

Statistics
of
Communicable
Diseases and
Surveillance Report
2016

Annual
November 2017

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

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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, 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, 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, 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 calendar established by the World Health Organization's (WHO) is adopted. 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 "2016 Demographic Fact Book, Republic of China" by 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 2016 was based on the data before May 1, 2017.
5. Symbols: "-" for no reported cases; "..." for not under surveillance.
 6. Figures may not sum up to the total due to rounding.

* 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

Table 1 Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Midyear population	Category I				Category II	
		Smallpox	Plague	SARS	Rabies	Diphtheria	Typhoid ¹ Fever
Total	23,515,945	-	-	-	-	-	14
Taipei Area							
Taipei City	2,700,257	-	-	-	-	-	2
New Taipei City	3,974,926	-	-	-	-	-	-
Keelung City	372,103	-	-	-	-	-	-
Yilan County	457,827	-	-	-	-	-	-
Kinmen County	133,956	-	-	-	-	-	-
Lienchiang County	12,571	-	-	-	-	-	-
Northern Area							
Taoyuan City	2,126,772	-	-	-	-	-	2
Hsinchu City	435,699	-	-	-	-	-	1
Hsinchu County	544,762	-	-	-	-	-	-
Miaoli County	561,550	-	-	-	-	-	-
Central Area							
Taichung City	2,755,842	-	-	-	-	-	1
Changhua County	1,288,109	-	-	-	-	-	-
Nantou County	507,327	-	-	-	-	-	1
Southern Area							
Yunlin County	697,253	-	-	-	-	-	-
Chiayi City	270,120	-	-	-	-	-	-
Chiayi County	517,580	-	-	-	-	-	2
Tainan City	1,885,787	-	-	-	-	-	2
Kao-Ping Area							
Kaohsiung City	2,779,144	-	-	-	-	-	3
Pingtung County	838,522	-	-	-	-	-	-
Penghu County	102,783	-	-	-	-	-	-
Eastern Area							
Hualien County	331,428	-	-	-	-	-	-
Taitung County	221,627	-	-	-	-	-	-
Others		-	-	-	-	-	-

Note: ¹Nine cases of typhoid fever were imported.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Category II						
	Dengue ¹ Fever	Meningococcal Meningitis	Paratyphoid ¹ Fever	Poliomyelitis	Acute ² Flaccid Paralysis	Shigellosis ¹	Amoebiasis ¹
Total	744	8	6	-	41	225	314
Taipei Area							
Taipei City	65	1	3	-	4	40	38
New Taipei City	63	-	2	-	8	78	49
Keelung City	2	-	1	-	2	7	5
Yilan County	3	2	-	-	1	6	12
Kinmen County	-	-	-	-	-	1	-
Lienchiang County	-	-	-	-	-	1	-
Northern Area							
Taoyuan City	44	2	-	-	7	32	21
Hsinchu City	7	-	-	-	1	3	6
Hsinchu County	11	1	-	-	-	5	6
Miaoli County	11	-	-	-	1	3	7
Central Area							
Taichung City	54	-	-	-	2	20	38
Changhua County	8	1	-	-	2	4	14
Nantou County	6	-	-	-	-	-	6
Southern Area							
Yunlin County	6	-	-	-	-	3	8
Chiayi City	4	-	-	-	-	4	3
Chiayi County	1	-	-	-	-	1	11
Tainan City	38	-	-	-	5	4	35
Kao-Ping Area							
Kaohsiung City	379	-	-	-	6	4	41
Pingtung County	35	-	-	-	1	2	7
Penghu County	1	-	-	-	1	1	1
Eastern Area							
Hualien County	2	1	-	-	-	5	5
Taitung County	4	-	-	-	-	1	1
Others	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: dengue fever (363), paratyphoid fever (3), shigellosis (109), and amoebiasis (166).

²No 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, 2016

Unit: Person

Area / Locality	Midyear population	Category II						
		Malaria ¹		Measles ¹	Acute ¹ Hepatitis A	Enterohae morrhagic <i>E. coli</i> Infection	Hantavirus Syndrome	
		Indigenous	Imported				Hemorrhagic Fever with Renal Syndrome	Hantavirus Pulmonary Syndrome
Total	23,515,945	-	13	14	1,133	-	4	-
Taipei Area								
Taipei City	2,700,257	-	4	5	272	-	-	-
New Taipei City	3,974,926	-	1	3	370	-	-	-
Keelung City	372,103	-	-	-	15	-	-	-
Yilan County	457,827	-	-	-	16	-	-	-
Kinmen County	133,956	-	-	1	1	-	-	-
Lienchiang County	12,571	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	2,126,772	-	4	1	93	-	-	-
Hsinchu City	435,699	-	-	2	21	-	-	-
Hsinchu County	544,762	-	-	-	22	-	-	-
Miaoli County	561,550	-	-	-	10	-	-	-
Central Area								
Taichung City	2,755,842	-	1	-	162	-	-	-
Changhua County	1,288,109	-	-	-	25	-	-	-
Nantou County	507,327	-	-	-	9	-	-	-
Southern Area								
Yunlin County	697,253	-	-	-	10	-	-	-
Chiayi City	270,120	-	-	-	2	-	-	-
Chiayi County	517,580	-	-	-	2	-	-	-
Tainan City	1,885,787	-	-	1	38	-	-	-
Kao-Ping Area								
Kaohsiung City	2,779,144	-	1	-	46	-	4	-
Pingtung County	838,522	-	-	1	9	-	-	-
Penghu County	102,783	-	-	-	4	-	-	-
Eastern Area								
Hualien County	331,428	-	2	-	3	-	-	-
Taitung County	221,627	-	-	-	3	-	-	-
Others		-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: malaria (13), measles (8), and acute hepatitis A (80).

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Category II						
	Cholera	Rubella ¹	MDR-TB ³	Chikungunya ¹ Fever	West Nile Fever	Epidemic Typhus Fever	Anthrax
Total	9	4	112	14	-	-	-
Taipei Area							
Taipei City	-	1	11	2	-	-	-
New Taipei City	-	1	19	2	-	-	-
Keelung City	-	-	2	1	-	-	-
Yilan County	-	-	4	-	-	-	-
Kinmen County	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	1	-	8	3	-	-	-
Hsinchu City	-	-	1	-	-	-	-
Hsinchu County	-	-	1	-	-	-	-
Miaoli County	1	-	4	-	-	-	-
Central Area							
Taichung City	2	-	16	2	-	-	-
Changhua County	2	-	6	-	-	-	-
Nantou County	-	-	2	-	-	-	-
Southern Area							
Yunlin County	-	-	4	-	-	-	-
Chiayi City	1	-	2	-	-	-	-
Chiayi County	-	-	1	-	-	-	-
Tainan City	-	2	8	-	-	-	-
Kao-Ping Area							
Kaohsiung City	2	-	13	4	-	-	-
Pingtung County	-	-	3	-	-	-	-
Penghu County	-	-	-	-	-	-	-
Eastern Area							
Hualien County	-	-	4	-	-	-	-
Taitung County	-	-	3	-	-	-	-
Others	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: rubella (3) and chikungunya fever (14).

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

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Midyear population	Category III					
		Pertussis	Tetanus ⁴	Japanese Encephalitis	Tuberculosis ³	Congenital Rubella Syndrome	Acute ¹ Hepatitis B
Total	23,515,945	17	14	23	10,328	-	118
Taipei Area							
Taipei City	2,700,257	2	1	-	797	-	16
New Taipei City	3,974,926	3	1	1	1,558	-	32
Keelung City	372,103	-	-	-	173	-	2
Yilan County	457,827	-	1	-	232	-	1
Kinmen County	133,956	-	-	-	30	-	-
Lienchiang County	12,571	-	-	-	4	-	-
Northern Area							
Taoyuan City	2,126,772	2	2	-	698	-	15
Hsinchu City	435,699	-	-	1	119	-	3
Hsinchu County	544,762	-	-	1	180	-	2
Miaoli County	561,550	-	1	1	179	-	4
Central Area							
Taichung City	2,755,842	4	2	2	1,125	-	11
Changhua County	1,288,109	-	-	1	632	-	6
Nantou County	507,327	-	1	2	327	-	1
Southern Area							
Yunlin County	697,253	2	1	1	427	-	1
Chiayi City	270,120	-	1	1	116	-	1
Chiayi County	517,580	1	1	2	249	-	2
Tainan City	1,885,787	-	1	3	870	-	9
Kao-Ping Area							
Kaohsiung City	2,779,144	3	-	4	1,563	-	7
Pingtung County	838,522	-	-	-	646	-	2
Penghu County	102,783	-	1	-	19	-	-
Eastern Area							
Hualien County	331,428	-	-	3	237	-	1
Taitung County	221,627	-	-	-	147	-	2
Others		-	-	-	-	-	-

Note: ¹Seven cases of acute hepatitis B were imported.

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

⁴Calculation for tetanus was based on reported cases only.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Category III						
	Acute Hepatitis				Mumps ⁴	Legionnaires ¹ Disease	Invasive Haemophilus Influenzae Type b Infection
	C ¹	D	E ¹	Un- specified			
Total	207	2	16	-	616	114	14
Taipei Area							
Taipei City	34	1	4	-	93	13	2
New Taipei City	34	-	3	-	107	22	3
Keelung City	10	-	1	-	12	-	-
Yilan County	10	-	-	-	14	4	-
Kinmen County	-	-	-	-	1	-	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	20	-	1	-	50	6	2
Hsinchu City	1	-	-	-	9	2	-
Hsinchu County	-	-	2	-	8	2	-
Miaoli County	7	-	1	-	13	1	-
Central Area							
Taichung City	13	-	1	-	52	8	-
Changhua County	6	-	-	-	19	7	2
Nantou County	2	-	-	-	27	-	-
Southern Area							
Yunlin County	6	-	-	-	9	5	-
Chiayi City	2	-	-	-	1	1	1
Chiayi County	6	-	-	-	3	2	1
Tainan City	10	1	1	-	44	8	1
Kao-Ping Area							
Kaohsiung City	23	-	2	-	92	21	-
Pingtung County	7	-	-	-	27	6	-
Penghu County	-	-	-	-	24	1	-
Eastern Area							
Hualien County	14	-	-	-	11	4	2
Taitung County	2	-	-	-	-	1	-
Others	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

⁴Calculation for mumps was based on reported cases only.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Midyear population	Category III							
		Syphilis ^{5,6}	Congenital syphilis ^{5,7}	Gonorrhoea ⁵	Neonatal Tetanus	Enteroviruses Infection with Severe Complications	HIV ⁸ Infection	AIDS ⁸	Hansen's Disease ⁵
Total	23,515,945	8,725	1	4,469	-	33	2,396	1,412	10
Taipei Area									
Taipei City	2,700,257	1,202	-	854	-	2	402	185	3
New Taipei City	3,974,926	1,795	1	1,089	-	6	539	294	3
Keelung City	372,103	167	-	93	-	1	20	30	-
Yilan County	457,827	211	-	31	-	2	19	10	-
Kinmen County	133,956	6	-	2	-	-	1	1	-
Lienchiang	12,571	1	-	1	-	-	-	-	-
Northern Area									
Taoyuan City	2,126,772	974	-	575	-	3	243	133	-
Hsinchu City	435,699	136	-	85	-	1	45	27	-
Hsinchu County	544,762	98	-	155	-	1	34	25	-
Miaoli County	561,550	132	-	66	-	-	21	17	1
Central Area									
Taichung City	2,755,842	1,052	-	315	-	8	331	183	-
Changhua County	1,288,109	340	-	98	-	1	55	38	1
Nantou County	507,327	122	-	71	-	-	34	25	-
Southern Area									
Yunlin County	697,253	161	-	53	-	-	41	45	-
Chiayi City	270,120	67	-	29	-	-	20	4	-
Chiayi County	517,580	93	-	45	-	-	19	11	-
Tainan City	1,885,787	537	-	205	-	2	167	106	1
Kao-Ping Area									
Kaohsiung City	2,779,144	1,000	-	482	-	4	301	185	-
Pingtung County	838,522	318	-	78	-	1	48	56	1
Penghu County	102,783	45	-	5	-	-	4	2	-
Eastern Area									
Hualien County	331,428	175	-	79	-	1	40	23	-
Taitung County	221,627	93	-	58	-	-	12	12	-
Others		-	-	-	-	-	-	-	-

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

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The 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, 2016

Unit: Person

Area / Locality	Category IV								
	Herpesvirus B Infection	Leptospirosis ¹	Melioidosis ¹	Botulism	Invasive ¹ Pneumococcal Disease	Q Fever ¹	Endemic Typhus Fever	Lyme ¹ Disease	Tularemia
Total	-	130	55	6	592	45	13	2	-
Taipei Area									
Taipei City	-	8	-	-	66	-	-	1	-
New Taipei City	-	26	1	1	100	5	-	1	-
Keelung City	-	-	-	1	14	-	-	-	-
Yilan County	-	2	-	-	15	-	-	-	-
Kinmen County	-	-	-	1	1	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-	-	-
Northern Area									
Taoyuan City	-	11	2	-	37	-	1	-	-
Hsinchu City	-	4	-	-	9	-	-	-	-
Hsinchu County	-	6	1	-	14	-	-	-	-
Miaoli County	-	2	-	-	10	1	-	-	-
Central Area									
Taichung City	-	14	1	-	50	5	-	-	-
Changhua County	-	6	-	-	32	4	2	-	-
Nantou County	-	4	1	-	15	2	-	-	-
Southern Area									
Yunlin County	-	4	-	-	23	2	2	-	-
Chiayi City	-	-	2	-	5	-	-	-	-
Chiayi County	-	3	-	1	20	-	-	-	-
Tainan City	-	6	6	-	54	10	3	-	-
Kao-Ping Area									
Kaohsiung City	-	17	34	-	79	6	5	-	-
Pingtung County	-	12	7	1	29	9	-	-	-
Penghu County	-	-	-	-	-	1	-	-	-
Eastern Area									
Hualien County	-	4	-	1	15	-	-	-	-
Taitung County	-	1	-	-	4	-	-	-	-
Others	-	-	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), and Lyme disease (2).

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

Unit: Person

Area / Locality	Midyear population	Category IV					
		Scrub ¹ Typhus	Complicated Varicella	Toxoplasmosis	Severe ¹ Complicated Influenza	Creutzfeldt- ⁵ Jakob Disease	Brucellosis
Total	23,515,945	488	40	10	2,084	-	-
Taipei Area							
Taipei City	2,700,257	16	4	-	206	-	-
New Taipei City	3,974,926	31	6	-	321	-	-
Keelung City	372,103	3	-	-	25	-	-
Yilan County	457,827	8	-	-	53	-	-
Kinmen County	133,956	66	-	-	1	-	-
Lienchiang County	12,571	10	-	-	-	-	-
Northern Area							
Taoyuan City	2,126,772	14	3	1	149	-	-
Hsinchu City	435,699	3	1	-	28	-	-
Hsinchu County	544,762	7	1	-	34	-	-
Miaoli County	561,550	7	1	-	56	-	-
Central Area							
Taichung City	2,755,842	15	6	2	191	-	-
Changhua County	1,288,109	7	2	1	126	-	-
Nantou County	507,327	20	1	-	63	-	-
Southern Area							
Yunlin County	697,253	2	3	-	62	-	-
Chiayi City	270,120	2	4	-	20	-	-
Chiayi County	517,580	1	-	1	56	-	-
Tainan City	1,885,787	9	4	1	267	-	-
Kao-Ping Area							
Kaohsiung City	2,779,144	59	2	3	258	-	-
Pingtung County	838,522	15	1	1	117	-	-
Penghu County	102,783	77	-	-	4	-	-
Eastern Area							
Hualien County	331,428	58	1	-	21	-	-
Taitung County	221,627	58	-	-	26	-	-
Others		-	-	-	-	-	-

Note:¹The total case number of the following diseases includes imported cases: scrub typhus (5) and severe complicated influenza (3).

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

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2016

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 ^{1,9} Infection
Total	-	-	-	-	-	-	-	13
Taipei Area								
Taipei City	-	-	-	-	-	-	-	-
New Taipei City	-	-	-	-	-	-	-	4
Keelung City	-	-	-	-	-	-	-	-
Yilan County	-	-	-	-	-	-	-	-
Kinmen County	-	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	-	-	-	-	-	-	-	1
Hsinchu City	-	-	-	-	-	-	-	1
Hsinchu County	-	-	-	-	-	-	-	-
Miaoli County	-	-	-	-	-	-	-	-
Central Area								
Taichung City	-	-	-	-	-	-	-	2
Changhua County	-	-	-	-	-	-	-	3
Nantou County	-	-	-	-	-	-	-	-
Southern Area								
Yunlin County	-	-	-	-	-	-	-	-
Chiayi City	-	-	-	-	-	-	-	-
Chiayi County	-	-	-	-	-	-	-	-
Tainan City	-	-	-	-	-	-	-	-
Kao-Ping Area								
Kaohsiung City	-	-	-	-	-	-	-	2
Pingtung County	-	-	-	-	-	-	-	-
Penghu County	-	-	-	-	-	-	-	-
Eastern Area								
Hualien County	-	-	-	-	-	-	-	-
Taitung County	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-

Note: ¹Thirteen cases of Zika virus infection were imported.

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

Table 2 Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

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	-	-	-	-	-	-	2	0.07	7	0.13
Dengue Fever ¹	2	1.00	10	1.16	38	1.80	146	4.75	237	4.34
Meningococcal Meningitis	1	0.50	-	-	1	0.05	1	0.03	1	0.02
Paratyphoid Fever ¹	-	-	-	-	-	-	-	-	3	0.05
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	1	0.50	19	2.21	21	1.00	-	-	-	-
Shigellosis ¹	-	-	3	0.35	7	0.33	34	1.11	148	2.71
Amoebiasis ¹	-	-	-	-	1	0.05	67	2.18	184	3.37
Malaria ¹										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	-	-	-	-	1	0.05	5	0.16	5	0.09
Measles ¹	2	1.00	1	0.12	1	0.05	1	0.03	6	0.11
Acute Hepatitis A ¹	-	-	3	0.35	8	0.38	188	6.12	718	13.14
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome										
Hemorrhagic Fever with Renal Syndrome	-	-	-	-	-	-	1	0.03	-	-
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-
Cholera	-	-	-	-	1	0.05	1	0.03	-	-
Rubella ¹	-	-	-	-	-	-	-	-	2	0.04
MDR-TB ³	-	-	-	-	-	-	2	0.1	12	0.2

Note: ¹The total case number of the following diseases includes imported cases: typhoid fever (9), dengue fever (363), paratyphoid fever (3), shigellosis (109), amoebiasis (166), malaria (13), measles (8), acute hepatitis A (80), and rubella (3).

²No 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.

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

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

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	3	0.03	2	0.07	-	-	14	0.06
Dengue Fever ¹	230	2.62	81	2.68	-	-	744	3.16
Meningococcal Meningitis	3	0.03	1	0.03	-	-	8	0.03
Paratyphoid Fever ¹	3	0.03	-	-	-	-	6	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	-	-	-	-	-	-	41	0.17
Shigellosis ¹	27	0.31	6	0.20	-	-	225	0.96
Amoebiasis ¹	50	0.57	12	0.40	-	-	314	1.34
Malaria ¹								
Indigenous	-	-	-	-	-	-	-	-
Imported	2	0.02	-	-	-	-	13	0.06
Measles ¹	3	0.03	-	-	-	-	14	0.06
Acute Hepatitis A ¹	202	2.30	14	0.46	-	-	1,133	4.82
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	-
Hantavirus Syndrome								
Hemorrhagic Fever with Renal Syndrome	2	0.02	1	0.03	-	-	4	0.02
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-
Cholera	2	0.02	5	0.17	-	-	9	0.04
Rubella ¹	2	0.02	-	-	-	-	4	0.02
MDR-TB ³	41	0.5	57	1.9	-	-	112	0.5

Note: ¹The total case number of the following diseases includes imported cases: typhoid fever (9), dengue fever (363), paratyphoid fever (3), shigellosis (109), amoebiasis (166), malaria (13), measles (8), acute hepatitis A (80), and rubella (3).

²No 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.

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

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

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	-	-	-	-	-	-	-	-	9	0.16
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-
Category III										
Pertussis	12	6.02	1	0.12	1	0.05	1	0.03	1	0.02
Tetanus ⁴	-	-	-	-	-	-	-	-	1	0.02
Japanese Encephalitis	-	-	-	-	-	-	1	0.03	2	0.04
Tuberculosis ³	4	2.0	5	0.6	41	1.9	363	11.8	790	14.5
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis										
B ¹	-	-	-	-	-	-	8	0.26	53	0.97
C ¹	-	-	-	-	-	-	14	0.46	70	1.28
D	-	-	-	-	-	-	-	-	1	0.02
E ¹	-	-	-	-	-	-	1	0.03	1	0.02
Unspecified	-	-	-	-	-	-	-	-	-	-
Mumps ⁴	3	1.51	116	13.51	246	11.67	52	1.69	83	1.52
Legionnaires' Disease ¹	-	-	-	-	-	-	1	0.03	3	0.05
Invasive Haemophilus Influenzae Type b Infection	-	-	-	-	-	-	-	-	-	-
Syphilis ^{5,6}	6	3.01	-	-	5	0.24	1,225	39.86	3,598	65.86
Congenital Syphilis ^{5,7}	1	0.50	-	-	-	-	-	-	-	-
Gonorrhoea ⁵	-	-	3	0.35	26	1.23	1,522	49.52	2,370	43.38
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	5	2.51	25	2.91	3	0.14	-	-	-	-
HIV Infection ⁸	-	-	-	-	-	-	697	22.68	1,308	23.94
AIDS ⁸	-	-	-	-	-	-	196	6.38	793	14.52

Note: ¹The total case number of the following diseases includes imported cases: chikungunya fever (14), acute hepatitis B (7), acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

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

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

⁵The caseload calculation of syphilis, congenital syphilis, and gonorrhoea were based on diagnosis date.

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

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	5	0.06	-	-	-	-	14	0.06
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-
Category III								
Pertussis	1	0.01	-	-	-	-	17	0.07
Tetanus ⁴	6	0.07	7	0.23	-	-	14	0.06
Japanese Encephalitis	19	0.22	1	0.03	-	-	23	0.10
Tuberculosis ³	3,324	37.8	5,801	191.9	-	-	10,328	43.9
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B ¹	48	0.55	9	0.30	-	-	118	0.50
C ¹	82	0.93	41	1.36	-	-	207	0.88
D	1	0.01	-	-	-	-	2	0.01
E ¹	12	0.14	2	0.07	-	-	16	0.07
Unspecified	-	-	-	-	-	-	-	-
Mumps ⁴	89	1.01	27	0.89	-	-	616	2.62
Legionnaires' Disease ¹	49	0.56	61	2.02	-	-	114	0.48
Invasive Haemophilus Influenzae Type b Infection	4	0.05	10	0.33	-	-	14	0.06
Syphilis ^{5,6}	1,990	22.63	1,901	62.90	-	-	8,725	37.10
Congenital Syphilis ^{5,7}	-	-	-	-	-	-	1	<0.01
Gonorrhoea ⁵	529	6.02	19	0.63	-	-	4,469	19.00
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	-	-	-	-	-	-	33	0.14
HIV Infection ⁸	371	4.22	20	0.66	-	-	2,396	10.19
AIDS ⁸	396	4.50	27	0.89	-	-	1,412	6.00

Note: ¹The total case number of the following diseases includes imported cases: chikungunya fever (14), acute hepatitis B (7), acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

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

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

⁵The caseload calculation of syphilis, congenital syphilis, and gonorrhoea were based on diagnosis date.

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

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 III										
Hansen's Disease ⁵	-	-	-	-	-	-	-	-	5	0.09
Category IV										
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-
Leptospirosis ¹	-	-	-	-	-	-	7	0.23	18	0.33
Melioidosis ¹	-	-	-	-	-	-	1	0.03	3	0.05
Botulism	-	-	-	-	2	0.09	1	0.03	-	-
Invasive Pneumococcal Disease ¹	3	1.51	66	7.69	21	1.00	9	0.29	55	1.01
Q Fever ¹	-	-	-	-	1	0.05	2	0.07	15	0.27
Endemic Typhus Fever	-	-	-	-	-	-	-	-	5	0.09
Lyme Disease ¹	-	-	-	-	-	-	-	-	-	-
Tularemia	-	-	-	-	-	-	-	-	-	-
Scrub Typhus ¹	1	0.50	3	0.35	21	1.00	39	1.27	80	1.46
Complicated Varicella	-	-	4	0.47	2	0.09	9	0.29	10	0.18
Toxoplasmosis	-	-	-	-	1	0.05	2	0.07	2	0.04
Severe Complicated Influenza ¹	11	5.52	48	5.59	45	2.14	30	0.98	150	2.75
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-
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 ^{1,9}	-	-	-	-	-	-	4	0.13	3	0.05

Note: ¹The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), Lyme disease (2), scrub typhus (5), severe complicated influenza (3), and Zika virus infection (13).

⁵The caseload calculation of Hansen's disease and Creutzfeldt-Jakob disease were based on diagnosis date.

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 2 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by age group, 2016

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category III								
Hansen's Disease ⁵	3	0.03	2	0.07	-	-	10	0.04
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis ¹	80	0.91	25	0.83	-	-	130	0.55
Melioidosis ¹	27	0.31	24	0.79	-	-	55	0.23
Botulism	-	-	3	0.10	-	-	6	0.03
Invasive Pneumococcal Disease ¹	208	2.37	230	7.61	-	-	592	2.52
Q Fever ¹	14	0.16	13	0.43	-	-	45	0.19
Endemic Typhus Fever	5	0.06	3	0.10	-	-	13	0.06
Lyme Disease ¹	2	0.02	-	-	-	-	2	0.01
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus ¹	247	2.81	97	3.21	-	-	488	2.08
Complicated Varicella	11	0.13	4	0.13	-	-	40	0.17
Toxoplasmosis	5	0.06	-	-	-	-	10	0.04
Severe Complicated Influenza ¹	984	11.19	816	27.00	-	-	2,084	8.86
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
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 ^{1,9}	6	0.07	-	-	-	-	13	0.06

Note: ¹The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), Lyme disease (2), scrub typhus (5), severe complicated influenza (3), and Zika virus infection (13).

⁵The caseload calculation of Hansen's disease and Creutzfeldt-Jakob disease were based on diagnosis date.

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 3 Number of confirmed cases of notifiable diseases — by month, 2016

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	1	-	-	1	-	-	1	-	3	2	2	4	14
Dengue Fever ¹	391	37	16	22	23	23	42	74	21	44	27	24	744
Meningococcal Meningitis	-	1	1	-	-	-	-	-	3	1	2	-	8
Paratyphoid Fever ¹	-	-	-	-	1	3	-	1	-	-	-	1	6
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	4	3	4	3	1	3	7	3	4	3	2	4	41
Shigellosis ¹	11	15	25	28	14	18	12	21	16	29	18	18	225
Amoebiasis ¹	19	21	27	17	28	33	23	37	30	30	21	28	314
Malaria ¹													
Indigenous	-	-	-	-	-	-	-	-	-	-	-	-	-
Imported	3	-	-	2	-	1	-	1	4	2	-	-	13
Measles ¹	-	-	1	2	2	1	2	5	-	-	-	1	14
Acute Hepatitis A ¹	36	35	83	84	143	137	143	111	92	93	94	82	1,133
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome													
Hemorrhagic Fever with Renal Syndrome	-	1	1	1	-	-	-	-	-	-	-	1	4
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-	-	-	-
Cholera	-	-	-	-	-	-	3	4	1	1	-	-	9
Rubella ¹	1	2	-	1	-	-	-	-	-	-	-	-	4
MDR-TB ³	11	7	14	13	9	6	9	13	6	9	7	8	112

Note: ¹The total case number of the following diseases includes imported cases: typhoid fever (9), dengue fever (363), paratyphoid fever (3), shigellosis (109), amoebiasis (166), malaria (13), measles (8), acute hepatitis A (80), and rubella (3).

²No 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.

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

Table 3 (Continued) Number of confirmed cases of notifiable diseases — by month, 2016

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category II													
Chikungunya Fever ¹	2	-	1	1	2	1	-	1	-	-	2	4	14
West Nile Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	-
Category III													
Pertussis	-	1	1	3	2	-	2	4	2	2	-	-	17
Tetanus ⁴	1	-	1	1	2	1	1	1	1	1	1	3	14
Japanese Encephalitis	-	-	-	-	2	6	8	-	6	1	-	-	23
Tuberculosis ³	787	736	876	882	990	938	882	936	833	815	843	810	10,328
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis													
B ¹	4	12	5	8	12	7	9	14	10	11	10	16	118
C ¹	12	12	23	17	21	22	13	18	20	11	14	24	207
D	-	1	-	-	-	-	-	-	-	-	-	1	2
E ¹	2	-	-	3	1	2	-	2	3	-	1	2	16
Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-
Mumps ⁴	51	33	50	41	53	60	52	49	59	73	44	51	616
Legionnaires' Disease ¹	12	9	7	4	9	12	12	7	7	16	14	5	114
Invasive Haemophilus Influenzae Type b Infection	-	1	1	2	2	1	4	2	-	1	-	-	14
Syphilis ^{5,6}	573	503	725	724	797	756	766	801	743	765	818	754	8,725
Congenital Syphilis ^{5,7}	-	-	-	-	1	-	-	-	-	-	-	-	1
Gonorrhea ⁵	343	303	379	317	384	345	394	413	401	402	407	381	4,469
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	-	-	1	3	5	3	3	5	5	2	4	2	33
HIV Infection ⁸	192	199	197	182	226	209	190	198	191	203	196	213	2,396
AIDS ⁸	108	116	121	124	142	123	111	118	117	122	98	112	1,412

Note: ¹The total case number of the following diseases includes imported cases: chikungunya fever (14), acute hepatitis B (7), acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

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

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

⁵The caseload calculation of syphilis, congenital syphilis, and gonorrhea were based on diagnosis date.

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The 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, 2016

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category III													
Hansen's Disease ⁵	1	-	1	1	1	-	1	2	1	-	1	1	10
Category IV													
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis ¹	5	5	2	7	10	9	14	20	24	18	5	11	130
Melioidosis ¹	-	2	2	2	-	2	7	4	12	10	9	5	55
Botulism	-	1	-	-	2	-	1	-	1	-	-	1	6
Invasive Pneumococcal Disease ¹	63	92	58	59	39	24	31	34	40	46	50	56	592
Q Fever ¹	4	1	1	7	7	5	4	7	3	3	1	2	45
Endemic Typhus Fever	1	-	-	-	4	3	1	2	-	-	1	1	13
Lyme Disease ¹	-	-	-	-	-	-	-	1	1	-	-	-	2
Tularemia	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrub Typhus ¹	32	4	2	24	78	79	46	22	47	58	59	37	488
Complicated Varicella	3	4	3	1	5	3	4	3	3	7	2	2	40
Toxoplasmosis	-	2	1	1	-	1	1	1	-	2	-	1	10
Severe Complicated Influenza ¹	240	1,047	448	74	13	8	10	10	17	49	103	65	2,084
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	-
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 ^{1,9}	1	-	-	-	1	1	1	2	3	4	-	-	13

Note: ¹The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), Lyme disease (2), scrub typhus (5), severe complicated influenza (3), and Zika virus infection (13).

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

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

Table 4 Number of confirmed cases and incidence¹⁰ rate of notifiable diseases — by sex, 2016

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	5	0.04	-	-	14	0.06
Dengue Fever ¹	359	3.04	385	3.29	-	-	744	3.16
Meningococcal Meningitis	6	0.05	2	0.02	-	-	8	0.03
Paratyphoid Fever ¹	5	0.04	1	0.01	-	-	6	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	17	0.14	24	0.20	-	-	41	0.17
Shigellosis ¹	99	0.84	126	1.08	-	-	225	0.96
Amoebiasis ¹	139	1.18	175	1.49	-	-	314	1.34
Malaria ¹								
Indigenous	-	-	-	-	-	-	-	-
Imported	4	0.03	9	0.08	-	-	13	0.06
Measles ¹	8	0.07	6	0.05	-	-	14	0.06
Acute Hepatitis A ¹	86	0.73	1,047	8.94	-	-	1,133	4.82
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	-
Hantavirus Syndrome								
Hemorrhagic Fever with Renal Syndrome	2	0.02	2	0.02	-	-	4	0.02
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-
Cholera	4	0.03	5	0.04	-	-	9	0.04
Rubella ¹	2	0.02	2	0.02	-	-	4	0.02
MDR-TB ³	24	0.2	88	0.8	-	-	112	0.5

Note: ¹The total case number of the following diseases includes imported cases: typhoid fever (9), dengue fever (363), paratyphoid fever (3), shigellosis (109), amoebiasis (166), malaria (13), measles (8), acute hepatitis A (80), and rubella (3).

²No 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.

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

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 4 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by sex, 2016

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II								
Chikungunya Fever ¹	5	0.04	9	0.08	-	-	14	0.06
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-
Category III								
Pertussis	7	0.06	10	0.09	-	-	17	0.07
Tetanus ⁴	7	0.06	7	0.06	-	-	14	0.06
Japanese Encephalitis	11	0.09	12	0.10	-	-	23	0.10
Tuberculosis ³	3,113	26.4	7,215	61.6	-	-	10,328	43.9
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B ¹	60	0.51	58	0.50	-	-	118	0.50
C ¹	67	0.57	140	1.19	-	-	207	0.88
D	-	-	2	0.02	-	-	2	0.01
E ¹	4	0.03	12	0.10	-	-	16	0.07
Unspecified	-	-	-	-	-	-	-	-
Mumps ⁴	257	2.18	359	3.06	-	-	616	2.62
Legionnaires' Disease ¹	26	0.22	88	0.75	-	-	114	0.48
Invasive Haemophilus Influenzae Type b Infection	4	0.03	10	0.09	-	-	14	0.06
Syphilis ^{5,6}	1,631	13.82	7,094	60.55	-	-	8,725	37.10
Congenital Syphilis ^{5,7}	1	0.01	-	-	-	-	1	<0.01
Gonorrhea ⁵	328	2.78	4,141	35.35	-	-	4,469	19.00
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	12	0.10	21	0.18	-	-	33	0.14
HIV Infection ⁸	62	0.53	2,334	19.92	-	-	2,396	10.19
AIDS ⁸	72	0.61	1,340	11.44	-	-	1,412	6.00
Hansen's Disease ⁵	6	0.05	4	0.03	-	-	10	0.04

Note: ¹The total case number of the following diseases includes imported cases: chikungunya fever (14), acute hepatitis B (7), acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

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

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

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

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 4 (Continued) Number of confirmed cases and incidence¹⁰ rate of notifiable diseases

— by sex, 2016

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis ¹	20	0.17	110	0.94	-	-	130	0.55
Melioidosis ¹	13	0.11	42	0.36	-	-	55	0.23
Botulism	3	0.03	3	0.03	-	-	6	0.03
Invasive Pneumococcal Disease ¹	192	1.63	400	3.41	-	-	592	2.52
Q Fever ¹	7	0.06	38	0.32	-	-	45	0.19
Endemic Typhus Fever	4	0.03	9	0.08	-	-	13	0.06
Lyme Disease ¹	1	0.01	1	0.01	-	-	2	0.01
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus ¹	186	1.58	302	2.58	-	-	488	2.08
Complicated Varicella	11	0.09	29	0.25	-	-	40	0.17
Toxoplasmosis	4	0.03	6	0.05	-	-	10	0.04
Severe Complicated Influenza ¹	851	7.21	1,233	10.52	-	-	2,084	8.86
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
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 ^{1,9}	4	0.03	9	0.08	-	-	13	0.06

Note: ¹The total case number of the following diseases includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), Lyme disease (2), scrub typhus (5), severe complicated influenza (3), and Zika virus infection (13).

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

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

¹⁰Incidence rate indicates the number of new confirmed cases per 100,000 population.

Table 5 Number of confirmed cases of notifiable diseases — by year, 2007-2016

Unit: Person

Disease	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Category I										
Smallpox	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	1	1	-	-	-
Category II										
Diphtheria	-	-	-	-	-	-	-	-	-	-
Typhoid Fever ¹	34	33	80	33	49	26	19	25	29	14
Dengue Fever ¹	2,179	714	1,052	1,896	1,702	1,478	860	15,732	43,784	744
Meningococcal Meningitis	20	19	2	7	5	6	6	3	3	8
Paratyphoid Fever ¹	6	11	6	12	6	8	9	8	3	6
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	51	74	45	49	45	51	25	29	19	41
Shigellosis ¹	246	90	91	172	203	155	155	132	186	225
Amoebiasis ¹	145	227	190	262	256	258	270	300	350	314
Malaria ¹										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	13	18	11	21	17	12	13	19	8	13
Measles ¹	10	16	48	12	33	9	8	26	29	14
Acute Hepatitis A ¹	203	236	234	110	104	99	139	117	171	1,133
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	-	-	-
Hantavirus Syndrome										
Hemorrhagic Fever with Renal Syndrome	1	1	-	1	-	1	-	2	2	4
Hantavirus Pulmonary Syndrome	-	-	-	-	-	-	-	-	-	-
Cholera	-	1	3	5	3	5	7	4	10	9
Rubella ¹	54	33	23	21	60	12	7	7	7	4
MDR-TB ^{3,11}	19	159	176	156	154	140	129	112	117	112

Note: ¹The total case number of the following diseases in 2016 includes imported cases: typhoid fever (9), dengue fever (363), paratyphoid fever (3), shigellosis (109), amoebiasis (166), malaria (13), measles (8), acute hepatitis A (80), and rubella (3).

²No 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.

³The caseload calculation of MDR-TB was based on CDC’s registration date.

¹¹The statistics of MDR-TB was conducted with the proclamation validated since October 15, 2007.

Table 5 (Continued) Number of confirmed cases of notifiable diseases — by year, 2007-2016

Unit: Person

Disease	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Category II										
Chikungunya Fever ^{1,11}	2	9	9	13	1	5	29	7	4	14
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-	-
Category III										
Pertussis	41	41	90	61	77	54	51	78	70	17
Tetanus ⁴	10	18	12	12	10	17	24	9	12	14
Japanese Encephalitis	37	17	18	33	22	32	16	18	30	23
Tuberculosis ³	14,480	14,265	13,336	13,237	12,634	12,338	11,528	11,326	10,711	10,328
Congenital Rubella Syndrome	1	1	-	-	-	-	-	-	-	-
Acute Hepatitis										
B ¹	202	231	152	172	163	97	97	120	125	118
C ¹	153	124	131	41	34	34	10	205	217	207
D	1	4	1	1	-	-	-	1	2	2
E ¹	12	14	9	7	12	9	9	9	8	16
Unspecified	10	22	18	13	10	10	5	1	2	-
Mumps ⁴	1,208	1,145	1,068	1,125	1,171	1,061	1,170	880	773	616
Legionnaires' Disease ¹	56	69	84	102	97	88	115	135	153	114
Invasive Haemophilus Influenzae Type b Infection	16	12	14	12	9	3	10	4	3	14
Syphilis ^{5,6}	5,798	6,526	6,668	6,482	6,372	5,896	6,346	6,986	7,471	8,725
Congenital Syphilis ^{5,7}	...	...	...	...	...	...	...	...	...	1
Gonorrhoea ⁵	1,442	1,621	2,137	2,265	1,978	1,983	2,155	2,622	3,587	4,469
Neonatal Tetanus ¹¹	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	12	373	29	16	59	153	12	6	6	33
HIV Infection ⁸	1,935	1,752	1,648	1,796	1,967	2,224	2,244	2,236	2,327	2,396
AIDS ⁸	1,061	849	930	1,087	1,075	1,280	1,430	1,387	1,440	1,412
Hansen's Disease ⁵	12	8	7	5	5	13	7	9	16	10

Note: ¹The total case number of the following diseases in 2016 includes imported cases: chikungunya fever (14), acute hepatitis B (7), acute hepatitis C (3), acute hepatitis E (5), and legionnaires' disease (3).

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

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

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

⁶The notification definition of syphilis has been revised into stages (latent, primary, secondary and tertiary) since April 1, 2016.

⁷Congenital syphilis has been included in the list of notifiable diseases since April 1, 2016.

⁸The caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

¹¹The statistics of chikungunya fever and neonatal tetanus were conducted with the proclamation validated since October 15, 2007.

Table 5 (Continued) Number of confirmed cases of notifiable diseases — by year, 2007-2016

Unit: Person

Disease	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Category IV										
Herpesvirus B Infection ¹¹	-	-	-	-	-	-	-	-	-	-
Leptospirosis ^{1, 11}	10	47	203	77	55	91	82	98	81	130
Melioidosis ^{1, 11}	4	45	44	45	45	29	19	37	32	55
Botulism ¹¹	4	11	1	11	6	-	1	-	2	6
Invasive Pneumococcal Disease ^{1, 11}	169	805	690	737	837	749	625	587	524	592
Q Fever ^{1,11}	17	91	89	89	35	53	48	42	43	45
Endemic Typhus Fever ¹¹	6	31	40	42	26	37	27	21	35	13
Lyme Disease ^{1, 11}	1	2	-	-	-	1	-	2	2	2
Tularemia ¹¹	-	-	-	-	1	-	-	-	-	-
Scrub Typhus ¹	510	492	353	402	322	460	538	414	494	488
Complicated Varicella ¹²	...	...	...	...	...	...	...	55	54	40
Toxoplasmosis ¹¹	2	3	7	5	5	12	15	12	13	10
Severe Complicated Influenza ^{1,13}	26	22	1,134	882	1,481	1,595	965	1,721	857	2,084
Creutzfeldt-Jakob Disease ^{5,11}	-	-	3	-	-	-	-	-	-	-
Brucellosis ¹³	...	...	...	...	...	-	-	-	1	-
Category V										
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome ¹⁵	...	...	...	...	...	-	-	-	-	-
Coronavirus Infections										
Novel Influenza A Virus Infections ¹⁶	...	...	...	...	...	...	...	-	-	-
Zika Virus Infection ^{1,9}	...	...	...	...	...	...	...	...	...	13

Note: ¹The total case number of the following diseases in 2016 includes imported cases: leptospirosis (1), melioidosis (1), invasive pneumococcal disease (1), Q fever (2), Lyme disease (2), scrub typhus (5), severe complicated influenza (3), and Zika virus infection (13).

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

⁹Zika virus infection has been included in Category II notifiable disease since January 22, 2016, and reclassified as Category V since February 2, 2016.

¹¹The statistics of herpesvirus B infection, leptospirosis, melioidosis, botulism, invasive pneumococcal disease, Q fever, endemic typhus fever, Lyme disease, tularemia, toxoplasmosis and Creutzfeldt-Jakob disease were conducted with the proclamation validated since October 15, 2007.

¹²Varicella was revised the notifiable condition into "complicated varicella", and has been validated since January 1, 2014.

¹³"Complicated influenza" was revised the notifiable condition into "severe complicated influenza", and has been validated since August 1, 2014.

¹⁴Brucellosis has been included in the list of notifiable diseases since February 7, 2012.

¹⁵"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.

¹⁶"Novel Influenza A Virus Infections" has been included in the list of notifiable diseases since July 1, 2014.

Table 6 Analysis of time intervals between diagnosis and reporting for notifiable diseases

— by locality, 2016

Unit: Day

Locality	2015			2016						
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	74,173	0.4	0	12,266	0.3	0	12,228	99.7	38	0.3
Taipei City	1,397	0.3	0	1,464	0.2	0	1,463	99.9	1	0.1
New Taipei City	729	0.2	0	787	0.2	0	786	99.9	1	0.1
Taichung City	1,012	0.3	0	863	0.3	0	863	100.0	-	-
Tainan City	31,250	0.4	0	1,079	0.2	0	1,079	100.0	-	-
Kaohsiung City	35,934	0.4	0	5,518	0.4	0	5,518	100.0	-	-
Yilan County	68	0.3	0	72	0.2	0	72	100.0	-	-
Taoyuan City	846	0.4	0	875	0.2	0	841	96.1	34	3.9
Hsinchu County	57	0.1	0	32	0.3	0	31	96.9	1	3.1
Miaoli County	81	0.2	0	65	0.1	0	65	100.0	-	-
Changhua County	227	0.2	0	176	0.1	0	176	100.0	-	-
Nantou County	57	0.1	0	43	0.1	0	43	100.0	-	-
Yunlin County	147	0.2	0	84	0.2	0	84	100.0	-	-
Chiayi County	177	0.3	0	89	0.4	0	89	100.0	-	-
Pingtung County	1,202	0.4	0	432	0.3	0	432	100.0	-	-
Taitung County	69	0.2	0	46	0.1	0	46	100.0	-	-
Hualien County	315	0.2	0	280	0.2	0	279	99.6	1	0.4
Penghu County	88	0.4	0	31	0.4	0	31	100.0	-	-
Keelung City	64	0.4	0	66	0.3	0	66	100.0	-	-
Hsinchu City	183	0.2	0	131	0.2	0	131	100.0	-	-
Chiayi City	254	0.2	0	126	0.1	0	126	100.0	-	-
Kinmen County	13	0.6	0	7	0.6	0	7	100.0	-	-
Lienchiang County	3	0.0	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, 2016

Unit: Day

Locality	2015			2016							
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours		
							No.	%	No.	%	
Total	74,173	0.0	0	12,266	0.0	0	12,266	100.0	-	-	
Taipei City	1,397	0.0	0	1,464	0.0	0	1,464	100.0	-	-	
New Taipei City	729	0.1	0	787	0.1	0	787	100.0	-	-	
Taichung City	1,012	0.1	0	863	0.1	0	863	100.0	-	-	
Tainan City	31,250	0.1	0	1,079	0.1	0	1,079	100.0	-	-	
Kaohsiung City	35,934	0.0	0	5,518	0.0	0	5,518	100.0	-	-	
Yilan County	68	0.0	0	72	0.0	0	72	100.0	-	-	
Taoyuan City	846	0.0	0	875	0.0	0	875	100.0	-	-	
Hsinchu County	57	0.0	0	32	0.0	0	32	100.0	-	-	
Miaoli County	81	0.0	0	65	0.0	0	65	100.0	-	-	
Changhua County	227	0.0	0	176	0.0	0	176	100.0	-	-	
Nantou County	57	0.0	0	43	0.0	0	43	100.0	-	-	
Yunlin County	147	0.0	0	84	0.0	0	84	100.0	-	-	
Chiayi County	177	0.0	0	89	0.0	0	89	100.0	-	-	
Pingtung County	1,202	0.0	0	432	0.0	0	432	100.0	-	-	
Taitung County	69	0.3	0	46	0.2	0	46	100.0	-	-	
Hualien County	315	0.0	0	280	0.0	0	280	100.0	-	-	
Penghu County	88	0.0	0	31	0.0	0	31	100.0	-	-	
Keelung City	64	0.0	0	66	0.0	0	66	100.0	-	-	
Hsinchu City	183	0.1	0	131	0.0	0	131	100.0	-	-	
Chiayi City	254	0.0	0	126	0.0	0	126	100.0	-	-	
Kinmen County	13	0.0	0	7	0.0	0	7	100.0	-	-	
Lienchiang County	3	0.0	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, 2016

Unit: Day

Locality	2015			2016						
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	74,173	0.0	0	12,266	0.0	0	12,265	100.0	1	0.0
Taipei City	1,397	0.0	0	1,464	0.0	0	1,464	100.0	-	-
New Taipei City	729	0.0	0	787	0.0	0	787	100.0	-	-
Taichung City	1,012	0.0	0	863	0.0	0	862	99.9	1	0.1
Tainan City	31,250	0.0	0	1,079	0.0	0	1,079	100.0	-	-
Kaohsiung City	35,934	0.0	0	5,518	0.0	0	5,518	100.0	-	-
Yilan County	68	0.0	0	72	0.0	0	72	100.0	-	-
Taoyuan City	846	0.0	0	875	0.0	0	875	100.0	-	-
Hsinchu County	57	0.0	0	32	0.0	0	32	100.0	-	-
Miaoli County	81	0.0	0	65	0.0	0	65	100.0	-	-
Changhua County	227	0.0	0	176	0.0	0	176	100.0	-	-
Nantou County	57	0.0	0	43	0.0	0	43	100.0	-	-
Yunlin County	147	0.0	0	84	0.0	0	84	100.0	-	-
Chiayi County	177	0.0	0	89	0.0	0	89	100.0	-	-
Pingtung County	1,202	0.0	0	432	0.0	0	432	100.0	-	-
Taitung County	69	0.0	0	46	0.0	0	46	100.0	-	-
Hualien County	315	0.0	0	280	0.0	0	280	100.0	-	-
Penghu County	88	0.0	0	31	0.0	0	31	100.0	-	-
Keelung City	64	0.0	0	66	0.0	0	66	100.0	-	-
Hsinchu City	183	0.0	0	131	0.0	0	131	100.0	-	-
Chiayi City	254	0.0	0	126	0.0	0	126	100.0	-	-
Kinmen County	13	0.0	0	7	0.0	0	7	100.0	-	-
Lienchiang County	3	0.0	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	BCG			DTaP-Hib-IPV					
	2015			2015			201304~201403		
Dose	single dose			3rd dose			4th dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	218,472	214,553	98.21	218,472	213,122	97.55	195,729	185,283	94.66
New Taipei City	34,674	33,807	97.50	34,674	33,592	96.88	31,170	29,306	94.02
Taipei City	30,538	29,897	97.90	30,538	29,864	97.79	28,095	26,518	94.39
Taoyuan City	23,695	23,359	98.58	23,695	23,108	97.52	19,620	18,782	95.73
Taichung City	27,757	27,269	98.24	27,757	27,076	97.55	26,406	24,967	94.55
Tainan City	15,937	15,694	98.48	15,937	15,579	97.75	13,980	13,317	95.26
Kaohsiung City	23,349	22,958	98.33	23,349	22,810	97.69	21,171	20,014	94.53
Yilan County	3,450	3,397	98.46	3,450	3,382	98.03	3,334	3,190	95.68
Hsinchu County	5,822	5,728	98.39	5,822	5,685	97.65	5,839	5,547	95.00
Miaoli County	5,579	5,484	98.30	5,579	5,444	97.58	4,905	4,664	95.09
Changhua County	14,194	14,009	98.70	14,194	14,000	98.63	10,202	9,918	97.22
Nantou County	3,464	3,400	98.15	3,464	3,350	96.71	3,005	2,817	93.74
Yunlin County	5,007	4,952	98.90	5,007	4,940	98.66	4,605	4,475	97.18
Chiayi County	3,091	3,051	98.71	3,091	3,014	97.51	2,763	2,625	95.01
Pingtung County	5,555	5,457	98.24	5,555	5,416	97.50	5,171	4,848	93.75
Taitung County	1,632	1,609	98.59	1,632	1,580	96.81	1,626	1,523	93.67
Hualien County	2,691	2,671	99.26	2,691	2,601	96.66	2,605	2,417	92.78
Penghu County	915	910	99.45	915	893	97.60	810	779	96.17
Keelung City	2,406	2,371	98.55	2,406	2,357	97.96	2,144	2,048	95.52
Hsinchu City	5,075	4,944	97.42	5,075	4,856	95.68	4,988	4,432	88.85
Chiayi City	2,192	2,161	98.59	2,192	2,154	98.27	2,059	1,917	93.10
Kinmen County	1,281	1,258	98.20	1,281	1,256	98.05	1,095	1,051	95.98
Lienchiang County	168	167	99.40	168	165	98.21	136	128	94.12

Note: 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2016.

3. Data was calculated in May 2017.

4. Due to global DTaP-Hib-IPV vaccine shortage, the immunization schedule of the 4th dose of DTaP-Hib-IPV vaccine has been revised from 18 months to 27 months after birth in January 2014 to April 2017.

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

Unit: person, person, %

Vaccines	Hepatitis B						Varicella			MMR		
	2015			2015			2014			2014		
Dose	2nd dose			3rd dose			single dose			1st 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	218,472	215,685	98.72	218,472	213,638	97.79	215,705	211,227	97.92	215,705	211,738	98.16
New Taipei City	34,674	34,046	98.19	34,674	33,698	97.19	34,863	34,157	97.97	34,863	34,211	98.13
Taipei City	30,538	30,184	98.84	30,538	29,885	97.86	31,267	30,580	97.80	31,267	30,703	98.20
Taoyuan City	23,695	23,470	99.05	23,695	23,163	97.75	21,568	21,144	98.03	21,568	21,187	98.23
Taichung City	27,757	27,412	98.76	27,757	27,165	97.87	28,504	27,919	97.95	28,504	27,990	98.20
Tainan City	15,937	15,639	98.13	15,937	15,610	97.95	15,919	15,583	97.89	15,919	15,601	98.00
Kaohsiung City	23,349	23,065	98.78	23,349	22,853	97.88	23,004	22,529	97.94	23,004	22,574	98.13
Yilan County	3,450	3,418	99.07	3,450	3,385	98.12	3,459	3,393	98.09	3,459	3,398	98.24
Hsinchu County	5,822	5,767	99.06	5,822	5,697	97.85	6,137	6,026	98.19	6,137	6,032	98.29
Miaoli County	5,579	5,528	99.09	5,579	5,461	97.88	5,706	5,588	97.93	5,706	5,601	98.16
Changhua County	14,194	14,080	99.20	14,194	14,023	98.80	11,808	11,637	98.55	11,808	11,665	98.79
Nantou County	3,464	3,408	98.38	3,464	3,365	97.14	3,422	3,336	97.49	3,422	3,342	97.66
Yunlin County	5,007	4,980	99.46	5,007	4,941	98.68	5,114	5,047	98.69	5,114	5,063	99.00
Chiayi County	3,091	3,056	98.87	3,091	3,034	98.16	2,994	2,938	98.13	2,994	2,938	98.13
Pingtung County	5,555	5,504	99.08	5,555	5,435	97.84	5,528	5,439	98.39	5,528	5,457	98.72
Taitung County	1,632	1,614	98.90	1,632	1,587	97.24	1,723	1,695	98.37	1,723	1,698	98.55
Hualien County	2,691	2,670	99.22	2,691	2,618	97.29	2,671	2,605	97.53	2,671	2,617	97.98
Penghu County	915	905	98.91	915	899	98.25	909	906	99.67	909	906	99.67
Keelung City	2,406	2,391	99.38	2,406	2,362	98.17	2,168	2,130	98.25	2,168	2,135	98.48
Hsinchu City	5,075	4,961	97.75	5,075	4,878	96.12	5,381	5,092	94.63	5,381	5,126	95.26
Chiayi City	2,192	2,161	98.59	2,192	2,156	98.36	2,079	2,031	97.69	2,079	2,039	98.08
Kinmen County	1,281	1,258	98.20	1,281	1,257	98.13	1,305	1,278	97.93	1,305	1,281	98.16
Lienchiang County	168	168	100.00	168	166	98.81	176	174	98.86	176	174	98.86

Note: 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2016.

3. Data was calculated in May 2017.

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

Unit: person, person, %

Vaccines	PCV13						JE					
	2014			2015			2014			2013		
Dose	2nd dose			3rd dose			2nd dose			3rd 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	218,805	210,956	96.41	215,488	201,131	93.34	215,705	207,325	96.12	197,961	185,259	93.58
New Taipei City	34,680	33,305	96.04	34,480	32,762	95.02	34,863	33,615	96.42	31,210	29,031	93.02
Taipei City	30,542	29,587	96.87	31,064	29,307	94.34	31,267	29,886	95.58	28,281	26,405	93.37
Taoyuan City	23,695	22,973	96.95	21,741	20,570	94.61	21,568	20,870	96.76	19,555	18,529	94.75
Taichung City	27,778	26,674	96.03	28,918	26,831	92.78	28,504	27,391	96.10	26,623	24,851	93.34
Tainan City	15,937	15,260	95.75	16,200	14,874	91.81	15,919	15,276	95.96	14,949	14,158	94.71
Kaohsiung City	23,319	22,405	96.08	23,262	21,557	92.67	23,004	22,127	96.19	21,457	19,943	92.94
Yilan County	3,448	3,370	97.74	3,474	3,302	95.05	3,459	3,341	96.59	3,463	3,321	95.90
Hsinchu County	5,822	5,646	96.98	6,203	5,739	92.52	6,137	5,902	96.17	5,916	5,578	94.29
Miaoli County	5,579	5,382	96.47	5,543	5,139	92.71	5,706	5,470	95.86	4,757	4,462	93.80
Changhua County	14,218	13,874	97.58	11,064	10,258	92.72	11,808	11,411	96.64	10,159	9,664	95.13
Nantou County	3,462	3,295	95.18	3,374	2,996	88.80	3,422	3,251	95.00	3,063	2,797	91.32
Yunlin County	5,012	4,896	97.69	5,047	4,784	94.79	5,114	4,989	97.56	4,624	4,463	96.52
Chiayi County	3,093	3,001	97.03	2,943	2,698	91.68	2,994	2,884	96.33	2,883	2,712	94.07
Pingtung County	5,580	5,362	96.09	5,570	5,092	91.42	5,528	5,328	96.38	5,132	4,791	93.36
Taitung County	1,633	1,563	95.71	1,707	1,635	95.78	1,723	1,662	96.46	1,605	1,502	93.58
Hualien County	2,691	2,593	96.36	2,644	2,429	91.87	2,671	2,543	95.21	2,592	2,379	91.78
Penghu County	1,211	1,168	96.45	988	948	95.95	909	900	99.01	818	779	95.23
Keelung City	2,406	2,315	96.22	2,231	2,090	93.68	2,168	2,088	96.31	2,207	2,088	94.61
Hsinchu City	5,075	4,793	94.44	5,383	4,737	88.00	5,381	4,958	92.14	5,031	4,379	87.04
Chiayi City	2,186	2,127	97.30	2,254	2,063	91.53	2,079	1,997	96.06	2,426	2,288	94.31
Kinmen County	1,284	1,219	94.94	1,241	1,172	94.44	1,305	1,266	97.01	1,081	1,015	93.89
Lienchiang County	154	148	96.10	157	148	94.27	176	170	96.59	129	124	96.12

Note: 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2016.

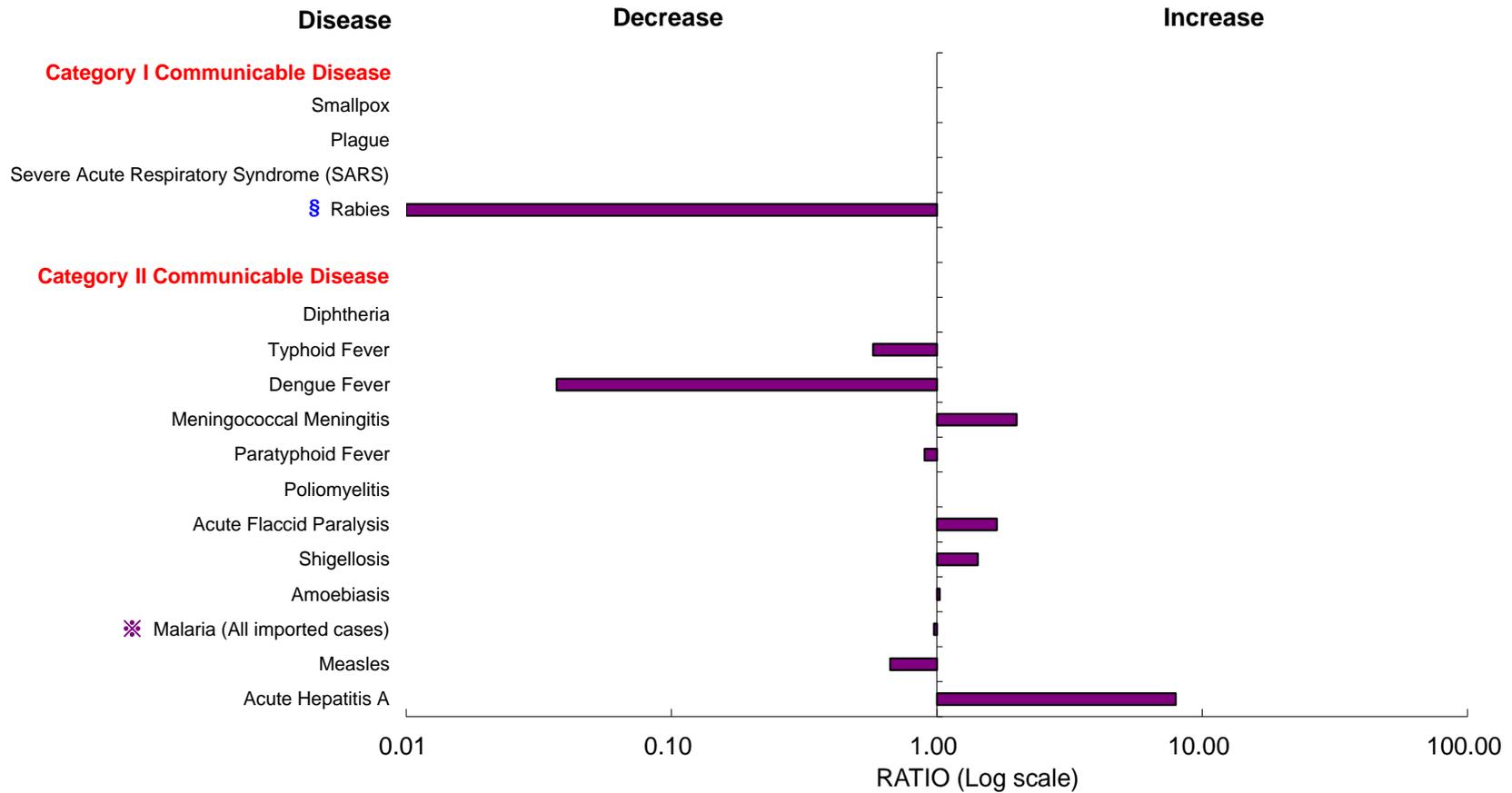
3. Data was calculated in May 2017.

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

Unit: person, person, %

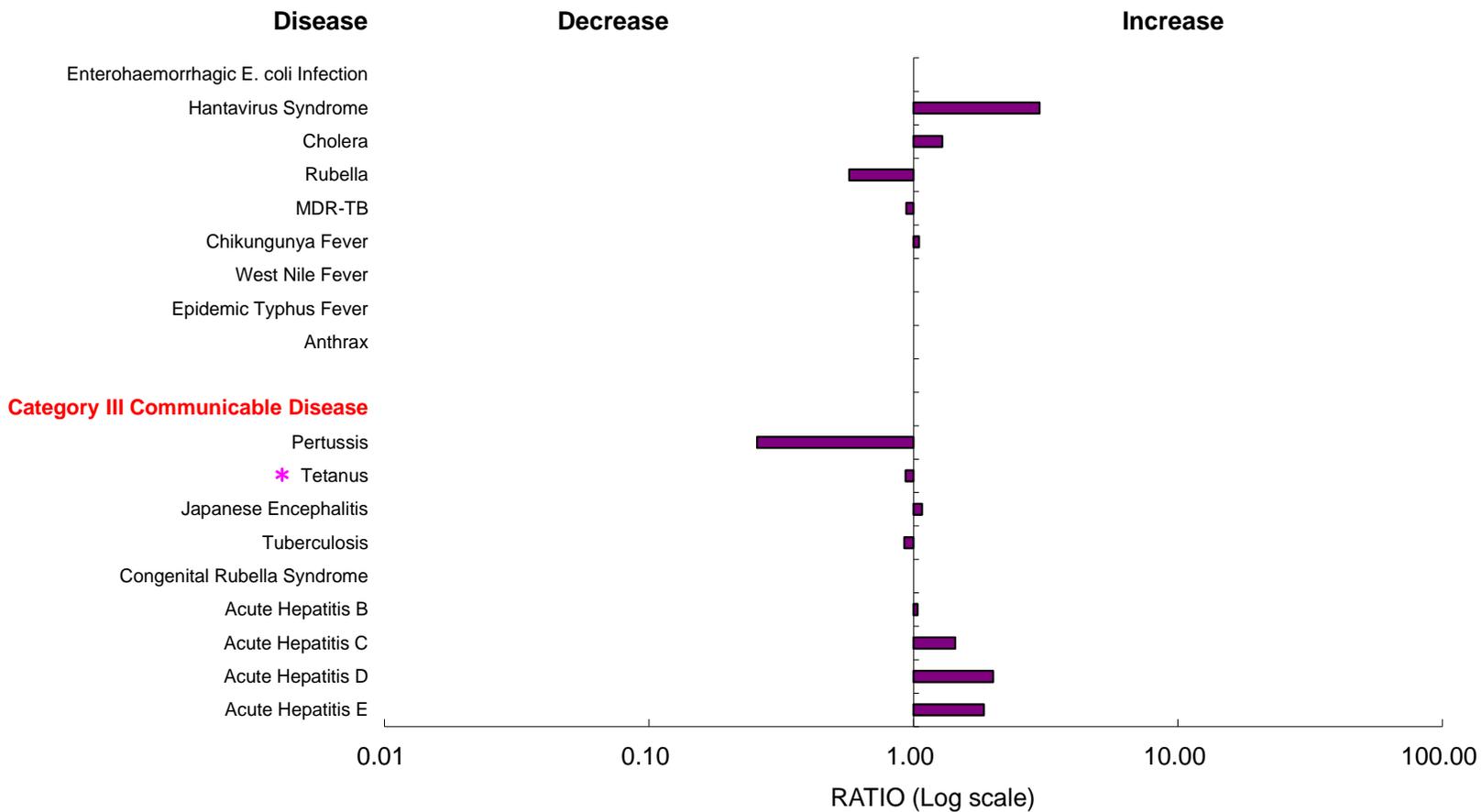
Vaccines	JE			MMR			Tdap-IPV		
Birth cohort	First grade of elementary school								
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	194,435	188,028	96.70	194,849	189,694	97.35	194,465	184,018	94.63
New Taipei City	32,308	31,248	96.72	32,349	31,522	97.44	32,307	30,853	95.50
Taipei City	20,628	19,931	96.62	20,784	20,238	97.37	20,654	19,527	94.54
Taoyuan City	20,662	19,768	95.67	20,703	20,002	96.61	20,659	19,135	92.62
Taichung City	25,142	24,013	95.51	25,191	24,260	96.30	25,149	23,350	92.85
Tainan City	15,170	14,678	96.76	15,184	14,782	97.35	15,166	14,305	94.32
Kaohsiung City	21,418	20,675	96.53	21,466	20,873	97.24	21,429	20,078	93.70
Yilan County	3,703	3,592	97.00	3,710	3,611	97.33	3,704	3,543	95.65
Hsinchu County	6,190	6,077	98.17	6,198	6,097	98.37	6,189	6,009	97.09
Miaoli County	4,691	4,526	96.48	4,693	4,564	97.25	4,689	4,481	95.56
Changhua County	10,742	10,614	98.81	10,755	10,649	99.01	10,741	10,489	97.65
Nantou County	3,567	3,469	97.25	3,570	3,494	97.87	3,567	3,444	96.55
Yunlin County	5,341	5,260	98.48	5,344	5,276	98.73	5,339	5,142	96.31
Chiayi County	3,214	3,147	97.92	3,217	3,154	98.04	3,212	3,114	96.95
Pingtung County	5,798	5,639	97.26	5,806	5,675	97.74	5,803	5,428	93.54
Taitung County	1,707	1,668	97.72	1,710	1,671	97.72	1,708	1,639	95.96
Hualien County	2,579	2,479	96.12	2,580	2,502	96.98	2,581	2,417	93.65
Penghu County	604	599	99.17	603	600	99.50	603	596	98.84
Keelung City	2,654	2,616	98.57	2,657	2,626	98.83	2,644	2,472	93.49
Hsinchu City	5,063	4,813	95.06	5,069	4,870	96.07	5,069	4,810	94.89
Chiayi City	2,440	2,410	98.77	2,442	2,420	99.10	2,440	2,394	98.11
Kinmen County	727	721	99.17	731	725	99.18	725	708	97.66
Lienchiang County	87	85	97.70	87	83	95.40	87	84	96.55

- Note: 1. Source: National Immunization Information System.
 2. Vaccination period: Before April 2017.
 3. Data was calculated in May 2017.
 4. The target population is children enrolled in elementary school.



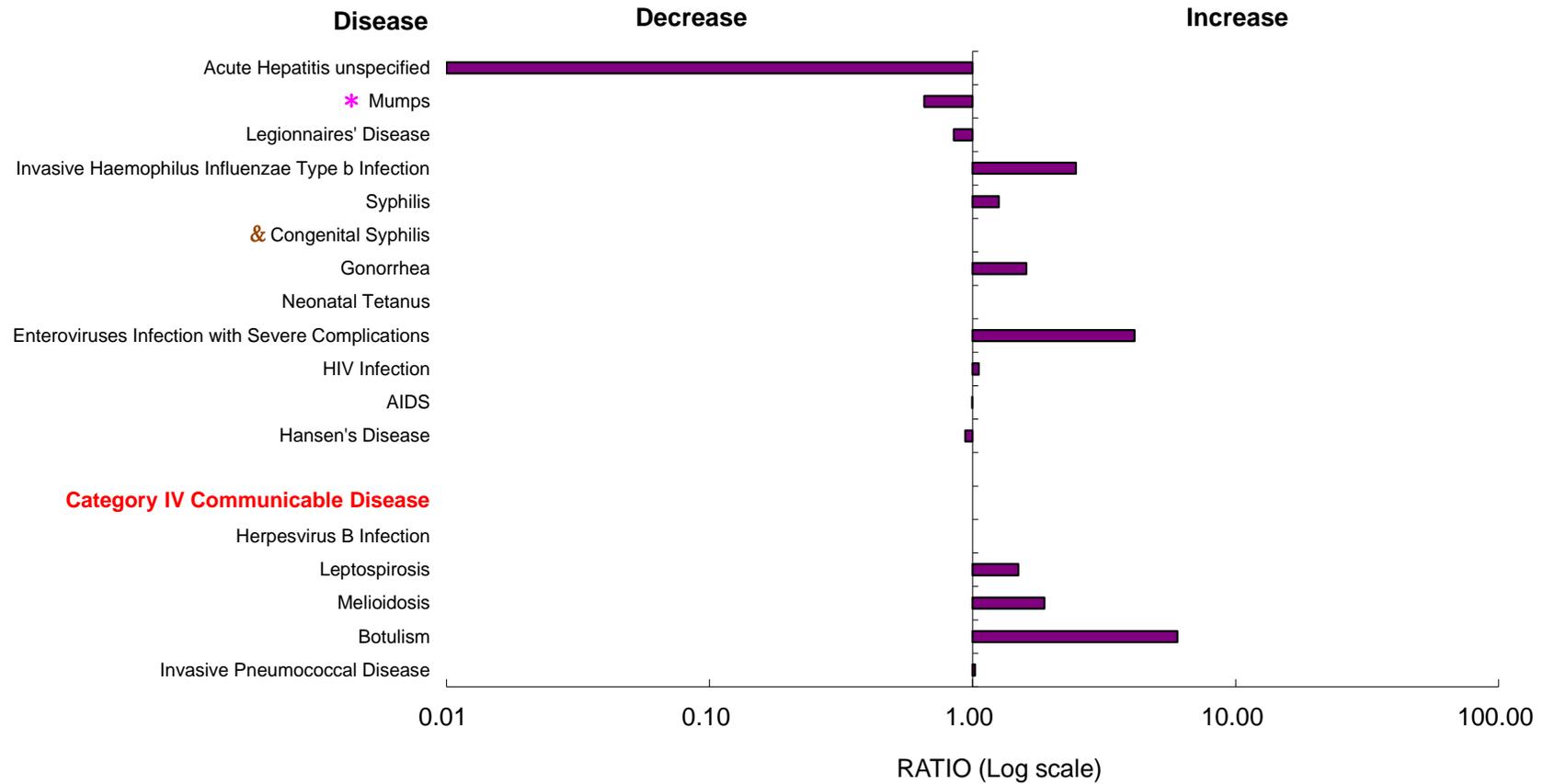
Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2016 cases / means of 2013-2015.
 3. The default value is 100 when denominator is zero and numerator is not zero.
 The default value is 0.01 when denominator is not zero and numerator is zero.
 4. § There was one imported case of rabies in 2013; in 2014-2016 there was no case.
 5. ✧ The World Health Organization (WHO) has declared Taiwan as a malaria eradication region in 1965.

Figure 1 Comparison of 2016 total confirmed cases of notifiable diseases with historical data



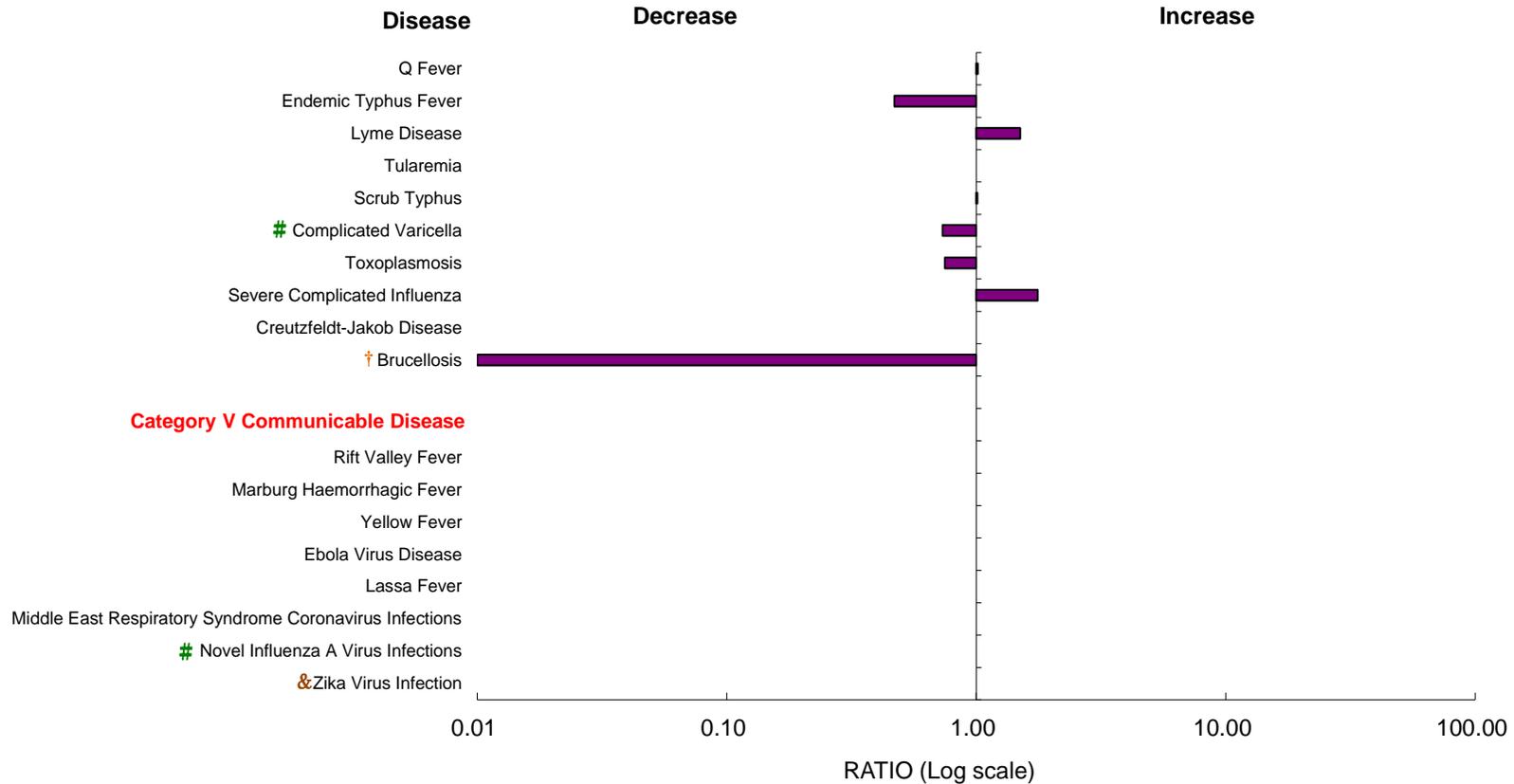
Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2016 cases / means of 2013-2015.
 3. The default value is 100 when denominator is zero and numerator is not zero.
 The default value is 0.01 when denominator is not zero and numerator is zero.
 4. * For tetanus: based on reported cases.
 5. For MDR-TB and tuberculosis: based on CDC's registration year and notification year respectively.

Figure 1 (Continued) Comparison of 2016 total confirmed cases of notifiable diseases with historical data



- Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2016 cases / means of 2013-2015.
 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, gonorrhoea, and Hansen's disease: based on diagnosis year.
 6. The numbers of HIV infection and AIDS were estimated by the date of diagnosis, and foreign nationality were excluded.
 7. & The statistics of congenital syphilis was validated since April 1, 2016, hence there was no comparative result with historical data.

Figure 1 (Continued) Comparison of 2016 total confirmed cases of notifiable diseases with historical data



- Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2016 cases / means of 2013-2015.
 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.
 6. # The statistics of complicated varicella and novel influenza A virus infections were validated since January 1 and July 1 in 2014 respectively. The analysis results were year 2016 compared with previous two years.
 7. & The statistics of Zika virus infection was validated since January 22, 2016, hence there was no comparative result with historical data.

Figure 1 (Continued) Comparison of 2016 total confirmed cases of notifiable diseases with historical data

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 online 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 2016.
2. Distribution of HAI rates by type of location in the ICUs of medical centers and regional hospitals in 2016.
3. Distribution of device-associated infection rates in the ICUs of medical centers and regional hospitals in 2016.
4. Distribution of major sites of HAI in ICU patients from medical centers and regional hospitals in 2016.
5. Common pathogens of HAI for patients in the ICUs of medical centers in 2016.
6. Common pathogens of HAI for patients in the ICUs of regional hospitals in 2016.
7. Antimicrobial resistance proportions of selected pathogens of HAI in the ICUs of medical centers and regional hospitals in 2016.

V. Surveillance method and main results

All the analytical results in this report were derived from TNIS system database with data updated to Aug 14, 2017. In 2016, there were 22 medical centers (195 ICU units) and 84 regional hospitals (268 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 4,863 episodes of HAI events occurred during 812,961 patient-days in the ICUs of 22 medical

centers; the rate of infections was 6.0‰. However, in the ICUs of the 84 regional hospitals, there were 4,040 episodes of HAI events occurred during 868,796 patient-days; the rate of infections was 4.7‰. 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 4.2‰ in medical centers and 3.1‰ in regional hospitals, and the pooled mean of catheter-associated urinary tract infection (CAUTI) rates were 3.3‰ and 2.5‰ 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 1.1‰ 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 (44.0%), followed by urinary tract (34.6%), and pneumonia (8.6%). In regional hospitals, the urinary tract infections topped the list (38.3%), followed by bloodstream infections (35.6%), and pneumonia (16.8%). The common pathogens for HAIs in ICUs are shown in Table 13 and Table 14. The top three pathogens in the ICUs were *Escherichia coli*, *Enterococcus faecium*, *Klebsiella pneumoniae* in medical centers and *Klebsiella pneumoniae*, *Escherichia coli*, *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 63.6%, the proportion of *K. pneumoniae* isolates those were resistant to carbapenem (CRKP) is 23.3%, the proportion of *Pseudomonas aeruginosa* isolates those were resistant to carbapenem (CRPA) is 16.7%, the proportion of *Enterococci* isolates those were resistant to vancomycin (VRE) is 41.6%, and the proportion of *Staphylococcus aureus* isolates those were resistant to oxacillin (MRSA) is 66.8%. Meanwhile, the antimicrobial resistance proportions of selected pathogens isolated from patients acquired HAIs in the ICUs of regional hospitals were 73.8%, 27.3%, 15.2%, 36.2% and 68.1% for CRAB, CRKP, CRPA, VRE and MRSA, respectively.

VI. 2016 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, 2016

Hospital level	1 st Quarter		2 nd Quarter		3 rd Quarter		4 th Quarter	
	No. of hospitals	No. of HAIs						
Medical center	22	1,309	22	1,188	22	1,147	22	1,222
Regional hospital	84	1,042	83	995	84	1,007	84	999

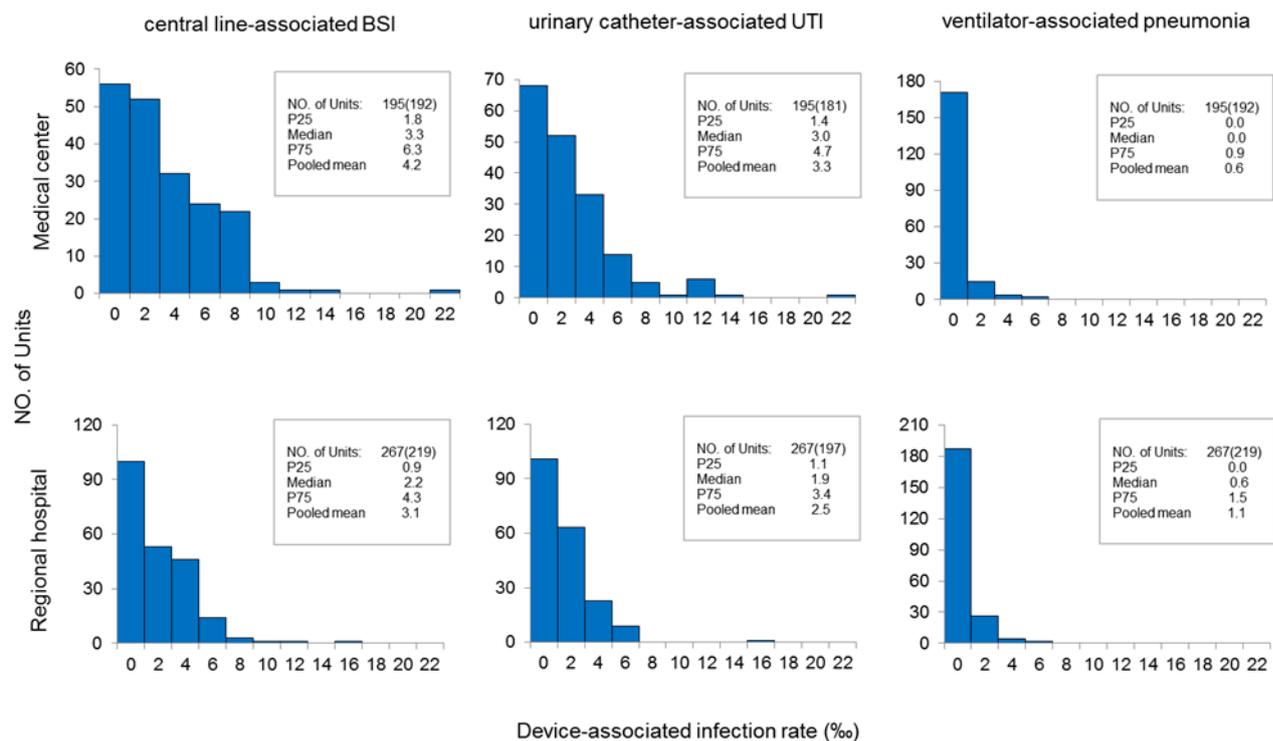
Note: Data updated to 2017/04/27

Table 11 Distribution of healthcare-associated infection rates by type of locations in the ICUs of medical centers and regional hospitals, 2016

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	55 (55)	1,738	249,132	7.0	4.9	6.3	8.8
	Surgical ICU	65 (65)	1,855	270,256	6.9	4.6	7.0	9.0
	Cardiology ICU	14 (14)	372	62,128	6.0	4.8	6.2	8.0
	Pediatric ICU	43 (43)	470	164,666	2.9	1.6	2.5	3.8
	Medical/surgical	18 (18)	428	66,779	6.4	3.4	5.2	9.5
	Total	195 (195)	4,863	812,961	6.0	3.4	5.5	8.2
Regional hospital	Medical ICU	58 (57)	1,054	257,075	4.1	2.7	3.7	5.4
	Surgical ICU	48 (46)	980	166,281	5.9	3.4	5.1	6.3
	Cardiology ICU	11 (10)	137	38,722	3.5	1.8	3.6	4.2
	Pediatric ICU	64 (57)	42	53,489	0.8	0.0	0.0	1.2
	Medical/surgical	87 (82)	1,827	353,229	5.2	3.3	4.3	6.7
	Total	268 (252)	4,040	868,796	4.6	1.5	3.7	5.9

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, 2016

Table12 Distribution of major types of healthcare-associated infection in the ICU patients from medical centers and regional hospitals, 2016

Types of infection	Medical center		Regional hospital	
	No.	%	No.	%
Urinary tract	1,683	34.6	1,549	38.3
Bloodstream	2,141	44.0	1,426	35.3
Pneumonia	419	8.6	680	16.8
Surgical site	262	5.4	164	4.1
Other	361	7.4	224	5.5
Total	4,866	100	4,043	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, 2016

Pathogens	Types of Infection											
	Total		Urinary tract		Bloodstream		Pneumonia		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
<i>Escherichia coli</i>	1	552	1	355	7	133	8	10	2	35	8	19
<i>Enterococcus faecium</i>	2	438	4	165	2	222			7	24	6	27
<i>Klebsiella pneumoniae</i>	3	426	7	125	3	185	2	61	6	25	5	30
<i>Candida albicans</i>	4	419	3	253	8	130	16	2	8	21	11	13
<i>Pseudomonas aeruginosa</i>	5	411	5	143	10	112	1	68	1	53	3	35
<i>Acinetobacter baumannii</i>	6	397	9	62	1	246	3	51	9	16	7	22
Yeast-like	7	388	2	320	17	35	11	5	11	12	10	16
Other <i>Candida</i> spp. or NOS	8	318	6	127	4	170	21	1	11	12	14	8
<i>Enterobacter</i> species	9	264	10	49	6	145	6	23	4	30	9	17
<i>E. cloacae</i>		194		33		111		15		23		12
Other <i>Enterobacter</i> spp. or NOS		70		16		34		8		7		5
<i>Enterococcus faecalis</i>	10	244	12	18	5	146	4	33	10	14	4	33
Others		1,675		286		911		105		170		203
Total		5,532		1,903		2,435		359		412		423

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.

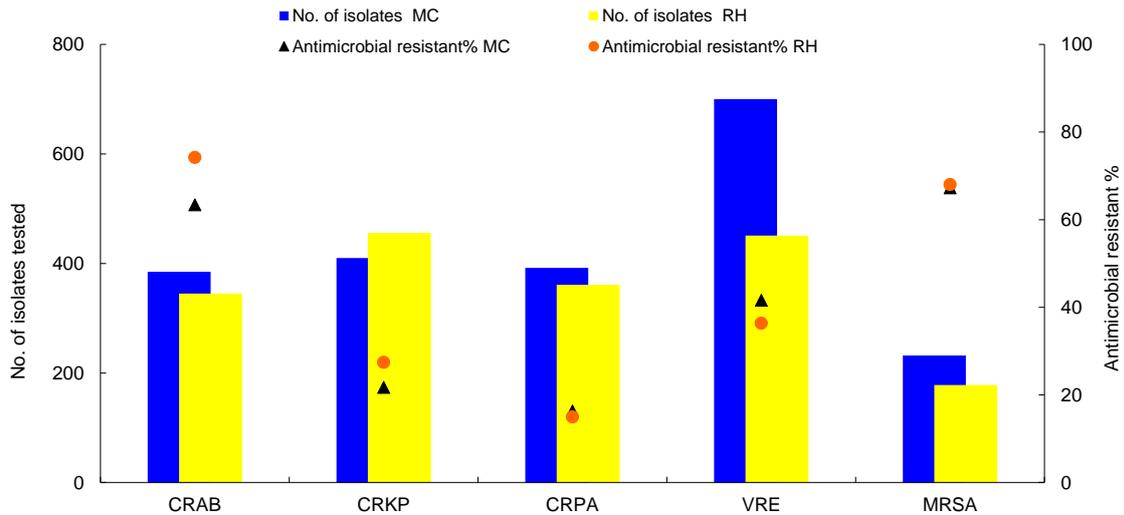
2. NOS: not otherwise specified.

Table 14 Common pathogens of healthcare-associated infections in the ICUs of regional hospitals, 2016

Pathogens	Types of Infection											
	Total		Urinary tract		Bloodstream		Pneumonia		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
<i>Klebsiella pneumoniae</i>	1	518	3	163	1	182	3	124	5	19	2	30
<i>Escherichia coli</i>	2	517	1	365	8	88	8	26	2	25	7	13
<i>Candida albicans</i>	3	506	2	344	5	99	7	28	8	10	5	25
<i>Pseudomonas aeruginosa</i>	4	410	5	130	10	77	1	141	1	32	2	30
<i>Acinetobacter baumannii</i>	5	398	9	54	2	177	2	126	9	9	1	32
<i>Enterococcus faecium</i>	6	251	4	141	7	93	24	1	10	7	9	9
Other <i>Candida</i> spp. or NOS	7	226	13	14	3	112	4	63	6	15	6	22
<i>Staphylococcus aureus</i>	8	224	6	122	6	95	17	2	18	1	14	4
<i>Enterobacter</i> species	9	182	11	37	9	79	6	35	2	25	12	6
<i>E. cloacae</i>		130		25		63		23		15		4
Other <i>Enterobacter</i> spp. or NOS		52		12		16		12		10		2
<i>Enterococcus faecalis</i>	10	181	7	86	12	64			4	23	10	8
Others		1,144		297		554		130		75		88
Total		4,557		1,753		1,620		676		241		267

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), 2016

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 2016, a total of 688 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 $\geq 38^{\circ}\text{C}$) and respiratory infection; and
- (2) Muscular soreness or headache or extreme fatigue.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidity of influenza-like illness among schools was between 0.03% and 0.90% in 2016. The epidemic during weeks 9-14 was significantly higher in 2016 than that during the same period in the past two years (2014 and 2015).

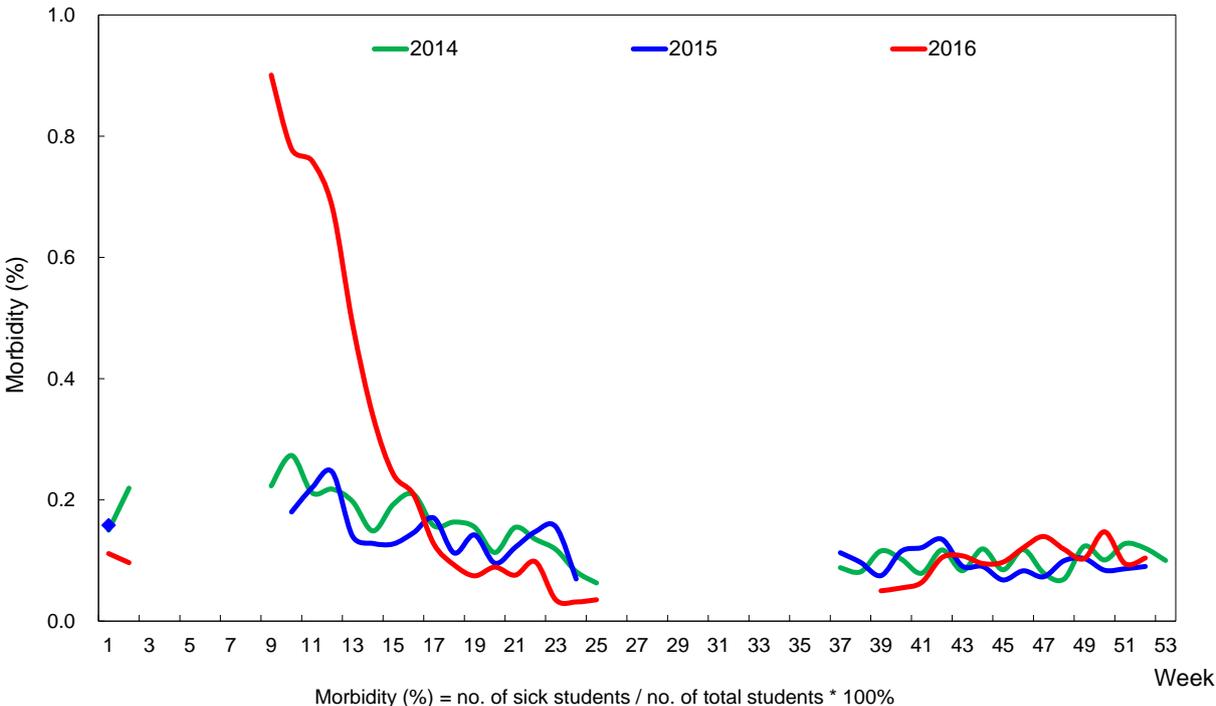


Figure 4 ILI morbidity reported by the School-based Surveillance System, 2014-2016

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 morbidity of hand-foot-mouth disease or herpangina among schools was between 0.02% and 0.32% in 2016. The overall morbidity is slightly higher than that in 2014 and 2015.

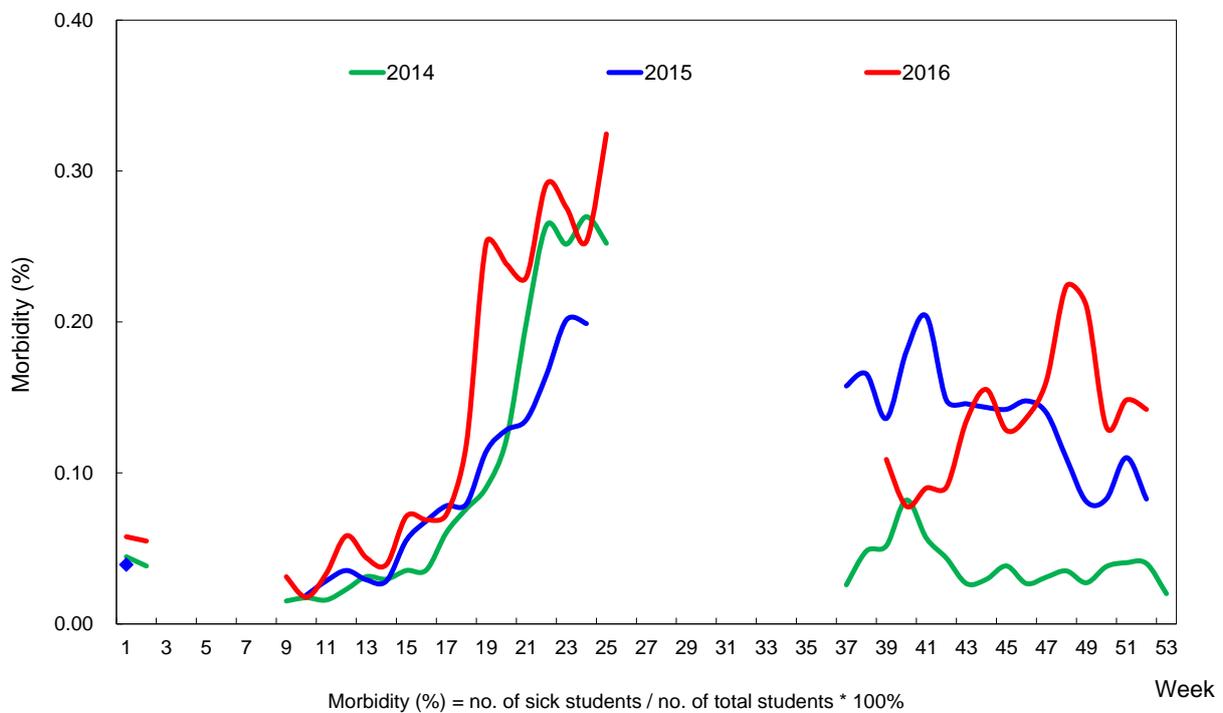


Figure 5 Hand-foot-mouth disease (HFMD) or herpangina morbidity reported by the School-based Surveillance System, 2014-2016

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; and
- (4) Watery diarrhea.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidity of diarrhea among schools was between 0.02% and 0.12% in 2016. The overall trend was similar to last two years.

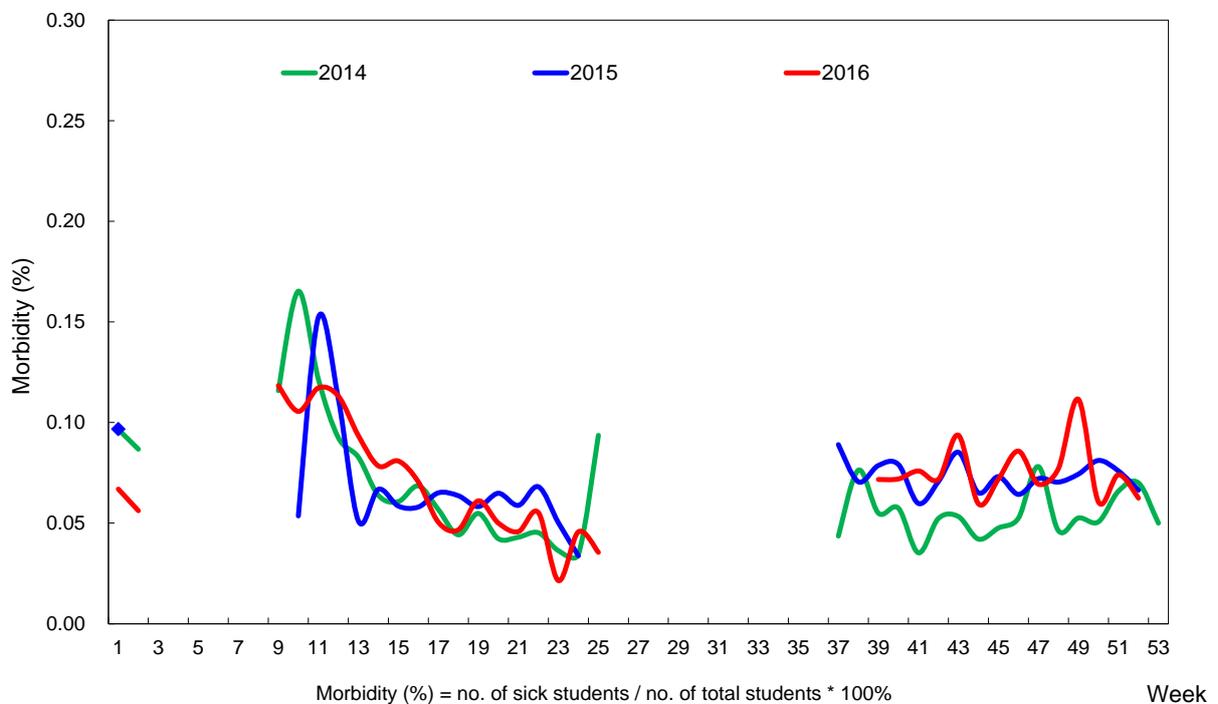


Figure 6 Diarrhea morbidity reported by the School-based Surveillance System, 2014-2016

4. Fever

■ Case definition:

Fever (ear temperature $\geq 38^{\circ}\text{C}$) 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 morbidity of fever among schools was between 0.31% and 1.04% in 2016. The epidemic during weeks 9-14 is slightly higher than that during the same period in the past two years.

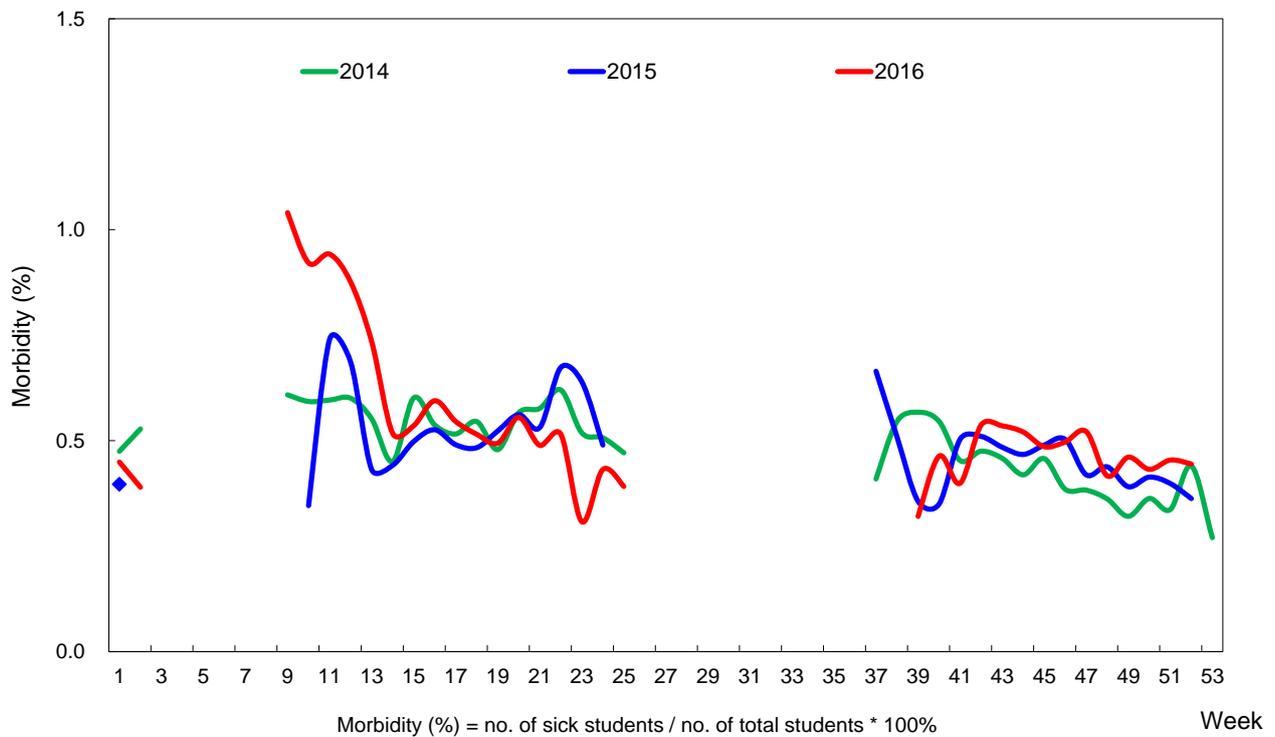


Figure 7 Fever morbidity reported by the School-based Surveillance System, 2014-2016

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 morbidity of acute hemorrhagic conjunctivitis (AHC) among schools was between 0.004‰ and 0.11‰ in 2016. The trend of AHC in 2016 was similar to the past two years.

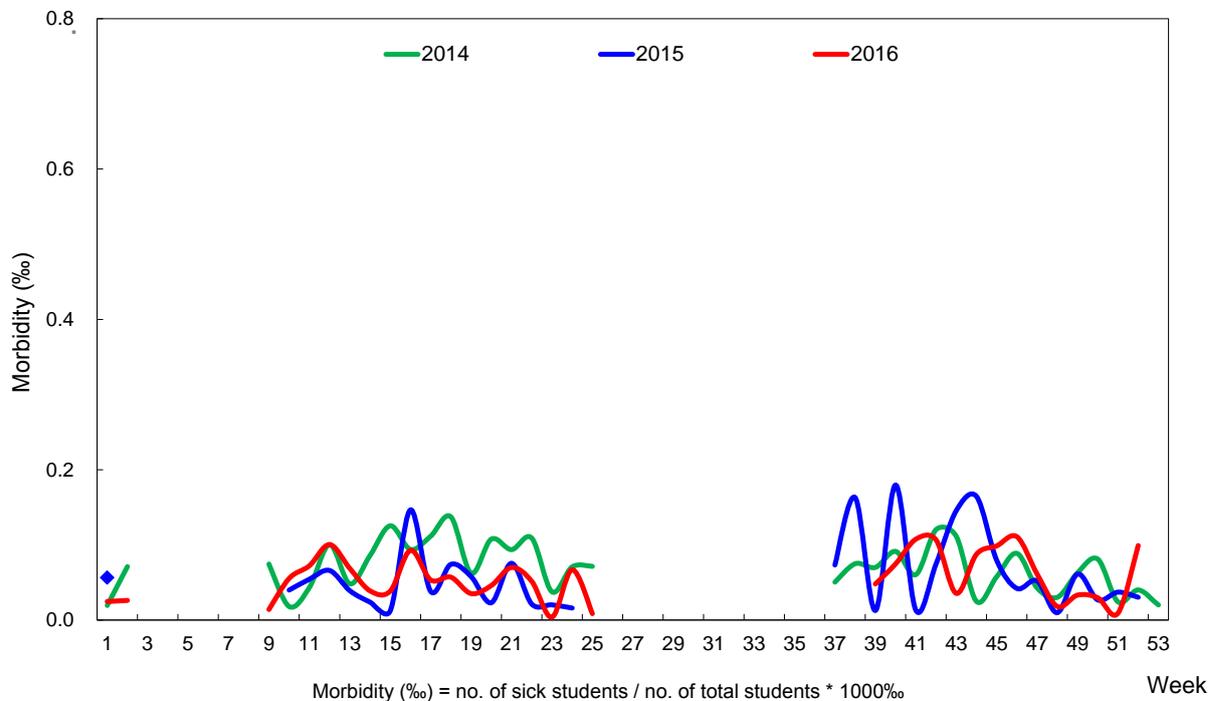


Figure 8 AHC morbidity reported by the School-based Surveillance System, 2014-2016

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 morbidity of varicella among schools was between 0.001% and 0.017% in 2016. The trend was similar to 2015.

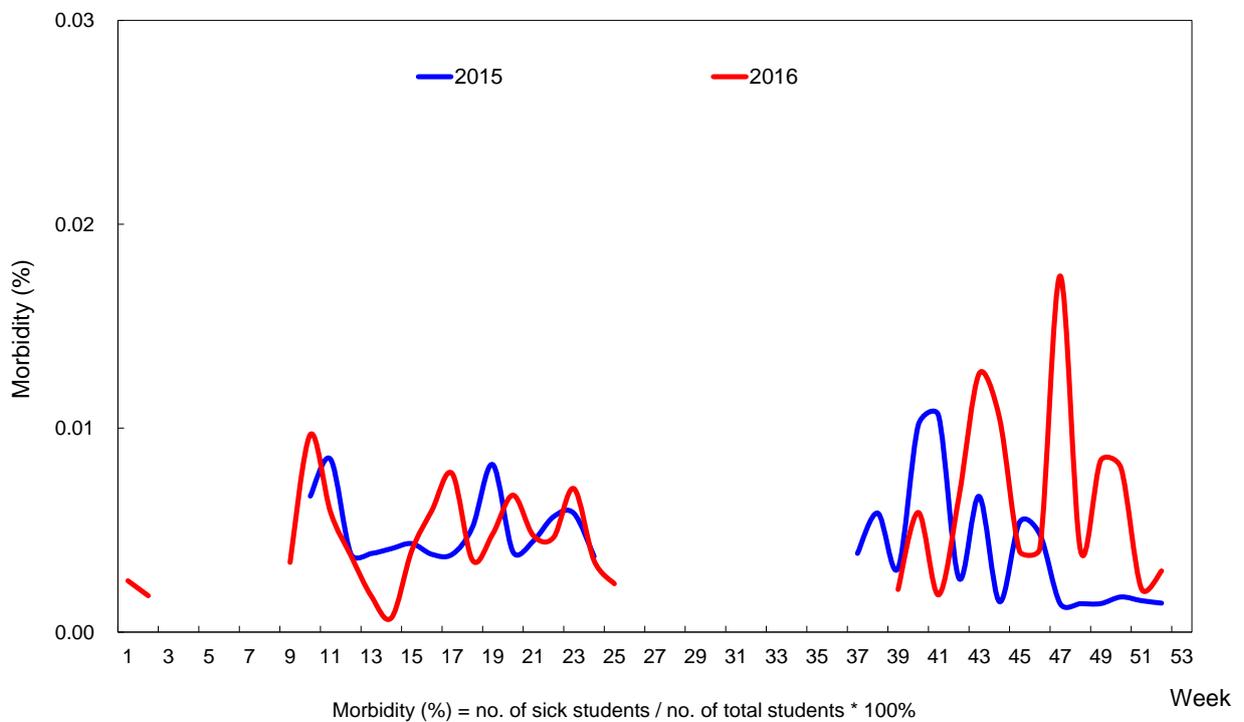


Figure 9 Varicella morbidity reported by the School-based Surveillance System, 2014-2016

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 2016, 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 Hospital (coverage area: Taipei City, Kinmen County, and Lienchiang County), Linkou Chang Gung Memorial Hospital (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 Chang Gung Memorial Hospital (coverage area: Kaohsiung City, Pingtung County, and Penghu County); and in eastern Taiwan, Buddhist Tzu Chi General 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, inpatients, and emergency 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 2016 totaled 12,671, which represents an average of 1,055 per month. The contracted laboratories in northern Taiwan received the largest number of specimens with 4,559 cases, whereas laboratories in eastern Taiwan received the fewest specimens with 1,364 cases.

2. Prevalence of enterovirus

In 2016, 1,899 strains of enterovirus were isolated. After typing by immunofluorescence assay (IFA), it was found the dominant type was Coxsackie virus A (1519 strains or 80.0%), followed by Coxsackie virus B (95 strains or 5.0%), Enterovirus Type 71 (90 strains or 4.7%), Echovirus (35 strains or 1.8%), whereas 160 isolates (8.4%) were non-polio enterovirus (NPEV).

Among 1519 strains of Coxsackievirus A isolated, the dominant types were CVA10 551 strains (36.3%) and CVA5 329 strains (21.7%). The majority of Coxsackievirus B isolated constituted type B3 51 strains (53.7%). Most of the Echovirus strains isolated were classified as type 6 23 strains (65.7%). (See Figure 10 Weekly enterovirus positive isolation rates in specimens collected by contract laboratories, 2016). After typing of NPEV by gene sequencing, it was found the majority of NPEV were in sequence Echovirus Type 18, followed by CVA21, Enterovirus 68, CVA10, CVA5, Echovirus 3, CVB3, and CVA2.

To sum up, the top five types of enterovirus isolated in 2016 were CVA10 (29.0%), CVA5 (17.3%), CVA2 (15.4%), CVA4 (7.2%), and CVA6 (4.8%). (See Figure 11 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2016).

3. Prevalence of influenza virus

In 2016, 1,785 strains of influenza virus were isolated, including 382 strains of influenza A subtype H3 (21.4%), 691 strains (38.7%) of type B and 712 strains of H1N1 (39.9%). H1N1 was the most prevalent strain in 2016; during weeks 1-11 of the year, H1N1 and influenza B were the most prevalent strains, whereas after week 36, influenza A subtype H3 became prevalent again (see Figure 12 Isolation situations of influenza viruses from specimens collected by the sentinel physicians, 2016).

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/California/07/2009, while the rest were A/Michigan/45/2015 and H3N2 subtype were predominantly A/Texas/50/2012, while the rest were A/Switzerland/9715293/2013. Of the influenza B viruses, B/Brisbane/60/2008 (B/Vic) was the dominant type and some were B/Phuket/3073/2013 (B/Yam), whereas a few were B/Massachusetts/02/2012 (B/Yam).

To sum up, influenza virus types isolated in 2016 were in sequence H1N1 (39.9%), INFB (38.7%), and INFAH3 (21.4%) (see Figure 13 Strain ratios of influenza virus isolates from specimens collected by the sentinel physicians, 2016).

4. Epidemic situations of other respiratory tract viruses

Respiratory tract viruses other than influenza virus isolated totaled 1,357 cases, including Adenovirus 692 strains (51.1%), Parainfluenza virus 219 strains (16.2%), Herpes simplex virus (HSV) 346 strains (25.6%), Respiratory syncytial virus (RSV) 54 strains (3.9%), and Cytomegalovirus (CMV) 43 strains (3.2%) (see Figure 14 Positive isolation rates for respiratory tract viruses from specimens collected by the sentinel physicians, 2016).

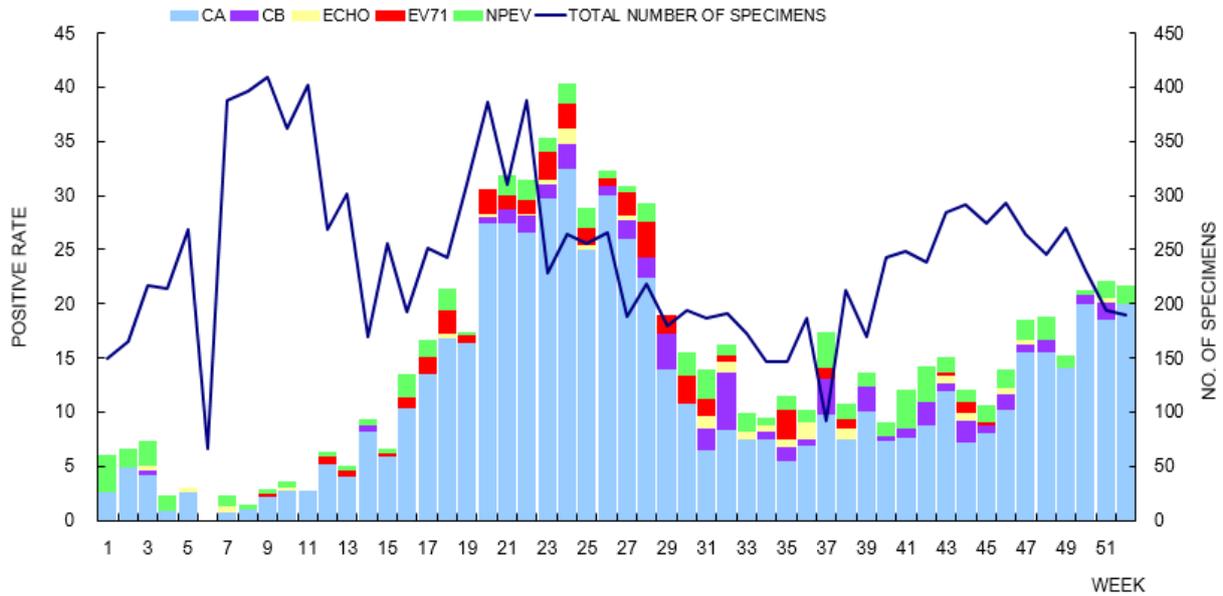


Figure 10 Enterovirus positive isolation rates in specimens collected by the sentinel physicians, 2016

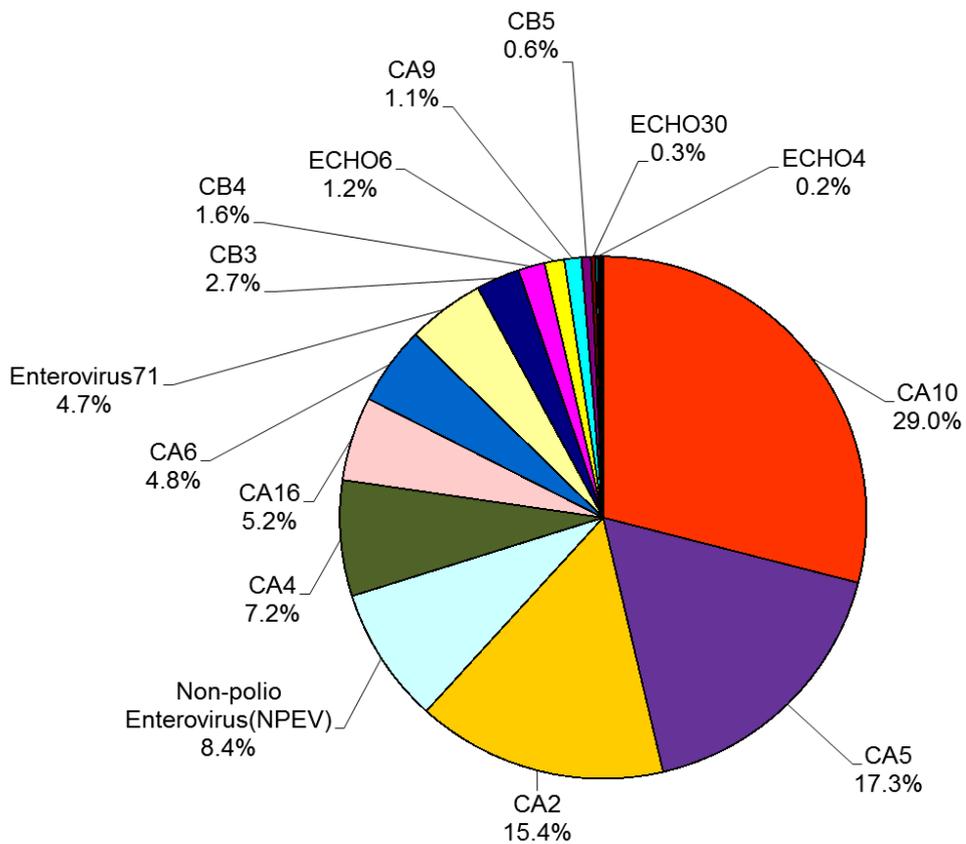


Figure 11 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2016

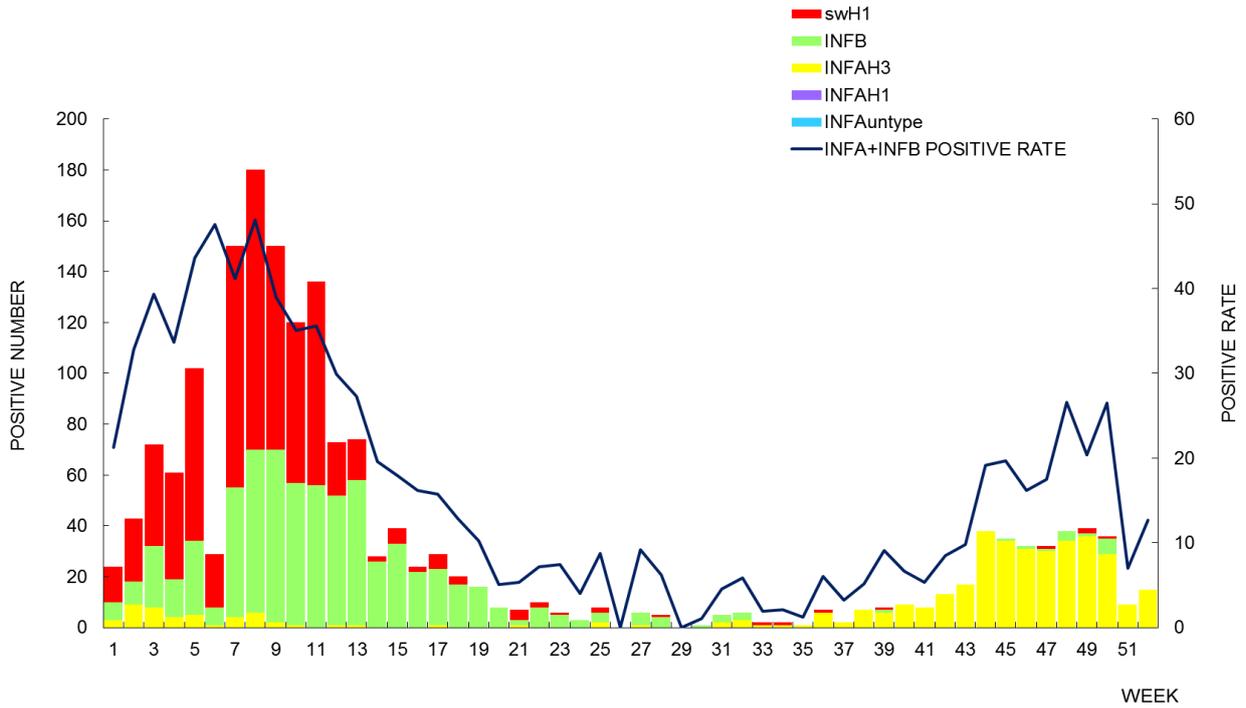


Figure 12 Isolation situations of influenza viruses from specimens collected by the sentinel physicians, 2016

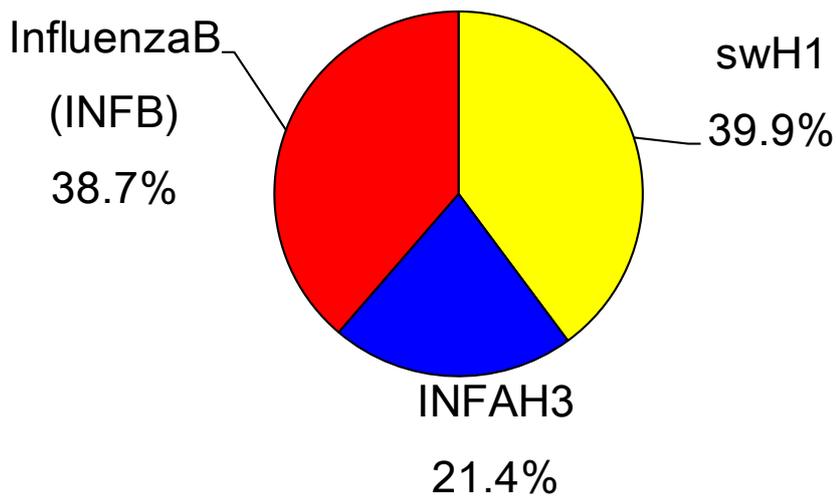


Figure 13 Strain ratios of influenza virus isolates from specimens collected by the sentinel physicians, 2016

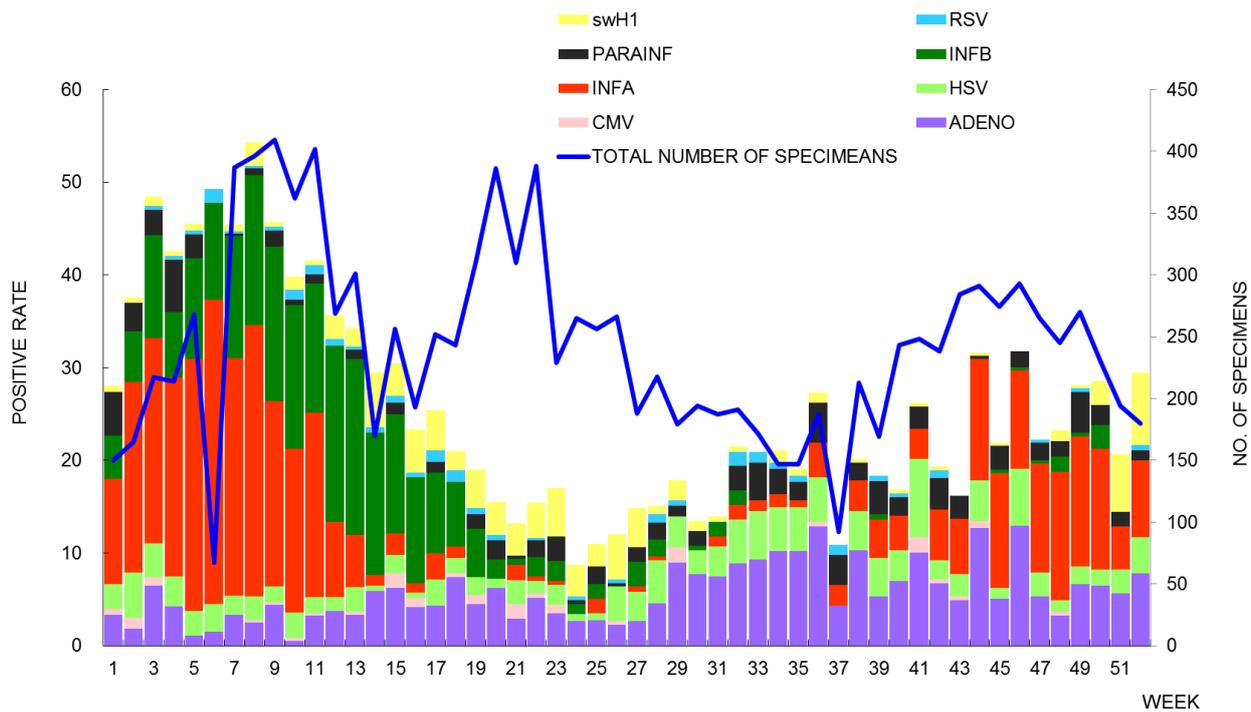


Figure 14 Positive isolation rates for respiratory tract viruses from specimens collected by the sentinel physicians, 2016

Quarantine Surveillance

I. Health examination of foreign workers

To prevent the importation of diseases by foreign workers to the local population, all legally imported workers are required to submit a health certificate issued by an approved foreign hospital before applying for an entry visa. Foreign workers are also required to undergo health examination at a designated hospital within three working days after entry. To monitor the health conditions of foreign workers, employed foreign workers are required to undergo health examination within 30 days before or after the days of 6, 18 and 30 months of the work start day. In 2016 the designated items of health examination of foreign workers include: chest X-ray examination for tuberculosis, examination for Hansen's disease, serological test for syphilis, stool examination for intestinal parasites, physical examination and antibody-positive proof or vaccination certificate for measles and rubella. In addition, only the health examination conducted in the home country needs to include antibody-positive proof or vaccination certificate for measles and rubella.

To prevent the importation of typhoid fever by foreign workers from Indonesia, starting from October 15, 2009, all Indonesian workers must be asked of symptoms of typhoid fever during health examination in their home country and subject to typhoid fever test (stool culture) and symptoms query during the health examination undertaken within three working days after entry.

In the 748,654 person-times health examinations conducted on foreign workers in Taiwan in 2016, 3,431 person-times were failed, representing a failed rate of 0.46%, of which, intestinal parasite diseases accounted for the highest failed rate with 2,847 person-times (0.38%), followed by chest X-ray tested for tuberculosis where 497 person-times (0.07%) were failed. (Table 15)

II. Health declaration of inbound passengers

To prevent the import of communicable diseases 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 ups and surveillance of 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 2016, the person time of inbound passengers was 25,227,784 and 25,366 of them showed symptoms were then subject to follow ups and surveillance by local health units. The “Communicable Disease Survey Form” and body temperature screening measures have identified 152 cases of dengue fever, 7 cases of chikungunya fever, and 5 cases of Zika virus infection cases. (Table 16)

Table 15 Physical examinations status of foreign labors, 2016

Unit : Number of Persons, Person Time, %

Country	Number of Persons		Failed (Person Time, %)	X-ray	Syphilis	Parasites	Hansen's disease	Mental condition	Others
Thailand	At Entry	26,064	2 0.01%	2 0.01%	- -	- -	- -	- -	- -
	Periodic	56,634	349 0.62%	24 0.04%	10 0.02%	314 0.55%	- -	- -	1 0.00%
Indonesia	At Entry	62,223	212 0.34%	100 0.16%	6 0.01%	106 0.17%	- -	- -	- -
	Periodic	212,577	1,248 0.59%	166 0.08%	48 0.02%	1,030 0.48%	1 0.00%	- -	3 0.00%
Philippines	At Entry	45,377	43 0.09%	14 0.03%	- -	29 0.06%	- -	- -	- -
	Periodic	128,453	646 0.50%	105 0.08%	9 0.01%	531 0.41%	1 0.00%	- -	- -
Vietnam	At Entry	68,172	30 0.04%	12 0.02%	- -	18 0.03%	- -	- -	- -
	Periodic	149,152	900 0.60%	74 0.05%	7 0.00%	819 0.55%	- -	- -	- -
Others	At Entry	-	- -	- -	- -	- -	- -	- -	- -
	Periodic	2	1 50.00%	- -	1 50.00%	- -	- -	- -	- -
Total	At Entry	201,836	287 0.14%	128 0.06%	6 0.00%	153 0.08%	- -	- -	- -
	Periodic	546,818	3,144 0.57%	369 0.07%	75 0.01%	2,694 0.49%	2 0.00%	- -	4 0.00%
Total		748,654	3,431 0.46%	497 0.07%	81 0.01%	2,847 0.38%	2 0.00%	- -	4 0.00%

Note: The data of physical examination at entry was provided by the Ministry of Labor; the failed results indicated the results of re-examinations after treatment. The data of periodic physical examination was provided by health bureaus of local governments; the failed results included first-time examinations and re-examination after treatment.

Table 16 Statistic of CDC "Communicable Diseases Survey Form" in 2016

Unit : Number of Person Time

Month	Person time of inbound passengers	Cases with symptom		Number of persons quarantined	Notifiable disease	Case No.	Traveling country
		Case No.	Case percentage (%)				
Jan.	1,938,264	2632	0.14	196	Dengue fever	10	Indonesia, India, Thailand, Malaysia, Philippines, Vietnam
					Zika virus	1	
					Chikungunya fever	1	
Feb.	2,127,844	4,090	0.19	290	Dengue fever	13	Indonesia, Malaysia, Vietnam, Myanmar
Mar.	2,112,178	2,499	0.12	237	Dengue fever	6	Indonesia, Kenya, Thailand, Vietnam, Indonesia
					Chikungunya fever	1	
Apr.	2,150,775	2,223	0.10	287	Dengue fever	11	Indonesia, Cambodia, Thailand, Malaysia
May.	2,095,101	1,660	0.08	250	Dengue fever	15	Indonesia, Thailand, Malaysia, Vietnam, Singapore
					Zika virus	1	
Jun.	2,128,316	1,755	0.08	341	Dengue fever	9	Indonesia, Thailand, Malaysia, Philippines, Singapore
					Zika virus	1	
					Chikungunya fever	1	
Jul.	2,252,273	2,006	0.09	464	Dengue fever	13	Indonesia, Cambodia, Thailand, Malaysia, Philippines, Vietnam, Singapore
Aug.	2,168,502	1,899	0.09	489	Dengue fever	19	Indonesia, Cambodia, Thailand, Malaysia, Philippines, Singapore, Saint Vincent and the Grenadines, India
					Zika virus	1	
					Chikungunya fever	1	
Sep.	2,033,913	1,599	0.08	359	Dengue fever	8	Indonesia, Malaysia, Philippines
Oct.	2,076,238	1,633	0.08	286	Dengue fever	25	Indonesia, Thailand, Malaysia, Philippines, Vietnam
					Zika virus	1	
Nov.	2,017,273	1,584	0.08	254	Dengue fever	10	Indonesia, Cambodia, Philippines, Vietnam
Dec.	2,127,107	1,981	0.09	282	Dengue fever	13	Indonesia, Palau, Thailand, Malaysia, Maldives, Philippines, Vietnam, Singapore, Myanmar
					Chikungunya fever	3	
Total	25,227,784	25,366	0.09	3740	Dengue fever	152	
					Zika virus	5	
					Chikungunya fever	7	

Note 1 : The source of inbound passenger number is from Taiwan National Immigration Agency.

Note 2 : The source of cases with symptom is from the 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 2016 finds the following: the health bureaus of all counties and cities conducted 33,171 wards/villages, including 19,467 wards/villages in Level 0, 10,179 wards/villages in Level I, 2,254 wards/villages in Level II, 949 wards/villages in Level III, 257 wards/villages in Level IV, 55 wards/villages in Level V, 9 wards/villages in Level VI, and 1 wards/villages in Level VII (Table 17). The number of wards/villages above Level II in the range of 3.2%~17.7% displayed one peak from June to December. (Figure 15)

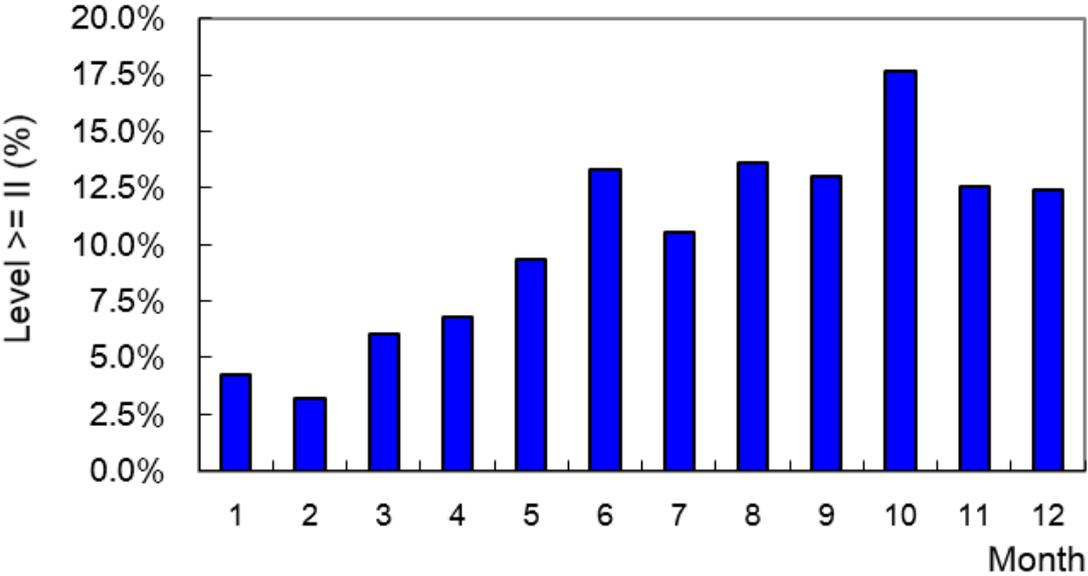


Figure 15 The percentage of wards/villages with Dengue fever vector by month in 2016

Table 17 Distribution of Breteau index, 2016

Locality	Villages (No. of times)	Breteau Index							
		0	1	2	3	4	5	6	7
Taichung City	1,315	615	677	21	1	1	-	-	-
Taipei City	1,354	743	510	73	27	1	-	-	-
Taitung County	888	555	302	26	4	1	-	-	-
Tainan City	4,723	2,833	1,257	374	200	51	7	1	-
Yilan County	1,171	948	220	2	-	1	-	-	-
Hualien County	1,130	948	143	33	5	1	-	-	-
Kinmen County	85	65	20	-	-	-	-	-	-
Nantou County	866	452	414	-	-	-	-	-	-
Pingtung County	3,129	943	1,178	618	294	75	19	1	1
Miaoli County	629	102	436	91	-	-	-	-	-
Taoyuan County	1,229	587	593	26	20	3	-	-	-
Kaohsiung City	5,905	2,325	2,340	761	339	107	27	6	-
Keelung City	334	272	27	35	-	-	-	-	-
Yunlin County	891	697	190	4	-	-	-	-	-
New Taipei City	3,253	2,718	523	8	4	-	-	-	-
Hsinchu City	520	291	198	29	2	-	-	-	-
Hsinchu County	731	580	139	12	-	-	-	-	-
Chiayi City	330	242	83	5	-	-	-	-	-
Chiayi County	2,137	1,911	201	23	2	-	-	-	-
Changhua	1,198	652	503	43	-	-	-	-	-
Penghu County	1,353	988	225	70	51	16	2	1	-
Total	33,171	19,467	10,179	2,254	949	257	55	9	1

II. Malaria vector mosquitoes

In 2016 mosquito light traps were hanged for collection of adult mosquitoes in 56 townships and 170 villages, including Daxi Dist. and Bade Dist. in Taoyuan City; Dalin Township, Taibao City, Shuishang Township, Budai Township, Minxiong Township, Dongshi Township, Alishan Township, Lucao Township and Xikou Township in Chiayi County; Zuozhen Dist., Nanhua Dist., Xinhua Dist., Nanxi Dist., Longci Dist. and Guanmiao Dist. in Tainan City; Tianliao Dist. and Alian Dist. in Kaohsiung 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, Haiduan Township, Daren Township, Luyeh Township, Ludao Township, Guanshan Township and Lanyu Township in Taitung County; Ji'an Township, Xincheng Township, Ruisui Township, Wanrong Township, Shoufeng Township and Fenglin Township in Hualien County. The survey result showed that 5 townships and 8 villages had collected adult *An. minimus* (Table 18 and Figure 16). Gonghe Village of Shoufeng Township in Hualien County had the highest density with the record of catching 15 *An. minimus* per trap-night in May.

Table 18 The number of adult mosquitoes of *Anopheles minimus* collected in 2016

County / Township		<i>An. minimus</i> (No.)	Villages (No.)	Villages with <i>An. minimus</i>
Pingtung County	Checheng	8	3	Tianzhong, Tongpu, Wenquan
	Manzhou	3	2	Jiupeng, Gangkou
Tainan City	Longci	15	1	Daping
Hualien County	Ruisui	14	1	Wuhe
	Shoufeng	121	1	Gonghe
Total	5 townships	161	8	

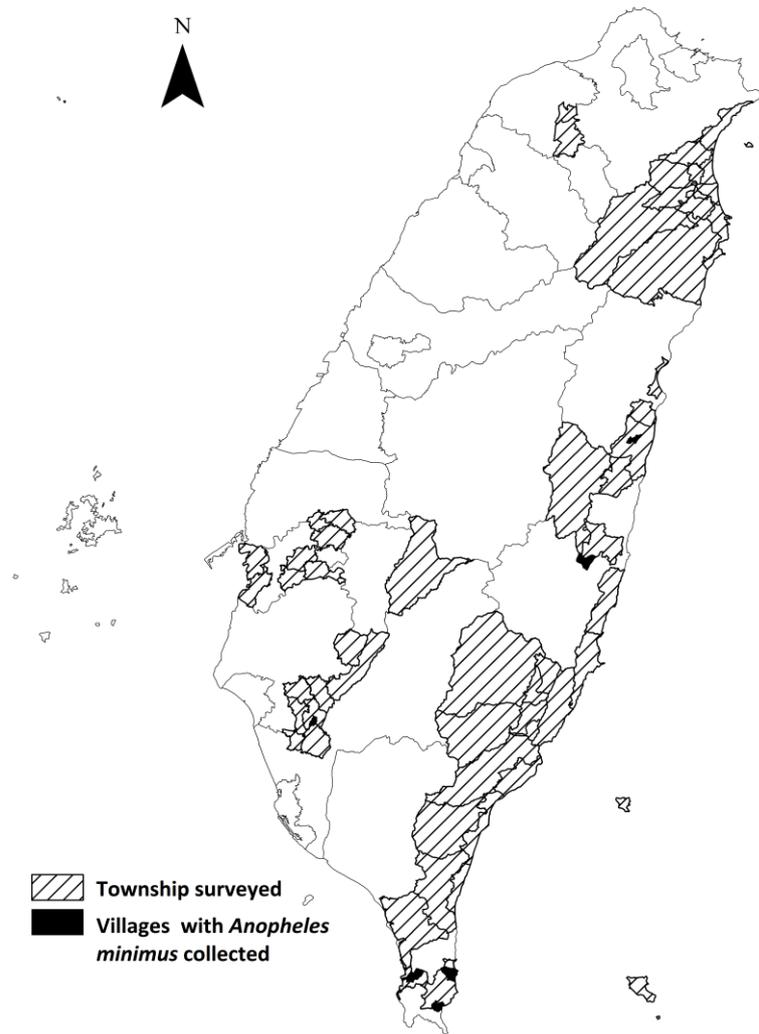


Figure 16 Distribution of *Anopheles minimus*, 2016

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 (tympenic temperature $\geq 38^{\circ}\text{C}$) 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 2016, a total of 91 clusters of influenza-like illness were reported. Laboratory confirmed clusters included 24 events of A(H1N1) infection, 18 events of A(H3N2) infection, 16 events of influenza B infection, 1 event of A(H1N1) and influenza B co-infection, 1 event of A(H3N2) and influenza B co-infection, 19 events of Influenza viruses (RIDTs) and 2 events of other pathogens infection (including 1 event of RSV and adenovirus co-infection, 1 event of Enterovirus 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 and military camps.

Table 19 Test results for influenza-like illness clustering incidents in 2016

No. of Clusters	Test results								
	Influenza A (H1N1) viruses	Influenza A (H3N2) viruses	Influenza B viruses	Influenza A (H1N1) + B viruses	Influenza A (H3N2) + B viruses	Influenza viruses (RIDTs*)	Others	Negative	No specimen
91	24	18	16	1	1	19	2	8	2

*RIDTs: Rapid influenza diagnostic tests, include 14 events of influenza A (RIDTs) and 5 events of influenza B (RIDTs).

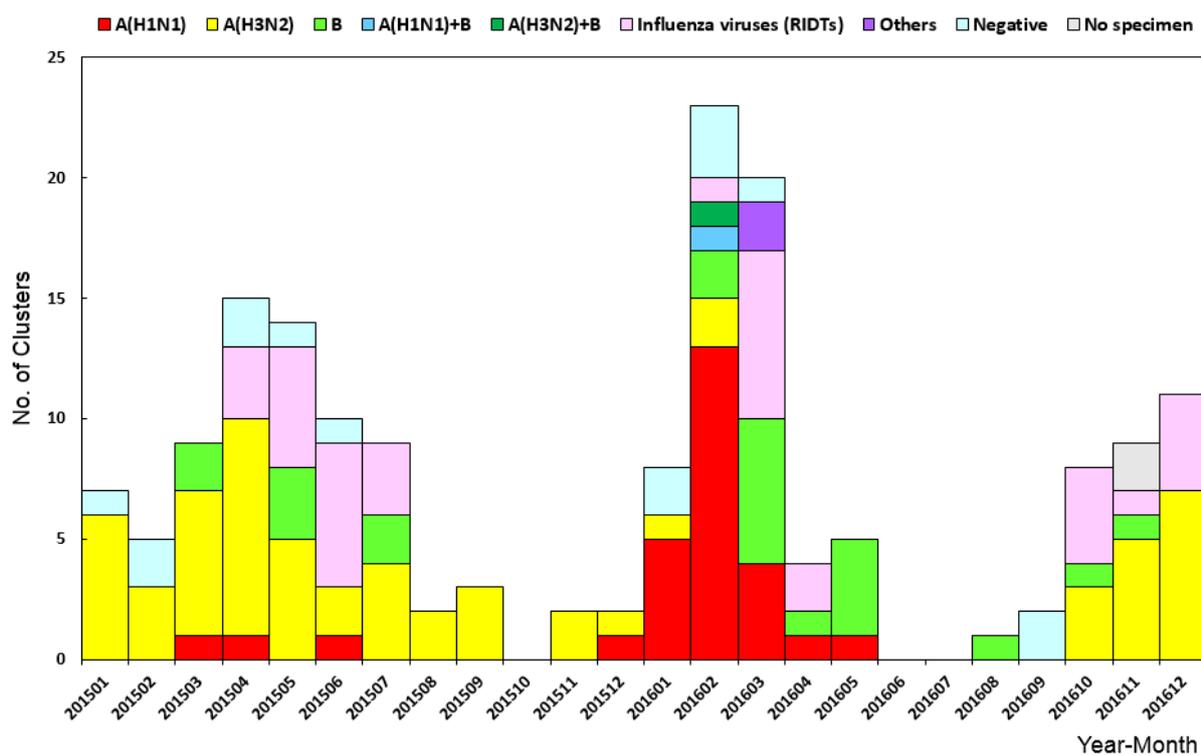


Figure 17 Evolutional trends of influenza-like illness clustering incidents in 2015-2016

Table 20 Distribution of clusters of influenza-like illness cases (by location) in 2016

Institution categories	No. of Clusters
schools	43
populous institutions	30
hospitals	15
military camps	3
Total	91

■ 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 2016, a total of 452 diarrhea cluster events were reported. Clusters that were tested positive include 298 events of Norovirus infection, 17 events of Norovirus and Rotavirus co-infection, 12 events of Rotavirus infection, and 30 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 hotels or restaurants, others (including business places, family, dormitory and camp), populous institutions, tour groups, hospitals and military bases.

Table 21 Test results for diarrhea clustering incidents in 2016

No. of Clusters	Test results					
	Norovirus	Norovirus and Rotavirus	Rotavirus	Others*	Negative	No specimen
452	298	17	12	30	94	1

*Others: Include 12 events of *Salmonell* infection, 7 events of *Bacillus cereus* infection, 6 events of *Vibrio parahaemolyticus* infection and 5 events of *Staphylococcus aureus* infection.

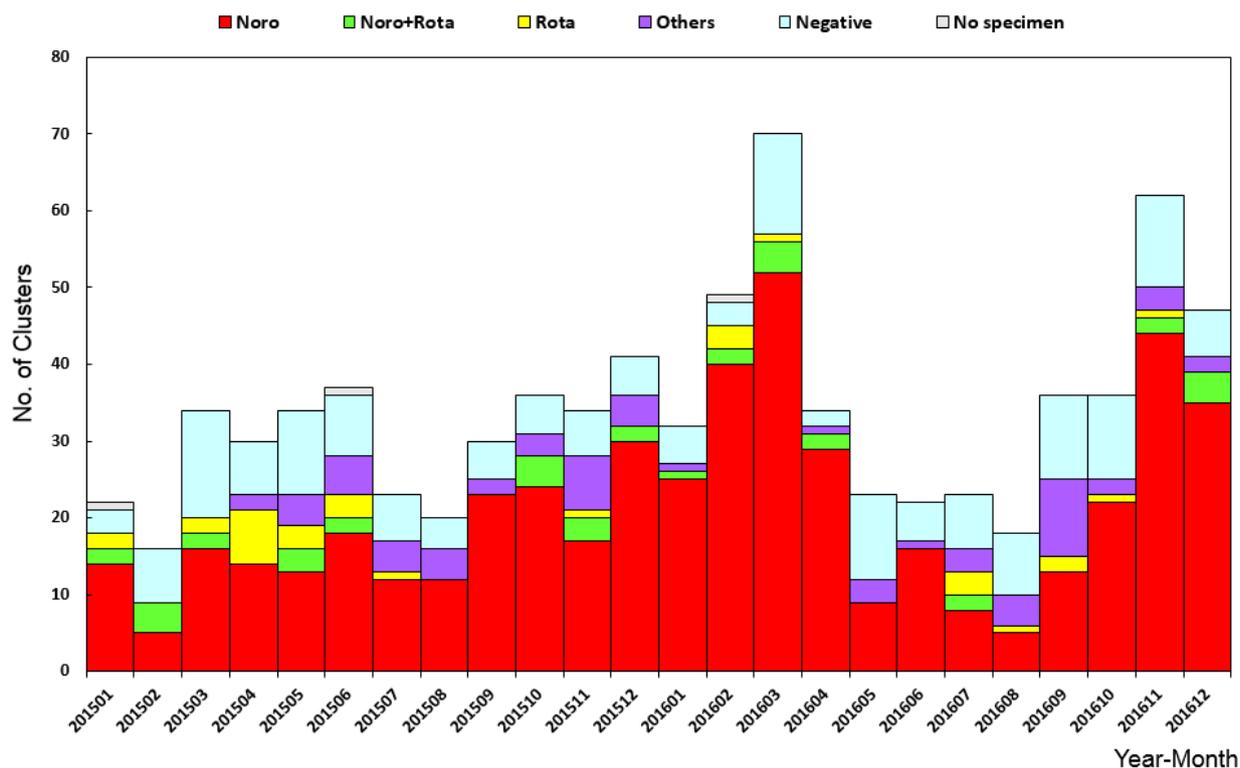


Figure 18 Evolutional trends of diarrhea clustering incidents in 2015-2016

Table 22 Distribution of clusters of diarrhea cases (by location) in 2016

Institution categories	No. of Clusters
schools	182
hotels or restaurants	155
others	42
populous institutions	38
tour groups	21
hospitals	8
military camps	6
Total	452

■ 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 2016, a total of 166 URI cluster events were reported. Clusters that were tested positive include 43 events of A(H1N1) infection, 30 events of A(H3N2) infection, 13 events of influenza B infection, 1 event of A(H1N1) and A(H3N2) co-infection, 1 event of A(H1N1) and influenza B co-infection, 2 events of influenza viruses (RIDTs) infection, and 20 events of other pathogens infection (the major causes were RSV and adenovirus infection). The other events were negative. Populous institutions had the highest number of URI clusters, followed by hospitals, schools, and military camps.

Table 23 Test results for upper respiratory tract infection clustering incidents in 2016

No. of Clusters	Test results							
	Influenza A (H1N1) viruses	Influenza A (H3N2) viruses	Influenza B viruses	Influenza A(H1N1)+A(H3N2) viruses	Influenza A(H1N1)+B viruses	Influenza viruses (RIDTs*)	Others*	Negative
166	43	30	13	1	1	2	20	56

*RIDTs : Rapid influenza diagnostic tests, include 2 events of influenza A (RIDTs).

*Others: Include 11 events of RSV infection, 5 events of adenovirus infection, 2 events of enterovirus infection, 1 event of metapneumovirus infection, 1 event of adenovirus and metapneumovirus co-infection.

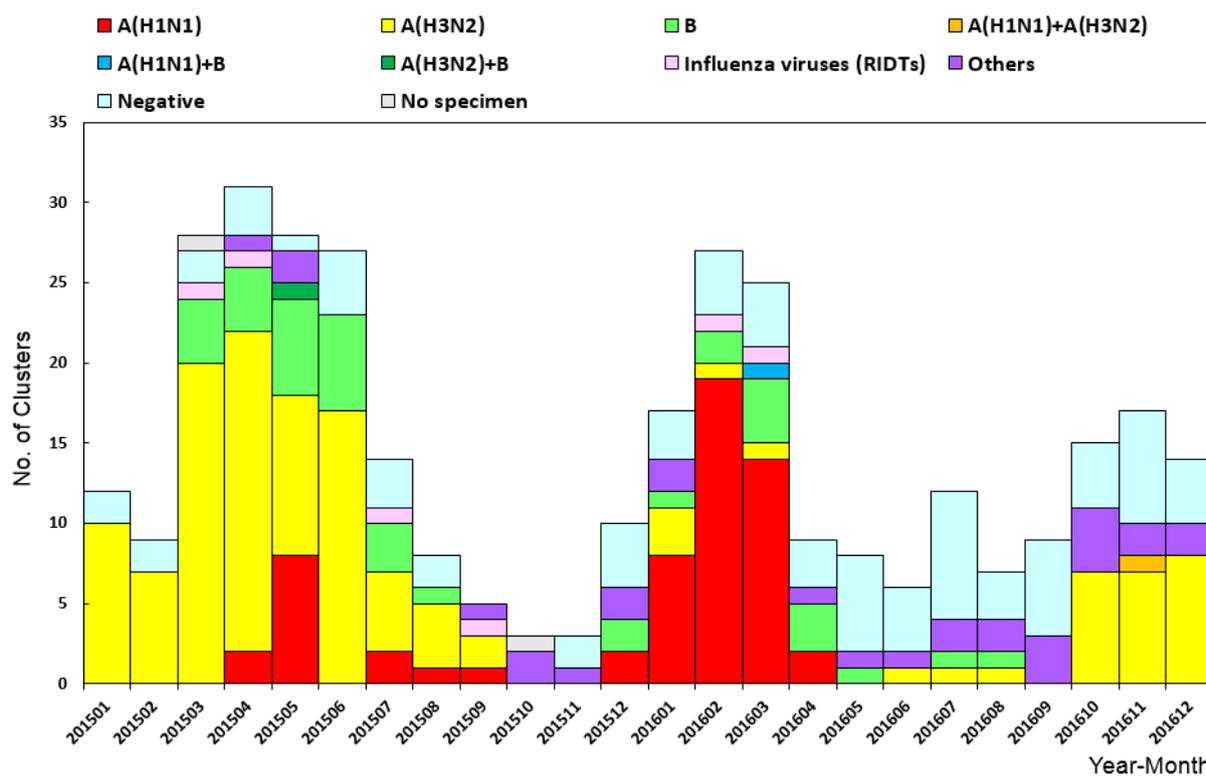


Figure 19 Evolutional trends of upper respiratory tract infection clustering incidents in 2015-2016

Table 24 Distribution of clusters of upper respiratory tract infection cases (by location) in 2016

Institution categories	No. of Clusters
populous institutions	64
hospitals	61
schools	38
military camps	3
Total	166

■ 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 2016, a total of 7 events of fever of unknown origin cluster were reported. Clusters that were tested positive include 3 events of influenza A (H1N1) infection and 2 events of Norovirus and adenovirus co-infection. Test results for two clusters were negative. Schools had the highest number of FUO clusters, followed by hospitals.

■ 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 2016.

■ 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 2016, a total of 2 events of enterovirus clusters were reported. Cluster that was tested positive include 1 event of Coxsackie A10 infection. These clusters were occurred in populous institution.

■ 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 2016, a total of 80 events of varicella cluster were reported. Schools had the highest number of varicella clusters, followed by others (including business places, dormitory and tutoring center), military camps, populous institutions and hospitals.

Table 25 Distribution of clusters of varicella cases (by location) in 2016

Institution categories	No. of Clusters
schools	70
others	5
military camps	2
populous institutions	2
hospitals	1
Total	80

Real-time Outbreak and Disease Surveillance System

I. Purpose of surveillance

Through the “Real-time Outbreak and Disease Surveillance (RODS)” system, 180 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 2016 include routine surveillance of acute hemorrhagic conjunctivitis in addition to the reportable items in 2007.

II. Data analysis methods

The 180 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 its website.

III. Findings

1. Enterovirus

Enterovirus infections are generally most prevalent between April and October every year in Taiwan. The epidemics in 2016 which had two uptrends in June ~ July and September ~ November respectively was slightly more prevalent than that in 2015. Based on the 2016 emergency enterovirus infection surveillance data, the emergency room visit rate of enterovirus infections throughout the year ranged from 0.64‰ to 16.28‰, which was lower than 2015 (0.56‰ to 11.60‰). The epidemic condition peaked up starting in April and peaked in June ~ July and November ~ December, but

the peaks in June to July were markedly higher than those in previous years. [Note: permillage of enterovirus visits= (person-time of emergency room enterovirus cases / total person-time of emergency room cases)* 1000‰]

2. Influenza-like illness

In 2016, the emergency room visit rate for influenza-like illness ranged from 7.53% to 30.46%, which was higher than the surveillance figures in 2015 (6.66% to 18.03%). The emergency room visits started to raise at the beginning of the year and reached a peak in early February when most hospitals and clinics closed their outpatient services during the Chinese New Year holiday. The emergency room visit rates declined gradually afterward the holiday, but in early March after the second peak gradually slowed until May began to reach stability, in the beginning of November, once again slowly rising. [Note: percentage of influenza-like illness visits = (person-time of emergency room influenza-like illness cases / total person-time of emergency room cases)* 100%]

3. Acute diarrhea

In 2016, the emergency room visit rate for acute diarrhea ranged from 3.03% to 10.28%, which was gentler than that in 2015 (3.24% to 14.09%), the highest peak was significantly lower than those in 2015. The epidemic at the end of last year continued onto the beginning of 2015, and after peaking in late February, but in early to mid-April after the second peak gradually slowed, showed a minor spike in September. Diarrhea epidemic typically reaches its peak before and after the Chinese New Year. Based on the 7-day moving average chart of acute diarrhea visit rate, the prevalence of the disease in 2015 reached its peak during the Chinese New Year, and emergency room visits leveled off afterwards as hospitals and clinics opened their outpatient services after the holiday. There was an abrupt spike in September and then declined. [Note: percentage of acute diarrhea visits = (person-time of emergency room acute diarrhea cases / total person-time of emergency room cases)* 100%]

4. Acute Hemorrhagic Conjunctivitis (AHC)

In 2016, the emergency room visit rate for conjunctivitis ranged from 0.68‰ to 5.93‰, which was slightly lower than that in 2015 (0.67‰ to 6.49‰). Based on the 7-day moving average chart of conjunctivitis visit rate, the emergency room visits showed a peak in mid-February during the Chinese New Year holiday, which was

higher than last year and then leveled off afterward the holiday before it showed a minor spike in early April. The emergency room visit rate for conjunctivitis in 2016 showed a similar trend as that in 2015 after the peak season. [Note: permillage of AHC visits = (person-time of emergency room AHC cases / total person-time of emergency room cases)* 1000‰]

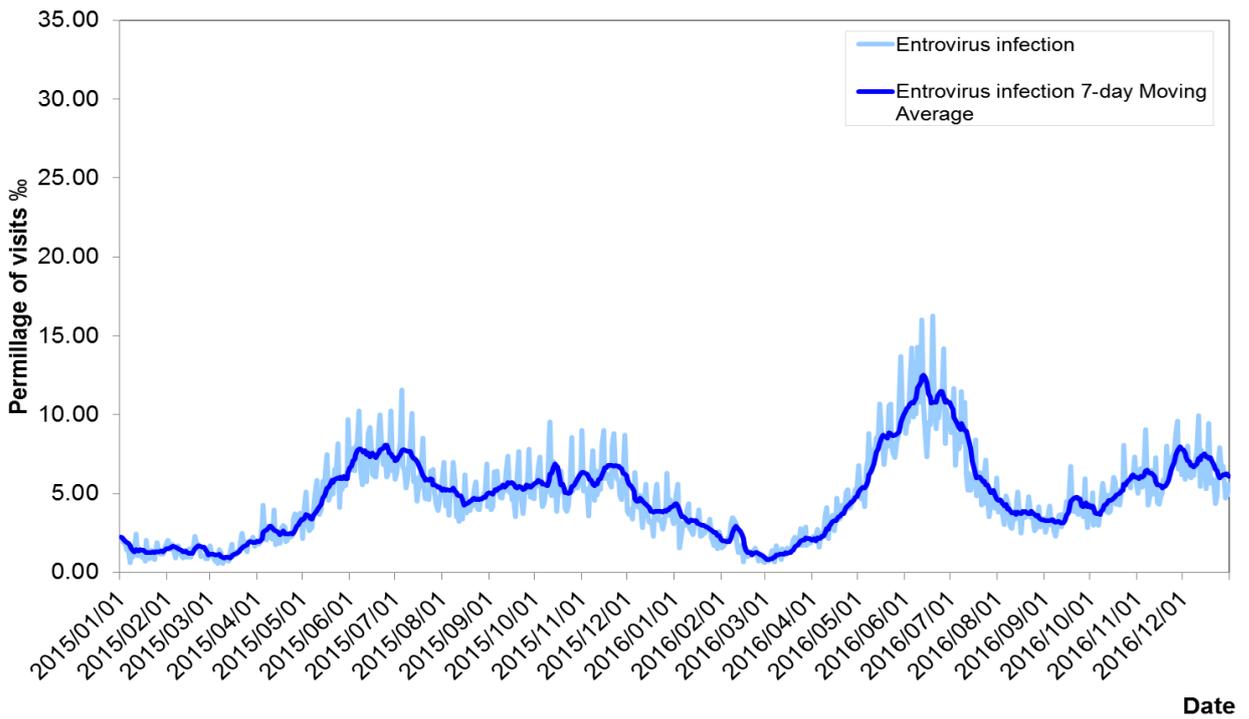


Figure 20 Daily Percentage of Emergency Department of Enterovirus Visits & 7-day Moving Average

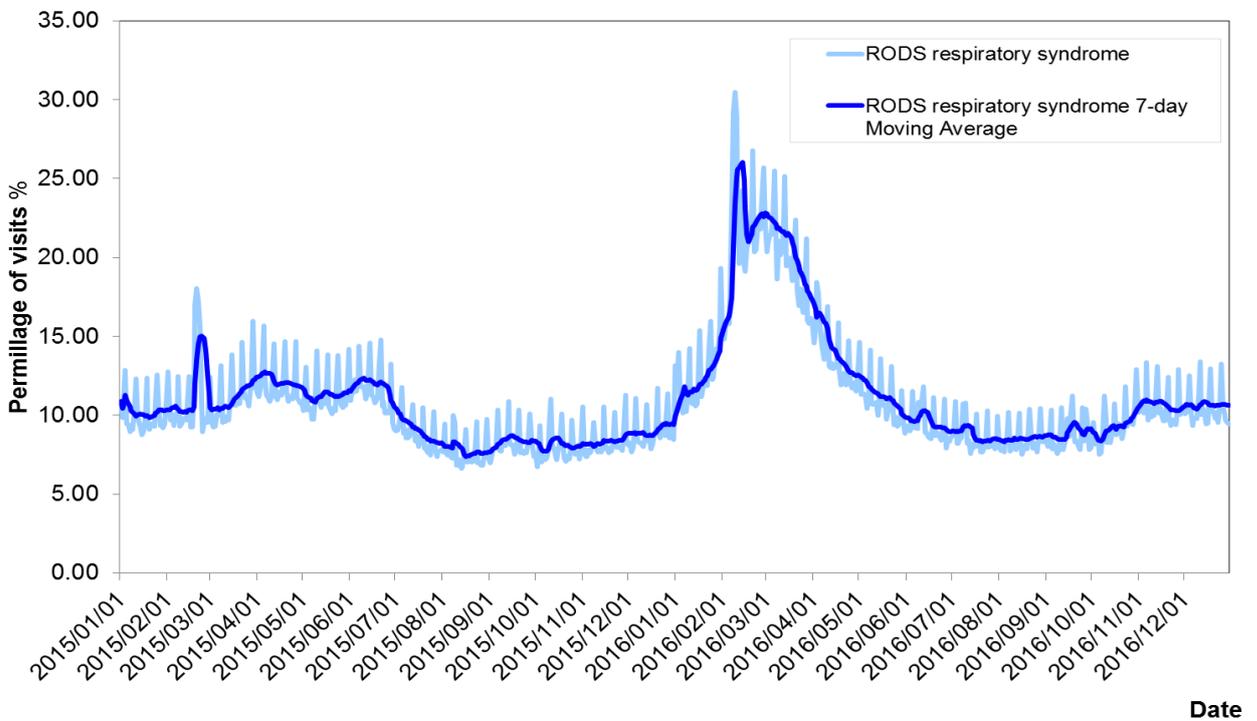


Figure 21 Daily Percentage of Emergency Department of Respiratory Visits & 7-day Moving Average

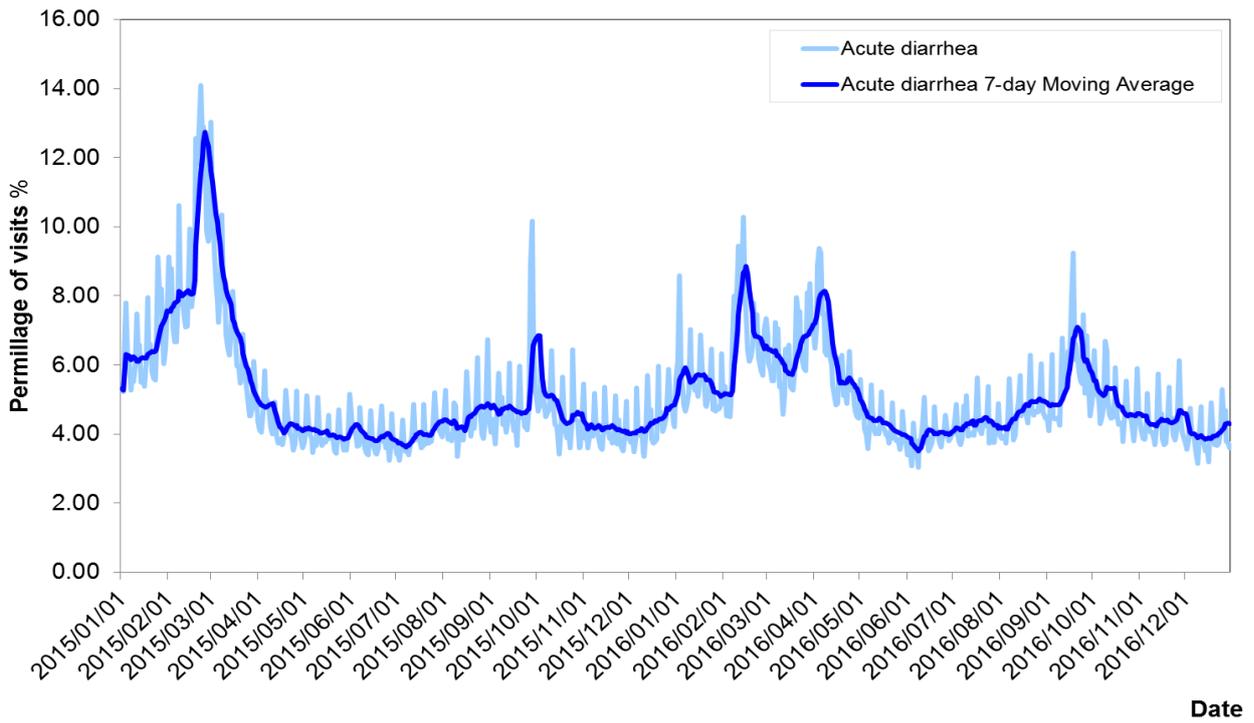


Figure 22 Daily Percentage of Emergency Department of Acute Diarrhea Visits & 7-day Moving Average

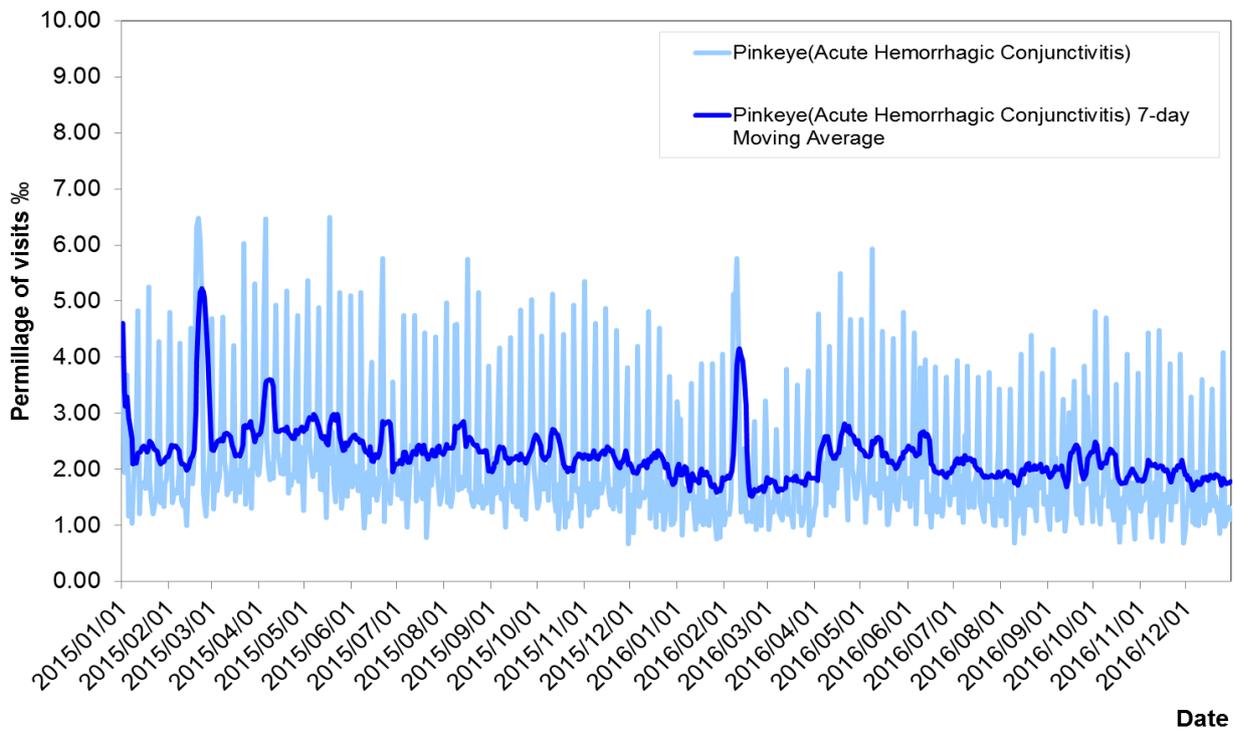


Figure 23 Daily Percentage of Emergency Department of Acute Hemorrhagic Conjunctivitis Visits & 7-day Moving Average

Disease Surveillance using National Health Insurance Data

I. Introduction

To boost 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 2016, between 1,750 and 36,625 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 2,102 and 26,839 person-times a day) in 2015. 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 early January and early February respectively, and reached a plateau in early March, then gradually tapered off to a trough in June. The peak was significantly higher than the same period in 2015, but the epidemic was relatively stable than last year since April and did not continue to fluctuate since May and June.

2. Enterovirus infections

In 2016, between 155 and 6,253 person-times visited the hospitals for enterovirus infection on an outpatient basis every day, which was higher in comparison with the number of outpatient visits in 2015 (ranging between 99 and 4,925 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 plateau during mid-June to the end of June, which was higher than that in 2015, and then dropped off suddenly in July. The epidemic surfaced again in September and reached a second peak in early December, then gradually leveled off at the end of December.

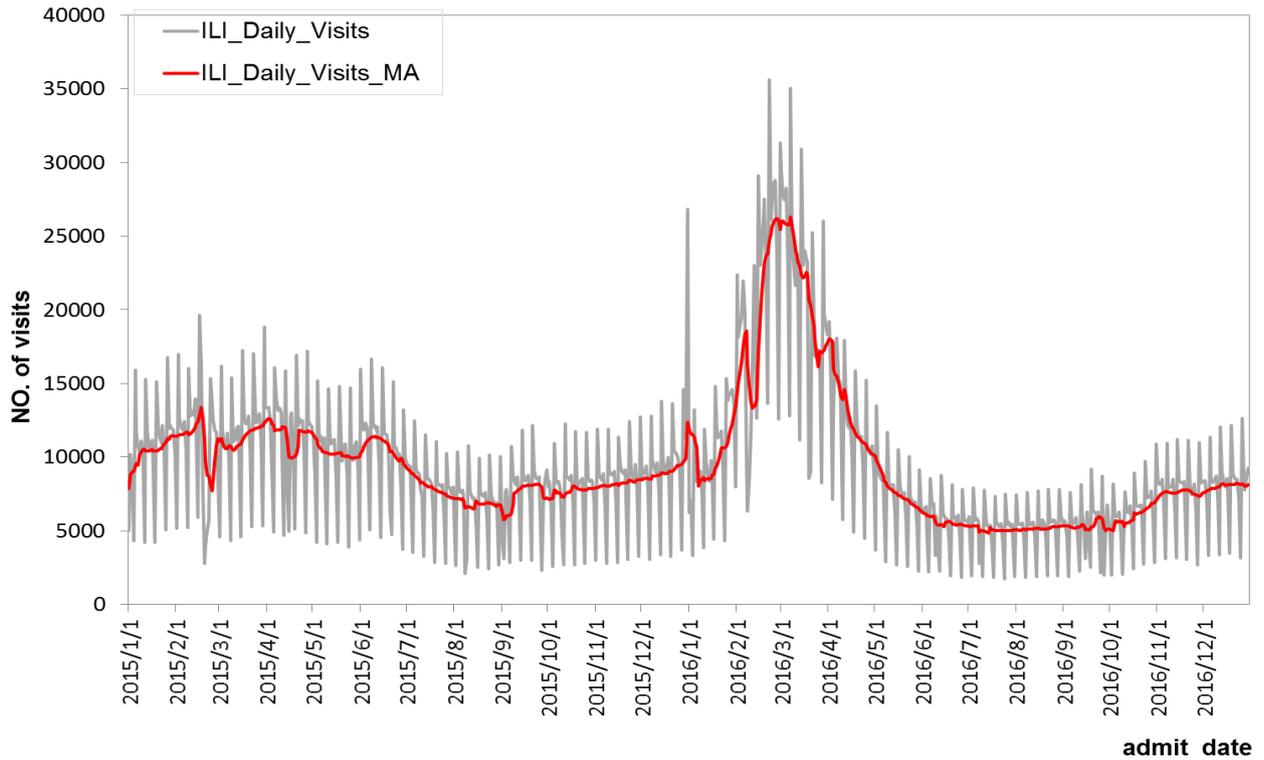


Figure 24 Daily influenza-like illness visits and the 7-day moving average trend, 2015-2016

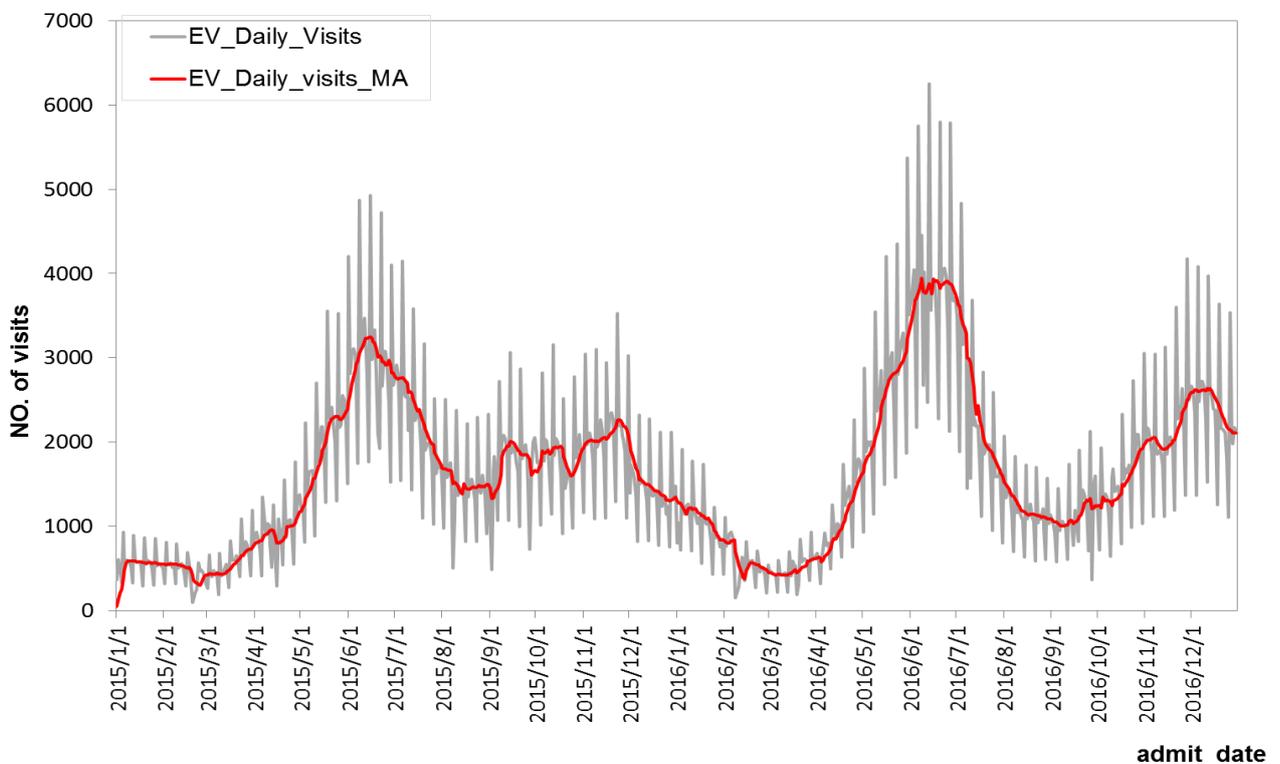


Figure 25 Daily enterovirus visits and the 7-day moving average trend, 2015-2016

Pneumonia and Influenza Mortality Surveillance

I. Introduction

Many parts of the world reported an outbreak of pandemic influenza A (H1N1) epidemics starting April 2009. Soon after the World Health Organization (WHO) announced the case definition of H1N1 influenza on April 26, 2009, Taiwan categorized H1N1 influenza as a Class 1 notifiable communicable disease on April 27 for epidemic surveillance purpose. Subsequently because the majority of H1N1 influenza cases had only mild symptoms, the WHO branded the flu outbreak as a "gentle pandemic". Thus Taiwan removed H1N1 influenza from Class 1 notifiable communicable diseases on June 19, 2009. From then on, cases of influenza A (H1N1) with severe complications are handled as a Class 4 notifiable communicable disease in terms of reporting deadline, reporting and relevant control measures.

Taking influenza surveillance in the U.S. for example, which includes five categories: viral surveillance, outpatient illness surveillance, mortality surveillance, hospitalization surveillance and geographic spread of influenza. The mortality surveillance consists of two parts: Pneumonia and Influenza (P&I) mortality surveillance, which is done through two systems, the National Center for Health Statistics (NCHS) Mortality Surveillance System and the 122 Cities Mortality Reporting System; the other is Influenza-Associated Pediatric Mortality Surveillance monitoring laboratory confirmed Influenza-associated deaths in children (persons less than 18 years).

Under the belief and guidance of real-time surveillance and early warning of communicable diseases and in consideration of rapid response to any pandemic, Taiwan CDC embarks on inter-agency collaboration with the Department of Statistics, Ministry of Health and Welfare (MOHW). Taiwan CDC receives daily death certification data electronically from the Department of Statistics, MOHW and analyzes whether the reported cause of death is pneumonia or influenza (P&I), and grasp the related mortality trends.

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 surveillance system established in response to the H1N1 epidemic in 2009 buttresses Taiwan CDC's influenza prevention and control network together with the operating "Real-Time Outbreak and Disease Surveillance System (RODS)", "Disease surveillance using National Health Insurance data", "Contracted Laboratory Surveillance System", and "Notifiable Disease Surveillance System" to cover surveillance in four dimensions (mortality, mild symptoms, virus and hospitalization). It is hoped that with routine operations in these four surveillance aspects in place, Taiwan CDC can firmly grasp the trends and variations in 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 the field of "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 the curve graphed with the 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 from P&I ranged between 320 to 660 in 2016, as compared to the weekly deaths between 300 and 440 in 2015. If analyzed by age group, the majority of P&I deaths in 2016 and 2015 occurred in 65 years old and above, accounting for respectively 87.7% and 88.3% of P&I deaths in the year. In observation of the 4-week moving average curve of P&I deaths, it is found that the overall mortality of P&I death in 2016 started to rise at the end of 2015, peaked during weeks 4-17 of the year. In comparison with the trend in 2016, the overall death trend in 2015 was relatively mild without apparent peaks.

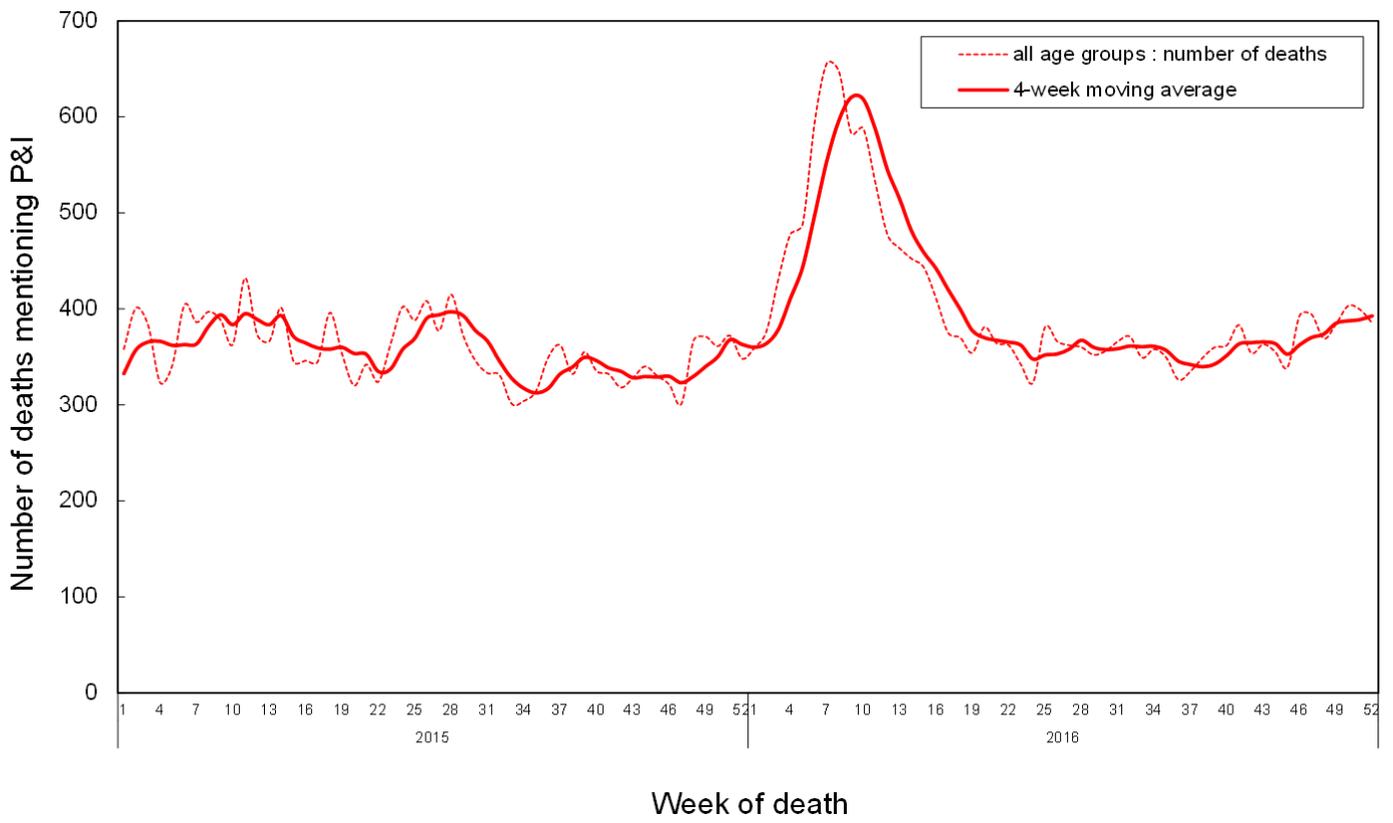


Figure 26 The surveillance trend of pneumonia and influenza mortality

PART III

Surveillance Reports of Selected Diseases

© **Abbreviations and Symbols Used in Table**

— No reported cases

... Not under surveillance

Measles

In 2016, 14 confirmed cases of measles (incidence rate: 0.06 per 100,000 population) were reported, which represented a decrease compared to 29 confirmed cases (incidence rate: 0.12 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 6 male cases (42.9%) and 8 female cases (57.1%) with male to female ratio of 0.8:1.0.

(2) By age group

There were 6 cases in 25-39 years age group, 3 cases in 40-64 years age group, 2 cases in 0-1 year age group, and 1 case each in 1-4, 5-14 and 15-24 years age groups.

(3) By month

There were 5 cases in August, 2 cases each in April, May and July, and 1 case each in March, June and December.

(4) By residential region

Taipei City had 5 cases reported, followed by New Taipei City with 3 cases, Hsinchu City with 2 cases, Taoyuan City, Tainan City, Pingtung County and Kinmen County 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 Kinmen County (0.75), followed by Hsinchu City (0.46) and Taipei City (0.19).

(5) Imported cases and countries of infection

There were 8 imported cases of measles in 2016, including 2 cases each came from China and India, 1 case each came from Thailand, Vietnam, Japan and Hong Kong.

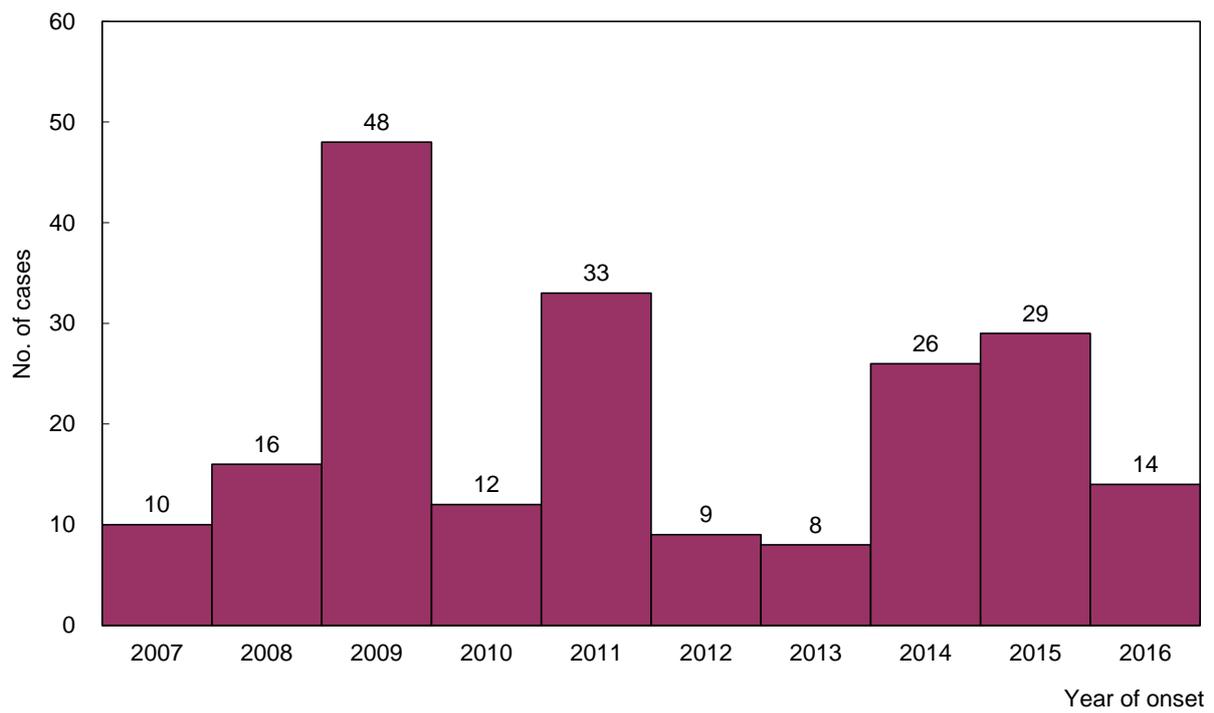


Figure 27 Number of confirmed measles cases, 2007-2016

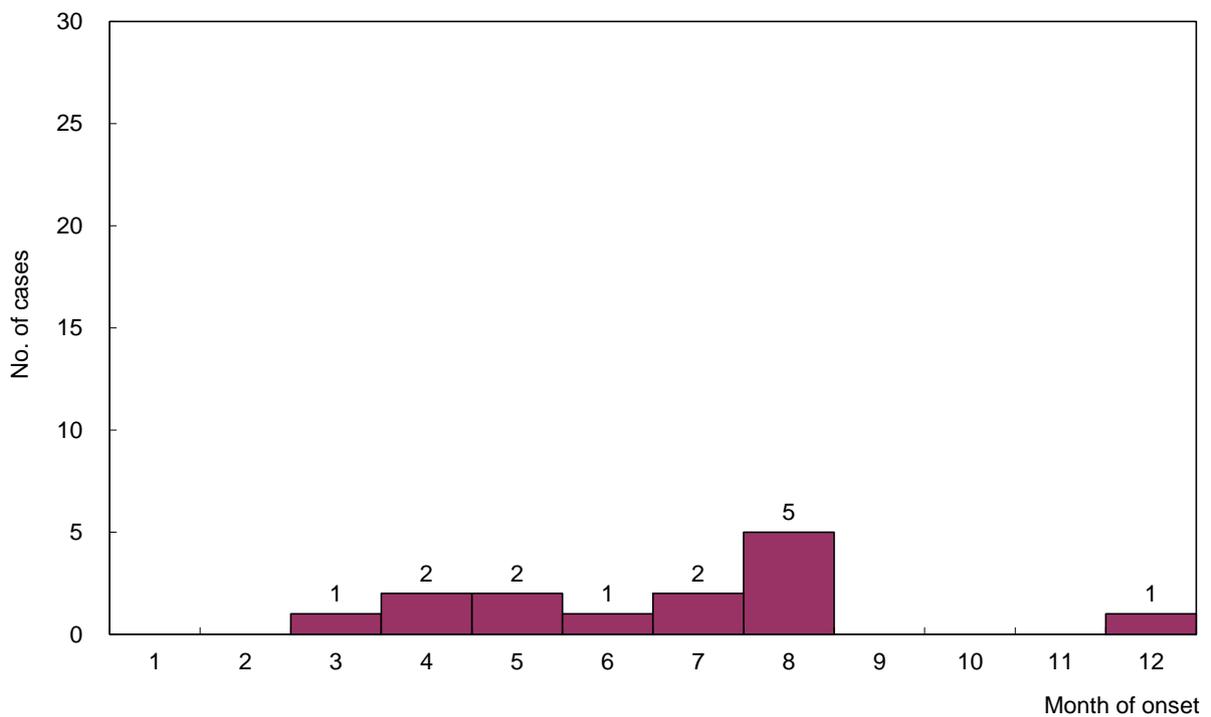


Figure 28 Number of confirmed measles cases, 2016

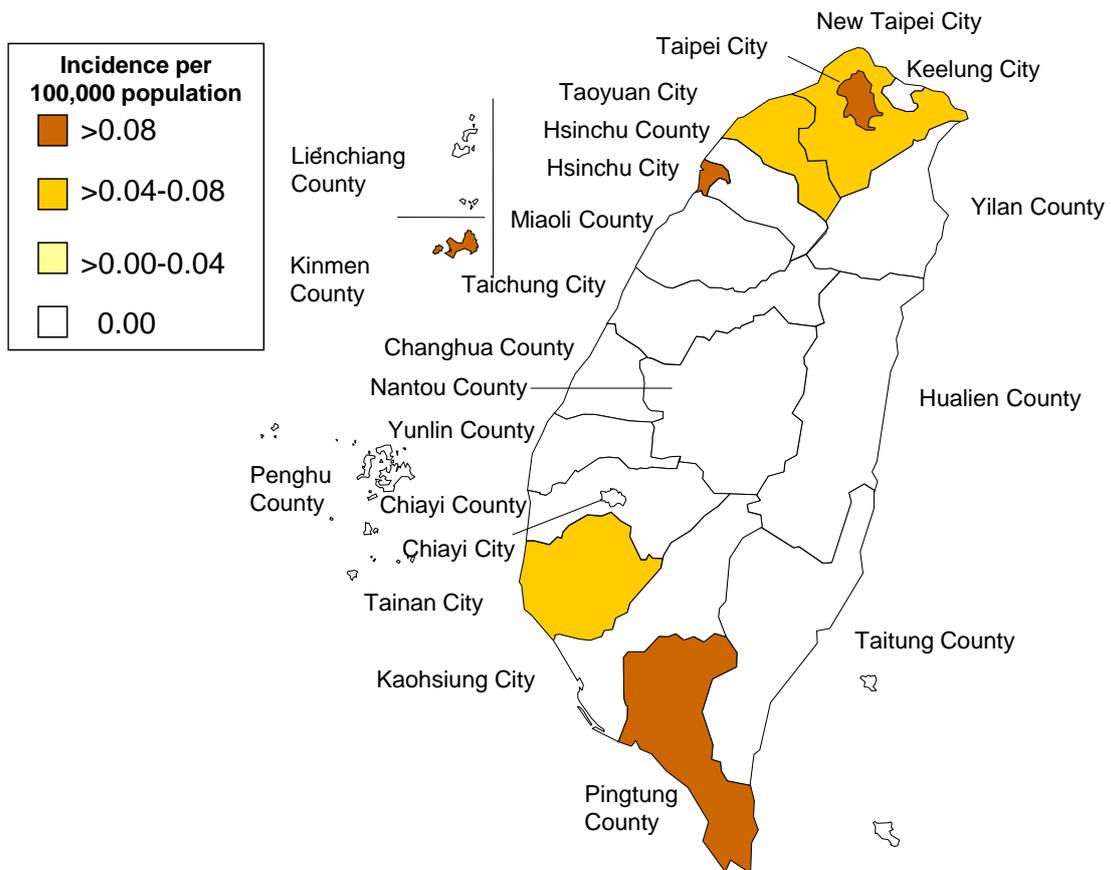


Figure 29 Geographical distribution by incidence of confirmed measles cases, 2016

Pertussis

In 2016, 17 confirmed cases of pertussis (incidence rate: 0.07 per 100,000 population) were reported, which represented a decrease compared to 70 confirmed cases (incidence rate: 0.30 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 10 male cases (58.8%) and 7 female cases (41.2%) with male to female ratio of 1.4:1.0.

(2) By age group

There were 12 cases in 0-1 year age group, 1 case each in 1-4, 5-14, 15-24, 25-39, and 40-64 years age group.

Of the 12 cases in 0-1 year age group, 6 cases were 1 month old, 3 cases were 3 months old, 2 cases were 2 months old, and 1 case was 6 months old.

(3) By month

There were 4 cases in August, 3 cases in April, 2 cases each in May, July, September and October, and 1 case each in February and March.

(4) By residential region

Taichung City had the highest number of incidents with 4 cases reported, followed by New Taipei City and Kaohsiung City each with 3 cases, Taipei City, Taoyuan City and Yunlin County each with 2 cases, and Chiayi 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 Yunlin County (0.29), followed by Chiayi County (0.19) and Taichung City (0.15).

(5) Imported cases and countries of infection

There were no imported cases of pertussis in 2016.

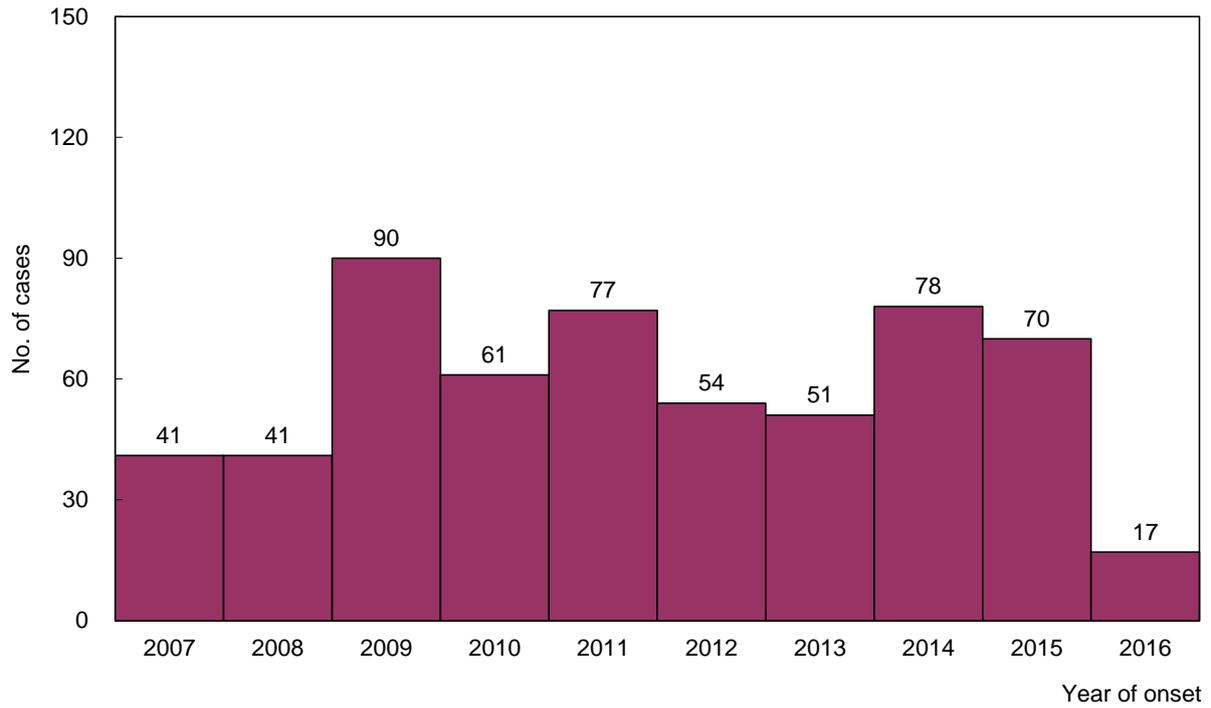


Figure 30 Number of confirmed pertussis cases, 2007-2016

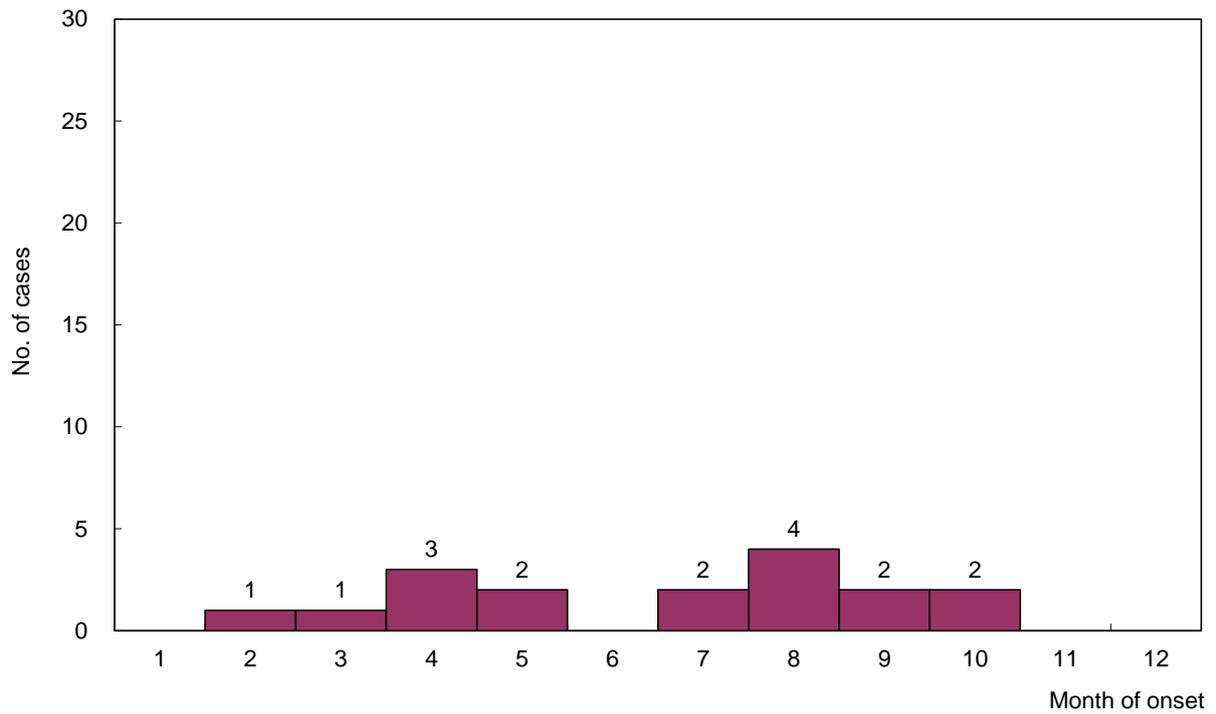


Figure 31 Number of confirmed pertussis cases, 2016

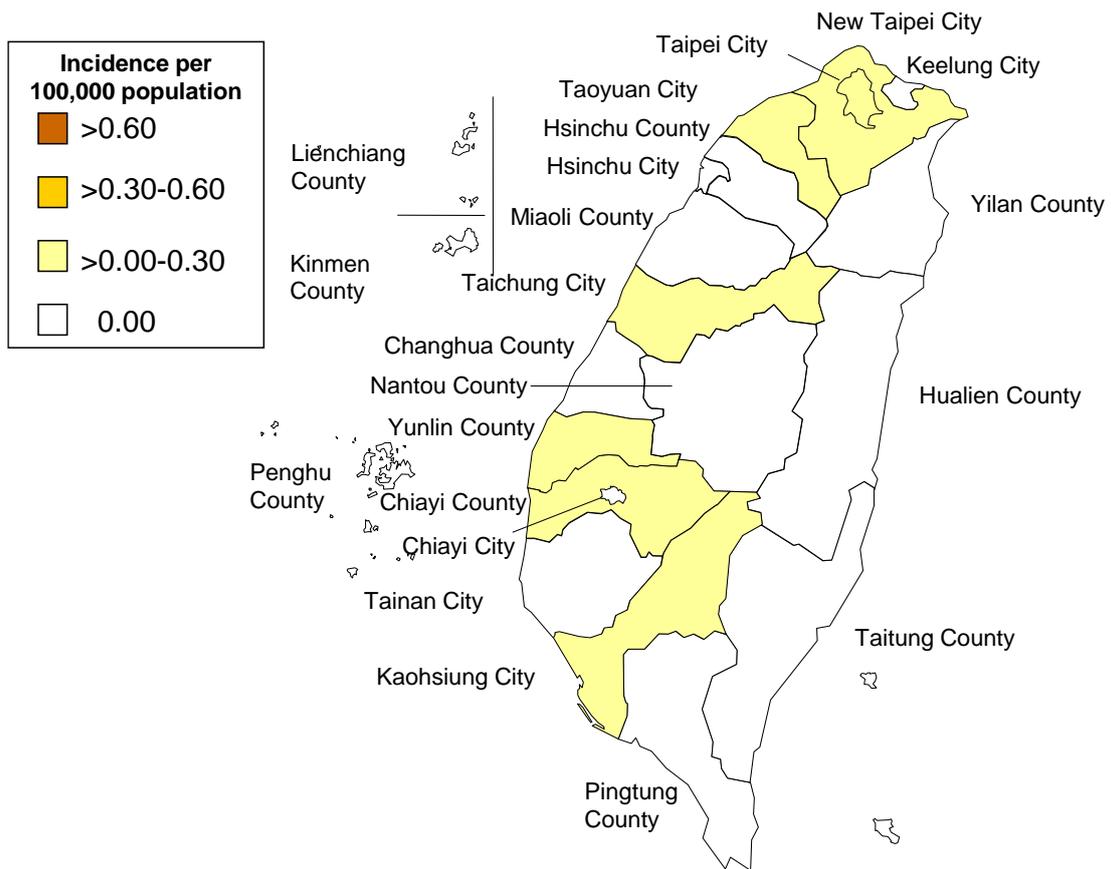


Figure 32 Geographical distribution by incidence of confirmed pertussis cases, 2016

Meningococcal Meningitis

In 2016, 8 confirmed cases of meningococcal meningitis (incidence rate: 0.03 per 100,000 population) were reported, which represented an increase compared to 3 confirmed cases (incidence rate: 0.01 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 2 male cases (25.0%) and 6 female cases (75.0%) with male to female ratio of 0.3:1.0.

(2) By age group

There were 3 cases in 40-64 years age group, 1 case each in 0-1, 5-14, 15-24, 25-39, and 65 years and over age groups.

(3) By month

There were 3 cases in September, 2 cases in November and 1 case each in February, March and October.

(4) By residential region

Confirmed cases were reported in 6 cities and counties, including Taoyuan City and Yilan County each with 2 cases, Taipei City, Hsinchu County, Changhua County and Hualien County each 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 Yilan County (0.44), followed by Hualien County (0.30) and Hsinchu County (0.18).

(5) Imported cases and countries of infection

There were no imported cases of meningococcal meningitis in 2016.

(6) By serogroup

Following laboratory confirmation, 6 confirmed cases were identified as serogroup B meningococcal infection, 1 confirmed cases were identified as combination of serogroup B and serogroup W135, and 1 confirmed case was unidentified serotype case.

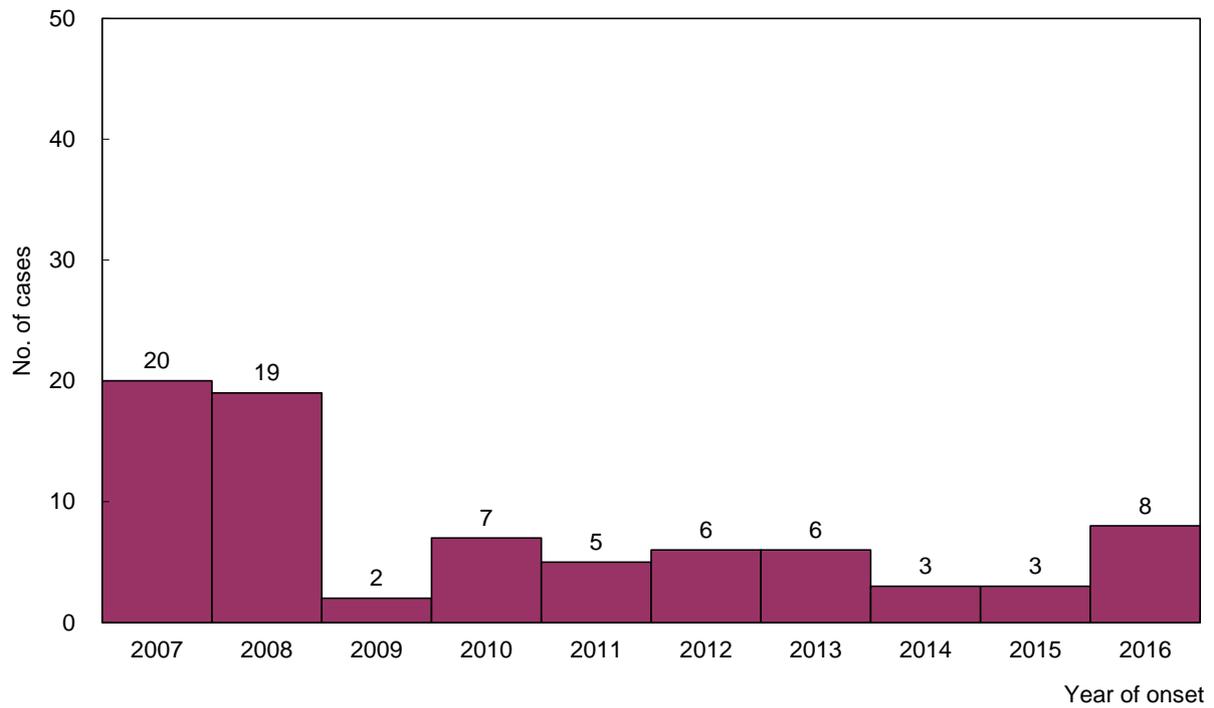


Figure 33 Number of confirmed meningococcal meningitis cases, 2007-2016

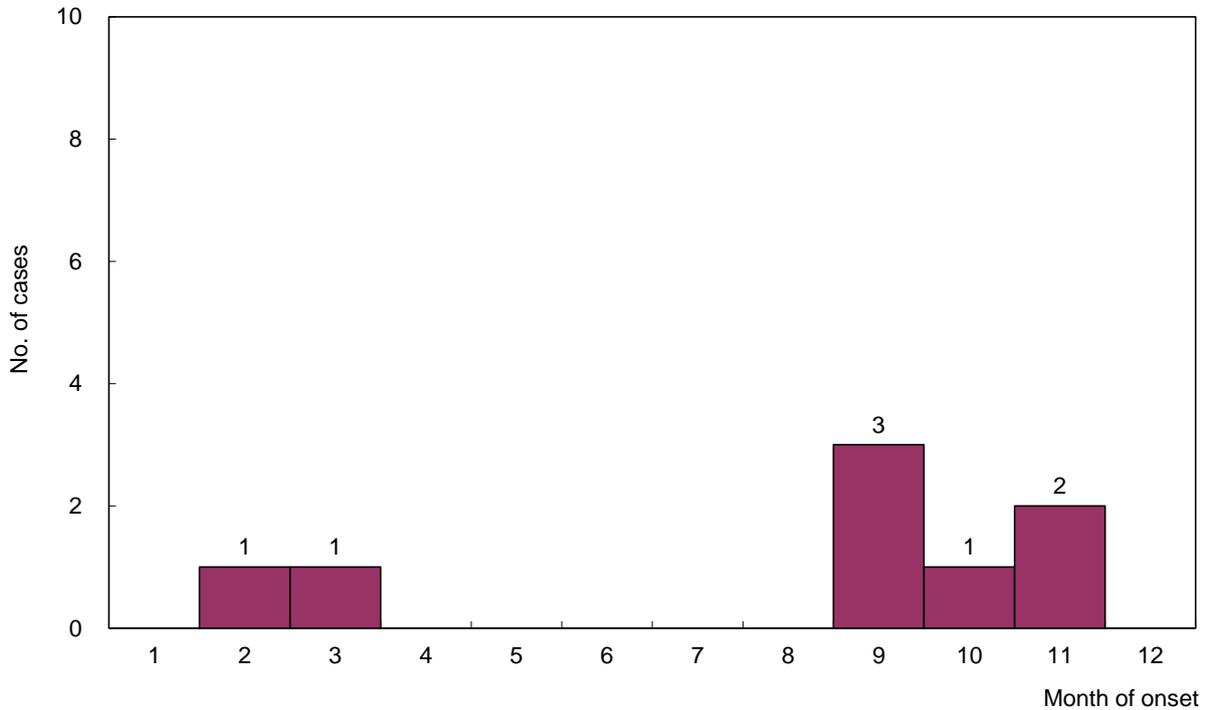


Figure 34 Number of confirmed meningococcal meningitis cases, 2016

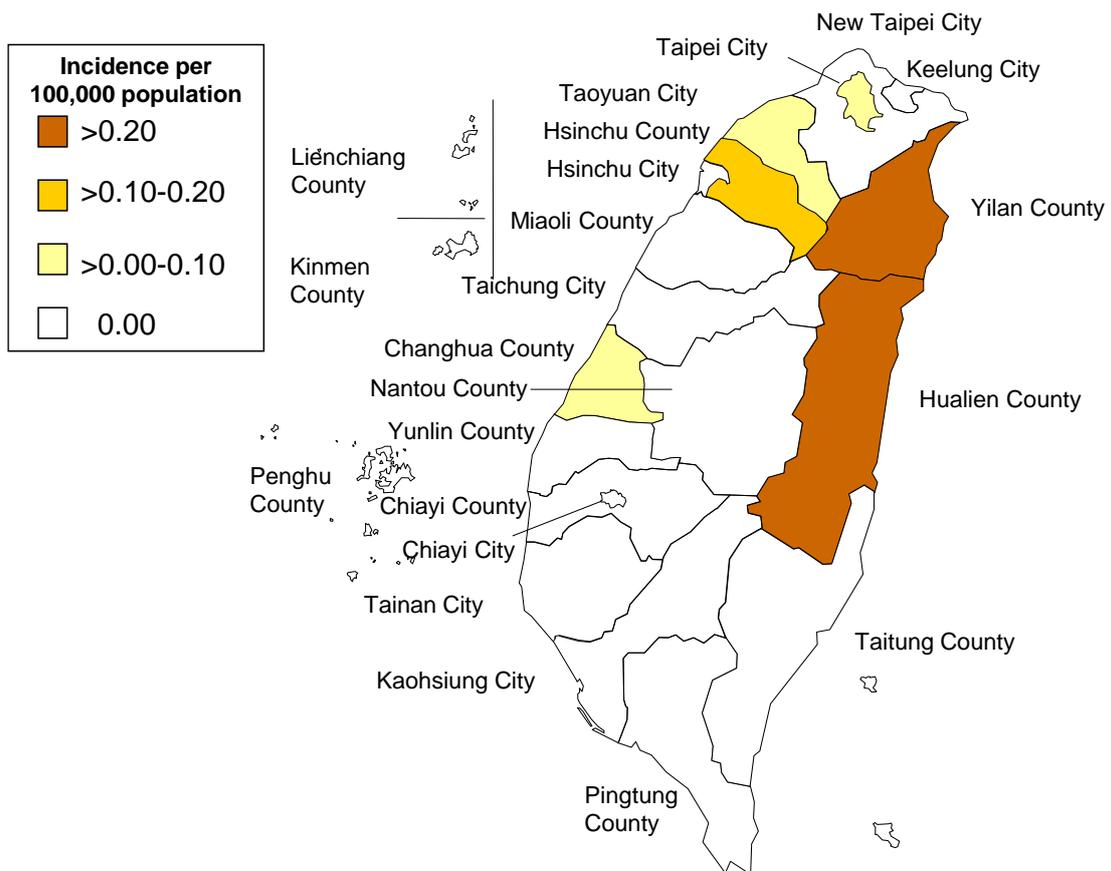


Figure 35 Geographical distribution by incidence of confirmed meningococcal meningitis cases, 2016

Japanese Encephalitis

In 2016, 23 confirmed cases of Japanese encephalitis (incidence rate: 0.10 per 100,000 population) were reported, which represented a decrease compared to 30 confirmed cases (incidence rate: 0.13 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 12 male cases (52.2%) and 11 female cases (47.8%) with male to female ratio of 1.1:1.0.

(2) By age group

By age group, there were 19 cases in 40-64 years age group, 2 cases in 25-39 years age group, and 1 case each in 15-24 years and 65 years and over age groups.

(3) By month

The cases occurred mostly in warm seasons, with 8 cases in July, 6 cases each in June and September, and 1 case in October.

(4) By residential region

Kaohsiung City had the highest number of incidents with 4 confirmed cases reported, followed by Tainan City and Hualien County each with 3 cases, Taichung City, Nantou County and Chiayi County each with 2 cases, and New Taipei City, Hsinchu City, Hsinchu County, Miaoli County, Changhua County, Yunlin County and Chiayi City 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 Hualien County (0.91), followed by Nantou County and Chiayi County (0.39 respectively).

(5) Imported cases and countries of infection

There were no imported cases of Japanese encephalitis in 2016.

(6) By clinical symptoms

Among the confirmed cases, 21 cases had fever, 17 cases had disorder of consciousness, 9 cases had headache, 5 cases each had psychological symptoms (delirium, unconsciousness, etc.) or stiff neck, 4 cases had dystonia, 2 cases each had encephalitic stimulation symptoms or muscle cramps, and 1 case had vomiting.

(7) Residential condition or neighboring environment

Among the confirmed cases, 11 cases lived nearby paddy fields, 11 cases lived nearby pigpens, 11 cases lived nearby pigeonries, 6 cases lived nearby duck or chicken farms, 1 case lived nearby ponds, and 1 case had pets at home.

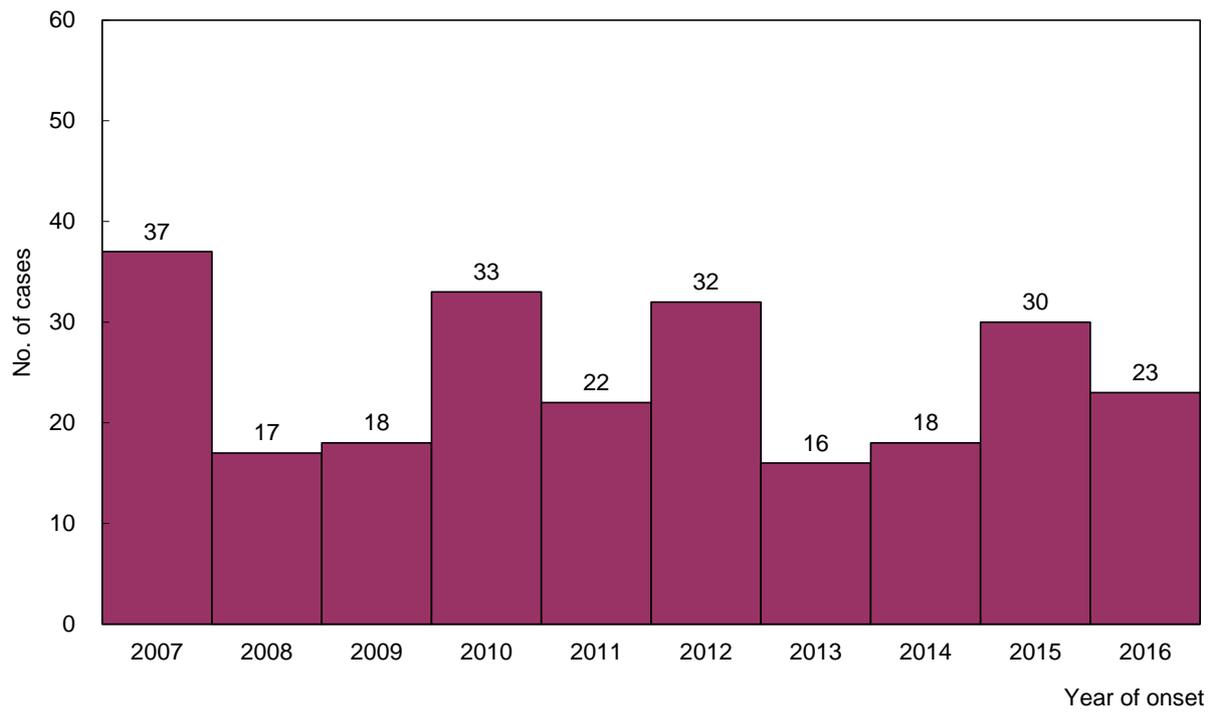


Figure 36 Number of confirmed Japanese encephalitis cases, 2007-2016

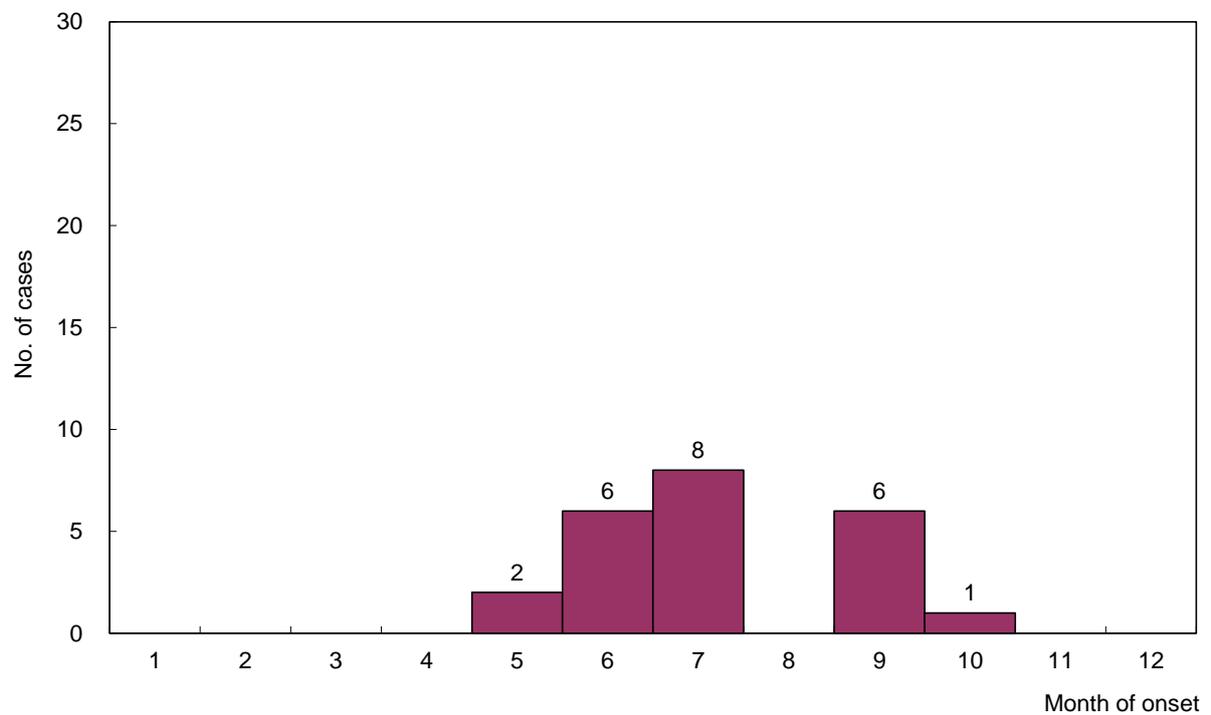


Figure 37 Number of confirmed Japanese encephalitis cases, 2016

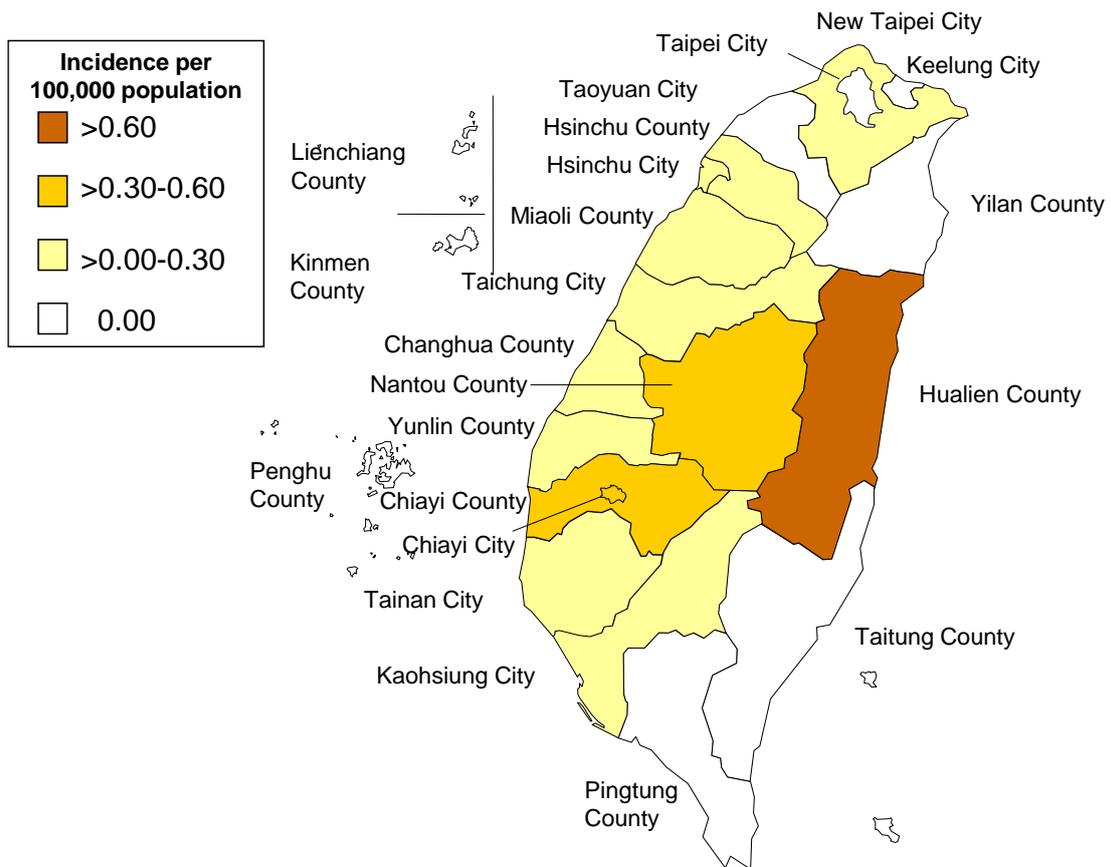


Figure 38 Geographical distribution by incidence of confirmed Japanese encephalitis cases, 2016

Acute Hepatitis A

In 2016, 1,133 confirmed cases of acute hepatitis A (incidence rate: 4.82 per 100,000 population) were reported, which represented an increase compared to 171 confirmed cases (incidence rate: 0.73 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 1,047 male cases (92.4%) and 86 female cases (7.6%) with male to female ratio of 12.2:1.0.

(2) By age group

There were 718 cases in 25-39 years age group, 202 cases in 40-64 years age group, 188 cases in 15-24 years age group, 14 cases in 65 years and over age group, 8 cases in 5-14 years age group, and 3 case 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 (143) were reported respectively in May and July, followed by 137 cases in June, 111 cases in August, 94 cases in November, 93 cases in October, 92 cases in September, 84 cases in April, 83 cases in March, 82 cases in December, 36 cases in January, and 35 cases in February.

(4) By residential region

All cities and counties had confirmed cases in 2016, except for Lienchiang County. New Taipei City had the highest number of incidents with 370 cases reported, followed by Taipei City with 272 cases, Taichung City with 162 cases, Taoyuan City with 93 cases, Kaohsiung City with 46 cases, Tainan City with 38 cases, Changhua County with 25 cases, Hsinchu County with 22 cases, Hsinchu City with 21 cases, Yilan County with 16 cases, Keelung City with 15 cases, and Miaoli County and Yunlin County with 10 cases. The other cities and counties all had less than 10 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Taipei City (10.07), followed by New Taipei City (9.31) and Taichung City (5.88).

(5) Imported cases and countries of infection

There were 80 imported cases of acute hepatitis A in 2016, including 23 cases from China, 20 cases from Thailand, 6 cases from Japan, 5 cases from Indonesia, 3 cases each from Philippines, Cambodia and Hong Kong, 2 cases each from Malaysia, Myanmar, South Korea, the United States and Greece, 1

case each from Vietnam, Laos, Nepal, France, Australia, Poland and Peru.

(6) By clinical symptoms

An epidemiological survey of 1,133 confirmed cases showed that in cases with symptoms (multiple answers are allowed), 61.8% (700 person-times) had jaundice, 52.3% (593 person-times) had tiredness, 45.4% (514 person-times) had poor appetite, 41.3% (468 person-times) had tawny urine, 39.6% (449 person-times) had abdominal pain, 39.5% (447 person-times) had stomach discomfort, 34.1% (386 person-times) had nausea, 32.7% (370 person-times) had fever and 25.3% (287 person-times) had vomiting.

(7) Source of drinking water and dietary habits

The epidemiological investigation of 1,133 confirmed cases showed that the major sources of residential drinking water (multiple answers are allowed) were tap water in 51.8% of cases (587 person-times), filtered water in 42.9% of cases (486 person-times), packaged water in 25.2% of cases (286 person-times), and spring water in 1.1% of cases (12 person-times). As for dietary habits (multiple answers allowed), eating at street vendors or having boxed meals were identified in the largest percentage of cases, accounting for 72.2% (818 person-times), followed by eating in restaurants in 29.7% of cases (337 person-times).

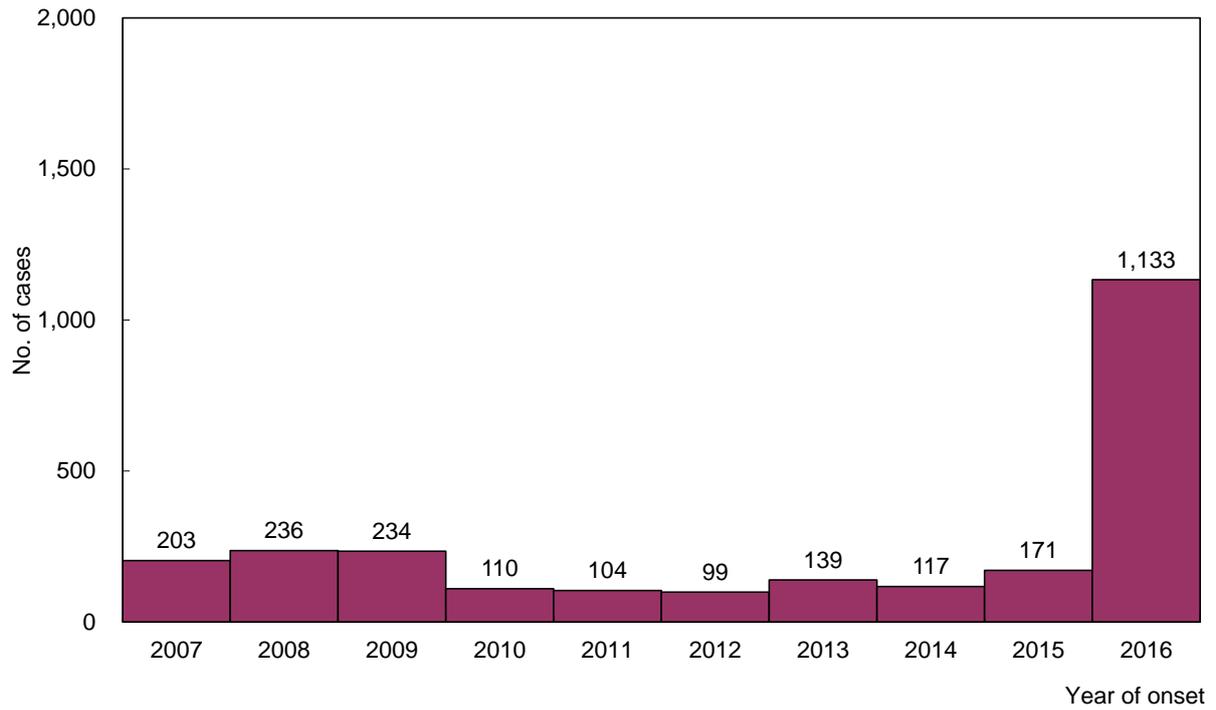


Figure 39 Number of confirmed acute hepatitis A cases, 2007-2016

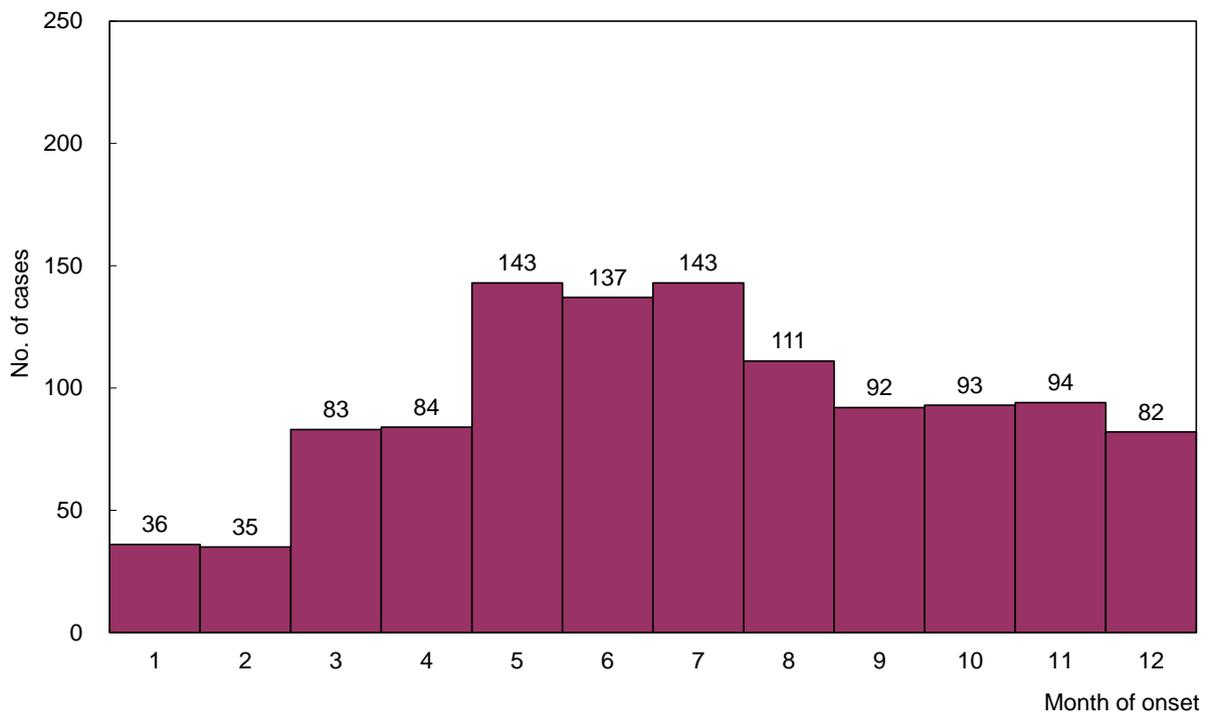


Figure 40 Number of confirmed acute hepatitis A cases, 2016

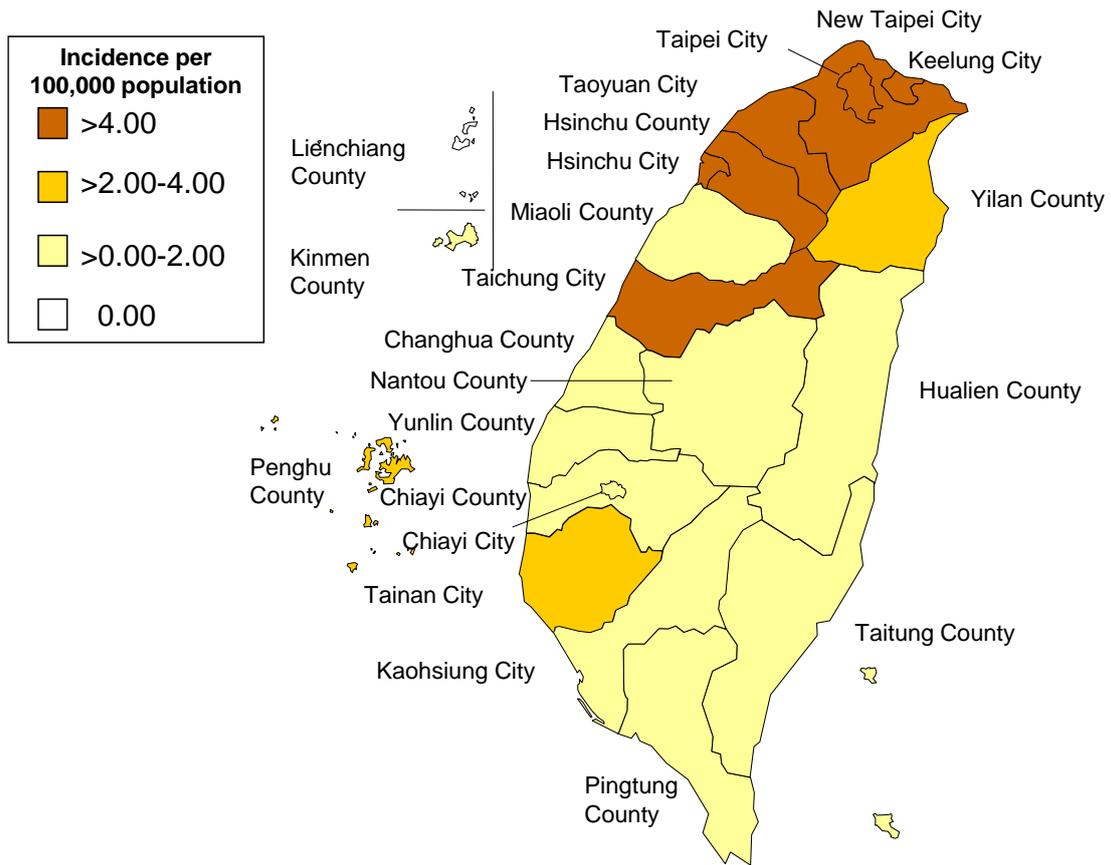


Figure 41 Geographical distribution by incidence of confirmed acute hepatitis A cases, 2016

Acute Hepatitis B

In 2016, 118 confirmed cases of acute hepatitis B (incidence rate: 0.50 per 100,000 population) were reported, which represented a decrease compared to 125 confirmed cases (incidence rate: 0.53 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 58 male cases (49.2%) and 60 female cases (50.8%) with male to female ratio of 1.0:1.0.

(2) By age group

There were 53 cases in 25-39 years age group, 48 cases in 40-64 years age group, 9 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. Except for December with 16 cases, August with 14 cases, February and May each with 12 cases, October with 11 cases, September and November each with 10 cases, the other months of year all had less than 10 cases.

(4) By residential region

New Taipei City had the highest number of incidents with 32 confirmed cases reported, followed by Taipei City with 16 cases, Taoyuan City with 15 cases, Taichung City with 11 cases, Tainan City with 9 cases, Kaohsiung City with 7 cases, and Changhua County with 6 cases. The other cities and counties all had less than 5 cases, in which Penghu County, Kinmen County and Lienchiang County had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Taitung County (0.90), followed by New Taipei City (0.81), Taoyuan City and Miaoli County (0.71 respectively).

(5) Imported cases and countries of infection

There were 7 imported cases of acute hepatitis B in 2016, including 3 cases each from China and Vietnam, and 1 case from Thailand.

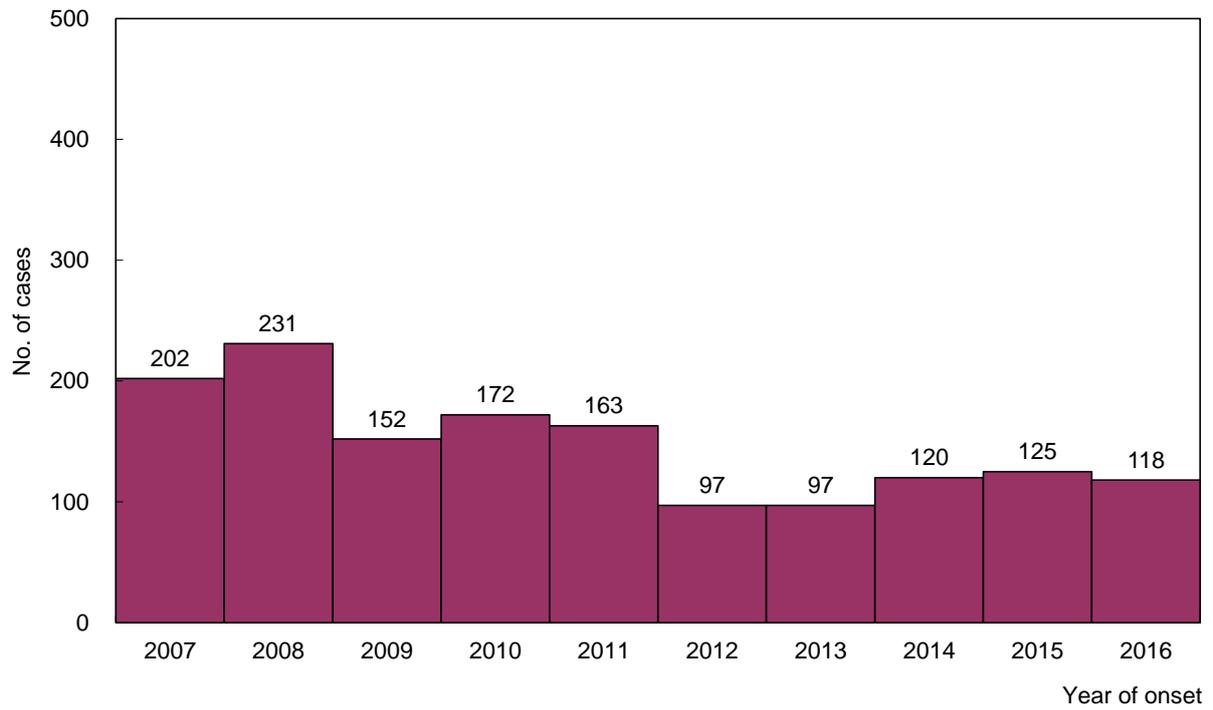


Figure 42 Number of confirmed acute hepatitis B cases, 2007-2016

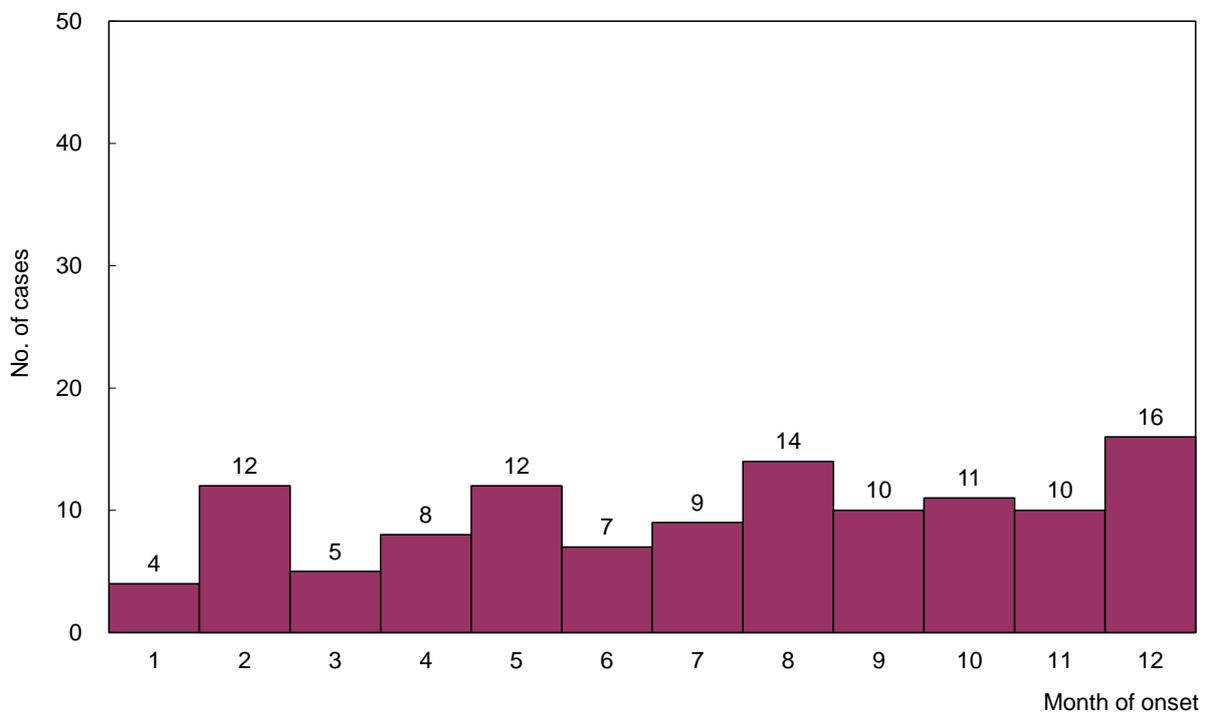


Figure 43 Number of confirmed acute hepatitis B cases, 2016

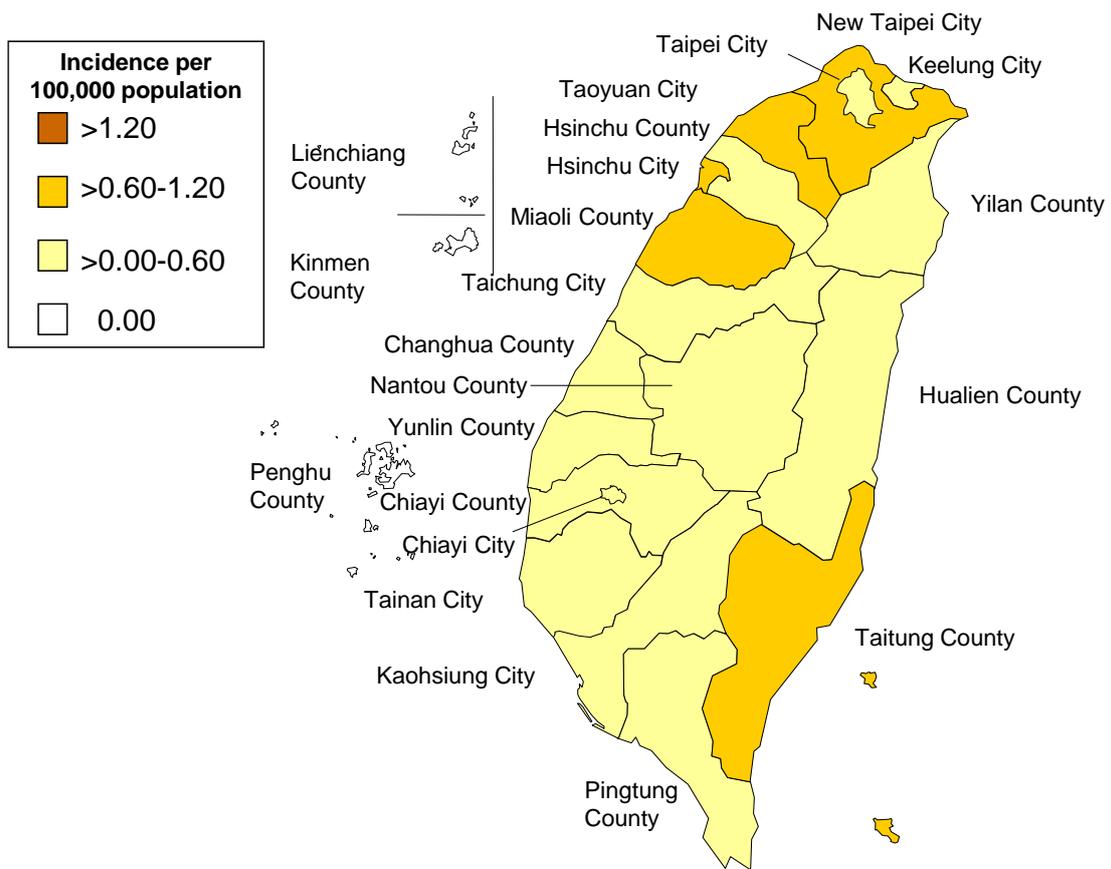


Figure 44 Geographical distribution by incidence of confirmed acute hepatitis B cases, 2016

Acute Hepatitis C

In 2016, 207 confirmed cases of acute hepatitis C (incidence rate: 0.88 per 100,000 population) were reported, which represented a decrease compared to 217 confirmed cases (incidence rate: 0.92 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 140 male cases (67.6%) and 67 female cases (32.4%) with male to female ratio of 2.1:1.0.

(2) By age group

There were 82 cases in 40-64 years age group, 70 cases in 25-39 years age group, 41 cases in 65 years and over age group, and 14 cases in 15-24 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 each with 24 confirmed cases reported, followed by 23 cases in March, 22 cases in June, 21 cases in May, 20 cases in September, 18 cases in August, 17 cases in April, 14 cases in November, 13 cases in July, 12 cases each in January and February, 11 cases in October.

(4) By residential region

Taipei City and New Taipei City had the highest number of incidents each with 34 cases reported, followed by Kaohsiung City with 23 cases, Taoyuan City with 20 cases, Hualien County with 14 cases, Taichung City with 13 cases, Yilan County, Keelung City and Tainan City each with 10 cases, Miaoli County and Pingtung County each with 7 cases, and Changhua County, Yunlin County and Chiayi County each with 6 cases. The other cities and counties had less than 5 cases reported, whereas Hsinchu County, Kinmen County, Lienchiang County and Penghu County has no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (4.22), followed by Keelung City (2.69) and Yilan County (2.18).

(5) Imported cases and countries of infection

There were 3 imported cases of acute hepatitis C in 2016, including 1 case each from Vietnam, Myanmar and Turkey.

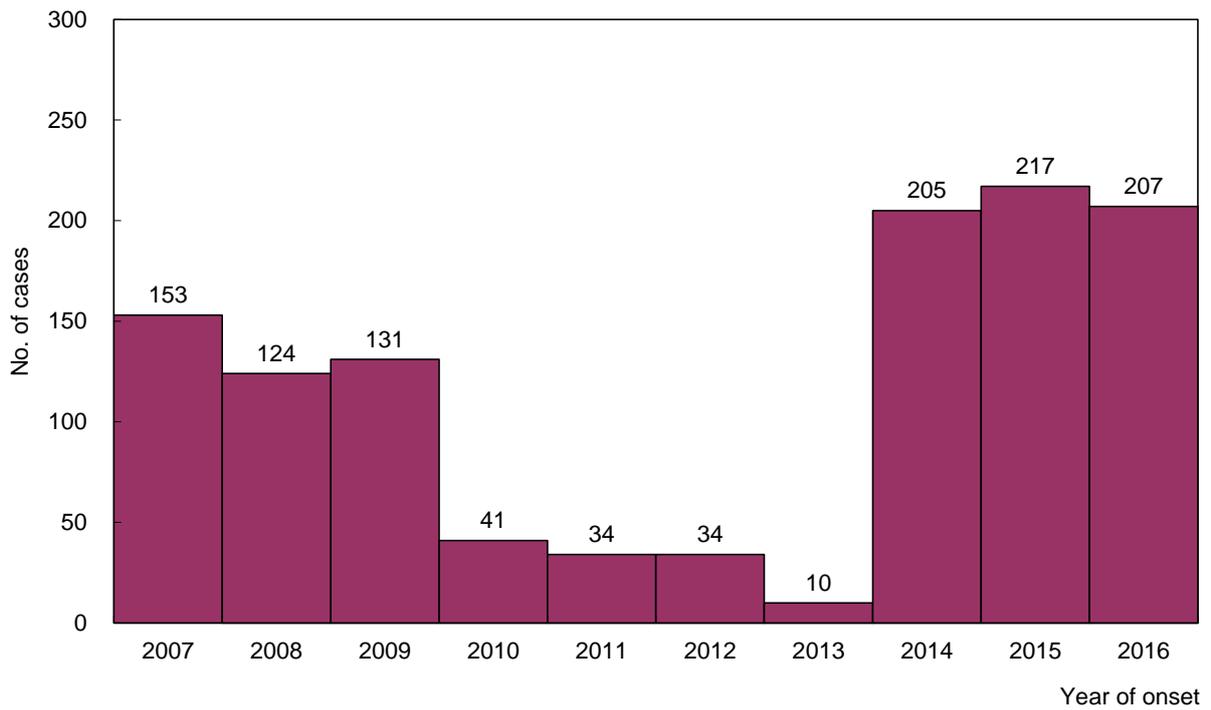


Figure 45 Number of confirmed acute hepatitis C cases, 2007-2016

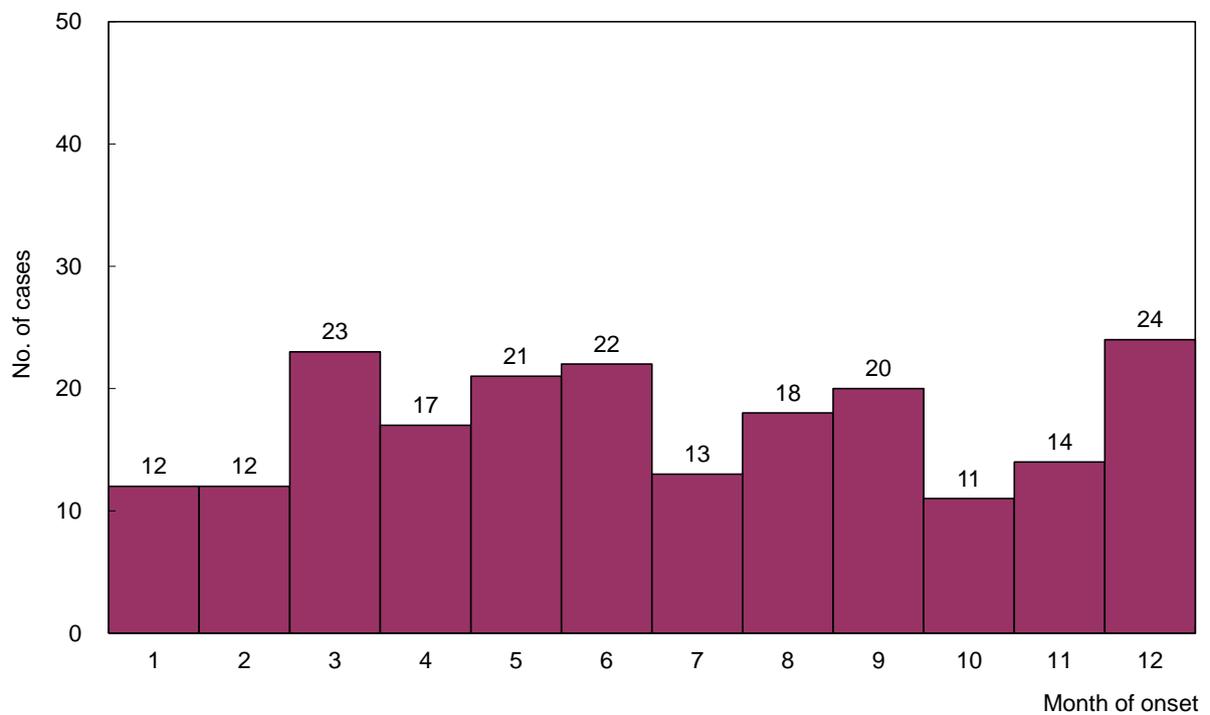


Figure 46 Number of confirmed acute hepatitis C cases, 2016

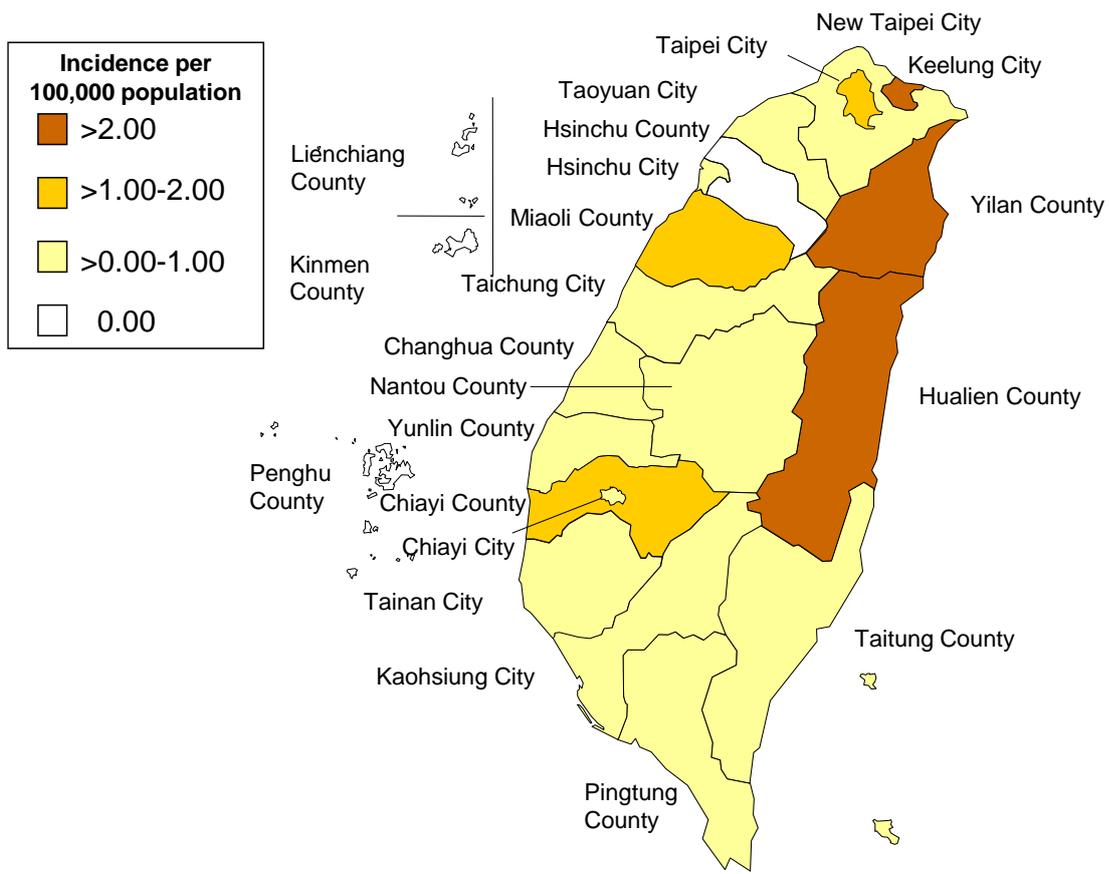


Figure 47 Geographical distribution by incidence of confirmed acute hepatitis C cases, 2016

Scrub Typhus

In 2016, 488 confirmed cases of scrub typhus (incidence rate: 2.08 per 100,000 population) were reported, which represented a decrease compared to 494 confirmed cases (incidence rate: 2.11 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 302 male cases (61.9%) and 186 female cases (38.1%) with male to female ratio of 1.6:1.0.

(2) By age group

The cases occurred predominantly in adults aged 25 years and above. In all, there were 247 cases in 40-64 years age group, 97 cases in 65 years and over age group, 80 cases in 25-39 years age group, 39 cases in 15-24 years age group, 21 cases in 5-14 years age group, 3 cases in 1-4 years age group, and 1 case in 0-1 year age group.

(3) By month

Confirmed cases were reported in each month of the year that concentrated mainly in May and June, while February to March had the fewest number of incidents. The distribution of cases in each month of the year is as follows: 32 cases in January, 4 cases in February, 2 cases in March, 24 cases in April, 78 cases in May, 79 cases in June, 46 cases in July, 22 cases in August, 47 cases in September, 58 cases in October, 59 cases in November and 37 cases in December.

(4) By residential region

Penghu County had the highest number of incidents with 77 confirmed cases reported, followed by Kinmen County with 66 cases, Kaohsiung City with 59 cases, Hualien County and Taitung County each with 58 cases, New Taipei City with 31 cases, Nantou County with 20 cases, Taipei City with 16 cases, Taichung City and Pingtung County each with 15 cases, Taoyuan City with 14 cases, Lienchiang County with 10 cases. The other cities and counties all had less than 10 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Lienchiang County (79.55), followed by Penghu County (74.92), Kinmen County (49.27), Taitung County (26.17) and Hualien County (17.50), whereas the other cities and counties had an incidence rate below 10.00.

(5) Imported cases and countries of infection

There were 5 imported cases of scrub typhus in 2016, including 2 cases from China, and 1 case each from Thailand, Philippines and Switzerland.

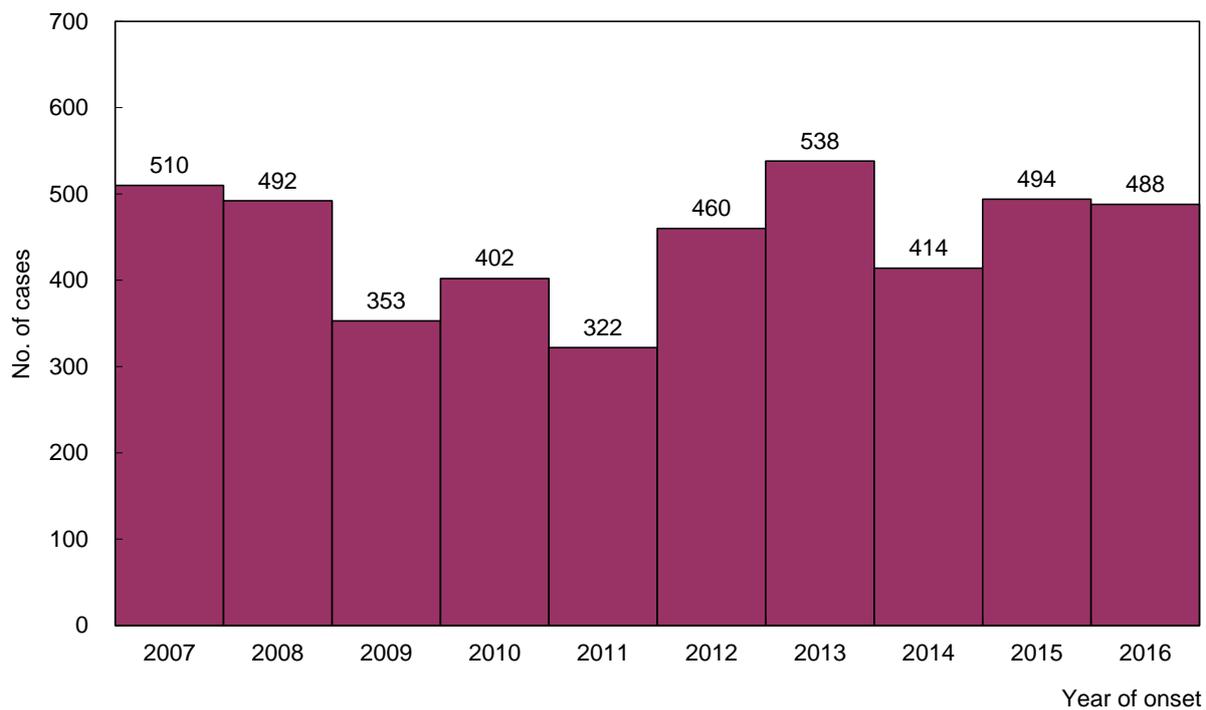


Figure 48 Number of confirmed scrub typhus cases, 2007-2016

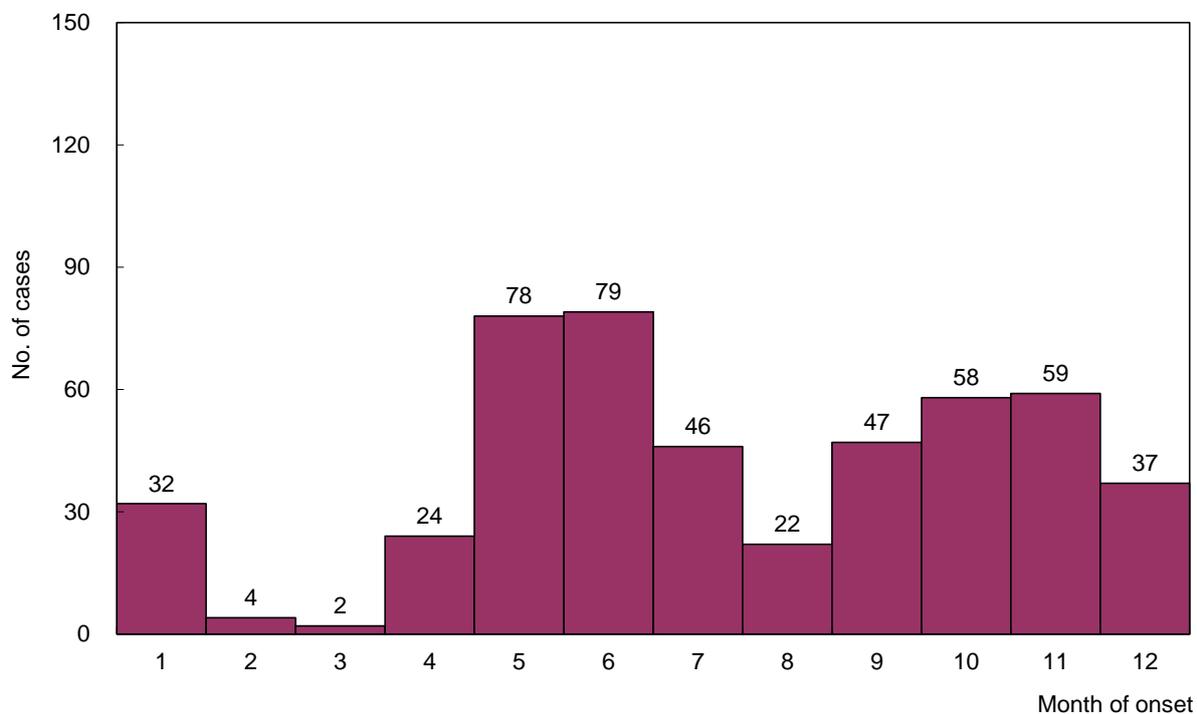


Figure 49 Number of confirmed scrub typhus cases, 2016

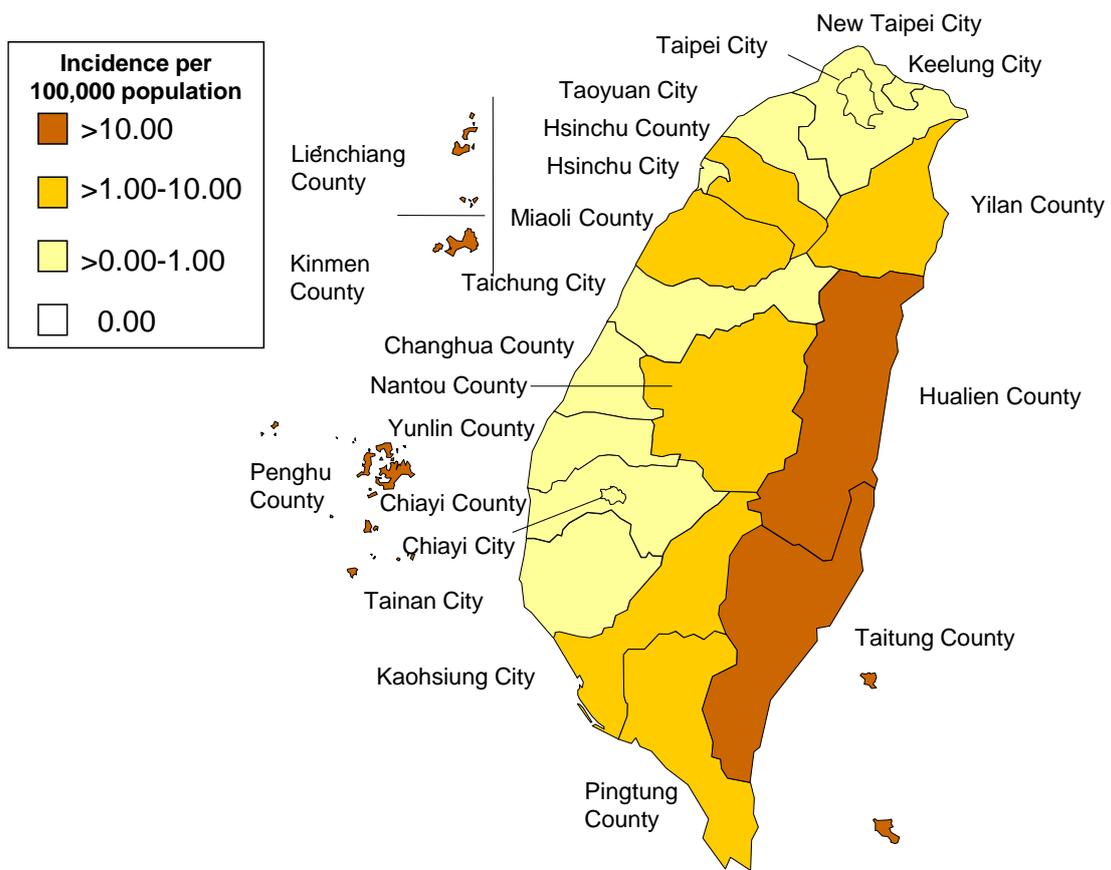


Figure 50 Geographical distribution by incidence of confirmed scrub typhus cases, 2016

Legionnaires' Disease

In 2016, 114 confirmed cases of legionnaires' disease (incidence rate: 0.48 per 100,000 population) were reported, which represented a decrease compared to 153 confirmed cases (incidence rate: 0.65 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 88 male cases (77.2%) and 26 female cases (22.8%) with male to female ratio of 3.4:1.0.

(2) By age group

Most cases occurred in elderly with 61 cases in 65 years and over age group, 49 cases in 40-64 years age group, 3 cases in 25-39 years age group and 1 case in 15-24 years age group.

(3) By month

Confirmed cases were reported in each month of the year where October had the highest number of incidents with 16 confirmed cases reported, followed by November with 14 cases, January, June and July each with 12 cases, February and May each with 9 cases, March, August and September each with 7 cases, December with 5 cases and April with 4 cases.

(4) By residential region

New Taipei City had the highest number of incidents with 22 confirmed cases reported, followed by Kaohsiung City with 21 cases, Taipei City with 13 cases, Taichung City and Tainan City each with 8 cases, Changhua County with 7 cases, Taoyuan City and Pingtung County each with 6 cases and Yunlin County with 5 cases. The other cities and counties had less than 5 cases reported, in which Keelung City, Nantou County, Kinmen County and Lienchiang County had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (1.21), followed by Penghu County (0.97) and Yilan County (0.87).

(5) Imported cases and countries of infection

There were 3 imported cases of legionnaires' disease in 2016, all of which came from China.

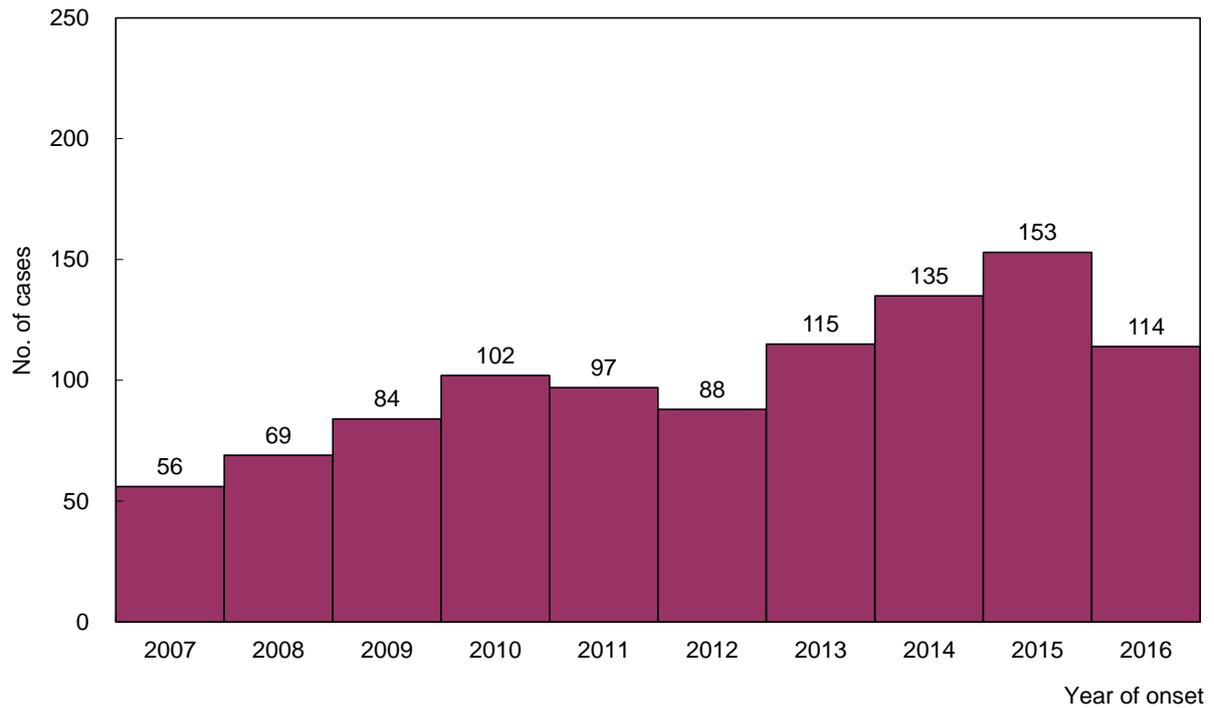


Figure 51 Number of confirmed legionnaires' disease cases, 2007-2016

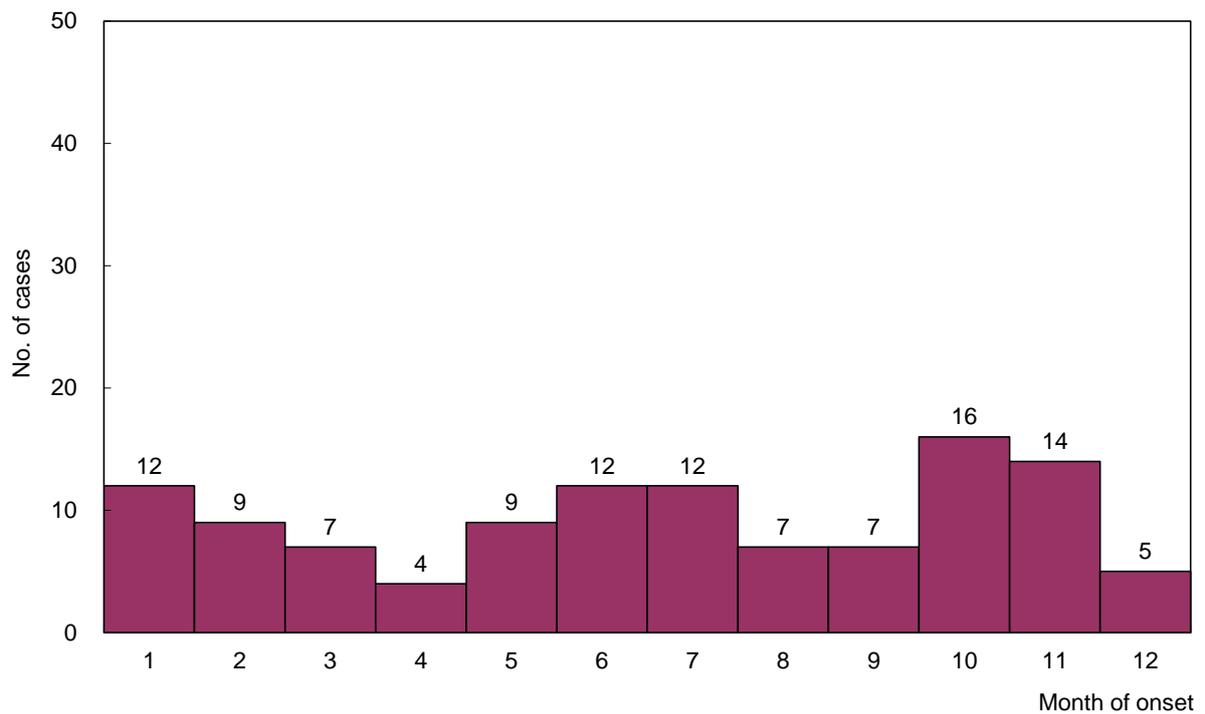


Figure 52 Number of confirmed legionnaires' disease cases, 2016

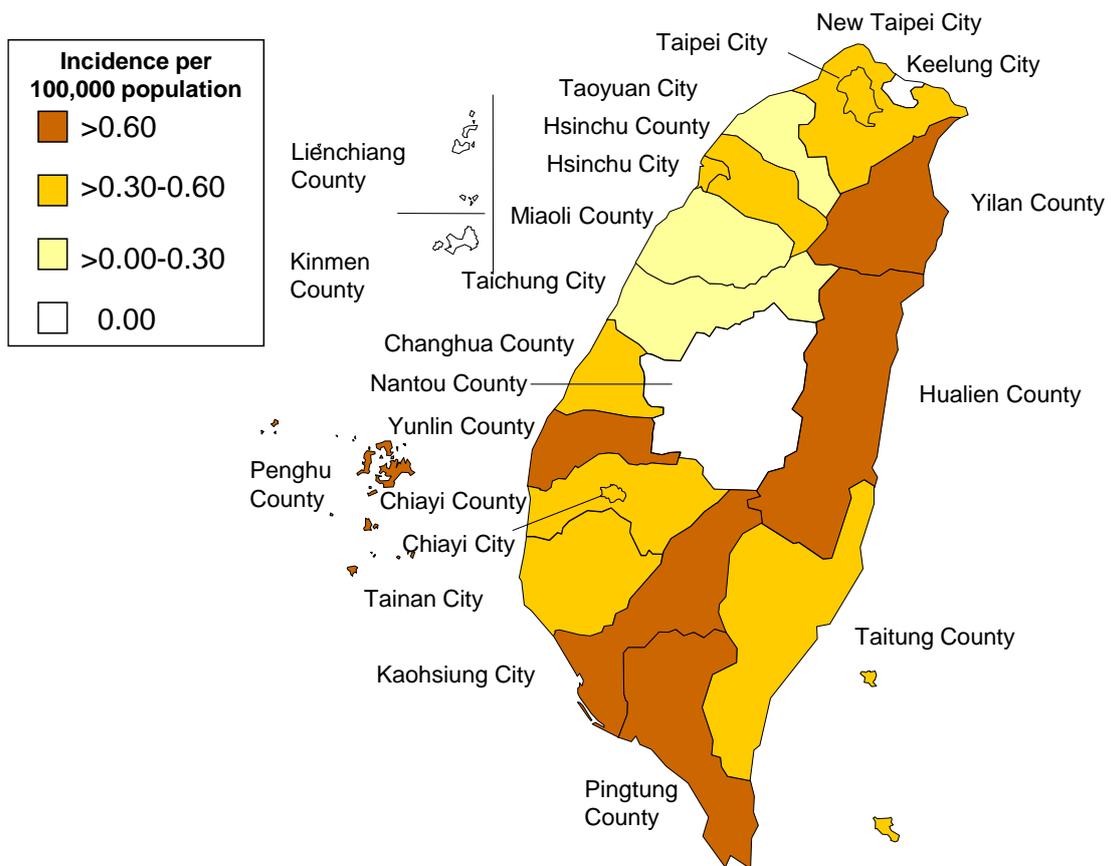


Figure 53 Geographical distribution by incidence of confirmed Legionnaires' Disease cases, 2016

Dengue Fever

In 2016, 744 confirmed cases of dengue fever (incidence rate: 3.16 per 100,000 population), including 363 imported cases and 381 indigenous cases were reported, which represented a sharp decrease compared to a total of 43,784 confirmed cases (incidence rate: 186.61 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

In the 363 imported cases, there were 193 male cases (53.2%) and 170 female cases (46.8%) with male to female ratio of 1.1:1.0.

In the 381 indigenous cases, there were 192 male cases (50.4%) and 189 female cases (49.6%) with male to female ratio of 1.0:1.0.

(2) By age group

In the 363 imported cases, there were 1 case (0.3%) in 1-4 years age group, 22 cases (6.1%) in 5-14 years age group, 76 cases (20.9%) in 15-24 years age group, 139 cases (38.3%) in 25-39 years age group, 108 cases (29.8%) in 40-64 years age group, and 17 cases (4.7%) in 65 years and over age group.

In the 381 indigenous cases, there were 2 cases (0.5%) in 0-1 year age group, 9 cases (2.4%) in 1-4 years age group, 16 cases (4.2%) in 5-14 years age group, 70 cases (18.4%) in 15-24 years age group, 98 cases (25.7%) in 25-39 years age group, 122 cases (32.0%) in 40-64 years age group, and 64 cases (16.8%) in 65 years and over age group.

(3) By month

In the 363 imported cases, confirmed cases were reported in each month of the year. In all, August had the highest number of incidents with 73 cases reported, followed by 44 cases in October, 39 cases in July, 30 cases in February, 29 cases in January, 24 cases each in November and December, 23 cases in May, 22 cases in June, 21 cases in April, 20 cases in September and 14 cases in March.

In the 381 indigenous cases, confirmed cases were reported in each month of the year except for May, October and December. January had the highest number of incidents with 362 confirmed cases reported, followed by 7 cases in February, 3 cases each in July and November, 2 cases in March, and 1 case each in April, June, August and September.

(4) By residential region

In the 363 imported cases, the number of incidents was the highest in

New Taipei City with 62 cases reported, followed by 61 cases in Taipei City, 53 cases in Taichung City, 44 cases in Taoyuan City, 37 cases in Kaohsiung City, 28 cases in Tainan City, 14 cases in Pingtung County, 11 cases each in Hsinchu County and Miaoli County. The other cities and counties all had less than 10 imported cases reported, in which Kinmen County and Lienchiang County did not have confirmed imported cases.

In the 381 indigenous cases, Kaohsiung City had the highest number of incidents with 342 cases reported, followed by 21 cases in Pingtung County, 10 cases in Tainan City, 4 cases in Taipei City, and 1 case each in Yilan County, New Taipei City, Taichung City and Chiayi City.

Overall, the incidence rate of confirmed cases per 100,000 population was the highest in Kaohsiung City (13.64), followed by Pingtung County (4.17) and Taipei City (2.41).

(5) Imported cases and countries of infection

In the 363 imported cases, there were 113 cases (31.1%) from Indonesia, 73 cases (20.1%) from Philippines, 44 cases (12.1%) each from Malaysia and Vietnam, 35 cases (9.6%) from Thailand, 17 cases (4.7%) from Singapore, 14 cases (3.9%) from Cambodia, 10 cases (2.8%) from Myanmar, 6 cases (1.7%) from Maldives, 2 cases (0.6%) from Papua New Guinea, and 1 case each (0.3% respectively) from India, Laos, China, Kenya and Palau.

(6) By virus type

In the 363 cases, 53 cases were caused by dengue virus type 1, 34 cases by type 2, 38 cases by type 3, and 15 cases by type 4. The other 223 cases were undetermined.

In the 381 indigenous cases, 2 cases were caused by dengue virus type 1 and 4 cases by type 2. The other 375 cases were undetermined.

Table 26 Virus type and infection source of confirmed dengue fever cases, 2016

Virus type/ infection source	DEN-1	DEN-2	DEN-3	DEN-4	Undetermined	Total
Indonesia	15	10	19	4	65	113
Philippines	7	5	8	2	51	73
Malaysia	14	3	7	-	20	44
Vietnam	10	1	-	2	31	44
Thailand	1	6	3	1	24	35
Singapore	2	3	1	-	11	17
Cambodia	2	2	-	3	7	14
Myanmar	1	-	-	1	8	10
Maldives	1	1	-	1	3	6
Papua New Guinea	-	-	-	1	1	2
China	-	-	-	-	1	1
India	-	-	-	-	1	1
Laos	-	1	-	-	-	1
Palau	-	1	-	-	-	1
Kenya	-	1	-	-	-	1
Taiwan	2	4	-	-	375	381
Total	55	38	38	15	598	744

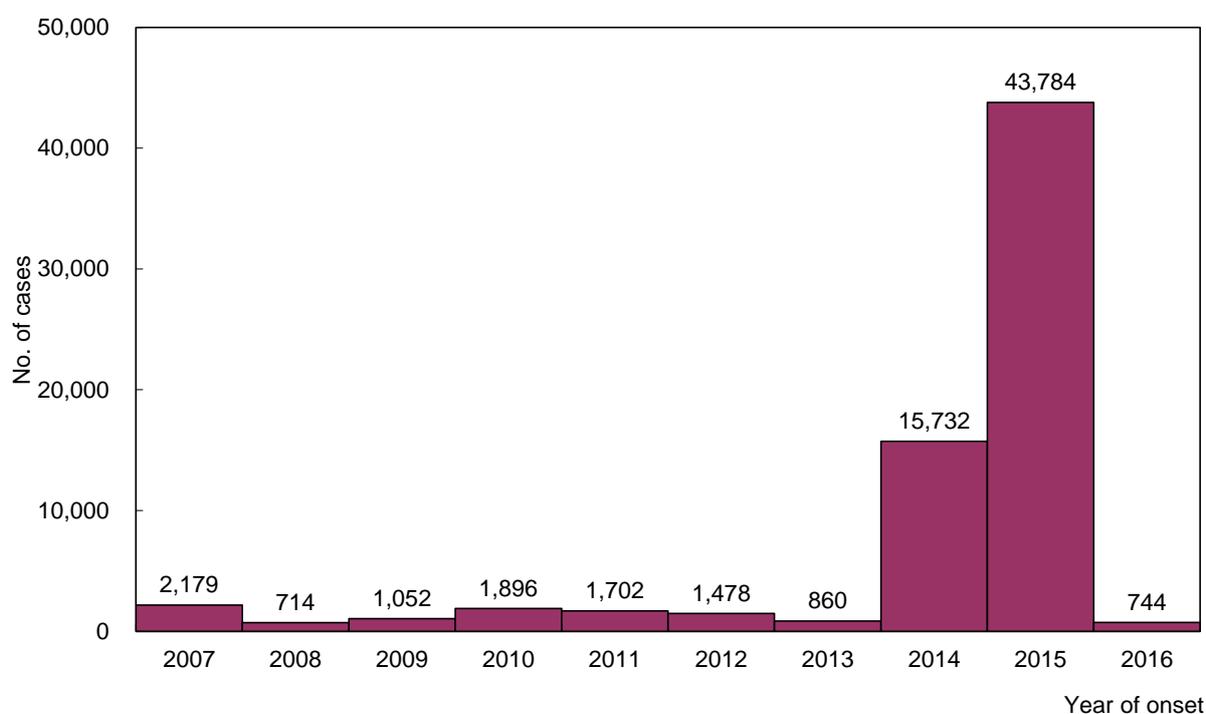


Figure 54 Number of confirmed dengue fever cases, 2007-2016

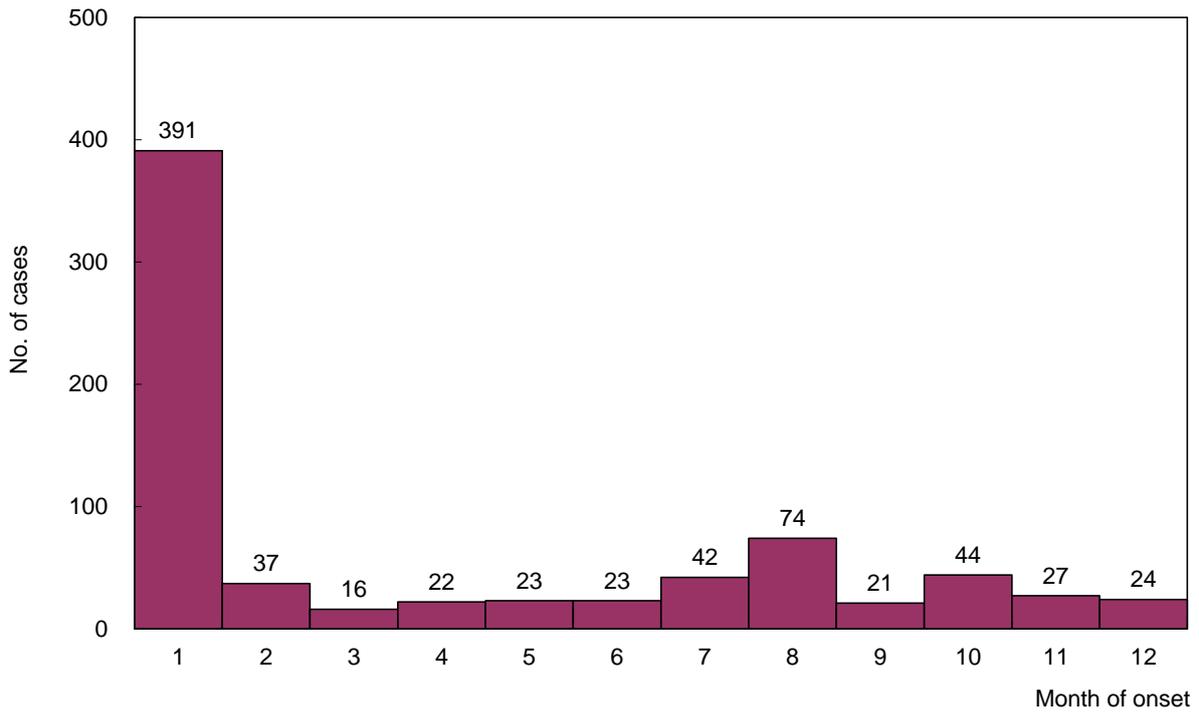


Figure 55 Number of confirmed dengue fever cases, 2016

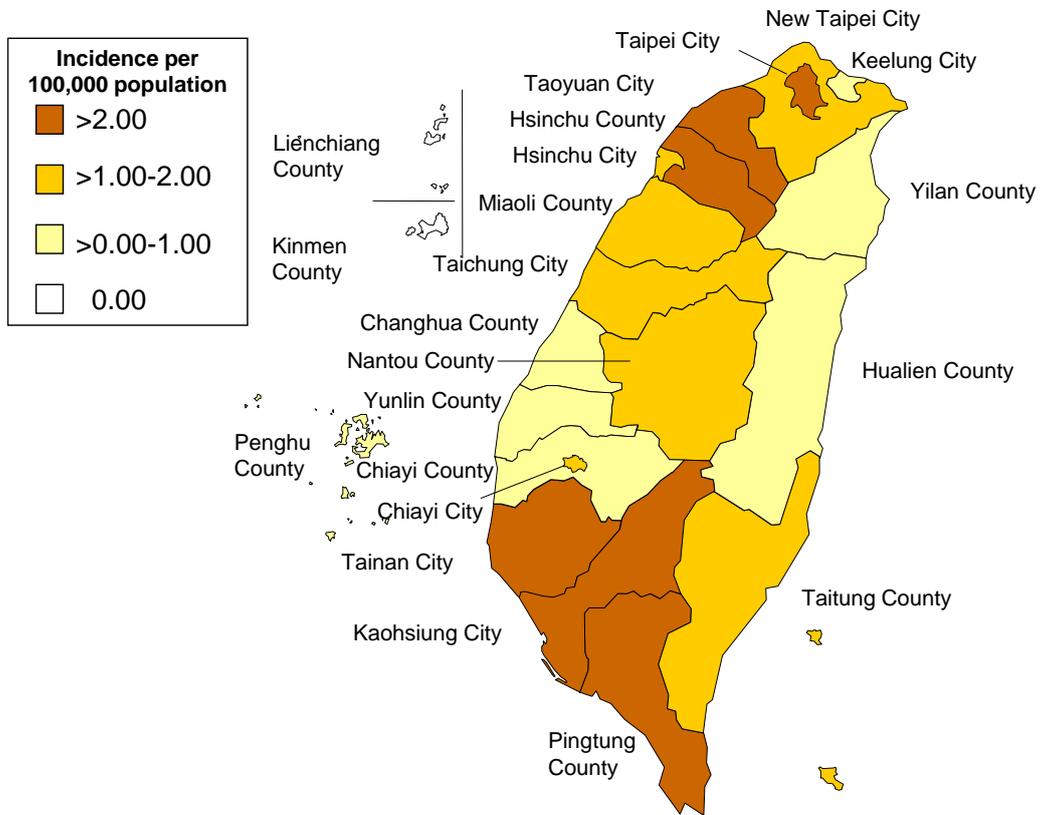


Figure 56 Geographical distribution by incidence of confirmed dengue fever cases, 2016

Enteroviruses Infection with Severe Complications

In 2016, 33 confirmed cases of enteroviruses infection with severe complications (incidence rate: 0.14 per 100,000 population) were reported, which represented an increase compared to 6 confirmed cases (incidence rate: 0.03 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 21 male cases (63.6%) and 12 female cases (36.4%) with male to female ratio of 1.8:1.0.

(2) By age group

There were 25 cases in 1-4 years age group, followed by 5 cases in 0-1 year age group, and 3 cases in 5-14 years age group.

(3) By month

In addition to January and February did not have confirmed cases, the other months have confirmed cases. 5 cases each in May, August and September, 4 cases in November, 3 cases each in April, June and July, 2 cases each in October and December, 1 case in March.

(4) By residential region

Taichung City had 8 cases reported, followed by 6 cases in New Taipei City, 4 cases in Kaohsiung City, 3 cases in Taoyuan City, 2 cases each in Yilan County, Taipei City and Tainan City, 1 case each in Keelung City, Hsinchu City, Hsinchu County, Changhua County, Pingtung County and Hualien 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 Yilan County (0.44), followed by Hualien County (0.30) and Taichung City (0.29).

(5) Imported cases and countries of infection

There were no imported cases of enteroviruses infection with severe complications in 2016.

(6) Pathogen identification

Assay with enzyme-linked immunosorbent assays (ELISA) of IgM, virus culture, and RT-PCR were adopted for testing. Enterovirus 71 was the main virus isolated in 23 cases. There were 10 cases found to be infected with other types, including 2 cases each of Coxsackievirus A4, Coxsackievirus A6, Coxsackievirus B3, and 1 case each of Coxsackievirus A2, Coxsackievirus A5, Coxsackievirus B4 and Echovirus 18.

Table 27 Number of confirmed enteroviruses infection with severe complications cases by age, 2013-2016

	2013		2014		2015		2016	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
>=0, <7m	2 (16.7)	2 (33.3)	6 (100.0)	3 (9.1)				
>=7m, <1yr	- (-)	1 (16.7)	- (-)	2 (6.1)				
>=1, <4 yrs	7 (58.3)	3 (50.0)	- (-)	22 (66.7)				
>=4, <7 yrs	2 (16.7)	- (-)	- (-)	6 (18.2)				
>=7, <16 yrs	- (-)	- (-)	- (-)	- (-)				
>=16 yrs	1 (8.3)	- (-)	- (-)	- (-)				
Unknown	- (-)	- (-)	- (-)	- (-)				
Total	12 (100.0)	6 (100.0)	6 (100.0)	33 (100.0)				

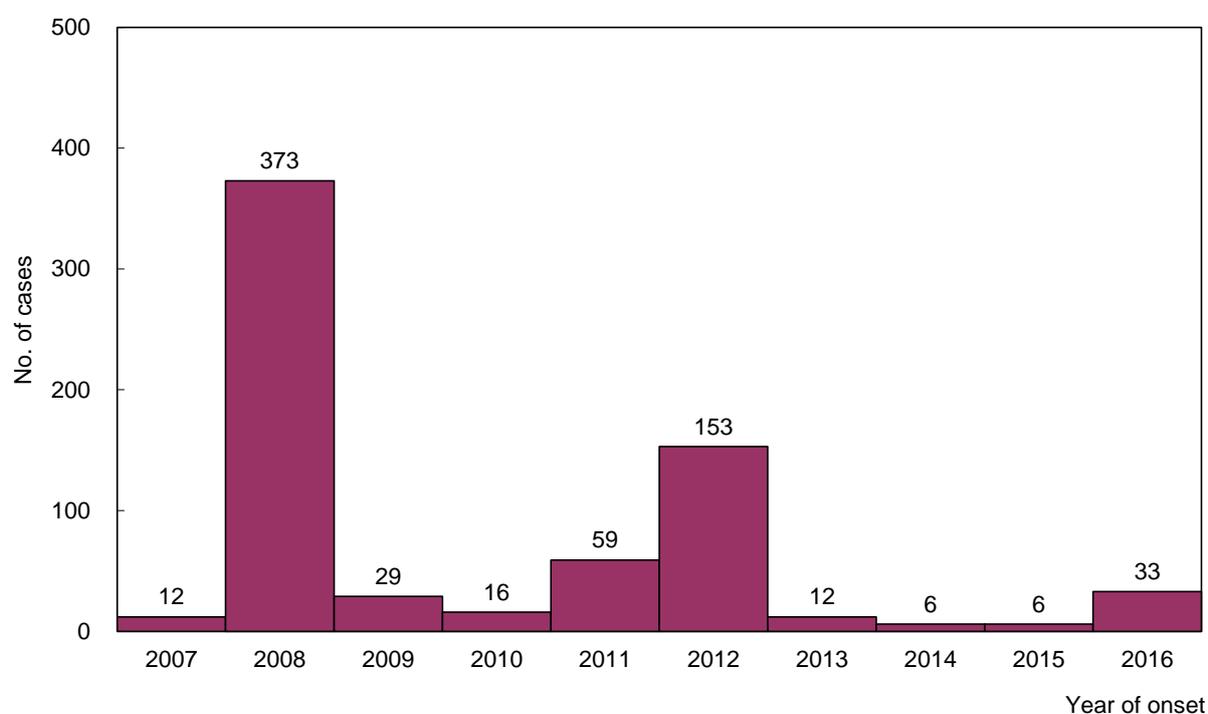


Figure 57 Number of confirmed enteroviruses infection with severe complications cases, 2007-2016

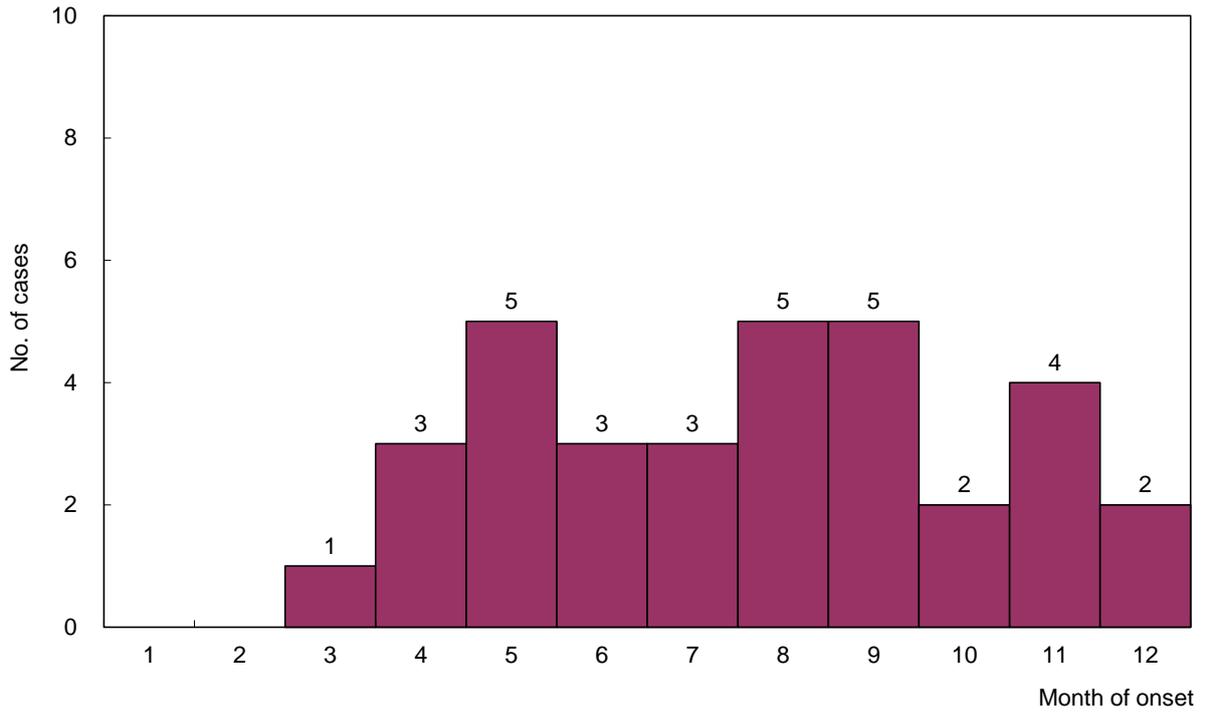


Figure 58 Number of confirmed enterovirus infection with severe complications cases, 2016

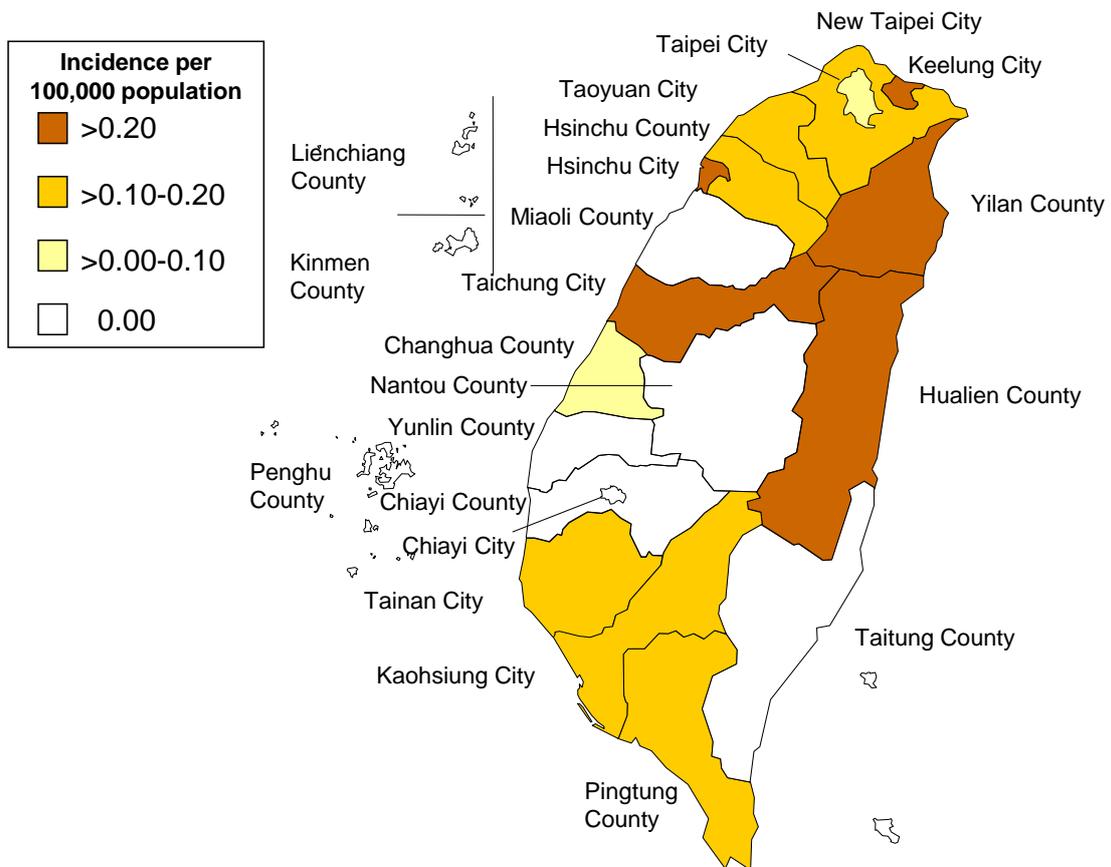


Figure 59 Geographical distribution by incidence of confirmed enterovirus infection with severe complications cases, 2016

Malaria

In 2016, 13 confirmed cases of malaria (incidence rate: 0.06 per 100,000 population) were reported, which represented an increase compared to 8 confirmed cases (incidence rate: 0.03 per 100,000 population) in 2015. All cases in 2016 were imported, and no indigenous case. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 9 male cases (69.2%) and 4 female case (30.8%) with male to female ratio of 2.3:1.0.

(2) By age group

The cases occurred mostly in 15-24 and 25-39 years age groups with 5 cases reported each, followed by 40-64 years age group with 2 cases and 5-14 years age group with 1 case.

(3) By month

There were 4 cases in September, 3 cases in January, 2 cases each in April and October, and 1 case each in June and August.

(4) By residential region

Taipei City and Taoyuan City had 4 cases reported, followed by 2 cases in Hualien County, 1 case each in New Taipei City, Taichung City and Kaohsiung 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 Hualien County (0.60), followed by Taoyuan City (0.19) and Taipei City (0.15).

(5) Imported cases and countries of infection

In the 13 imported cases, 3 cases (23.1%) were from Asia, specifically 2 cases from Thailand and 1 case from Indonesia ; 10 cases (76.9%) were from Africa, specifically 4 cases from The Gambia, 2 cases from Sierra Leone and 1 case each from Ghana, Malawi, Angola and Mozambique

(6) Types of protozoan parasites

By the types of protozoan parasites, there were 10 cases of *Plasmodium falciparum* infection and 3 cases of *Plasmodium vivax* infection.

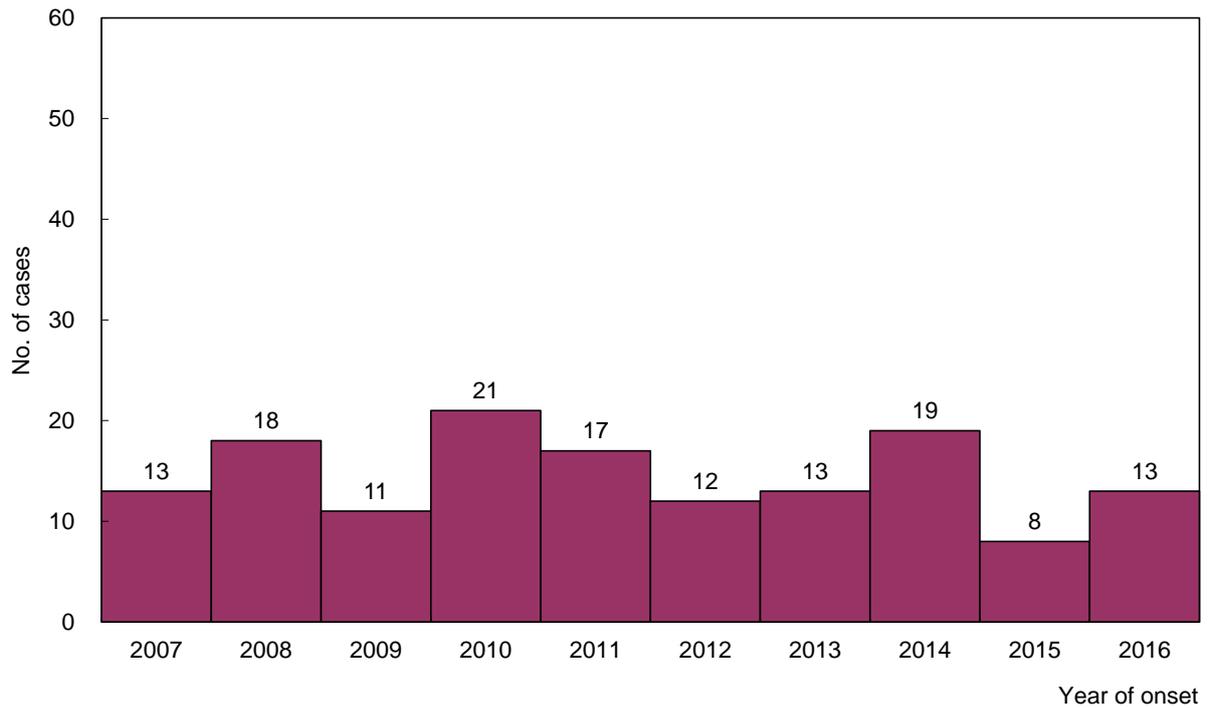


Figure 60 Number of confirmed imported malaria cases, 2007-2016

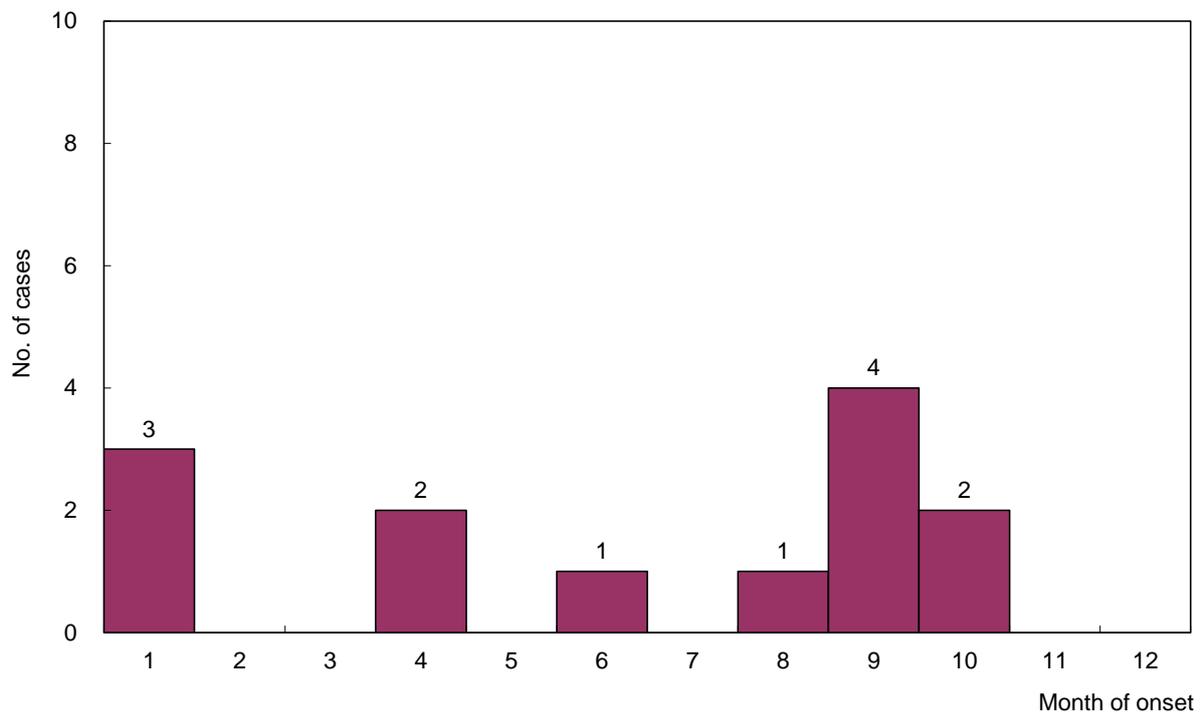


Figure 61 Number of confirmed imported malaria cases, 2016

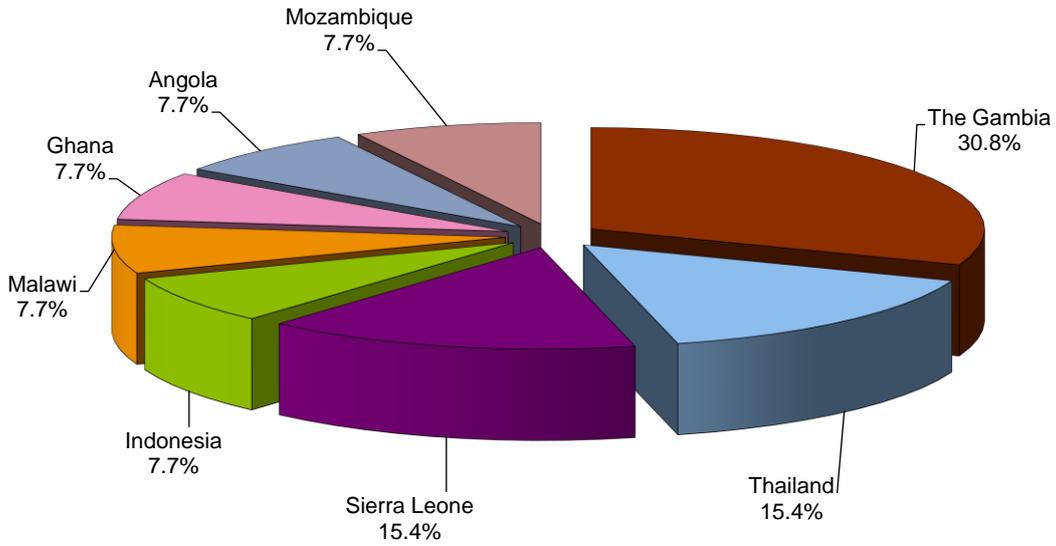


Figure 62 Infections source of confirmed imported malaria cases, 2016

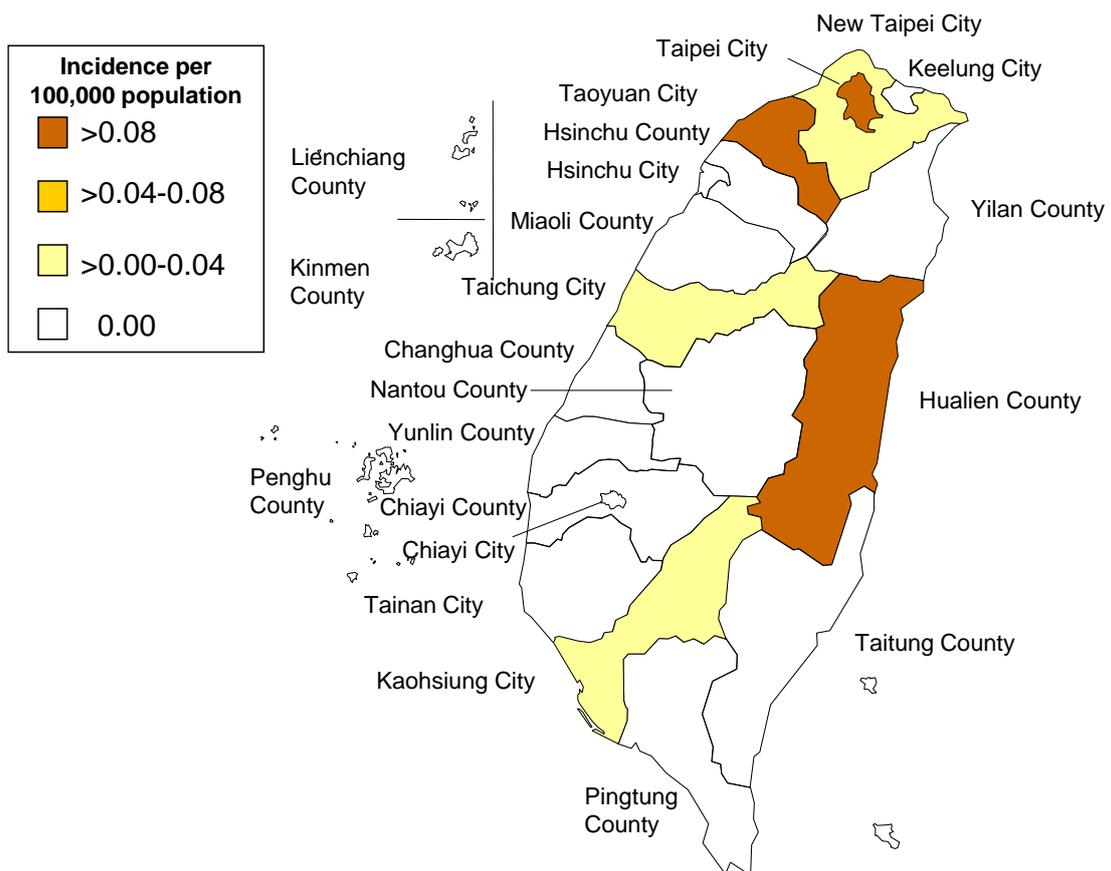


Figure 63 Geographical distribution by incidence of confirmed imported malaria cases, 2016

Shigellosis

In 2016, 225 confirmed cases of shigellosis (incidence rate: 0.96 per 100,000 population) were reported, of which 109 cases were imported, which represented an increase compared to 186 confirmed cases (incidence rate: 0.79 per 100,000 population) in 2015, of which 105 cases were imported. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

In the 109 imported cases, there were 27 male cases (24.8%) and 82 female cases (75.2%) with male to female ratio of 0.3:1.0.

In the 116 indigenous cases, there were 99 male cases (85.3%) and 17 female cases (14.7%) with male to female ratio of 5.8:1.0.

(2) By age group

In the 109 imported cases, there were 67 cases in 25-39 years age group, 22 cases in 15-24 years age group, 15 cases in 40-64 years age group, 4 cases in 5-14 years age group and 1 case in 1-4 years age group.

In the 116 indigenous cases, there were 81 cases in 25-39 years age group, 12 cases each in 15-24 and 40-64 years age group, 6 cases in 65 years and over age group, 3 cases in 5-14 years age group and 2 cases in 1-4 years age group.

(3) By month

In the 109 imported cases, confirmed cases were reported in each month of the year where April had the highest number of incidents with 17 confirmed cases reported, followed by 15 cases each in March and August, 13 cases in November, 12 cases in October, 8 cases in September, 6 cases each in May and June, 5 cases in December, and 4 cases each in January, February and July.

In the 116 indigenous cases, confirmed cases were reported in each month of the year. October had the highest number of incidents with 17 confirmed cases reported, followed by 13 cases in December, 12 cases in June, 11 cases each in February and April, 10 cases in March, 8 cases each in May, July and September, 7 cases in January, 6 cases in August and 5 cases in November.

(4) By residential region

In the 109 imported cases, New Taipei City had the highest number of incidents with 42 confirmed cases reported, followed by Taipei City with 16 cases, Taichung City with 11 cases, Taoyuan City with 9 cases, Yilan County with 6 cases, Chiayi City and Changhua County each with 4 cases, Hsinchu County and Miaoli County each with 3 cases, Keelung City, Yunlin County and Pingtung County each with 2 cases, Hsinchu City, Chiayi County, Hualien County, Kinmen County and Lienchiang County each with 1 case.

In the 116 indigenous cases, New Taipei City had the highest number of incidents with 36 confirmed cases reported, followed by Taipei City with 24 cases, Taoyuan City with 23 cases, Taichung City with 9 cases, Keelung County with 5 cases, Tainan City, Kaohsiung City and Hualien County each with 4 cases, Hsinchu City and Hsinchu County each with 2 cases, Yunlin County, Taitung County and Penghu County each with 1 case.

In all, the incidence rate of confirmed cases per 100,000 population was the highest in Lienchiang County (7.95). New Taipei City ranked in the second place with incidence rate of 1.96 and Keelung City ranked in the third place with 1.88.

(5) Imported cases and countries of infection

In the 109 imported cases, 88 cases were from Indonesia, 8 cases from India, 3 cases each from Vietnam and China, 2 cases each from Thailand, the Philippines, Cambodia and 1 case from Nepal .

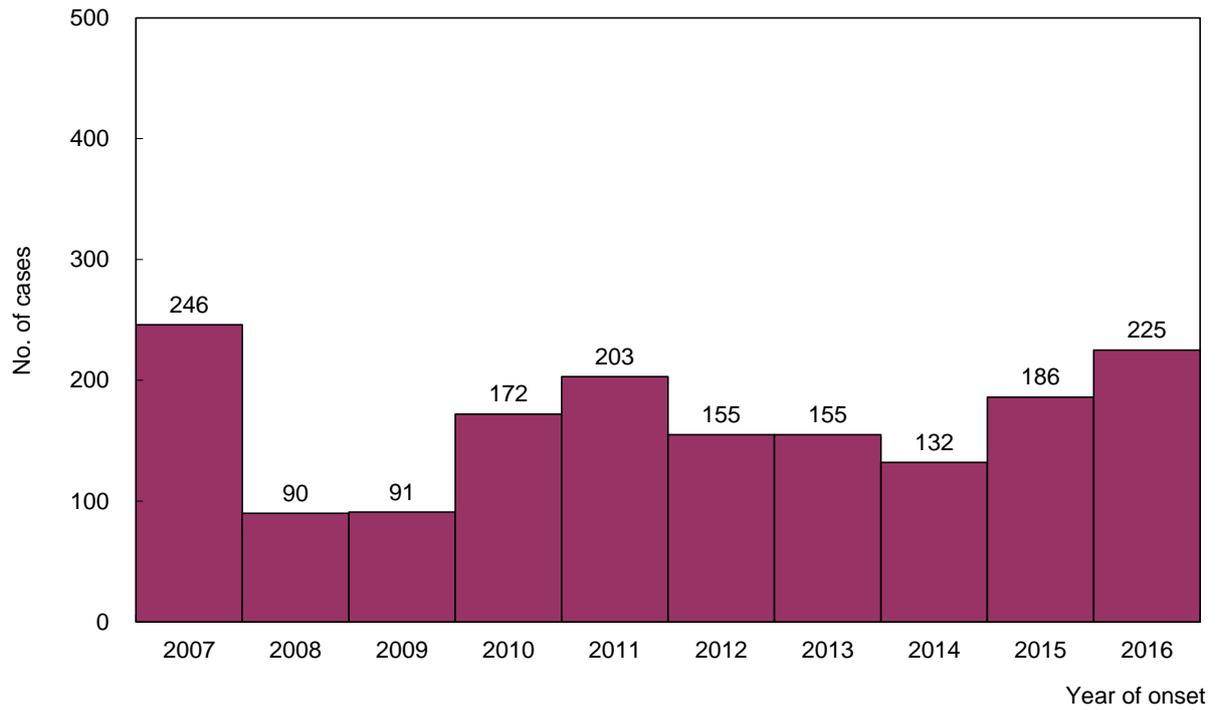


Figure 64 Number of confirmed shigellosis cases, 2007-2016

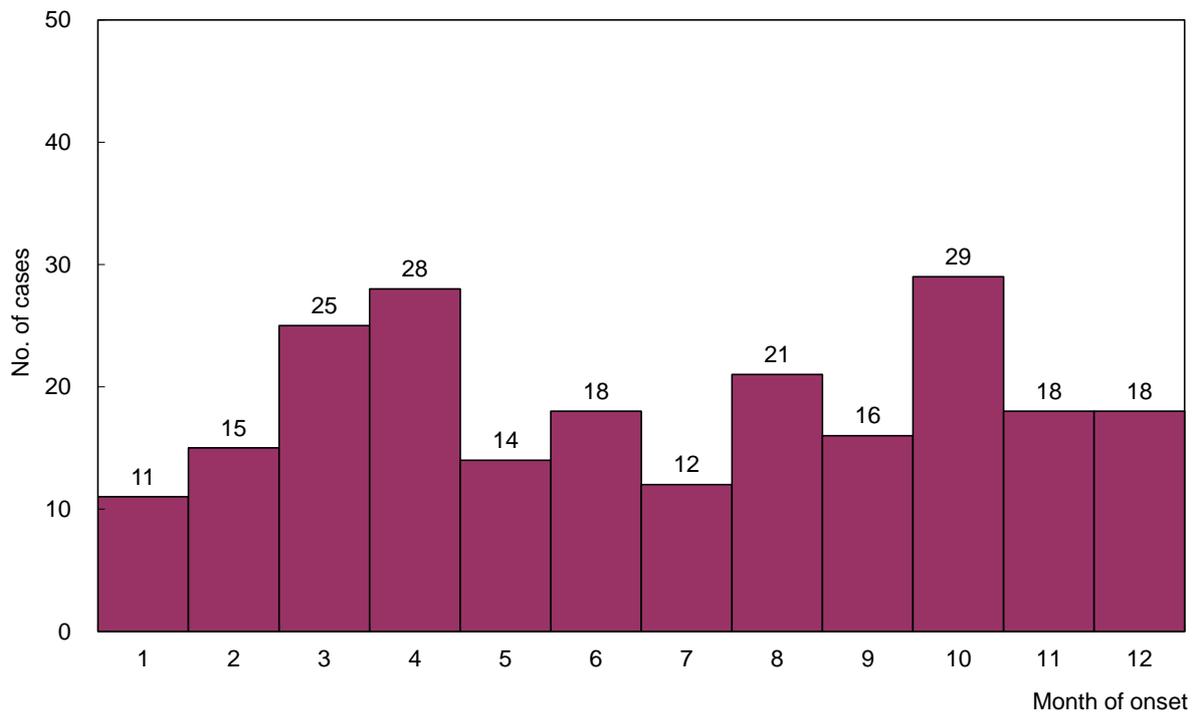


Figure 65 Number of confirmed shigellosis cases, 2016

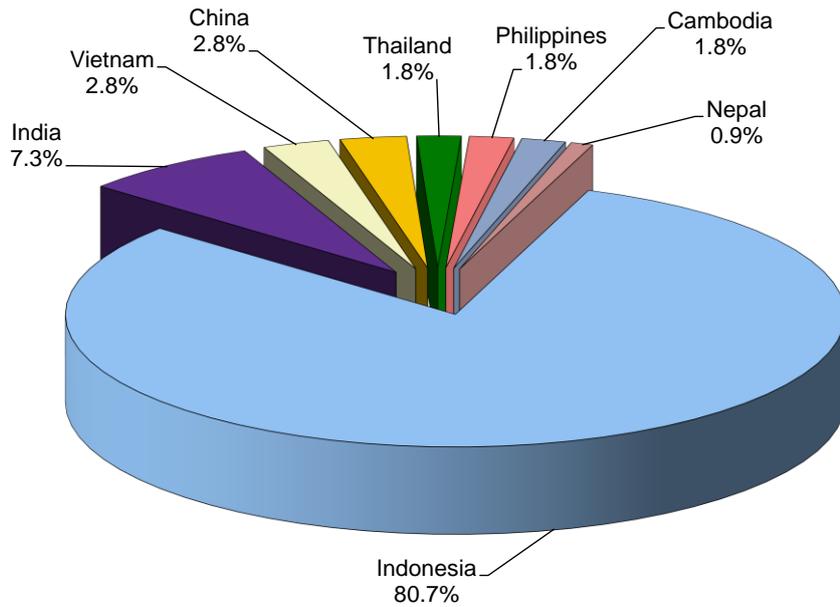


Figure 66 Infections source of confirmed imported shigellosis cases, 2016

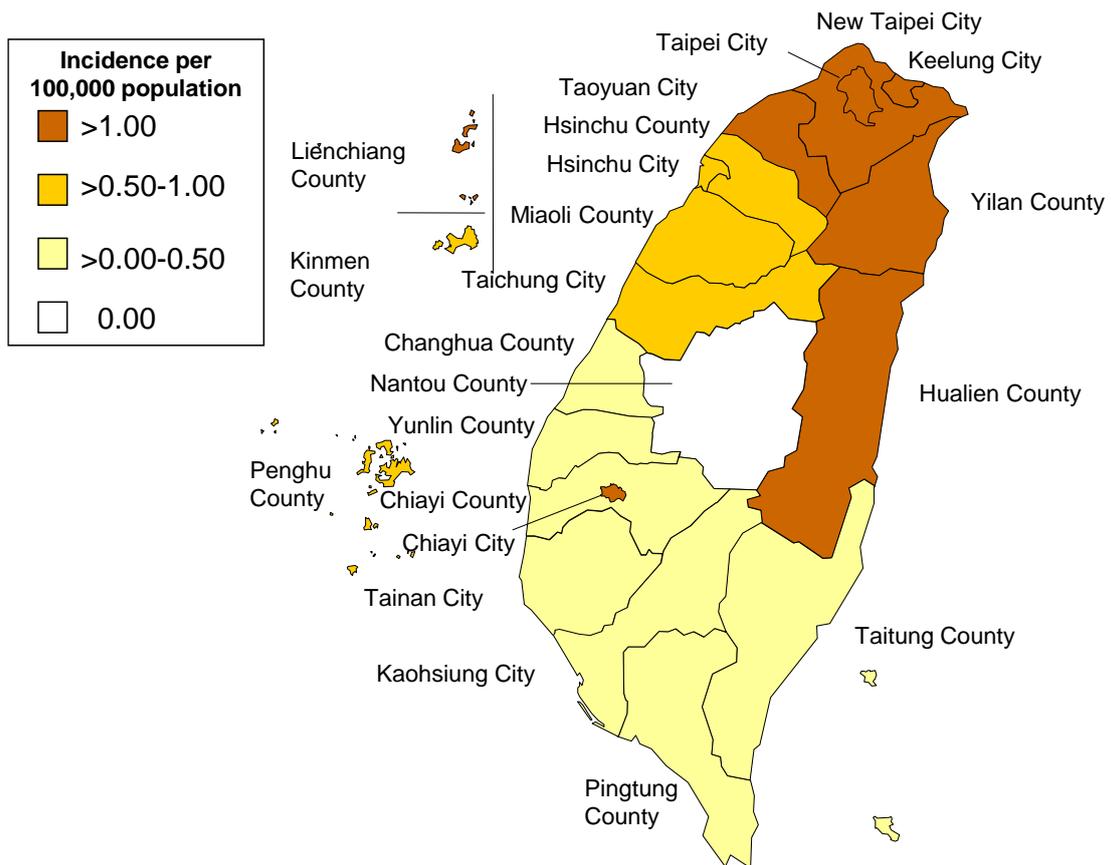


Figure 67 Geographical distribution by incidence of confirmed shigellosis cases, 2016

Severe Complicated Influenza

In 2016, 2,084 confirmed cases of severe complicated influenza (incidence rate: 8.86 per 100,000 population) were reported, which represented a significant increase compared to 857 confirmed cases (incidence rate: 3.65 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 1,233 male cases (59.2%) and 851 female cases (40.8%) with male to female ratio of 1.4:1.0.

(2) By age group

There were 984 cases in 40-64 years age group, 816 cases in 65 years and over age group, 150 cases in 25-39 years age group, 48 cases in 1-4 years age group, 45 cases in 5-14 years age group, 30 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 March and November with more than 100 cases reported in each of the months. February had the highest number of incidents with 1,047 cases reported, followed by March with 448 cases, January with 240 cases, November with 103 cases, April with 74 cases, December with 65 cases, October with 49 cases, September with 17 cases, May with 13 cases, July and August each with 10 cases, and June with 8 cases.

(4) By residential region

All cities and counties had confirmed cases of severe complicated influenza reported in 2016, except for Lienchiang County. New Taipei City had the highest number of incidents with 321 confirmed cases reported, followed by Tainan City with 267 cases, Kaohsiung City with 258 cases, Taipei City with 206 cases, Taichung City with 191 cases, Taoyuan City with 149 cases, Changhua County with 126 cases, Pingtung County with 117 cases, Nantou County with 63 cases, Yunlin County with 62 cases, Miaoli County and Chiayi County each with 56 cases, Yilan County with 53 cases, Hsinchu County with 34 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 Tainan City (14.16), followed by Pingtung County (13.95) and Nantou County (12.42).

(5) Imported cases and countries of infection

There were 3 imported cases of severe complicated influenza in 2016, including 1 cases each from China, Korea and Japan.

(6) By virus type

By virus type, there were 1,826 cases associated with influenza A viruses (1,471 cases of H1N1, 273 cases of H3N2, and 82 cases were untyped), 255

cases associated with influenza B viruses, 2 cases co-infected with both H3N2 and B viruses, and 1 case co-infected with both H1N1 and B viruses.

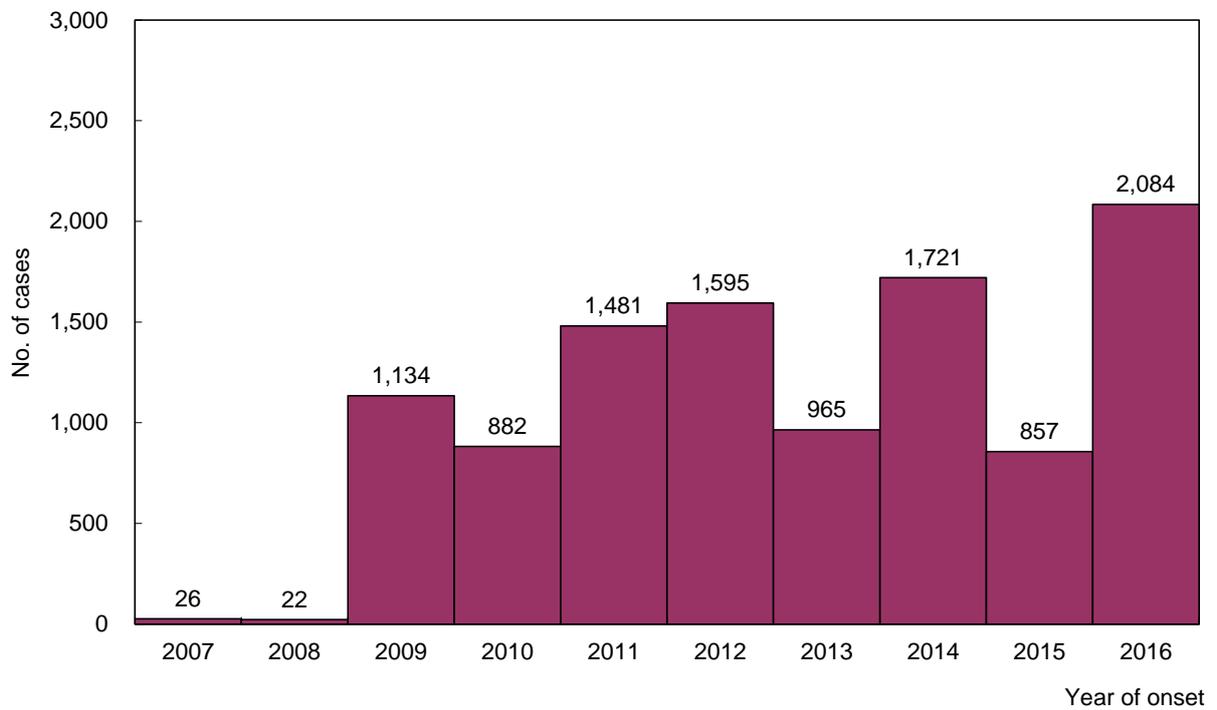


Figure 68 Number of confirmed severe complicated influenza cases, 2007-2016

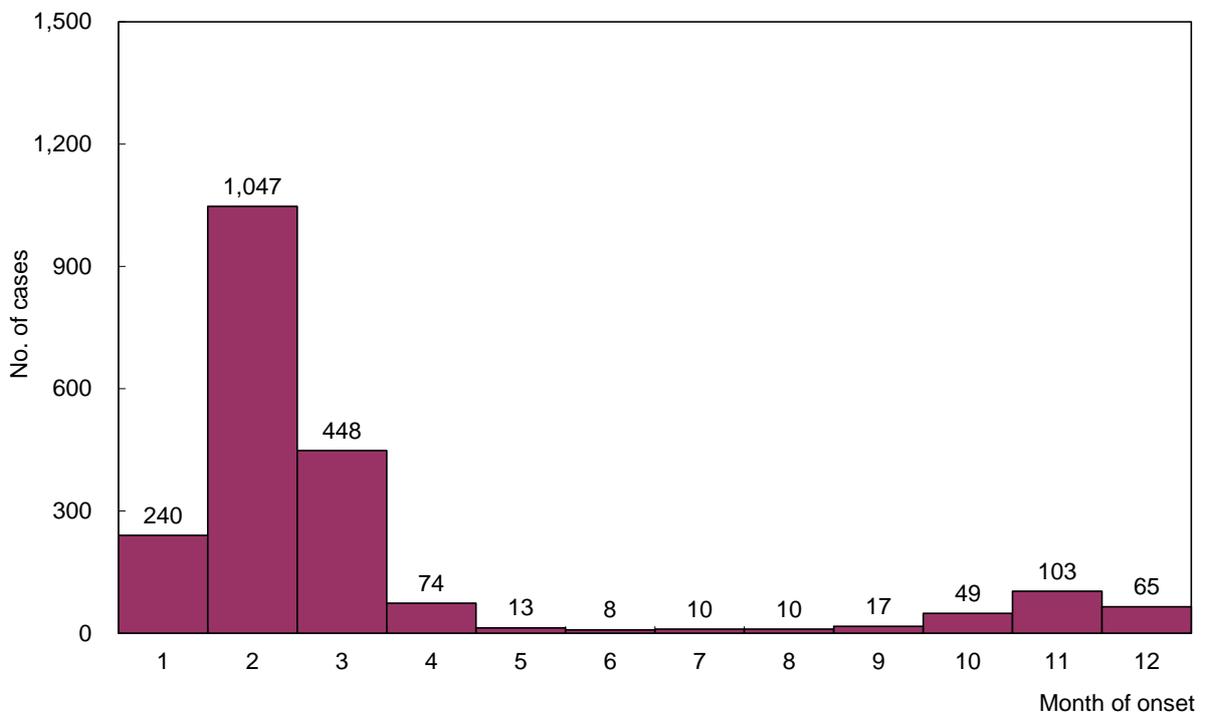


Figure 69 Number of confirmed severe complicated influenza cases, 2016

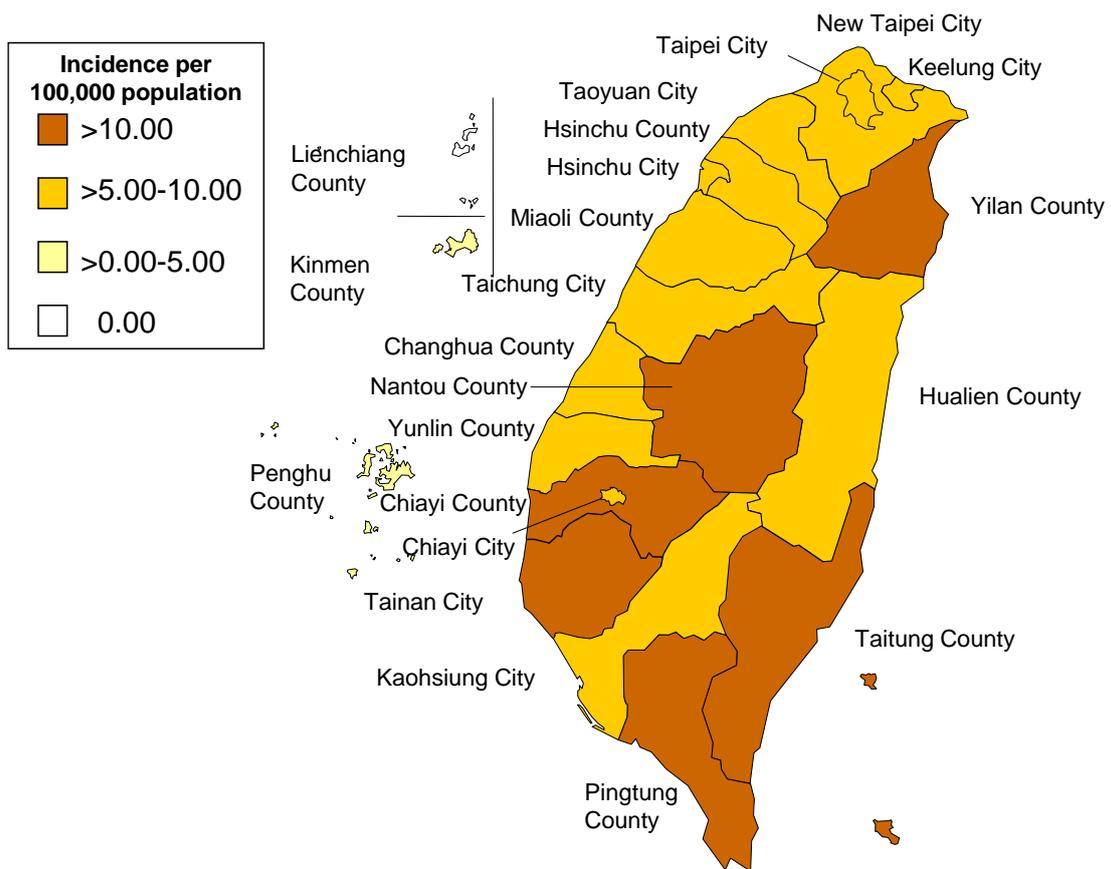


Figure 70 Geographical distributions by incidence of confirmed severe complicated influenza cases, 2016

Government-funded influenza vaccination coverage rate

In the government-funded influenza vaccination program for influenza season 2015-2016, as recommended by the Advisory Committee on Immunization Practices (ACIP), trivalent inactivated influenza vaccines (TIV) were used in eight high-risk groups, including the elders aged more than 65 years, children aged six months through six years and elementary school students from grade one through six, 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 50-64 years age group who have medical conditions, and pregnant women. The influenza vaccine uptake rates obtained via the Influenza Vaccine Information System (IVIS) in this influenza season, were described below:

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

The coverage rates for each group were as follows: the elders aged more than 65 years: 1,142,974 people/39.7%; pre-school children aged above six months with at least one dose: 369,135 people/33.8%; elementary school students from grade one through six: 875,281 people/72%; staff in nursing homes and other long-term care facilities: 32,689 people/89.1%; people with catastrophic illness: 42,094 people; healthcare workers: 190,721 people/67.9%; public health personnel: 16,542 people/63.4%; poultry or livestock farmers and animal health inspectors: 14,055 people/87.1%; 50-64 years age group who have medical conditions: 72,665 people; and pregnant women: 12,767 people.

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

Most of the recipients received the vaccines during the period of October 1 to November 30. Up to 94% of 0.5mL influenza vaccines were administered by end of November after the government-funded vaccines became available. The vaccine use rate then increased slowly after November, and by the end of December, the vaccine use rate was 97%. By the end of January 2016, a total of 98.2% of the vaccines had been administered. After the end of February 2016, the percentage of vaccines administered was kept at 99%.

As for 0.25mL influenza vaccines, the percentage of the vaccines administered reached 89.8% by the end of November since the vaccines became available. The percentage then increased slowly, and reached 98.4% by end of December. At the end of January 2016, 99.5% of the vaccines had been administered, and after the end of February 2016, the percentage was kept at 99.8%.

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

The average coverage rate of government-funded influenza vaccine was 48.6%. The coverage rates were highest in Northern Taiwan for 54%, followed by 53% in both Central Taiwan and Eastern Taiwan. The coverage rate in Lienchiang County was 58.9%, which was the highest among all cities and counties. In Taoyuan City, Chiayi City, Yilan County, Chiayi County, Changhua County, Nantou County, Hualien County, Taichung City, Taitung County, Keelung City and Pingtung County, the coverage rates were higher than average.

Table 28 Government-funded influenza vaccination coverage rates by high-risk groups, 2015-2016

High-risk groups	No. of Vaccine	Coverage rates
Elders aged more than 65 years*	1,142,974	39.7%
Pre-school children aged above six months with at least one dose	369,135	33.8%
Elementary school students	875,281	72.0%
People with catastrophic illness	42,094	-
Staff in nursing homes and other long-term care facilities	32,689	89.1%
Healthcare workers	276,708	73.5%
Registered health care workers	190,721	67.9%
Others workers in the hospitals	85,987	89.9%
Public health personnel	16,542	63.4%
Infection control workers	8,092	98.9%
Emergency medical technicians	5,049	71.0%
Airborne service corps	89	33.1%
Coast guards	2,530	59.3%
Border control workers	782	12.5%
Animal farm-related workers	14,055	87.1%
50-64 years age group who have medical conditions	72,665	-
Pregnant women	12,767	-

*including residents in long term care facilities

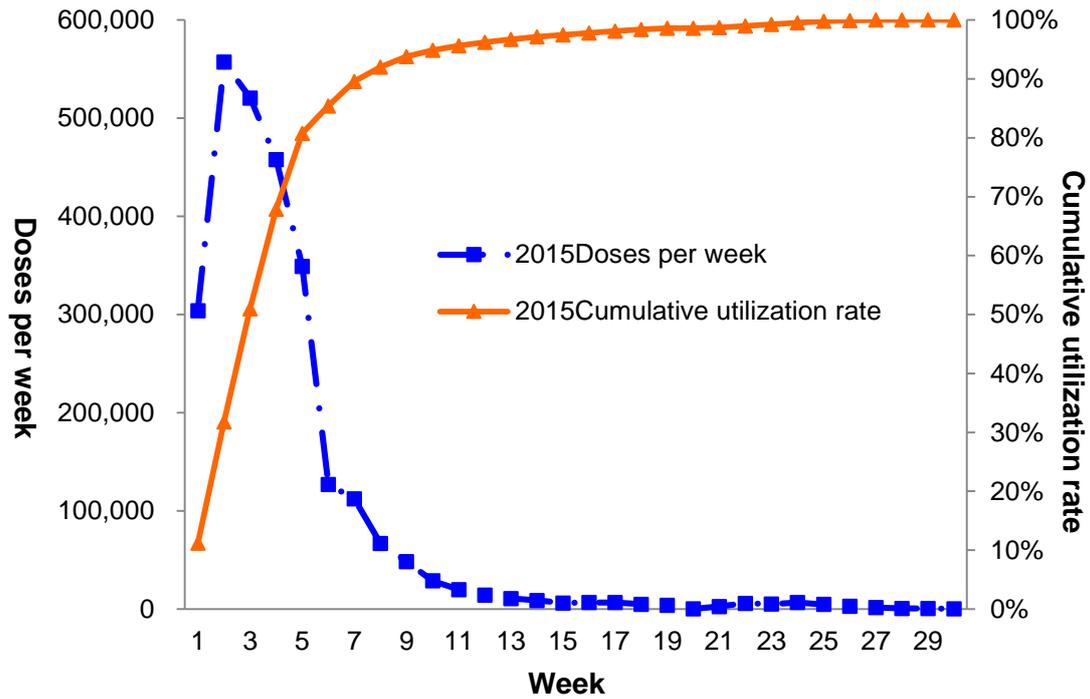


Figure 71 Immunization progress with 0.5ml influenza vaccine shots

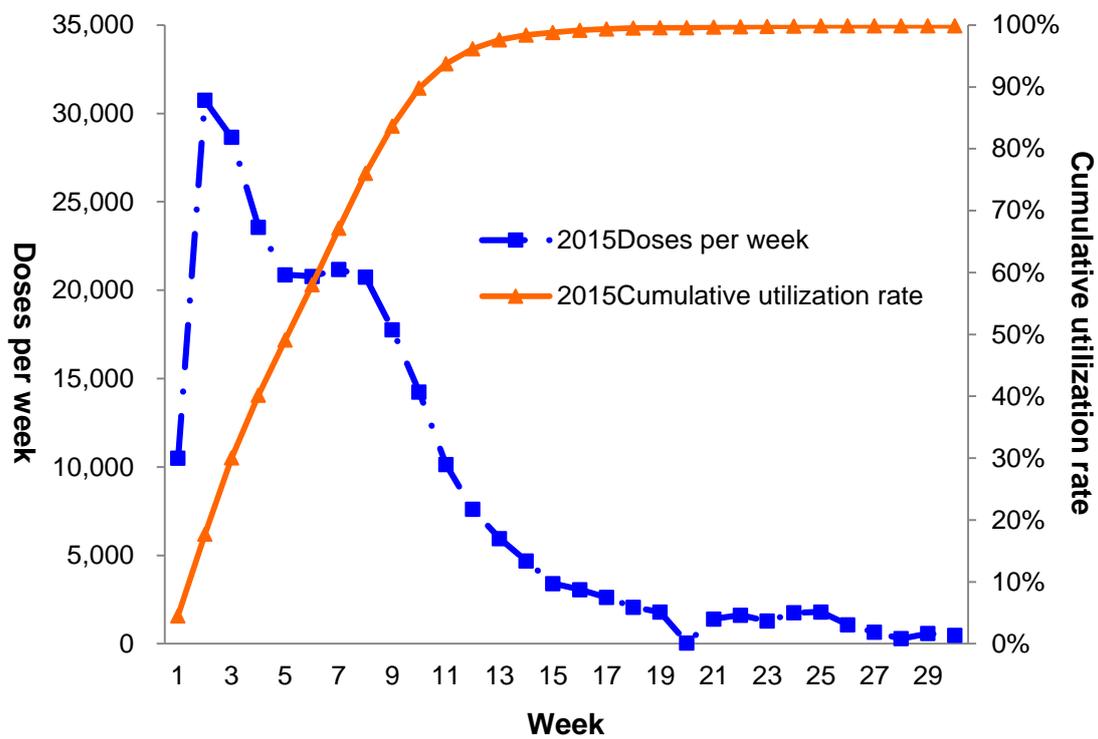


Figure 72 Immunization progress with 0.25ml influenza vaccine shots

Table 29 Government-funded influenza vaccination coverage rates by cities/counties, 2015-2016

Locality	Target population	Vaccinated population	Coverage rate
Taipei City	737,473	282,168	38.3%
Kaohsiung City	646,311	285,253	44.1%
Keelung City	84,543	42,532	50.3%
Hsinchu City	110,345	52,809	47.9%
Taichung City	620,669	319,944	51.5%
Tainan City	451,589	215,558	47.7%
Chiayi City	70,493	39,711	56.3%
New Taipei City	847,460	404,562	47.7%
Taoyuan City	464,054	269,578	58.1%
Hsinchu County	135,360	65,044	48.1%
Yilan County	114,825	64,653	56.3%
Miaoli County	145,680	70,632	48.5%
Changhua County	323,036	180,762	56.0%
Nantou County	129,429	72,135	55.7%
Yunlin County	187,976	91,159	48.5%
Chiayi County	136,809	76,854	56.2%
Pingtung County	204,177	99,601	48.8%
Penghu County	25,422	9,860	38.8%
Hualien County	85,643	46,805	54.7%
Taitung County	56,791	28,854	50.8%
Kinmen County	26,131	7,195	27.5%
Lienchiang County	2,914	1,715	58.9%
Total	5,607,130	2,727,384	48.6%

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 and people with medical conditions were not calculated because the target population could not be estimated by cities/counties.

Syphilis

In 2016, 8,725 confirmed cases of syphilis (incidence rate: 37.10 per 100,000 population) were reported, which represented an increase compared to 7,471 confirmed cases (incidence rate: 31.84 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 7,094 male cases (81.3%) and 1,631 female cases (18.7%) with male to female ratio of 4.3:1.0.

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

The cases occurred mostly in 25-39 years age group with 3,598 cases (41.2%) reported, followed by 40-64 years age group with 1,990 cases (22.8%), 65 years and over age group with 1,901 cases (21.8%), 15-24 years age group with 1,225 cases (14.0%), 0-1 year age group with 6 cases (0.1%), and 5-14 years age group with 5 cases (0.1%).

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for syphilis in 2016 and there were confirmed cases reported in each month of the year.

(4) By residential region

New Taipei City had the highest number of incidents with 1,795 cases (20.6%) reported, followed by Taipei City with 1,202 cases (13.8%), Taichung City with 1,052 cases (12.1%), Kaohsiung City with 1,000 cases (11.5%), Taoyuan City with 974 cases (11.2%), Tainan City with 537 cases (6.2%), Changhua County with 340 cases (3.9%), Pingtung County with 318 cases (3.6%), Yilan County with 211 cases (2.4%), Hualien County with 175 cases (2.0%), Keelung City with 167 cases (1.9%), Yunlin County with 161 cases (1.8%), Hsinchu City with 136 cases (1.6%), Miaoli County with 132 cases (1.5%), and Nantou County with 122 cases (1.4%). 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 Hualien County (52.80), followed by Yilan County (46.09), Taoyuan City (45.80).

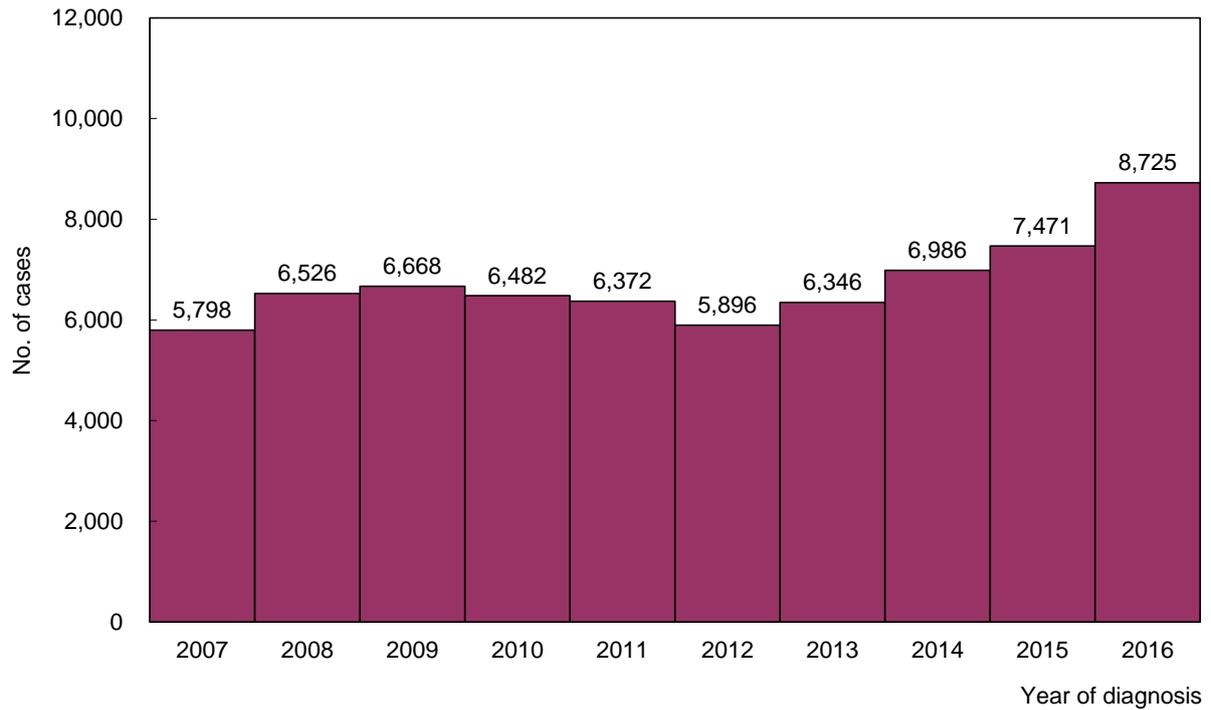


Figure 73 Number of confirmed syphilis cases, 2007-2016

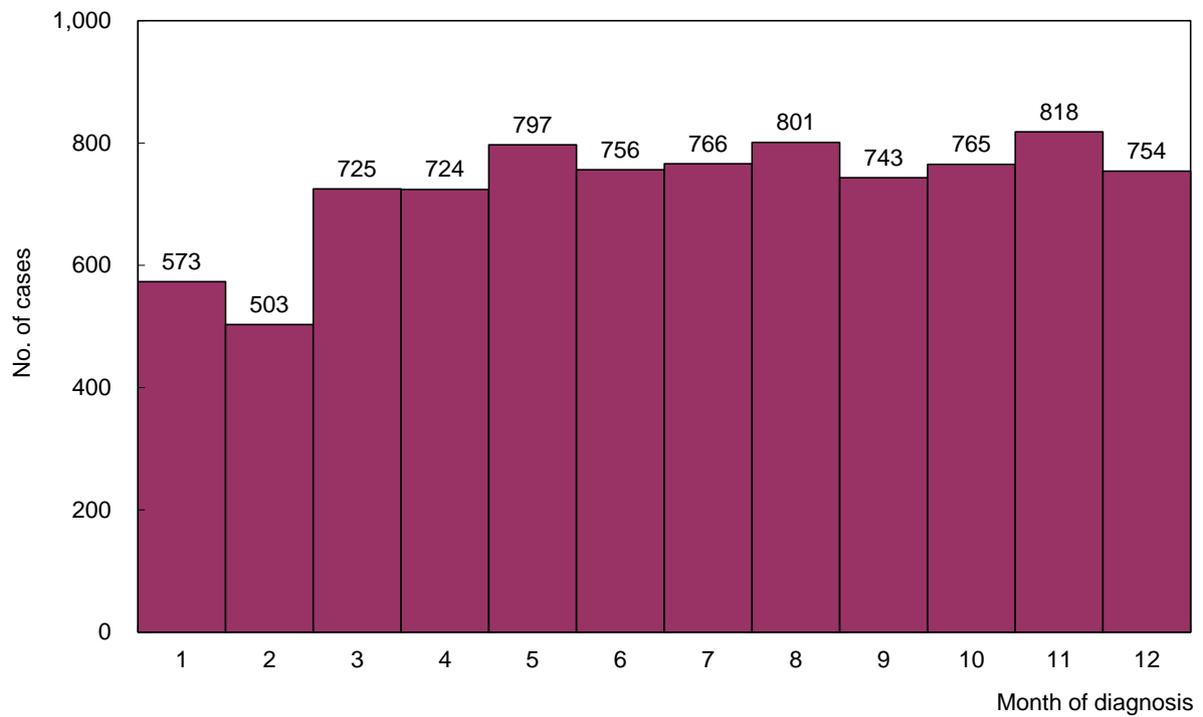


Figure 74 Number of confirmed syphilis cases, 2016

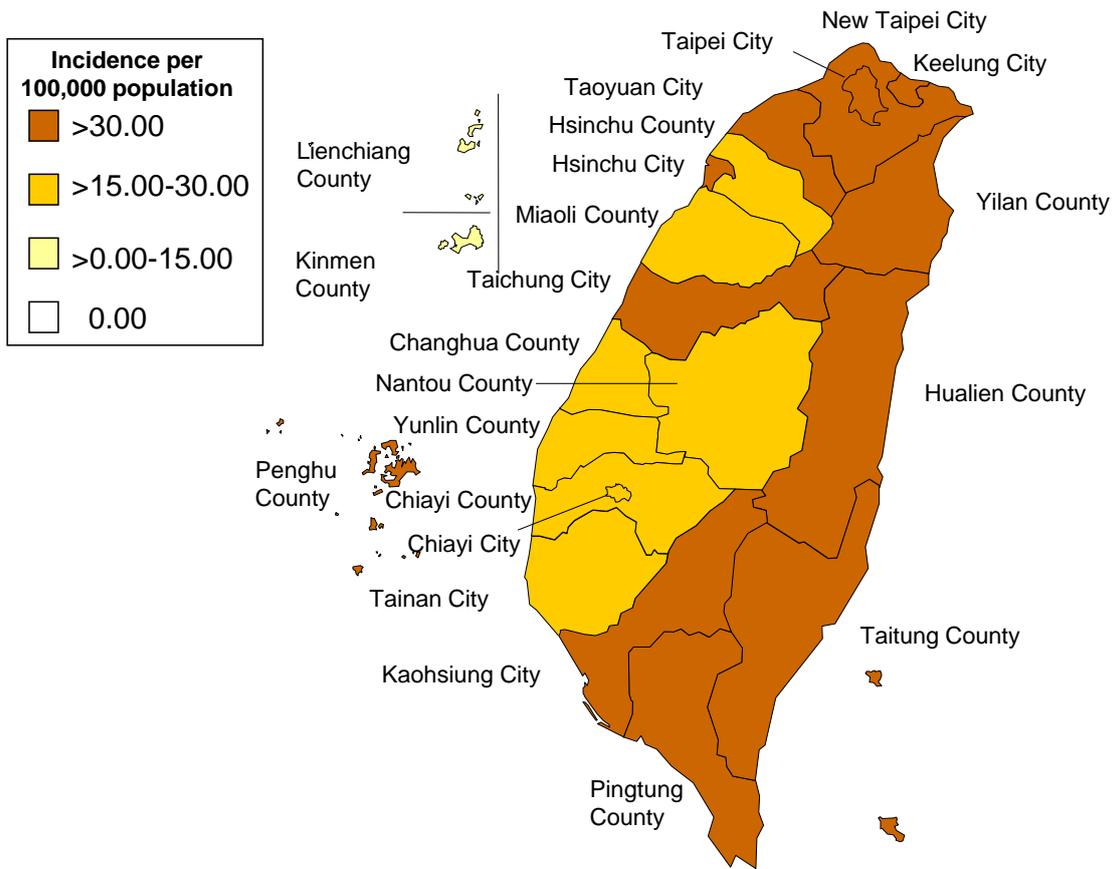


Figure 75 Geographical distribution by incidence of confirmed syphilis cases, 2016

Gonorrhoea

In 2016, 4,469 confirmed cases of gonorrhoea (incidence rate: 19.00 per 100,000 population) were reported, which represented an increase compared to 3,587 confirmed cases (incidence rate: 15.29 per 100,000 population) in 2015. The data of confirmed cases in 2016 are analyzed as follows:

(1) By gender

There were 4,141 male cases (92.7%) and 328 female cases (7.3%) with male to female ratio of 12.6:1.0.

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

The cases occurred mostly in 25-39 years age group with 2,370 cases (53.0%) reported, followed by 15-24 years age group with 1,522 cases (34.1%), 40-64 years age group with 529 cases (11.8%), 5-14 years age group with 26 cases (0.6%), 65 years and over age group with 19 cases (0.4%) and 1-4 years age group with 3 cases (0.1%).

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for gonorrhoea in 2016, and there were confirmed cases reported in each month of the year.

(4) By residential region

New Taipei City had the highest number of incidents with 1,089 cases (24.4%) reported, followed by Taipei City with 854 cases (19.1%), Taoyuan City with 575 cases (12.9%), Kaohsiung City with 482 cases (10.8%), Taichung City with 315 cases (7.0%), Tainan City with 205 cases (4.6%), Hsinchu County with 155 cases (3.5%), Changhua County with 98 cases (2.2%), Keelung City with 93 cases (2.1%), Hsinchu City with 85 cases (1.9%), Hualien County with 79 cases (1.8%), Pingtung County with 78 cases (1.7%), Nantou County with 71 cases (1.6%), Miaoli County with 66 cases (1.5%), Taitung County with 58 cases (1.3%), and Yunlin County with 53 cases (1.2%). 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 Taipei City (31.63), followed by Hsinchu County (28.45), New Taipei City (27.40).

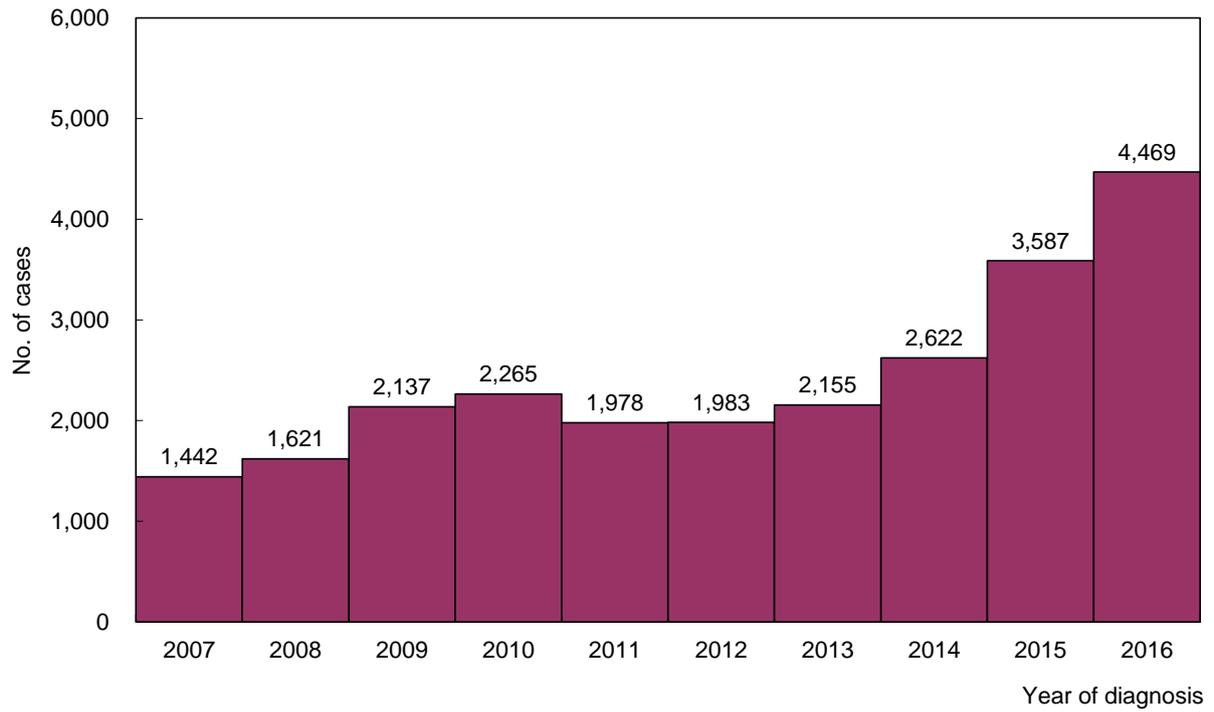


Figure 76 Number of confirmed gonorrhea cases, 2007-2016

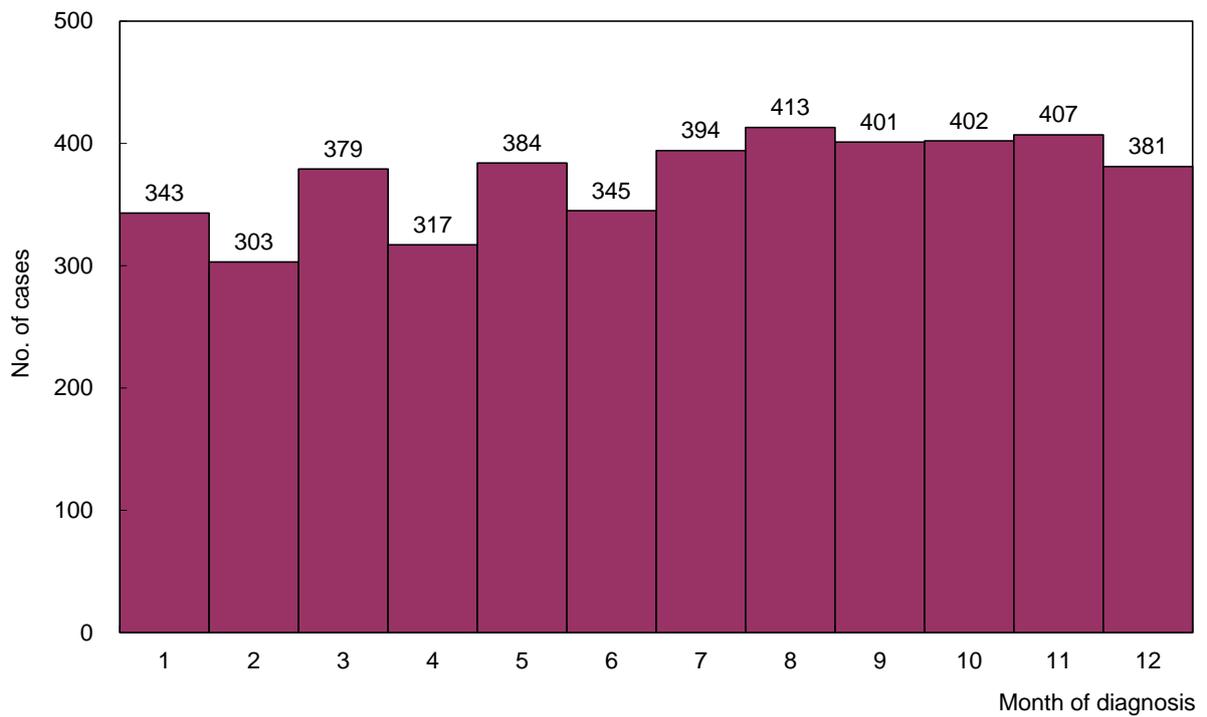


Figure 77 Number of confirmed gonorrhea cases, 2016

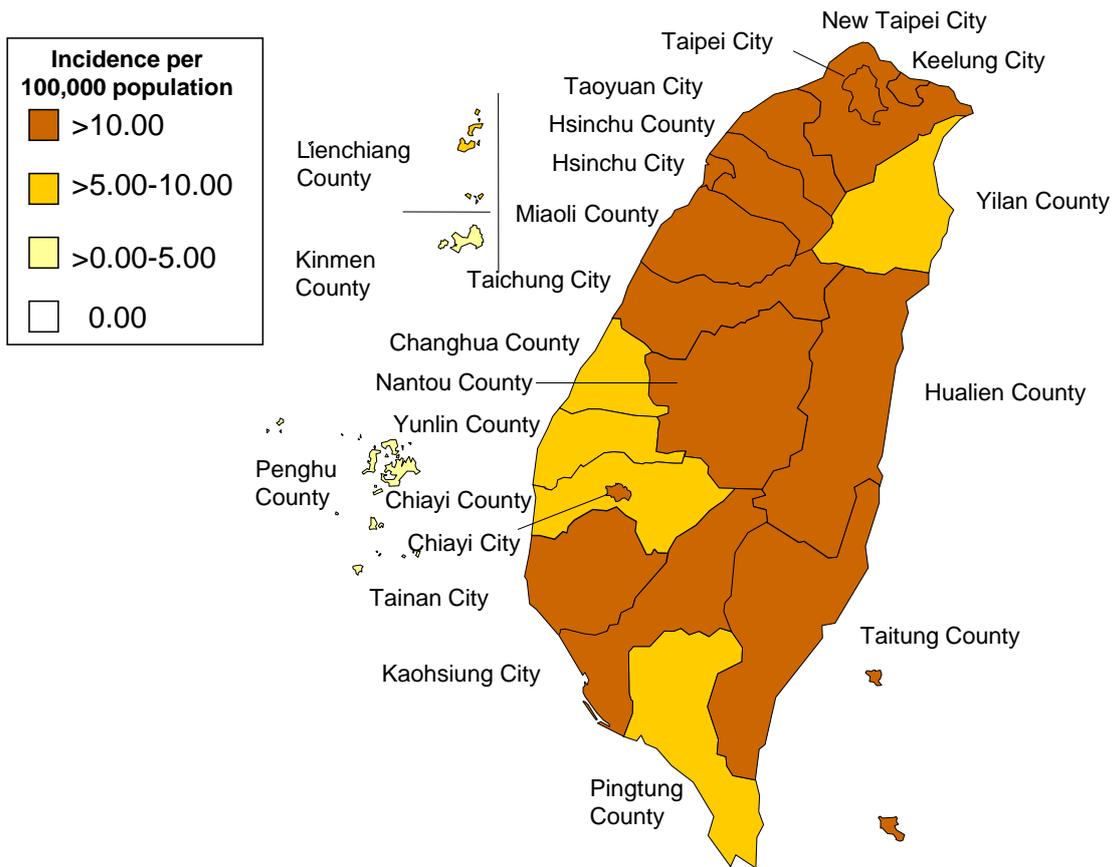


Figure 78 Geographical distribution by incidence of confirmed gonorrhea cases, 2016

HIV Infection & AIDS

From 1984 up to the end of 2016, there were 34,474 cases of human immunodeficiency virus (HIV) infection (33,423 native cases and 1,051 foreign cases) and 15,568 acquired immunodeficiency syndrome (AIDS) cases (15,418 native cases and 150 foreign cases) were reported.

In 2016, 2,438 HIV cases (2,396 native cases and 42 foreign cases) and 1,429 AIDS cases (1,412 native cases and 17 foreign cases) were diagnosed and reported. The data of native cases in 2016 are analyzed as follows (the HIV infection cases include those cases with AIDS at the time of reporting):

(1) By gender

HIV: There were 2,334 male cases (97.4%) and 62 female cases (2.6%) with male to female ratio of 37.6:1.0.

AIDS: There were 1,340 male cases (94.9%) and 72 female cases (5.1%) with male to female ratio of 18.6:1.0.

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

HIV: There were 1,308 cases (54.6%) in 25-39 years age group, 697 cases (29.1%) in 15-24 years age group, and 371 cases (15.5%) in 40-64 years age group.

AIDS: There were 793 cases (56.2%) in 25-39 years age group, 396 cases (28.0%) in 40-64 years age group, and 196 cases (13.9%) 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 2016 and there were confirmed cases reported in each month of the year.

(4) By risk factor

HIV (total): There were 2,035 cases (84.9%) caused by men who have sex with men, 214 cases (8.9%) caused by heterosexual contact, 70 cases (2.9%) caused by injection drug use, and 77 cases (3.2%) with unknown causes.

HIV (male): There were 2,035 cases (87.2%) caused by men who have sex with men, 170 cases (7.3%) caused by heterosexual contact, 63 cases (2.7%) caused by injection drug use, and 66 cases (2.8%) with unknown causes.

HIV (female): The cases were mostly caused by heterosexual contact with 44 cases (71.0%), followed by injection drug use with 7 cases (11.3%) and unknown causes with 11 cases (17.7%).

AIDS (total): There were 996 cases (70.5%) involving men who have sex with men, 218 cases (15.4%) involving injection drug use, 174 cases (12.3%) involving heterosexual contact. There were also 24 cases (1.7%) with unknown causes.

AIDS (male): There were 996 cases (74.3%) involving men who have sex with men, 186 cases (13.9%) involving injection drug use, 139 cases (10.4%) involving heterosexual contact. There were also 19 cases (1.4%) with unknown causes.

AIDS (female): There were 35 cases (48.6%) involving heterosexual contact, 32 cases (44.4%) involving injection drug use, and 5 cases (6.9%) 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 539 cases (22.5%) reported, followed by Taipei City with 402 cases (16.8%), Taichung City with 331 cases (13.8%), Kaohsiung City with 301 cases (12.6%), and Taoyuan City with 243 cases (10.1%). Lienchiang County did not have HIV infection cases reported in 2015.

The incidence rate of confirmed HIV cases per 100,000 population was the highest in New Taipei City (14.89), followed by Taipei City (13.24) and Taichung City (11.46).

AIDS: New Taipei City had the highest number of incidents with 294 cases (20.8%) reported, followed by Kaohsiung City and Taipei City each with 185 cases (13.1%), Taichung City with 183 cases (13.0%) and Taoyuan City with 133 cases (9.4%). Lienchiang County did not have AIDS cases reported in 2015.

The incidence rate of confirmed AIDS cases per 100,000 population was the highest in Keelung City (8.86), followed by New Taipei City (8.04) and Hualien County (7.51).

Table 30 Risk factors for male HIV and AIDS cases (foreigner excluded), 2016

Risk factor	HIV	%	AIDS	%
Men who have sex with men	2,035	87.2%	996	74.3%
Heterosexual contact	170	7.3%	139	10.4%
Injecting drug users	63	2.7%	186	13.9%
Recipient of blood/clotting factor	0	0.0%	0	0.0%
Vertical transmission	0	0.0%	0	0.0%
Unknown	66	2.8%	19	1.4%
Total	2,334	100.0%	1,340	100.0%

Table 31 Risk factors for female HIV and AIDS cases (foreigner excluded), 2016

Risk factor	HIV	%	AIDS	%
Heterosexual contact	44	71.0%	35	48.6%
Injecting drug users	7	11.3%	32	44.4%
Recipient of blood/clotting factor	0	0.0%	0	0.0%
Vertical transmission	0	0.0%	0	0.0%
Unknown	11	17.7%	5	6.9%
Total	62	100.0%	72	100.0%

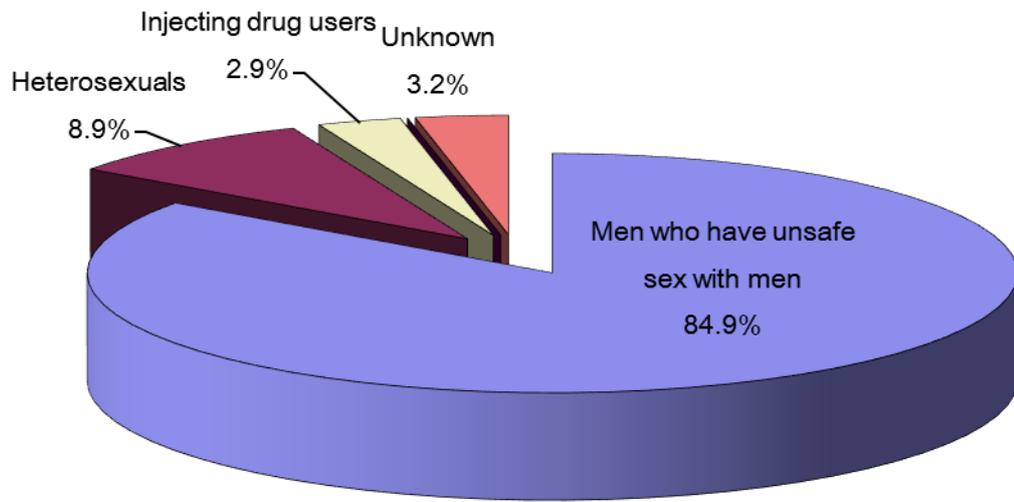


Figure 79 Risk factor of confirmed HIV infection cases (foreigner excluded), 2016

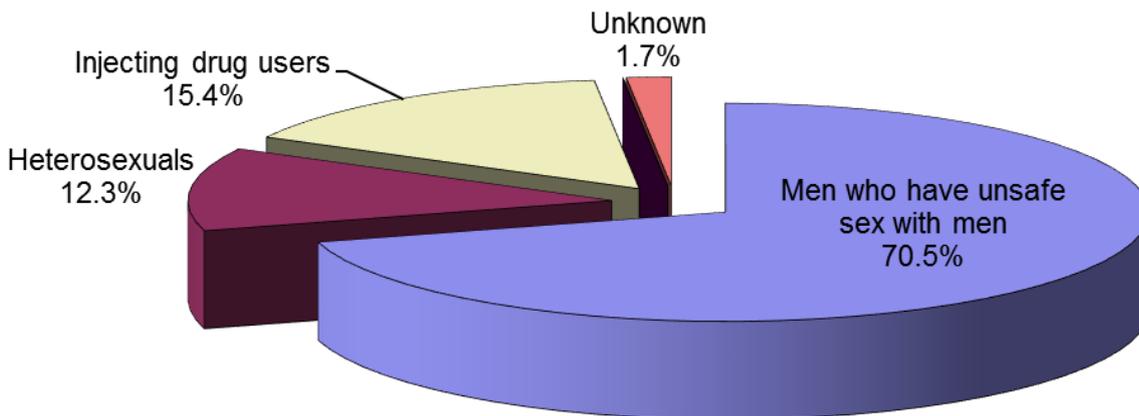


Figure 80 Risk factor of confirmed AIDS cases (foreigner excluded), 2016

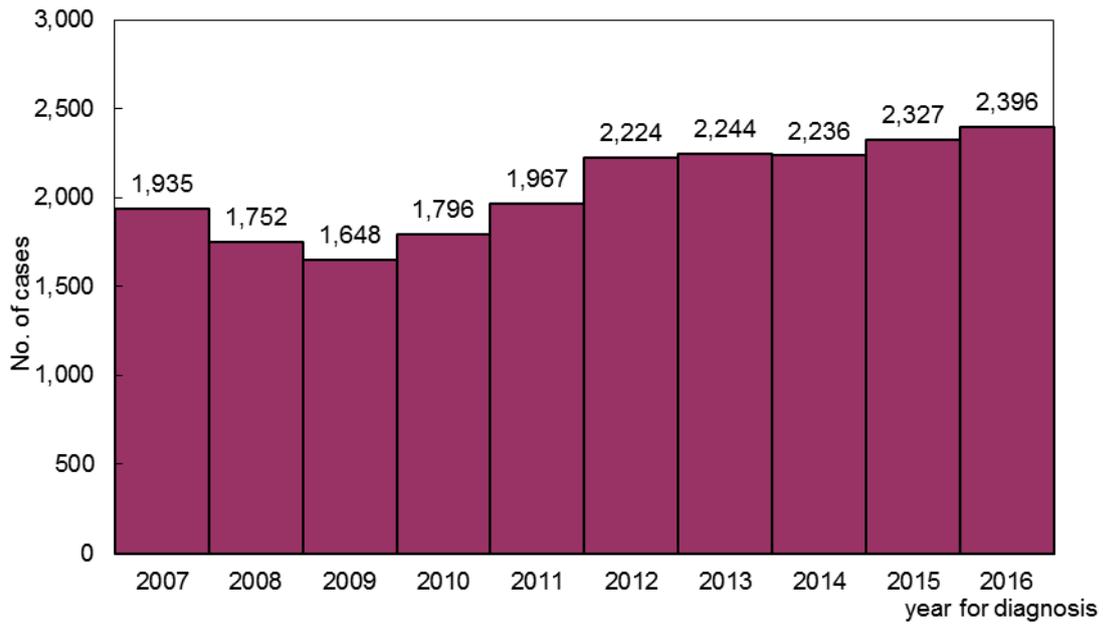


Figure 81 Number of confirmed HIV infection cases (foreigner excluded), 2007-2016

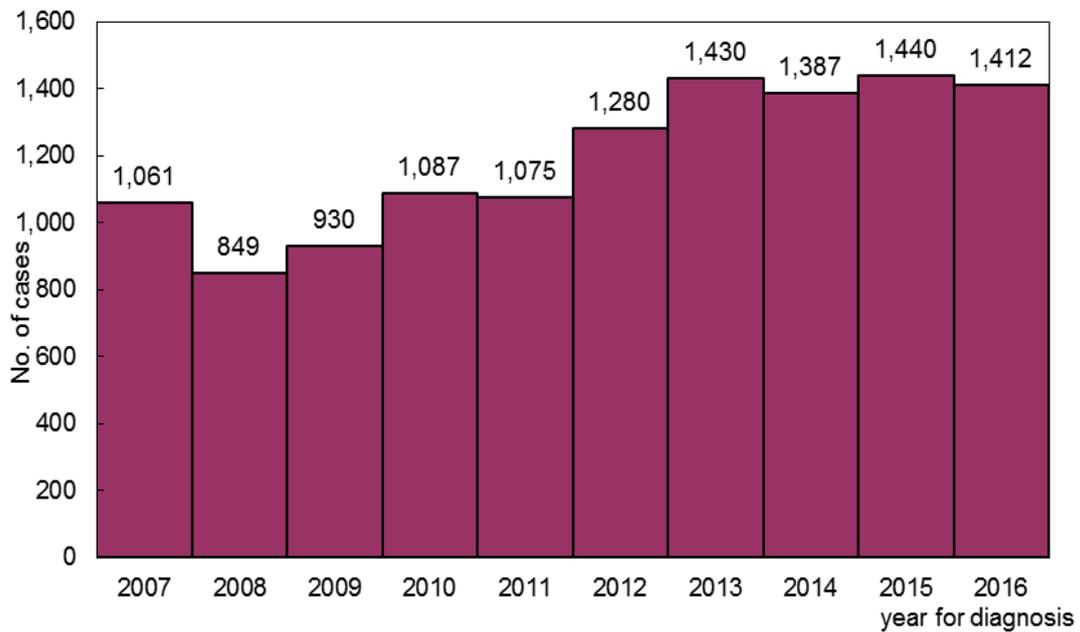


Figure 82 Number of confirmed AIDS cases (foreigner excluded), 2007-2016

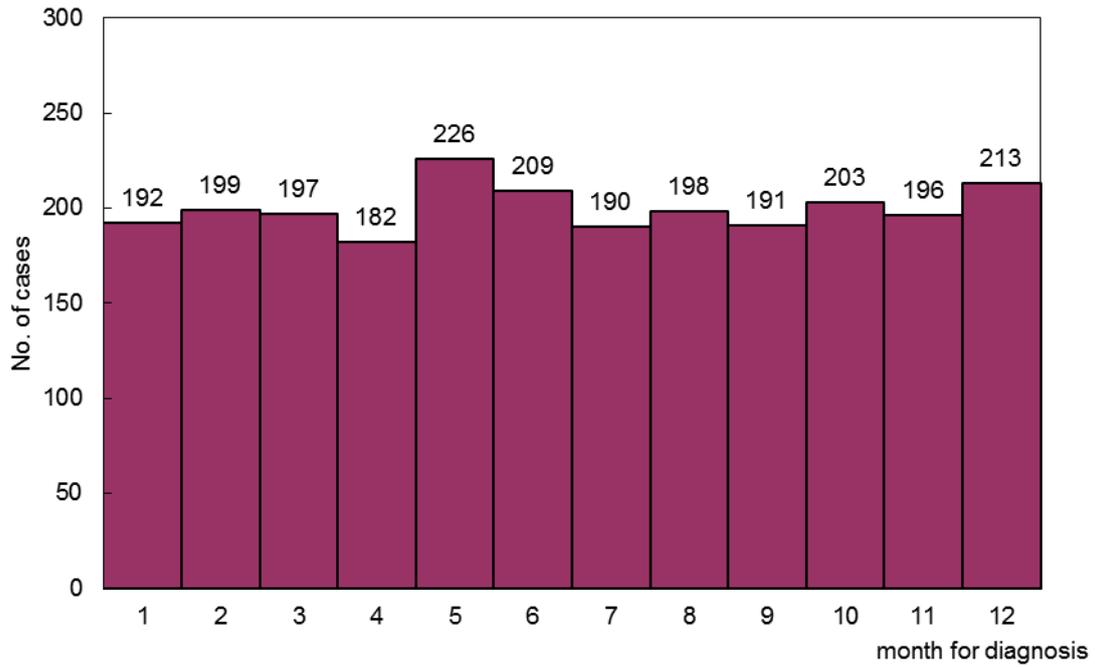


Figure 83 Number of confirmed HIV infection cases (foreigner excluded), 2016

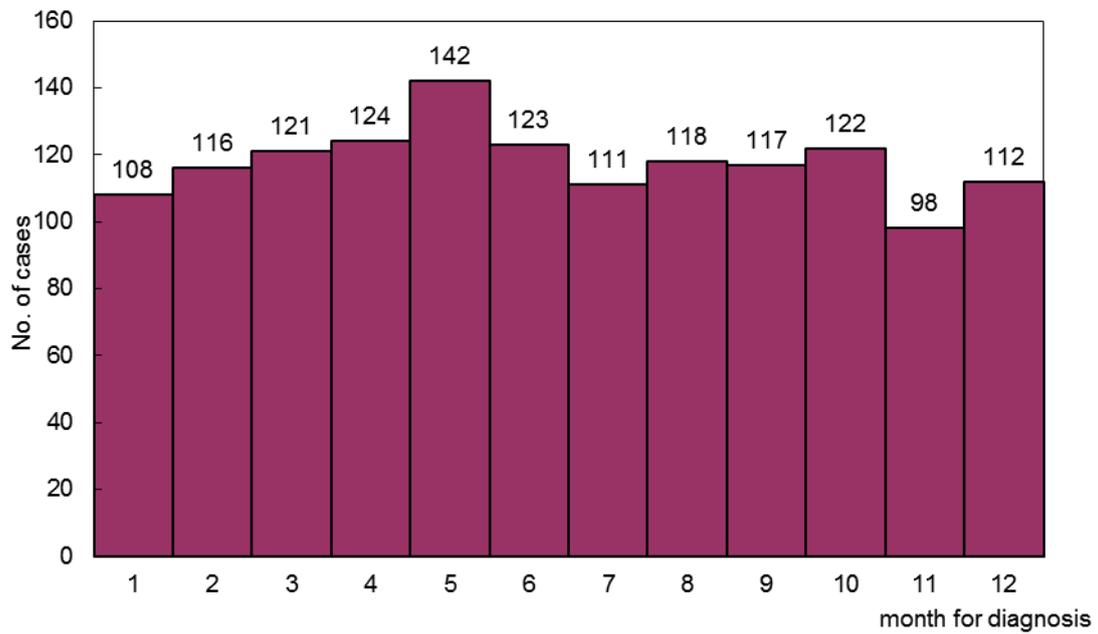


Figure 84 Number of confirmed AIDS cases (foreigner excluded), 2016

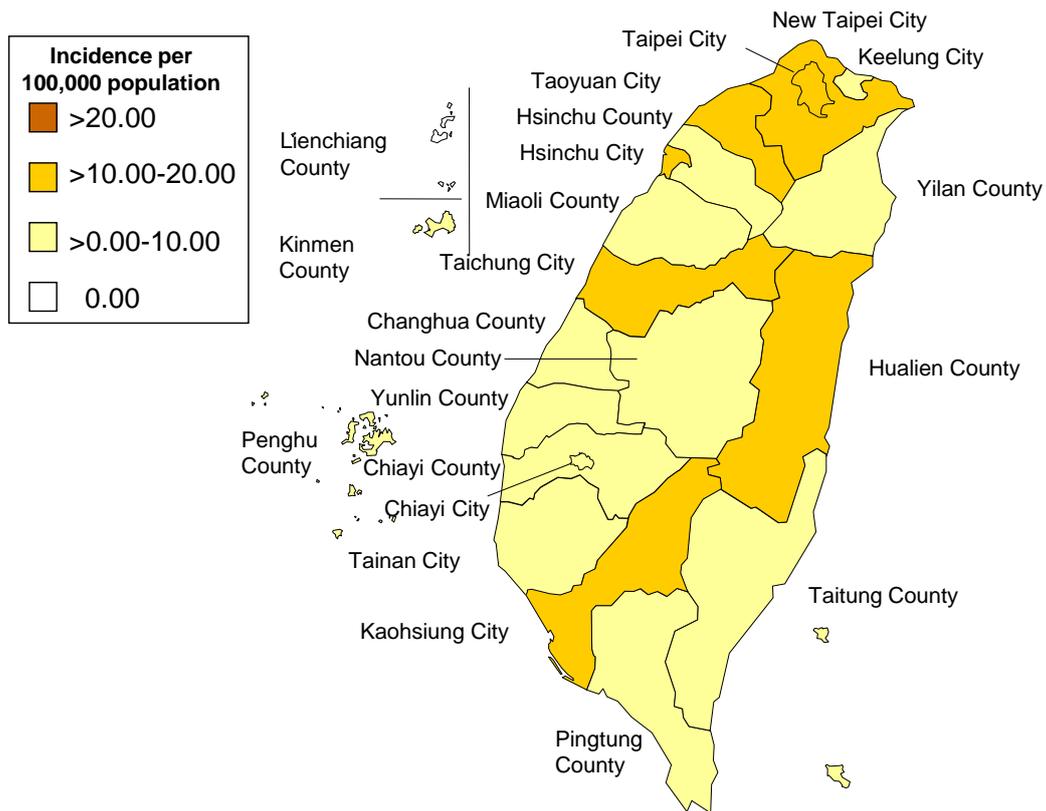


Figure 84 Geographical distribution by incidence of confirmed HIV infection cases (foreigner excluded), 2016

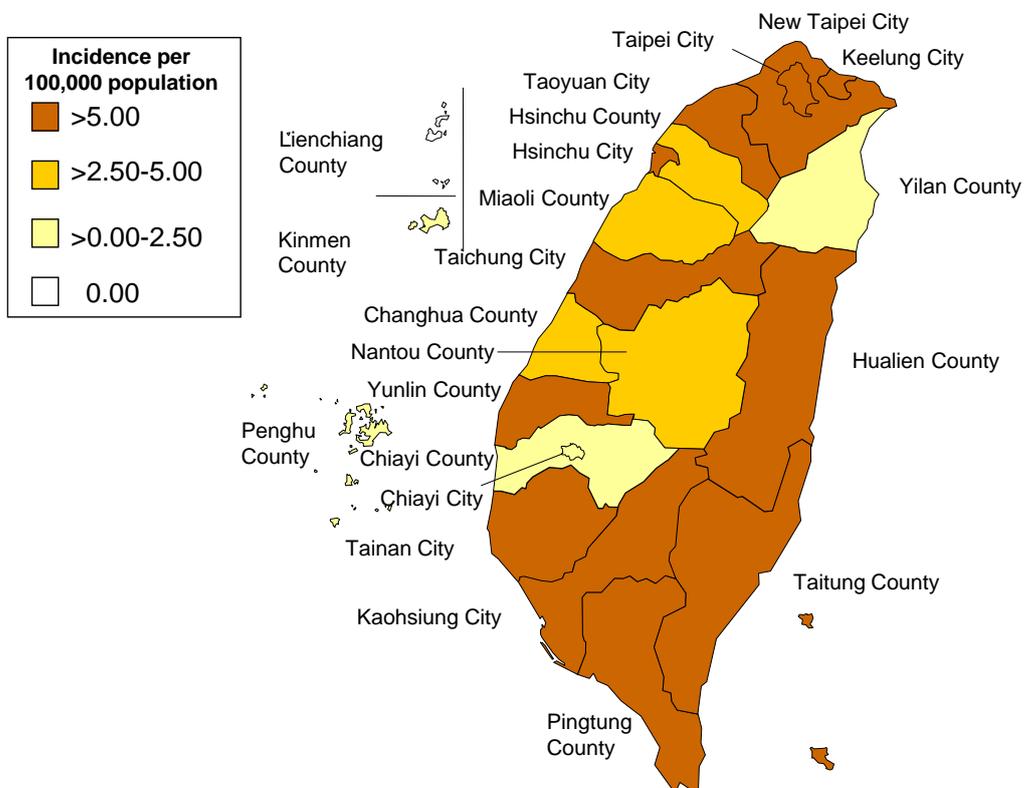


Figure 85 Geographical distribution by incidence of confirmed AIDS cases (foreigner excluded), 2016

Tuberculosis

In 2016, 10,328 cases of tuberculosis (incidence rate: 43.9 per 100,000 population) were confirmed, which went down in both case number and incidence rate with 3.7% and 3.9% declining respectively, as compared with 10,711 confirmed cases (incidence rate: 45.7 per 100,000 population) in 2015. The data of confirmed TB cases in 2016 were analyzed as follows:

(1) By gender

There were 7,215 male cases (70.0%) and 3,113 female cases (30.0%) with a male to female ratio of 2.3:1.0. The incidence rate of tuberculosis in males (61.6 per 100,000 population) was 2.3 times higher than that in females (26.4 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 2016, 50 were aged 0-14, 363 were aged 15-24, 477 were aged 25-34, 645 were aged 35-44, 1,191 were aged 45-54, 1,801 were aged 55-64, and 5,801 were elderly over 65 year-old which accounted for 56.2% of total.

(3) By month (based on notification date)

Tuberculosis cases were reported in each month of the year, with the highest notification (990 cases) in May and lowest (763 cases) in February.

(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 77.0 per 100,000 population, followed by Hualien County with 71.5 per 100,000 population. Kinmen County and Penghu County had the lowest incidence rate with 22.4 and 18.5 per 100,000 population respectively.

(5) Mortality distribution

In 2016, there were 547 tuberculosis deaths with a mortality rate of 2.3 per 100,000 population. Males accounted for 415 deaths (3.5 deaths per 100,000 population) and the rest of 132 were females (1.1 deaths per 100,000 population) with a male to female death ratio of 3.1:1.0.

The tuberculosis mortality rate in Taiwan increased with age. Of the 547 tuberculosis deaths in 2016, 83.2% (455 cases) were elderly aged 65 years and above.

For the overall geographic distribution, tuberculosis deaths in 2016 showed a pattern of higher in eastern and southern regions and lower in northern region. Hualien County had the highest TB mortality rate (4.8 per 100,000 population), followed by Pingtung County (4.2 per 100,000 population) and Changhua County (3.9 per 100,000 population).

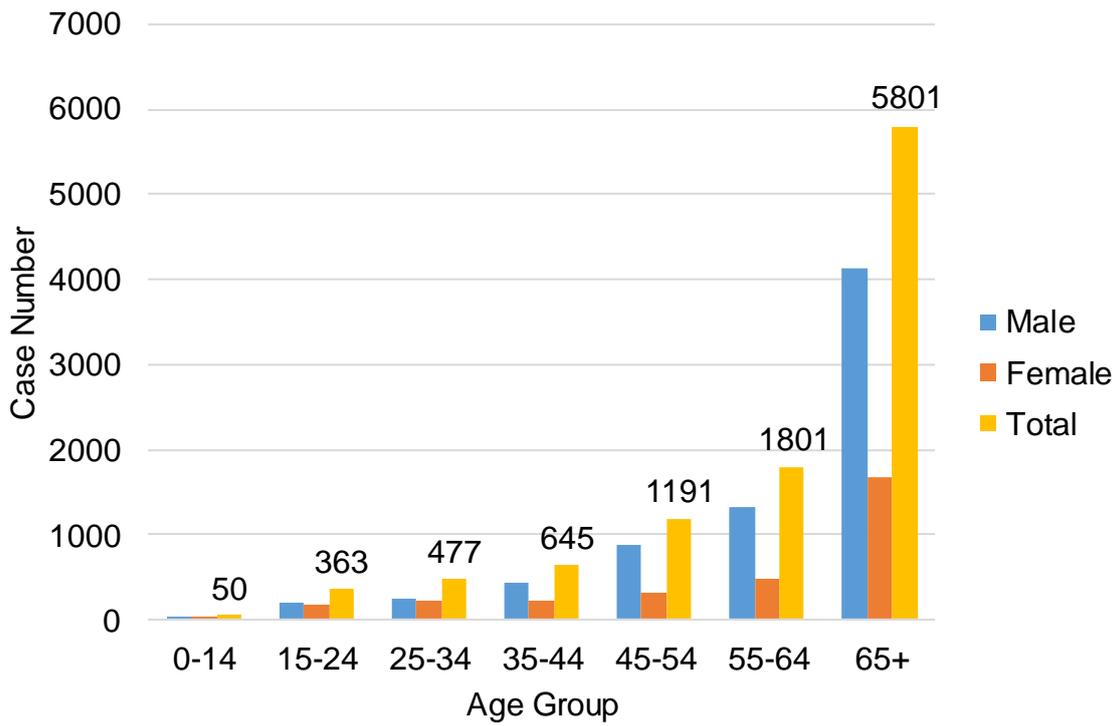


Figure 87 Tuberculosis cases number by age group and sex, 2016

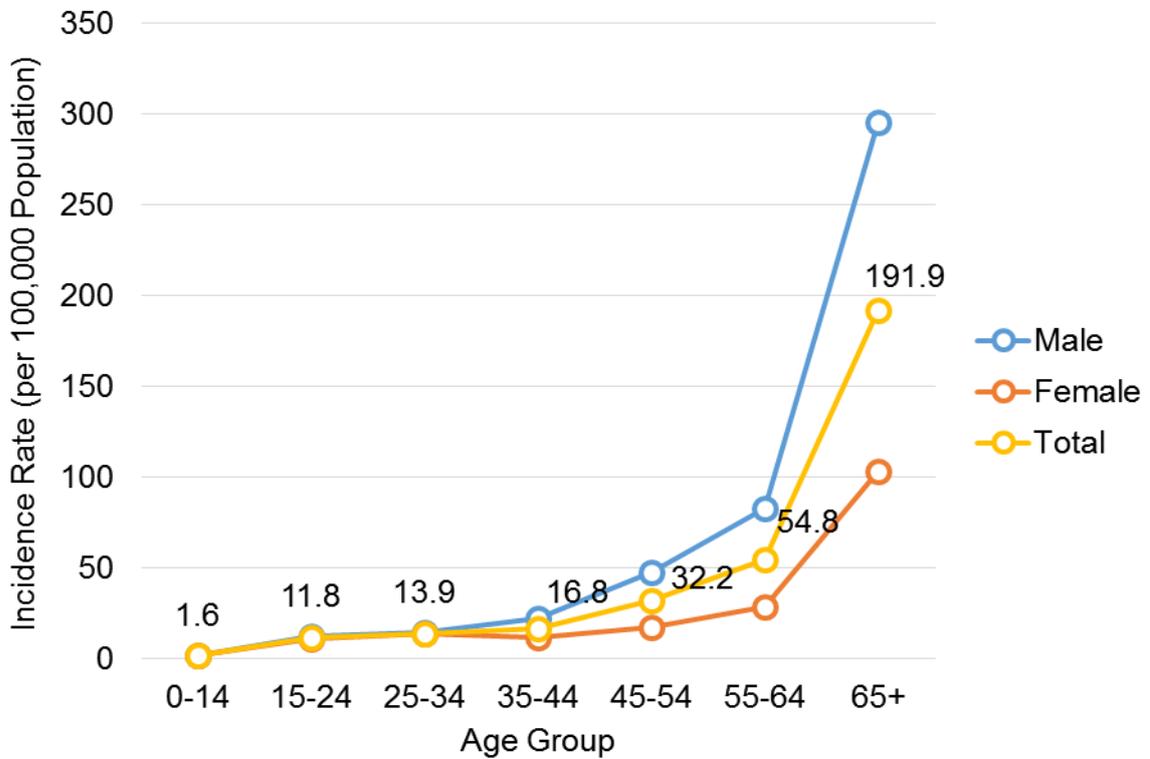


Figure 88 Incidence rate of tuberculosis by age group and sex, 2016

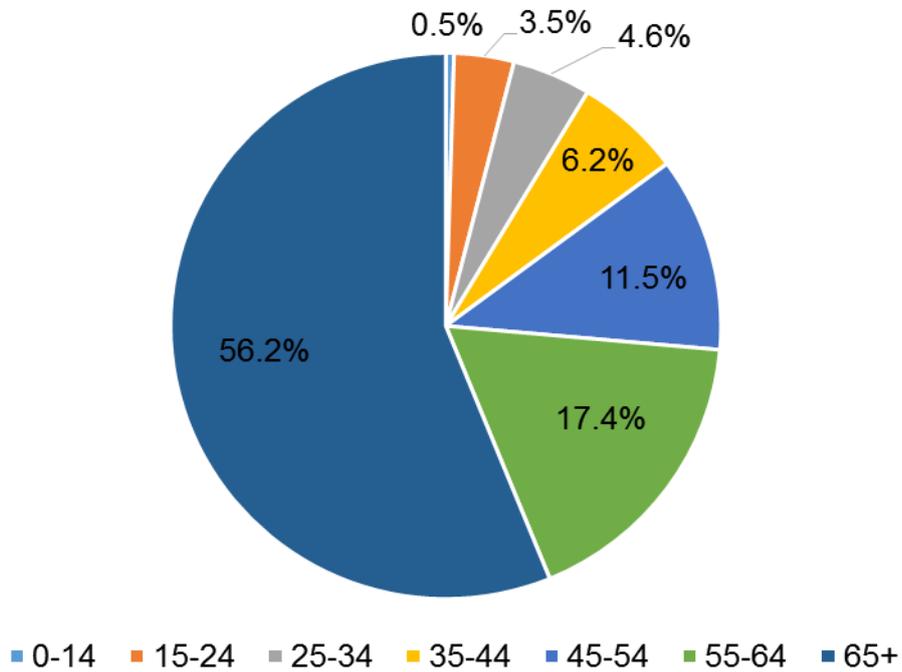


Figure 89 Distribution of tuberculosis incidence by age group, 2016

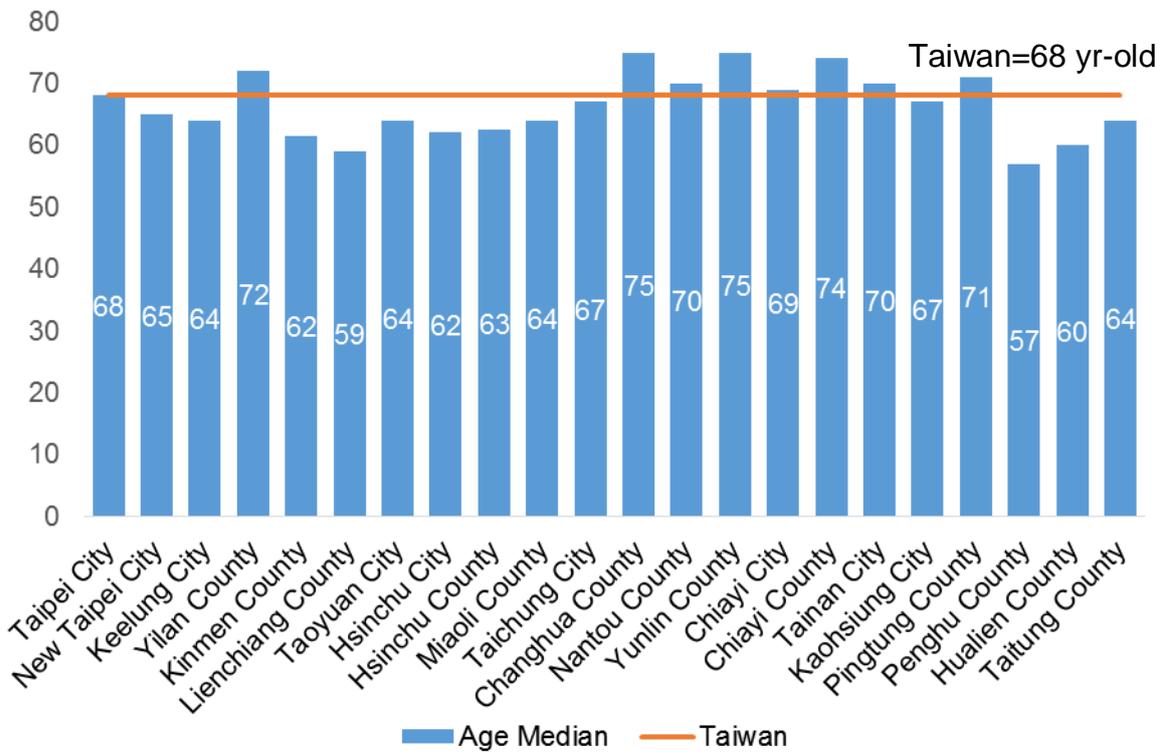


Figure 90 Tuberculosis Age Median by city and county, 2016

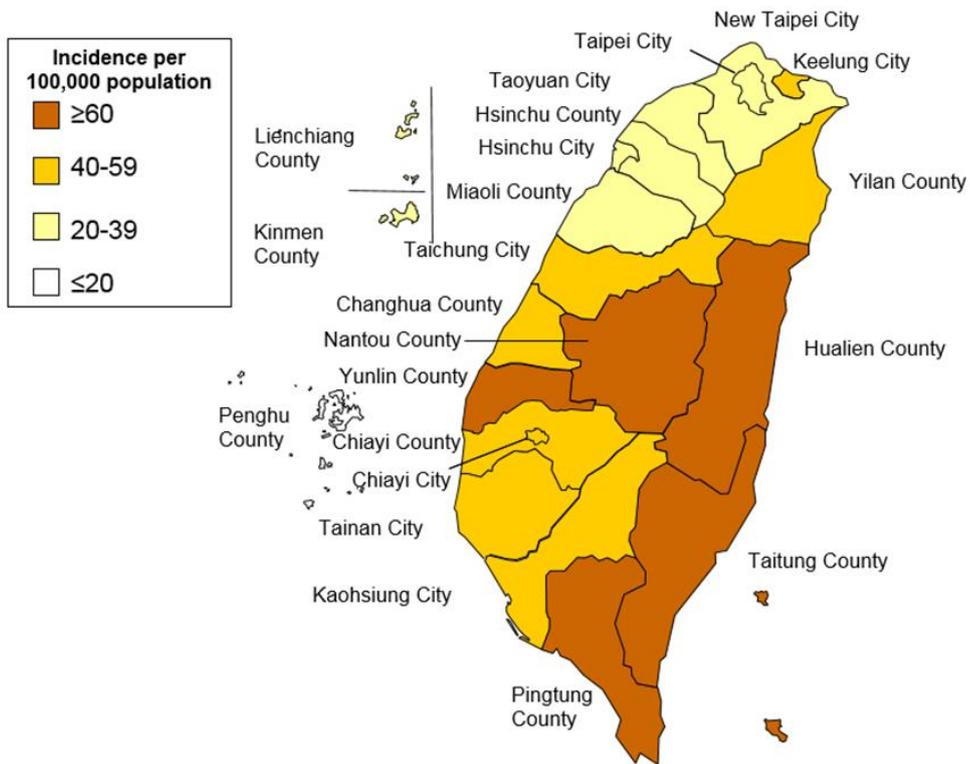


Figure 91 Geographical distribution by incidence of tuberculosis cases, 2016

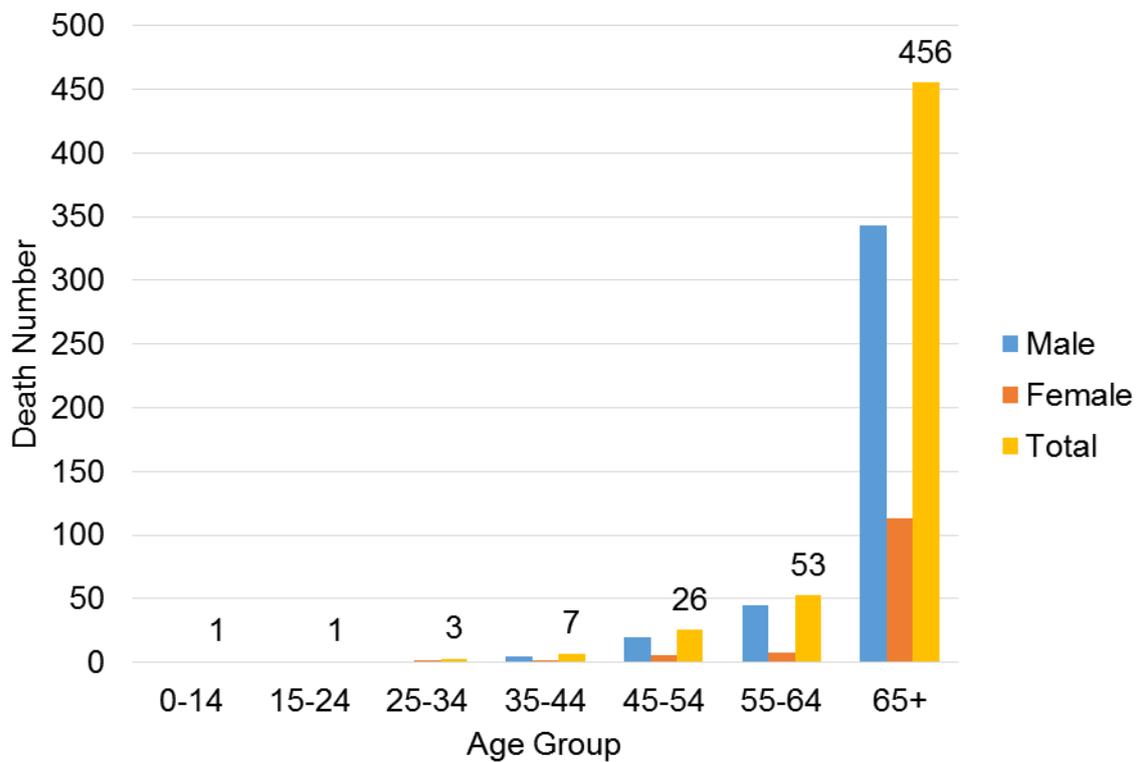


Figure 92 Mortality number of Tuberculosis by age group and sex, 2016

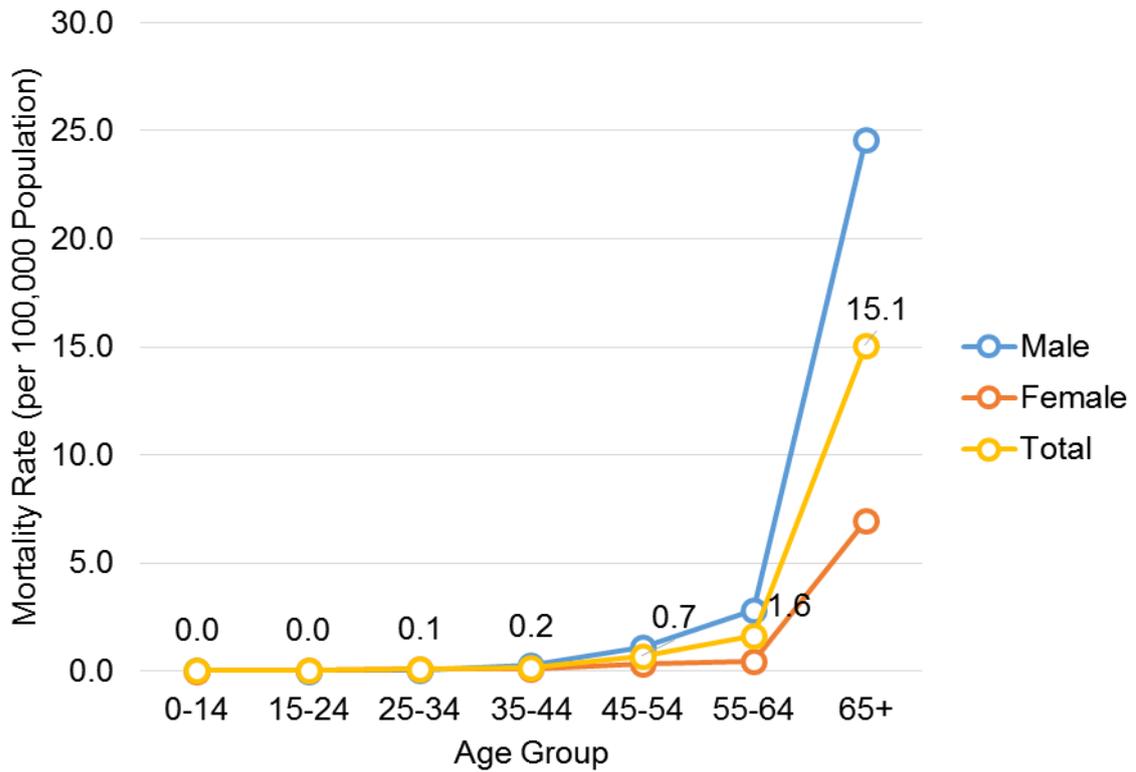


Figure 93 Mortality rate of tuberculosis by age group and sex, 2016

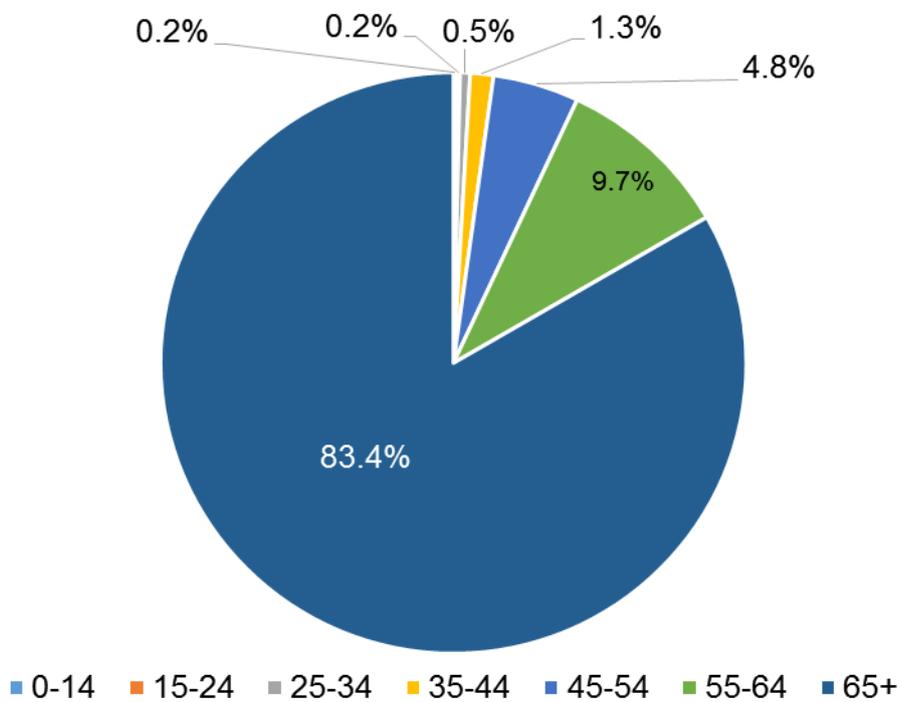


Figure 94 Distribution of tuberculosis mortality by age group, 2016

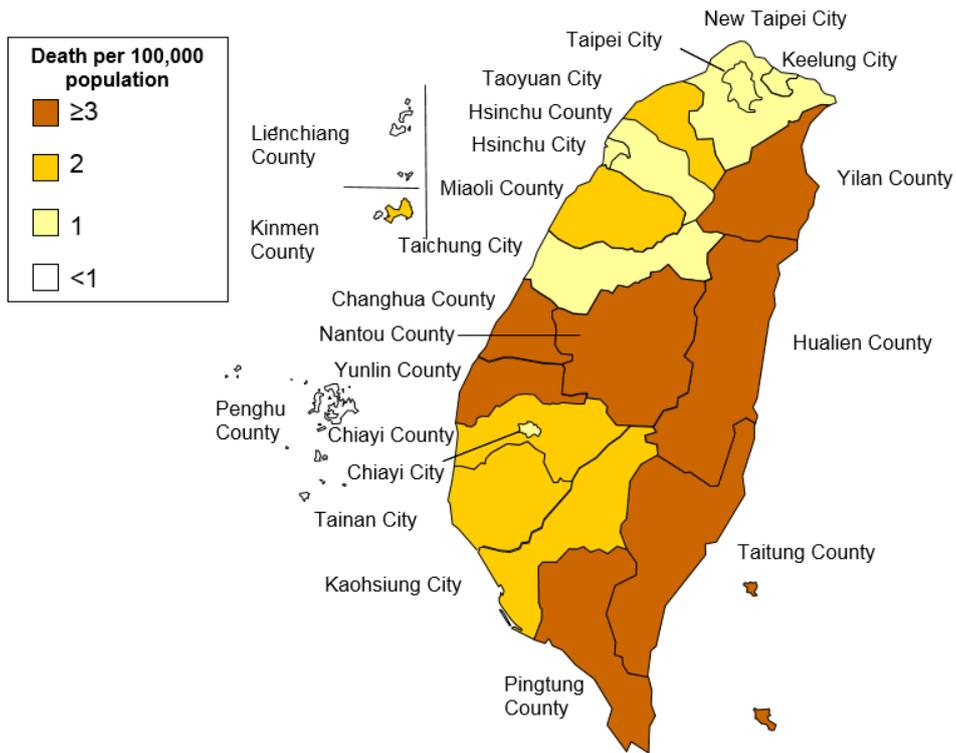


Figure 95 Geographical distribution by mortality of confirmed tuberculosis cases, 2016

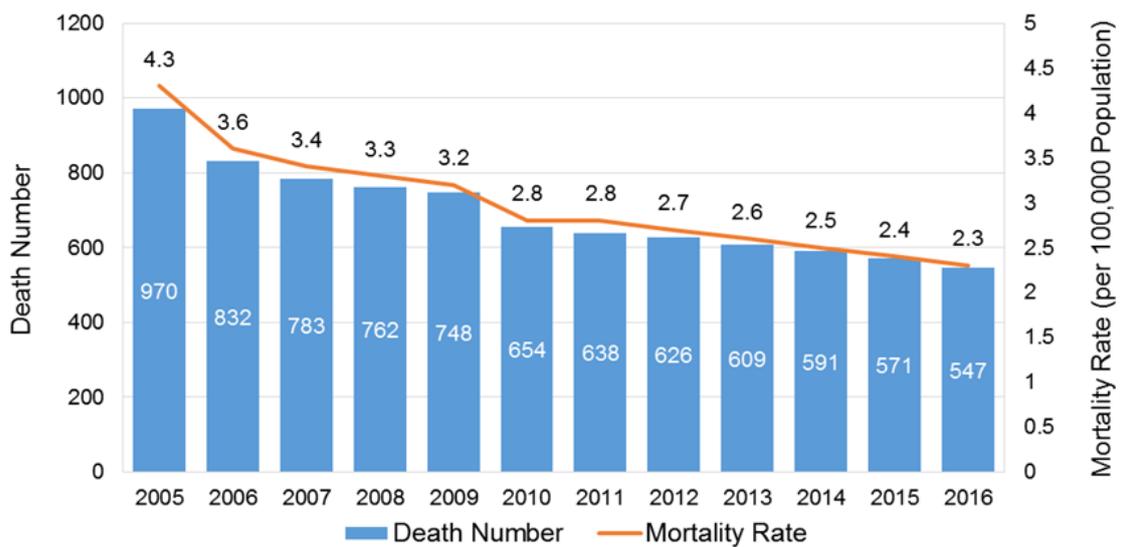


Figure 96 Trend of tuberculosis mortality rate by year, 2005-2016

Table 32 Confirmed tuberculosis cases — by geographical distribution, 2016

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	10328	23,515,945	43.9	7215	11,715,659	61.6	3113	11,800,286	26.4
Taipei City	797	2,700,257	29.5	560	1,292,486	43.3	237	1,407,771	16.8
New Taipei City	1558	3,974,926	39.2	1068	1,951,848	54.7	490	2,023,078	24.2
Keelung City	173	372,103	46.5	109	186,733	58.4	64	185,370	34.5
Yilan County	232	457,827	50.7	177	231,969	76.3	55	225,858	24.4
Kinmen County	30	133,956	22.4	21	67,081	31.3	9	66,875	13.5
Lienchiang County	4	12,571	31.8	3	7,175	41.8	1	5,396	18.5
Taoyuan City	698	2,126,772	32.8	506	1,062,283	47.6	192	1,064,489	18.0
Hsinchu City	119	435,699	27.3	88	215,501	40.8	31	220,198	14.1
Hsinchu County	180	544,762	33.0	139	278,724	49.9	41	266,038	15.4
Miaoli County	179	561,550	31.9	141	289,597	48.7	38	271,953	14.0
Taichung City	1125	2,755,842	40.8	765	1,361,663	56.2	360	1,394,179	25.8
Changhua County	632	1,288,109	49.1	427	657,655	64.9	205	630,454	32.5
Nantou County	327	507,327	64.5	227	260,185	87.2	100	247,142	40.5
Yunlin County	427	697,253	61.2	292	362,406	80.6	135	334,847	40.3
Chiayi City	116	270,120	42.9	79	131,659	60.0	37	138,461	26.7
Chiayi County	249	517,580	48.1	191	269,395	70.9	58	248,185	23.4
Tainan City	870	1,885,787	46.1	602	943,443	63.8	268	942,344	28.4
Kaohsiung City	1563	2,779,144	56.2	1096	1,380,016	79.4	467	1,399,128	33.4
Pingtung County	646	838,522	77.0	443	429,336	103.2	203	409,186	49.6
Penghu County	19	102,783	18.5	14	52,960	26.4	5	49,823	10.0
Hualien County	237	331,428	71.5	159	168,855	94.2	78	162,573	48.0
Taitung County	147	221,627	66.3	108	114,689	94.2	39	106,938	36.5

Table 33 Confirmed tuberculosis cases — by age & sex, 2016

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	10,328	23,515,945	43.9	7215	11,715,659	61.6	3,113	11,800,286	26.4
0-4	9	1,057,759	0.9	6	547,929	1.1	3	509,830	0.6
5-9	19	974,392	1.9	11	508,158	2.2	8	466,234	1.7
10-14	22	1,132,679	1.9	8	592,189	1.4	14	540,490	2.6
15-19	145	1,467,306	9.9	78	764,212	10.2	67	703,094	9.5
20-24	218	1,606,056	13.6	123	834,006	14.7	95	772,050	12.3
25-29	196	1,594,232	12.3	104	823,974	12.6	92	770,258	11.9
30-34	281	1,842,745	15.2	144	921,907	15.6	137	920,838	14.9
35-39	313	2,026,123	15.4	186	1,002,468	18.6	127	1,023,655	12.4
40-44	332	1,807,393	18.4	238	890,533	26.7	94	916,860	10.3
45-49	494	1,829,560	27.0	356	907,250	39.2	138	922,310	15.0
50-54	697	1,871,483	37.2	514	925,408	55.5	183	946,075	19.3
55-59	841	1,747,001	48.1	608	856,364	71.0	233	890,637	26.2
60-64	960	1,536,874	62.5	711	744,491	95.5	249	792,383	31.4
65+	5,801	3,022,342	191.9	4128	1,396,770	295.5	1,673	1,625,572	102.9

Table 34 Confirmed tuberculosis cases — by aboriginal locality / township, 2016

Locality	Township	Tuberculosis	Midyear population	Per 100,000 population
Total		271	200,490	135.2
New Taipei City	Wulai District	4	6,199	64.5
Yilan County	Datong Township	4	6,081	65.8
Yilan County	Nanao Township	18	5,994	300.3
Taoyuan City	Fusing District	11	11,061	99.4
Hsinchu County	Wufong Township	7	4,589	152.5
Hsinchu County	Jianshih Township	4	9,415	42.5
Miaoli County	Taian Township	6	5,987	100.2
Taichung City	Heping District	13	10,760	120.8
Nantou County	Renai Township	50	15,740	317.7
Nantou County	Sinyi Township	23	16,453	139.8
Chiayi County	Alishan Township	5	5,693	87.8
Kaohsiung City	Namasia District	2	3,140	63.7
Kaohsiung City	Maolin District	2	1,893	105.7
Kaohsiung City	Taoyuan District	5	4,229	118.2
Pingtung County	Sandimen Township	16	7,681	208.3
Pingtung County	Mudan Township	5	4,810	104.0
Pingtung County	Laiyi Township	6	7,532	79.7
Pingtung County	Chunrih Township	6	4,830	124.2
Pingtung County	Taiwu Township	8	5,240	152.7
Pingtung County	Shihzih Township	0	4,816	0.0
Pingtung County	Majia Township	9	6,771	132.9
Pingtung County	Wutai Township	4	3,307	121.0
Hualien County	Sioulin Township	26	15,731	165.3
Hualien County	Jhuosi Township	8	6,037	132.5
Hualien County	Wanrong Township	9	6,430	140.0
Taitung County	Yanping Township	10	3,549	281.8
Taitung County	Jinfong Township	2	3,599	55.6
Taitung County	Haiduan Township	6	4,303	139.4
Taitung County	Daren Township	2	3,556	56.2
Taitung County	Lanyu Township	0	5,064	0.0

Table 35 Mortality of Tuberculosis — by geographical distribution, 2016

Locality	Midyear population	Number of Death	Per 100,000 population
Taiwan	23,515,945	547	2.3
Taipei City	2,700,257	54	2.0
New Taipei City	3,974,926	57	1.4
Keelung City	372,103	6	1.6
Yilan County	457,827	15	3.3
Kinmen County	133,956	4	3.0
Lienchiang County	12,571	0	0.0
Taoyuan City	2,126,772	55	2.6
Hsinchu City	435,699	6	1.4
Hsinchu County	544,762	7	1.3
Miaoli County	561,550	13	2.3
Taichung City	2,755,842	41	1.5
Changhua County	1,288,109	50	3.9
Nantou County	507,327	16	3.2
Yunlin County	697,253	24	3.4
Chiayi City	270,120	4	1.5
Chiayi County	517,580	12	2.3
Tainan City	1,885,787	48	2.5
Kaohsiung City	2,779,144	76	2.7
Pingtung County	838,522	35	4.2
Penghu County	102,783	1	1.0
Hualien County	331,428	16	4.8
Taitung County	221,627	7	3.2

Table 36 Mortality of Tuberculosis — by age & sex, 2016

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	547	23,515,945	2.3	415	11,715,659	3.5	132	11,800,286	1.1
0-4	1	1,057,759	0.1	1	547,929	0.2	-	509,830	-
5-9	-	974,392	-	-	508,158	-	-	466,234	-
10-14	-	1,132,679	-	-	592,189	-	-	540,490	-
15-19	-	1,467,306	-	-	764,212	-	-	703,094	-
20-24	1	1,606,056	0.1	-	834,006	-	1	772,050	0.1
25-29	2	1,594,232	0.1	-	823,974	-	2	770,258	0.3
30-34	1	1,842,745	0.1	1	921,907	0.1	-	920,838	-
35-39	5	2,026,123	0.2	3	1,002,468	0.3	2	1,023,655	0.2
40-44	2	1,807,393	0.1	2	890,533	0.2	-	916,860	-
45-49	13	1,829,560	0.7	10	907,250	1.1	3	922,310	0.3
50-54	13	1,871,483	0.7	10	925,408	1.1	3	946,075	0.3
55-59	25	1,747,001	1.4	23	856,364	2.7	2	890,637	0.2
60-64	28	1,536,874	1.8	22	744,491	3.0	6	792,383	0.8
65+	456	3,022,342	15.1	343	1,396,770	24.6	113	1,625,572	7.0

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 / Dengue Hemorrhagic Fever / Dengue Shock Syndrome (Removed on 2015.03.23), Meningococcal Meningitis, Paratyphoid Fever, Poliomyelitis (AFP), Shigellosis, Amoebiasis, Malaria, Measles, Acute Hepatitis A, Enterohaemorrhagic <i>E. coli</i> 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, Legionellosis, Invasive <i>Haemophilus Influenzae</i> Type b Infection, Syphilis, Gonorrhoea, 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
	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" was amended with 77 articles and promulgated on July 18, 2007.
2. "Categories of Communicable Diseases and Preventive measures for Category IV and V Communicable Diseases" were announced by the Department of Health, the Executive Yuan, on October 9, 2007.
3. The "HIV Infection Control and Patient Rights Protection Act" was amended with 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" was promulgated on August 13, 2008.
5. "Categories of Communicable Diseases and Preventive measures for Category IV and V Communicable Diseases" were announced and amended by the Department of Health, the Executive Yuan, on October 24, 2008.
6. "Categories of Communicable Diseases and Preventive measures for Category IV and V Communicable Diseases" were announced and amended by the Department of Health, the Executive Yuan, on June 19, 2009.
7. "Categories of Communicable Diseases and Preventive measures for Category IV and V Communicable Diseases" were announced and amended by the Department of Health, the Executive Yuan, on September 9, 2010.
8. According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Category IV Notifiable Communicable Disease "Severe Complicated Influenza" was renamed to "Complicated Influenza".
9. According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, "Brucellosis" was included in the list of Category IV Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.
10. According to the 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" was included in the list of Category V Notifiable Communicable Diseases.
11. According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, "Anthrax" was changed from the list of Category I Notifiable Communicable Diseases to Category II.
12. According to the 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" was renamed to "Novel Coronavirus Infections" in the list of Category V Notifiable Communicable Disease.
13. According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, "H7N9 Influenza" was included in the list of Category V Notifiable Communicable Diseases.
14. According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of Health, "Novel Coronavirus Infection" was renamed to "Middle East Respiratory Syndrome Coronavirus Infections" in the list of Category V Notifiable Communicable Disease. "Cat-Scratch Disease" and "NDM-1 Enterobacteriaceae" were removed from the list of Category IV Notifiable Communicable Disease.
15. According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, "Varicella" was renamed to "Complicated varicella" in the list of Category IV Notifiable Communicable Disease.
16. According to the 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" was included in the list of Category V Notifiable Communicable Diseases. "H5N1 Influenza" in the list of Category I Notifiable Communicable Disease and "H7N9 Influenza" in the list of Category V were removed.
17. According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated August 1, 2014 of the Department of Health, "Complicated Influenza" was renamed to "Severe Complicated Influenza" in the list of Category IV Notifiable Communicable Disease.
18. According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated August 8, 2014 of the Department of Health, "Ebola Haemorrhagic Fever" was renamed to "Ebola Virus Disease" in the list of Category V Notifiable Communicable Disease.
19. According to Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1040200233 dated March 23, 2015, "dengue hemorrhagic fever / dengue shock syndrome" was removed from Category II Notifiable Communicable Diseases.
20. According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100083 dated January 22, 2016, "Zika virus infection" was included in Category II Notifiable Communicable Diseases.
21. According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100179 dated February 2, 2016, "Zika virus infection" was changed from Category II Notifiable Communicable Diseases to Category V.
22. According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100423 dated April 1, 2016, "Congenital Syphilis" was included in Category III Notifiable Communicable Diseases.
23. According to the Ministry of Health and Welfare's Bulletin No. Bing-Guan-Man-Zi-1050300358 dated April 1, 2016, the notification definition of "Syphilis" was revised and "Congenital Syphilis" was added.

Reply Letter

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 Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100423 dated April 1, 2016, "Congenital Syphilis" was included in Category III Notifiable Communicable Diseases.
- (2) According to the Ministry of Health and Welfare's Bulletin No. Bing-Guan-Man-Zi-1050300358 dated April 1, 2016, the notification definition of "Syphilis" was revised and "Congenital Syphilis" was added.
- (3) According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100179 dated February 2, 2016, "Zika virus infection" was changed from Category II Notifiable Communicable Diseases to Category V.
- (4) According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1050100083 dated January 22, 2016, "Zika virus infection" was included in Category II Notifiable Communicable Diseases.
- (5) According to the Ministry of Health and Welfare's Bulletin No. Bu-So-Ji-Zi-1040200233 dated March 23, 2015, "dengue hemorrhagic fever / dengue shock syndrome" was removed from Category II Notifiable Communicable Diseases.
- (6) According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated August 8, 2014 of the Department of Health, "Ebola Haemorrhagic Fever" was renamed to "Ebola Virus Disease" in the list of Category V Notifiable Communicable Disease.
- (7) According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated August 1, 2014 of the Department of Health, "Complicated Influenza" was renamed to "Severe Complicated Influenza" in the list of Category IV Notifiable Communicable Disease.
- (8) According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030100927 dated June 27, 2014 of the Department of Health, "Novel Influenza A Virus infections" was included in the list of Category V Notifiable Communicable Diseases. "H5N1 Influenza" in the list of Category I Notifiable Communicable Disease and "H7N9 Influenza" in the list of Category V were removed.
- (9) According to the Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, "Varicella" was renamed to "Complicated varicella" in the list of Category IV Notifiable Communicable Disease.
- (10) According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of

Health, "Novel Coronavirus Infection" was renamed to "Middle East Respiratory Syndrome Coronavirus Infections" in the list of Category V Notifiable Communicable Disease. "Cat-Scratch Disease" and "NDM-1 Enterobacteriaceae" were removed from the list of Category IV Notifiable Communicable Disease

- (11) According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, "H7N9 Influenza" was included in the list of Category V Notifiable Communicable Diseases.
- (12) According to the 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" was renamed to "Novel Coronavirus Infections" in the list of Category V Notifiable Communicable Disease.
- (13) According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, "Anthrax" was changed from the list of Category I Notifiable Communicable Diseases to Category II.
- (14) According to the 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" was included in the list of Category V Notifiable Communicable Diseases.
- (15) According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, "Brucellosis" was included in the list of Category IV Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.
- (16) According to the Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Category IV Notifiable Communicable Disease "Severe Complicated Influenza" was renamed to "Complicated Influenza."
- (17) According "Categories of Communicable Diseases and Prophylaxis of Category IV and V" were announced and amended by the Department of Health, the Executive Yuan, on September 9, 2010.
- (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 I notifiable communicable diseases. Any influenza A (H1N1) cases with severe complications should be reported in accordance with regulations applicable to Category IV notifiable communicable diseases, and subject to that category's corresponding prevention and control measures.
- (19) Leprosy "Categories of Communicable Diseases and Prophylaxis of Category IV and V" were announced and amended by the Department of Health, the Executive Yuan, 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-mentioned the serological test items has been tagged negative were unspecified. 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 count / 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

2016 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	1	2	3	4	5	6	7	week 5	29	30	31	1	2	3	4	week 9	26	27	28	1	2	3	4
week 2	8	9	10	11	12	13	14	week 6	5	6	7	8	9	10	11	week 10	5	6	7	8	9	10	11
week 3	15	16	17	18	19	20	21	week 7	12	13	14	15	16	17	18	week 11	12	13	14	15	16	17	18
week 4	22	23	24	25	26	27	28	week 8	19	20	21	22	23	24	25	week 12	19	20	21	22	23	24	25
w	29	30	31	2	2	3	3	26	27	28					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 13	26	27	28	29	30	31	1	week 18	30	1	2	3	4	5	6	week 22	28	29	30	31	1	2	3
week 14	2	3	4	5	6	7	8	week 19	7	8	9	10	11	12	13	week 23	4	5	6	7	8	9	10
week 15	9	10	11	12	13	14	15	week 20	14	15	16	17	18	19	20	week 24	11	12	13	14	15	16	17
week 16	16	17	18	19	20	21	22	week 21	21	22	23	24	25	26	27	week 25	18	19	20	21	22	23	24
week 17	23	24	25	26	27	28	29	w	28	29	30	31	2	2	3	25	26	27	28	29	30		
	30							3															

	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 26	25	26	27	28	29	30	1	week 31	30	31	1	2	3	4	5	week 35	27	28	29	30	31	1	2
week 27	2	3	4	5	6	7	8	week 32	6	7	8	9	10	11	12	week 36	3	4	5	6	7	8	9
week 28	9	10	11	12	13	14	15	week 33	13	14	15	16	17	18	19	week 37	10	11	12	13	14	15	16
week 29	16	17	18	19	20	21	22	week 34	20	21	22	23	24	25	26	week 38	17	18	19	20	21	22	23
week 30	23	24	25	26	27	28	29	w	27	28	29	30	2	2	2	week 39	24	25	26	27	28	29	30
	30	31						3	3														

	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	1	2	3	4	5	6	7	week 44	29	30	31	1	2	3	4	week 48	26	27	28	29	30	1	2
week 41	8	9	10	11	12	13	14	week 45	5	6	7	8	9	10	11	week 49	3	4	5	6	7	8	9
week 42	15	16	17	18	19	20	21	week 46	12	13	14	15	16	17	18	week 50	10	11	12	13	14	15	16
week 43	22	23	24	25	26	27	28	week 47	19	20	21	22	23	24	25	week 51	17	18	19	20	21	22	23
w	29	30	31	2	2	3	3	26	27	28	29	30			week 52	24	25	26	27	28	29	30	
															week 53	31	1	2	3	4	5	6	

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
Public Health Bureau, Chiayi City
Chiayi County Health Bureau
Department of Health, Tainan City Government
Department of Health, Kaohsiung City Government
Public Health Bureau, Pingtung County Government
Public Health Bureau, Penghu County
Hualien County Health Bureau
Public Health Bureau, Taitung County

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Division of Chronic Infectious Diseases:

Shiang-Lin Yang, Hsiu-Yun Lo, Po-Wei Chu, Jheng-Cyun Huang, Shiuan-Bei Wu

Division of Preparedness and Emerging Infectious Diseases:

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Division of Quarantine:

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