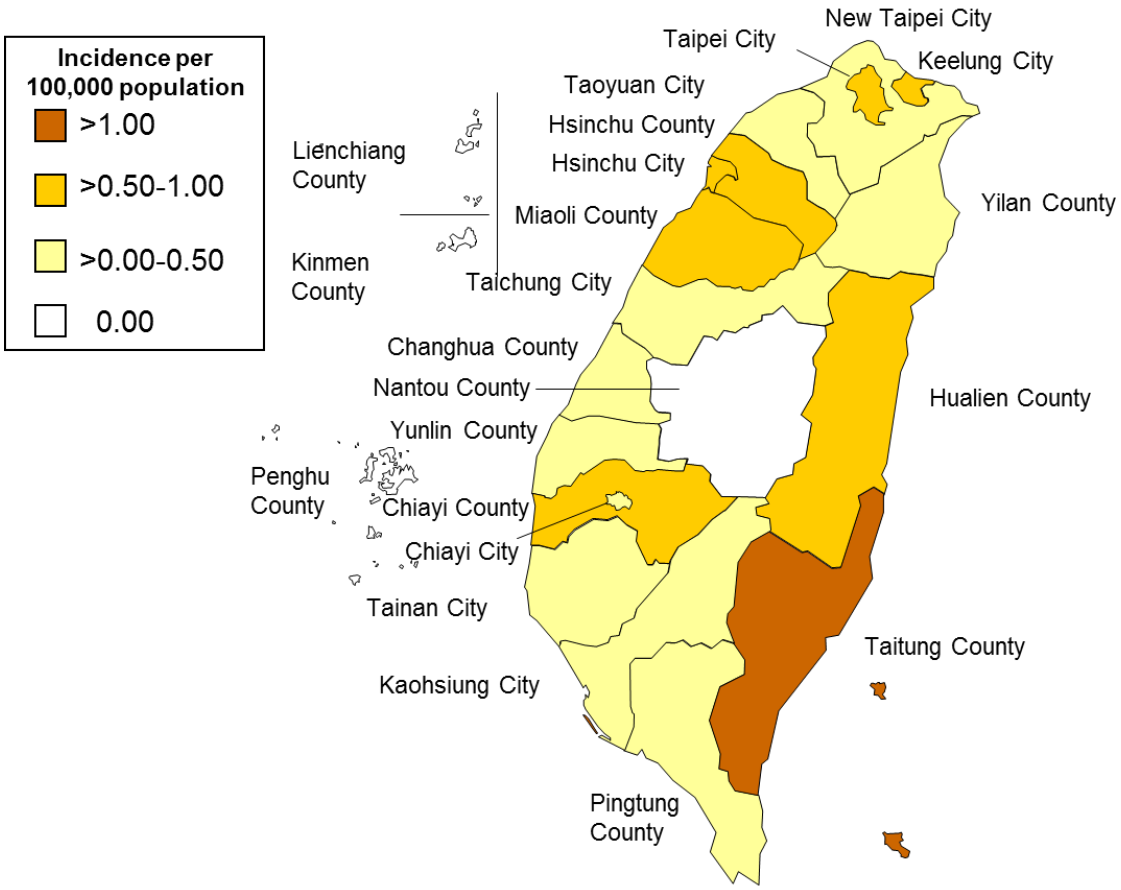


Figure 41 Geographical distribution by incidence of confirmed acute hepatitis A cases, 2018

Acute Hepatitis B

In 2018, 143 confirmed cases of acute hepatitis B (incidence rate: 0.61 per 100,000 population) were reported, which represented an decrease compared to 151 confirmed cases (incidence rate: 0.64 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 86 male cases (60.1%) and 57 female cases (39.9%) with male to female ratio of 1.5:1.0.

(2) By age group

There were 61 cases in 40-64 years age group, 53 cases in 25-39 years age group, 21 cases in 65 years and over age group, and 8 cases in 15-24 years age group.

(3) By month

Confirmed cases were reported in each month of the year without apparent concentration in any of the months. September with 18 cases, July with 17 cases, April, August and October each with 14 cases, March with 13 cases, December with 12 cases, and February and November each with 10 cases, January, May and June with less than 10 cases.

(4) By residential region

New Taipei City had the highest number of incidents with 29 confirmed cases reported, followed by Taoyuan City with 23 cases, Tainan City with 17 cases, Taipei City with 14 cases, Taichung City with 13 cases, Kaohsiung City with 8 cases, Changhua County with 7 cases, Hsinchu City with 5 cases, Chiayi County and Pingtung County each with 4 cases, Keelung City, Yilan County, Miaoli County, Yunlin County and Hualien County each with 3 cases, Hsinchu County with 2 cases, Chiayi City and Penghu County each with 1 case. The other cities and counties had no confirmed case.

The incidence rate of confirmed cases per 100,000 population was the highest in Hsinchu City (1.13), followed by Taoyuan City (1.04) and Penghu County (0.96).

(5) Imported cases and countries of infection

There were 10 imported cases of acute hepatitis B in 2018, including 5 cases from Vietnam, 4 cases from China, and 1 case from Thailand.

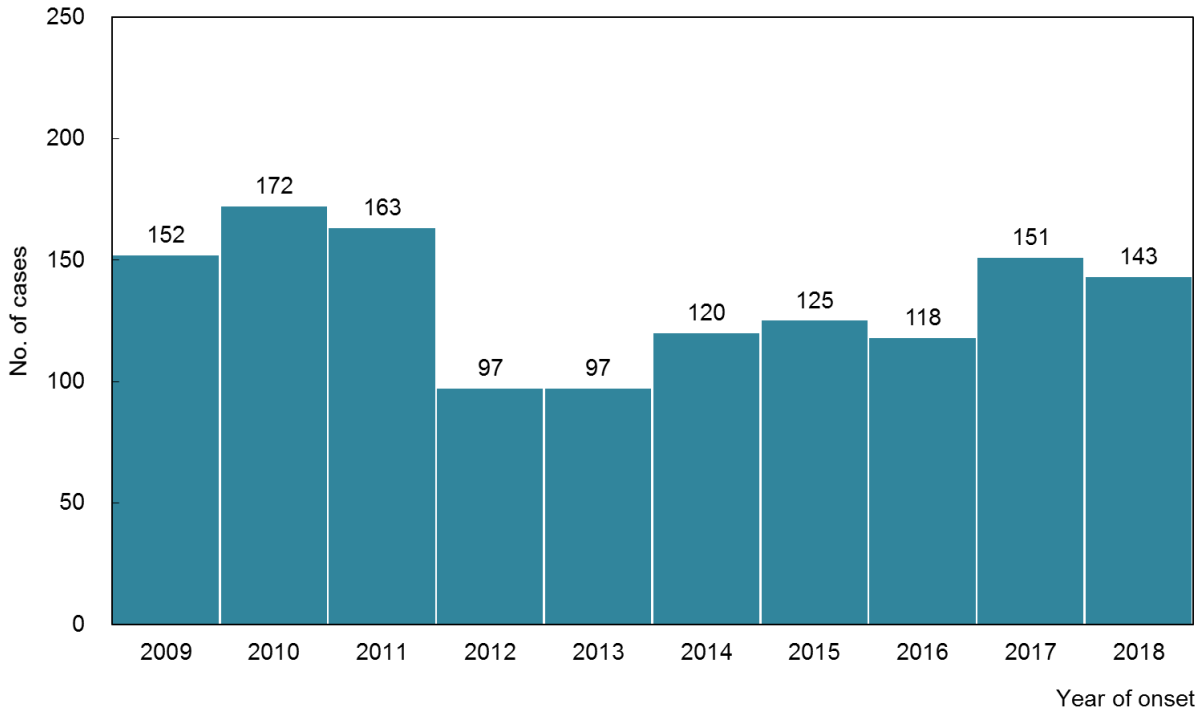


Figure 42 Number of confirmed acute hepatitis B cases, 2009-2018

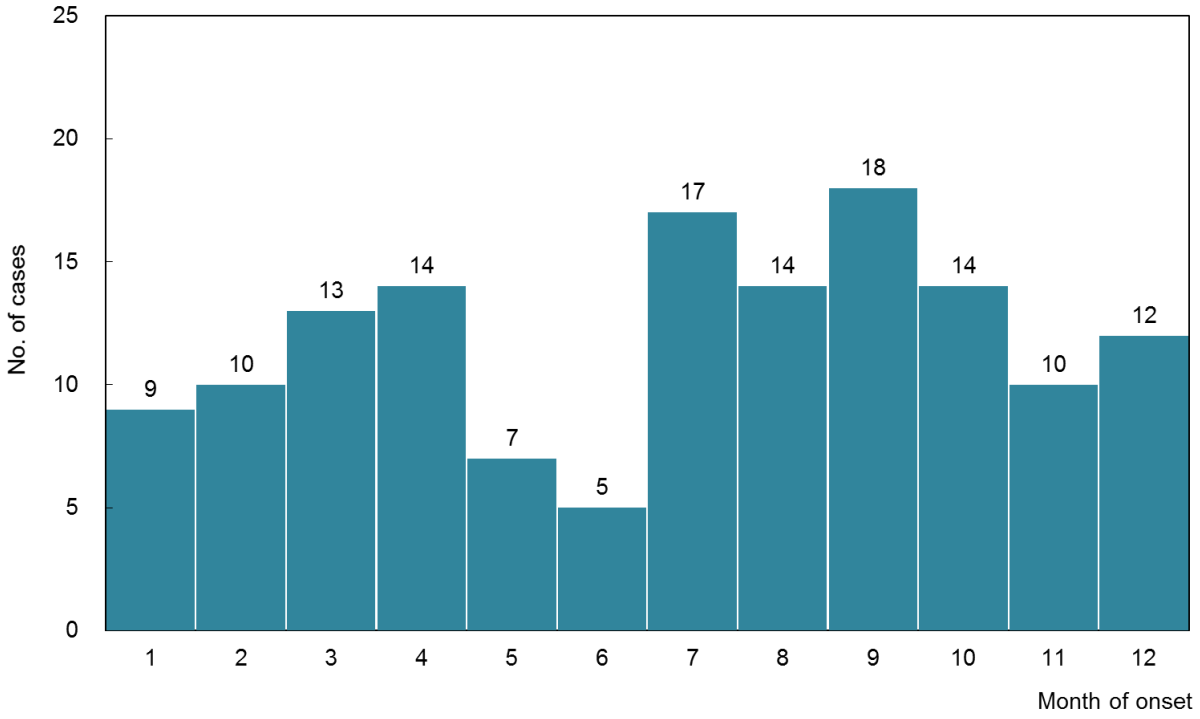


Figure 43 Number of confirmed acute hepatitis B cases, 2018

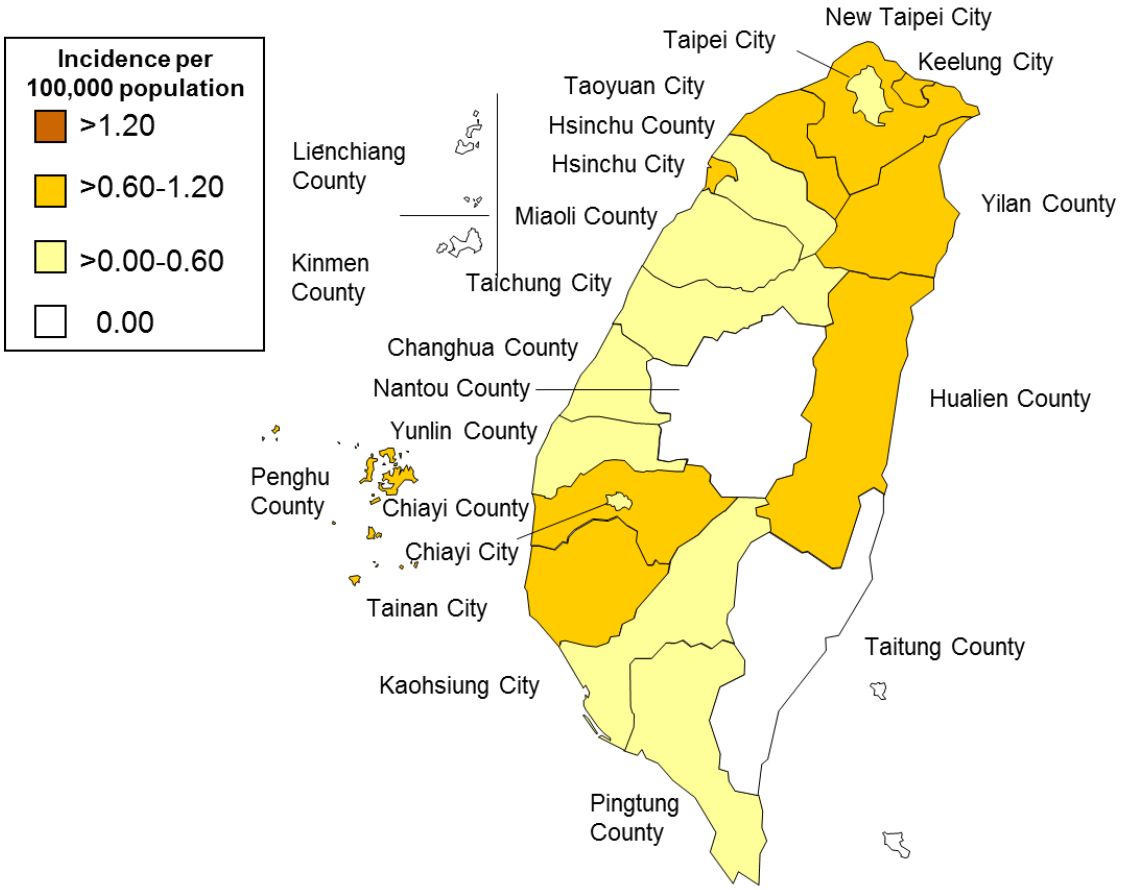


Figure 44 Geographical distribution by incidence of confirmed acute hepatitis B cases, 2018

Acute Hepatitis C

In 2018, 510 confirmed cases of acute hepatitis C (incidence rate: 2.16 per 100,000 population) were reported, which represented an increase compared to 325 confirmed cases (incidence rate: 1.38 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 374 male cases (73.3%) and 136 female cases (26.7%) with male to female ratio of 2.8:1.0.

(2) By age group

There were 199 cases in 25-39 years age group, 191 cases in 40-64 years age group, 96 cases in 65 years and over age group, 23 cases in 15-24 years age group, and 1 case in 0-1 years age group.

(3) By month

Acute hepatitis C cases were reported in each month of the year. December had the highest number of incidents with 61 confirmed cases reported, followed by 55 cases in March, 52 cases in July, 50 cases in November, 47 cases in October, 44 cases in May, 39 cases in August, 38 cases in April, 37 cases in January, 29 cases each in February, June and September.

(4) By residential region

New Taipei City had the highest number of incidents with 109 cases reported, followed by Taipei City with 87 cases, Taichung City with 63 cases, Taoyuan City with 39 cases, Kaohsiung City with 38 cases, Tainan City with 33 cases, Hsinchu County with 23 cases, Hualien County and Yunlin County each with 16 cases, Miaoli County with 13 cases, Keelung City and Pingtung County each with 12 cases, Yilan County with 11 cases, Changhua County with 10 cases, Hsinchu City with 8 cases, and Nantou County with 7 cases. The other cities and counties had less than 5 cases reported, whereas Kinmen County, Lienchiang County and Penghu County had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (4.87), followed by Hsinchu County (4.15) and Taipei City (3.25).

(5) Imported cases and countries of infection

There were 7 imported cases of acute hepatitis C in 2018, including 3 cases from China, 2 cases from Vietnam, and 1 case each from Thailand and Australia.

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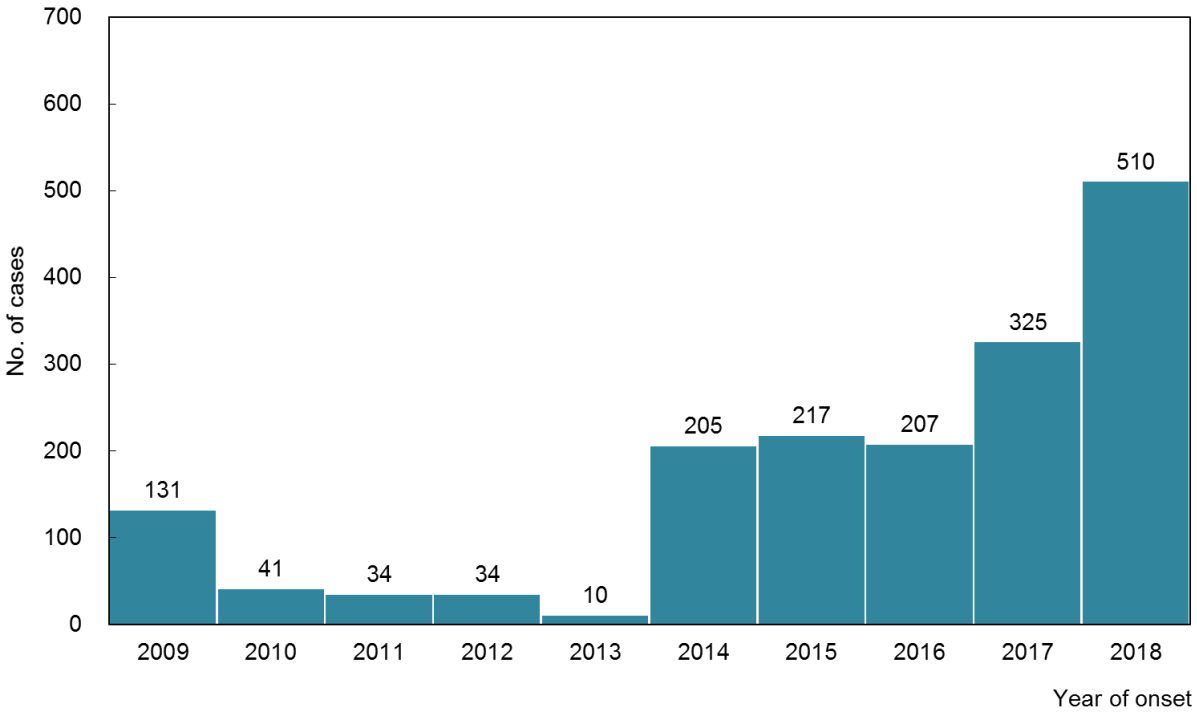

Figure 45 Number of confirmed acute hepatitis C cases, 2009-2018

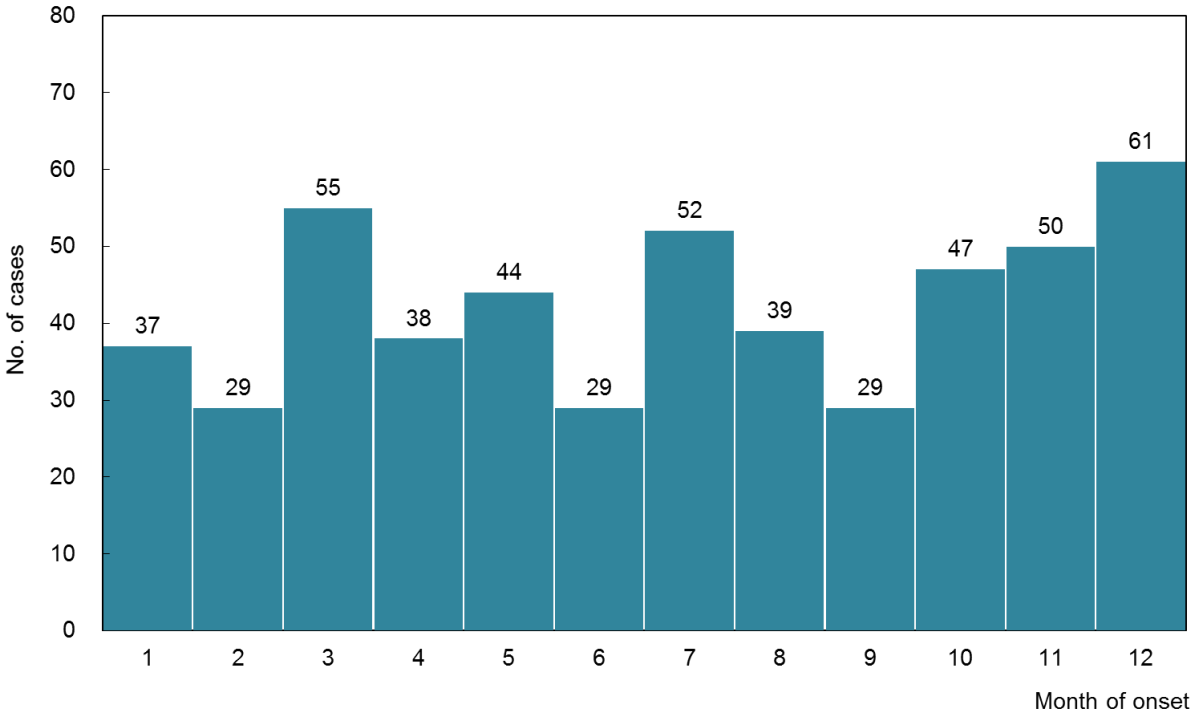

Figure 46 Number of confirmed acute hepatitis C cases, 2018

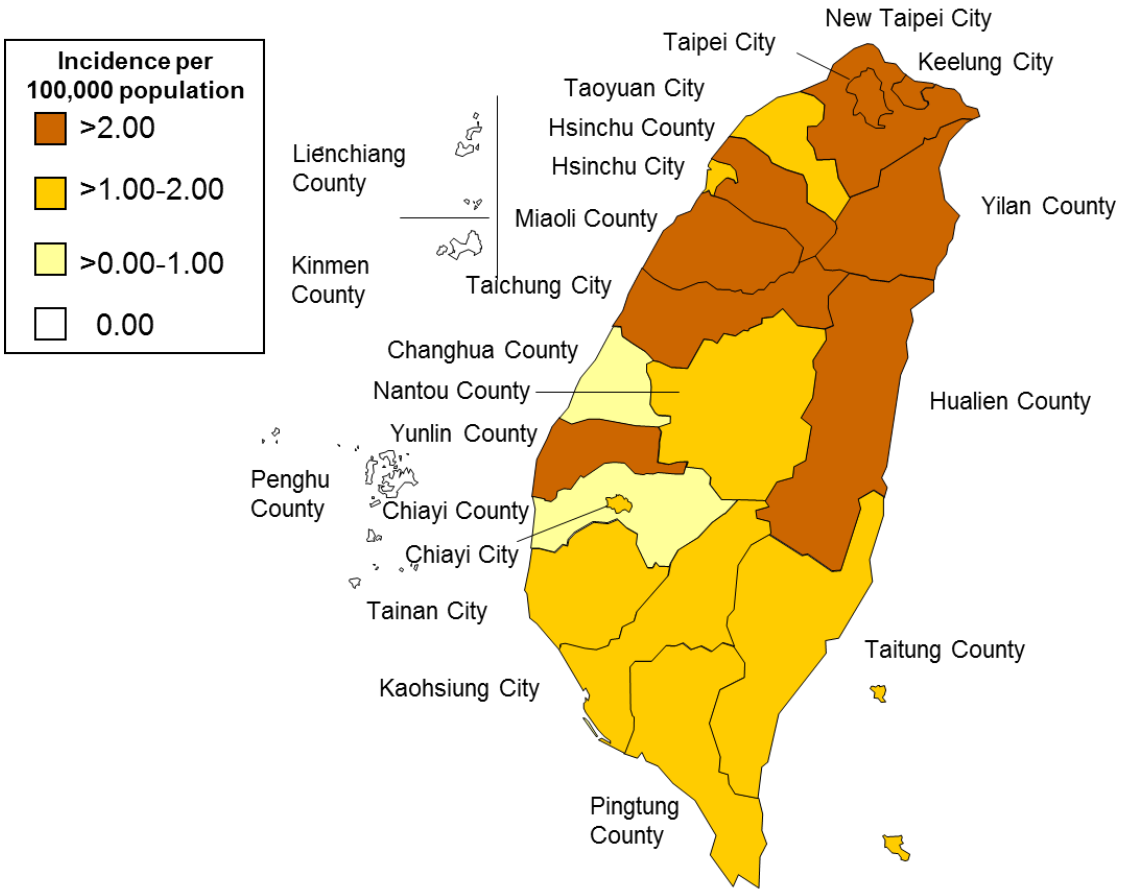

Figure 47 Geographical distribution by incidence of confirmed acute hepatitis C cases, 2018

Scrub Typhus

In 2018, 386 confirmed cases of scrub typhus (incidence rate: 1.64 per 100,000 population) were reported, which represented a decrease compared to 422 confirmed cases (incidence rate: 1.79 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 257 male cases (66.6%) and 129 female cases (33.4%) with male to female ratio of 2.0:1.0.

(2) By age group

The cases occurred predominantly in adults aged 25 years and above. In all, there were 202 cases in 40-64 years age group, 79 cases in 25-39 years age group, 59 cases in 65 years and over age group, 32 cases in 15-24 years age group, 14 cases in 5-14 years age group.

(3) By month

Confirmed cases were reported in each month of the year that concentrated mainly in July, while March had the fewest number of incidents. The distribution of cases in each month of the year is as follows: 54 cases in January, 11 cases in February, 6 cases in March, 13 cases in April, 32 cases in May, 33 cases in June, 57 cases in July, 40 cases in August, 29 cases in September, 41 cases in October, 27 cases in November, and 43 cases in December.

(4) By residential region

Taitung County had the highest number of incidents with 86 confirmed cases reported, followed by Hualien County with 70 cases, Kaohsiung City with 44 cases, Penghu County with 31 cases, Nantou County with 29 cases, Taichung City with 20 cases, New Taipei City with 17 cases, Kinmen County with 16 cases, and Taipei City and Pingtung County each with 12 cases. The other cities and counties all had less than 10 cases reported, whereas there were no cases in Keelung City.

The incidence rate of confirmed cases per 100,000 population was the highest in Lienchiang County (61.69), followed by Taitung County (39.23), Penghu County (29.73), Hualien County (21.30) and Kinmen County (11.56). The other cities and counties all had an incidence rate below 10.00.

(5) Imported cases and countries of infection

There were 2 imported cases of scrub typhus in 2018, including 1 case each from Thailand and Philippines.

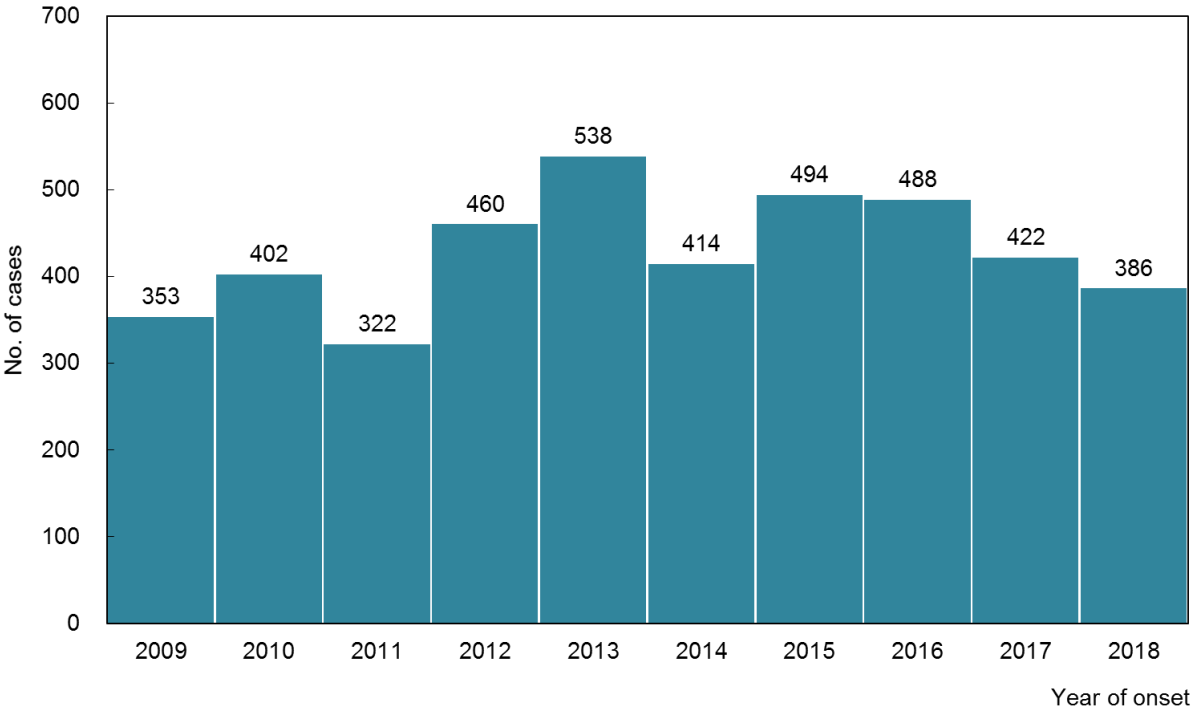

Figure 48 Number of confirmed scrub typhus cases, 2009-2018

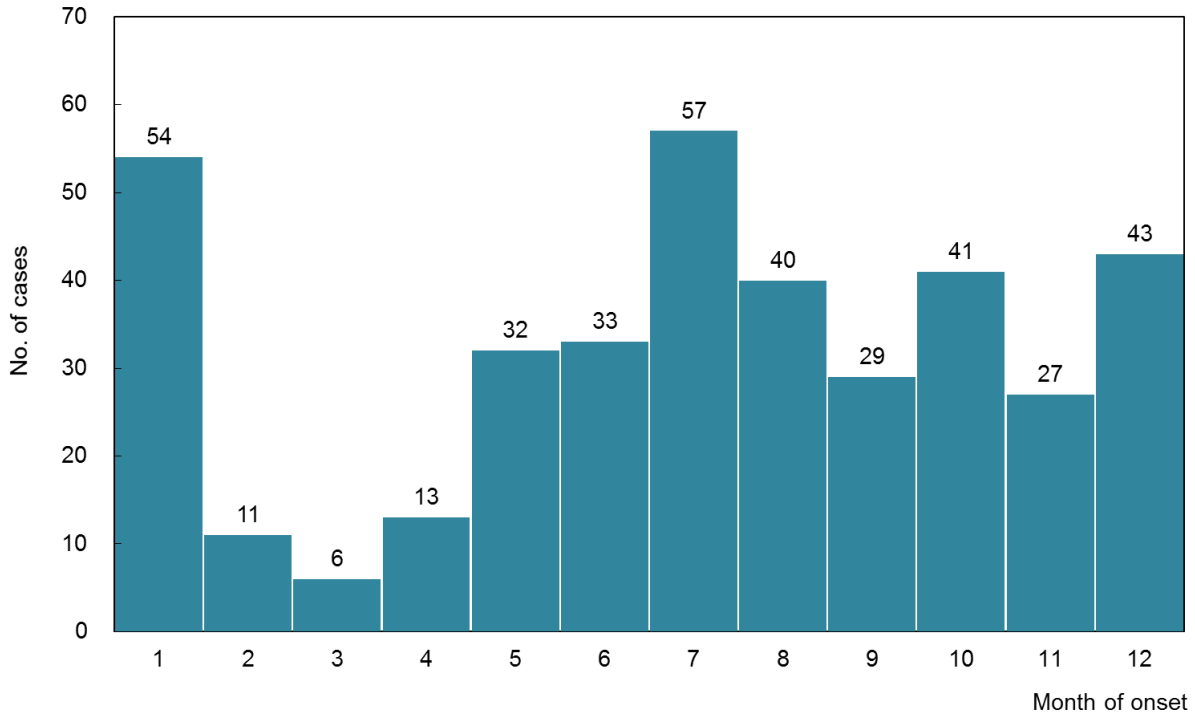

Figure 49 Number of confirmed scrub typhus cases, 2018

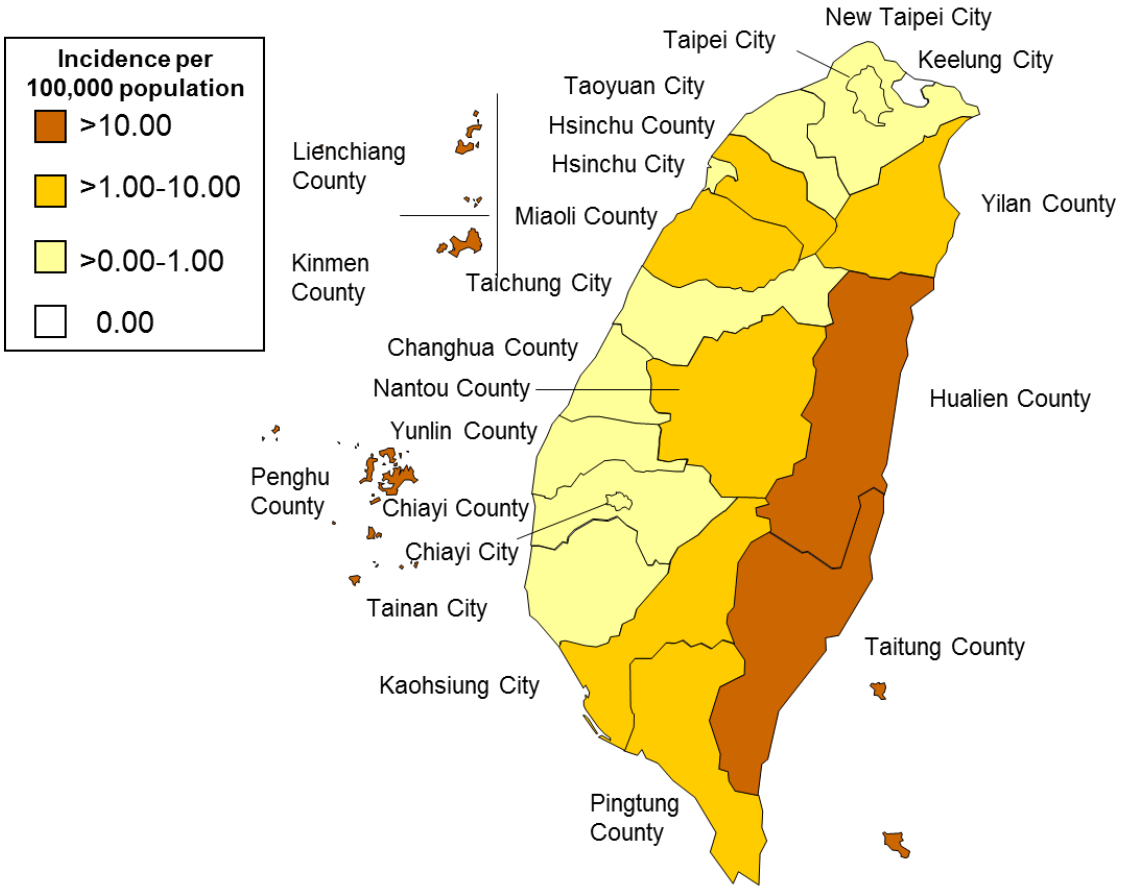

Figure 50 Geographical distribution by incidence of confirmed scrub typhus cases, 2018

Legionnaires' Disease

In 2018, 211 confirmed cases of legionnaires' disease (incidence rate: 0.89 per 100,000 population) were reported, which represented an increase compared to 188 confirmed cases (incidence rate: 0.80 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 160 male cases (75.8%) and 51 female cases (24.2%) with male to female ratio of 3.1:1.0.

(2) By age group

Most cases occurred in 65 years and over age group with 117 cases, followed by 86 cases in 40-64 years age group, 6 cases in 25-39 years age group, and 2 cases in 15-24 years age group.

(3) By month

Confirmed cases were reported in each month of the year where August had the highest number of incidents with 25 confirmed cases reported, followed by October with 24 cases, September with 23 cases, June and December each with 20 cases, January and July each with 19 cases, November with 16 cases, February with 15 cases, May with 13 cases, April with 9 cases, and March with 8 cases.

(4) By residential region

Taipei City had the highest number of incidents with 37 confirmed cases reported, followed by New Taipei City with 36 cases, Taoyuan City with 29 cases, Kaohsiung City with 22 cases, Tainan City with 15 cases, Pingtung County with 14 cases, Changhua County with 12 cases, Taichung City with 8 cases, Yilan County with 7 cases, and Yunlin County and Hualien County each with 6 cases. The other cities and counties had less than 5 cases reported, in which Kinmen County, Lienchiang County, Miaoli County and Penghu County had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (1.83), followed by Pingtung County (1.69) and Yilan County (1.54).

(5) Imported cases and countries of infection

There were 11 imported cases of legionnaires' disease in 2018, 9 cases from China, and Japan and Vietnam each with 1 case.

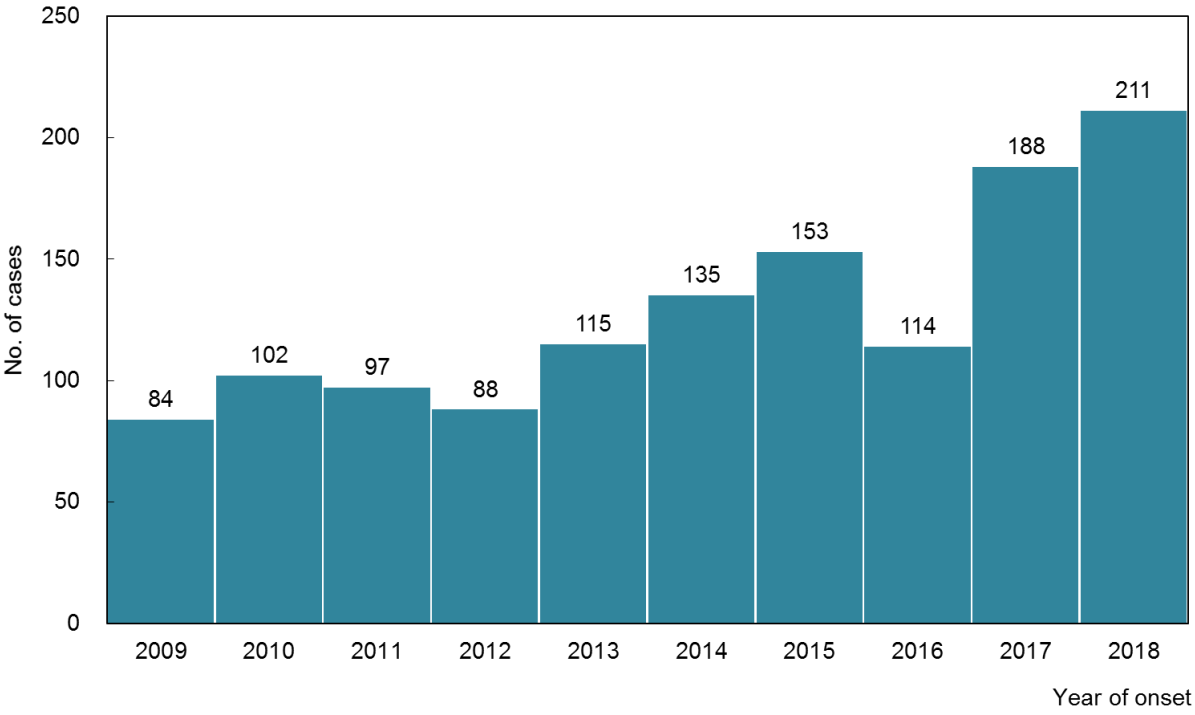

Figure 51 Number of confirmed legionnaires' disease cases, 2009-2018

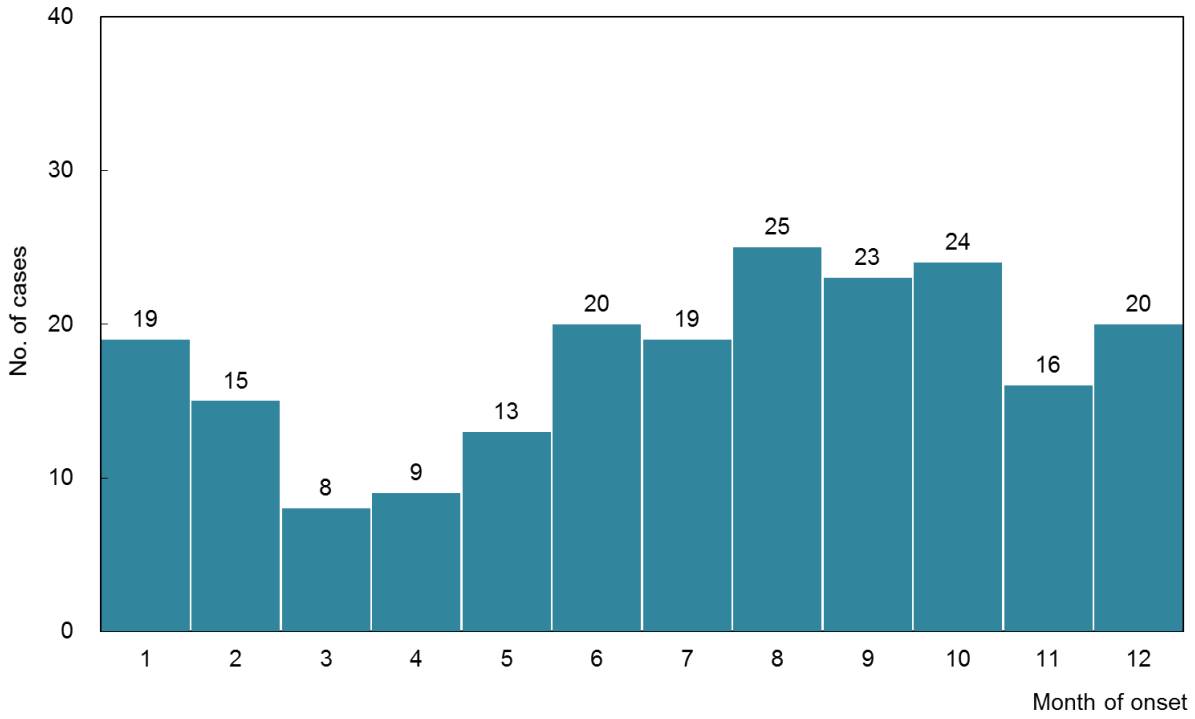

Figure 52 Number of confirmed legionnaires' disease cases, 2018

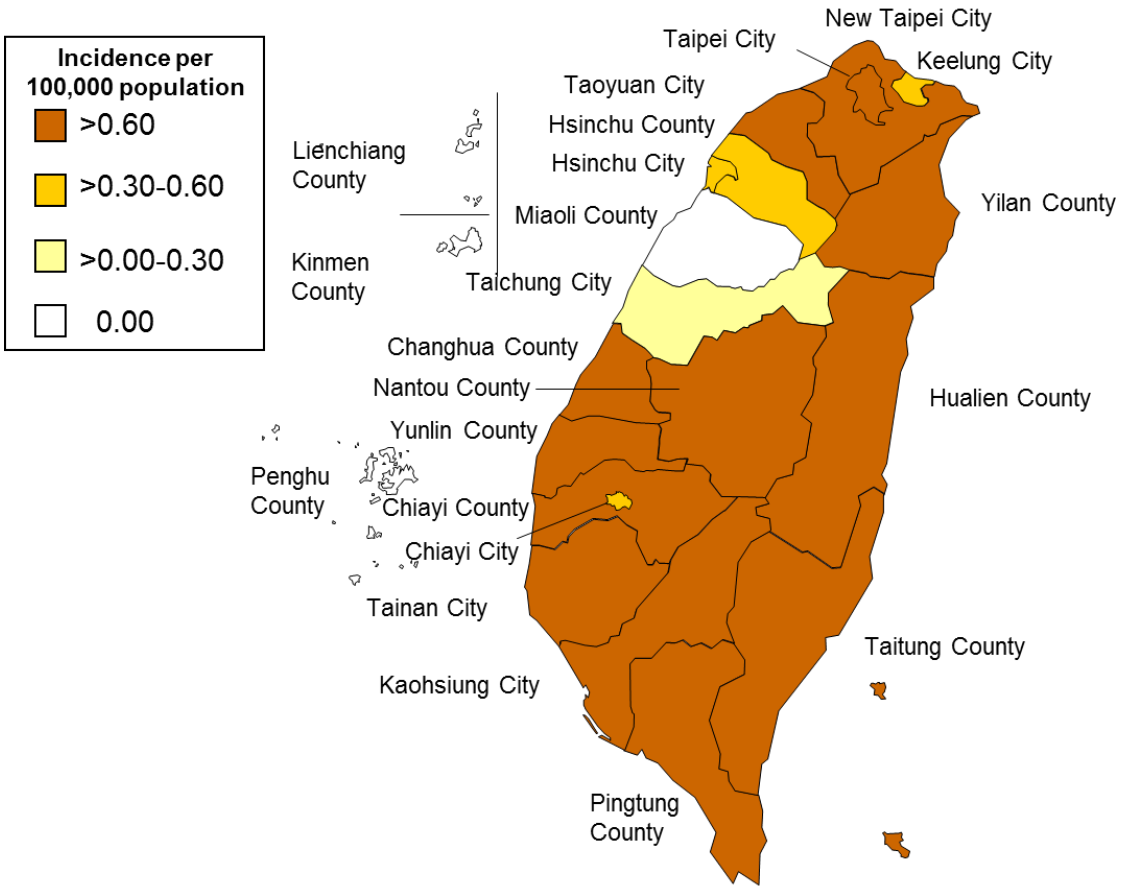

Figure 53 Geographical distribution by incidence of confirmed legionnaires' Disease cases, 2018

Dengue Fever

In 2018, 533 confirmed cases of dengue fever (incidence rate: 2.26 per 100,000 population), including 350 imported cases and 183 indigenous cases were reported, which represented a increase compared to a total of 343 confirmed cases (incidence rate: 1.46 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

In the 350 imported cases, there were 204 male cases (58.3%) and 146 female cases (41.7%) with male to female ratio of 1.4:1.0.

In the 183 indigenous cases, there were 94 male cases (51.4%) and 89 female cases (48.6%) with male to female ratio of 1.1:1.0.

(2) By age group

In the 350 imported cases, there were 2 cases (0.6%) in 1-4 years age group, 15 case (4.3%) in 5-14 years age group, 67 cases (19.1%) in 15-24 years age group, 140 cases (40.0%) in 25-39 years age group, 110 cases (31.4%) in 40-64 years age group, and 16 cases (4.6%) in 65 years and over age group.

In the 183 indigenous cases, there were 1 case (0.5%) in 1-4 years age group, 11 cases each (6.0% respectively) in 5-14 and 15-24 years age group, 30 cases (16.4%) in 25-39 years age group, 86 cases (47.0%) in 40-64 years age group, and 44 cases (24.0%) in 65 years and over age group.

(3) By month

In the 350 imported cases, confirmed cases were reported in each month of the year. In all, August had the highest number of incidents with 47 cases reported, followed by 45 cases in December, 44 cases in September, 41 cases in October, 40 cases in November, 35 cases in July, 33 cases in June, 23 cases in May, 16 cases each in February and April, and 5 cases each in January and March.

In the 183 indigenous cases, August had the highest number of incidents with 77 confirmed cases reported, followed by 64 cases in September, 25 cases in October, 9 cases in November, 7 cases in July, and 1 case in June. There were no cases in the other months.

(4) By residential region

In the 350 imported cases, the number of incidents was the highest in Taipei City with 69 cases reported, followed by 59 cases in New Taipei City, 44 cases in Kaohsiung City, 39 cases in Taichung City, 28 cases in Taoyuan City,

25 cases in Tainan City, and 23 cases in Changhua County. The other cities and counties all had less than 10 imported cases reported, in which Lienchiang County did not has confirmed imported cases.

In the 183 indigenous cases, Taichung City had the highest number of incidents with 113 cases reported, followed by 44 cases in New Taipei City, 12 cases in Kaohsiung City, 8 cases in Changhua County, 2 cases each in Taipei City and Chiayi County, and 1 case each in Tainan City and Taoyuan City, in which other cities and counties did not have confirmed indigenous cases.

Overall, the incidence rate of confirmed cases per 100,000 population was the highest in Taichung City (5.44), followed by Penghu County (2.88) and Taipei City (2.65).

(5) Imported cases and countries of infection

In the 350 imported cases, there were 69 cases (19.7%) from Cambodia, 68 cases (19.4%) from Vietnam, 61 cases (17.4%) from Philippines, 37 cases (10.6%) from Thailand, 36 cases (10.3%) from Malaysia, 29 cases (8.3%) from Indonesia, 11 cases each (3.1 % respectively) from Myanmar and Maldives, 9 cases (2.6%) from India, 8 cases (2.3%) from Singapore, 4 cases (1.1%) from Sri Lanka, 3 cases (0.9%) from China, 2 cases (0.6%) from Cuba, and 1 case each (0.3% respectively) from Laos and Nigeria.

(6) By virus type

In the 350 cases, 76 cases were caused by dengue virus type 1, 79 cases by type 2, 27 cases each by type 3 and type 4. The other 141 cases were undetermined.

In the 183 indigenous cases, 78 cases were caused by dengue virus type 1, 40 cases by type 2, 6 cases by type 3, and 2 cases by type 4. The other 57 cases were undetermined.

Table 26 Virus type and infection source of confirmed dengue fever cases, 2018

Infection source	Virus type					Total
	DEN-1	DEN-2	DEN-3	DEN-4	Undetermined	
Cambodia	26	12		2	29	69
Vietnam	21	19		10	18	68
Philippines	4	7	18	4	28	61
Thailand	12	7	2		16	37
Malaysia	5	11	1		19	36
Indonesia	3	6	1	10	9	29
Maldives	1	6	1		3	11
Myanmar	1	1	1		8	11
India		1	1	1	6	9
Singapore		4	2		2	8
Sri Lanka	1	1			2	4
China	1	1			1	3
Cuba	1	1				2
Nigeria		1				1
Laos		1				1
Taiwan	78	40	6	2	57	183
Total	154	119	33	29	198	533

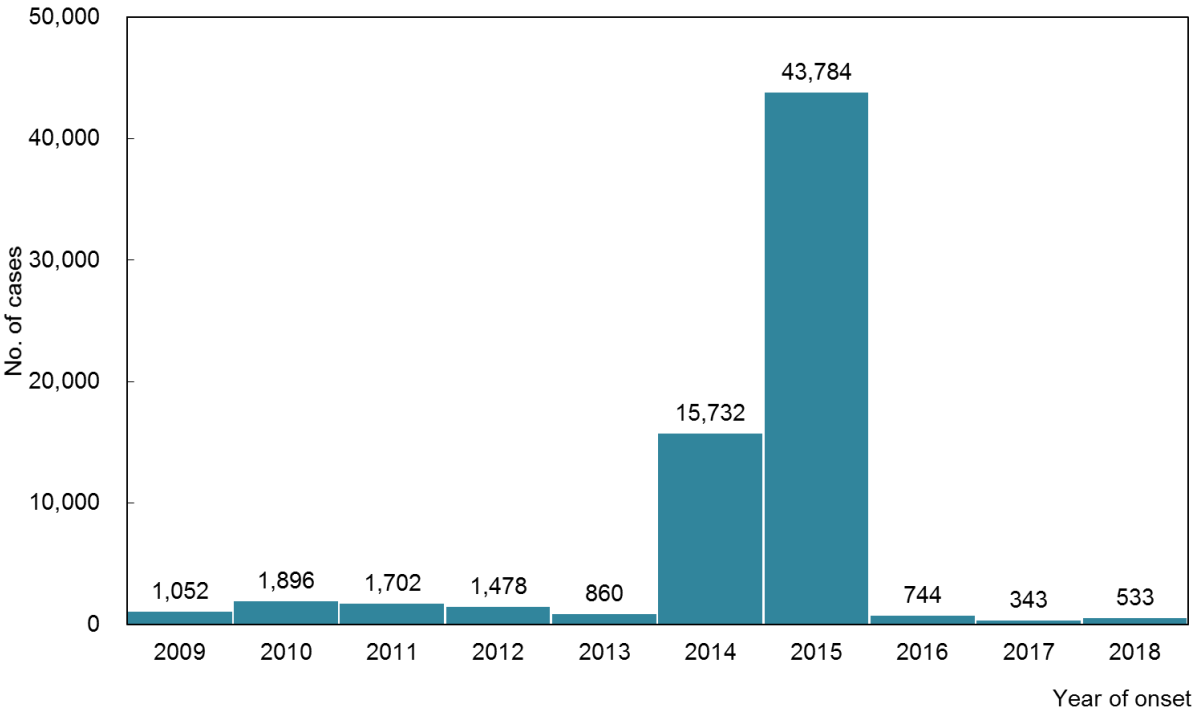

Figure 54 Number of confirmed dengue fever cases, 2009-2018

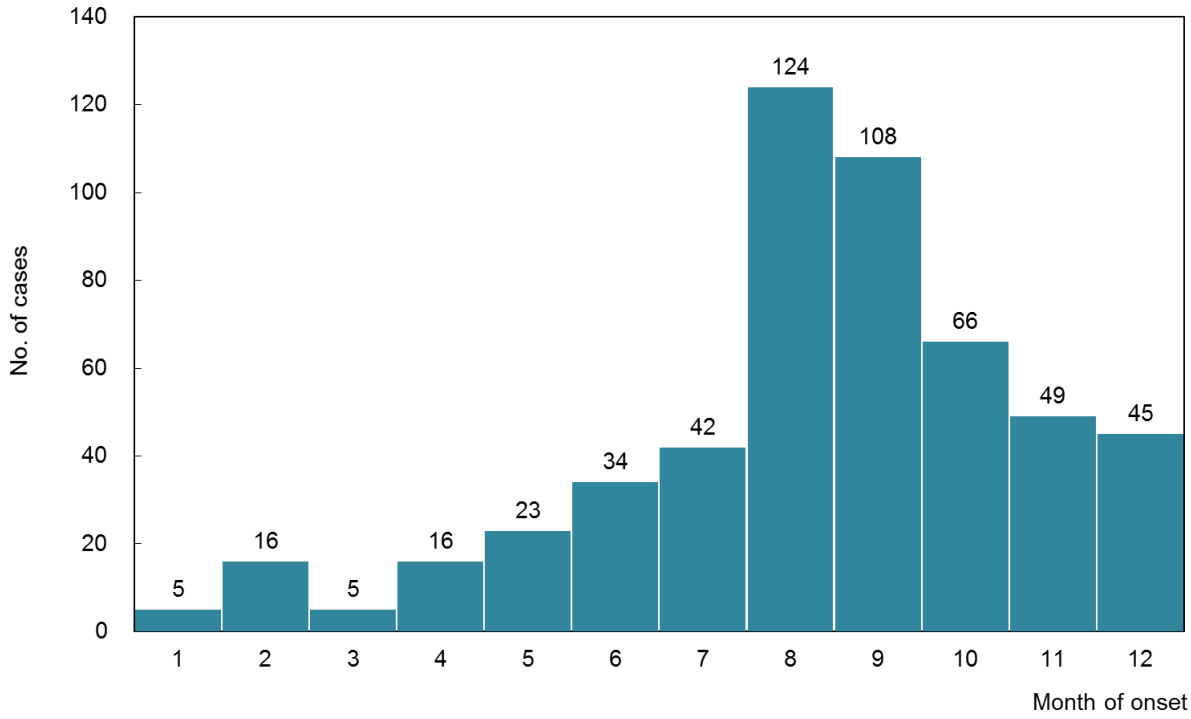

Figure 55 Number of confirmed dengue fever cases, 2018

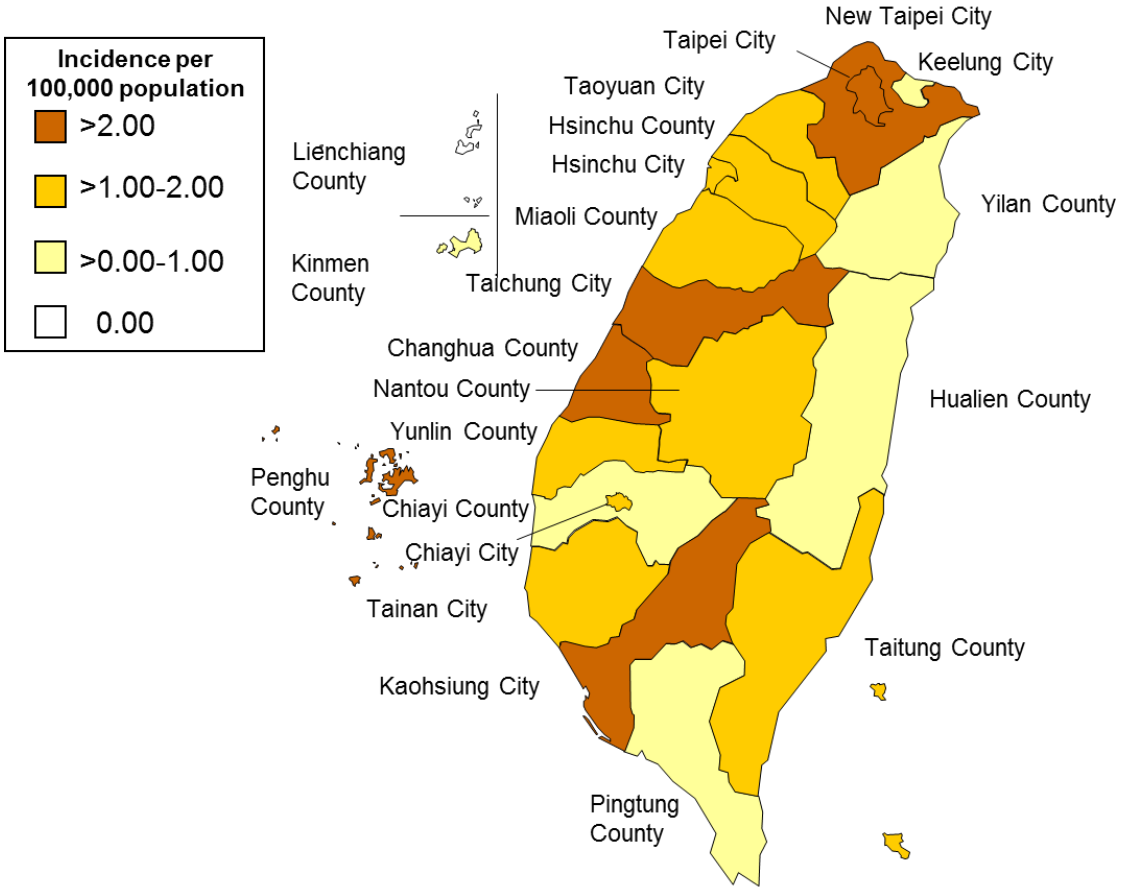

Figure 56 Geographical distribution by incidence of confirmed dengue fever cases, 2018

Enteroviruses Infection with Severe Complications

In 2018, 36 confirmed cases of enteroviruses infection with severe complications (incidence rate: 0.15 per 100,000 population) were reported, which represented a increase compared to 24 confirmed cases (incidence rate: 0.10 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 23 male cases (63.9%) and 13 female cases (36.1%) with male to female ratio of 1.8:1.0.

(2) By age group

There were 18 cases in 1-4 year age group, followed by 12 cases in 0-1 years age group, and 6 case in 5-14 years age group.

Of the 12 cases in 0-1 years age group, 8 cases were 0 month old, 4 cases were 1 months old.

(3) By month

In addition to March did not have confirmed cases, the other months had confirmed cases. 10 cases in May, 6 cases in July, 5 cases in June, 3 cases each in February, August and October, 2 cases in December, and 1 case each in January, April, September and November.

(4) By residential region

New Taipei City had 10 cases reported, followed by 6 cases in Taichung City, 4 cases in Taoyuan City, 3 cases each in Kaohsiung City and Hualien County, 2 cases each in Keelung City, Changhua County and Tainan City, and 1 case each in Taipei City, Yilan County, Miaoli County and Taitung County. The other cities and counties did not have confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (0.91), followed by Keelung City (0.54) and Taitung County (0.46).

(5) Imported cases and countries of infection

There were no imported cases of enteroviruses infection with severe complications in 2018.

(6) Pathogen identification

Assay with enzyme-linked immunosorbent assays (ELISA) of IgM, virus culture, and RT-PCR were adopted for testing. Echovirus 11 was the main virus isolated in 12 cases. There were 24 cases found to be infected with other types, including 7 cases of Enterovirus 71 and 1 case involving

Enterovirus 71 in combination with other type of enterovirus (Enterovirus 71 combined with Coxsackievirus A16), 3 cases of Coxsackievirus A10, 2 cases each of Coxsackievirus A16, Coxsackievirus A4, Coxsackievirus A9, Coxsackievirus B1 and Coxsackievirus B5, and 1 case each of Enterovirus 68, Coxsackievirus B2 and Coxsackievirus B3.

Table 27 Number of confirmed enteroviruses infection with severe complications cases by age, 2015-2018

	2015		2016		2017		2018	
	No. of cases	(%)	No. of cases	(%)	No. of cases	(%)	No. of cases	(%)
>=0, <7m	6	(100.0)	3	(9.1)	2	(8.3)	12	(33.3)
>=7m, <1yr	-	(-)	2	(6.1)	1	(4.2)	-	(-)
>=1, <4 yrs	-	(-)	22	(66.7)	6	(25.0)	14	(38.9)
>=4, <7 yrs	-	(-)	6	(18.2)	10	(41.7)	7	(19.4)
>=7, <16 yrs	-	(-)	-	(-)	5	(21)	3	(8.3)
>=16 yrs	-	(-)	-	(-)	-	(-)	-	(-)
Unknown	-	(-)	-	(-)	-	(-)	-	(-)
Total	6	(100.0)	33	(100.0)	24	(100.0)	36	(100.0)

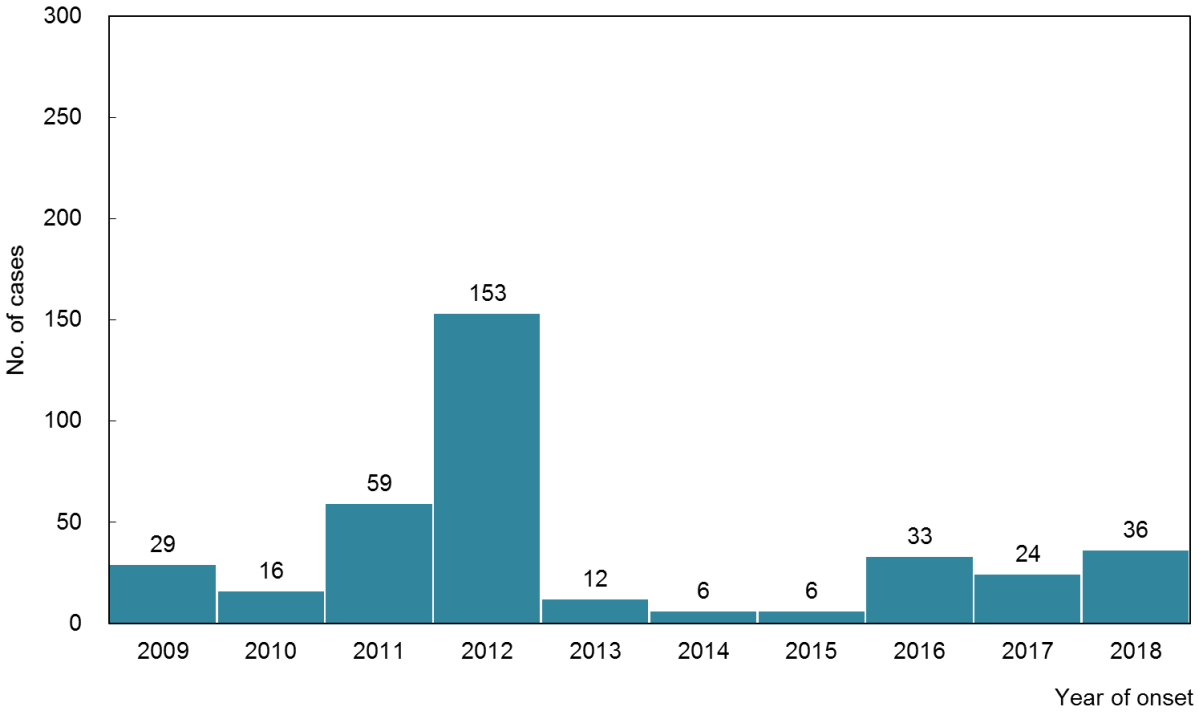

Figure 57 Number of confirmed enteroviruses infection with severe complications cases, 2009-2018

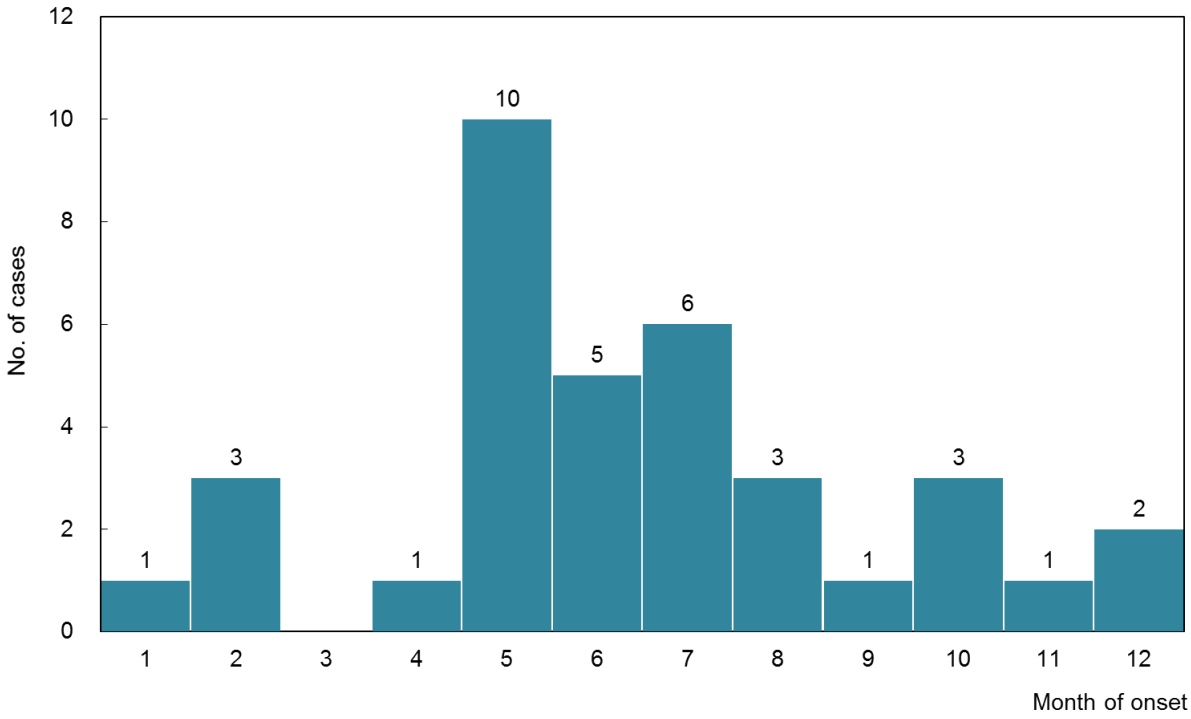

Figure 58 Number of confirmed enteroviruses infection with severe complications cases, 2018

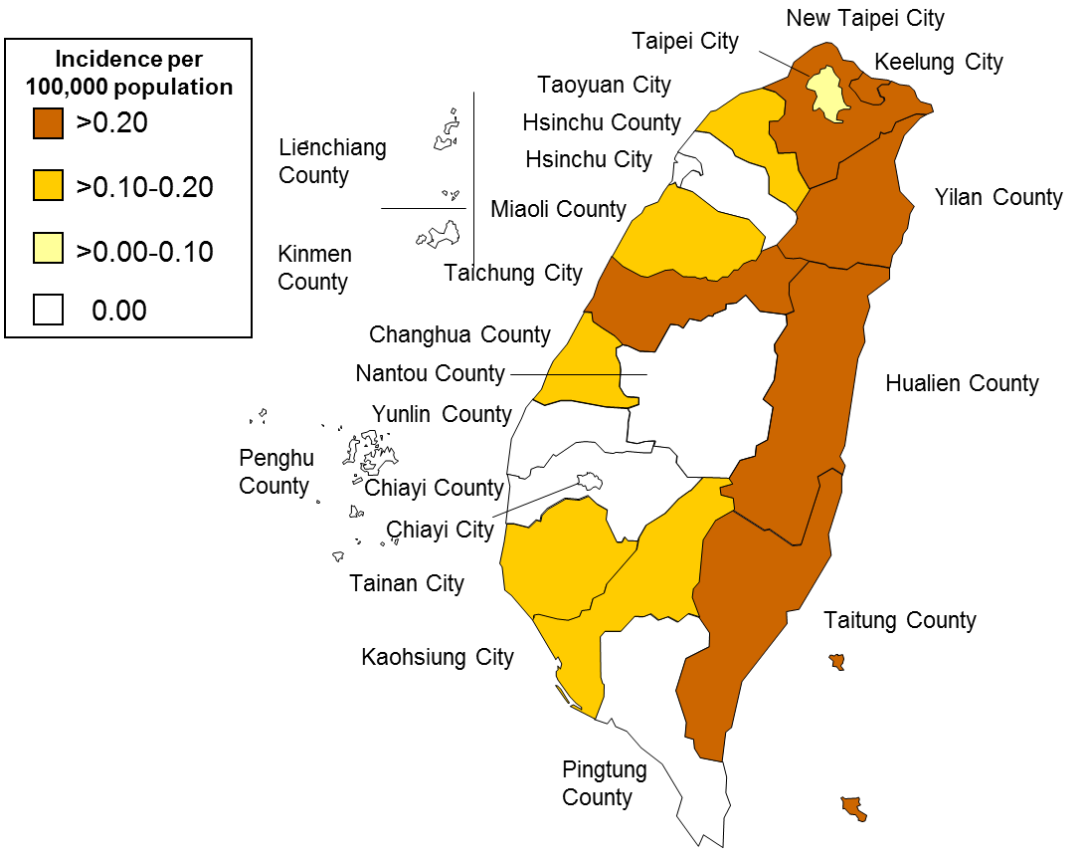

Figure 59 Geographical distribution by incidence of confirmed enteroviruses infection with severe complications cases, 2018

Malaria

In 2018, 7 confirmed cases of malaria (incidence rate: 0.03 per 100,000 population) were reported, which represented same as 7 confirmed cases (incidence rate: 0.03 per 100,000 population) in 2017. All cases in 2018 were imported. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 5 male cases (71.4%) and 2 female case (28.6%) with male to female ratio of 2.5:1.0.

(2) By age group

The cases occurred mostly in 15-24 years age groups with 4 cases reported, followed by 25-39, 40-64 and 65 years and over age group each with 1 case.

(3) By month

There were 3 cases in October, and 1 case each in June, August, September and December.

(4) By residential region

Taipei City, New Taipei City and Kaohsiung City each had 2 cases reported, followed by 1 case in Taichung City. The other cities and counties did not have confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taipei City and Kaohsiung City (0.07 respectively), followed by New Taipei City (0.05) and Taichung City (0.04).

(5) Imported cases and countries of infection

In the 7 imported cases, 1 case (14.3% respectively) each from Asia and Oceania, specifically from India and Solomon Islands; 5 cases (71.4%) were from Africa, specifically 3 cases from Uganda, and 1 case each from Ethiopia and Kenya.

(6) Types of protozoan parasites

By the types of protozoan parasites, there were 3 cases of *Plasmodium falciparum* infection, 2 cases of *Plasmodium vivax*, 1 case of *Plasmodium malariae*, and 1 case co-infected with *Plasmodium* parasites.

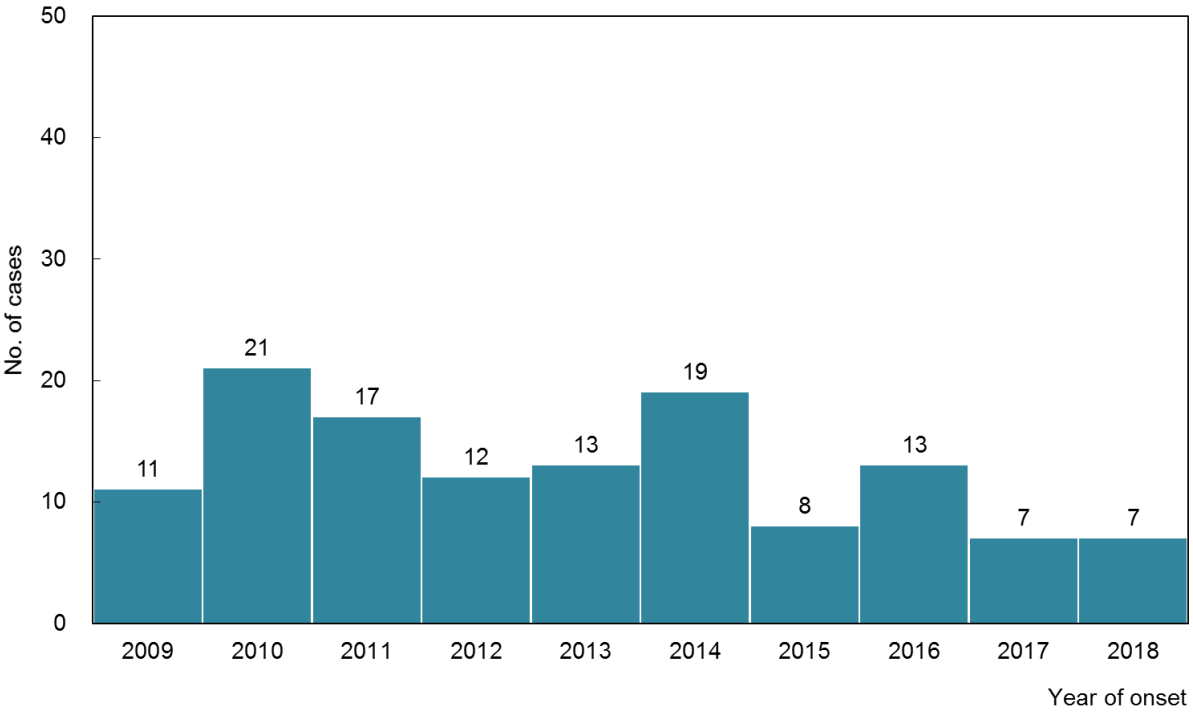

Figure 60 Number of confirmed imported malaria cases, 2009-2018

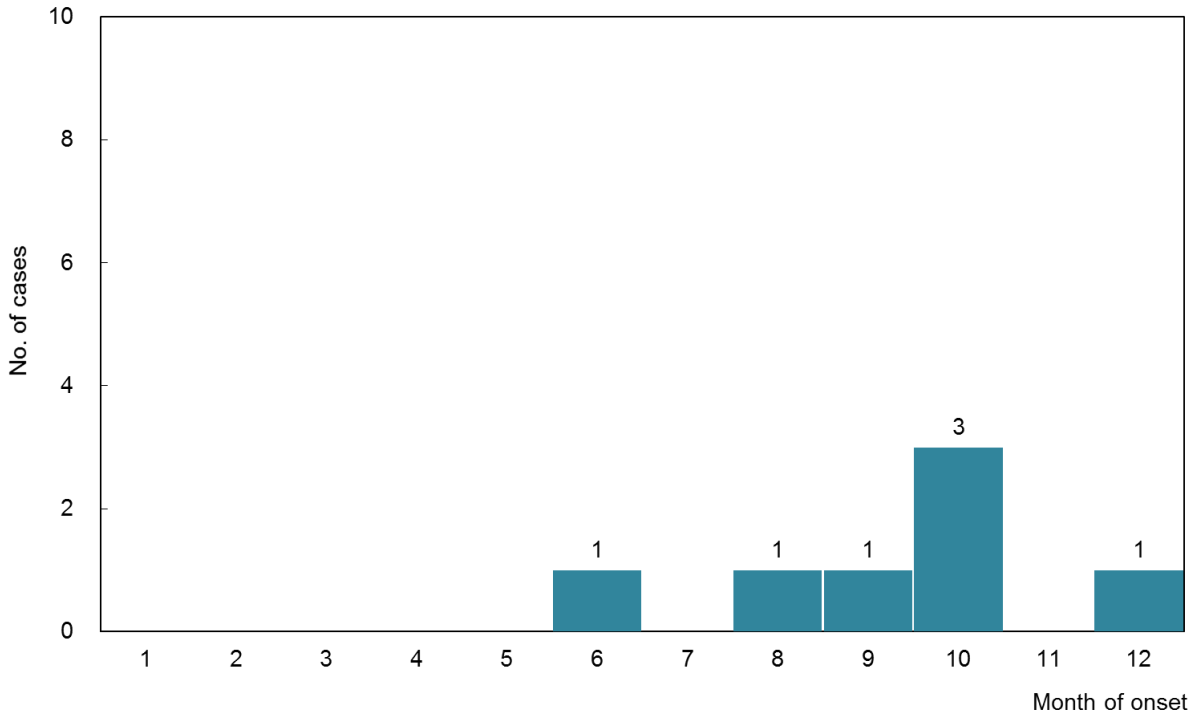

Figure 61 Number of confirmed imported malaria cases, 2018

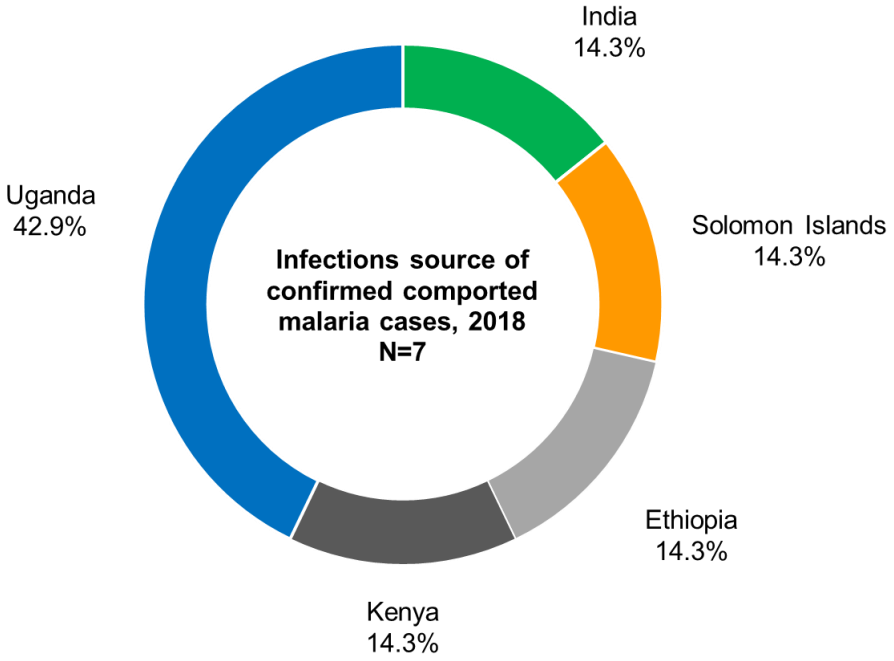

Figure 62 Infections source of confirmed imported malaria cases, 2018

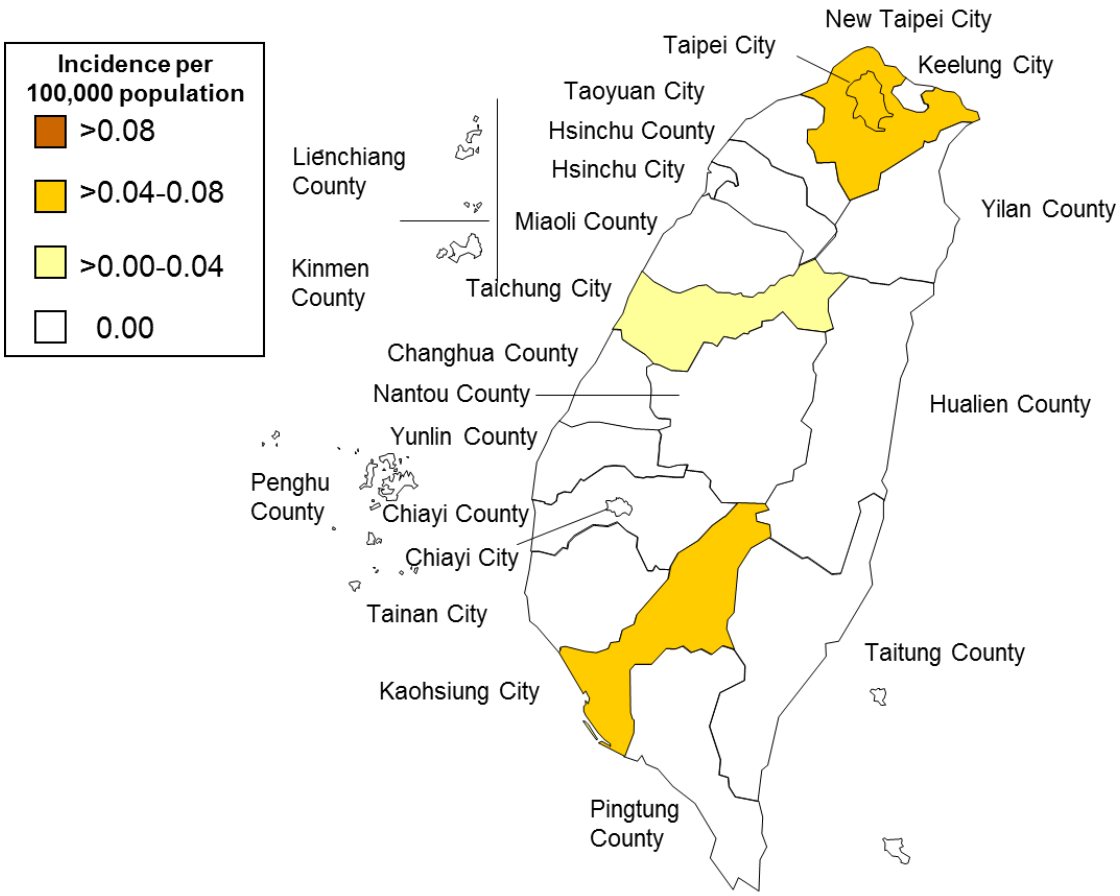

Figure 63 Geographical distribution by incidence of confirmed imported malaria cases, 2018

Shigellosis

In 2018, 172 confirmed cases of shigellosis (incidence rate: 0.73 per 100,000 population) were reported, including 59 imported cases, which represented a increase compared to 162 confirmed cases (incidence rate: 0.69 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

In the 59 imported cases, there were 11 male cases (18.6%) and 48 female cases (81.4%) with male to female ratio of 0.2:1.0.

In the 113 indigenous cases, there were 100 male cases (88.5%) and 13 female cases (11.5%) with male to female ratio of 7.7:1.0.

(2) By age group

In the 59 imported cases, there were 35 cases in 25-39 years age group, 16 cases in 15-24 years age group, 7 cases in 40-64 years age group, and 1 case in 65 years and over age group.

In the 113 indigenous cases, there were 69 cases in 25-39 years age group, 24 cases in 40-64 years age group, 16 cases in 15-24 years age group, 4 cases in 65 years and over age group.

(3) By month

In the 59 imported cases, confirmed cases were reported in each month of the year where December had the highest number of incidents with 10 confirmed cases reported, followed by 8 cases in August, 7 cases in July, 6 cases in May, 5 cases each in March, April and September, 4 cases in October, 3 cases in June, 2 cases each in January, February and November.

In the 113 indigenous cases, confirmed cases were reported in each month of the year where October had the highest number of incidents with 14 confirmed cases reported, followed by 13 cases in September, 11 cases each in May, June, and November, 10 cases each in January and March, 8 cases in February, 7 cases each in April and August, 6 cases in December, and 5 cases in July.

(4) By residential region

In the 59 imported cases, Taichung City had the highest number of incidents with 13 confirmed cases reported, followed by Changhua County with 11 cases, New Taipei City with 9 cases, Taipei City with 6 cases, Taoyuan City and Hsinchu City each with 4 cases, Nantou County with 3 cases, Miaoli County, Chiayi County and Tainan City each with 2 cases, and Yilan County, Hualien County and Hsinchu County each with 1 case. There were no cases reported in other cities and counties.

In the 113 indigenous cases, New Taipei City had the highest number of incidents with 31 confirmed cases reported, followed by Taipei City with 27 cases, Taoyuan City with 22 cases, Taichung City and Tainan City each with 8 cases, Hsinchu City with 6 cases, Nantou County with 4 cases, Kaohsiung City and Hualien County each with 2 cases, Yilan County, Yunlin County and Hsinchu County each with 1 case.There were no cases reported in other cities and counties.

In all, the incidence rate of confirmed cases per 100,000 population was the highest in Hsinchu City (2.26). Nantou County ranked in the second place with incidence rate of 1.40, and Taipei City ranked in the third place with 1.23.

(5) Imported cases and countries of infection

In the 59 imported cases, 48 cases were from Indonesia, 2 cases each from Cambodia, India, Myanmar and Malaysia, and 1 case each from Hong Kong, Macao and Philippines.

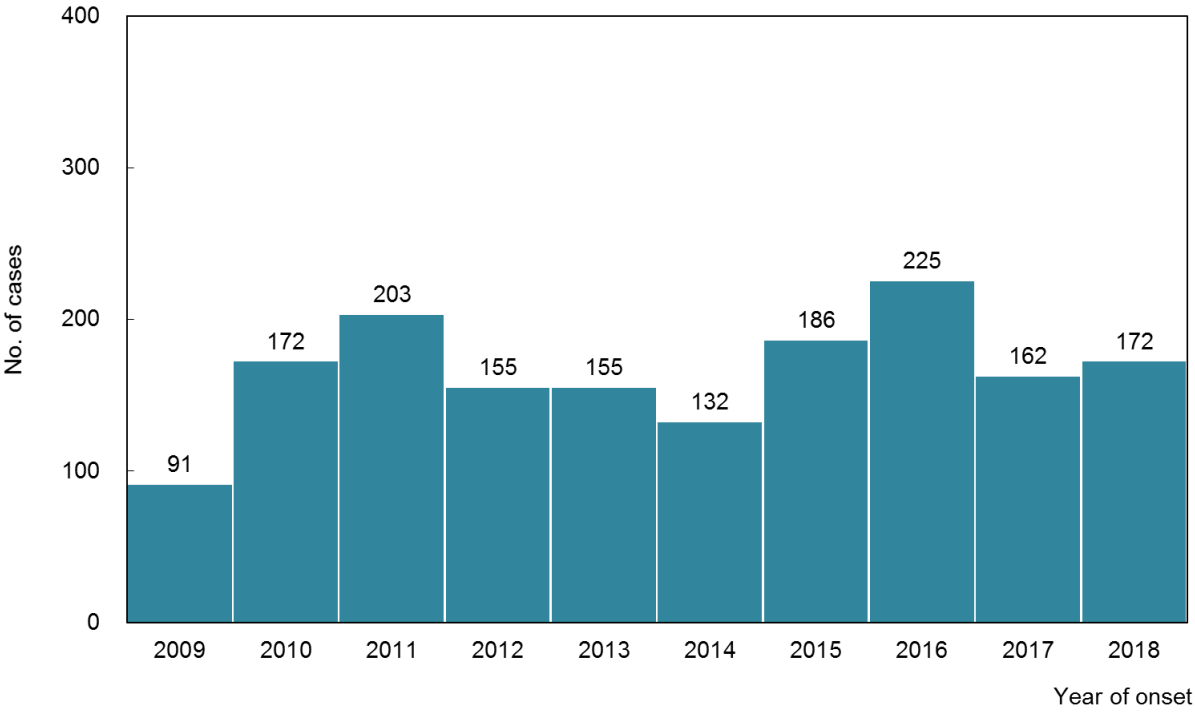

Figure 64 Number of confirmed shigellosis cases, 2009-2018

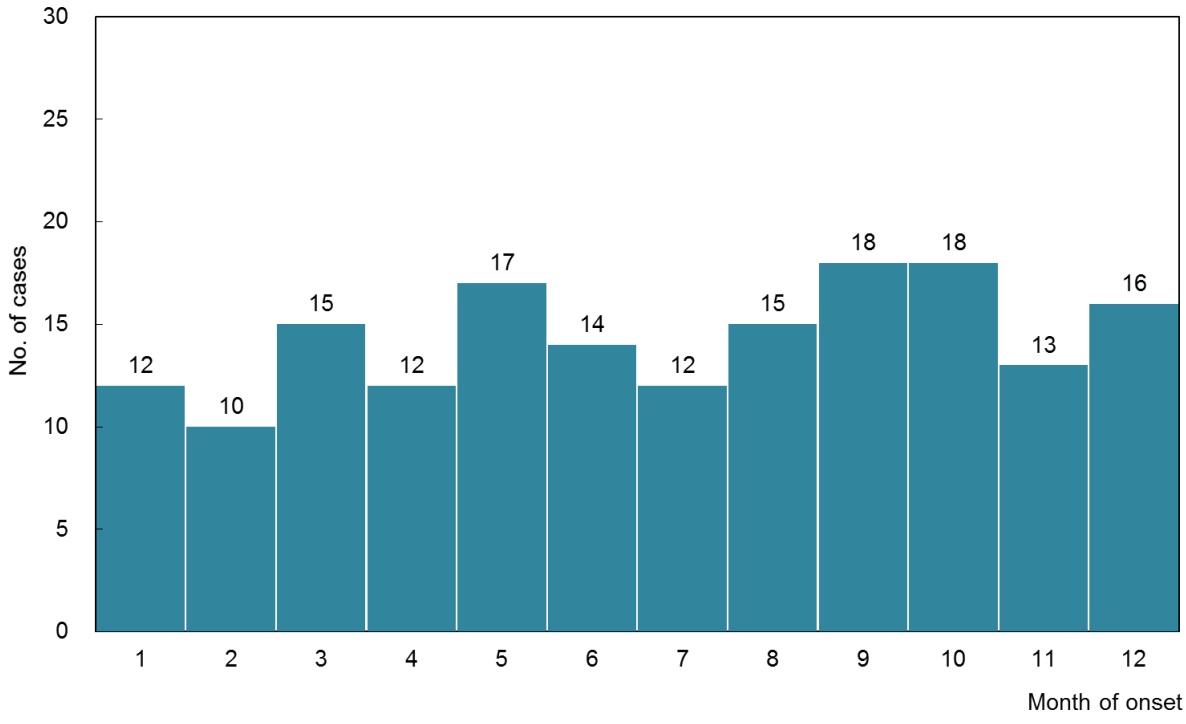

Figure 65 Number of confirmed shigellosis cases, 2018

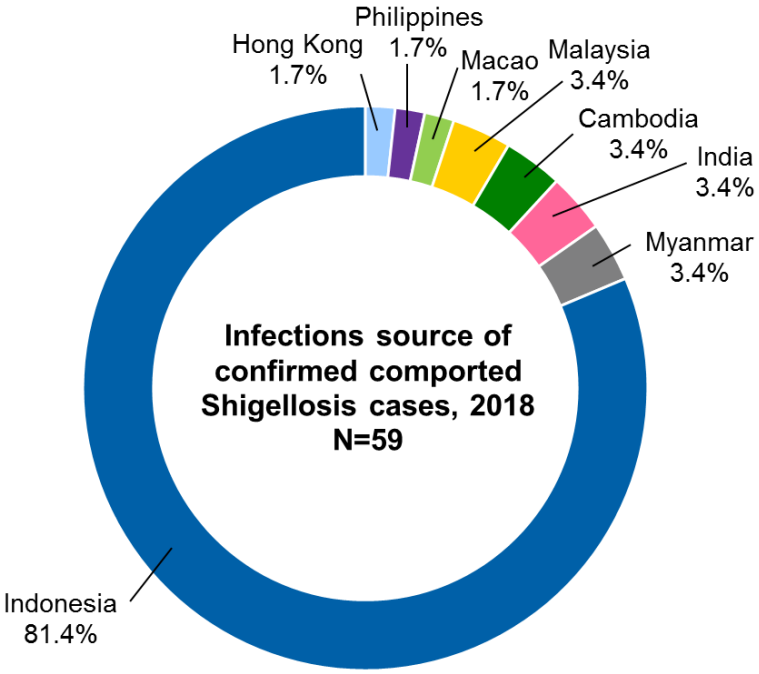

Figure 66 Infections source of confirmed imported shigellosis cases, 2018

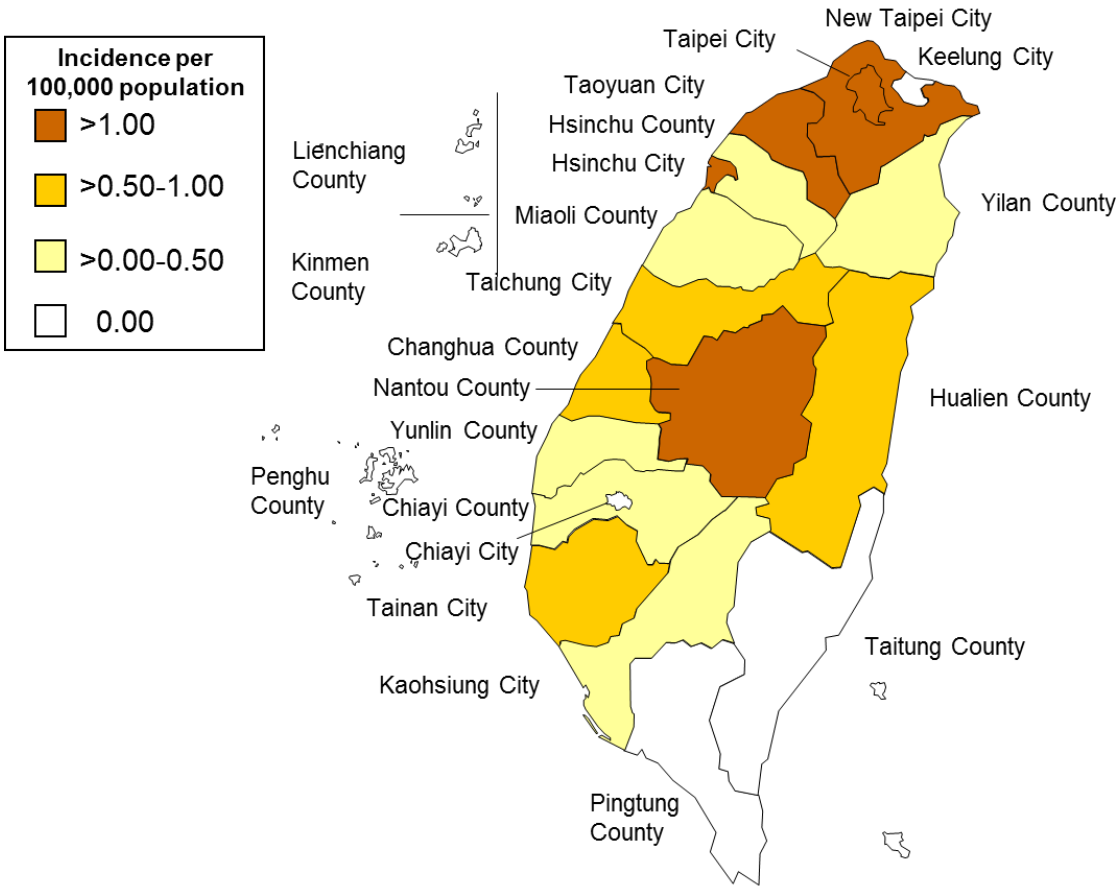

Figure 67 Geographical distribution by incidence of confirmed shigellosis cases, 2018

Severe Complicated Influenza

In 2018, 1,196 confirmed cases of severe complicated influenza (incidence rate: 5.07 per 100,000 population) were reported, which represented a decrease compared to 1,359 confirmed cases (incidence rate: 5.77 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 664 male cases (55.5%) and 532 female cases (44.5%) with male to female ratio of 1.2:1.0.

(2) By age group

There were 717 cases in 65 years and over age group, 346 cases in 40-64 years age group, 50 cases in 25-39 years age group, 34 cases in 5-14 years age group, 25 cases in 1-4 years age group, 13 cases in 15-24 year age group, and 11 cases in 0-1 year age group.

(3) By month

The confirmed cases were concentrated in January through February with more than 200 cases reported in each of the months. February had the highest number of incidents with 246 cases reported, followed by January with 217 cases, March with 121 cases, July with 109 cases, August with 99 cases, December with 97 cases, September with 84 cases, October with 51 cases, June and November each with 46 cases, and April and May each with 40 cases.

(4) By residential region

Except Lienchiang County, all cities and counties had confirmed cases of severe complicated influenza reported in 2018. Tainan City had the highest number of incidents with 159 confirmed cases reported, followed by Taipei City with 152 cases, Kaohsiung City with 145 cases, New Taipei City with 136 cases, Taoyuan City with 81 cases, Taichung City with 78 cases, Changhua County with 77 cases, Pingtung County with 73 cases, Yilan County with 39 cases, Nantou County with 36 cases, Taitung County with 34 cases, Miaoli County and Yunlin County each with 32 cases, whereas the other cities and counties all had less than 30 cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taitung County (15.51), followed by Pingtung County (8.82) and Yilan County (8.55).

(5) Imported cases and countries of infection

In the 5 imported cases, there were 2 cases from China, and 1 case each from Japan, Korea and Macao.

(6) By virus type

By virus type, there were 694 cases associated with influenza A viruses (397 cases of H3, 259 cases of H1, and 38 cases were untyped), 501 cases associated with influenza B viruses, 1 case co-infected with both A and B viruses.

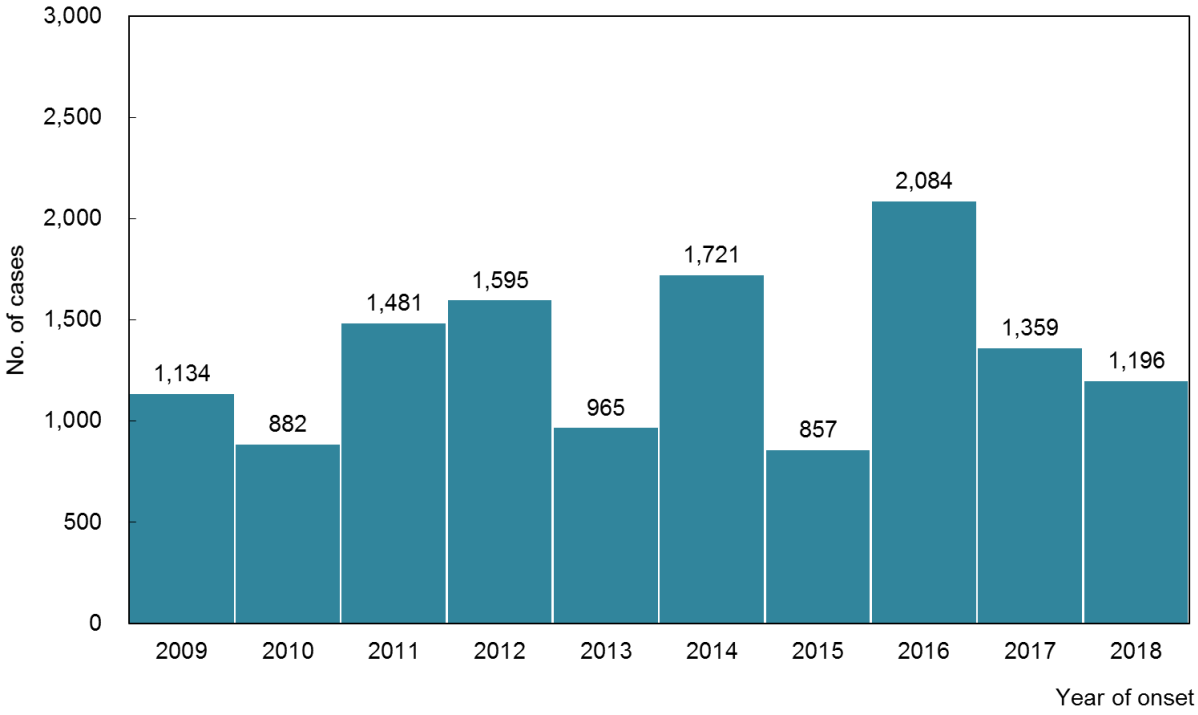

Figure 68 Number of confirmed severe complicated influenza cases, 2009-2018

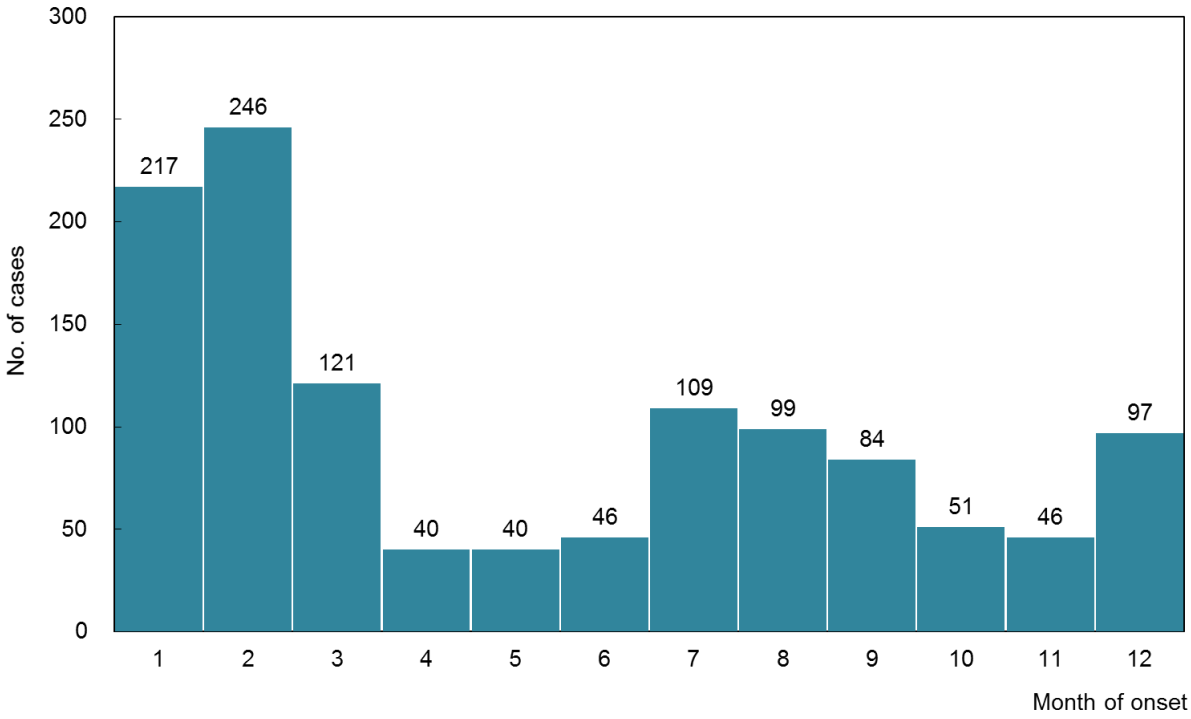

Figure 69 Number of confirmed severe complicated influenza cases, 2018

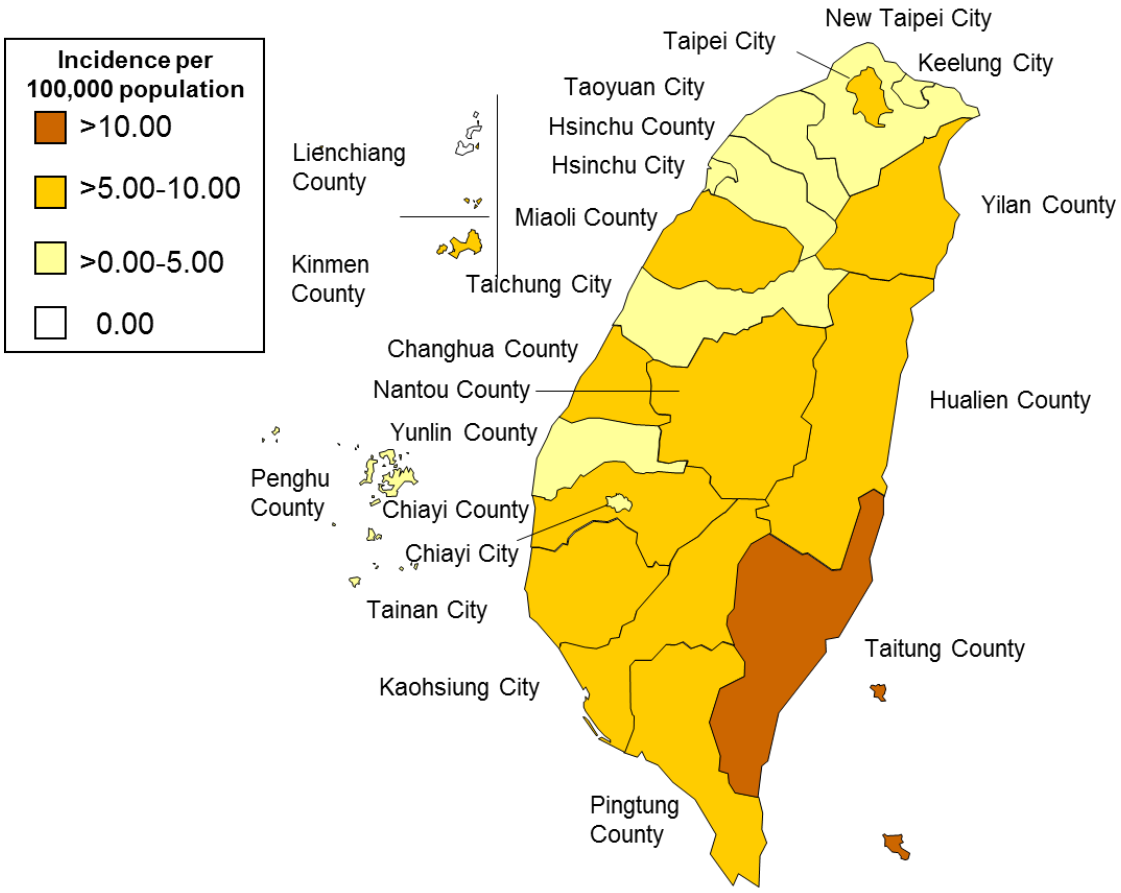

Figure 70 Geographical distributions by incidence of confirmed severe complicated influenza cases, 2018

Government-funded influenza vaccination coverage rate

In the government-funded influenza vaccination program for influenza season 2017-2018, as recommended by Influenza Control and Prevention Division and the Immunization Division under the Ministry of Health and Welfare Infectious Disease Control and Prevention Advisory Committee during the Influenza Control and Prevention Advisory Meeting, trivalent inactivated influenza vaccines (TIV) were used in eleven high-risk groups, including the elders aged more than 65 years, adults aged 50 to 64 years, pre-school children aged 6 months through 6 years, students aged 7 years through 18 years, residents and staff in nursing homes and other long-term care facilities, healthcare and public health personnel, poultry or livestock farmers and animal health inspectors, people with catastrophic illness and 19-49 years of age who have underlying medical conditions, pregnant women and parents of infants less than 6 months of age, and kindergarten caretakers and child-care professionals. The influenza vaccine uptake rates obtained via the Influenza Vaccine Information System (IVIS) in this influenza season, were described below:

(1) Coverage rates among high-risk groups (See Table 28 for more details)

The vaccination doses and coverage rates for each group were as follows: the elders aged more than 65 years: 1,525,449 people/47.6%; adults aged 50 to 64 years: 1,080,938 people/20.8%; pre-school children aged 6 months through 6 years vaccinated at least one dose: 573,323 people/49.5%; students aged 7 years through 18 years: 1,938,603 people/76.4%; staff in nursing homes and other long-term care facilities: 37,625 people/98.9%; people with catastrophic illness: 52,600 people; healthcare workers: 223,765 people/74.3%; public health personnel: 20,884 people/ 80.3%; poultry or livestock farmers and animal health inspectors: 9,245 people/99.9%; 19-49 years of age who have underlying medical conditions: 169,231 people; pregnant women and parents of infants less than 6 months of age: 112,853 people; kindergarten caretakers and child-care professionals: 18,253 people/34.7%.

(2) Utilization rates by months (See Figures 71 and 72 for more details)

The government-funded influenza vaccination program started from October 1, 2017. Most of the recipients received the vaccines during the period of October 1 to November 30. Up to 93% of 0.5mL influenza vaccines were administered by end of November. The vaccine utilization rate then increased

slowly after November, and by the end of December, the vaccine utilization rate reached 98%. After the end of February 2018, the cumulative utilization rate was kept at 99.6%.

As for 0.25mL influenza vaccines, the percentage of the vaccines administered reached 87% by the end of November. The percentage then increased slowly, and reached 98% by end of December. After the end of February 2018, the cumulative utilization rate was kept at 99.9%.

(3) Coverage by cities/counties (See Table 29 for more details)

The average coverage rate of government-funded influenza vaccine was 43.9%. Central Taiwan had the highest coverage rate of 46.6%, followed by 46.5% and 45.2% in both Northern Taiwan and Eastern Taiwan. The coverage rate in Chiayi City was 56.1%, which was the highest among all cities and counties. In Changhua County, Lienchiang County, Hsinchu City, Taoyuan City, Yilan County, Hualien County, Taichung City, Nantou County, Chiayi County, Kaohsiung City, Yunlin County, Miaoli County and Taitung County the coverage rates were higher than the average rate.

Table 28 Government-funded influenza vaccination coverage rates among high-risk groups, 2017-2018

High-risk groups	No. of recipients vaccinated	Coverage rates
Elders aged more than 65 years*	1,525,449	47.6%
Adults aged 50 to 64 years	1,080,938	20.8%
Pre-school children aged 6 months through 6 years vaccinated at least one dose	573,323	49.5%
Students aged 7 years through 18 years	1,938,603	76.4%
People with catastrophic illness	52,600	-
Staff in nursing homes and other long-term care facilities	37,625	98.9%
Healthcare workers	318,393	80.4%
Registered health care workers	223,765	74.3%
Others workers in hospitals	94,628	93.0%
Public health personnel	20,884	80.3%
Infection control workers	10,349	99.9%
Emergency medical technicians	6,290	73.7%
Airborne service corps	150	60%
Coast guards	2,069	90.6%
Border control workers	2,026	34.4%
Poultry or livestock farmers and animal health inspectors	9,245	99.9%
19-49 years of age who have underlying medical conditions	169,231	-
Pregnant women and parents of infants less than 6 months of age	112,853	-
Kindergarten caretakers and child-care professionals	18,253	34.7%

*including residents in long term care facilities

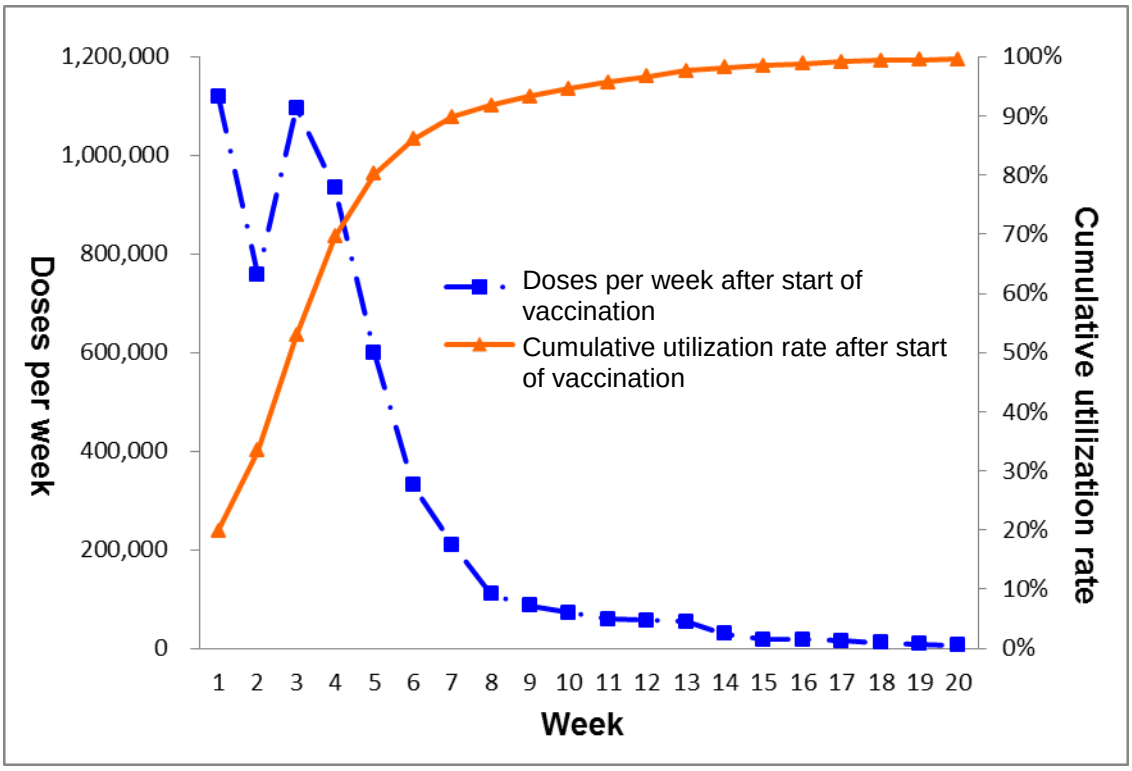

Figure 71 Immunization progress with 0.5ml influenza vaccine shots

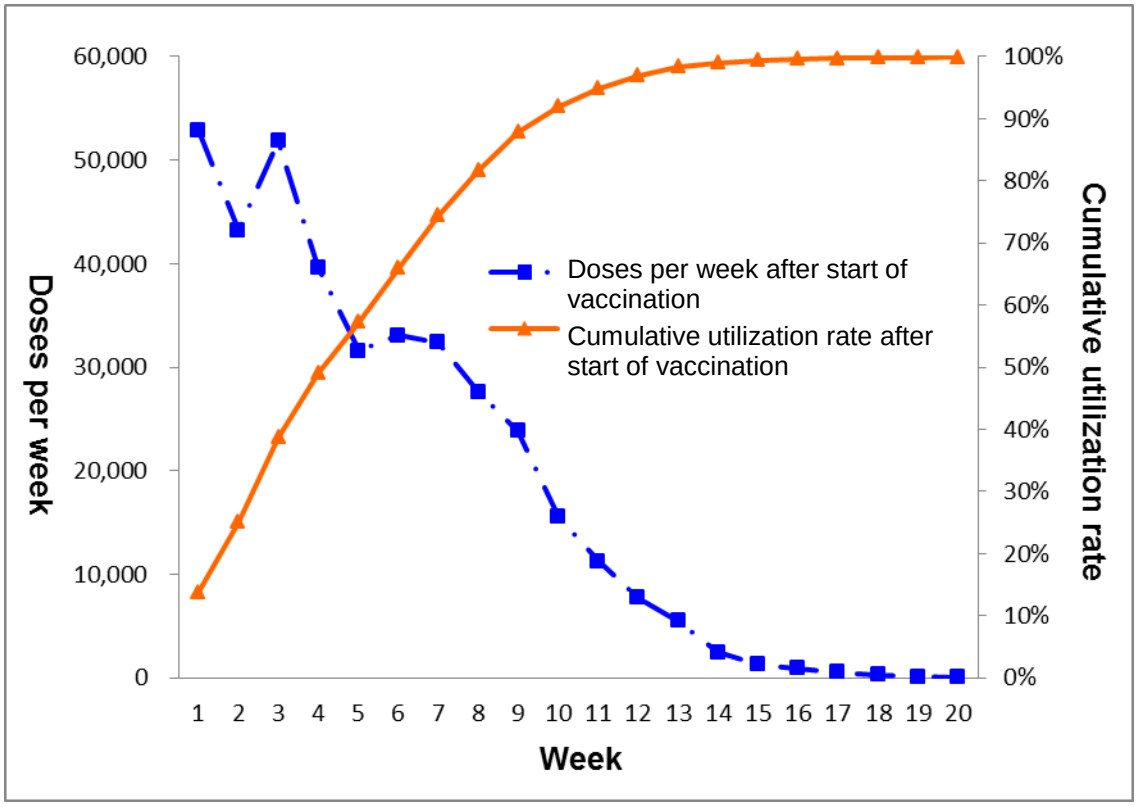

Figure 72 Immunization progress with 0.25ml influenza vaccine shots

Table 29 Government-funded influenza vaccination coverage rates by cities/counties, 2017-2018

Locality	Target population	Vaccinated population	Coverage rate
Taipei City	1,534,669	619,531	40.37%
New Taipei City	2,049,087	829,225	40.47%
Keelung City	203,998	89,358	43.80%
Yilan County	251,596	118,601	47.14%
Kinmen County	67,560	13,008	19.25%
Lienchiang County	6,737	3,261	48.40%
Taoyuan City	1,104,645	524,803	47.51%
Hsinchu City	232,693	112,448	48.32%
Hsinchu County	278,781	122,189	43.83%
Miaoli County	301,997	132,788	43.97%
Taichung City	1,445,372	662,193	45.81%
Changhua County	690,223	335,253	48.57%
Nantou County	281,160	128,146	45.58%
Yunlin County	378,103	166,633	44.07%
Chiayi City	152,780	85,717	56.10%
Chiayi County	280,667	126,632	45.12%
Tainan City	1,025,522	445,477	43.44%
Kaohsiung City	1,488,649	658,106	44.21%
Pingtung County	450,731	187,210	41.53%
Penghu County	53,443	22,852	42.76%
Hualien County	186,268	85,798	46.06%
Taitung County	121,717	53,484	43.94%
Total	12,586,398	5,522,713	43.88%

Note: 1. Data source: Influenza Vaccine Information System (IVIS)

2. The coverage rates were calculated by reports from the cities and counties.

3. People who were not eligible for the government-funded influenza vaccination program and the 2nd dose for children under 6 years old were not calculated.

4. Patients with catastrophic illness, people with medical conditions, pregnant women and parents of infants less than 6 months of age and others were not calculated because the target population could not be estimated by cities/counties.

Syphilis

In 2018, 9,808 confirmed cases of syphilis (incidence rate: 41.59 per 100,000 population) were reported, which represented an decrease compared to 9,835 confirmed cases (incidence rate: 41.75 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 8,071 male cases (82.3%) and 1,737 female cases (17.7%) with male to female ratio of 4.6:1.0.

(2) By age group (by age of diagnosis)

The cases occurred mostly in 25-39 years age group with 4,367 cases (44.5%) reported, followed by 40-64 years age group with 2,108 cases (21.5%), 65 years and over age group with 2,030 cases (20.7%), 15-24 years age group with 1,301 cases (13.3), and 5-14 years age group with 2 cases (0.1%).

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for syphilis in 2018, and there were confirmed cases reported in each month of the year.

(4) By residential region

Except Lienchiang County, all cities and counties had confirmed cases of syphilis reported in 2018. New Taipei City had the highest number of incidents with 2,026 cases (20.7%) reported, followed by Taipei City with 1,421 cases (14.5%), Taoyuan City with 1,119 cases (11.4%), Taichung City with 1,109 cases (11.3%), Kaohsiung City with 1,100 cases (11.2%), Tainan City with 606 cases (6.2%), Pingtung County with 379 cases (3.9%), Changhua County with 348 cases (3.5%), Yilan County with 221 cases (2.3%), Keelung City with 191 cases (1.9%), Yunlin County with 183 cases (1.9%), Hsinchu County with 171 cases (1.7%), Nantou County with 156 cases (1.6%), Hsinchu City with 155 cases (1.6%), Hualien County with 146 cases (1.5%), Chiayi County with 136 cases (1.4%), Miaoli County with 105 cases (1.1%), and Taitung County with 100 cases (1.0%). The other cities and counties had less than 100 confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taipei City (53.10), followed by Keelung City (51.51), and New Taipei City and Taoyuan City (50.76 respectively).

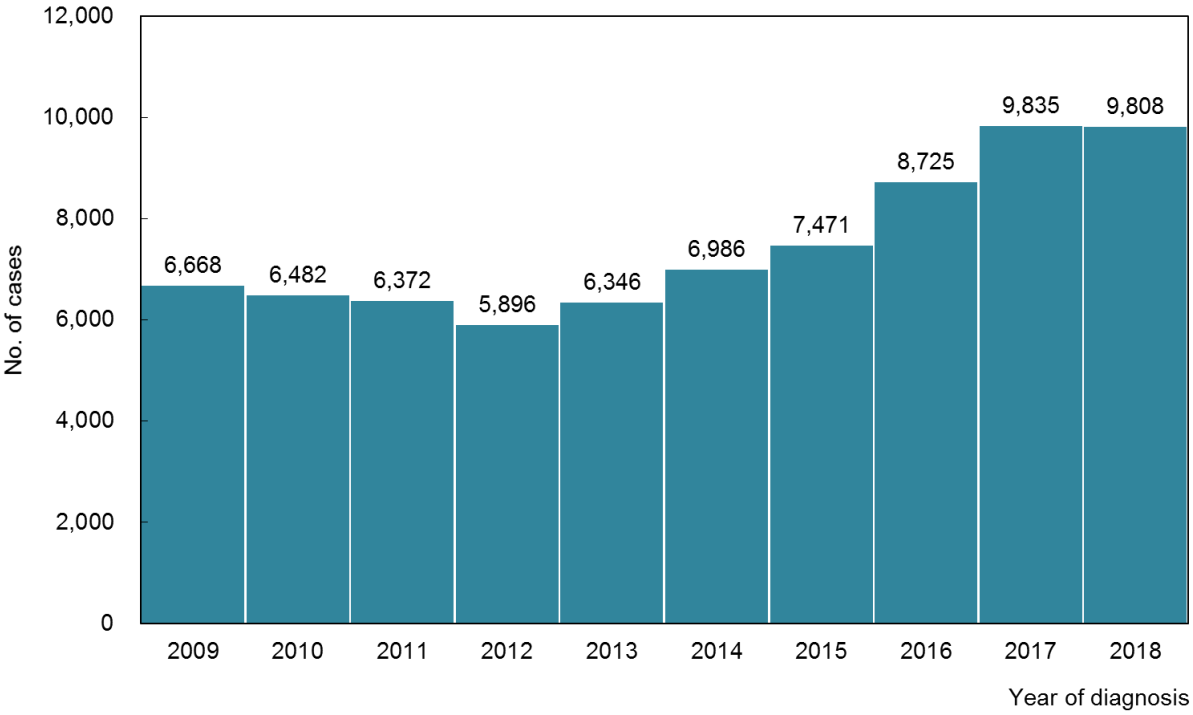

Figure 73 Number of confirmed syphilis cases, 2009-2018

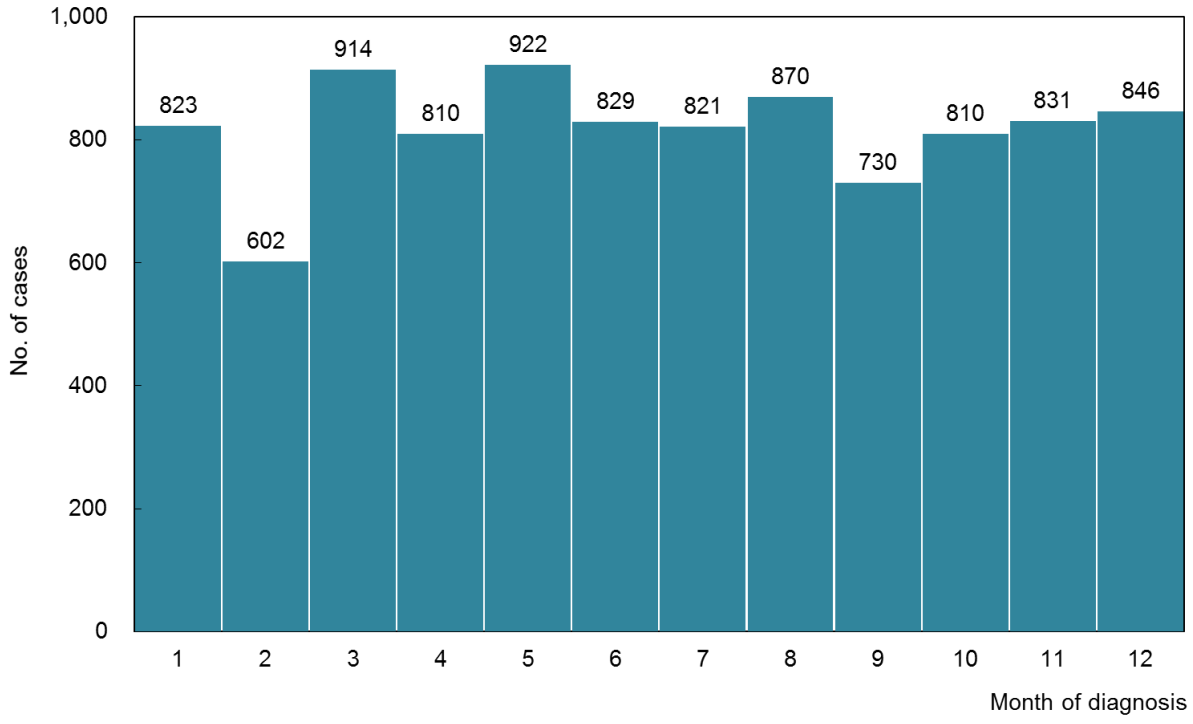

Figure 74 Number of confirmed syphilis cases, 2018

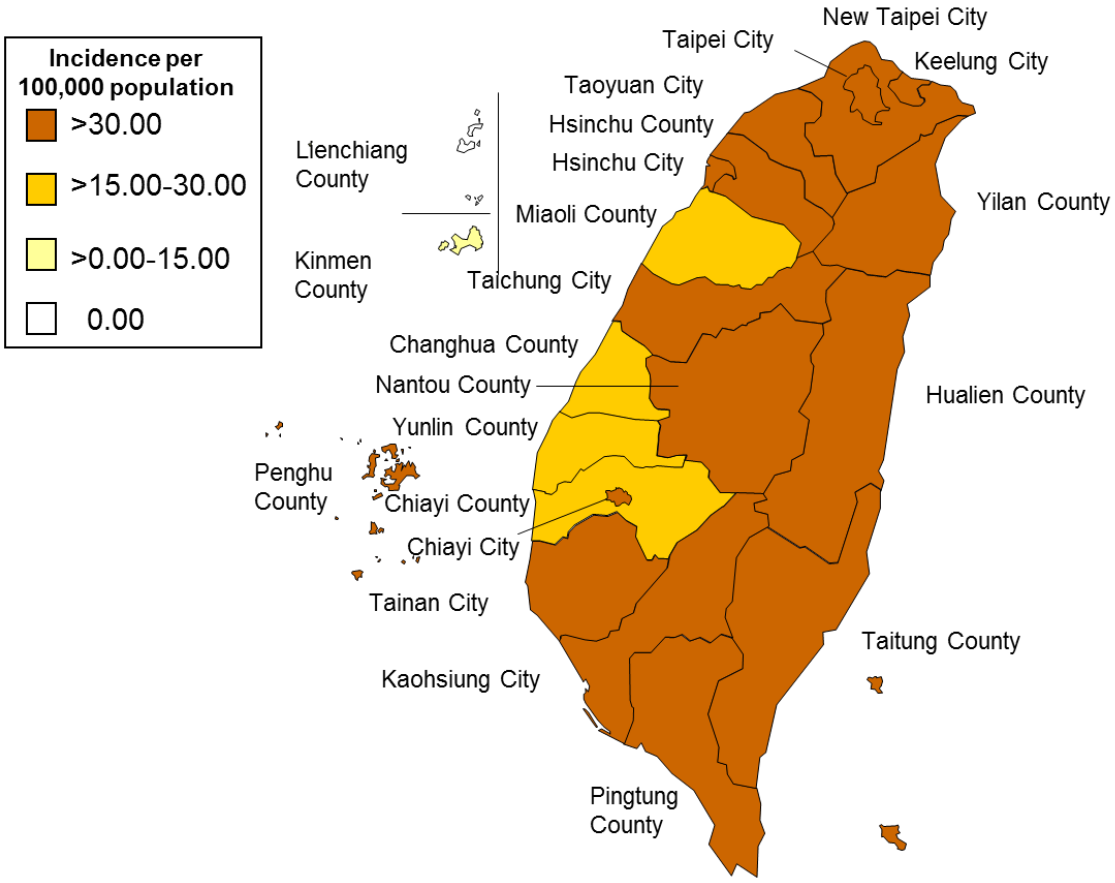

Figure 75 Geographical distribution by incidence of confirmed syphilis cases, 2018

Gonorrhea

In 2018, 4,209 confirmed cases of gonorrhea (incidence rate: 17.85 per 100,000 population) were reported, which represented an decrease compared to 4,601 confirmed cases (incidence rate: 19.53 per 100,000 population) in 2017. The data of confirmed cases in 2018 are analyzed as follows:

(1) By gender

There were 3,906 male cases (92.8%) and 303 female cases (7.2%) with male to female ratio of 12.9:1.0.

(2) By age group (by age of diagnosis)

The cases occurred mostly in 25-39 years age group with 2,273 cases (54.0%) reported, followed by 15-24 years age group with 1,265 cases (30.1%), 40-64 years age group with 617 cases (14.7%), 65 years and over age group with 42 cases (1.0%), and 5-14 years age group with 12 cases (0.3%).

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for gonorrhea in 2018, and there were confirmed cases reported in each month of the year.

(4) By residential region

Except Lienchiang County, all other cities and counties had confirmed cases. New Taipei City had the highest number of incidents with 1,041 cases (24.7%) reported, followed by Taipei City with 767 cases (18.2%), Taoyuan City with 515 cases (12.2%), Kaohsiung City with 475 cases (11.3%), Taichung City with 283 cases (6.7%), Tainan City with 184 cases (4.4%), Keelung City with 174 cases (4.1%), Hsinchu County with 137 cases (3.3%), Changhua County with 87 cases (2.1%), Nantou County with 76 cases (1.8%), Pingtung County with 73 cases (1.7%), Miaoli County with 70 cases (1.7%), Hsinchu City with 65 cases (1.5%), Yunlin County and Hualien County each with 57 cases (1.4% respectively), and Taitung County with 53 cases (1.3%). The other cities and counties had less than 50 confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Keelung City (46.92), followed by Taipei City (28.66) and New Taipei City (26.08).

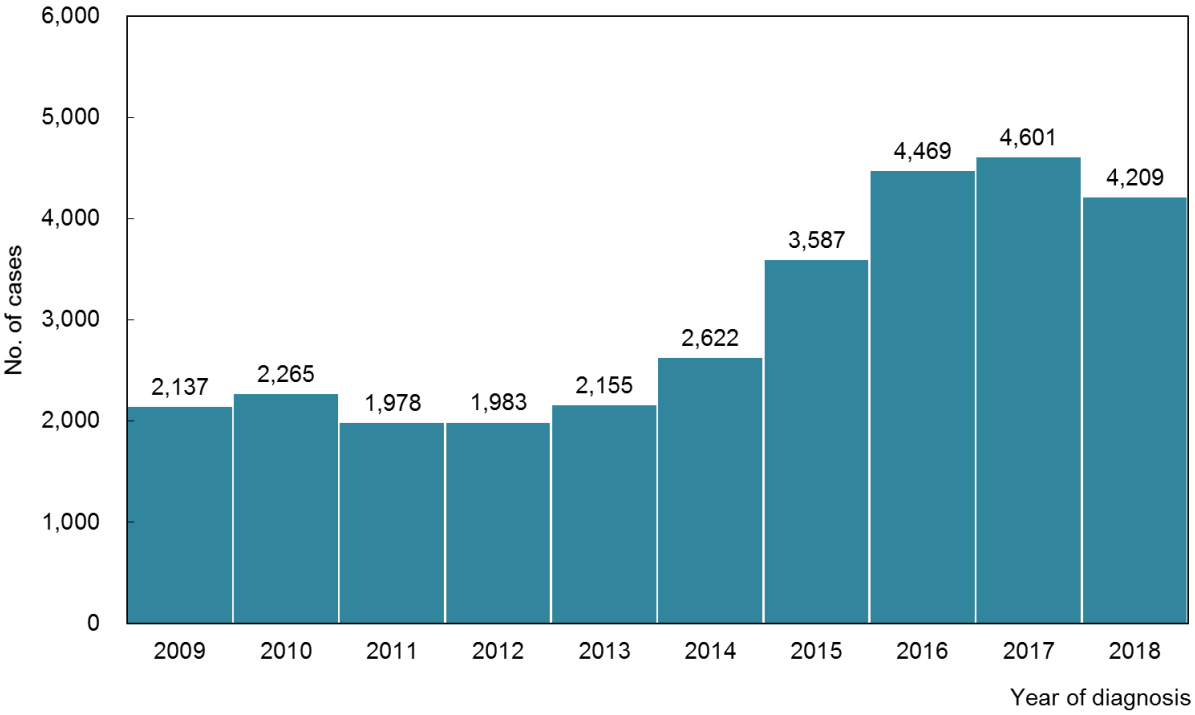

Figure 76 Number of confirmed gonorrhea cases, 2009-2018

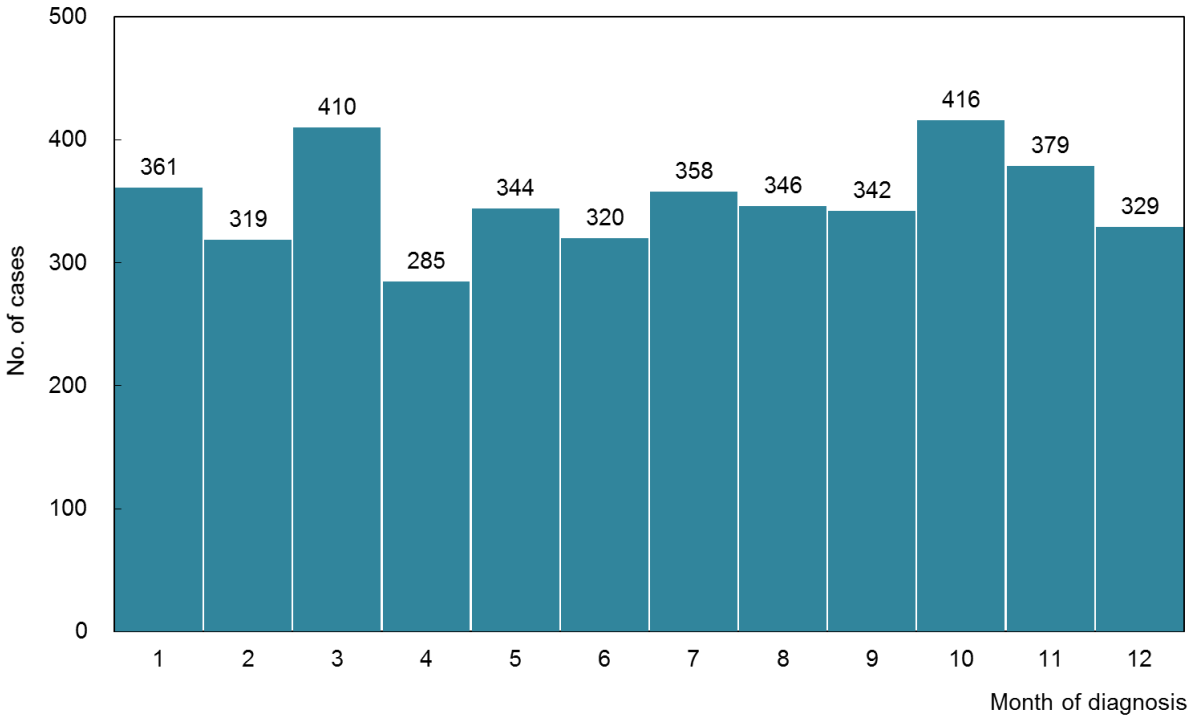

Figure 77 Number of confirmed gonorrhea cases, 2018

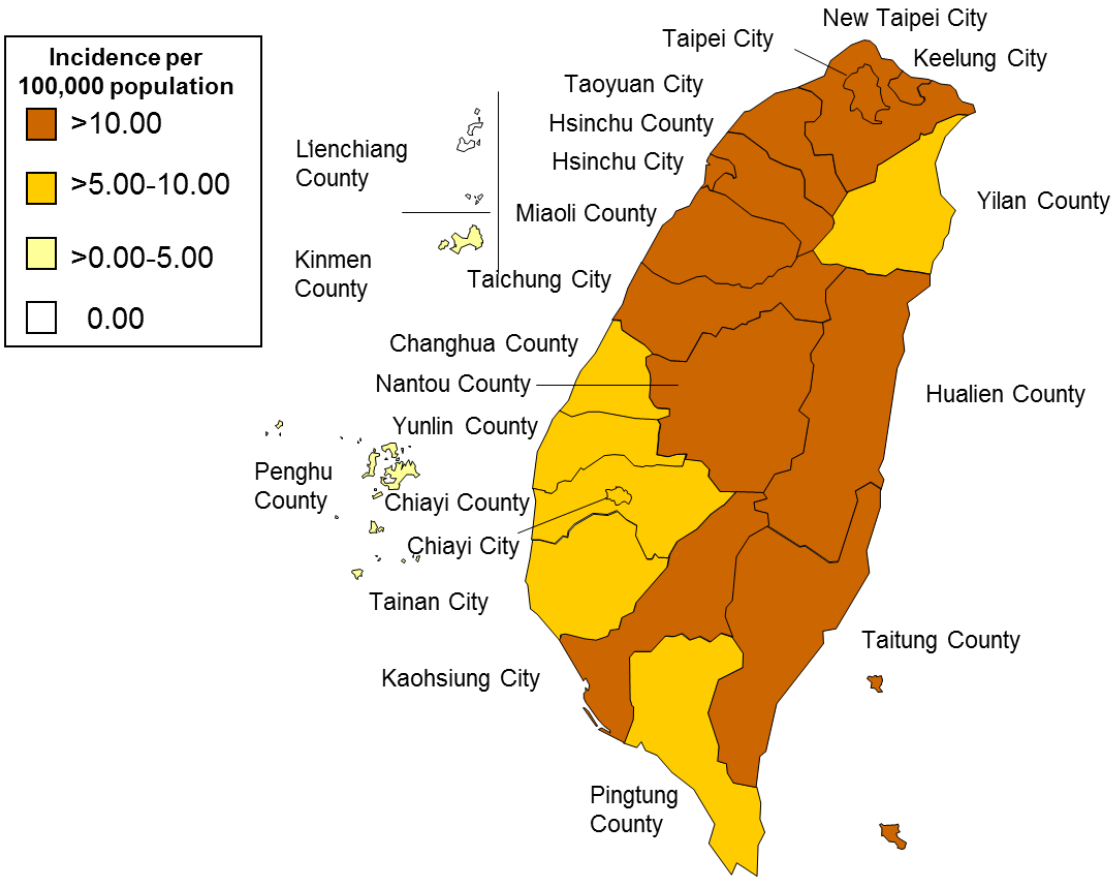

Figure 78 Geographical distribution by incidence of confirmed gonorrhea cases, 2018

HIV Infection & AIDS

From 1984 up to the end of 2018, there were 39,109 cases of human immunodeficiency virus (HIV) infection (37,917 native cases and 1,192 foreign cases) and 18,092 acquired immunodeficiency syndrome (AIDS) cases (17,902 native cases and 190 foreign cases) were reported.

In 2018, 2,064 HIV cases (1,992 native cases and 72 foreign cases) and 1,116 AIDS cases (1,091 native cases and 25 foreign cases) were diagnosed and reported. The data of native cases in 2018 are analyzed as follows (the HIV infection cases include those cases with AIDS at the time of reporting):

(1) By gender

HIV: There were 1,949 male cases (97.8%) and 43 female cases (2.2%) with male to female ratio of 45.3：1.0.

AIDS: There were 1,048 male cases (96.1%) and 43 female cases (3.9%) with male to female ratio of 24.4：1.0.

(2) By age group (by age of diagnosis)

HIV: There were 1,106 cases (55.5%) in 25-39 years age group, 510 cases (25.6%) in 15-24 years age group, and 366 cases (18.4%) in 40-64 years age group.

AIDS: There were 623 cases (57.1%) in 25-39 years age group, 332 cases (30.4%) in 40-64 years age group, and 122 cases (11.2%) in 15-24 years age group.

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for HIV infection and AIDS in 2018 and there were confirmed cases reported in each month of the year.

(4) By risk factor

HIV (total): There were 1,705 cases (85.6%) caused by male to male sexual contact, 212 cases (10.6%) caused by heterosexual contact, 44 cases (2.2%) caused by injection drug use, and 31 cases (1.6%) with unknown causes.

HIV (male): There were 1,705 cases (87.5%) caused by male to male sexual contact, 175 cases (9.0%) caused by heterosexual contact, 41 cases (2.1%) caused by injection drug use, and 28 cases (1.4%) with unknown causes.

HIV (female): The cases were mostly caused by heterosexual contact with 37 cases (86.0%), followed by injection drug use with 3 cases (7.0%) and unknown causes with 3 cases (7.0%).

AIDS (total): There were 817 cases (74.9%) involving male to male sexual contact, 142 cases (13.0%) involving heterosexual contact, 113 cases (10.4%) involving injection drug use, 1 case (<0.1%) involving vertical transmission. There were also 18 cases (1.6%) with unknown causes.

AIDS (male): There were 817 cases (78.0%) involving male to male sexual contact, 117 cases (11.2%) involving heterosexual contact, 99 cases (9.4%) involving injection drug use, and 15 cases (1.4%) with unknown causes.

AIDS (female): There were 25 cases (58.1%) involving heterosexual contact, 14 cases (32.6%) involving injection drug use, 1 case (2.3%) involving vertical transmission. There were also 3 cases (7.0%) with unknown causes.

See Tables 30 and 31 and Figures 79 and 80 for statistics of HIV infection and AIDS by risk factor.

(5) By residential region

HIV: New Taipei City had the highest number of incidents with 432 cases (21.7%) reported, followed by Taipei City with 306 cases (15.4%), Kaohsiung City with 263 cases (13.2%), Taichung City with 257 cases (12.9%), and Taoyuan City with 195 cases (9.8%). Lienchiang County did not have HIV infection cases reported in 2018.

The incidence rate of confirmed HIV cases per 100,000 population was the highest in Taipei City (11.44), followed by New Taipei City (10.82) and Hsinchu City (10.15).

AIDS: New Taipei City had the highest number of incidents with 260 cases (23.8%) reported, followed by Kaohsiung City with 145 cases (13.3%), Taipei City with 132 cases (12.1%), Taichung City with 130 cases (11.9%) and Taoyuan City with 107 cases (9.8%). Lienchiang County did not have AIDS cases reported in 2018.

The incidence rate of confirmed AIDS cases per 100,000 population was the highest in Taitung County (6.84), followed by New Taipei City (6.51) and Keelung City (5.66).

Table 30 Risk factors for male HIV and AIDS cases (foreigner excluded), 2018

Risk factor	HIV	%	AIDS	%
Male to male sexual contact	1,705	87.5%	817	78.0%
Heterosexual contact	175	9.0%	117	11.2%
Injection drug use	41	2.1%	99	9.4%
Recipient of blood/clotting factor	0	0.0%	0	0.0%
Vertical transmission	0	0.0%	0	0.0%
Unknown	28	1.4%	15	1.4%
Total	1,949	100.0%	1,048	100.0%

Table 31 Risk factors for female HIV and AIDS cases (foreigner excluded), 2018

Risk factor	HIV	%	AIDS	%
Heterosexual contact	37	86.0%	25	58.1%
Injection drug use	3	7.0%	14	32.6%
Recipient of blood/clotting factor	0	0.0%	0	0.0%
Vertical transmission	0	0.0%	1	2.3%
Unknown	3	7.0%	3	7.0%
Total	43	100.0%	43	100.0%

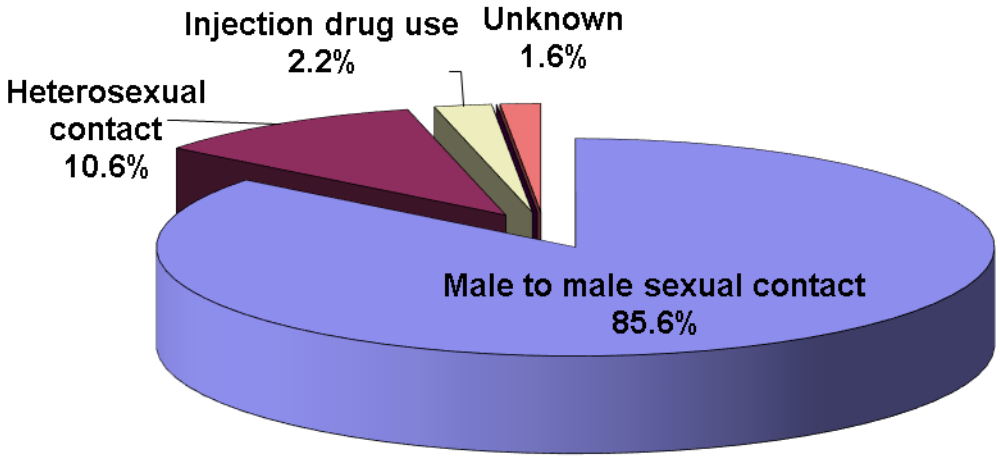

Figure 79 Risk factor of confirmed HIV infection cases (foreigner excluded), 2018

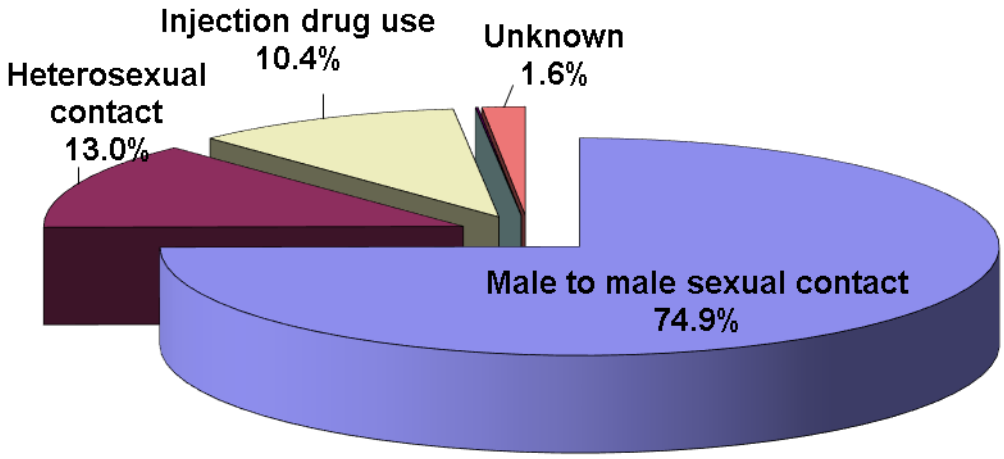

Figure 80 Risk factor of confirmed AIDS cases (foreigner excluded), 2018

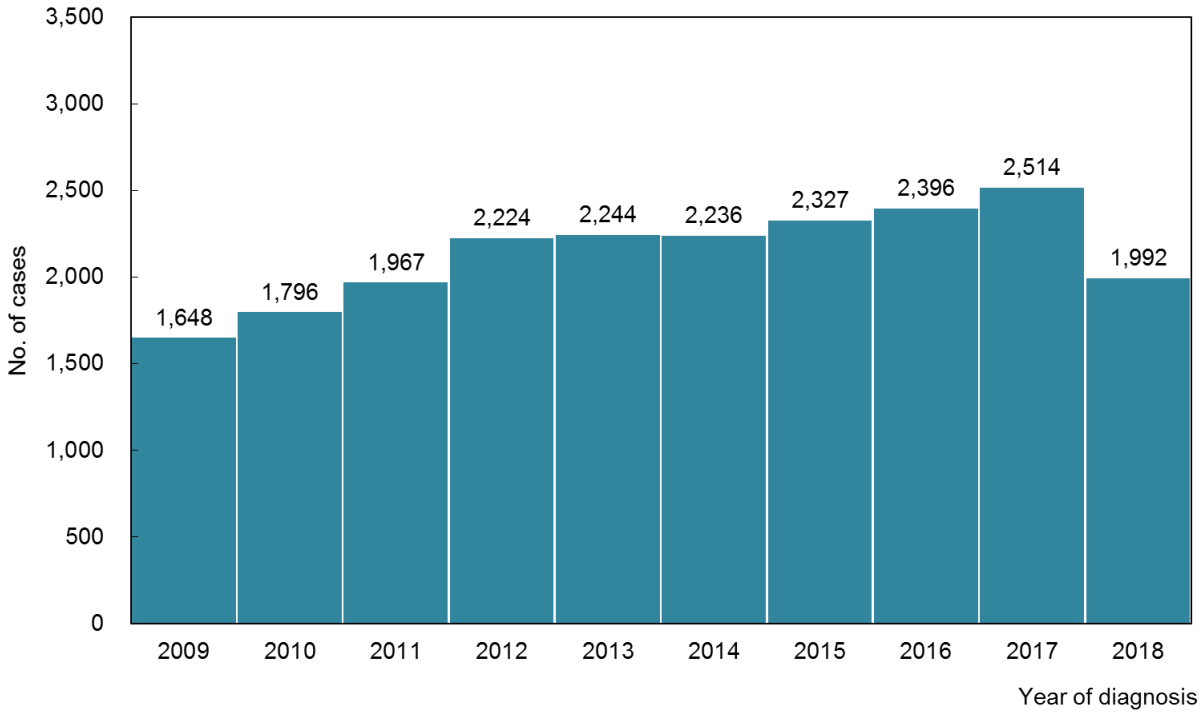

Figure 81 Number of confirmed HIV infection cases (foreigner excluded), 2009-2018

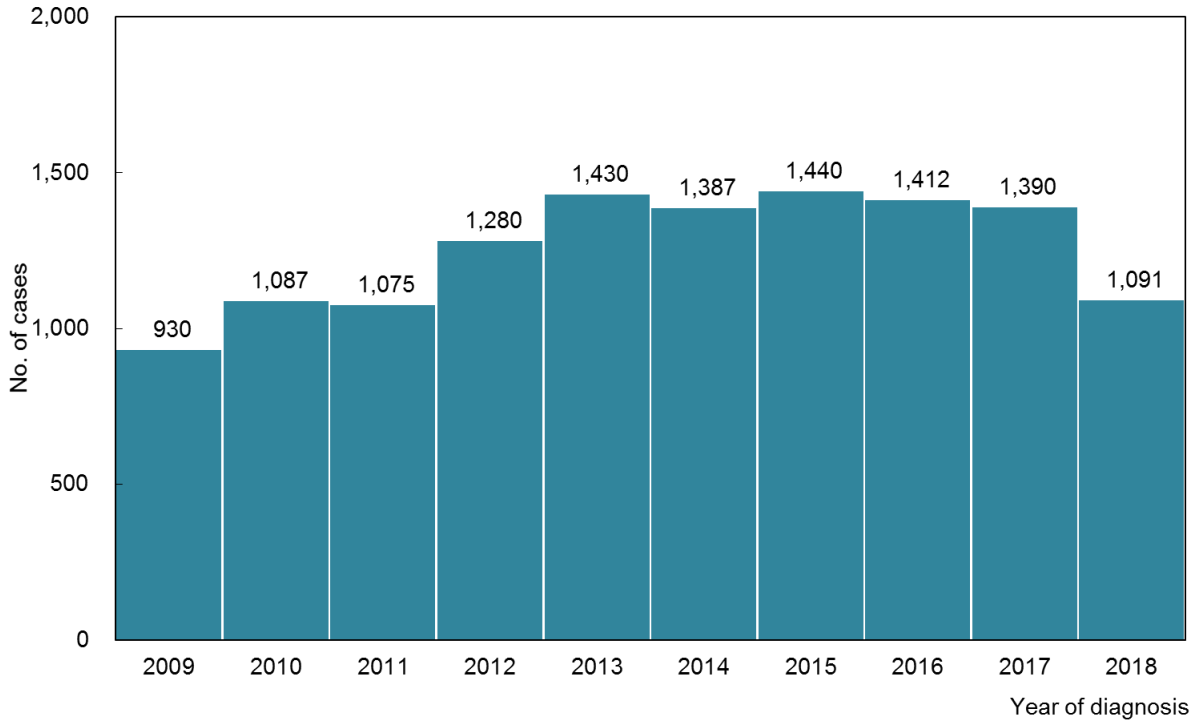

Figure 82 Number of confirmed AIDS cases (foreigner excluded), 2009-2018

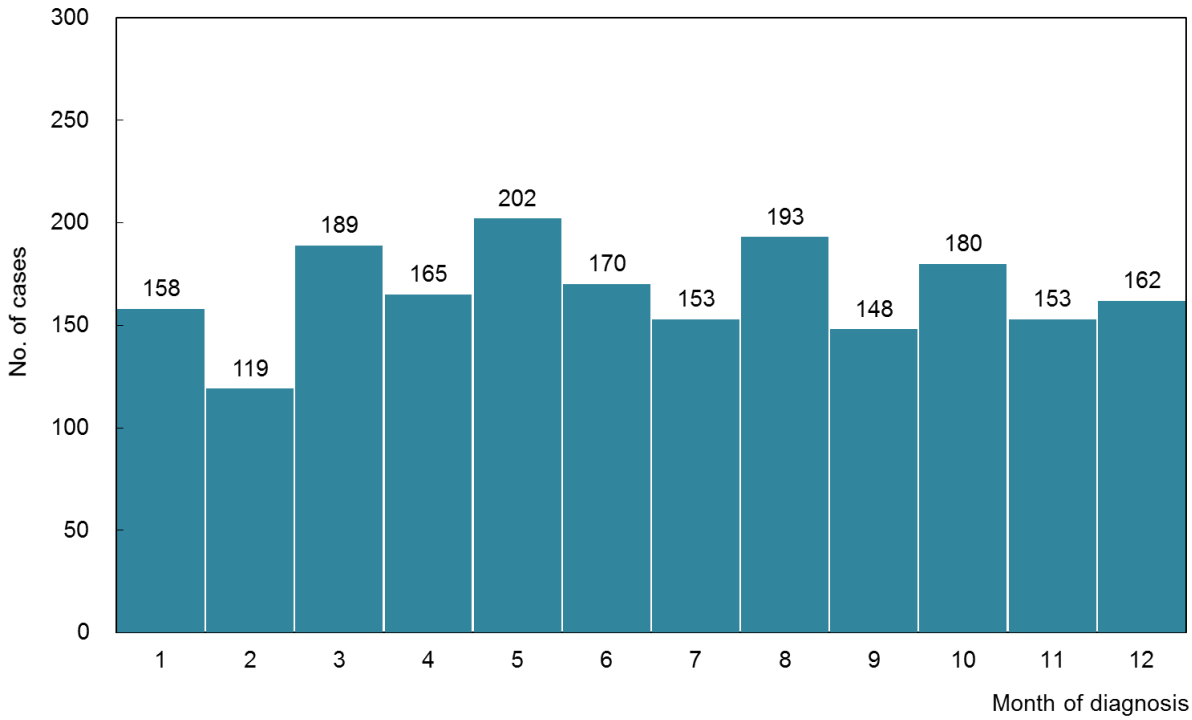

Figure 83 Number of confirmed HIV infection cases (foreigner excluded), 2018

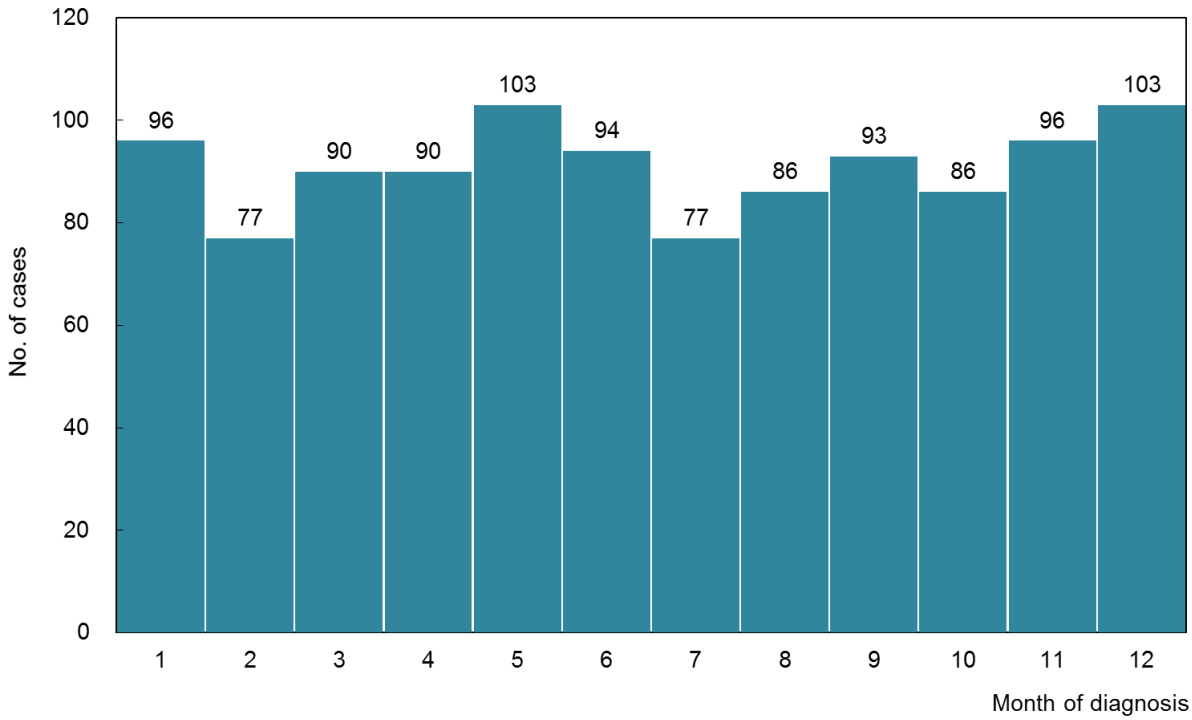

Figure 84 Number of confirmed AIDS cases (foreigner excluded), 2018

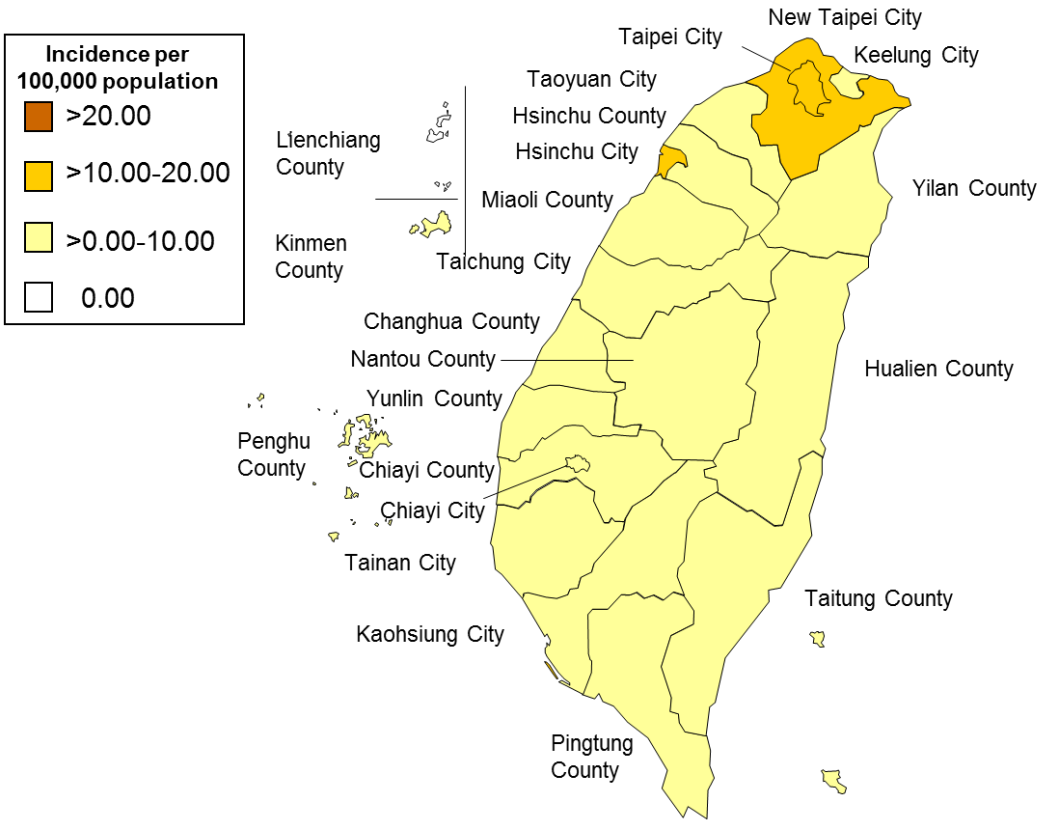

Figure 85 Geographical distribution by incidence of confirmed HIV infection cases (foreigner excluded), 2018

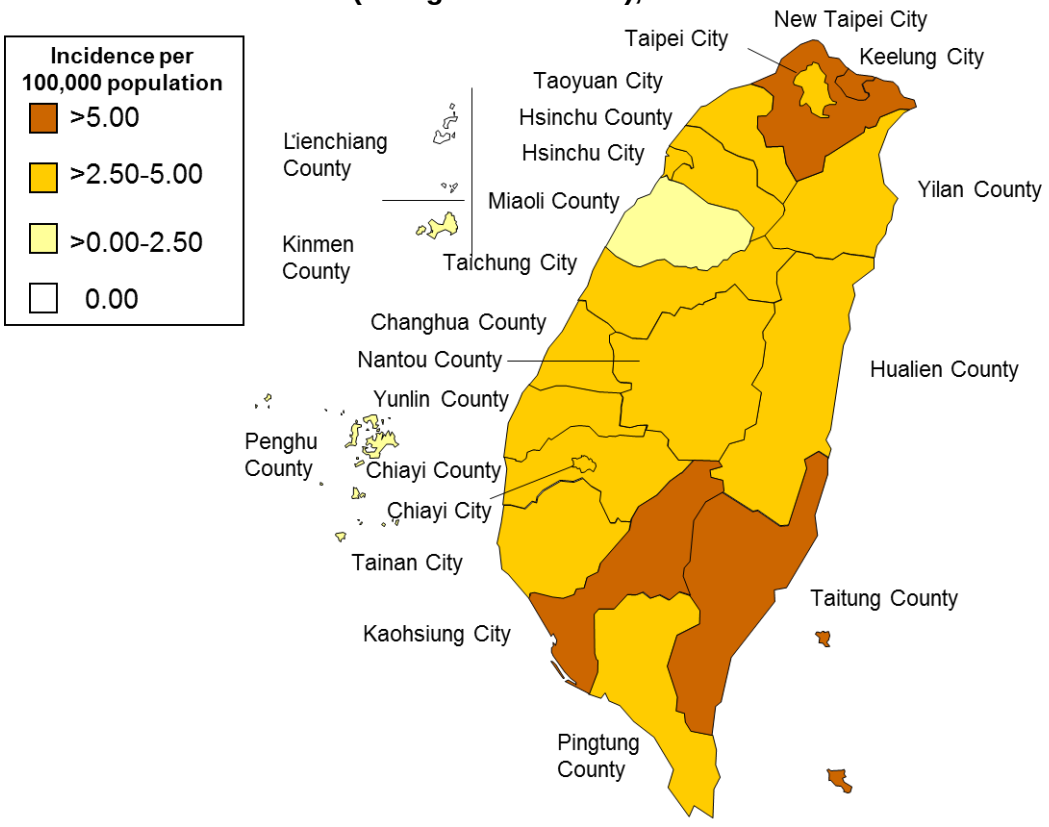

Figure 86 Geographical distribution by incidence of confirmed AIDS cases (foreigner excluded), 2018

Tuberculosis

In 2018, 9,179 cases of tuberculosis (incidence rate: 38.9 per 100,000 population) were confirmed, which went down in both case number and incidence rate with 6.0% and 6.0% declining respectively, as compared with 9,759 confirmed cases (incidence rate: 41.4 per 100,000 population) in 2017. The data of confirmed TB cases in 2018 were analyzed as follows:

(1) By gender

There were 6,439 male cases (70.0%) and 2,740 female cases (30.0%) with a male to female ratio of 2.4:1.0. The incidence rate of tuberculosis in males (55.0 per 100,000 population) was 2.4 times higher than that in females (23.1 per 100,000 population).

(2) By age group

The number of tuberculosis cases and incidence rate per 100,000 population rose significantly with age. Of the new TB cases in 2018, 39 were aged 0-14, 280 were aged 15-24, 391 were aged 25-34, 591 were aged 35-44, 985 were aged 45-54, 1,552 were aged 55-64, and 5,341 were elderly over 65 year-old which accounted for 58.2% of total.

(3) By month (based on notification date)

There were no specific prevalent months or seasons for tuberculosis notification in 2018 and there were confirmed cases reported in each month of the year, with highest number in May (852 reported) and lowest in February (568 reported).

(4) By residential region

The incidence rate of tuberculosis was higher in eastern region than in western region, and was higher in southern region than in northern region. With regard to incidence rate by city and county, Pingtung county had the highest incidence rate with 66.1 per 100,000 population, followed by Taitung county with 58.8 per 100,000 population. Kinmen county and Lienchiang county had the lowest incidence rate with 13.0 and 15.4 per 100,000 population respectively.

(5) Mortality distribution

In 2018, there were 506 tuberculosis deaths with a mortality rate of 2.1 per 100,000 population. Males accounted for 388 deaths (3.3 deaths per 100,000 population) and the rest of 118 were females (1.0 deaths per 100,000 population) with a male to female death ratio of 3.3:1.0.

The tuberculosis mortality rate in Taiwan increased with age. Of the 506 tuberculosis deaths in 2018, 85.0% (430 cases) were elderly aged 65 years and above.

For the overall geographic distribution, tuberculosis deaths in 2018 showed a pattern of higher in eastern and southern regions and lower in northern region. Yunlin county had the highest TB mortality rate (4.8 per 100,000 population), followed by Hualien county (3.7 per 100,000 population).

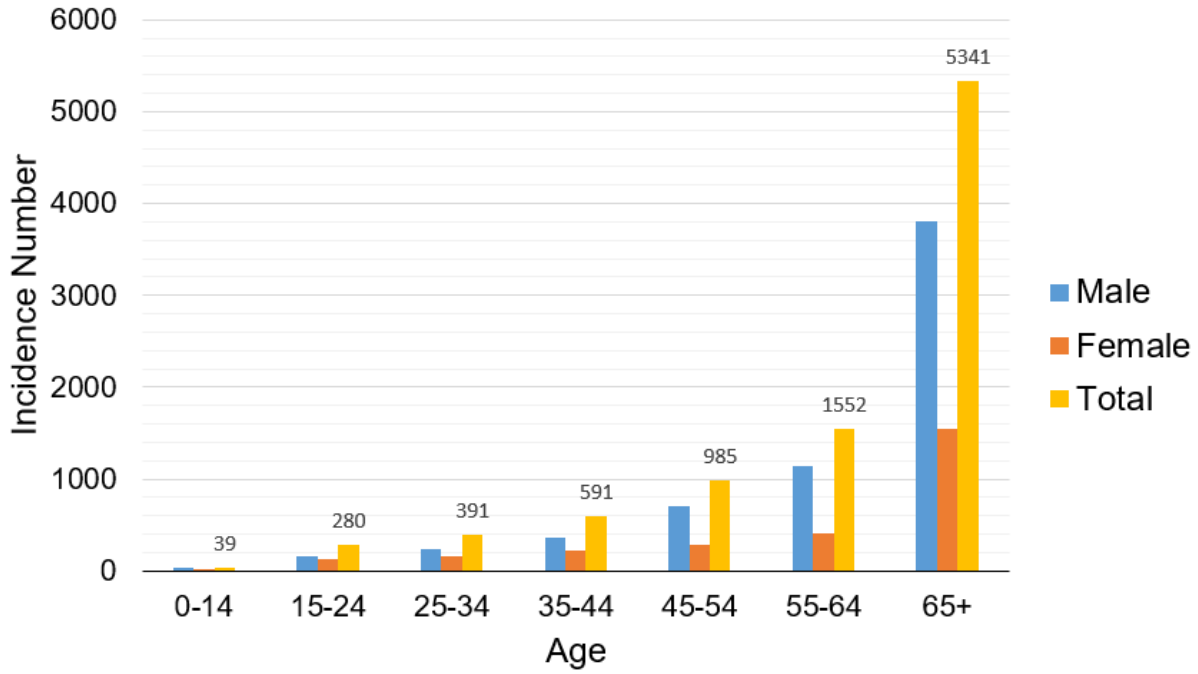

Figure 87 Tuberculosis cases number by age group and sex, 2018

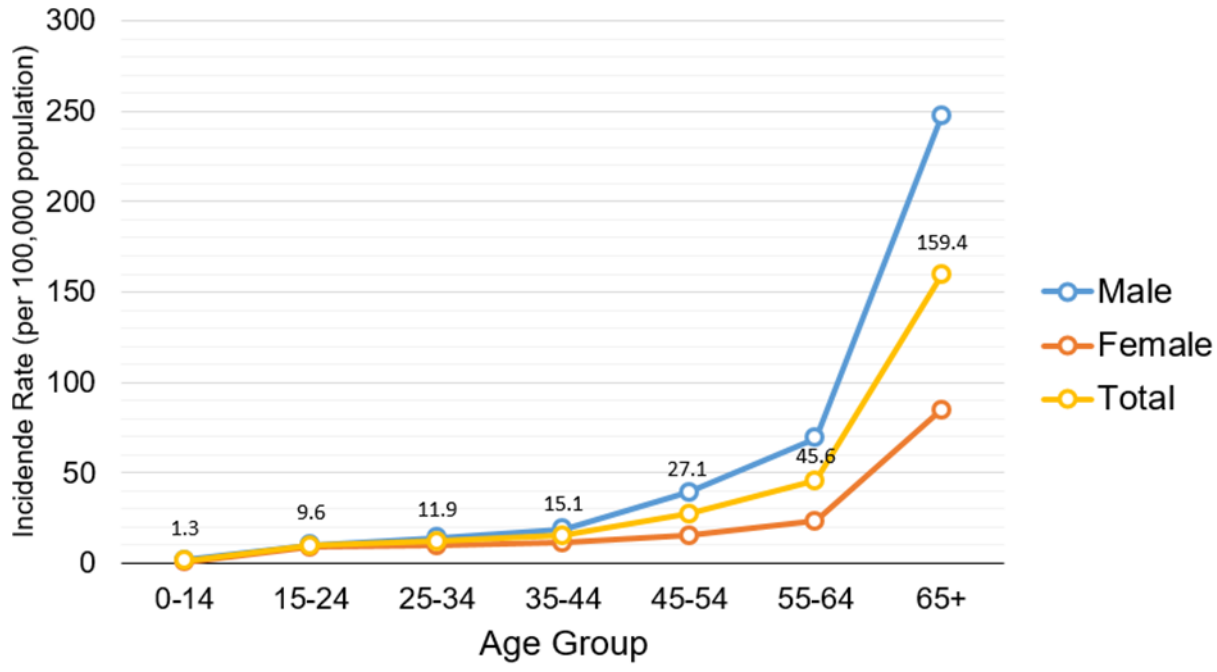

Figure 88 Incidence rate of tuberculosis by age group and sex, 2018

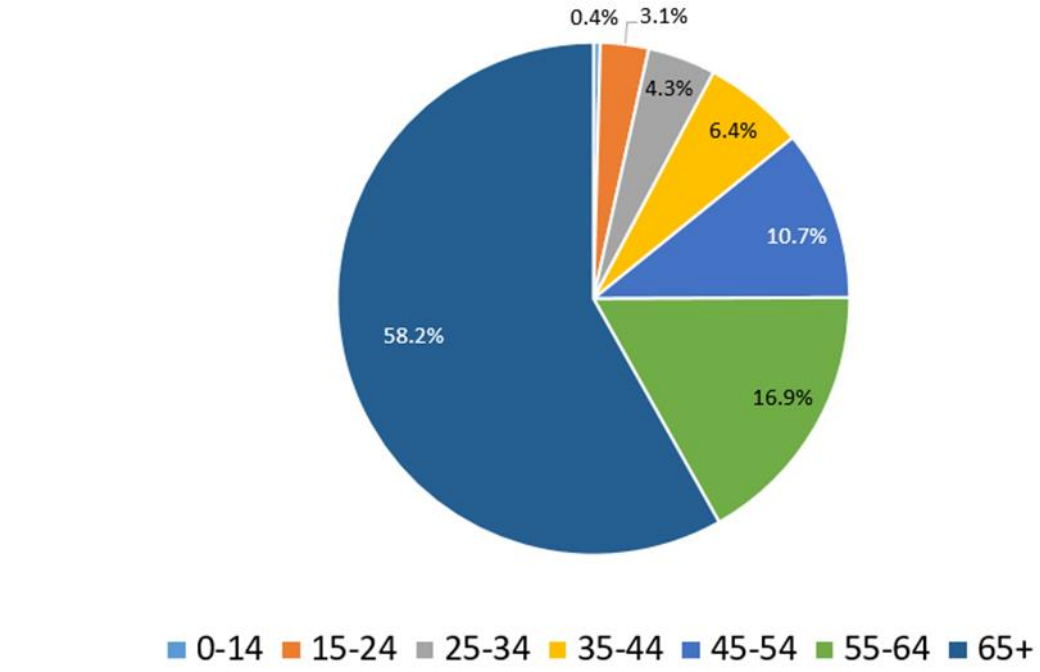

Figure 89 Distribution of tuberculosis incidence by age group, 2018

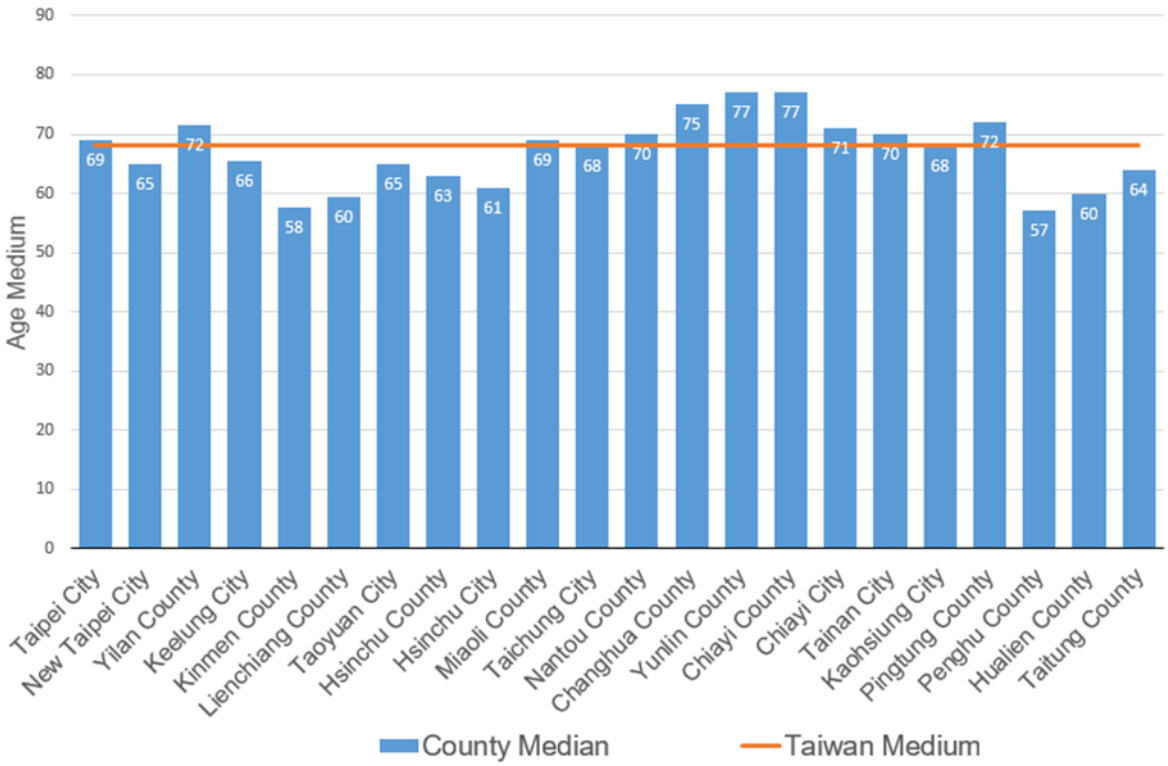

Figure 90 Tuberculosis Age Median by city and county, 2018

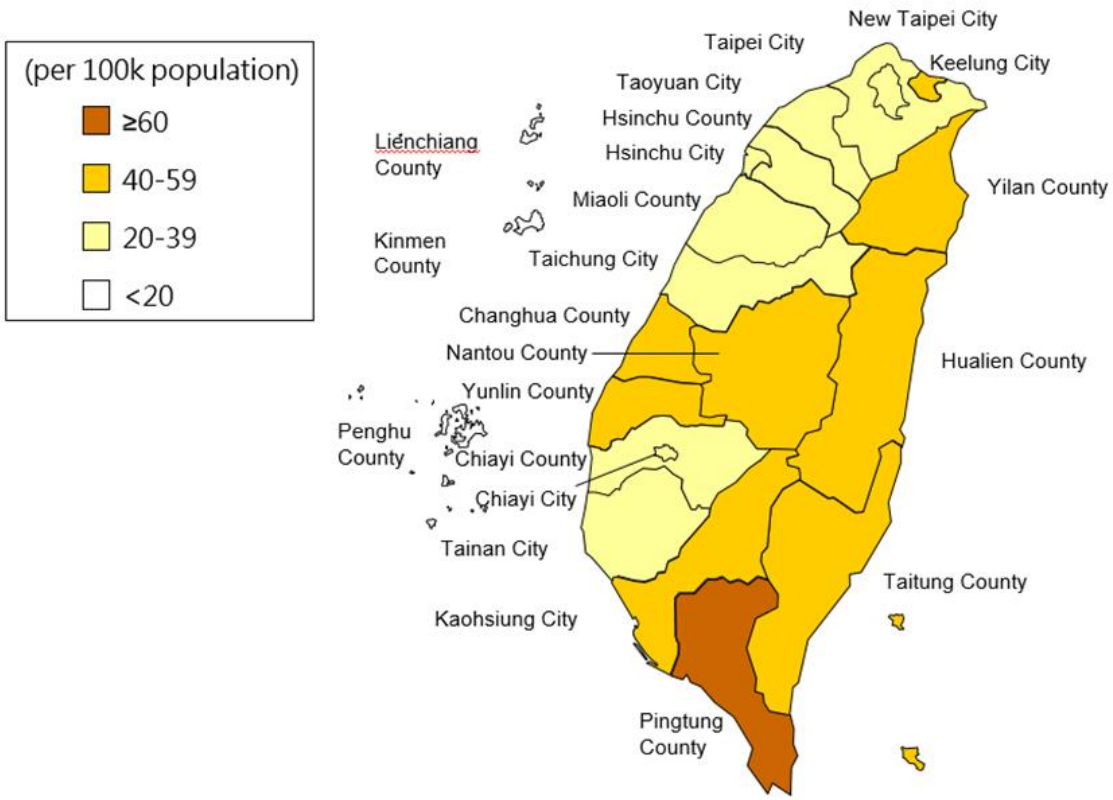

Figure 91 Geographical distribution by incidence of tuberculosis cases, 2018

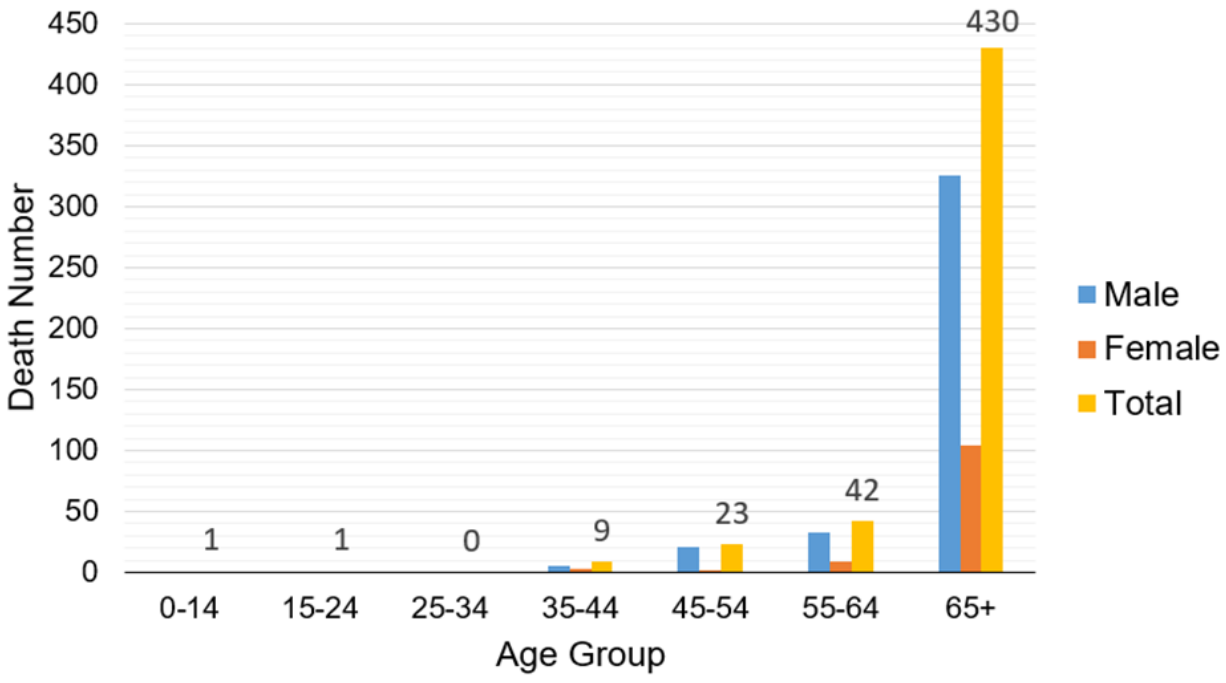

Figure 92 Mortality number of Tuberculosis by age group and sex, 2018

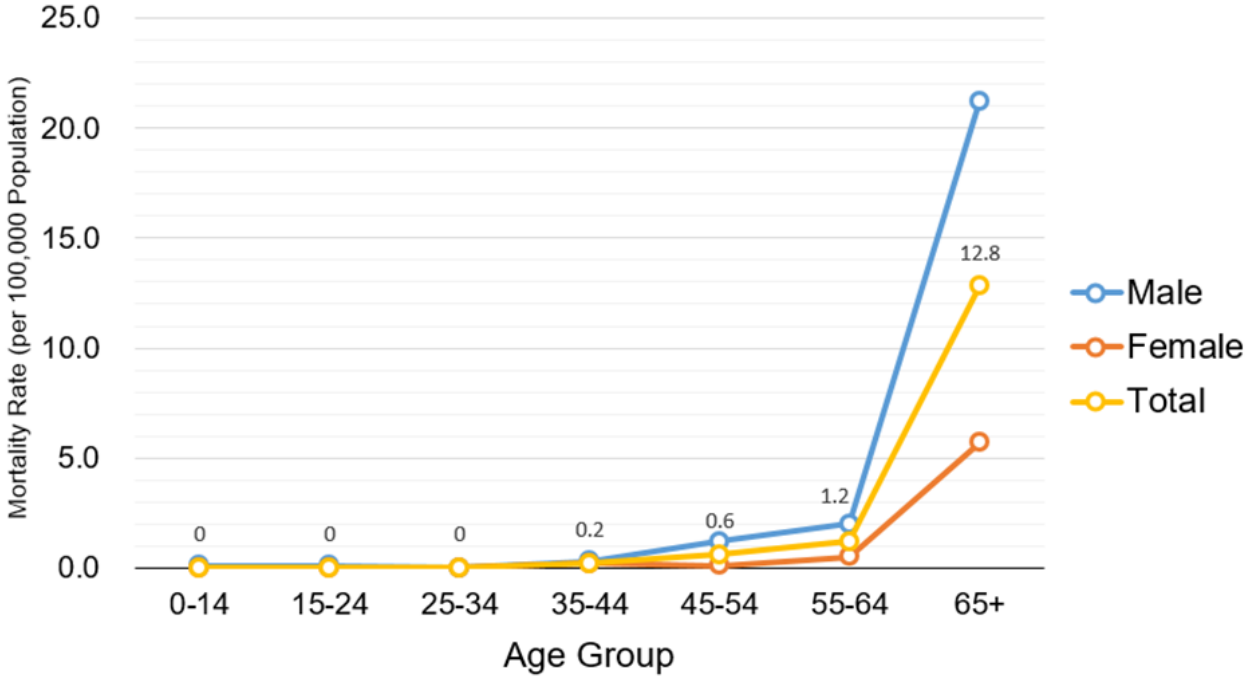

Figure 93 Mortality rate of tuberculosis by age group and sex, 2018

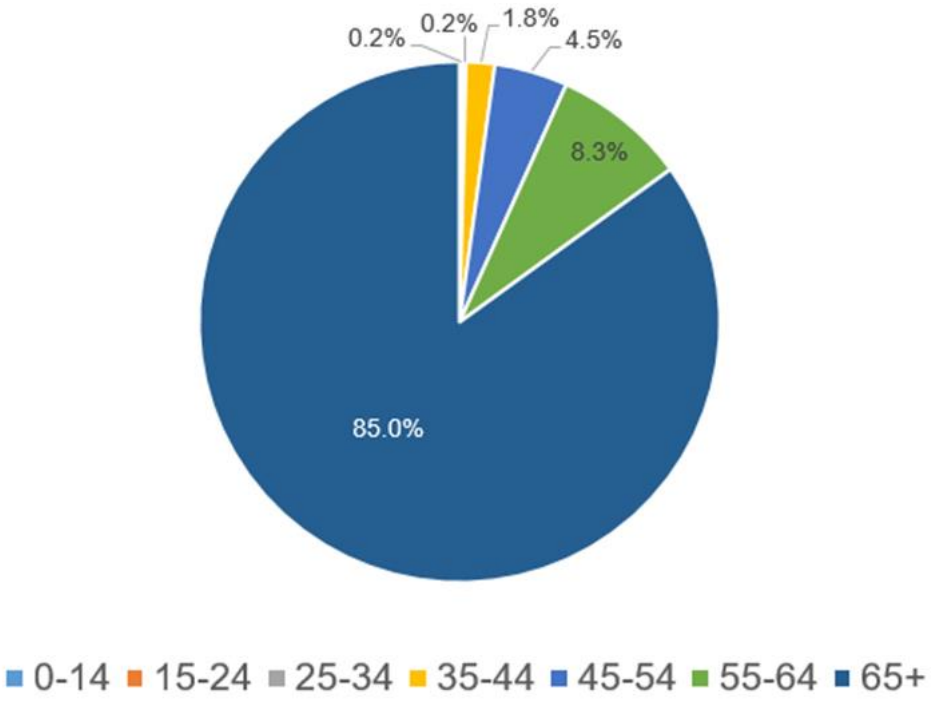

Figure 94 Distribution of tuberculosis mortality by age group, 2018

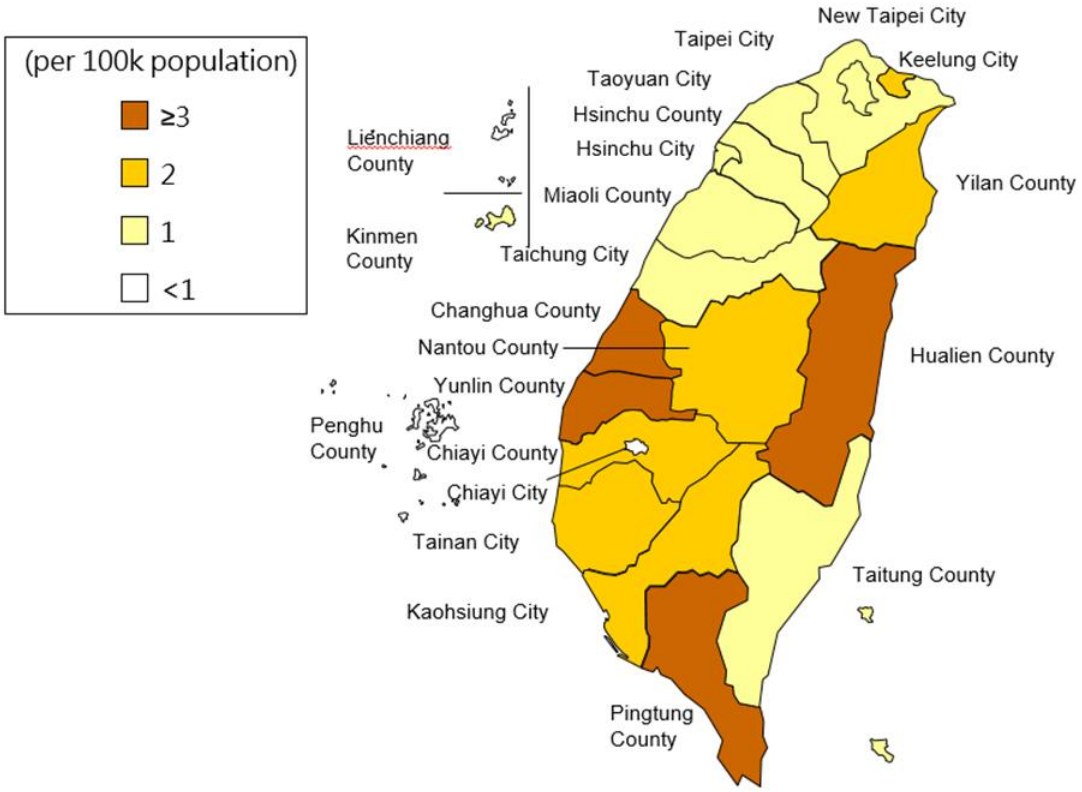

Figure 95 Geographical distribution by mortality of confirmed tuberculosis cases, 2018

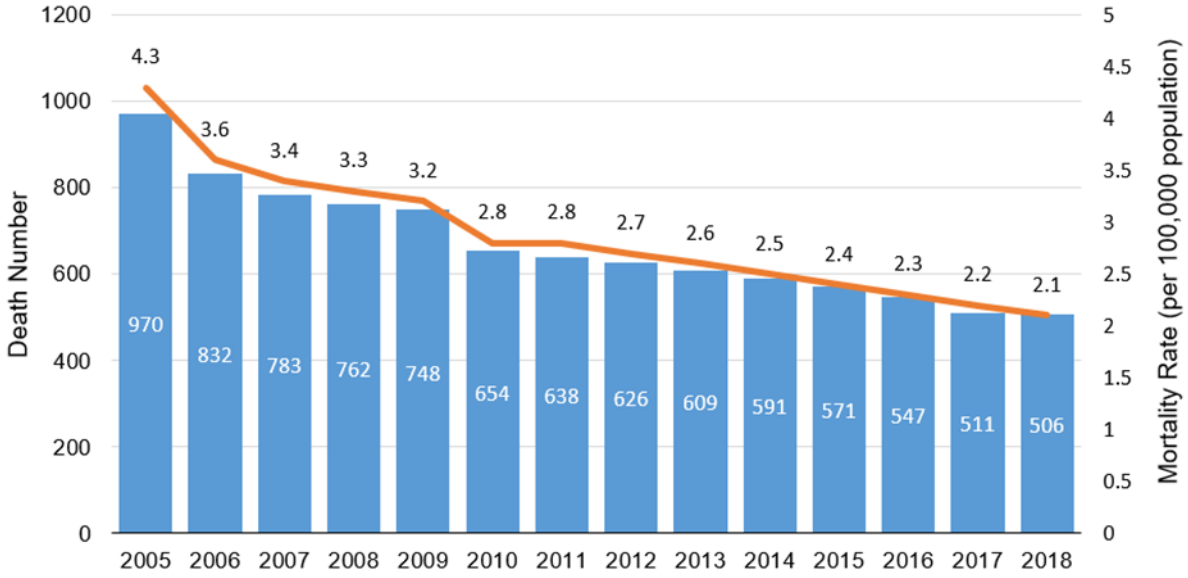

Figure 96 Trend of tuberculosis mortality rate by year, 2006-2018

Table 32 Confirmed tuberculosis cases — by geographical distribution, 2018

Locality	Total			Male			Female		
	Tuberculosis	Midyear population	Per 100,000 population	Tuberculosis	Midyear population	Per 100,000 population	Tuberculosis	Midyear population	Per 100,000 population
Taiwan	9,179	23,580,080	38.9	6,439	11,716,247	55.0	2,740	11,863,833	23.1
Taipei City	727	2,675,915	27.2	474	1,277,646	37.1	253	1,398,269	18.1
New Taipei City	1,509	3,991,203	37.8	1,033	1,954,183	52.9	476	2,037,021	23.4
Keelung City	193	455,914	42.3	145	230,502	62.9	48	225,413	21.3
Yilan County	164	370,807	44.2	119	185,424	64.2	45	185,383	24.3
Kinmen County	18	138,365	13.0	13	69,108	18.8	5	69,257	7.2
Lienchiang County	2	12,968	15.4	-	7,399	0.0	2	5,570	35.9
Taoyuan City	662	2,204,445	30.0	462	1,096,846	42.1	200	1,107,599	18.1
Hsinchu City	153	554,590	27.6	105	283,229	37.1	48	271,361	17.7
Hsinchu County	103	443,384	23.2	72	218,839	32.9	31	224,545	13.8
Miaoli County	154	551,335	27.9	123	284,509	43.2	31	266,826	11.6
Taichung City	1,007	2,795,482	36.0	702	1,377,096	51.0	305	1,418,387	21.5
Changhua County	256	499,041	51.3	193	255,641	75.5	63	243,401	25.9
Nantou County	546	1,280,141	42.7	379	652,162	58.1	167	627,980	26.6
Yunlin County	372	688,198	54.1	255	356,879	71.5	117	331,319	35.3
Chiayi City	198	509,125	38.9	140	264,667	52.9	58	244,459	23.7
Chiayi County	90	269,010	33.5	67	130,695	51.3	23	138,315	16.6
Tainan City	720	1,885,177	38.2	514	941,123	54.6	206	944,054	21.8
Kaohsiung City	1,430	2,775,223	51.5	1,000	1,373,736	72.8	430	1,401,487	30.7
Pingtung County	547	827,673	66.1	398	423,010	94.1	149	404,663	36.8
Penghu County	17	104,257	16.3	11	53,728	20.5	6	50,529	11.9
Hualien County	182	328,603	55.4	138	166,719	82.8	44	161,884	27.2
Taitung County	129	219,230	58.8	96	113,112	84.9	33	106,118	31.1

Table 33 Confirmed tuberculosis cases — by age & sex, 2018

Age	Total			Male			Female		
	tuberculosis	Midyear population	Per 100,000 population	tuberculosis	Midyear population	Per 100,000 population	tuberculosis	Midyear population	Per 100,000 population
Total	9,179	23,580,080	38.9	6,439	11,716,247	55.0	2,740	11,863,833	23.1
0-4	8	1,015,689	0.8	6	526,055	1.1	2	489,634	0.4
5-9	11	1,001,506	1.1	9	520,281	1.7	2	481,225	0.4
10-14	20	1,052,855	1.9	15	550,503	2.7	5	502,352	1.0
15-19	107	1,338,169	8.0	63	697,915	9.0	44	640,254	6.9
20-24	173	1,582,327	10.9	91	820,908	11.1	82	761,419	10.8
25-29	176	1,604,801	11.0	105	833,039	12.6	71	771,762	9.2
30-34	215	1,673,187	12.8	131	845,212	15.5	84	827,975	10.1
35-39	285	2,026,721	14.1	164	1,002,884	16.4	121	1,023,837	11.8
40-44	306	1,889,070	16.2	203	929,762	21.8	103	959,308	10.7
45-49	400	1,805,696	22.2	274	889,234	30.8	126	916,463	13.7
50-54	585	1,832,923	31.9	432	904,820	47.7	153	928,103	16.5
55-59	711	1,805,572	39.4	522	884,603	59.0	189	920,969	20.5
60-64	841	1,600,803	52.5	622	773,817	80.4	219	826,986	26.5
65+	5,341	3,350,765	159.4	3,802	1,537,215	247.3	1,539	1,813,550	84.9

Table 34 Confirmed tuberculosis cases — by aboriginal locality / township, 2018

Locality	Township	Tuberculosis	Midyear population	Per 100,000 population
Total		227	202,404	112.2
New Taipei City	Wulai District	1	6,379	15.7
Yilan County	Nanao Township	11	5,958	184.6
Yilan County	Datong Township	7	6,172	113.4
Taoyuan City	Fusing District	9	11,766	76.5
Hsinchu County	Jianshih Township	7	9,619	72.8
Hsinchu County	Wufong Township	7	4,667	150.0
Miaoli County	Taian Township	11	5,961	184.5
Taichung City	Heping District	6	10,982	54.6
Nantou County	Renai Township	30	15,859	189.2
Nantou County	Sinyi Township	27	16,242	166.2
Chiayi County	Alishan Township	3	5,614	53.4
Kaohsiung City	Maolin District	2	1,959	102.1
Kaohsiung City	Taoyuan District	1	4,279	23.4
Kaohsiung City	Namasia District	3	3,137	95.6
Pingtung County	Sandimen Township	11	7,671	143.4
Pingtung County	Shihzih Township	4	4,880	82.0
Pingtung County	Majia Township	7	6,788	103.1
Pingtung County	Laiyi Township	8	7,449	107.4
Pingtung County	Chunrih Township	4	4,888	81.8
Pingtung County	Taiwu Township	5	5,332	93.8
Pingtung County	Mudan Township	4	4,954	80.8
Pingtung County	Wutai Township	1	3,300	30.3
Hualien County	Sioulin Township	25	15,914	157.1
Hualien County	Wanrong Township	10	6,402	156.2
Hualien County	Jhuosi Township	6	6,084	98.6
Taitung County	Yanping Township	6	3,590	167.2
Taitung County	Haiduan Township	4	4,204	95.1
Taitung County	Jinfong Township	2	3,696	54.1
Taitung County	Daren Township	5	3,549	140.9
Taitung County	Lanyu Township	-	5,116	0.0

Table 35 Mortality of Tuberculosis — by geographical distribution, 2018

Locality	Number of Death	Midyear population	Per 100,000 population
Taiwan	506	23,580,080	2.1
Taipei City	50	2,675,915	1.9
New Taipei City	74	3,991,203	1.9
Keelung City	10	455,914	2.2
Yilan County	10	370,807	2.7
Kinmen County	2	138,365	1.4
Lienchiang County	-	12,968	0.0
Taoyuan City	29	2,204,445	1.3
Hsinchu City	8	554,590	1.4
Hsinchu County	5	443,384	1.1
Miaoli County	8	551,335	1.5
Taichung City	44	2,795,482	1.6
Nantou County	13	499,041	2.6
Changhua County	41	1,280,141	3.2
Yunlin County	33	688,198	4.8
Chiayi City	14	509,125	2.7
Chiayi County	1	269,010	0.4
Tainan City	42	1,885,177	2.2
Kaohsiung City	75	2,775,223	2.7
Pingtung County	30	827,673	3.6
Penghu County	1	104,257	1.0
Hualien County	12	328,603	3.7
Taitung County	4	219,230	1.8

Table 36 Mortality of Tuberculosis — by age & sex, 2018

Age	Total			Male			Female		
	Death	Midyear population	Per 100,000 population	Death	Midyear population	Per 100,000 population	Death	Midyear population	Per 100,000 population
Total	506	23,580,080	2.1	388	11,716,247	3.3	118	11,863,833	1.0
0-4	1	1,015,689	0.1	1	526,055	0.2	-	489,634	0.0
5-9	-	1,001,506	0.0	-	520,281	0.0	-	481,225	0.0
10-14	-	1,052,855	0.0	-	550,503	0.0	-	502,352	0.0
15-19	-	1,338,169	0.0	-	697,915	0.0	-	640,254	0.0
20-24	1	1,582,327	0.1	1	820,908	0.1	-	761,419	0.0
25-29	-	1,604,801	0.0	-	833,039	0.0	-	771,762	0.0
30-34	-	1,673,187	0.0	-	845,212	0.0	-	827,975	0.0
35-39	4	2,026,721	0.2	3	1,002,884	0.3	1	1,023,837	0.1
40-44	5	1,889,070	0.3	3	929,762	0.3	2	959,308	0.2
45-49	8	1,805,696	0.4	8	889,234	0.9	-	916,463	0.0
50-54	15	1,832,923	0.8	13	904,820	1.4	2	928,103	0.2
55-59	16	1,805,572	0.9	13	884,603	1.5	3	920,969	0.3
60-64	26	1,600,803	1.6	20	773,817	2.6	6	826,986	0.7
65+	430	3,350,765	12.8	326	1,537,215	21.2	104	1,813,550	5.7

PART IV

Appendix

Appendix 1

Regulations for notifiable disease

Category	Diseases	Reported Within	Mandatory Isolation	Legal Basis*
I	Smallpox, Plague, Severe Acute Respiratory Syndrome, Rabies	24 hours	Isolation care at designated isolation care institution	1、2、6、11、16
II	Diphtheria, Typhoid Fever, Dengue Fever, Meningococcal Meningitis, Paratyphoid Fever, Poliomyelitis (AFP), Shigellosis, Amoebiasis, Malaria, Measles, Acute Hepatitis A, Enterohaemorrhagic E. coli Infection, Hantavirus Syndrome, Cholera, Rubella, Multidrug-Resistant Tuberculosis, Chikungunya Fever, West Nile Fever, Epidemic Typhus Fever, Anthrax	24 hours	When necessary, patients may be placed in designated isolation care institutions for isolation care.	1、2、11、19
III	Pertussis, Tetanus, Neonatal Tetanus, Japanese Encephalitis, Tuberculosis (except MDR TB),Congenital Rubella Syndrome, Acute Hepatitis B, Acute Hepatitis C, Acute Hepatitis D, Acute Hepatitis E, Acute Hepatitis (unspecified), Mumps, Legionnaires' Disease, Invasive *Haemophilus Influenzae* Type b Infection, Syphilis, Gonorrhea, Enteroviruses Infection with Severe Complications, Hansens's disease, Congenital Syphilis	one week	When necessary, patients may be placed in designated isolation care institutions for isolation care.	1、2、4、5、22
	HIV Infection, AIDS	24 hours		3、5
IV	Herpesvirus B Infection, Leptospirosis, Melioidosis, Botulism	24 hours	When necessary, patients may be placed in designated isolation care institutions for isolation care.	1、2、6、7、8、9、14、15、17、23
	Listeriosis	72 hours		
	Invasive Pneumococcal Disease, Q Fever, Endemic Typhus Fever, Lyme Disease, Tularemia, Scrub Typhus, Complicated varicella, Toxoplasmosis, Severe Complicated Influenza, Brucellosis	one week		
	Creutzfeldt-Jakob Disease	one month		
V	Rift Valley Fever, Marburg Haemorrhagic Fever, Yellow Fever, Ebola Virus Disease, Lassa Fever	24 hours	Isolation care at designated isolation care institution	1、2、10、12、13、14、16、18、20、21
	Middle East Respiratory Syndrome Coronavirus Infections, Novel Influenza A Virus infections		When necessary, patients may be placed in designated isolation care institutions for isolation care.	
	Zika virus infection		As the symptoms continue, patients should take precautions against mosquito bites.	

*Note：

1."The Communicable Disease Control Act" amended in 77 articles and promulgated on July 18, 2007.

2."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced by the Department of Health, the Executive Yuan, on October 9, 2007.

3.“HIV Infection Control and Patient Rights Protection Act“ amended in 27 articles and promulgated on July 11, 2007. (original title : AIDS Prevention and Control Act)

4.The "Hansen's disease Patients Human Rights Protection and Compensation Act" promulgated on August 13, 2008.
5."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on October 24, 2008.
6."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on June 19, 2009.
7."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on September 9, 2010.
8.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Class IV Notifiable Communicable Disease "Severe Complicated Influenza" is changed name to "Complicated Influenza."
9.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, "Brucellosis" is included in the list of Class IV Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.
10.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010101167 dated October 3, 2012 of the Department of Health, "Severe Acute Respiratory Infections associated with Novel Coronavirus" is included in the list of Class V Notifiable Communicable Diseases.
11.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, "Anthrax" is changed from the list of Class I Notifiable Communicable Diseases to Class II.
12.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100343 dated March 14, 2013 of the Department of Health, "Severe Acute Respiratory Infections associated with Novel Coronavirus" is changed name to "Novel Coronavirus Infections" in the list of Class V Notifiable Communicable Disease.
13.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, "H7N9 Influenza" is included in the list of Class V Notifiable Communicable Diseases.
14.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of Health, "Novel Coronavirus Infection" is changed name to "Middle East Respiratory Syndrome Coronavirus Infections" in the list of Class V Notifiable Communicable Disease. "Cat-Scratch Disease" and "NDM-1 Enterobacteriaceae" are removed from the list of Class IV Notifiable Communicable Disease.
15.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, "Varicella" is changed name to "Complicated varicella" in the list of Class IV Notifiable Communicable Disease.
16.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-10301009927 dated June 27, 2014 of the Department of Health, "Novel Influenza A Virus infections" is included in the list of Class V Notifiable Communicable Diseases. "H5N1 Influenza" in the list of Class I Notifiable Communicable Disease and "H7N9 Influenza" in the list of Class V are removed.
17.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated Augest 1, 2014 of the Department of Health, "Complicated Influenza" is changed name to "Severe Complicated Influenza" in the list of Class IV Notifiable Communicable Disease.
18.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated Augest 8, 2014 of the Department of Health, "Ebola Haemorrhagic Fever" is changed name to "Ebola Virus Disease" in the list of Class V Notifiable Communicable Disease.
19.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1040200233 on March 23, 2015, removed "dengue hemorrhagic fever/ dengue shock syndrome" from Category II Communicable Diseases.
20.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100083 on January 22, 2016, included "zika virus infection" in Category II Communicable Diseases.
21.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100179 on February 2, 2016, changed "zika virus infection" from Category II Notifiable Communicable Diseases to Category V.
22.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100423 on Apr 1, 2016, included "congenital syphilis" in Category 3 Communicable Diseases.
23.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1060101687 on Dec 29, 2017, included "listeriosis" in Category 4 Communicable Diseases

Appendix 2

Report of cases of communicable and emerging infectious disease, include suspected cases

Please protect patient's privacy 2017/12/29

Hos-pital	Hospital/Clinic		Code No.		Tel
	Diagnosed by Physician		Address of Hospital/Clinic		

I. The Patient

Name		Sex	☐Male ☐Female	Date of Birth	(Y) (M) (D)
I.D. Number / Passport Number					
Nationality	☐National ☐Other_____ Residence: ☐Foreign Labor ☐Foreigners Identity: ☐ Mainland Chinese ☐ Foreign Bride ☐Mainland Bride ☐Unknown	Tel	Office / Home / Mobil	Marital Status	☐Single ☐Married ☐Widowed ☐Divorced ☐Separated ☐Unknown
Address		Occupation		Animal contact (within 3 months)	☐ No ☐ Yes

II. Medical Record and Date

Medical Record No.		Date of Onset	(Y) (M) (D)	Travel history(within 3 months)	☐ No ☐ Yes, place：_____ From：(Y) (M) (D) To：(Y) (M) (D)
Major Symptoms/ Vaccination record		Date of Diagnosis	(Y) (M) (D)		
Hospital Care	☐ Yes ☐ No ☐ Referred (Date:) to _____ Hospital/Clinic	Specimen Collection	☐Yes ☐No	Date of Death	(Y) (M) (D)
Date Reported	(Y) (M) (D)	Date Received by Health Bureau	(Y) (M) (D)	Date Received by CDC	(Y) (M) (D)

III. The Disease

Category I Communicable Diseases
- ☐Smallpox ☐Plague
- ☐Severe Acute Respiratory Syndrome
- ☐Rabies

Category II Communicable Diseases
- ☐Diphtheria ☐Anthrax
- ☐Measles ☐Rubella
- ☐Meningococcal Meningitis
- ☐Dengue Fever
- ☐Typhoid Fever ☐Paratyphoid Fever
- ☐Poliomyelitis
  - ☐Acute Flaccid Paralysis
- ☐Shigellosis ☐Amoebiasis
- ☐Cholera ☐Acute Hepatitis A
- ☐EHEC (Enterohaemorrhagic *E. coli*) Infection
- ☐Hantavirus Syndrome
  - ☐Hemorrhagic Fever with Renal Syndrome
  - ☐Hantavirus Pulmonary Syndrome
- ☐Malaria
- ☐Chikungunya Fever ☐West Nile Fever
- ☐Typhus ☐MDR-TB

Category III Communicable Diseases
- ☐Pertussis ☐Tetanus
- ☐Japanese Encephalitis ☐Tuberculosis
- ☐Congenital Rubella Syndrome
- Acute Hepatitis(except Hepatitis A)
  - ☐Type B ☐Type C ☐Type D ☐Type E
  - ☐Unspecified
- ☐Mumps ☐Legionnaires' Disease
- ☐Invasive Haemophilus Influenzae Type b Infection
- ☐Syphilis ☐ Congenital Syphilis
- ☐Gonorrhea ☐Neonatal Tetanus
- ☐Enteroviruses Infection with Severe Complications
- ☐Hansen's Disease
- AIDS
  - ☐HIV infection
  - ☐AIDS
  - Specify risk factors for HIV/AIDS infection：
  - _____
  - Confirmation Unit of Western Blot：
  - _____
  - Confirmation Unit of NAT：
  - _____

Category IV Communicable Diseases
- ☐Herpesvirus B Infection
- ☐Leptospirosis ☐Melioidosis
- ☐Botulism
- ☐Listeriosis
- ☐Invasive Pneumococcal Disease
- ☐Q fever ☐Murine Typhus
- ☐Lyme Disease ☐Tularemia
- ☐Scrub Typhus ☐Brucellosis
- ☐Complicated varicella
- ☐Toxoplasmosis
- ☐Severe Complicated Influenza
- ☐**Creutzfeldt-Jakob disease**

Category V Communicable Diseases
- ☐Rift Valley Fever
- ☐Lassa Fever
- ☐Marburg Haemorrhagic Fever
- ☐Ebola Virus Disease
- ☐Yellow Fever
- ☐Middle East Respiratory Syndrome Coronavirus Infections
- ☐Novel Influenza A Virus infections
- ☐Zika virus infection
- ☐Others _____

IV. Remarks

1. Tuberculosis：☐Acid fast stain: ☐ Positive ☐ Negative ☐ Not tested ☐ Tested but not detected，Date of Testing:_____(y/m/d)
   ☐TB culture: ☐ Positive ☐ Negative ☐ Not tested ☐ Tested but not detected，Date of Testing:_____(y/m/d)
   ☐PCR: ☐ Positive ☐ Negative ☐ Not tested ☐ Tested but not detected，Date of Testing:_____(y/m/d)
   ☐Typical tuberculosis pathology report，Date of Testing: _____(y/m/d)，☐pleural effusion
   ☐Chest and other X-ray examination: ☐Normal ☐No cavity ☐With cavity，Date of Examination:_____(y/m/d)；
2. Testing result by reported hospital：

For Health Agency

Signed by Person-in-charge		Signed by Section Chief	

This form shall be in two copies; one copy is for the Health Bureau.

※For outbreaks of communicable diseases or important communicable diseases (in red), please notify in advance the local health bureau by telephone or FAX, and then fill in and send this report. Diseases in red must be reported in 24 hours. Diseases in brown must be reported in 72 hours. Diseases in black shall be reported in one week. Diseases in green must be reported in one month. Diseases in blue are non-notifiable diseases, suspected cases must be reported as soon as possible.

Express Mail

Floor __ No __ Alley __ Lane___ Section ___ Road / Street _____
_____ Township / District _____ County / City

To：_____Health Bureau, Disease Control Section
Floor __ No __ Alley __ Lane___ Section ___ Road / Street _____
_____ Township / District _____ County / City

Instructions for filling in the report：

(1) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1060101687 on Dec 29, 2017, included “listeriosis” in Category 4 Communicable Diseases.

(2) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100423 on Apr 1, 2016, included “congenital syphilis” in Category 3 Communicable Diseases.

(3) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100179 on Feb 2, 2016, changed “zika virus infection” from Category 2 Notifiable Communicable Diseases to Category 5.

(4) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100083 on Jan 22, 2016, included “zika virus infection” in Category 2 Communicable Diseases.

(5) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1040200233 on Mar 23, 2015, removed “dengue hemorrhagic fever/ dengue shock syndrome” from Category 2 Communicable Diseases.

(6) According to Department of Health’s Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated Augest 8, 2014 of the Department of Health, “Ebola Haemorrhagic Fever” is changed name to “Ebola Virus Disease” in the list of Class V Notifiable Communicable Disease

(7) According to Department of Health’s Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated Augest 1, 2014 of the Department of Health, “Complicated Influenza” is changed name to “Severe Complicated Influenza” in the list of Class IV Notifiable Communicable Disease

(8) According to Department of Health’s Bulletin No. Bu-Shou-Ji-Zi-10301009927 dated June 27, 2014 of the Department of Health, “Novel Influenza A Virus infections” is included in the list of Class V Notifiable Communicable Diseases. “H5N1 Influenza” in the list of Class I Notifiable Communicable Disease and “H7N9 Influenza” in the list of Class V are removed

(9) According to Department of Health’s Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, “Varicella” is changed name to “Complicated varicella” in the list of Class IV Notifiable Communicable Disease

(10) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of Health, “Novel Coronavirus Infection” is changed name to “Middle East Respiratory Syndrome Coronavirus Infections” in the list of Class V Notifiable Communicable Disease. “Cat-Scratch Disease” and “NDM-1 Enterobacteriaceae” are removed from the list of Class IV Notifiable Communicable Disease.

(11) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, “H7N9 Influenza” is included in the list of Class V Notifiable Communicable Diseases.

(12) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1020100343 dated March 14, 2013 of the Department of Health, “Severe Acute Respiratory Infections associated with Novel Coronavirus” is changed name to “Novel Coronavirus Infections” in the list of Class V Notifiable Communicable Disease.

(13) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, “Anthrax” is changed from the list of Class I Notifiable Communicable Diseases to Class II.

(14) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi- 1010101167dated October 3, 2012 of the Department of Health, is Severe Acute Respiratory Infections associated with Novel Coronavirus included in the list of Class 5 Notifiable Communicable Diseases.

(15) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, Brucellosis is included in the list of Class 4 Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.

(16) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Class 4 Notifiable Communicable Disease “Severe Complicated Influenza” is changed name to “Complicated Influenza.”

(17) According to Department of Health’s Bulletin No. Shu-Shou-Ji-Zi-0990001077 dated September 9, 2010 of the

Department of Health, NDM-1 Enterobacteriaceae infection is included in the list of Class 4 Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.

(18) According to the announcement of the Department of Health of the Executive Yuan, Shu-So-Ji No.0980000829 on June 19, 2009, amendment was made to exclude influenza A (H1N1) from Category 1 notifiable communicable diseases. Any influenza A (H1N1) cases with severe complications should be reported in accordance with regulations applicable to Category 4 notifiable communicable diseases, and subject to that category's corresponding prevention and control measures.

(19) Leprosy were renamed as Hansen's Disease and HIV Infection were belong to category 3 of communicable disease Since Nov.1, 2008, announced under Sue-So-Ji No. 0970001187 on October 24, 2008.

(20) On detection of acute intestinal tract communicable diseases such as suspected Cholera, Typhoid Fever, dysentery, Pertussis, Meningococcal Meningitis specimens shall be collected for laboratory testing before medication. For specimen collection for cases of other communicable diseases, please refer to the "Manual of Standard Operational Procedures for Specimen Collection for Disease Control" of the Center for Disease Control, or directly contact the local health bureau (station).

(21) Acute Hepatitis Unspecified- the serological test has been tagged items are negative. The reporting of Acute Hepatitis D,E and Unspecified shall send the specimen to CDC lab. For specimen collection of the rest acute hepatitis, please refer to the "Manual of Standard Operation Procedures for specimen collection of Disease control.

(22) HIV infection：Cases must be confirmed positive by the Western Blot assay or NAT. When reporting, hospitals shall attach laboratory report of positive result or indicate agency for testing confirmation.

AIDS：In addition to prior mentioned, cases must be considered "infected" while developing symptoms of opportunistic infections such as candidiasis or pneumocystis carinii pneumonia; or CD4/ CD4 ratio complied with reporting criteria. Please fill "AIDS case report form" additionally.

(23) This report may be mailed or faxed to the local health agency or internet communications. When necessary, report can be made directly by telephone to the local health agency (report will be filled out by person-in-charge.)

(24) Website：**https://ida4.cdc.gov.tw/hospital**

For further information, please contact：

_____Health Bureau, Disease Control Section

Hot Line：_____

Appendix 3

2018 calendar for re-defined months

	January								February								March						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat
week 1	31	1	2	3	4	5	6	week 5	28	29	30	31	1	2	3	week 9	25	26	27	28	1	2	3
week 2	7	8	9	10	11	12	13	week 6	4	5	6	7	8	9	10	week 10	4	5	6	7	8	9	10
week 3	14	15	16	17	18	19	20	week 7	11	12	13	14	15	16	17	week 11	11	12	13	14	15	16	17
week 4	21	22	23	24	25	26	27	week 8	18	19	20	21	22	23	24	week 12	18	19	20	21	22	23	24
	~~28~~	~~29~~	~~30~~	~~31~~					~~25~~	~~26~~	~~27~~	~~28~~				week 13	25	26	27	28	29	30	31

	April								May								June						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat
week 14	1	2	3	4	5	6	7	week 18	29	30	1	2	3	4	5	week 22	27	28	29	30	31	1	2
week 15	8	9	10	11	12	13	14	week 19	6	7	8	9	10	11	12	week 23	3	4	5	6	7	8	9
week 16	15	16	17	18	19	20	21	week 20	13	14	15	16	17	18	19	week 24	10	11	12	13	14	15	16
week 17	22	23	24	25	26	27	28	week 21	20	21	22	23	24	25	26	week 25	17	18	19	20	21	22	23
	~~29~~	~~30~~							~~27~~	~~28~~	~~29~~	~~30~~	~~31~~			week 26	24	25	26	27	28	29	30

	July								August								September						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat
week 27	1	2	3	4	5	6	7	week 31	29	30	31	1	2	3	4	week 35	26	27	28	29	30	31	1
week 28	8	9	10	11	12	13	14	week 32	5	6	7	8	9	10	11	week 36	2	3	4	5	6	7	8
week 29	15	16	17	18	19	20	21	week 33	12	13	14	15	16	17	18	week 37	9	10	11	12	13	14	15
week 30	22	23	24	25	26	27	28	week 34	19	20	21	22	23	24	25	week 38	16	17	18	19	20	21	22
	~~29~~	~~30~~	~~31~~						~~26~~	~~27~~	~~28~~	~~29~~	~~30~~	~~31~~		week 39	23	24	25	26	27	28	29

	October								November								December						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat
week 40	30	1	2	3	4	5	6	week 44	28	29	30	31	1	2	3	week 48	25	26	27	28	29	30	1
week 41	7	8	9	10	11	12	13	week 45	4	5	6	7	8	9	10	week 49	2	3	4	5	6	7	8
week 42	14	15	16	17	18	19	20	week 46	11	12	13	14	15	16	17	week 50	9	10	11	12	13	14	15
week 43	21	22	23	24	25	26	27	week 47	18	19	20	21	22	23	24	week 51	16	17	18	19	20	21	22
	~~28~~	~~29~~	~~30~~	~~31~~					~~25~~	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~		week 52	23	24	25	26	27	28	29
																	~~30~~	~~31~~					

Acknowledgement

We would like to thank all medical practitioners, laboratory personnel, nurses, public health professionals, as well as partners from public and private healthcare institutions and other government agencies, who contributed to the data and information published in this report. We acknowledge their invaluable contributions towards our national efforts in communicable diseases surveillance, prevention and control, and look forward to their continued support and cooperation in our work.

List of information providers

Centers for Disease Control, Ministry of Health and Welfare
Lo-Sheng Sanatorium and Hospital, Ministry of Health and Welfare
Department of Health, Taipei City Government
Department of Health, New Taipei City Government
Keelung City Health Bureau
Public Health Bureau, Yilan County
Public Health Bureau, Kinmen County
Bureau of Health and Welfare, Lienchiang County
Department of Public Health, Taoyuan
Public Health Bureau, Hsinchu City
Public Health Bureau of Hsinchu County Government
Miaoli County Government Public Health Bureau
Health Bureau of Taichung City Government
Changhua County Public Health Bureau
Health Bureau, Nantou County Government
Public Health Bureau, Yunlin County
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Chiayi County Health Bureau
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Public Health Bureau, Pingtung County Government
Public Health Bureau, Penghu County
Hualien County Health Bureau
Public Health Bureau, Taitung County

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