

Statistics
of
Communicable Diseases and
Surveillance Report
2022

Annual
December 2023

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

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Surveillance Report
Republic of China
2022

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

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Explanatory Notes

1. The scope of this year's report includes notifiable statutory infectious diseases* and other related infectious diseases. The data source is from medical institutions and physicians who report directly through the infectious disease reporting system or send the 'Communicable and Emerging Infectious Disease Report Form' ** by mail/fax to their local health authorities, who then complete the online reporting on their behalf.
2. Definitions of related terms :
 - (1) Notifiable diseases: Communicable diseases listed in Article 3, Communicable disease Control Act.
 - (2) Reported cases: When a physician diagnoses a patient with an infectious disease or suspects an infectious disease during treatment, the case is reported using the 'Communicable and Emerging Infectious Disease Report Form' and the statistics are recorded.
 - (3) Confirmed cases: For most notifiable infectious diseases, reported cases are considered confirmed when diagnosed or tested positive by the Taiwan CDC's laboratory or verified institutions. However, for some diseases, diagnosis is based on clinical and epidemiological criteria, and a few diseases require expert committee review for determination. Detailed definitions for the diagnosis of each disease can be found in the 'Case definition for Notifiable Communicable Diseases'.
 - (4) Unspecified hepatitis: The statistics under unspecified hepatitis category include cases of non-A, non-B hepatitis that cannot be clearly classified as hepatitis C, D, or E.
3. Analysis standards:
 - (1) By locality: For determining the residence of confirmed cases or the stationed location of military cases; all tables for daily distance analysis are categorized based on the reporting city or county as the regional analysis reference.
 - (2) By age group: To determine the actual age of confirmed cases on the day of onset; for syphilis, congenital syphilis, gonorrhea, HIV, AIDS, Hansen's disease, and Creutzfeldt-Jakob disease, it is based on the diagnosis date; for tuberculosis, it is based on the notification creatdate; for MDR-TB, it is based on the age on the CDC's registration date ***.
 - (3) By month: To determine the actual month of onset for confirmed cases; for syphilis, congenital syphilis, gonorrhea, HIV, AIDS, Hansen's disease, and Creutzfeldt-Jakob disease, it is based on the diagnosis month; for tuberculosis, it is based on the month of notification creatdate; for MDR-TB, it is based on the CDC's registration month***.
 - (4) By year: To determine the actual year of onset for confirmed cases; for syphilis, congenital syphilis, gonorrhea, HIV, AIDS, Hansen's disease, and Creutzfeldt-Jakob

disease, it is based on the diagnosis year; for tuberculosis, it is based on the year of notification creatdate; for MDR-TB, it is based on the CDC's registration year***.

- (5) By week: The epidemic week as in Appendix 3.
 - (6) In the 1999 surveillance annual report, pulmonary tuberculosis was categorized as either simple open pulmonary tuberculosis or non-open pulmonary tuberculosis, excluding cases of pulmonary tuberculosis combined with extrapulmonary tuberculosis. In order to comply with amendments to the Infectious Diseases Prevention and Control Act in 1999 and to strengthen the management of open pulmonary tuberculosis, the tuberculosis surveillance report changed from 2000 onwards to be based on open pulmonary tuberculosis (including simple open pulmonary tuberculosis and cases of pulmonary tuberculosis with concurrent extrapulmonary tuberculosis) and other forms of tuberculosis (tuberculosis cases excluding the aforementioned open pulmonary tuberculosis cases). In line with international indicators, starting in 2006, classification was based on smear-positive tuberculosis and other tuberculosis cases. To align with updated definitions by the WHO and to maintain consistency in baseline comparisons over the years, starting in 2014, the tuberculosis statistics in this annual report were no longer classified and were instead reported as total numbers.
 - (7) Starting from 2002, the analysis of HIV and AIDS is based on data from cases with local nationality. Prior to 2002, the analysis data included both local and foreign nationality cases.
 - (8) From 2000 to 2005, mumps and varicella were reported using simple and secondary data. Starting from January 1, 2006, detailed reporting is required for mumps and varicella.
 - (9) Mid-Year Population: The data source for calculating disease incidence rates is the Ministry of the Interior's mid-year population.
 - (10) Starting from 2002, historical data will no longer be modified. This (2022) annual report is based on data entered prior to May 1, 2023, for analysis.
5. Symbols: “-” Indicates no reported cases; “...” Indicates not under surveillance.
 6. Due to rounding of data, the sum of categories may slightly differ from the total count.

* Appendix 1: Classification of communicable diseases.

** Appendix 2: Communicable and Emerging Infectious Disease Report Form.

*** CDC's registration date is the date when a confirmed report is received, and the annotation is completed in the “Tuberculosis Tracking Management System” for cases of MDR-TB.

PART I

Summary Tables and Graphs for Confirmed Cases

© **Abbreviations and Symbols Used in Table**

- No reported cases
- ... Not under surveillance

Table 1 Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Midyear population	Category I				Category II	
		Smallpox	Plague	SARS	Rabies	Diphtheria	Typhoid ¹ Fever
Total	23,319,977	-	-	-	-	-	5
Taipei Area							
Taipei City	2,502,537	-	-	-	-	-	1
New Taipei City	4,001,832	-	-	-	-	-	2
Keelung City	362,752	-	-	-	-	-	-
Yilan County	449,877	-	-	-	-	-	-
Kinmen County	141,417	-	-	-	-	-	-
Lienchiang County	13,814	-	-	-	-	-	-
Northern Area							
Taoyuan City	2,276,928	-	-	-	-	-	-
Hsinchu City	452,557	-	-	-	-	-	-
Hsinchu County	578,042	-	-	-	-	-	-
Miaoli County	536,655	-	-	-	-	-	-
Central Area							
Taichung City	2,813,975	-	-	-	-	-	-
Changhua County	1,250,285	-	-	-	-	-	-
Nantou County	482,246	-	-	-	-	-	-
Southern Area							
Yunlin County	667,112	-	-	-	-	-	-
Chiayi City	263,826	-	-	-	-	-	-
Chiayi County	490,737	-	-	-	-	-	-
Tainan City	1,857,528	-	-	-	-	-	-
Kao-Ping Area							
Kaohsiung City	2,736,414	-	-	-	-	-	2
Pingtung County	801,572	-	-	-	-	-	-
Penghu County	106,782	-	-	-	-	-	-
Eastern Area							
Hualien County	320,125	-	-	-	-	-	-
Taitung County	212,969	-	-	-	-	-	-

Note: ¹3 cases of Typhoid Fever were imported.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Category II						
	Dengue ¹ Fever	Meningococcal Meningitis	Paratyphoid Fever	Poliomyelitis	Acute ² Flaccid Paralysis	Shigellosis ¹	Amoebiasis ¹
Total	88	1	6	-	38	92	216
Taipei Area							
Taipei City	7	-	1	-	2	17	18
New Taipei City	11	-	1	-	6	24	45
Keelung City	1	-	-	-	-	-	7
Yilan County	2	-	-	-	-	-	-
Kinmen County	-	-	-	-	-	1	2
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	11	-	1	-	10	12	11
Hsinchu City	1	-	-	-	1	7	5
Hsinchu County	3	1	-	-	2	1	5
Miaoli County	3	-	-	-	2	2	2
Central Area							
Taichung City	8	-	1	-	4	12	40
Changhua County	3	-	-	-	1	1	10
Nantou County	2	-	-	-	-	1	5
Southern Area							
Yunlin County	1	-	-	-	-	1	1
Chiayi City	1	-	-	-	1	-	-
Chiayi County	1	-	-	-	-	-	4
Tainan City	6	-	-	-	1	10	13
Kao-Ping Area							
Kaohsiung City	26	-	2	-	5	-	28
Pingtung County	-	-	-	-	1	-	12
Penghu County	-	-	-	-	-	2	2
Eastern Area							
Hualien County	1	-	-	-	2	1	3
Taitung County	-	-	-	-	-	-	3

Note: ¹ The total case number of the following diseases includes imported cases: Dengue Fever (68), Shigellosis (12) and Amoebiasis (78).

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

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Midyear population	Category II						
		Malaria ¹		Measles	Acute Hepatitis A ¹	Enterohaemorrhagic E. coli Infection	Hantavirus Syndrome	Cholera
		Indigenous	Imported					
Total	23,319,977	-	2	1	122	2	5	2
Taipei Area								
Taipei City	2,502,537	-	-	-	10	-	1	-
New Taipei City	4,001,832	-	-	1	19	-	1	-
Keelung City	362,752	-	-	-	-	-	-	-
Yilan County	449,877	-	-	-	3	-	-	-
Kinmen County	141,417	-	-	-	-	-	-	-
Lienchiang	13,814	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	2,276,928	-	-	-	40	-	1	-
Hsinchu City	452,557	-	-	-	1	-	-	-
Hsinchu County	578,042	-	-	-	4	-	-	-
Miaoli County	536,655	-	-	-	-	-	-	-
Central Area								
Taichung City	2,813,975	-	1	-	19	1	-	-
Changhua County	1,250,285	-	1	-	6	1	1	-
Nantou County	482,246	-	-	-	1	-	-	1
Southern Area								
Yunlin County	667,112	-	-	-	1	-	-	-
Chiayi City	263,826	-	-	-	-	-	-	-
Chiayi County	490,737	-	-	-	1	-	-	1
Tainan City	1,857,528	-	-	-	8	-	-	-
Kao-Ping Area								
Kaohsiung City	2,736,414	-	-	-	3	-	1	-
Pingtung County	801,572	-	-	-	4	-	-	-
Penghu County	106,782	-	-	-	-	-	-	-
Eastern Area								
Hualien County	320,125	-	-	-	1	-	-	-
Taitung County	212,969	-	-	-	1	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: Malaria (2) and Acute Hepatitis A (2).

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Category II							
	Rubella	MDR-TB ³	Chikungunya ¹ Fever	West Nile Fever	Epidemic Typhus Fever	Anthrax	Zika Virus Infection	Mpox ^{1,7}
Total	-	64	1	-	-	-	-	4
Taipei Area								
Taipei City	-	4	-	-	-	-	-	1
New Taipei City	-	9	1	-	-	-	-	1
Keelung City	-	1	-	-	-	-	-	-
Yilan County	-	2	-	-	-	-	-	-
Kinmen County	-	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-	-
Northern Area								
Taoyuan City	-	4	-	-	-	-	-	-
Hsinchu City	-	-	-	-	-	-	-	-
Hsinchu County	-	1	-	-	-	-	-	-
Miaoli County	-	1	-	-	-	-	-	-
Central Area								
Taichung City	-	10	-	-	-	-	-	-
Changhua County	-	7	-	-	-	-	-	-
Nantou County	-	1	-	-	-	-	-	-
Southern Area								
Yunlin County	-	-	-	-	-	-	-	-
Chiayi City	-	1	-	-	-	-	-	-
Chiayi County	-	2	-	-	-	-	-	-
Tainan City	-	5	-	-	-	-	-	1
Kao-Ping Area								
Kaohsiung City	-	12	-	-	-	-	-	1
Pingtung County	-	2	-	-	-	-	-	-
Penghu County	-	-	-	-	-	-	-	-
Eastern Area								
Hualien County	-	1	-	-	-	-	-	-
Taitung County	-	1	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: Chikungunya Fever (1) and Mpox (4).

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

⁷ Mpox has been included in Category II notifiable disease since June 23, 2022.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Midyear population	Category III					
		Pertussis	Tetanus ⁴	Japanese Encephalitis	Tuberculosis ³	Congenital Rubella Syndrome	Acute Hepatitis B
Total	23,319,977	2	9	19	6,576	-	104
Taipei Area							
Taipei City	2,502,537	-	1	-	506	-	13
New Taipei City	4,001,832	1	1	2	1,076	-	13
Keelung City	362,752	-	-	-	101	-	3
Yilan County	449,877	-	-	-	141	-	4
Kinmen County	141,417	-	-	-	12	-	-
Lienchiang County	13,814	-	-	-	1	-	-
Northern Area							
Taoyuan City	2,276,928	-	2	-	456	-	20
Hsinchu City	452,557	1	-	-	81	-	2
Hsinchu County	578,042	-	-	1	112	-	-
Miaoli County	536,655	-	-	1	121	-	2
Central Area							
Taichung City	2,813,975	-	-	-	690	-	17
Changhua County	1,250,285	-	-	2	401	-	2
Nantou County	482,246	-	-	1	195	-	5
Southern Area							
Yunlin County	667,112	-	-	2	291	-	2
Chiayi City	263,826	-	-	-	72	-	-
Chiayi County	490,737	-	-	2	131	-	1
Tainan City	1,857,528	-	3	4	545	-	6
Kao-Ping Area							
Kaohsiung City	2,736,414	-	2	1	999	-	9
Pingtung County	801,572	-	-	1	379	-	2
Penghu County	106,782	-	-	-	16	-	1
Eastern Area							
Hualien County	320,125	-	-	-	146	-	2
Taitung County	212,969	-	-	2	104	-	-

Note: ³The caseload calculation of tuberculosis was based on notification creatdate.

⁴Calculation for tetanus was based on reported cases only.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Category III						
	Acute Hepatitis				Mumps ⁴	Legionnaires ¹ Disease	Invasive Haemophilus Influenzae Type b Infection
	C ¹	D	E	Un- specified			
Total	506	-	11	-	306	383	2
Taipei Area							
Taipei City	62	-	1	-	24	33	-
New Taipei City	105	-	4	-	29	63	1
Keelung City	8	-	-	-	3	8	-
Yilan County	15	-	-	-	7	13	-
Kinmen County	2	-	-	-	-	1	-
Lienchiang County	-	-	-	-	-	-	-
Northern Area							
Taoyuan City	50	-	-	-	35	71	-
Hsinchu City	9	-	1	-	4	2	-
Hsinchu County	15	-	-	-	2	5	-
Miaoli County	16	-	-	-	14	4	-
Central Area							
Taichung City	41	-	1	-	44	14	-
Changhua County	12	-	-	-	7	20	1
Nantou County	7	-	-	-	23	4	-
Southern Area							
Yunlin County	8	-	1	-	4	16	-
Chiayi City	7	-	-	-	1	7	-
Chiayi County	12	-	-	-	4	10	-
Tainan City	50	-	1	-	20	16	-
Kao-Ping Area							
Kaohsiung City	58	-	1	-	60	52	-
Pingtung County	18	-	1	-	9	31	-
Penghu County	1	-	-	-	2	-	-
Eastern Area							
Hualien County	6	-	-	-	11	10	1
Taitung County	4	-	-	-	3	3	-

Note: ¹The total case number of the following diseases includes imported cases: Acute Hepatitis C (2) and Legionnaires' Disease (2).

⁴Calculation for mumps was based on reported cases only.

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Midyear population	Category III							
		Syphilis ⁵	Congenital ⁵ syphilis	Gonorrhea ⁵	Neonatal Tetanus	Enteroviruses Infection with Severe Complications	HIV ⁶ Infection	AIDS ⁶	Hansen's ^{1,5} Disease
Total	23,319,977	9,707	-	8,015	-	3	1,069	657	8
Taipei Area									
Taipei City	2,502,537	1,233	-	1,150	-	-	119	72	-
New Taipei City	4,001,832	2,124	-	1,812	-	3	230	159	1
Keelung City	362,752	126	-	190	-	-	10	9	-
Yilan County	449,877	231	-	124	-	-	15	10	-
Kinmen County	141,417	11	-	16	-	-	2	-	-
Lienchiang County	13,814	2	-	-	-	-	-	-	-
Northern Area									
Taoyuan City	2,276,928	1,053	-	1,108	-	-	119	59	-
Hsinchu City	452,557	179	-	164	-	-	33	17	-
Hsinchu County	578,042	168	-	286	-	-	27	11	1
Miaoli County	536,655	162	-	231	-	-	22	8	1
Central Area									
Taichung City	2,813,975	1,125	-	692	-	-	128	86	1
Changhua County	1,250,285	323	-	234	-	-	31	29	-
Nantou County	482,246	163	-	166	-	-	12	12	1
Southern Area									
Yunlin County	667,112	177	-	136	-	-	15	15	-
Chiayi City	263,826	81	-	69	-	-	12	7	-
Chiayi County	490,737	97	-	86	-	-	14	4	1
Tainan City	1,857,528	709	-	309	-	-	80	47	1
Kao-Ping Area									
Kaohsiung City	2,736,414	1,193	-	859	-	-	135	78	1
Pingtung County	801,572	284	-	114	-	-	28	18	-
Penghu County	106,782	23	-	7	-	-	3	1	-
Eastern Area									
Hualien County	320,125	153	-	161	-	-	20	7	-
Taitung County	212,969	90	-	101	-	-	14	8	-

Note:¹The total case number of the following diseases includes imported cases: Hansen's Disease (7).

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

⁶The 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, 2022

Unit: Person

Area / Locality	Category IV								
	Herpesvirus B Infection	Leptospirosis	Melioidosis ¹	Botulism	Invasive Pneumococcal Disease	Q Fever	Endemic Typhus Fever	Lyme Disease	Tularemia
Total	-	71	25	-	200	3	17	-	-
Taipei Area									
Taipei City	-	3	-	-	11	-	-	-	-
New Taipei City	-	10	-	-	37	-	-	-	-
Keelung City	-	-	-	-	2	-	-	-	-
Yilan County	-	-	-	-	6	-	-	-	-
Kinmen County	-	1	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-	-	-
Northern Area									
Taoyuan City	-	9	-	-	17	-	-	-	-
Hsinchu City	-	-	1	-	4	-	-	-	-
Hsinchu County	-	3	-	-	6	-	-	-	-
Miaoli County	-	-	1	-	3	-	-	-	-
Central Area									
Taichung City	-	8	5	-	27	-	2	-	-
Changhua County	-	3	-	-	22	-	2	-	-
Nantou County	-	1	-	-	3	-	-	-	-
Southern Area									
Yunlin County	-	3	-	-	3	1	-	-	-
Chiayi City	-	-	-	-	1	-	-	-	-
Chiayi County	-	3	-	-	2	-	-	-	-
Tainan City	-	2	2	-	25	1	1	-	-
Kao-Ping Area									
Kaohsiung City	-	9	13	-	18	-	9	-	-
Pingtung County	-	11	3	-	8	-	3	-	-
Penghu County	-	-	-	-	1	-	-	-	-
Eastern Area									
Hualien County	-	5	-	-	2	-	-	-	-
Taitung County	-	-	-	-	2	1	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: Melioidosis (2).

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

Unit: Person

Area / Locality	Midyear population	Category IV							
		Scrub Typhus	Complicated Varicella	Toxoplasmosis	Influenza Case with Severe ¹ Complications	Creutzfeldt- ⁵ Jakob Disease	Brucellosis	Listeriosis	Severe Fever with ⁷ Thrombocytopenia Syndrome
Total	23,319,977	276	35	27	22	-	-	149	1
Taipei Area									
Taipei City	2,502,537	19	2	2	3	-	-	16	-
New Taipei City	4,001,832	16	7	4	2	-	-	21	-
Keelung City	362,752	2	1	-	-	-	-	3	-
Yilan County	449,877	4	2	4	-	-	-	3	-
Kinmen County	141,417	23	-	-	-	-	-	-	-
Lienchiang County	13,814	2	-	-	-	-	-	-	-
Northern Area									
Taoyuan City	2,276,928	2	2	1	3	-	-	17	-
Hsinchu City	452,557	4	-	1	-	-	-	7	-
Hsinchu County	578,042	6	2	-	2	-	-	5	-
Miaoli County	536,655	2	-	2	-	-	-	2	-
Central Area									
Taichung City	2,813,975	9	5	1	1	-	-	15	-
Changhua County	1,250,285	5	-	1	2	-	-	5	-
Nantou County	482,246	3	-	-	-	-	-	3	-
Southern Area									
Yunlin County	667,112	3	1	-	-	-	-	5	-
Chiayi City	263,826	1	1	-	-	-	-	1	-
Chiayi County	490,737	4	-	-	-	-	-	5	-
Tainan City	1,857,528	8	4	3	2	-	-	12	-
Kao-Ping Area									
Kaohsiung City	2,736,414	17	5	6	2	-	-	21	-
Pingtung County	801,572	11	1	-	3	-	-	5	-
Penghu County	106,782	31	-	-	-	-	-	-	-
Eastern Area									
Hualien County	320,125	33	2	2	2	-	-	1	-
Taitung County	212,969	71	-	-	-	-	-	2	1

Note: ¹The total case number of the following diseases includes imported cases: Influenza Case with Severe Complications (1).

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

Table 1 (Continued) Number of confirmed cases of notifiable diseases — by locality, 2022

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	Severe ¹ Pneumonia with Novel Pathogens
Total	-	-	-	-	-	-	1	8,856,169
Taipei Area								
Taipei City	-	-	-	-	-	-	-	891,100
New Taipei City	-	-	-	-	-	-	-	1,836,359
Keelung City	-	-	-	-	-	-	-	159,790
Yilan County	-	-	-	-	-	-	-	174,237
Kinmen County	-	-	-	-	-	-	-	23,025
Lienchiang County	-	-	-	-	-	-	-	3,687
Northern Area								
Taoyuan City	-	-	-	-	-	-	-	973,821
Hsinchu City	-	-	-	-	-	-	-	196,985
Hsinchu County	-	-	-	-	-	-	-	244,569
Miaoli County	-	-	-	-	-	-	-	197,875
Central Area								
Taichung City	-	-	-	-	-	-	-	1,090,487
Changhua County	-	-	-	-	-	-	1	422,774
Nantou County	-	-	-	-	-	-	-	145,543
Southern Area								
Yunlin County	-	-	-	-	-	-	-	183,759
Chiayi City	-	-	-	-	-	-	-	86,083
Chiayi County	-	-	-	-	-	-	-	135,024
Tainan City	-	-	-	-	-	-	-	624,588
Kao-Ping Area								
Kaohsiung City	-	-	-	-	-	-	-	985,275
Pingtung County	-	-	-	-	-	-	-	250,341
Penghu County	-	-	-	-	-	-	-	25,305
Eastern Area								
Hualien County	-	-	-	-	-	-	-	132,945
Taitung County	-	-	-	-	-	-	-	72,597

Note:¹The total case number of the following diseases includes imported cases: Severe Pneumonia with Novel Pathogens (37,858).

**Table 2 Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

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	0.08	3	0.06
Dengue Fever ¹	-	-	-	-	5	0.25	17	0.69	32	0.65
Meningococcal Meningitis	-	-	-	-	-	-	-	-	-	-
Paratyphoid Fever	-	-	-	-	1	0.05	3	0.12	1	0.02
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	1	0.71	15	2.15	17	0.84	5	0.20	-	-
Shigellosis ¹	-	-	2	0.29	-	-	18	0.73	57	1.16
Amoebiasis ¹	-	-	-	-	1	0.05	26	1.06	107	2.18
Malaria ¹										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	-	-	-	-	-	-	-	-	-	-
Measles	-	-	-	-	-	-	1	0.04	-	-
Acute Hepatitis A ¹	-	-	-	-	-	-	16	0.65	54	1.10
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	1	0.14	1	0.05	-	-	-	-
Hantavirus Syndrome	-	-	-	-	-	-	-	-	3	0.06
Cholera	-	-	-	-	-	-	-	-	-	-
Rubella	-	-	-	-	-	-	-	-	-	-
MDR-TB ³	-	-	-	-	-	-	4	0.20	6	0.10
Chikungunya Fever ¹	-	-	-	-	-	-	-	-	-	-
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: Typhoid Fever (3), Dengue Fever (68), Shigellosis (12), Amoebiasis (78), Malaria (2), Acute Hepatitis A (2) and Chikungunya Fever (1).

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.

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

**Table 2 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

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	-	-	-	-	-	-	5	0.02
Dengue Fever ¹	27	0.30	7	0.17	-	-	88	0.38
Meningococcal Meningitis	1	0.01	-	-	-	-	1	<0.01
Paratyphoid Fever	1	0.01	-	-	-	-	6	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	-	-	-	-	-	-	38	0.16
Shigellosis ¹	11	0.12	4	0.10	-	-	92	0.39
Amoebiasis ¹	70	0.77	12	0.30	-	-	216	0.93
Malaria ¹	1	0.01	1	0.02	-	-	2	0.01
Indigenous	-	-	-	-	-	-	-	-
Imported	1	0.01	1	0.02	-	-	2	0.01
Measles	-	-	-	-	-	-	1	<0.01
Acute Hepatitis A ¹	33	0.36	19	0.47	-	-	122	0.52
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	2	0.01
Hantavirus Syndrome	2	0.02	-	-	-	-	5	0.02
Cholera	1	0.01	1	0.02	-	-	2	0.01
Rubella	-	-	-	-	-	-	-	-
MDR-TB ³	22	0.20	32	0.80	-	-	64	0.30
Chikungunya Fever ¹	-	-	1	0.02	-	-	1	<0.01
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-

Note: ¹ The total case number of the following diseases includes imported cases: Typhoid Fever (3), Dengue Fever (68), Shigellosis (12), Amoebiasis (78), Malaria (2), Acute Hepatitis A (2) and Chikungunya Fever (1).

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.

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

**Table 2 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

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										
Anthrax	-	-	-	-	-	-	-	-	-	-
Zika Virus Infection	-	-	-	-	-	-	-	-	-	-
Mpox ^{1,7}	-	-	-	-	-	-	1	0.04	2	0.04
Category III										
Pertussis	-	-	-	-	1	0.05	-	-	1	0.02
Tetanus ⁴	-	-	-	-	1	0.05	-	-	-	-
Japanese Encephalitis	-	-	1	0.14	-	-	-	-	-	-
Tuberculosis ³	2	1.40	4	0.50	8	0.40	150	6.10	356	7.30
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis										
B	-	-	-	-	-	-	6	0.24	36	0.73
C ¹	-	-	-	-	-	-	14	0.57	162	3.31
D	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-	-	-	-	-
Mumps ⁴	2	1.42	64	9.17	125	6.20	21	0.85	37	0.75
Legionnaires' Disease ¹	-	-	-	-	-	-	-	-	11	0.22
Invasive Haemophilus Influenzae Type b Infection	-	-	-	-	-	-	-	-	-	-
Syphilis ⁵	-	-	1	0.14	3	0.15	1,238	50.30	4,480	91.41
Congenital Syphilis ⁵	-	-	-	-	-	-	-	-	-	-
Gonorrhea ⁵	-	-	-	-	21	1.04	2,594	105.39	3,986	81.33
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	1	0.71	-	-	1	0.05	-	-	1	0.02
HIV Infection ⁶	-	-	-	-	-	-	212	8.61	582	11.87
AIDS ⁶	-	-	-	-	-	-	54	2.19	323	6.59
Hansen's Disease ^{1,5}	-	-	-	-	-	-	2	0.08	4	0.08

Note:¹The total case number of the following diseases includes imported cases: Mpox (4), Acute Hepatitis C (2), Legionnaires' Disease (2) and Hansen's Disease (7).

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

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

⁷ Mpox has been included in Category II notifiable disease since June 23, 2022.

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

**Table 2 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II								
Anthrax	-	-	-	-	-	-	-	-
Zika Virus Infection	-	-	-	-	-	-	-	-
Mpox ^{1,7}	1	0.01	-	-	-	-	4	0.02
Category III								
Pertussis	-	-	-	-	-	-	2	0.01
Tetanus ⁴	4	0.04	4	0.10	-	-	9	0.04
Japanese Encephalitis	14	0.15	4	0.10	-	-	19	0.08
Tuberculosis ³	1,961	21.60	4,095	102.10	-	-	6,576	28.20
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B	47	0.52	15	0.37	-	-	104	0.45
C ¹	236	2.60	94	2.34	-	-	506	2.17
D	-	-	-	-	-	-	-	-
E	6	0.07	5	0.12	-	-	11	0.05
Unspecified	-	-	-	-	-	-	-	-
Mumps ⁴	41	0.45	16	0.40	-	-	306	1.31
Legionnaires' Disease ¹	163	1.79	209	5.21	-	-	383	1.64
Invasive Haemophilus Influenzae Type b Infection	2	0.02	-	-	-	-	2	0.01
Syphilis ⁵	2,293	25.22	1,692	42.17	-	-	9,707	41.63
Congenital Syphilis ⁵	-	-	-	-	-	-	-	-
Gonorrhea ⁵	1,358	14.94	56	1.40	-	-	8,015	34.37
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	-	-	-	-	-	-	3	0.01
HIV Infection ⁶	263	2.89	12	0.30	-	-	1,069	4.58
AIDS ⁶	267	2.94	13	0.32	-	-	657	2.82
Hansen's Disease ^{1,5}	2	0.02	-	-	-	-	8	0.03

Note:¹The total case number of the following diseases includes imported cases: Mpox (4), Acute Hepatitis C (2), Legionnaires' Disease (2) and Hansen's Disease (7).

³The caseload calculation of tuberculosis was based on notification created 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 caseload calculation of HIV infection and AIDS were based on diagnosis date, and foreign nationality cases were excluded.

⁷ Mpox has been included in Category II notifiable disease since June 23, 2022.

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

**Table 2 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

Unit: Person

Disease	< 1 yr		1-4 yrs		5-14 yrs		15-24 yrs		25-39 yrs	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV										
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-
Leptospirosis	-	-	-	-	-	-	3	0.12	13	0.27
Melioidosis ¹	-	-	-	-	-	-	-	-	1	0.02
Botulism	-	-	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	1	0.71	15	2.15	5	0.25	-	-	12	0.24
Q Fever	-	-	-	-	-	-	-	-	-	-
Endemic Typhus Fever	-	-	-	-	-	-	-	-	4	0.08
Lyme Disease ¹	-	-	-	-	-	-	-	-	-	-
Tularemia	-	-	-	-	-	-	-	-	-	-
Scrub Typhus	-	-	2	0.29	13	0.64	17	0.69	48	0.98
Complicated Varicella	1	0.71	-	-	1	0.05	1	0.04	9	0.18
Toxoplasmosis	2	1.42	-	-	-	-	1	0.04	11	0.22
Influenza Case with Severe Complications ¹	-	-	1	0.14	3	0.15	2	0.08	2	0.04
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-
Listeriosis	4	2.85	-	-	-	-	1	0.04	13	0.27
Severe Fever with Thrombocytopenia Syndrome	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	1	0.05	-	-	-	-
Severe Pneumonia with Novel Pathogens ¹	52,823	37,606.34	331,890	47530.05	998,462	49,531.75	1,149,524	46,702.76	2,359,186	48,134.46

Note: ¹The total case number of the following diseases includes imported cases: Melioidosis (2), Influenza Case with Severe Complications (1) and Severe Pneumonia with Novel Pathogens (37,858).

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

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

**Table 2 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by age group, 2022**

Unit: Person

Disease	40-64 yrs		≥ 65 yrs		Age not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis	38	0.42	17	0.42	-	-	71	0.30
Melioidosis ¹	15	0.17	9	0.22	-	-	25	0.11
Botulism	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	63	0.69	104	2.59	-	-	200	0.86
Q Fever	3	0.03	-	-	-	-	3	0.01
Endemic Typhus Fever	10	0.11	3	0.07	-	-	17	0.07
Lyme Disease ¹	-	-	-	-	-	-	-	-
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus	133	1.46	63	1.57	-	-	276	1.18
Complicated Varicella	11	0.12	12	0.30	-	-	35	0.15
Toxoplasmosis	10	0.11	3	0.07	-	-	27	0.12
Influenza Case with Severe Complications ¹	5	0.06	9	0.22	-	-	22	0.09
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
Listeriosis	48	0.53	83	2.07	-	-	149	0.64
Severe Fever with Thrombocytopenia Syndrome	1	0.01	-	-	-	-	1	<0.01
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	-	-	-	-	-	-	1	<0.01
Severe Pneumonia with Novel Pathogens ¹	2,966,962	32,638.33	997,322	24,855.92	-	-	8,856,169	37,976.75

Note: ¹The total case number of the following diseases includes imported cases: Melioidosis (2), Influenza Case with Severe Complications (1) and Severe Pneumonia with Novel Pathogens (37,858).

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

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

Table 3 Number of confirmed cases of notifiable diseases — by month, 2022

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	-	1	1	5
Dengue Fever ¹	-	-	-	1	1	8	7	17	25	13	8	8	88
Meningococcal Meningitis	-	-	-	-	-	-	1	-	-	-	-	-	1
Paratyphoid Fever	-	-	-	-	-	-	-	-	-	5	1	-	6
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	3	-	5	1	2	4	2	-	6	1	6	8	38
Shigellosis ¹	8	10	5	8	6	6	6	6	5	9	11	12	92
Amoebiasis ¹	22	15	16	16	12	21	13	13	25	22	9	32	216
Malaria ¹													
Indigenous	-	-	-	-	-	-	-	-	-	-	-	-	-
Imported	-	1	-	1	-	-	-	-	-	-	-	-	2
Measles	-	-	-	-	-	-	-	1	-	-	-	-	1
Acute Hepatitis A ¹	16	43	20	9	3	7	4	8	1	1	3	7	122
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	-	2	-	-	-	-	2
Hantavirus Syndrome	-	1	1	-	-	1	-	-	-	1	1	-	5
Cholera	-	-	-	-	-	-	-	-	-	1	1	-	2
Rubella	-	-	-	-	-	-	-	-	-	-	-	-	-
MDR-TB ³	3	6	5	1	7	4	4	6	6	6	6	10	64
Chikungunya Fever ¹	-	-	-	-	-	-	-	-	1	-	-	-	1
West Nile Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases includes imported cases: Typhoid Fever (3), Dengue Fever (68), Shigellosis (12), Amoebiasis (78), Malaria (2), Acute Hepatitis A (2) and Chikungunya Fever (1).

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, 2022

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category II													
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	-
Zika Virus Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Mpox ^{1,7}	-	-	-	-	-	1	2	-	1	-	-	-	4
Category III													
Pertussis	-	-	-	-	-	-	-	-	1	-	1	-	2
Tetanus ⁴	1	-	-	-	-	1	-	1	1	3	1	1	9
Japanese Encephalitis	-	-	-	-	-	7	10	2	-	-	-	-	19
Tuberculosis ³	538	423	569	576	551	462	571	599	622	514	590	561	6,576
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Hepatitis													
B	8	10	13	4	5	3	9	8	7	13	14	10	104
C ¹	33	26	60	41	29	35	36	29	48	53	59	58	507
D	-	-	-	-	-	-	-	-	-	-	-	-	-
E	1	2	1	2	-	1	1	2	-	-	1	-	11
Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-
Mumps ⁴	18	17	21	18	11	17	18	23	21	52	66	24	306
Legionnaires' Disease ¹	37	22	28	16	35	40	13	20	31	38	42	61	383
Invasive Haemophilus Influenzae Type b Infection	-	-	1	-	-	1	-	-	-	-	-	-	2
Syphilis ⁵	777	673	967	789	692	809	790	876	802	786	876	870	9,707
Congenital Syphilis ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonorrhea ⁵	654	588	711	606	593	571	707	721	769	742	713	640	8,015
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	-	-	-	-	-	-	-	-	-	-	-	3	3
HIV Infection ⁶	90	80	121	83	85	87	81	96	67	96	83	100	1,069
AIDS ⁶	51	44	72	49	45	55	46	69	53	54	66	53	657
Hansen's Disease ^{1,5}	1	1	-	-	-	1	-	1	2	1	1	-	8

Note: ¹The total case number of the following diseases includes imported cases: Mpox (4), Acute Hepatitis C (2), and Legionnaires' Disease (2) and Hansen's Disease (7).

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

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

⁷ Mpox has been included in Category II notifiable disease since June 23, 2022.

Table 3 (Continued) Number of confirmed cases of notifiable diseases — by month, 2022

Unit: Person

Disease	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Category IV													
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis	3	3	3	6	1	3	9	7	8	12	8	8	71
Melioidosis ¹	-	1	-	1	-	-	5	4	7	3	3	1	25
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	15	13	16	11	10	26	18	4	13	15	19	40	200
Q Fever	1	1	-	-	-	-	-	1	-	-	-	-	3
Endemic Typhus Fever	-	-	-	2	3	-	2	3	-	1	4	2	17
Lyme Disease	-	-	-	-	-	-	-	-	-	-	-	-	-
Tularemia	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrub Typhus	13	11	14	6	19	20	46	37	47	29	16	18	276
Complicated Varicella	1	3	3	3	2	3	-	4	4	5	2	5	35
Toxoplasmosis	3	1	4	2	1	-	2	3	2	2	6	1	27
Influenza Case with Severe Complications ¹	-	-	-	-	-	-	-	-	-	2	11	9	22
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	-
Listeriosis	8	9	14	10	12	17	10	21	9	11	13	15	149
Severe Fever with Thrombocytopenia Syndrome	-	-	-	-	-	1	-	-	-	-	-	-	1
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	-	-	-	-	-	-	-	-	1	-	-	-	1
Severe Pneumonia with Novel Pathogens ¹	1,821	1,662	3,181	120,457	1,982,714	1,677,413	801,180	737,507	1,162,286	1,242,340	581,708	543,900	8,856,169

Note: ¹The total case number of the following diseases includes imported cases: Melioidosis (2), Influenza Case with Severe Complications (1) and Severe Pneumonia with Novel Pathogens (37,858).

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

**Table 4 Number of confirmed cases and incidence⁸ rate of notifiable diseases —
by sex, 2022**

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	2	0.02	3	0.03	-	-	5	0.02
Dengue Fever ¹	37	0.31	51	0.44	-	-	88	0.38
Meningococcal Meningitis	-	-	1	0.01	-	-	1	<0.01
Paratyphoid Fever	2	0.02	4	0.03	-	-	6	0.03
Poliomyelitis	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	21	0.18	17	0.15	-	-	38	0.16
Shigellosis ¹	17	0.14	75	0.65	-	-	92	0.39
Amoebiasis ¹	63	0.53	151	1.31	-	-	214	0.92
Malaria ¹								
Indigenous	-	-	-	-	-	-	-	-
Imported	1	0.01	1	0.01	-	-	2	0.01
Measles	1	0.01	-	-	-	-	1	<0.01
Acute Hepatitis A ¹	43	0.36	79	0.68	-	-	122	0.52
Enterohaemorrhagic <i>E. coli</i> Infection	2	0.02	-	-	-	-	2	0.01
Hantavirus Syndrome	1	0.01	4	0.03	-	-	5	0.02
Cholera	1	0.01	1	0.01	-	-	2	0.01
Rubella	-	-	-	-	-	-	-	-
MDR-TB ³	13	0.10	51	0.40	-	-	64	0.30
Chikungunya Fever ¹	-	-	1	0.01	-	-	1	<0.01
West Nile Fever	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-

Note: ¹ The total case number of the following diseases includes imported cases: Typhoid Fever (3), Dengue Fever (68), Shigellosis (12), Amoebiasis (78), Malaria (2), Acute Hepatitis A (2) and Chikungunya Fever (1).

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.

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

**Table 4 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by sex, 2022**

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category II								
Anthrax	-	-	-	-	-	-	-	-
Zika Virus Infection	-	-	-	-	-	-	-	-
Mpox ^{1,7}	-	-	4	0.03	-	-	4	0.02
Category III								
Pertussis	1	0.01	1	0.01	-	-	2	0.01
Tetanus ⁴	3	0.03	6	0.05	-	-	9	0.04
Japanese Encephalitis	3	0.03	16	0.14	-	-	19	0.08
Tuberculosis ³	2,064	17.50	4,512	39.10	-	-	6,576	28.20
Congenital Rubella Syndrome	-	-	-	-	-	-	-	-
Acute Hepatitis								
B	44	0.37	60	0.52	-	-	104	0.45
C ¹	133	1.13	373	3.23	-	-	506	2.17
D	-	-	-	-	-	-	-	-
E	3	0.03	8	0.07	-	-	11	0.05
Unspecified	-	-	-	-	-	-	-	-
Mumps ⁴	135	1.15	171	1.48	-	-	306	1.31
Legionnaires' Disease ¹	90	0.76	293	2.54	-	-	383	1.64
Invasive Haemophilus Influenzae Type b Infection	-	-	2	0.02	-	-	2	0.01
Syphilis ⁵	1,534	13.02	8,172	70.82	1	-	9,707	41.63
Congenital Syphilis ⁵	-	-	-	-	-	-	-	-
Gonorrhea ⁵	828	7.03	7,185	62.27	2	-	8,015	34.37
Neonatal Tetanus	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	1	0.01	2	0.02	-	-	3	0.01
HIV Infection ⁶	42	0.36	1,027	8.90	-	-	1,069	4.58
AIDS ⁶	38	0.32	619	5.36	-	-	657	2.82
Hansen's Disease ^{1,5}	7	0.06	1	0.01	-	-	8	2.94

Note:¹The total case number of the following diseases includes imported cases: Mpox (4), Acute Hepatitis C (2), Legionnaires' Disease (2) and Hansen's Disease (7).

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

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

⁷ Mpox has been included in Category II notifiable disease since June 23, 2022.

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

**Table 4 (Continued) Number of confirmed cases and incidence⁸ rate of notifiable diseases
— by sex, 2022**

Unit: Person

Disease	Female		Male		Sex not stated		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Category IV								
Herpesvirus B Infection	-	-	-	-	-	-	-	-
Leptospirosis	18	0.15	53	0.46	-	-	71	0.30
Melioidosis ¹	6	0.05	19	0.16	-	-	25	0.11
Botulism	-	-	-	-	-	-	-	-
Invasive Pneumococcal Disease	63	0.53	137	1.19	-	-	200	0.86
Q Fever	-	-	3	0.03	-	-	3	0.01
Endemic Typhus Fever	3	0.03	14	0.12	-	-	17	0.07
Lyme Disease	-	-	-	-	-	-	-	-
Tularemia	-	-	-	-	-	-	-	-
Scrub Typhus	103	0.87	173	1.50	-	-	276	1.18
Complicated Varicella	11	0.09	24	0.21	-	-	35	0.15
Toxoplasmosis	6	0.05	11	0.10	-	-	17	0.07
Influenza Case with Severe Complications ¹	10	0.08	12	0.10	-	-	22	0.09
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-
Brucellosis	-	-	-	-	-	-	-	-
Listeriosis	69	0.59	79	0.68	1	-	149	0.64
Severe Fever with Thrombocytopenia Syndrome	-	-	1	0.01	-	-	1	<0.01
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	1	0.01	-	-	-	-	1	<0.01
Severe Pneumonia with Novel Pathogens ¹	4,716,807	40,037.20	4,137,705	35,858.70	1,657	-	8,856,169	37,976.75

Note: ¹The total case number of the following diseases includes imported cases: Melioidosis (2), Influenza Case with Severe Complications (1) and Severe Pneumonia with Novel Pathogens (37,858).

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

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

Table 5 Number of confirmed cases of notifiable diseases — by year, 2013-2022

Unit: Person

Disease	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Category I										
Smallpox	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-
SARS	-	-	-	-	-	-	-	-	-	-
Rabies	1	-	-	-	-	-	-	-	-	-
Category II										
Diphtheria	-	-	-	-	-	-	-	-	-	-
Typhoid Fever ¹	19	25	29	14	16	17	21	10	3	5
Dengue Fever ¹	860	15,732	43,784	743	343	533	640	137	12	88
Meningococcal Meningitis	6	3	3	8	12	6	8	6	3	1
Paratyphoid Fever	9	8	3	6	4	8	8	-	1	6
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Acute Flaccid Paralysis ²	25	29	19	41	61	66	64	33	28	38
Shigellosis ¹	155	132	186	225	162	172	147	151	121	92
Amoebiasis ¹	270	300	350	314	378	334	352	250	188	216
Malaria ¹										
Indigenous	-	-	-	-	-	-	-	-	-	-
Imported	13	19	8	13	7	7	7	2	2	2
Measles	8	26	29	14	6	40	141	-	-	1
Acute Hepatitis A ¹	139	117	171	1133	369	88	107	74	74	122
Enterohaemorrhagic <i>E. coli</i> Infection	-	-	-	-	-	-	1	-	-	2
Hantavirus Syndrome	-	2	2	4	-	1	3	11	10	5
Cholera	7	4	10	9	2	7	-	1	-	2
Rubella	7	7	7	4	3	10	25	-	-	-
MDR-TB ³	129	112	117	112	103	120	79	74	82	64
Chikungunya Fever ¹	29	7	4	14	11	7	116	3	1	1
West Nile Fever	-	-	-	-	-	-	-	-	-	-
Epidemic Typhus Fever	-	-	-	-	-	-	-	-	-	-

Note: ¹The total case number of the following diseases in 2022 includes imported cases: Typhoid Fever (3), Dengue Fever (68), Shigellosis (12), Amoebiasis (78), Malaria (2), Acute Hepatitis A (2) and Chikungunya Fever (1).

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 5 (Continued) Number of confirmed cases of notifiable diseases — by year, 2013-2022

Unit: Person

Disease	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Category II										
Anthrax	-	-	-	-	-	-	-	-	-	-
Zika Virus Infection	...	...	...	...	13	4	3	4	2	-
Mpox ^{1,7}	...	...	...	...	...	...	...	...	...	4
Category III										
Pertussis	51	78	70	17	34	30	32	5	-	2
Tetanus ⁴	24	9	12	14	11	4	6	8	5	9
Japanese Encephalitis	16	18	30	23	25	37	21	21	28	19
Tuberculosis ³	11,528	11,326	10,711	10,328	9,759	9,179	8,732	7,823	7,062	6,576
Congenital Rubella Syndrome	-	-	-	-	1	-	-	-	-	-
Acute Hepatitis										
B	97	120	125	118	151	143	111	108	144	104
C ¹	10	205	217	207	325	510	626	602	561	506
D	-	1	2	2	-	-	-	-	1	-
E	9	9	8	16	13	10	7	7	5	11
Unspecified	5	1	2	-	-	-	-	-	-	-
Mumps ⁴	1,170	880	773	616	636	600	594	498	404	306
Legionnaires' Disease ¹	115	135	153	114	188	211	281	326	351	383
Invasive Haemophilus Influenzae Type b Infection	10	4	3	14	6	5	3	3	1	2
Syphilis ⁵	6,346	6,986	7,471	8,725	9,835	9,808	9,397	8,799	9,412	9,707
Congenital Syphilis ⁵	...	...	...	1	-	-	-	-	-	-
Gonorrhea ⁵	2,155	2,622	3,587	4,469	4,601	4,209	4,523	7,082	7,381	8,015
Neonatal Tetanus	-	-	-	-	-	-	-	-	-	-
Enteroviruses Infection with Severe Complications	12	6	6	33	24	36	69	6	-	3
HIV Infection ⁶	2,244	2,236	2,327	2,396	2,514	1,992	1,755	1,390	1,246	1,069
AIDS ⁶	1,430	1,387	1,440	1,412	1,390	1,091	1,005	800	689	657
Hansen's Disease ^{1,5}	7	9	16	10	10	7	10	7	3	8

Note:¹The total case number of the following diseases in 2022 includes imported cases: Mpox (4), Acute Hepatitis C (2), Legionnaires' Disease (2) and Hansen's Disease (7).

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

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

⁷ Mpox has been included in the list of notifiable diseases since January 22, 2016. Zika virus infection has been included in the list of notifiable diseases since January 22, 2016. Congenital Syphilis has been included in the list of notifiable diseases since April 1, 2016.

Table 5 (Continued) Number of confirmed cases of notifiable diseases — by year, 2013-2022

Unit: Person

Disease	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Category IV										
Herpesvirus B Infection	-	-	-	-	-	-	-	-	-	-
Leptospirosis	82	98	81	130	101	96	111	86	80	71
Melioidosis ¹	19	37	32	55	26	23	46	20	21	25
Botulism	1	-	2	6	-	-	-	1	-	-
Invasive Pneumococcal Disease	625	587	524	592	454	459	447	228	194	200
Q Fever	48	42	43	45	18	20	23	14	9	3
Endemic Typhus Fever	27	21	35	13	38	22	30	25	30	17
Lyme Disease	-	2	2	2	1	3	-	1	2	-
Tularemia	-	-	-	-	-	-	-	-	1	-
Scrub Typhus	538	414	494	488	422	386	449	422	292	276
Complicated Varicella ⁸	...	55	54	40	32	54	57	54	44	35
Toxoplasmosis	15	12	13	10	21	17	16	17	17	27
Influenza Case with Severe Complications ^{1,9}	965	1,721	857	2,084	1,359	1,196	2,325	444	1	22
Creutzfeldt-Jakob Disease ⁵	-	-	-	-	-	-	-	-	-	-
Brucellosis ¹⁰	-	-	1	-	-	-	-	-	-	-
Listeriosis ¹¹	...	...	...	...	...	168	164	142	157	149
Severe Fever with Thrombocytopenia Syndrome ⁷	...	...	...	...	...	...	...	-	-	1
Category V										
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-
Marburg Haemorrhagic Fever	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-
Ebola Virus Disease	-	-	-	-	-	-	-	-	-	-
Lassa Fever	-	-	-	-	-	-	-	-	-	-
Middle East Respiratory Syndrome Coronavirus Infections ¹²	-	-	-	-	-	-	-	-	-	-
Novel Influenza A Virus Infections ¹³	...	...	-	-	-	1	-	-	1	1
Severe Pneumonia with Novel Pathogens ^{1,7}	...	...	...	...	...	...	...	823	16,302	8,856,169

Note: ¹The total case number of the following diseases in 2022 includes imported cases: Melioidosis (2), Influenza Case with Severe Complications (1) and Severe Pneumonia with Novel Pathogens (37,858).

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

⁷Severe fever with thrombocytopenia syndrome has been included in Category IV notifiable disease since April 15, 2020.

Severe pneumonia with novel pathogens has been included in Category V notifiable disease since January 15, 2020.

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

⁹"Severe Complicated Influenza" has changed name to "influenza case with severe complications" since November, 2019.

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

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

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

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

**Table 6 Analysis of time intervals between diagnosis² and reporting for notifiable diseases
— by locality, 2022**

Unit: Day

Locality	2021			2022						
	No. ¹	Average	Median	No. ¹	Average	Median	<=24 hours		>24 hours	
							No.	%	No.	%
Total	50,708	0.3	0	8,434,330	0.4	0	8,360,940	99.1	73,390	0.9
Taipei City	11,694	0.3	0	764,222	0.5	0	757,501	99.1	6,721	0.9
New Taipei City	17,419	0.4	0	1,711,975	0.5	0	1,692,035	98.8	19,940	1.2
Keelung City	1,481	0.1	0	145,406	0.6	0	143,179	98.5	2,227	1.5
Yilan County	1,414	0.3	0	171,291	0.4	0	170,161	99.3	1,130	0.7
Kinmen County	43	0.2	0	22,849	0.3	0	22,815	99.9	34	0.1
Lienchiang County	27	0.1	0	3,697	0.2	0	3,633	98.3	64	1.7
Taoyuan City	3,489	0.3	0	957,784	0.5	0	949,468	99.1	8,316	0.9
Hsinchu City	659	0.4	0	190,556	0.6	0	187,764	98.5	2,792	1.5
Hsinchu County	796	0.3	0	230,127	0.5	0	228,058	99.1	2,069	0.9
Miaoli County	1,151	0.5	0	72,346	0.4	0	192,294	99.5	1,063	0.5
Taichung City	2,517	0.3	0	1,076,605	0.5	0	1,068,585	99.3	8,020	0.7
Changhua County	1,067	0.3	0	412,634	0.4	0	409,956	99.4	2,678	0.6
Nantou County	378	0.2	0	141,599	0.3	0	140,592	99.3	1,007	0.7
Yunlin County	395	0.1	0	181,190	0.3	0	180,297	99.5	893	0.5
Chiayi City	234	0.1	0	84,893	0.4	0	84,462	99.5	431	0.5
Chiayi County	197	0.2	0	133,686	0.3	0	133,094	99.6	592	0.4
Tainan City	1,650	0.3	0	609,721	0.4	0	604,710	99.2	5,011	0.8
Kaohsiung City	3,989	0.2	0	957,056	0.4	0	950,347	99.3	6,709	0.7
Pingtung County	864	0.3	0	229,344	0.4	0	227,542	99.2	1,802	0.8
Penghu County	196	0.2	0	25,051	0.4	0	24,874	99.3	177	0.7
Hualien County	813	0.4	0	124,618	0.4	0	123,338	99.0	1,280	1.0
Taitung County	235	0.4	0	66,669	0.3	0	66,235	99.3	434	0.7

Note: ¹Listed infectious diseases should be reported within 24 hours, which was not included MDR-TB, HIV infection and AIDS.

² Severe Pneumonia with Novel Pathogens revised report procedure, the diagnosis day is not required fields.

Table 7 Analysis of time intervals between reporting and reports received from local health bureaus for notifiable diseases — by locality, 2022

Unit: Day

Locality	2021			2022							
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours		
							No.	%	No.	%	
Total	50,708	0.0	0	8,879,297	0.0	0	8,863,133	99.8	16,164	0.2	
Taipei City	11,694	0.0	0	893,731	0.1	0	890,629	99.7	3,102	0.3	
New Taipei City	17,419	0.1	0	1,840,890	0.1	0	1,832,725	99.6	8,165	0.4	
Keelung City	1,481	0.1	0	160,520	0.0	0	160,490	100.0	30	<0.1	
Yilan County	1,414	0.0	0	174,728	0.0	0	174,728	100.0	23	<0.1	
Kinmen County	43	0.0	0	23,064	0.0	0	23,064	100.0	-	-	
Lienchiang County	27	0.0	0	3,739	0.0	0	3,735	99.9	4	0.1	
Taoyuan City	3,489	0.0	0	976,223	0.0	0	974,763	99.9	1,460	0.1	
Hsinchu City	659	0.1	0	197,544	0.0	0	197,442	99.9	102	0.1	
Hsinchu County	796	0.0	0	245,405	0.0	0	245,315	100.0	90	<0.1	
Miaoli County	1,151	0.0	0	198,382	0.0	0	198,191	99.9	191	0.1	
Taichung City	2,517	0.0	0	1,092,420	0.0	0	1,091,991	100.0	429	<0.1	
Changhua County	1,067	0.0	0	423,226	0.0	0	422,875	99.9	351	0.1	
Nantou County	378	0.0	0	145,784	0.0	0	145,704	99.9	80	0.1	
Yunlin County	395	0.0	0	184,116	0.0	0	184,045	100.0	71	<0.1	
Chiayi City	234	0.0	0	86,205	0.0	0	86,134	99.9	71	0.1	
Chiayi County	197	0.0	0	135,191	0.0	0	135,105	99.9	86	0.1	
Tainan City	1,650	0.0	0	626,225	0.0	0	625,899	99.9	326	0.1	
Kaohsiung City	3,989	0.0	0	988,780	0.0	0	987,705	99.9	1,075	0.1	
Pingtung County	864	0.0	0	250,984	0.0	0	250,692	99.9	292	0.1	
Penghu County	196	0.0	0	25,413	0.0	0	25,383	99.9	30	0.1	
Hualien County	813	0.0	0	133,900	0.0	0	133,786	99.9	114	0.1	
Taitung County	235	0.1	0	72,827	0.0	0	72,755	99.9	72	0.1	

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, 2022

Unit: Day

Locality	2021			2022							
	No.	Average	Median	No.	Average	Median	<=24 hours		>24 hours		
							No.	%	No.	%	
Total	50,708	0.0	0	8,879,297	0.0	0	8,877,285	100.0	2,012	<0.1	
Taipei City	11,694	0.0	0	893,731	0.1	0	893,117	99.9	614	0.1	
New Taipei City	17,419	0.0	0	1,840,890	0.0	0	1,840,667	100.0	223	<0.1	
Keelung City	1,481	0.0	0	160,520	0.0	0	160,369	99.9	151	0.1	
Yilan County	1,414	0.0	0	174,728	0.0	0	174,685	100.0	43	<0.1	
Kinmen County	43	0.0	0	23,064	0.0	0	23,064	100.0	-	-	
Lienchiang County	27	0.0	0	3,739	0.3	0	3,635	97.2	104	2.8	
Taoyuan City	3,489	0.0	0	976,223	0.0	0	976,192	100.0	31	<0.1	
Hsinchu City	659	0.0	0	197,544	0.0	0	197,537	100.0	7	<0.1	
Hsinchu County	796	0.0	0	245,405	0.0	0	245,367	100.0	38	<0.1	
Miaoli County	1,151	0.0	0	198,382	0.0	0	198,366	100.0	16	<0.1	
Taichung City	2,517	0.0	0	1,092,420	0.0	0	1,092,344	100.0	76	<0.1	
Changhua County	1,067	0.0	0	423,226	0.0	0	423,197	100.0	29	<0.1	
Nantou County	378	0.0	0	145,784	0.0	0	145,756	100.0	28	<0.1	
Yunlin County	395	0.1	0	184,116	0.0	0	184,104	100.0	12	<0.1	
Chiayi City	234	0.0	0	86,205	0.0	0	86,191	100.0	14	<0.1	
Chiayi County	197	0.0	0	135,191	0.0	0	135,162	100.0	29	<0.1	
Tainan City	1,650	0.0	0	626,225	0.0	0	626,050	100.0	175	<0.1	
Kaohsiung City	3,989	0.0	0	988,780	0.0	0	988,499	100.0	281	<0.1	
Pingtung County	864	0.0	0	250,984	0.0	0	250,879	100.0	105	<0.1	
Penghu County	196	0.0	0	25,413	0.0	0	25,410	100.0	3	<0.1	
Hualien County	813	0.1	0	133,900	0.0	0	133,884	100.0	16	<0.1	
Taitung County	235	0.1	0	72,827	0.0	0	72,810	100.0	17	<0.1	

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

Table 9 National Immunization coverage — by counties/cities

Unit: person, person, %

Vaccines	Hepatitis B						DTaP-Hib-IPV					
	2021			2021			2021			2020		
Dose	2nd dose			3rd dose			3rd dose			4th dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	159,347	157,680	98.95	159,347	156,570	98.26	159,347	156,224	98.04	163,575	156,466	95.65
New Taipei City	26,112	25,743	98.59	26,112	25,639	98.19	26,112	25,596	98.02	26,462	25,352	95.81
Taipei City	16,729	16,477	98.49	16,729	16,279	97.31	16,729	16,270	97.26	17,572	16,700	95.04
Taoyuan City	19,597	19,493	99.47	19,597	19,348	98.73	19,597	19,316	98.57	19,663	19,032	96.79
Taichung City	20,731	20,531	99.04	20,731	20,399	98.40	20,731	20,336	98.09	21,597	20,704	95.87
Tainan City	10,835	10,711	98.86	10,835	10,645	98.25	10,835	10,621	98.02	11,790	11,316	95.98
Kaohsiung City	18,235	18,066	99.07	18,235	17,908	98.21	18,235	17,851	97.89	18,329	17,454	95.23
Yilan County	2,929	2,910	99.35	2,929	2,893	98.77	2,929	2,890	98.67	2,938	2,812	95.71
Hsinchu County	5,183	5,147	99.31	5,183	5,117	98.73	5,183	5,106	98.51	5,410	5,183	95.80
Miaoli County	2,897	2,875	99.24	2,897	2,858	98.65	2,897	2,851	98.41	3,117	2,928	93.94
Changhua County	9,925	9,868	99.43	9,925	9,822	98.96	9,925	9,820	98.94	9,528	9,256	97.15
Nantou County	2,774	2,762	99.57	2,774	2,728	98.34	2,774	2,721	98.09	2,893	2,767	95.64
Yunlin County	3,907	3,882	99.36	3,907	3,855	98.67	3,907	3,846	98.44	4,074	3,946	96.86
Chiayi County	2,534	2,504	98.82	2,534	2,497	98.54	2,534	2,488	98.18	2,663	2,526	94.86
Pingtung County	4,388	4,315	98.34	4,388	4,282	97.58	4,388	4,255	96.97	4,668	4,345	93.08
Taitung County	1,354	1,340	98.97	1,354	1,326	97.93	1,354	1,319	97.42	1,364	1,311	96.11
Hualien County	2,076	2,064	99.42	2,076	2,031	97.83	2,076	2,018	97.21	2,071	1,945	93.92
Penghu County	875	864	98.74	875	865	98.86	875	866	98.97	869	829	95.40
Keelung City	1,821	1,805	99.12	1,821	1,788	98.19	1,821	1,778	97.64	1,981	1,876	94.70
Hsinchu City	3,860	3,769	97.64	3,860	3,750	97.15	3,860	3,742	96.94	4,022	3,742	93.04
Chiayi City	1,567	1,552	99.04	1,567	1,542	98.40	1,567	1,536	98.02	1,640	1,554	94.76
Kinmen County	901	887	98.45	901	881	97.78	901	881	97.78	827	794	96.01
Lienchiang County	117	116	99.15	117	117	100.00	117	117	100.00	97	94	96.91

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2022.

3. Data was calculated in February 2023.

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

Unit: person, person, %

Vaccines	PCV13						BCG		
Birth cohort	2021			2020			2021		
Dose	2nd dose			3rd dose			single dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	159,358	156,881	98.45	163,585	158,534	96.91	159,347	156,300	98.09
New Taipei City	26,117	25,677	98.32	26,462	25,695	97.10	26,112	25,573	97.94
Taipei City	16,723	16,360	97.83	17,573	16,963	96.53	16,729	16,095	96.21
Taoyuan City	19,593	19,365	98.84	19,663	19,150	97.39	19,597	19,352	98.75
Taichung City	20,745	20,464	98.65	21,603	21,031	97.35	20,731	20,379	98.30
Tainan City	10,840	10,660	98.34	11,788	11,358	96.35	10,835	10,633	98.14
Kaohsiung City	18,235	17,949	98.43	18,329	17,755	96.87	18,235	17,881	98.06
Yilan County	2,930	2,897	98.87	2,940	2,844	96.73	2,929	2,892	98.74
Hsinchu County	5,186	5,121	98.75	5,411	5,246	96.95	5,183	5,112	98.63
Miaoli County	2,896	2,862	98.83	3,117	3,000	96.25	2,897	2,846	98.24
Changhua County	9,922	9,828	99.05	9,527	9,346	98.10	9,925	9,812	98.86
Nantou County	2,773	2,734	98.59	2,895	2,799	96.68	2,774	2,741	98.81
Yunlin County	3,907	3,847	98.46	4,074	3,972	97.50	3,907	3,852	98.59
Chiayi County	2,534	2,509	99.01	2,661	2,573	96.69	2,534	2,503	98.78
Pingtung County	4,385	4,294	97.92	4,668	4,501	96.42	4,388	4,287	97.70
Taitung County	1,354	1,327	98.01	1,364	1,326	97.21	1,354	1,333	98.45
Hualien County	2,077	2,040	98.22	2,071	1,967	94.98	2,076	2,052	98.84
Penghu County	874	865	98.97	868	850	97.93	875	867	99.09
Keelung City	1,821	1,773	97.36	1,984	1,862	93.85	1,821	1,784	97.97
Hsinchu City	3,860	3,760	97.41	4,023	3,828	95.15	3,860	3,761	97.44
Chiayi City	1,568	1,546	98.60	1,640	1,576	96.10	1,567	1,538	98.15
Kinmen County	901	886	98.34	827	796	96.25	901	890	98.78
Lienchiang County	117	117	100.00	97	96	98.97	117	117	100.00

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2022.

3. Data was calculated in February 2023.

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

Unit: person, person, %

Vaccines	Varicella			MMR			Hepatitis A					
Birth cohort	2020			2020			2020			2020		
Dose	single dose			1st dose			1st dose			2nd dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	163,575	161,078	98.47	163,575	161,234	98.57	163,575	160,248	97.97	163,575	151,905	92.87
New Taipei City	26,462	26,110	98.67	26,462	26,144	98.80	26,462	25,931	97.99	26,462	24,518	92.65
Taipei City	17,572	17,187	97.81	17,572	17,232	98.07	17,572	17,069	97.14	17,572	16,226	92.34
Taoyuan City	19,663	19,412	98.72	19,663	19,443	98.88	19,663	19,352	98.42	19,663	18,565	94.42
Taichung City	21,597	21,305	98.65	21,597	21,335	98.79	21,597	21,209	98.20	21,597	20,167	93.38
Tainan City	11,790	11,610	98.47	11,790	11,547	97.94	11,790	11,545	97.92	11,790	11,050	93.72
Kaohsiung City	18,329	18,003	98.22	18,329	18,059	98.53	18,329	17,927	97.81	18,329	16,859	91.98
Yilan County	2,938	2,889	98.33	2,938	2,880	98.03	2,938	2,869	97.65	2,938	2,741	93.29
Hsinchu County	5,410	5,334	98.60	5,410	5,339	98.69	5,410	5,316	98.26	5,410	5,033	93.03
Miaoli County	3,117	3,073	98.59	3,117	3,075	98.65	3,117	3,049	97.82	3,117	2,837	91.02
Changhua County	9,528	9,451	99.19	9,528	9,464	99.33	9,528	9,411	98.77	9,528	9,029	94.76
Nantou County	2,893	2,853	98.62	2,893	2,854	98.65	2,893	2,839	98.13	2,893	2,663	92.05
Yunlin County	4,074	4,033	98.99	4,074	4,033	98.99	4,074	4,020	98.67	4,074	3,836	94.16
Chiayi County	2,663	2,626	98.61	2,663	2,617	98.27	2,663	2,607	97.90	2,663	2,469	92.71
Pingtung County	4,668	4,573	97.96	4,668	4,584	98.20	4,668	4,558	97.64	4,668	4,160	89.12
Taitung County	1,364	1,351	99.05	1,364	1,350	98.97	1,364	1,345	98.61	1,364	1,294	94.87
Hualien County	2,071	2,031	98.07	2,071	2,028	97.92	2,071	2,011	97.10	2,071	1,845	89.09
Penghu County	869	858	98.73	869	856	98.50	869	858	98.73	869	803	92.41
Keelung City	1,981	1,937	97.78	1,981	1,942	98.03	1,981	1,920	96.92	1,981	1,818	91.77
Hsinchu City	4,022	3,926	97.61	4,022	3,928	97.66	4,022	3,903	97.04	4,022	3,637	90.43
Chiayi City	1,640	1,612	98.29	1,640	1,615	98.48	1,640	1,604	97.80	1,640	1,487	90.67
Kinmen County	827	807	97.58	827	812	98.19	827	808	97.70	827	778	94.07
Lienchiang County	97	97	100.00	97	97	100.00	97	97	100.00	97	90	92.78

Note 1. Source: National Immunization Information System.

2. Vaccination period: Before December 2022.

3. Data was calculated in February 2023.

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

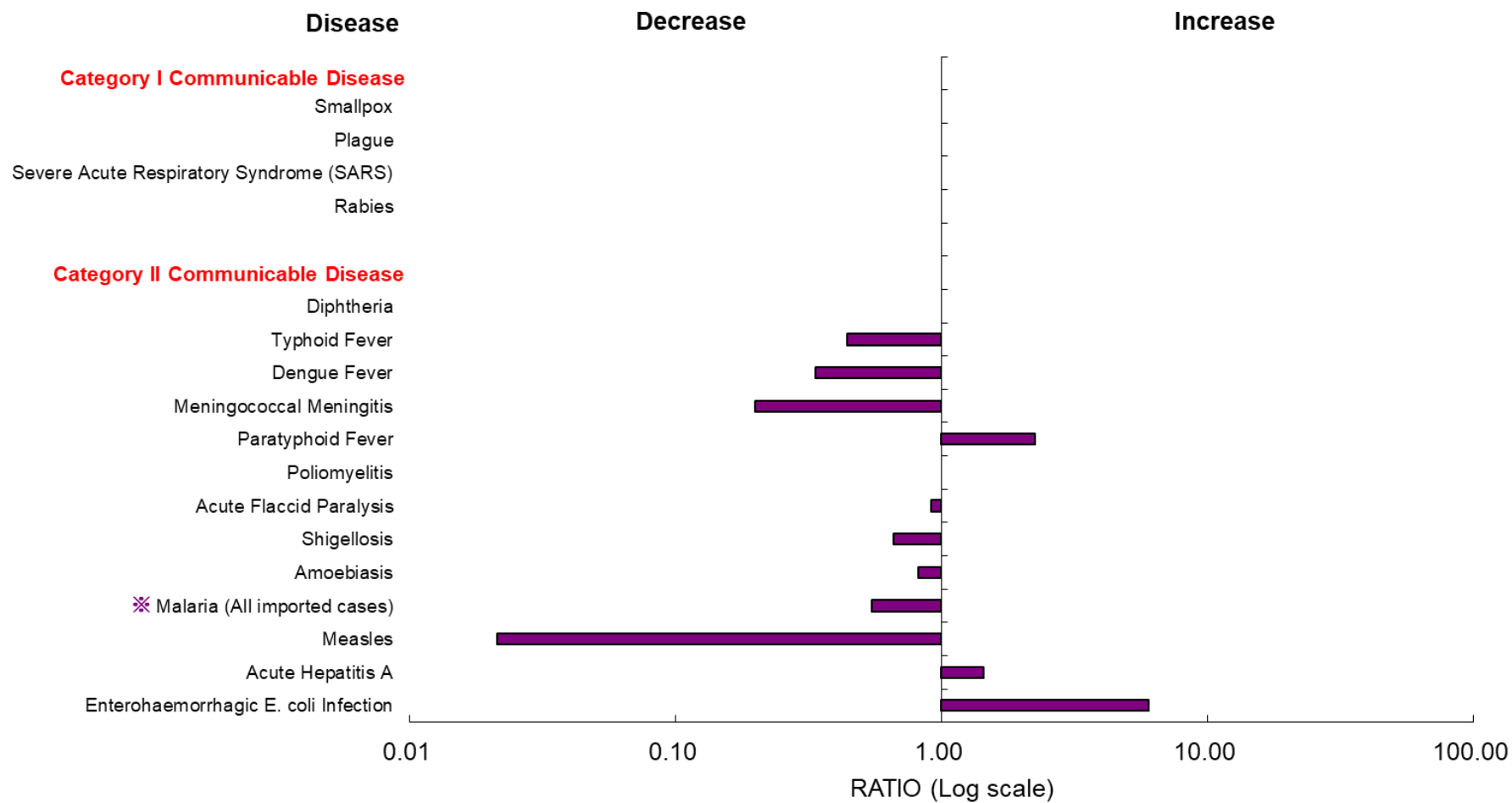
Unit: person, person, %

Vaccines	Japanese encephalitis, live chimeric						DTaP-IPV			MMR		
Birth cohort	2020			2019			First grade of elementary school					
Dose	1st dose			2nd dose			single dose			2nd dose		
Locality	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage	Target population	Vaccinated population	Vaccination coverage
Total	163,575	158,797	97.08	177,231	164,871	93.03	211,207	202,694	95.97	211,207	203,089	96.16
New Taipei City	26,462	25,707	97.15	28,922	26,792	92.64	35,286	33,906	96.09	35,286	34,005	96.37
Taipei City	17,572	16,878	96.05	19,504	17,931	91.93	23,099	22,239	96.28	23,099	22,320	96.63
Taoyuan City	19,663	19,230	97.80	21,032	19,953	94.87	23,581	22,740	96.43	23,581	22,777	96.59
Taichung City	21,597	21,032	97.38	23,960	22,350	93.28	29,234	28,325	96.89	29,234	28,344	96.96
Tainan City	11,790	11,449	97.11	13,184	12,295	93.26	16,413	15,601	95.05	16,413	15,634	95.25
Kaohsiung City	18,329	17,730	96.73	19,262	17,977	93.33	22,841	22,074	96.64	22,841	22,134	96.90
Yilan County	2,938	2,851	97.04	3,228	3,042	94.24	3,862	3,640	94.25	3,862	3,646	94.41
Hsinchu County	5,410	5,259	97.21	5,752	5,358	93.15	6,916	6,730	97.31	6,916	6,741	97.47
Miaoli County	3,117	2,995	96.09	3,481	3,186	91.53	4,898	4,497	91.81	4,898	4,516	92.20
Changhua County	9,528	9,356	98.19	9,703	9,208	94.90	10,643	10,403	97.74	10,643	10,412	97.83
Nantou County	2,893	2,820	97.48	3,006	2,853	94.91	3,660	3,599	98.33	3,660	3,604	98.47
Yunlin County	4,074	3,992	97.99	4,319	4,010	92.85	4,926	4,647	94.34	4,926	4,649	94.38
Chiayi County	2,663	2,584	97.03	2,652	2,446	92.23	2,966	2,848	96.02	2,966	2,838	95.68
Pingtung County	4,668	4,496	96.32	5,070	4,553	89.80	5,989	5,607	93.62	5,989	5,606	93.60
Taitung County	1,364	1,342	98.39	1,422	1,320	92.83	1,702	1,645	96.65	1,702	1,651	97.00
Hualien County	2,071	1,989	96.04	2,331	2,131	91.42	2,712	2,598	95.80	2,712	2,574	94.91
Penghu County	869	846	97.35	857	801	93.47	664	645	97.14	664	645	97.14
Keelung City	1,981	1,903	96.06	2,126	1,964	92.38	2,816	2,698	95.81	2,816	2,713	96.34
Hsinchu City	4,022	3,853	95.80	4,474	3,986	89.09	5,591	5,008	89.57	5,591	5,037	90.09
Chiayi City	1,640	1,583	96.52	1,928	1,753	90.92	2,572	2,451	95.30	2,572	2,454	95.41
Kinmen County	827	805	97.34	901	850	94.34	752	709	94.28	752	705	93.75
Lienchiang County	97	97	100.00	117	112	95.73	84	84	100.00	84	84	100.00

Note 1. Source: National Immunization Information System.

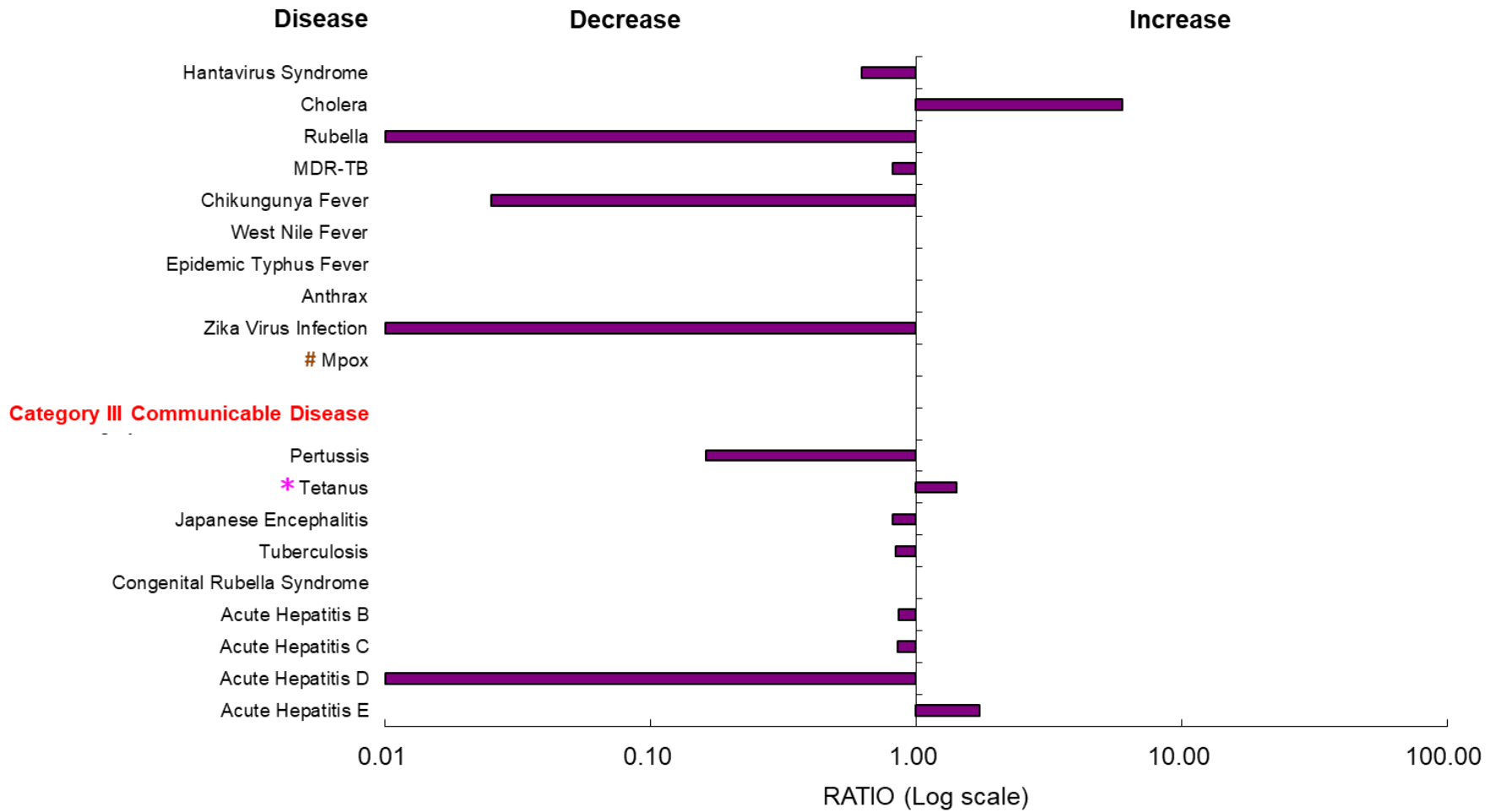
2. Vaccination period: Before December 2022.

3. Data was calculated in February 2023.



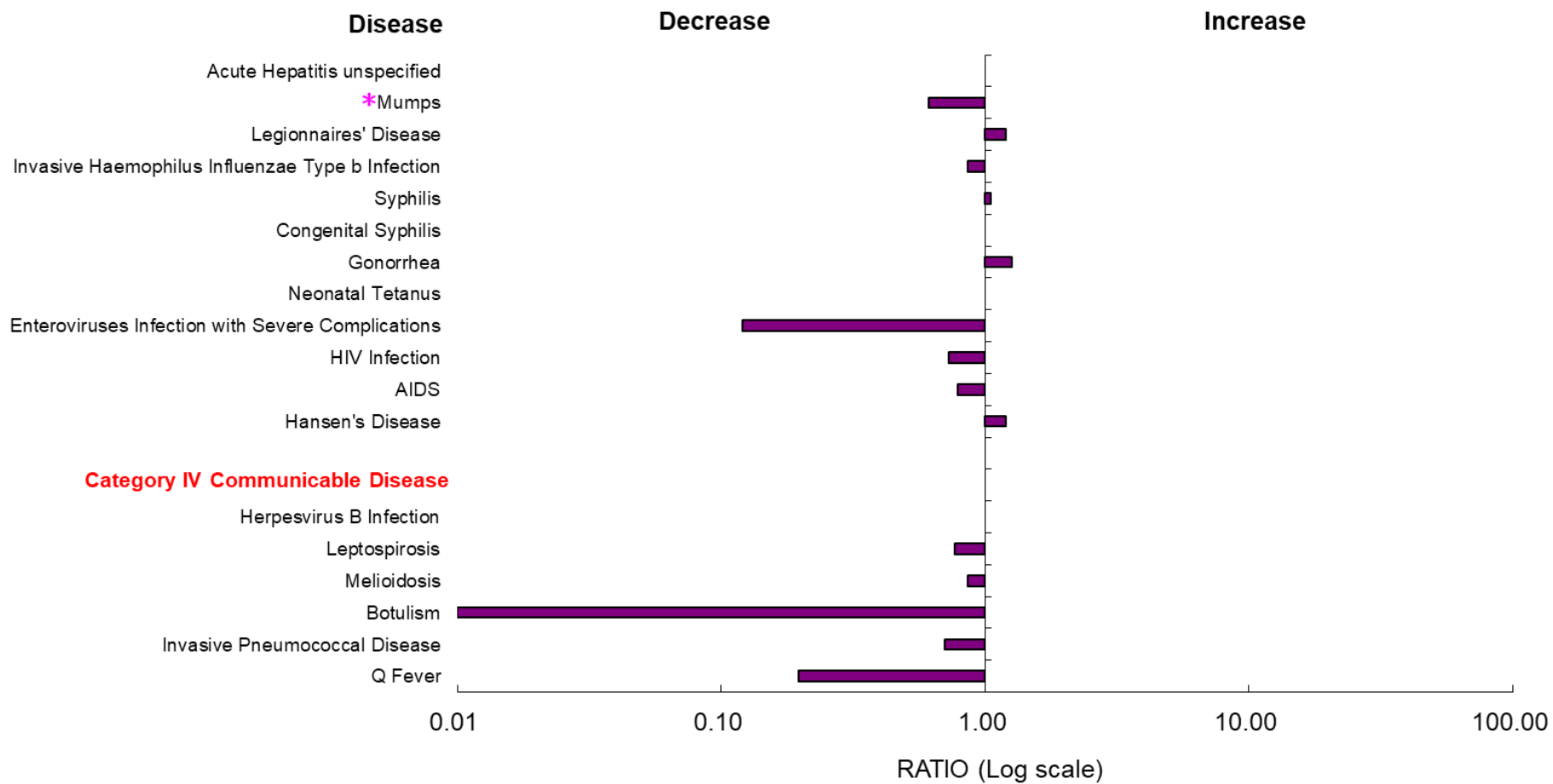
Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2022 cases / means of 2019-2021.
 3. The default value is 100 when denominator is zero and numerator is not zero.
 The default value is 0.01 when denominator is not zero and numerator is zero.
 4. * The World Health Organization (WHO) has declared Taiwan as a malaria eradication region in 1965.

Figure 1. Comparison of 2022 total confirmed cases of notifiable diseases with historical data



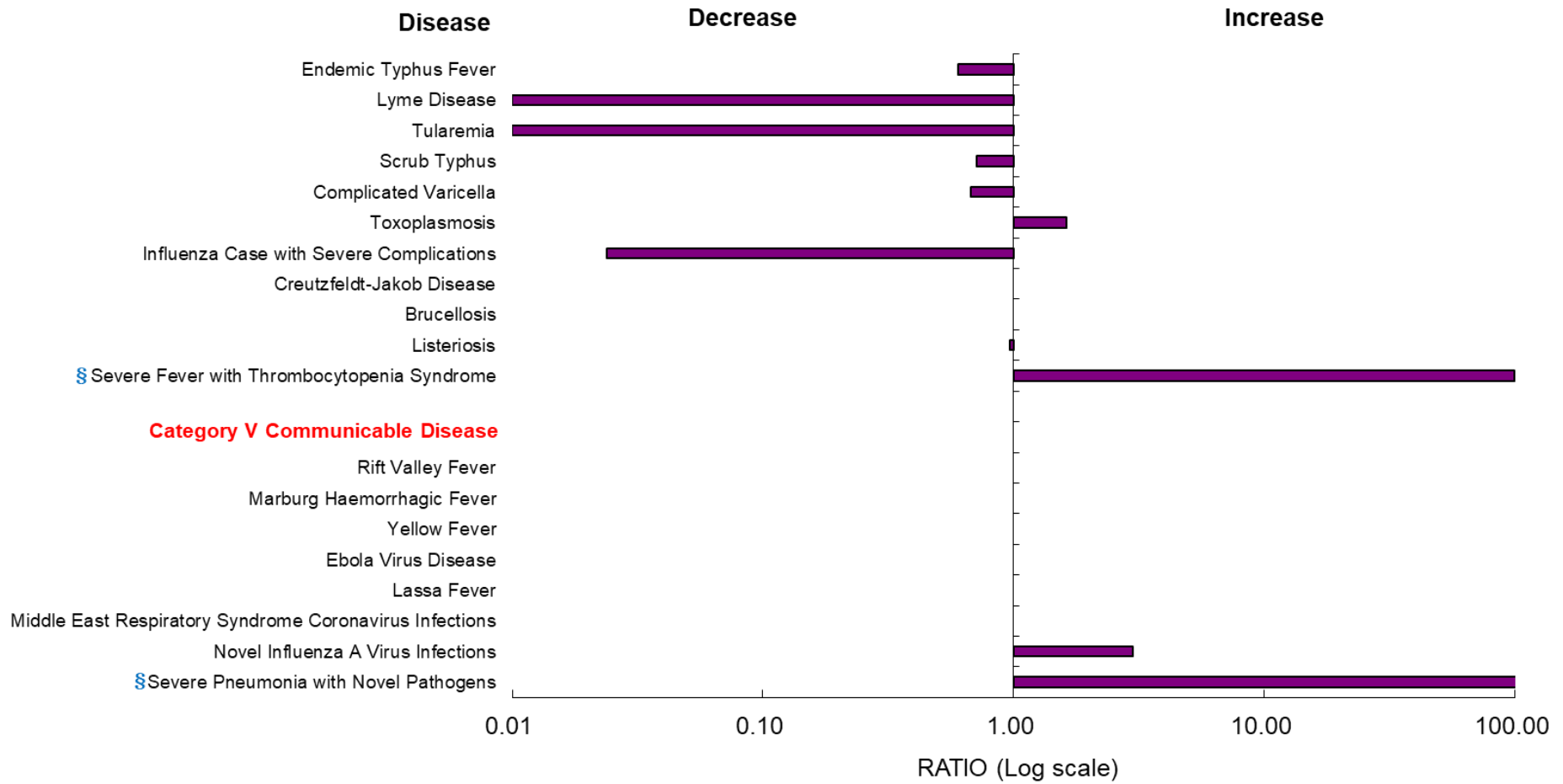
Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2022 cases / means of 2019-2021.
 3. The default value is 100 when denominator is zero and numerator is not zero. The default value is 0.01 when denominator is not zero and numerator is zero.
 4. * For tetanus: based on reported cases.
 5. For MDR-TB and tuberculosis: based on CDC's registration year and the year of notification creatdate respectively.
 6. # Mpox were validated since June 23, 2023, respectively, hence there is no comparable of cases in 2019-2021.

Figure 1. (Continued) Comparison of 2022 total confirmed cases of notifiable diseases with historical data



- Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2022 cases / means of 2019-2021.
 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 calculated based on diagnosis date, and the foreign nationality cases were excluded.

Figure 1. (Continued) Comparison of 2022 total confirmed cases of notifiable diseases with historical data



Note: 1. Analysis unit: confirmed cases and onset year.
 2. Ratio = 2022 cases / means of 2019-2021.
 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. § The statistics of Severe Fever with Thrombocytopenia Syndrome and Severe Pneumonia with Novel Pathogens were validated since April 15 and January 15, 2020, respectively, hence there is no comparable number of cases in 2019-2021.

Figure 1. (Continued) Comparison of 2022 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 Healthcare-associated infection and Antimicrobial resistance Surveillance System

I. Preface

"Nosocomial infection" is used to describe infections acquired in hospitals, while "healthcare-associated infection" (HAI) generally refers to infections that patients acquire while receiving medical or surgical treatments. HAIs can occur in various healthcare settings, including hospitals, long-term care facilities, homecare facilities, or outpatient departments. To respond to continuously evolving landscapes of medical services and expand the scope of surveillance, "healthcare-associated infection" instead of "nosocomial infection" was used internationally and in the definition of infection surveillance in acute care settings published by US CDC in 2008. To monitor the occurrence of HAIs effectively, evaluate the epidemiologic trend of HAIs in Taiwan, and analyze surveillance data using standard indicators for policy making, Taiwan CDC launched the Taiwan Nosocomial Infections Surveillance System (TNIS System) in 2007 and revised it to Taiwan Healthcare-associated infection and Antimicrobial resistance Surveillance System (THAS System) in 2020. Moreover, strengthening functions and the utility of the surveillance system is on going. THAS system gathers demographic data, laboratory results of pathogens identified, antimicrobial susceptibility test for each HAI, and provides simple analytical function; reporting hospitals can analyze their own data on line as a reference in developing quality improvement initiatives.

II. Objectives

1. To establish epidemiological database of HAI in Taiwan
2. To monitor HAI trends in Taiwan
3. To facilitate inter- and intra-hospital comparisons for implementation of quality improvement activities
4. To assist hospitals in developing appropriate surveillance mechanisms for timely identification of infection control lapses

III. Reporting methods, data analysis, and feedback

The THAS system adopts voluntary reporting, and each hospital may provide their data either through web-based entry or by conveying it electronically through an interchange platform or Web API. The web-based report mechanism mainly serves for hospitals that do not have their own HAI surveillance system. Hospital staff enter the HAI data on the THAS system website directly. The other mechanism, using an interchange platform or Web

API, serves for the hospitals which have established their own HAI surveillance system. However, to ensure interoperability between hospital information systems (HIS) and THAS system, infection control practitioners work on mapping vocabularies from local to standard codes and hospital information technology staff 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 automatically transferred from the HIS to the THAS system, eliminating the need for repetitive data entry. At present, 482 hospitals were enrolled in THAS system. Hospitals may use THAS system to manage HAI cases and generate individual hospital reports. Additionally, Taiwan CDC periodically provides hospitals with national reports for inter- and intra-hospital comparisons, aiming to facilitate hospitals to improve their quality in HAIs control 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 2022.
2. Distribution of HAI rates by type of location in the ICUs of medical centers and regional hospitals in 2022.
3. Distribution of device-associated infection rates in the ICUs of medical centers and regional hospitals in 2022.
4. Distribution of major sites of HAI in ICU patients from medical centers and regional hospitals in 2022.
5. Common pathogens of HAI for patients in the ICUs of medical centers in 2022.
6. Common pathogens of HAI for patients in the ICUs of regional hospitals in 2022.
7. Antimicrobial resistance proportions of selected pathogens of HAI in the ICUs of medical centers and regional hospitals in 2022.

V. Surveillance method and main results

All the analytical results in this report were extracted from THAS system database with data updated as of July 13, 2023. In 2022, there were 24 medical centers with 195 ICU units and 82 regional hospitals with 270 ICU units reported both HAI cases and the number of patient-days to THAS system for at least one calendar month (Table 10). The distribution of HAI rate ([number of HAIs/number of patient-days] × 1000‰) in ICUs of medical centers and regional

hospitals is shown in Table 11. There were 5,215 episodes of HAI events occurred during 840,088 patient-days in the ICUs of 24 medical centers; the rate of infections was 6.2‰. However, in the ICUs of the 82 regional hospitals, there were 3,624 episodes of HAI events occurred during 869,972 patient-days; the rate of infections was 4.2‰. The HAI rates in ICUs were higher in medical centers than those in regional hospitals by corresponding types of ICU. The distribution of device-associated infection rate in ICUs ([number of device-associated infections/ number of device-days] ×1000‰) is shown in Figure 2. The pooled mean of central line-associated bloodstream infection (CLABSI) rates was 4.2‰ in medical centers and 2.6‰ in regional hospitals, and the pooled mean of catheter-associated urinary tract infection (CAUTI) rates were 3.1‰ and 2.2‰ respectively, the rate of CAUTI and the rate of CLABSI in ICUs of medical centers were higher than those in regional hospitals; the pooled mean of ventilator-associated pneumonia (VAP) rates in regional hospitals was higher than that in medical centers, which were 0.6‰ and 0.5‰ respectively.

The distribution of site-specific HAIs in ICUs is shown in Table 12, with the bloodstream infections topped the list in medical centers (47.4%), followed by urinary tract infections (UTIs) (32.4%), and other (9.5%). In regional hospitals, the bloodstream infections topped the list (40.5%), followed by UTIs (37.5%), and pneumonia (10.9%). The common pathogens for HAIs in ICUs are shown in Table 13 and Table 14. The top three pathogens in ICUs were *Enterococcus faecium*, *Klebsiella pneumoniae*, and *Candida* spp. in medical centers, and *Klebsiella pneumoniae*, *Candida albicans*, and *Enterococcus faecium* in regional hospitals. The proportion of antimicrobial resistance among selected pathogens identified from patients in the ICUs with HAIs is shown in Figure 3. In the ICUs of medical centers, 82.8% of *Acinetobacter baumannii* isolates were resistant to carbapenem (CRAB), 43.0% of *K. pneumoniae* isolates were resistant to carbapenem (CRKP), 26.0% of *Pseudomonas aeruginosa* isolates were resistant to carbapenem (CRPA), 50.9% of *Enterococci* isolates were resistant to vancomycin (VRE), and 50.9% of *Staphylococcus aureus* isolates were resistant to oxacillin (MRSA). Meanwhile, the antimicrobial resistance percentage of selected pathogens isolated from patients with HAIs in the ICUs of regional hospitals were 80.8%, 44.8%, 15.6%, 44.2% and 54.8% for CRAB, CRKP, CRPA, VRE and MRSA, respectively.

VI. 2022 Data analyses of HAI in the ICUs of medical centers and regional hospitals

Table 10 Number of medical centers and regional hospitals contributing ICU HAI data, 2022

Hospital level	1 st Quarter		2 nd Quarter		3 rd Quarter		4 th Quarter	
	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs	No. of hospitals	No. of HAIs
Medical center	23	1,279	24	1,251	23	1,434	23	1,495
Regional hospital	81	894	81	845	82	1,001	80	1,051

Note: Data updated to 2023/7/13

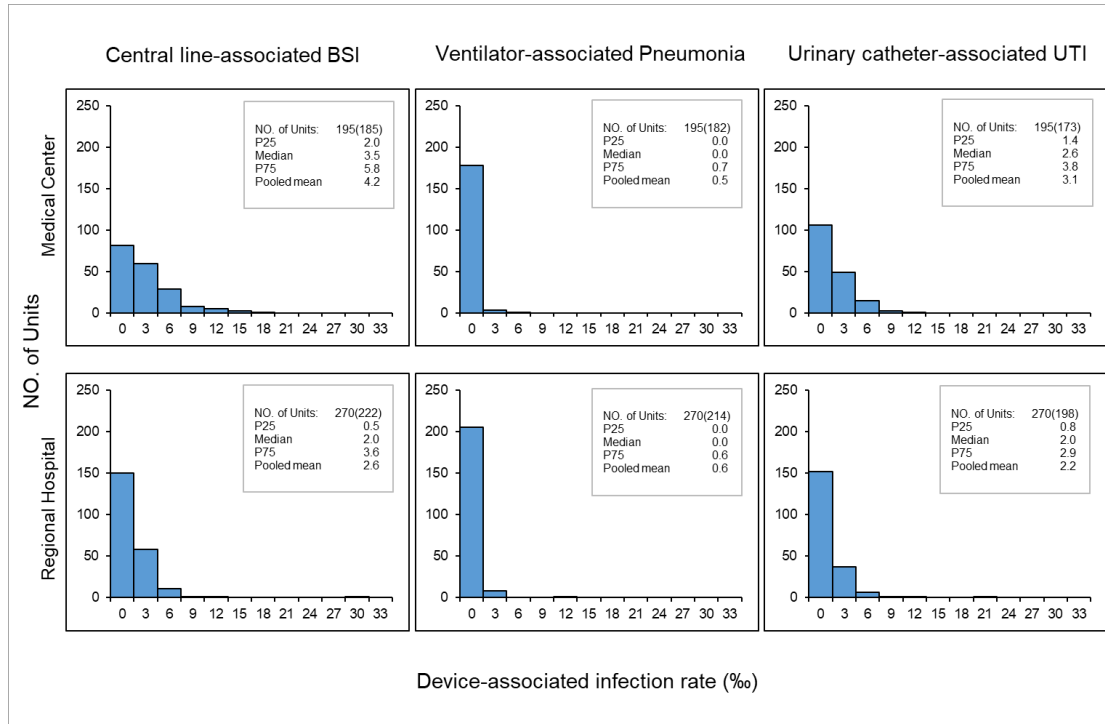
Table 11 Distribution of healthcare-associated infection rates by type of locations in the ICUs of medical centers and regional hospitals, 2022

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	48(48)	1,729	228,751	7.6	4.9	6.7	9.8
	Surgical ICU	63(60)	1,709	244,914	7.0	5.1	6.6	8.3
	Cardiology ICU	15(15)	499	68,639	7.3	-	6.9	-
	Pediatric ICU	45(45)	382	173,908	2.2	0.9	1.7	2.9
	Medical/surgical ICU	24(23)	896	123,876	7.2	5.2	6.5	7.9
	Total	195(191)	5,215	840,088	6.2	3.2	5.9	7.9
Regional hospital	Medical ICU	52(51)	1,142	240,243	4.8	3.5	4.2	5.8
	Surgical ICU	45(43)	818	175,819	4.7	2.3	4.0	5.5
	Cardiology ICU	11(9)	129	38,349	3.4	-	-	-
	Pediatric ICU	66(55)	59	49,789	1.2	0.0	0.0	1.3
	Medical/surgical ICU	96(89)	1,476	365,772	4.0	2.2	3.7	5.3
	Total	270(247)	3,624	869,972	4.2	1.5	3.1	5.0

Note: 1. If a unit changes type of location, each type of locations will be counted separately, but only one will be counted when totaled. 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. For the number of units < 20 but > 10, only 50th percentile distribution is provided; for the number of units ≤ 10, percentile distribution is not provided.

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



- Note: 1. device-associated infection rate= (number of HAIs/number of device-days) ×1000‰;
 2. BSI, bloodstream infection; UTI, urinary tract infection;
 3. Units with device-days < 50 are not included in percentile distribution; the number in parentheses is the number of units that meets the minimum requirement for percentile distribution.

Figure 2 Distribution of device-associated infection rates in the ICUs of medical centers and regional hospitals, 2022

Table12 Distribution of major types of healthcare-associated infection in the ICU patients from medical centers and regional hospitals, 2022

Types of infection	Medical center		Regional hospital	
	No.	%	No.	%
Bloodstream	2,590	47.4	1,536	40.5
Urinary tract	343	6.3	412	10.9
Pneumonia	1,771	32.4	1,422	37.5
Surgical site	235	4.3	162	4.3
Other	520	9.5	259	6.8
Total	5,459	100	3,791	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, 2022

Pathogens	Types of Infection											
	Total		Bloodstream		Pneumonia		Urinary tract		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
<i>Enterococcus faecium</i>	1	663	2	338	22	3	4	243	1	40	3	39
<i>Klebsiella pneumoniae</i>	2	645	1	348	1	75	6	152	2	37	5	33
<i>Candida</i> spp.	3	629	3	314	11	9	3	264	7	22	7	20
<i>Candida albicans</i>	4	485	6	153	9	11	2	270	6	26	6	25
<i>Escherichia coli</i>	5	423	9	103	11	9	1	271	8	21	9	19
<i>Pseudomonas aeruginosa</i>	6	358	7	142	2	62	7	104	4	30	7	20
<i>Acinetobacter baumannii</i>	7	270	4	173	4	29	9	43	13	8	10	17
Yeast-like	8	267	22	26	34	1	5	225	16	6	13	9
<i>Stenotrophomonas maltophilia</i>	9	242	5	156	3	54	18	9	10	14	13	9
<i>Enterococcus faecalis</i>	10	226	13	92	34	1	8	89	3	35	13	9
Others		2,169		1,344		163		227		163		272
Total		6,377		3,189		417		1,897		402		472

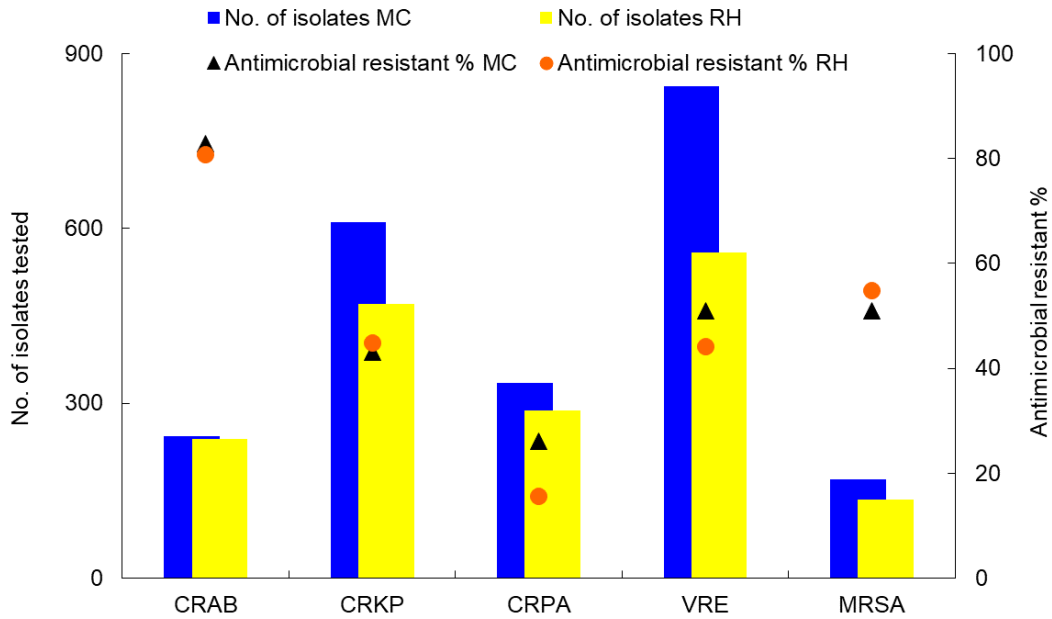
Note: Isolates of the same species of bacteria, regardless of antimicrobial susceptibility pattern, are counted only once per patient per infection. No duplicate isolates are included.

Table 14 Common pathogens of healthcare-associated infections in the ICUs of regional hospitals, 2022

Pathogens	Types of Infection											
	Total		Bloodstream		Pneumonia		Urinary tract		Surgical site		Others	
	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.
<i>Klebsiella pneumoniae</i>	1	483	1	221	1	84	5	139	3	26	5	13
<i>Candida albicans</i>	2	400	5	97	8	14	1	258	6	19	6	12
<i>Enterococcus faecium</i>	3	394	2	154	-	-	3	205	5	20	3	15
<i>Escherichia coli</i>	4	374	8	81	7	16	2	252	7	18	11	7
<i>Candida</i> spp.	5	309	4	106	11	4	4	192	13	3	14	4
<i>Pseudomonas aeruginosa</i>	6	295	8	81	2	71	6	95	1	36	6	12
<i>Acinetobacter baumannii</i>	7	251	3	152	3	45	9	34	8	9	8	11
<i>Enterobacter</i> spp.	8	170	7	82	5	22	10	30	2	28	10	8
<i>E. cloacae</i>		111		54		14		21		20		2
Other <i>Enterobacter</i> spp. or NOS		59		28		8		9		8		6
<i>Enterococcus faecalis</i>	9	163	13	50	21	1	8	82	4	25	12	5
<i>Staphylococcus aureus</i>	10	146	6	91	5	22	13	12	10	6	3	15
Others		1,124		603		93		234		73		121
Total		4,109		1,718		372		1,533		263		223

Note: 1. Isolates of the same species of bacteria, regardless of antimicrobial susceptibility pattern, are counted only once per patient per infection. No duplicate isolates are included.

2. NOS: not otherwise specified.



Note: 1. “Antimicrobial resistant %” indicates the % of Isolates with susceptibility testing and found 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), 2022

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 2022, a total of 775 elementary schools enrolling students from kindergarten to 6th grade voluntarily 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 in 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 released“ Sentinel Surveillance Weekly Report” 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 morbidities of influenza-like illness among schools were between 0.02% and 0.17% in 2022. Due to the COVID-19 pandemic, the morbidity of ILI was higher than the trends in 2020 and 2021.

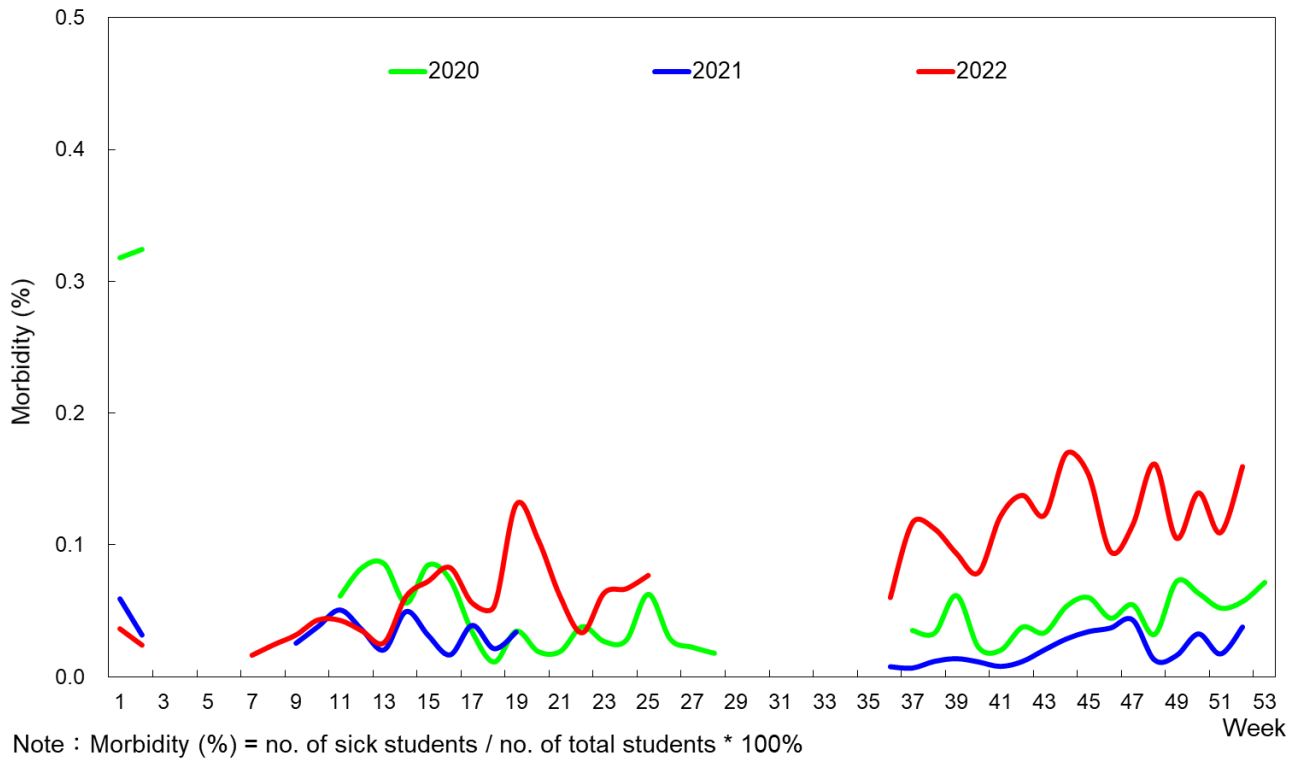


Figure 4 ILI morbidity reported by the School-based Surveillance System, 2020-2022

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

■ Case definition:

- (1) Case definition of hand-foot-and-mouth disease: Vesicular lesions or rashes appear on mouth, palms, soles, and/or knees and buttocks.
- (2) Case definition of herpangina: Fever and vesicular lesions or ulcer in pharyngeal area.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of hand-foot-mouth disease or herpangina among schools were between 0.00% and 0.01% in 2022. Overall, it was lower than the trends in 2020 and 2021.

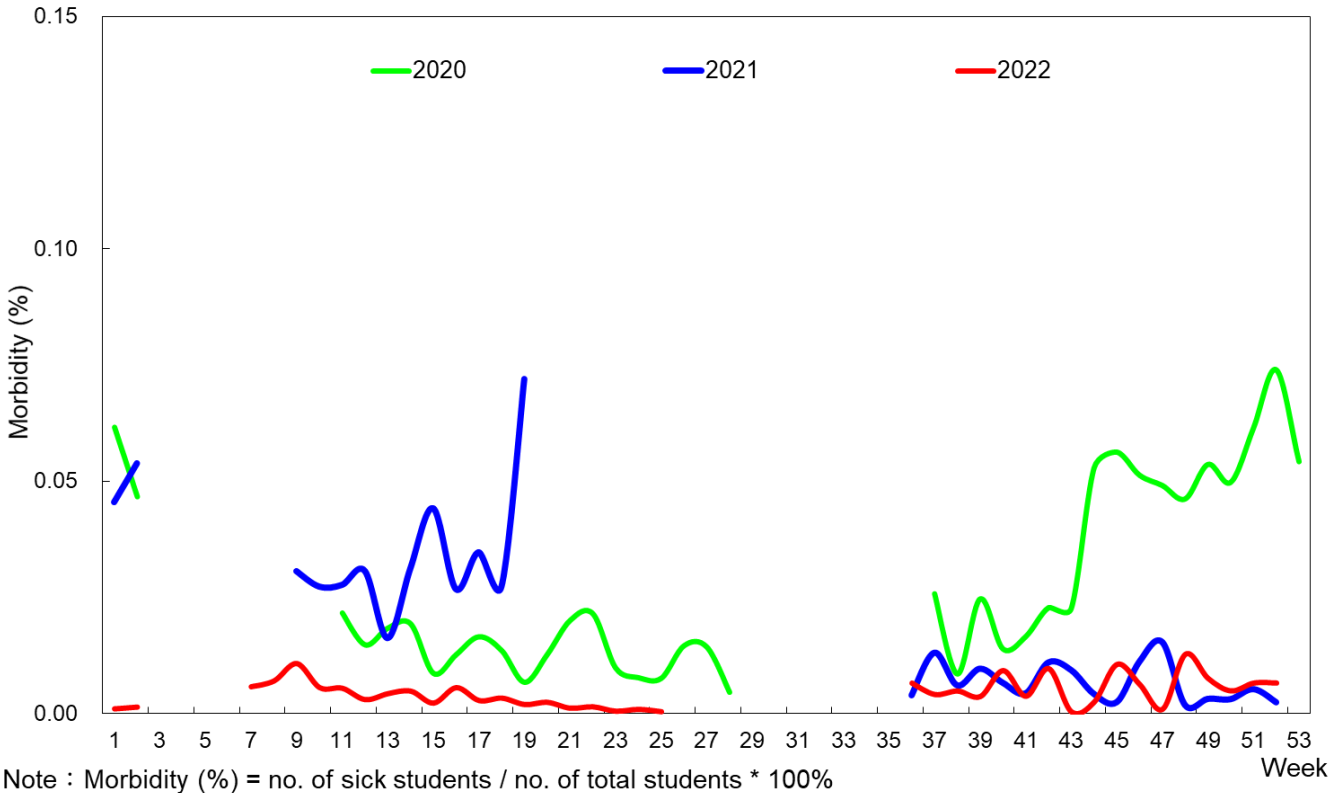


Figure 5 Hand-foot-mouth disease (HFMD) or herpangina morbidity reported by the School-based Surveillance System, 2020-2022

3. Diarrhea

■ Case definition:

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

- (1) Vomiting
- (2) Fever
- (3) Mucous stool or hematochezia
- (4) Watery diarrhea.

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of diarrhea among schools were between 0.00% and 0.17% in 2022. In the first half of 2022, amidst the peak of the COVID-19 pandemic and with enhanced preventive measures, there was a decline in the morbidity of diarrhea. In the second half of the year, the overall situation was lower than that of 2020 and was similar to the trend of 2021.

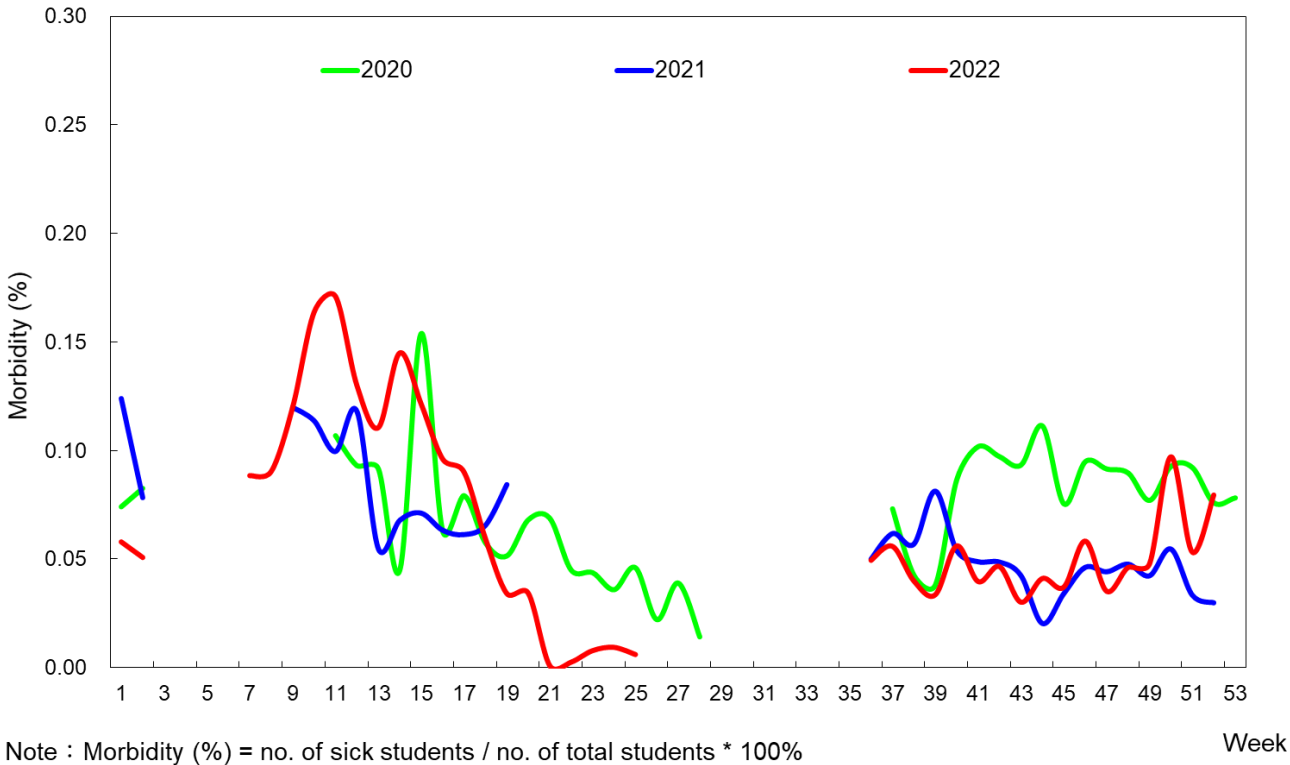


Figure 6 Diarrhea morbidity reported by the School-based Surveillance System, 2020-2022

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 morbidities of fever among schools were between 0.09% and 0.49% in 2022. Due to the COVID-19 pandemic, the morbidity of fever increased in the first half of the year, the second half of the year was higher than that in 2021 and was similar to the trend of 2020.

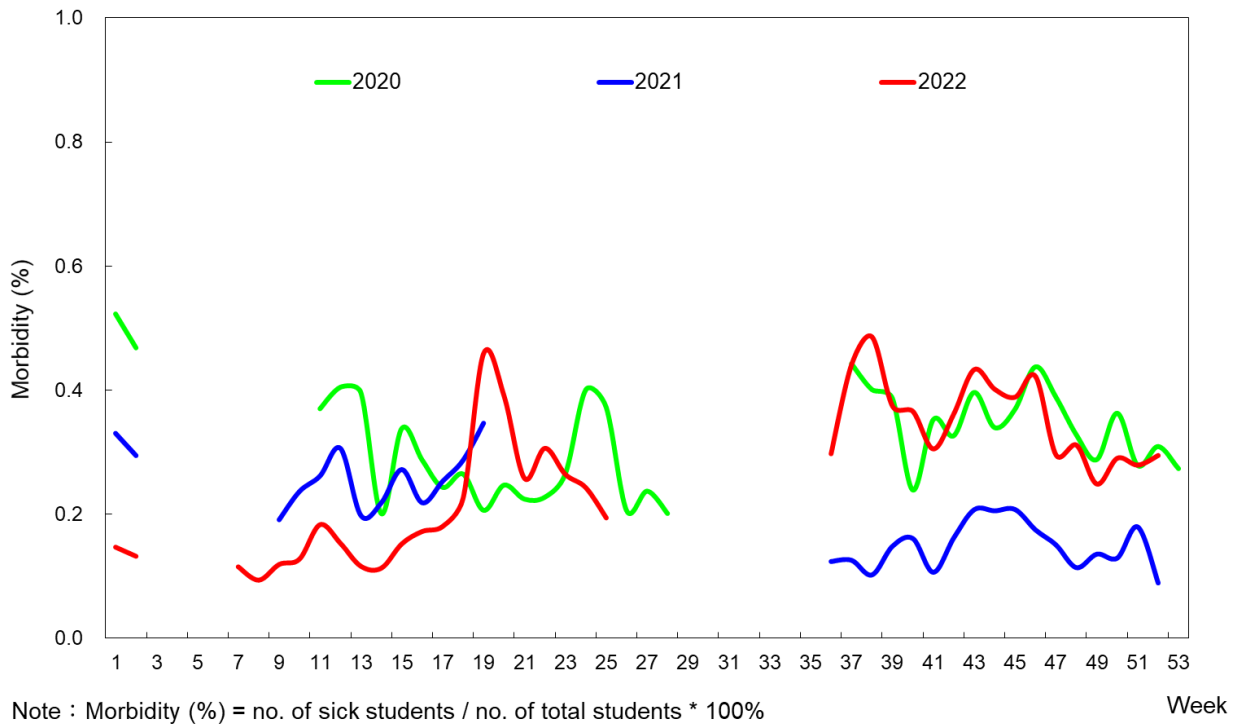


Figure 7 Fever Morbidity Reported by the School-based Surveillance System, 2020-2022

5. Acute hemorrhagic conjunctivitis (AHC)

■ Case definition:

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

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of Acute hemorrhagic conjunctivitis (AHC) among schools were between 0.00‰ and 0.07‰ in 2022. Overall, it was lower than the trends in 2020 and 2021.

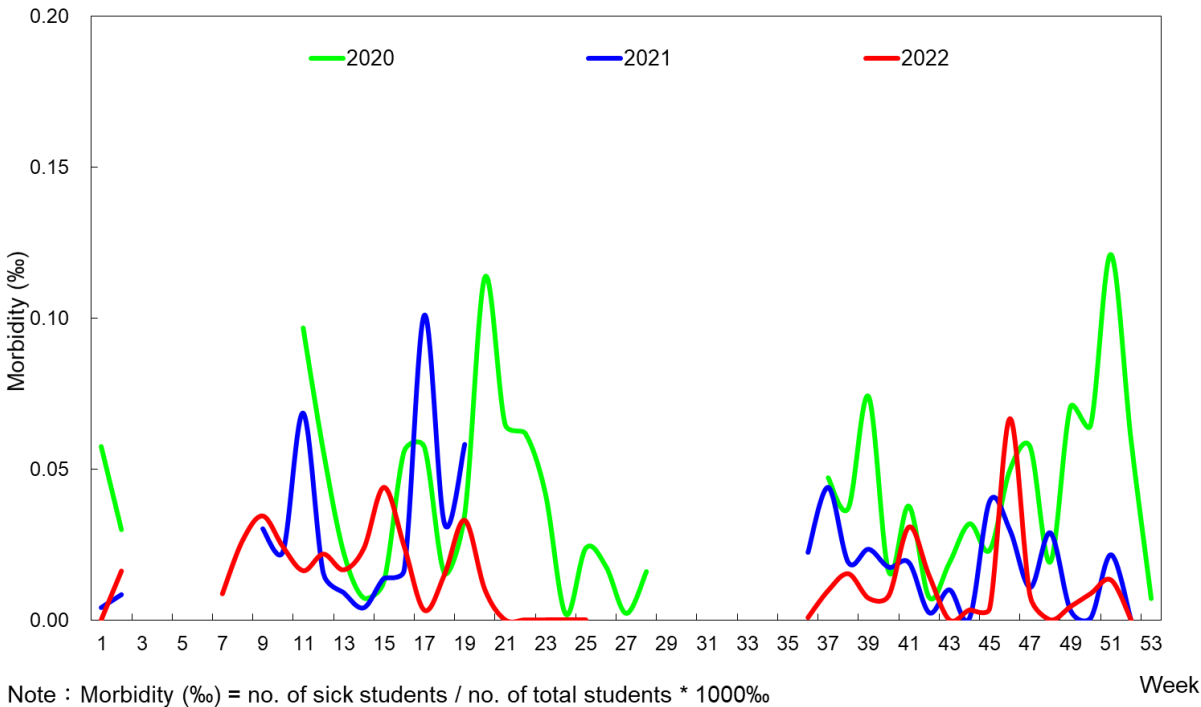


Figure 8 AHC morbidity reported by the School-based Surveillance System, 2020-2022

6. Varicella:

■ Case definition:

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

■ Epidemic analysis:

According to CDC school-based surveillance system, the morbidities of varicella among schools were between 0.00% and 0.02% in 2022. Overall, it was lower than the trends in 2020 and 2021.

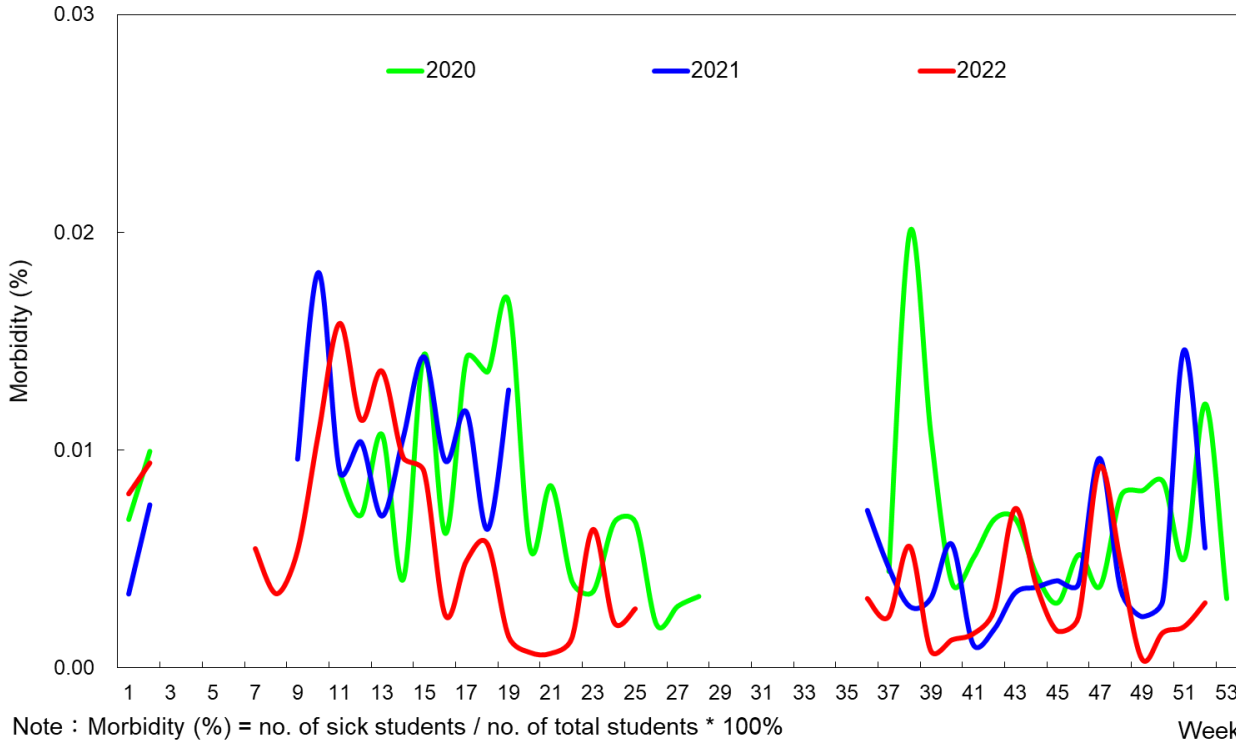


Figure 9 Varicella morbidity reported by the School-based Surveillance System, 2020-2022

Laboratory Surveillance System

I. Origin

The island-wide outbreak of the enterovirus epidemic in Taiwan, in 1998, exposed the deficiency of virology laboratories in both quality and quantity. Therefore, the Department of Health (DOH) established contract virology laboratories throughout Taiwan in March 1999. DOH is committed to improving Taiwan's capabilities in virus biology testing and training programs in this field. Currently, contract laboratories are playing an important role in the monitoring of enterovirus and influenza viruses in communities. The laboratory surveillance systems provide information on the main circulating types or subtypes of enteroviruses and influenza viruses to better understand their prevalence in different seasons. This information provides useful reference for making epidemic prevention policies. In addition, regular receipt of biological materials will be beneficial to the establishment of valuable viral genome database and biological materials database in Taiwan.

In order to monitor the infection situation of COVID-19 in the community, the active surveillance network of viral infectious contract laboratories has added "SARS-Cov2" testing items to provide information on the prevalence of the virus in the community. This project will continue to be implemented in 2012.

II. Distribution and responsibility areas of contracted laboratories

In 2022, there are eight contracted laboratories for viral diseases monitoring in Taiwan, of which the locations and their covering areas where the specimen sampled are as follows: three in Northern Taiwan, including National Taiwan University (covers Taipei City, Kinmen County, and Lienchiang County), Chang Gung University (covers Taoyuan City, Hsinchu County, Hsinchu City and Miaoli County), and Tri-Service General Hospital (covers New Taipei City, Keelung City, Yilan County, and specimens from military hospitals); two in Central Taiwan, including Taichung Veterans General Hospital (covers Taichung City) and Changhua Christian Hospital (covers Changhua County, Yunlin County and Nantou County); two in Southern Taiwan, including National Cheng Kung University Hospital (covers Chiayi County, Chiayi City and Tainan City) and Kaohsiung Medical University Chung-Ho Memorial Hospital (covers Kaohsiung City, Pingtung County, and Penghu County); one in Eastern Taiwan, Hualien Tzu Chi Hospital (covers Hualien County and Taitung County).

III. Sources of specimens and testing process

Sources of specimens at the contracted laboratories come mainly from outpatients, emergency and inpatients patients at medical centers within the areas covered by the laboratories, as well as from 165 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

The total number of cases with the specimens collected by the eight contract laboratories is 10,712 in 2022, with an average of 893 cases per month. Among them, northern Taiwan has the largest number of contract laboratories with 3,971 cases, followed by 2,744 cases in central Taiwan, 2,644 cases in southern Taiwan, and 1,353 cases in the eastern region.

In 2022, the total number of SARS-Cov-2 specimens monitored by contract laboratories was 5,408, an average of 451 cases per month. Among them, the northern region has the largest number of cases monitored, reaching 2,810; followed by the southern region with 1,244 cases; the central region with 718 cases; and the eastern region with 636 cases.

2. Prevalence of enterovirus

In 2022, a total of 151 strains of enterovirus were isolated. When typed with immunofluorescence assay (IFA), the 151 strains composed of 7 Coxsackie virus A (CVA) strains (4.6%, including 3 CVA6 strains, 1 CVA2 strain, 1 CVA4 strain, 1 CVA10 strain, 1 CVB5 strain) and 143 non-polio enterovirus (NPEV) strains (94.7%). When typed using the determined partial genome sequences, the majority of NPEV strains were Rhinovirus 49, followed by Rhinovirus 31, Human Enterovirus D68, and Rhinovirus 23 (Figure 11).

To sum up, the top two types of enterovirus isolated in 2022 were CVA6 (2.0%) and NPEV (94.7%) (Figures 10 and 11).

3. Prevalence of influenza virus

In 2022, a total of 131 strains of influenza virus were isolated, including 128 strains of influenza A subtype H3 (97.6%), 1 strain of type B (0.8%), 1 strain of H1N2 variant (0.8%), and 1 strain of H1N1 (0.8%). H3 was the most prevalent strain in 2022. The influenza virus strains were mainly isolated after the 37th week, during which the H3 is the main epidemic strain; see Figure 12 for the isolation composition of influenza viruses from specimens collected by the sentinel physicians, 2022.

A new type of reassortment virus, A/Taiwan/1/2021(H1N2)v, was isolated. The whole genome sequencing and the epidemic study revealed that its HA and NA gene fragments were from the swine influenza A(H1N2) virus. The phylogenetic and evolutionary analysis suggested that it belongs to the unique evolutionary group of Taiwanese pigs. These gene segments were presumed to have been circulated in Taiwan for decades.

To sum up, the isolated influenza virus strains in 2022 contained INFA H3 (97.6%), INFB (0.8%), H1N2v (0.8%) and H1N1 (0.8%), including a new swine to human reassortant influenza virus strain, A/Taiwan/1/2021(H1N2)v (Figure 12).

4. The circulations of other respiratory viruses

A total of 994 cases of respiratory viruses other than influenza virus were isolated, including 362 strains of parainfluenza virus (36.4%), 299 strains of herpes simplex virus (HSV) (30.1%), 161 strains of respiratory syncytial virus (RSV) (16.2%), 148 strains of adenovirus (14.9%), and 24 strains of cytomegalovirus (CMV) (2.4%). In early 2011, in response to the global COVID-19 epidemic and the rapid increase in suspected cases in Taiwan, the virology contract laboratories were promptly dispatched to become a designated laboratory to support the nationwide COVID-19 surveillance. Leveraging the network established by Virology Contract Laboratories over the years, the overall community surveillance sites were strengthened during the pandemic period, and the SARS-CoV-2 testing was included in the surveillance program. In 2022, Virology Contract Laboratories performed a total of 10,712 SARS-CoV-2 tests across the constituting contract laboratories, including 56 positive cases and 10,656 negative cases. (Figure 13).

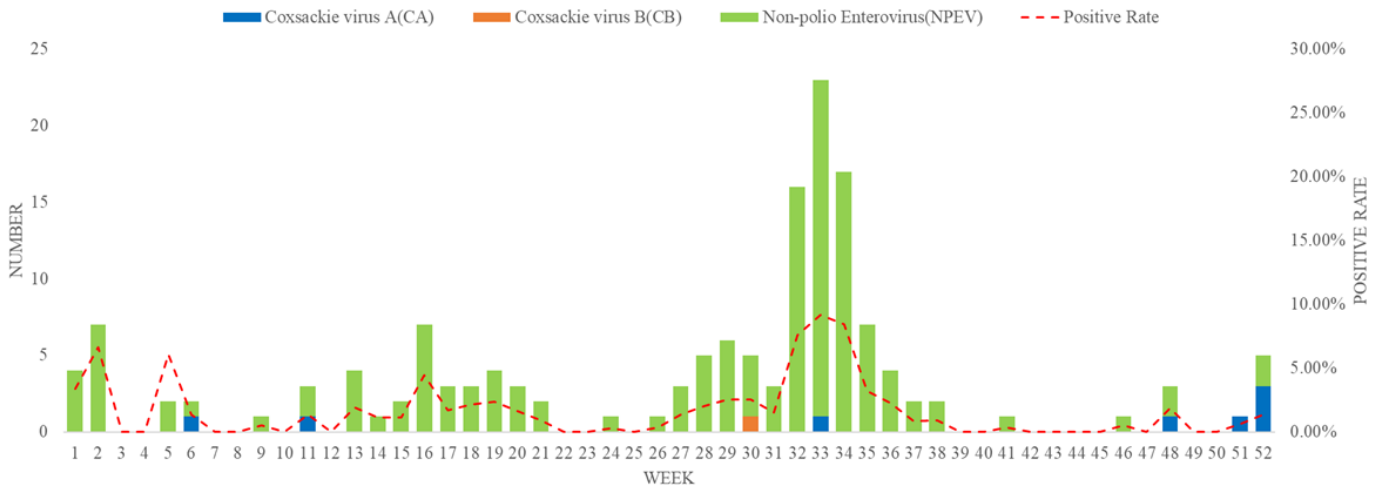
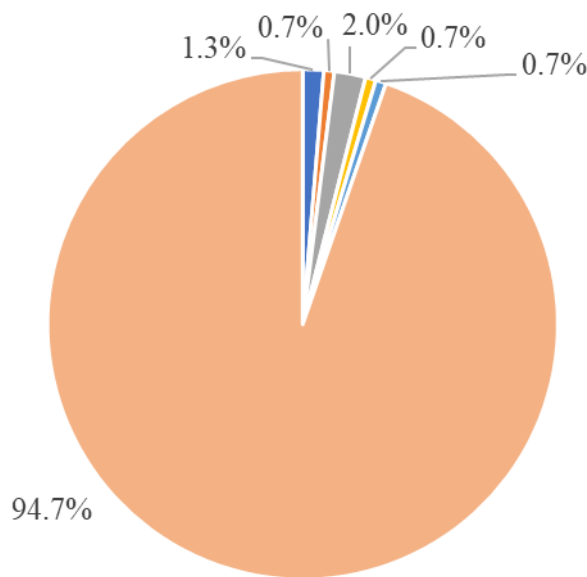


Figure 10 Enterovirus positive isolation rates in specimens collected by the sentinel physicians, 2022



■ CA2 ■ CA4 ■ CA6 ■ CA10 ■ CB5 ■ Non-polio Enterovirus(NPEV)

Figure 11 Strain ratios of enterovirus isolates from specimens collected by the sentinel physicians, 2022

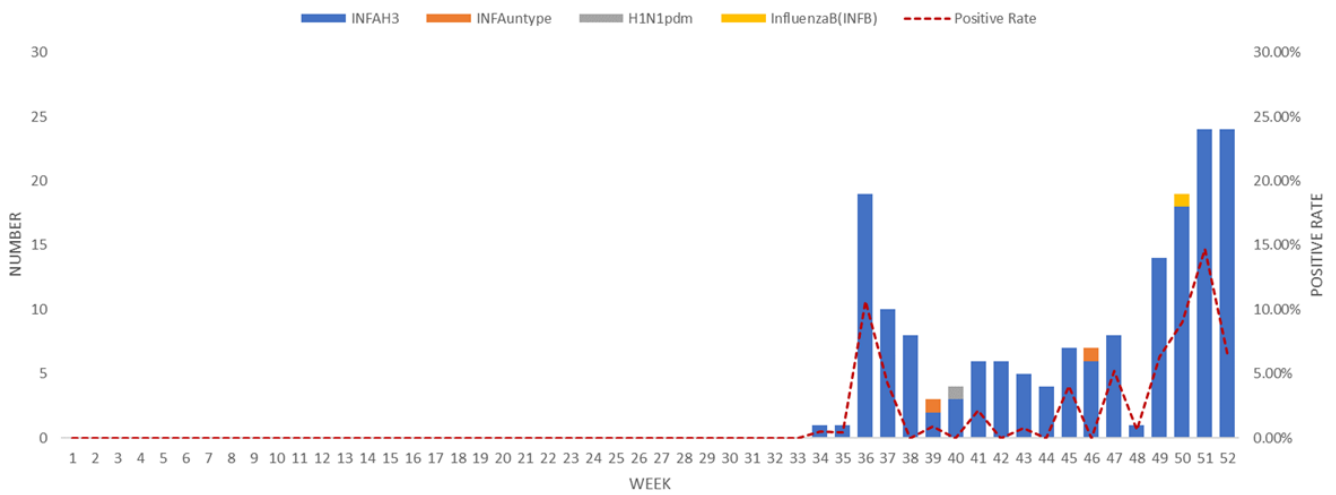


Figure 12 Isolation situations of influenza viruses from specimens collected by the sentinel physicians, 2022

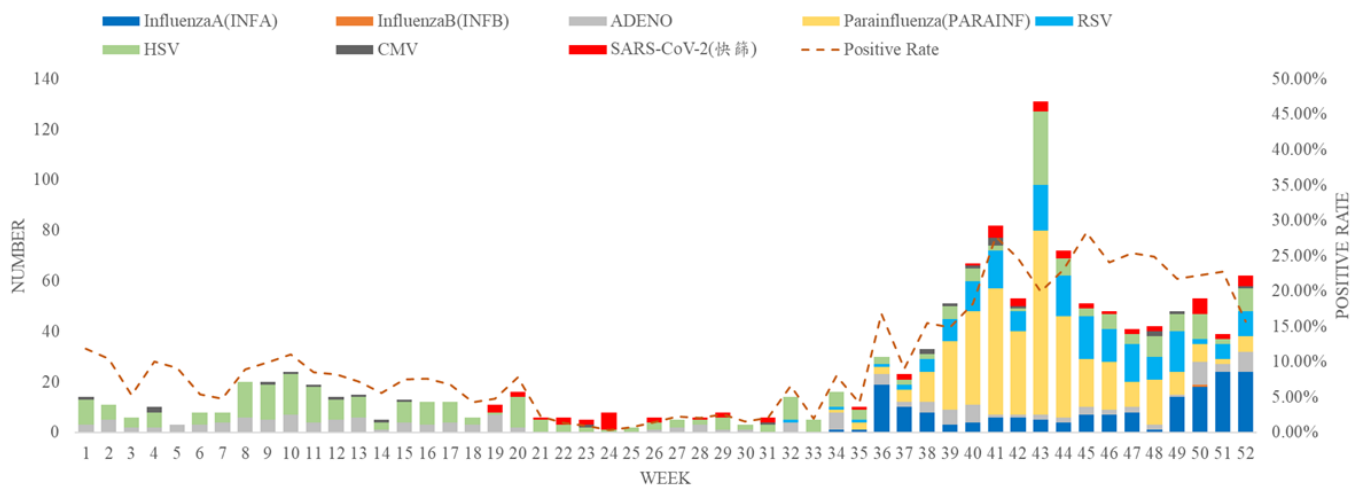


Figure 13 Positive isolation rates for respiratory tract viruses from specimens collected by the sentinel physicians, 2022

Quarantine Surveillance

I. Health examination of migrant workers

To prevent the importation of infectious diseases by migrant workers affecting the health of the population, all legally imported workers are required to submit a health certificate issued by an authorized foreign hospital before applying for an entry visa. They are also required to undergo health examination at a designated hospital within 3 working days after entry and within 30 days before or after the days of 6, 18 and 30 months of the employment permit effective date in order to ensure their health condition. The designated items of health examination for migrant workers in 2021 include chest X-ray examination for tuberculosis, examination for Hansen's disease, serological test for syphilis, stool examination for intestinal parasites, and physical examination. In addition, either proof of positive antibody or vaccination certificate for measles and rubella is required in the health examination conducted in the authorized hospitals.

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

Within 759,038 man-times health examinations for migrant workers conducted in Taiwan in 2022, 3,760 man-times were failed, representing a failed rate of 0.50%. Stool examination for intestinal parasite accounted for the highest failed rate with 0.42% (3,205 man-times), followed by chest X-ray examination for tuberculosis with 0.04% (324 man-times) (Table 15).

II. Health declaration of inbound passengers

To prevent the imported infectious disease through aircrafts and ships into Taiwan, Taiwan CDC in accordance with the "Communicable Diseases Control Act" and "Regulations Governing Quarantine at Ports" implements necessary quarantine measures--in particular, the follow-up and surveillance of suspect passengers with symptoms. On December 1, 2004, new regulations took effect that all inbound passengers with suspected symptoms of communicable diseases should fill in the "Communicable Disease Survey Form." At the end of December 2019, an outbreak of pneumonia of unknown cause (later called COVID-19) occurred in Wuhan, China. Starting from January 24, 2020, Taiwan CDC required all the inbound passengers from China, Hong Kong and Macau to complete the "COVID-19 Health Declaration Card", which asked the passengers to provide their personal information, travel

history and health status. This policy was expanded to all travelers from February 11, 2020. Besides the measure, Taiwan CDC began to require all passengers arriving in Taiwan from abroad to quarantine for 14 days in response to the measure, starting February 3, 2020, Taiwan CDC started to issue the "COVID-19 Health Declaration and Home Quarantine Notice" ("COVID-19 Health Declaration Form"), a form produced by merging the "COVID-19 Health Declaration Card" with the "Home Quarantine Notice", to all arriving passengers and to require them to describe their health status and provide the address of their quarantine location, mobile phone number and other information. Such information allowed public health and civil affairs personnel to monitor passengers' health conditions for the next 14 days. Later, from March 19, 2020, all arriving travelers were required to fill out the COVID-19 Health Declaration Form before entry and undergo home quarantine for 14 days following arrival.

Due to the COVID-19 pandemic and variants were prevalent. Enhanced inbound passengers border quarantine from July 2, 2021. All the inbound passengers were required saliva-based PCR testing was implemented at international airports/seaports to enhance surveillance of the passengers and continued until discharge from quarantine. In 2022, there was outbreak of the international COVID-19 Omicron variant, and additional landing inspection measures were implemented for high-risk routes from January 11th to May 31st in 2022.

From 2022, Taiwan adopted a virus coexistence epidemic prevention strategy alongside economic development in response to COVID-19. Under effective risk management, we gradually opened borders, relaxed or exempted various control measures, including reducing home quarantine from 14 days to 10 days, 7 days, and 3 days, with home quarantine being completely lifted on October 13, 2022. Furthermore, as of September 29, 2022, the saliva PCR testing requirement for entry was abolished, airport and port quarantine operations returned to normal, and we continued to conduct health assessments and necessary measures for symptomatic individuals upon entry.

From January to December of 2022, the man-time of inbound passengers was 2,296,981 in total and 11,734 of them showing symptoms were then subject to follow-up and surveillance by local health authorities. Blood samples were collected from 1,062 man-times, while deep throat saliva/nasopharyngeal swab samples were collected from a total of 860,685 man-times. The "COVID-19 Health Declaration and Home Quarantine Notice", the "Communicable Disease Survey Form" and body temperature screening measures have identified 27,793 cases of COVID-19 and 31 cases of dengue fever (Table 16).

Table 15 Physical examinations status of migrant workers, 2022

Unit : Number of Persons, Person Time, %

Country	Number of Persons		Failed	X-ray	Syphilis	Parasites	Hansen's disease	Mental condition	Others
Thailand	At Entry	21,721	175 0.81%	3 0.01%	10 0.05%	162 0.75%	-	-	-
	Periodic	60,824	428 0.70%	41 0.07%	17 0.03%	370 0.61%	-	-	-
Indonesia	At Entry	43,251	470 1.09%	3 0.01%	15 0.03%	452 1.05%	-	-	-
	Periodic	207,139	669 0.32%	97 0.05%	63 0.03%	508 0.25%	1 0.00%	-	-
Philippines	At Entry	29,984	357 1.19%	-	5 0.02%	352 1.17%	-	-	-
	Periodic	140,517	443 0.32%	72 0.05%	44 0.03%	327 0.23%	-	-	-
Vietnam	At Entry	68,320	542 0.79%	29 0.04%	26 0.04%	487 0.71%	-	-	-
	Periodic	187,276	676 0.36%	79 0.04%	49 0.03%	547 0.29%	1 0.00%	-	-
Others	At Entry	0	-	-	-	-	-	-	-
	Periodic	6	-	-	-	-	-	-	-
Total	At Entry	163,276	1,544 0.95%	35 0.02%	56 0.03%	1,453 0.89%	-	-	-
	Periodic	595,762	2,216 0.37%	289 0.05%	173 0.03%	1,752 0.29%	2 0.00%	-	-
Total (Person Time)		759,038	3,760 0.50%	324 0.04%	229 0.03%	3,205 0.42%	2 0.00%	-	-

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

Table 16 Implementation Outcomes of International Ports Entry Quarantine Measures in 2022

Unit : Number of Person Time

Month	Person time of inbound passengers ¹	Cases with symptom ²		Cases sample taking (No.)		Notifiable disease	Case No.	Traveling country
		Case No.	Case percentage (%)	Blood (No.)	Swab/Saliva (No.) ³			
Jan.	60,348	230	0.38	2	59,360	COVID-19	776	United States, Philippines, Canada, India, United Kingdom, Vietnam, Australia, France, United Arab Emirates, Turkey et al.
Feb.	36,423	208	0.57	0	35,768	COVID-19	682	United States, Indonesia, Philippines, Vietnam, India, France, Hong Kong, Thailand, United Kingdom, Australia, et al.
Mar.	49,400	306	0.62	0	48,154	COVID-19	1,450	Vietnam, Indonesia, Thailand, Philippines, United States, Korea, Hong Kong, Malaysia, Myanmar, United Kingdom et al.
Apr.	60,742	393	0.65	0	59,350	COVID-19	2,873	Vietnam, Indonesia, Philippines, Thailand, United States, United Kingdom, Malaysia, Singapore, Korea, Turkey, Unknown et al.
May	70,755	509	0.72	1	70,095	COVID-19	1,333	Vietnam, United States, Thailand, Turkey, Indonesia, United Kingdom, Philippines, France, Malaysia, Singapore, Unknown et al.
						Dengue fever	1	Indonesia
Jun.	96,061	964	1.00	18	94,958	COVID-19	1,639	United States, Vietnam, Germany, France, Thailand, Singapore, United Kingdom, Turkey, Canada, United Arab Emirates, Unknown et al.
						Dengue fever	3	Vietnam, Indonesia
Jul.	146,225	2,764	1.89	59	144,738	COVID-19	5,286	United States, Germany, Vietnam, Thailand, Singapore, United Kingdom, Netherlands, Philippines, Australia, Turkey, Unknown et al.
						Dengue fever	3	Philippines, Vietnam

(Continued) Table 16 Implementation Outcomes of International Ports Entry Quarantine Measures in 2022

Month	Person time of inbound passengers ¹	Cases with symptom ²		Cases sample taking (No.)		Notifiable disease	Case No.	Traveling country
		Case No.	Case percentage (%)	Blood (No.)	Swab/Saliva (No.) ³			
Aug.	183,020	2,854	1.56	246	181,644	COVID-19	7,074	Vietnam, United States, Thailand, Philippines, Malaysia, Japan, Singapore, Canada, Indonesia, Cambodia, Unknown et al.
						Dengue fever	5	Vietnam, Myanmar, Indonesia, Thailand
Sep.	179,100	2,137	1.19	248	165,296	COVID-19	6,037	Vietnam, United States, Thailand, Indonesia, Philippines, Singapore, Germany, Malaysia, Japan, Korea, Unknown et al.
						Dengue fever	7	Vietnam, Myanmar, Indonesia, Philippines
Oct.	258,745	665	0.26	252	643	COVID-19	277	United States, Singapore, Thailand, Vietnam, Germany, Netherlands, India, France, Switzerland, United Kingdom, Unknown et al.
						Dengue fever	5	Indonesia, Vietnam, India
Nov.	443,890	242	0.05	120	223	COVID-19	112	Japan, Indonesia, Thailand, United States, Vietnam, Malaysia, Singapore, Korea, Cambodia, Turkey, Unknown et al.
						Dengue fever	6	Vietnam, Philippines, Thailand
Dec.	712,272	462	0.06	116	456	COVID-19	254	China, Japan, United States, Korea, Vietnam, Thailand, Hong Kong, Turkey, United Kingdom, Singapore, Unknown et al.
						Dengue fever	1	Indonesia
Total	2,296,981	11,734	0.51	1,062	860,685	COVID-19	27,793	
						Dengue fever	31	

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

2. The data of cases with symptom was provided by Taiwan CDC Smart Quarantine Multifunctional System. The data of cases were provided by NIDRS system. The statistics are calculated based on the date of disease confirmed.

3. Due to the COVID-19 pandemic, saliva-based PCR testing was implemented at international airports from July 2, 2021 to September 28, 2022. The policy of conducting flight landing inspections was implemented from January 1, 2022, to May 31, 2022.

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 vector mosquito

The dengue fever vector 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 2022 finds the following: the health bureaus of all counties and cities conducted 32,120 wards/villages, including 22,243 wards/villages in Level 0, 8,278 wards/villages in Level I, 1,173 wards/villages in Level II, 207 wards/villages in Level III, 36 wards/villages in Level IV, 11 wards/villages in Level V, 20 wards/villages in Level VI, 4 wards/villages in Level VII, 74 wards/villages in Level VIII, 74 wards/villages in Level IX (Table 17). The number of wards/villages above Level II in the range of 1.3~13.4% displayed one peak from May to July (Figure 14).

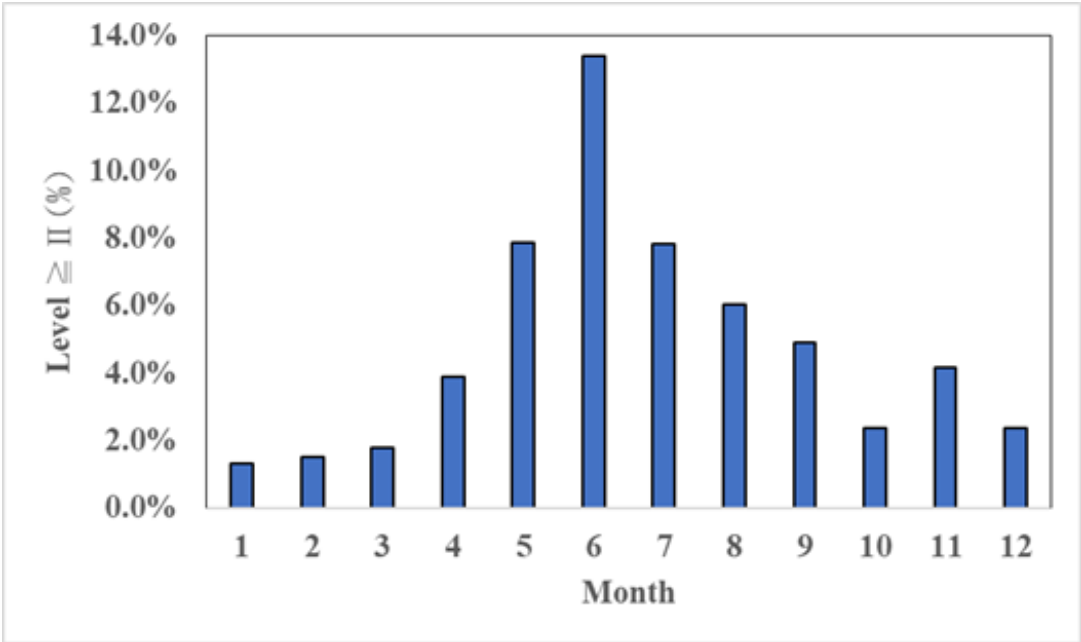


Figure 14 The percentage of wards/villages with Dengue fever vector by month in 2022.

Table 17 Distribution of Breteua index, 2022

Locality	Villages (No. of times)	Breteua Index									
		0	1	2	3	4	5	6	7	8	9
Taipei City	1,551	1,290	249	3	1	1	1	-	-	3	3
New Taipei City	3,678	3,554	93	5	2	3	1	1	-	4	15
Keelung City	419	346	50	23	-	-	-	-	-	-	-
Yilan County	1,022	880	141	1	-	-	-	-	-	-	-
Kinmen County	31	27	4	-	-	-	-	-	-	-	-
Taoyuan County	698	336	194	88	16	8	3	12	-	21	20
Hsinchu City	52	47	5	-	-	-	-	-	-	-	-
Hsinchu County	589	556	24	1	3	-	-	-	-	4	1
Miaoli County	291	129	126	34	-	-	-	-	-	-	2
Taichung City	811	306	398	65	19	5	2	-	-	7	9
Changhua County	425	289	96	24	9	2	-	-	2	2	1
Nantou County	950	563	333	28	3	1	2	1	1	16	2
Yunlin County	226	168	57	-	-	1	-	-	-	-	-
Chiayi City	1206	286	682	172	60	5	-	-	-	-	1
Chiayi County	1,423	1,256	153	9	3	-	-	-	-	1	1
Tainan City	9,777	6,716	2,879	167	13	2	-	-	-	-	-
Kaohsiung City	4,140	2,258	1,379	439	62	-	1	-	-	1	-
Pingtung County	2,565	1,457	1,011	73	1	1	-	3	-	11	8
Penghu County	769	628	114	14	10	2	1	-	-	-	-
Hualien County	529	427	81	7	-	1	-	2	1	2	8
Taitung County	968	724	209	20	5	4	-	1	-	2	3
Total	32,120	22,243	8,278	1,173	207	36	11	20	4	74	74

II. Malaria vector mosquito

In 2022 mosquito light traps were hanged for collection of adult mosquitoes in 4 Counties, 6 townships and 20 villages, including Longqi Dist. in Tainan City; Checheng Township and Manzhou Township in Pingtung County; Donghe Township in Taitung County; Wanrung Township and Shoufeng Township in Hualien County. The survey result showed that 4 counties, 4 townships and 6 villages had collected adult *An. minimus* (Table 18 and Figure 15).

Table 18 The number of adult mosquitoes of *Anopheles minimus* collected in 2022

County	Township	<i>An. minimus</i> (No.)	Villages (No.)	Villages with <i>An. minimus</i>
Tainan City	Longqi	1	1	Tuqi
Pingtung County	Checheng	136	1	Wenquan
Hualien County	Shoufeng	90	2	Gonghe, Pinghe
Taitung County	Donghe	28	2	Doulan, Donghe
Total	4 townships	255	6	

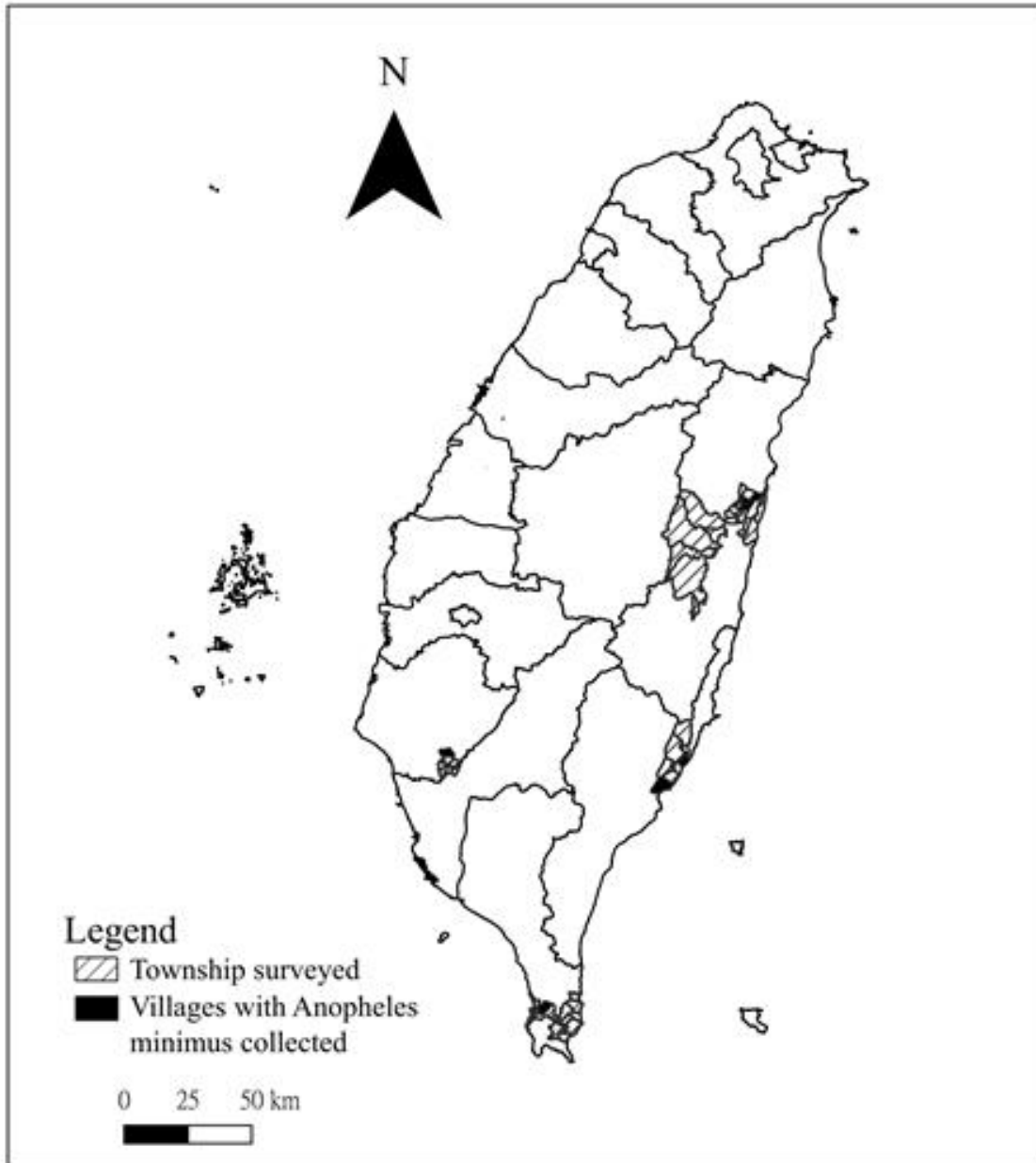


Figure 15 Distribution of *Anopheles minimus*, 2021

Symptom Surveillance and Early Warning 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. On September 6th, 2021, the Symptom Surveillance System carried out the revision to cluster events function modular with NIDRS System. The followings are the symptoms of diseases to be reported currently: upper respiratory infection clustering (included influenza-like illness), fever of unknown origin clustering, diarrhea clustering, enterovirus clustering and varicella clustering.

II. Objectives of surveillance system

Effectively control suspected cluster events and activate related prevention programs in a timely manner.

III. Reporting method and data analysis

Mainly reported via internet, when public health authorities received notifications from hospitals, populous institutions, school, others (e.g. people in the local community) reported suspected cluster events it need to be invesgated for pre-judgement. If complied with cluster events, report cluster events and case reports filling in the items “cluster events” in NIDRS System (<https://NIDRS.cdc.gov.tw>).

Public health officers of local authorities and CDC are able to access data of

reports, specimen submission forms and test results in the system for analysis.

IV. Description of reportable diseases

■ Upper respiratory tract infection (URI) clustering (Included Influenza-like illness (ILI) clustering)

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

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

- (1) Sudden onset, with fever (tympanic 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 URI clusters: In 2022, a total of 95 URI cluster events were reported. Clusters that were tested positive include 40 events of other respiratory pathogens infection (the major causes were rhinovirus infection and RSV). The other events were negative or had no specimens taken (Table 19 and Figure 16). Schools had the highest number of URI clusters, followed by populous institutions, hospitals, others (including cram school and business places) and military camps (Table 20).

Table 19 Test results for upper respiratory tract infection clustering incidents in 2022

No. of Clusters	Test results					
	Influenza A (H1N1) viruses	Influenza A (H3N2) viruses	Influenza viruses (RIDTs)	Other respiratory pathogens*	Negative	No specimen
95	-	12	6	40	34	3

Note: * Include 22 events of rhinovirus infection, 12 events of RSV infection, 3 events of adenovirus infection, 2 events of human coronavirus 229E infection and 1 event adenovirus+rhinovirus infection.

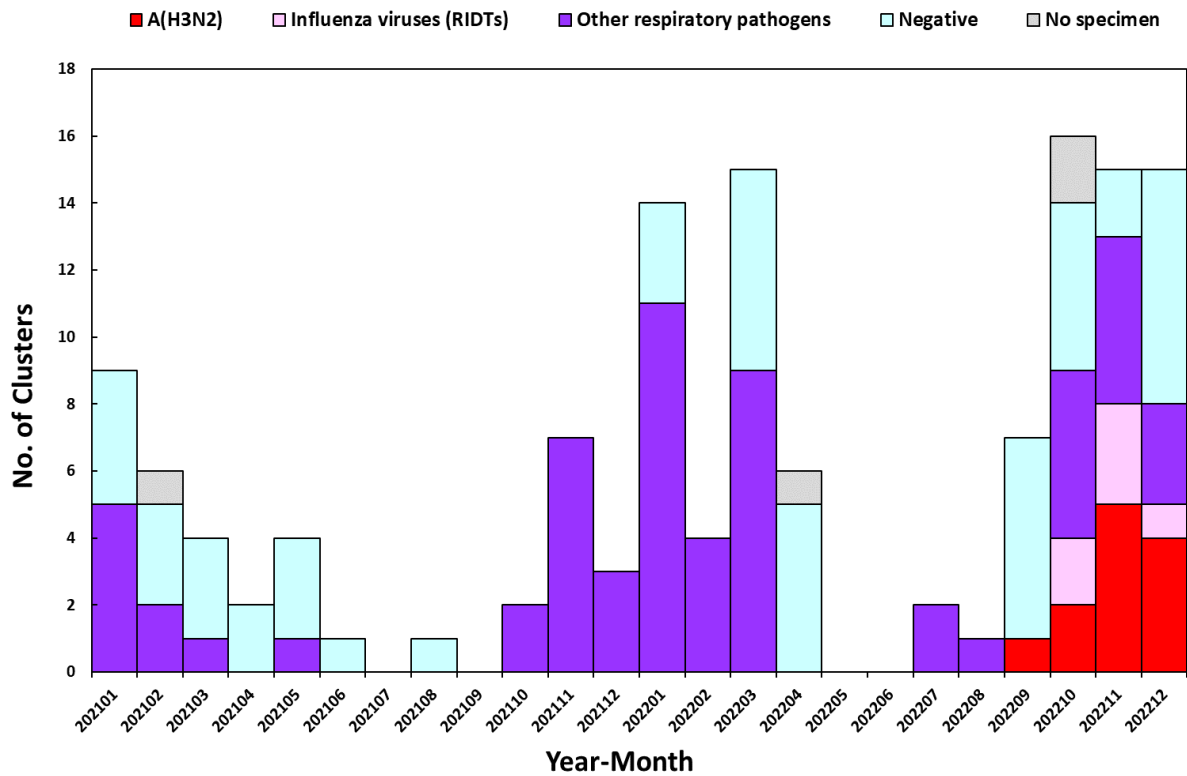


Figure 16. Evolutional trends of upper respiratory tract infection clustering incidents in 2021-2022

Table 20 Distribution of clusters of upper respiratory tract infection cases (by location) in 2022

Institution categories	No. of Clusters
schools	55
populous institutions	31
hospitals	7
others	1
military camps	1
Total	95

■ Fever of unknown origin (FUO) clustering

1. Case definition: Patients with fever of unknown cause (tympanic temperature $\geq 38^{\circ}\text{C}$) 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 2022, a total of 2 cases FUO cluster events were reported. Clusters that were tested positive include 1 event of Respiratory syncytial virus infection. The other event was negative. Both of them were schools.

■ Diarrhea clustering

1. Case definition: 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 2022, a total of 538 diarrhea cluster events were reported. Clusters that were tested positive include 328 events of Norovirus infection, 2 events of Rotavirus infection, 1 event of Norovirus and Rotavirus coinfection, and 38 events of other pathogens infection (the major causes were *Vibrio parahaemolyticus*, *Staphylococcus aureus*, *Salmonella*). The other events were negative or had no specimens taken or specimen retention (Table 21 and Figure 17). Schools had the highest number of diarrheal clusters, followed by hospitality industry, populous institutions, tour groups, others (including business places, family, camp and cram school), military camps and hospitals. (Table 22).

Table 21 Test results for diarrhea clustering incidents in 2022

No. of Clusters	Test results						
	Norovirus	Rotavirus	Norovirus and Rotavirus	Others *	Negative	No specimen	Specimen retention
538	328	2	1	38	147	5	17

Note : * Include 14 events of *Vibrio parahaemolyticus*, 13 events of *Staphylococcus aureus* infections, 10 events of *Salmonella* infection, 1 *Vibrio cholerae*.

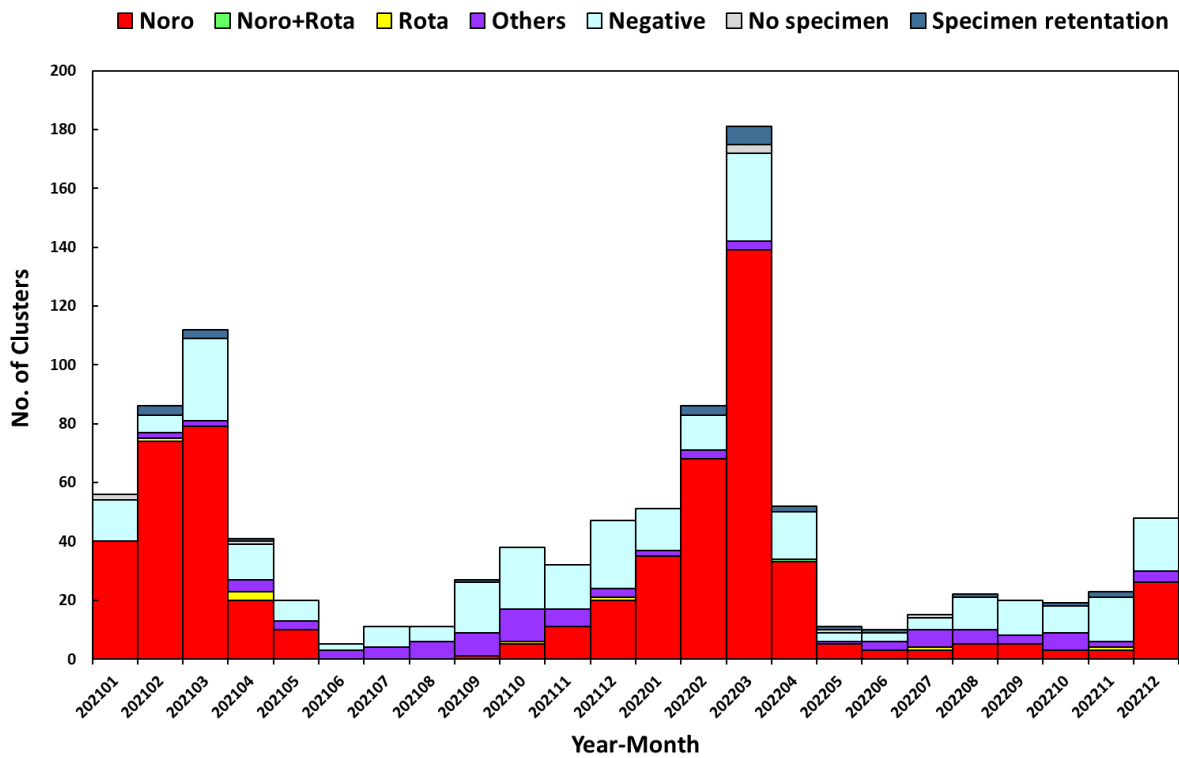


Figure 17 Evolutional trends of diarrhea clustering incidents in 2021-2022

Table 22 Distribution of clusters of diarrhea cases (by location) in 2022

Institution categories	No. of Clusters
schools	243
hospitality industry	188
populous institutions	59
tour groups	17
others	16
military camps	9
hospitals	6
Total	538

■ Enterovirus clustering

1. Case definition: Patients 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 2022, a total of 1 event of enterovirus clusters were reported. Cluster that was tested positive include 1 event of Coxsackie A6 and Enterovirus D68 infection. Populous institutions had the highest number of Enterovirus clusters.

■ 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 2022, a total of 19 events of varicella clusters were reported. Schools had the highest number of varicella clusters, followed by military camps, others (including tutoring center and business places), and hospitals (Table 23).

Table 23 Distribution of clusters of varicella cases (by location) in 2022

Institution categories	No. of Clusters
schools	15
military camps	2
others	1
hospitals	1
Total	19

Real-time Outbreak and Disease Surveillance System

I. Purpose of surveillance

Taiwan CDC has constructed the "Real-time Outbreak and Disease Surveillance (RODS)" system, which integrated 180 responsible hospitals nationwide. The RODS system automatically transfers ICD-10-CM (International Classification of Diseases, Clinical Modification, Tenth Revision) coded diagnostic information of patients seen on an emergency basis to the Taiwan CDC to help early and rapid analysis of irregularities in the prevalence of diseases or syndromes.

The RODS system aims to detect the potential early outbreak of infectious diseases in the communities, track the trends and predict the prevalence of diseases. The reportable diseases under RODS included influenza-like illness, enterovirus infection, and acute diarrhea, and the system started actively monitoring those diseases in 2007. In addition, the reportable diseases in 2008 through 2022 included routine surveillance of acute hemorrhagic conjunctivitis.

II. Data analysis methods

The 180 responsibility healthcare facilities across the country provide daily real-time information on emergency patients via the Internet directly. The format of the report contains the fields of the patient information, the ID of reporting hospital, time of admission, chief complaint, ICD-9-CM, and ICD-10-CM codes. Taiwan CDC compiles and analyzes the RODS data weekly, determines the trends in the prevalence of diseases, produces statistical charts, and publishes that information on the website.

III. Findings

■ Enterovirus

Epidemic analysis:

Based on the surveillance data of enterovirus cases in the year 2022, the annual visit percentage ranged from 0‰ to 0.63‰, which is lower compared to 2021 (0‰ to 3.29‰). The overall trend of the epidemic in 2022 was lower than that of 2021. Starting from early January, it remained relatively stable throughout the year, and the peak of the epidemic was significantly lower than in 2021 (Figure 18). 【Note: per mileage of enterovirus visits= (person-time of emergency room enterovirus cases / total person-time of emergency room cases) *1000‰】

■ Influenza-like illness

Epidemic analysis:

In the year 2022, the annual visit percentage for influenza-like illnesses in emergency departments ranged from 4.19% to 31.46%. Compared to the monitoring data of the year 2021 (4.51% to 26.42%), the overall trend of the epidemic in 2022 was higher than that of 2021, with a higher peak. Based on the seven-day moving average of the visit percentage for influenza-like illnesses in emergency departments in 2022, the situation began to rise in early May and reached its peak in mid-May, followed by a decline in early June. However, it started to increase again from early August (Figure 19). 【Note: percentage of influenza-like illness = (person-time of emergency room influenza-like illness cases / total person-time of emergency room cases) *100%】

■ Acute diarrhea

Epidemic analysis:

In the year 2022, the annual visit percentage for acute diarrhea cases in emergency departments ranged from 0.78% to 8.31%. The overall trend of the epidemic in this year was lower compared to 2021 (1.82% to 9.31%). The first wave of the epidemic occurred from late January to mid-February, followed by a decrease in May and a resurgence at the end of the month. From August, the trend remained relatively stable, with an upward trend in November. Generally, the peak of diarrhea outbreaks occurs around the Chinese New Year period. Based on the seven-day moving average of the visit percentage for acute diarrhea cases, this year reached its peak during the Lunar New Year holiday, and after the holiday ended, outpatient visits resumed, gradually slowing down the trend in emergency department visits (Figure 20). 【Note: percentage of acute diarrhea visits= (person-time of emergency room acute diarrhea cases / total person-time of emergency room cases) *100%】

■ Acute Hemorrhagic Conjunctivitis

Epidemic analysis:

In the year 2022, the annual visit percentage for acute hemorrhagic conjunctivitis in emergency departments ranged from 0.14‰ to 5.57‰. It was lower compared to 2022 (0.27‰ to 5.58‰). Based on the seven-day moving average of the visit percentage for conjunctivitis cases, there was a peak during the Chinese New Year holiday in early February. After the holiday ended, the trend significantly declined. The situation reached its lowest point at the end of May and then showed a slow growth trend towards the end of the year (Figure 21). 【Note: per mileage of acute hemorrhagic conjunctivitis visits = (person-time of emergency room acute

hemorrhagic conjunctivitis cases / total person-time of emergency room cases)
*1000‰】

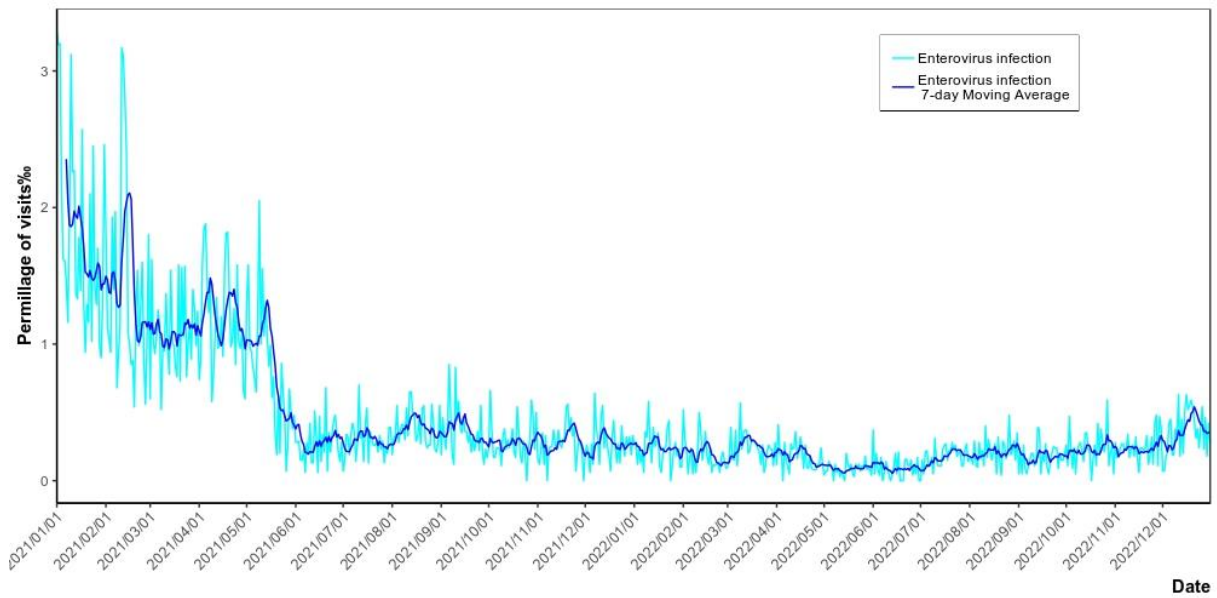


Figure 18 Daily Permillage of Emergency Department of Enterovirus Visits & 7-day Moving Average, 2021-2022

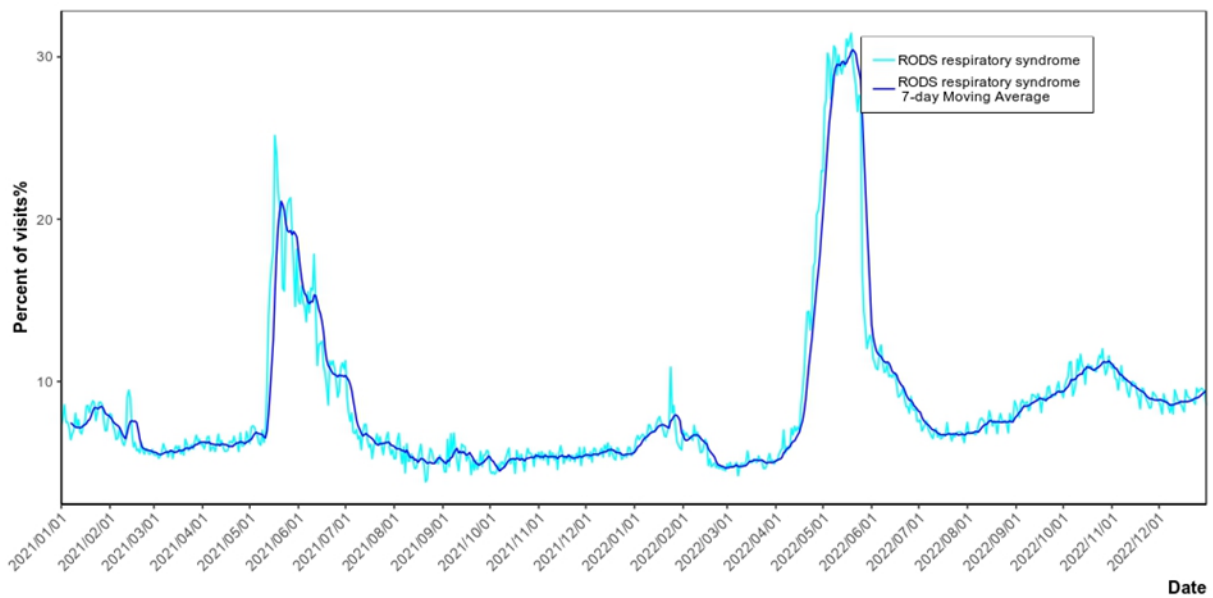


Figure 19 Daily Percentage of Emergency Department of Respiratory Visits & 7-day Moving Average, 2021-2022

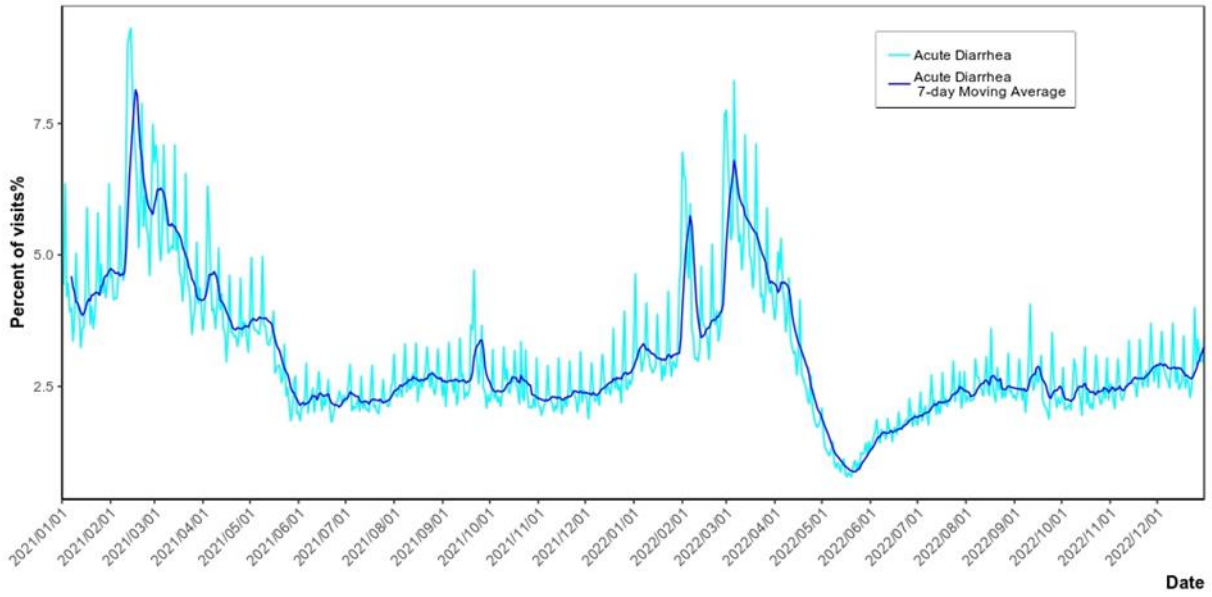


Figure 20 Daily Percentage of Emergency Department of Acute Diarrhea Visits & 7-day Moving Average, 2021-2022

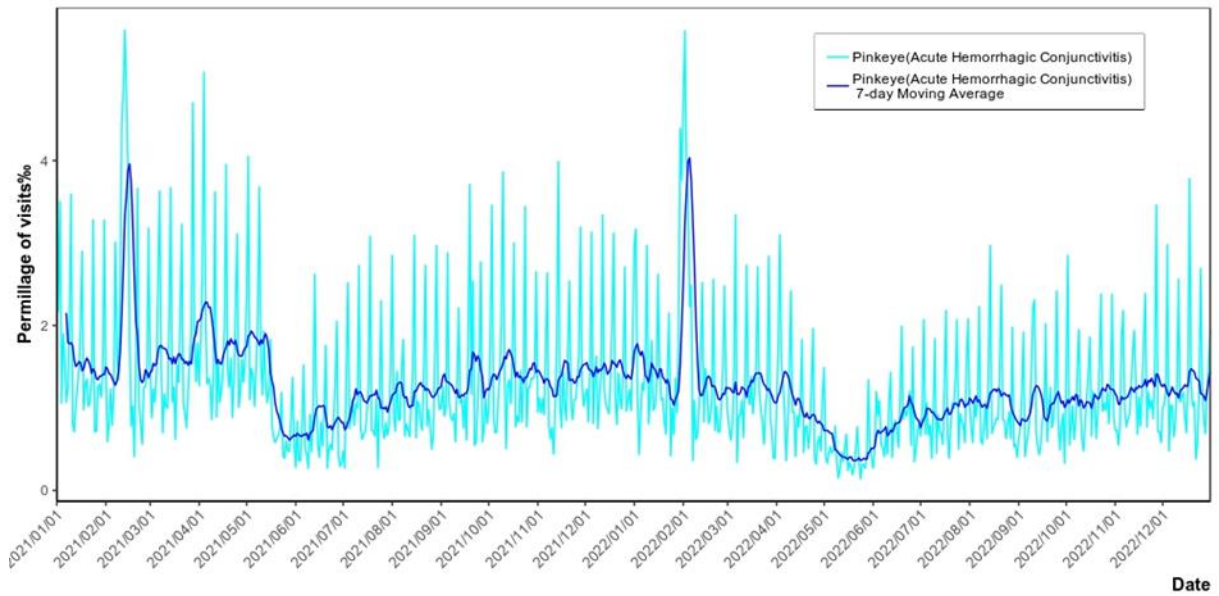


Figure 21 Daily Permillage of Emergency Department of Acute Hemorrhagic Conjunctivitis Visits & 7-day Moving Average, 2021-2022

Disease Surveillance using National Health Insurance Data

I. Introduction

Taiwan CDC and the National Health Insurance Administration (NHIA) cooperate to strengthen Taiwan's surveillance capacity for specific diseases. The NHIA 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.

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

Taiwan CDC obtains the surveillance data received daily and extracts 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 outpatient, inpatient, and emergency department codes. Due to the more significant 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 the year 2022, the daily number of visits to outpatient clinics for influenza-like illnesses ranged from approximately 48 to 8533. Compared to the daily visits in 2021 (ranging from 79 to 6,932), the overall trend of the epidemic in 2022 was higher. The peak of the epidemic occurred in November. By observing the seven-day moving average of influenza-like illness cases, it was found that in 2021, the epidemic reached its lowest point in February, followed by a relatively stable trend until August when the trend started to rise. In 2022, there was a significant increase in the occurrence of the epidemic during the flu season, mainly in November (Figure 22).

2. Enterovirus infections

In the year 2022, the daily number of visits to outpatient clinics for enterovirus cases ranged from approximately 3 to 249. This data is lower than the daily number of visits in 2021 for enterovirus cases (ranging from approximately 16 to 1,535). By observing the seven-day moving average of enterovirus cases, it was found that the epidemic in 2022 reached its lowest point in February, remained relatively stable until November, and then gradually started to increase in early December (Figure 23).

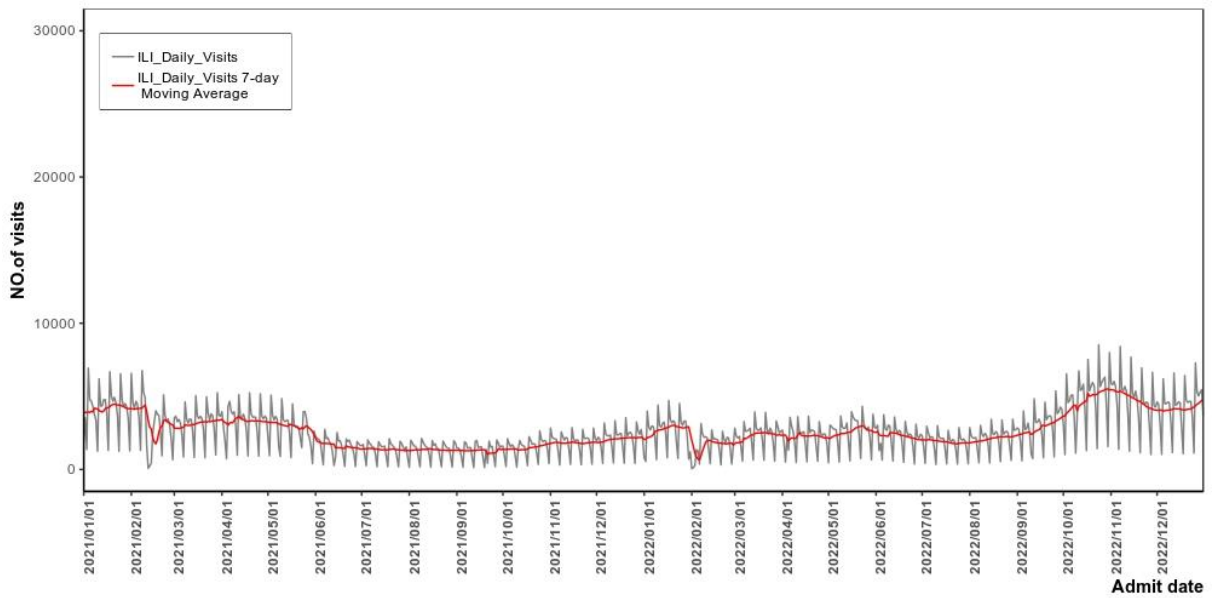


Figure 22 Daily influenza-like illness visits and the 7-day moving average trend, 2021-2022

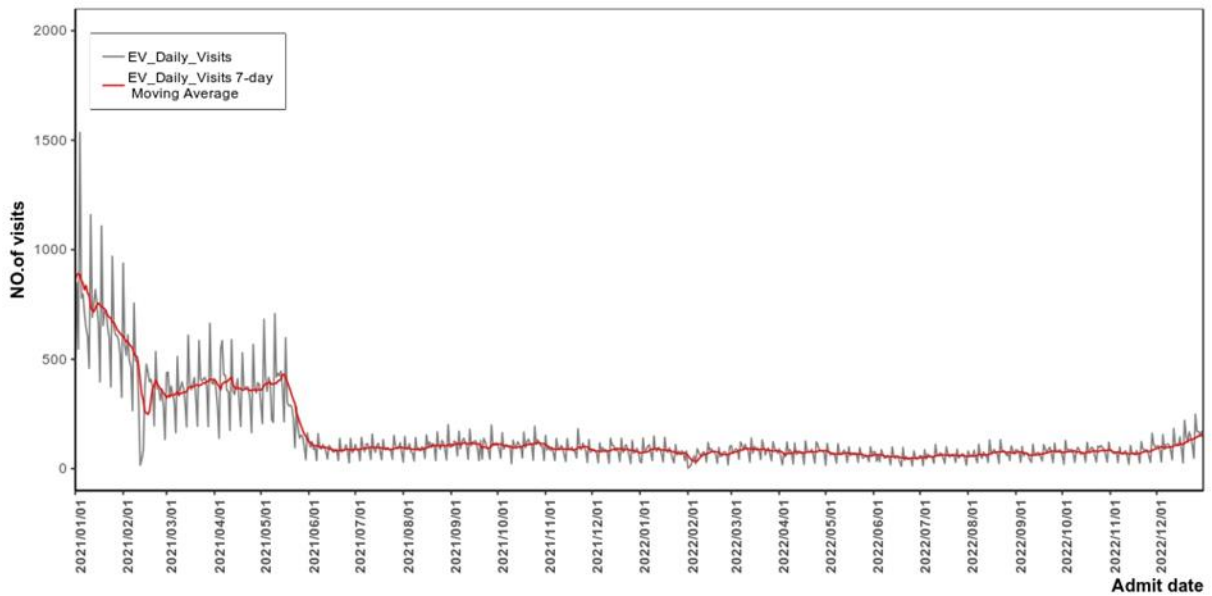


Figure 23 Daily enterovirus visits and the 7-day moving average trend, 2021-2022

Pneumonia and Influenza Mortality Surveillance

I. Introduction

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

II. Purpose of surveillance

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

III. Data analysis methods

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

IV. Findings

Based on the P&I mortality surveillance data of Taiwan CDC, the weekly number of deaths attributed to P&I in 2022 and 2021 ranged from 390 to 1,100 and from 320 to 590, respectively. The majority of P&I deaths occurred in individuals aged 65 and above, accounting for 89.0% in 2021 and 89.6% in 2022. According to the 4-week moving average curve of P&I deaths, in 2021, two peaks occurred in week 4 and week 23, then decreased to remain roughly flat but slightly increased towards the end of the year. In 2022, due to the the epidemic of SARS-CoV-2, the trend dramatically surged from week 19, peaking at week 24, and another peak was observed in week 43, followed by a slight decline and subsequent rise at the end of the year. (Figure 24)

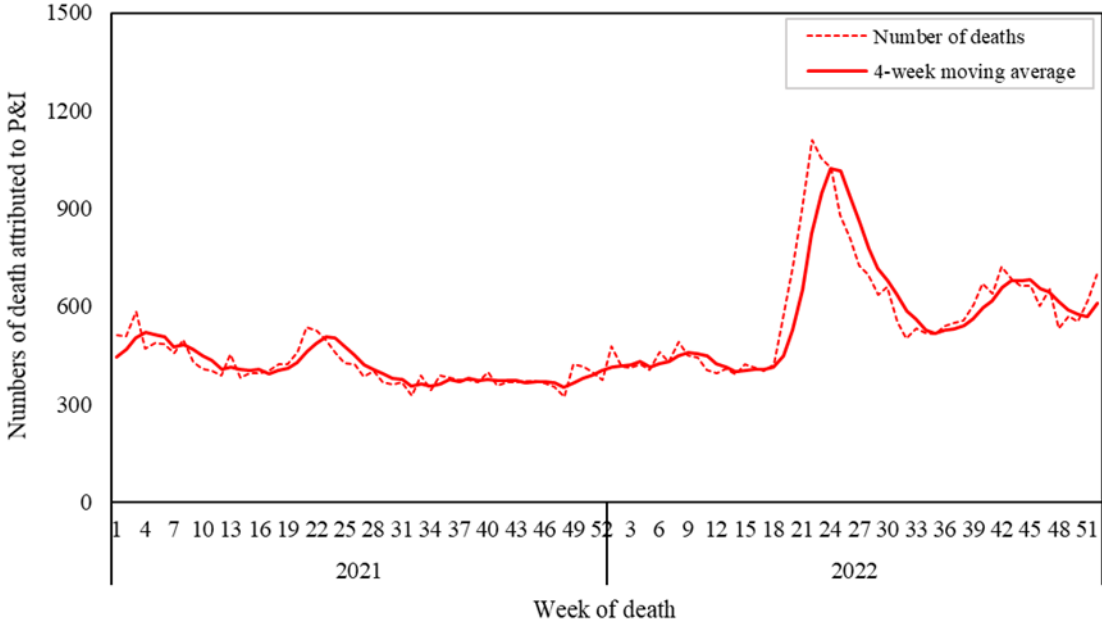


Figure 24 The surveillance trend of pneumonia and influenza mortality, 2021-2022

PART III

Surveillance Reports of Selected Diseases

© **Abbreviations and Symbols Used in Table**

— No reported cases

... Not under surveillance

Measles

In 2022, 1 confirmed case of measles (incidence rate: 0.004 per 100,000 population) was reported, There were no confirmed cases during the period from 2020 to 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There was 1 female case (100%).

(2) By age group

There was 1 case in 15-24 years age group.

(3) By month

There was 1 case in August.

(4) By residential region

Confirmed case was reported in 1 city, including New Taipei City with 1 case. The other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population in New Taipei City (0.02).

(5) Imported cases and countries of infection

There were no imported cases of measles in 2022.

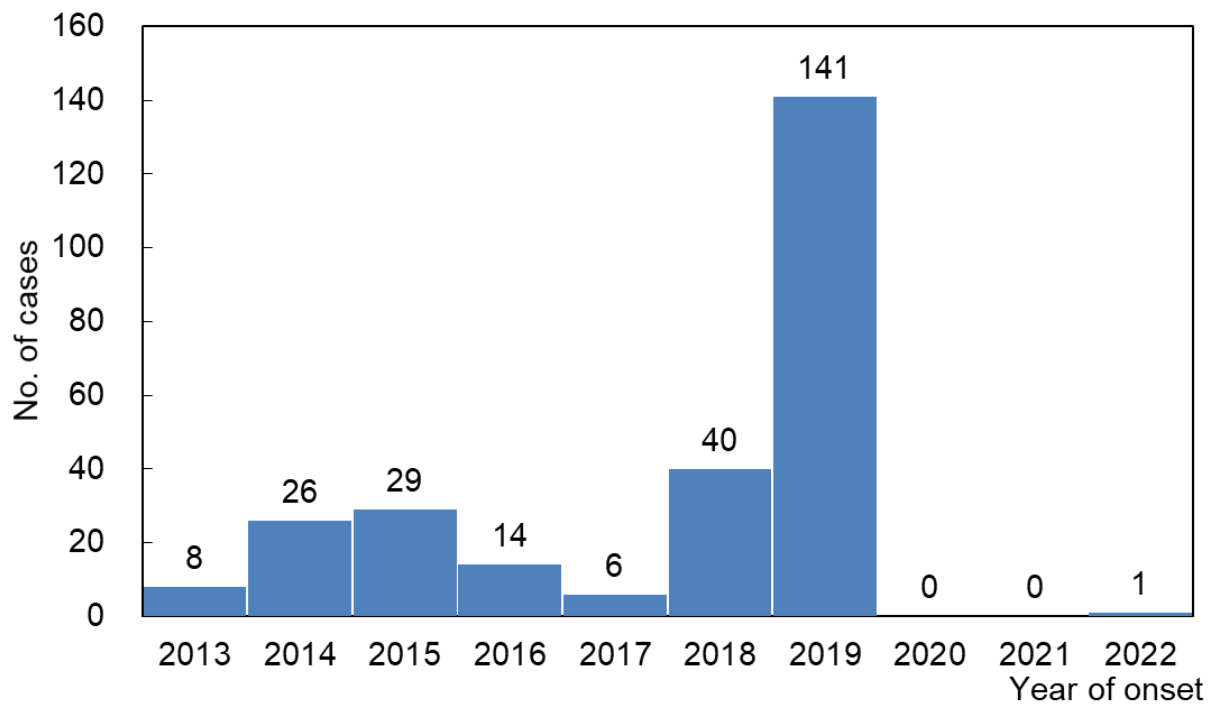


Figure 25 Number of confirmed measles cases, 2013 - 2022

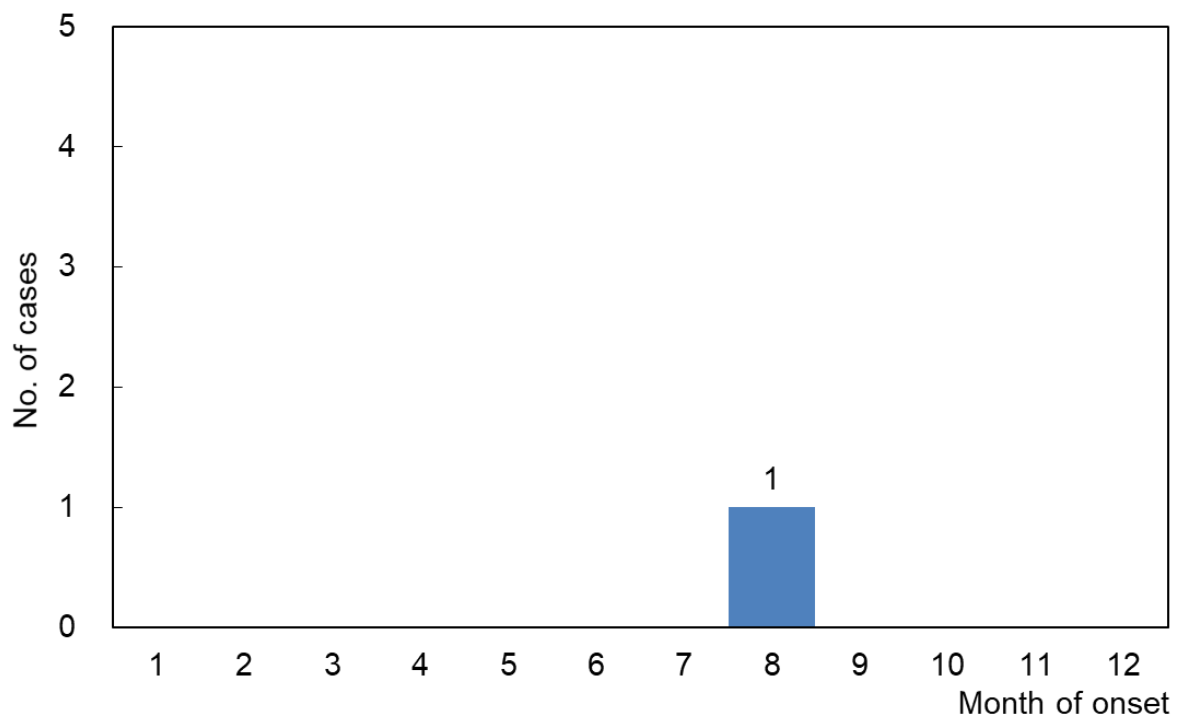


Figure 26 Number of confirmed measles cases, 2022

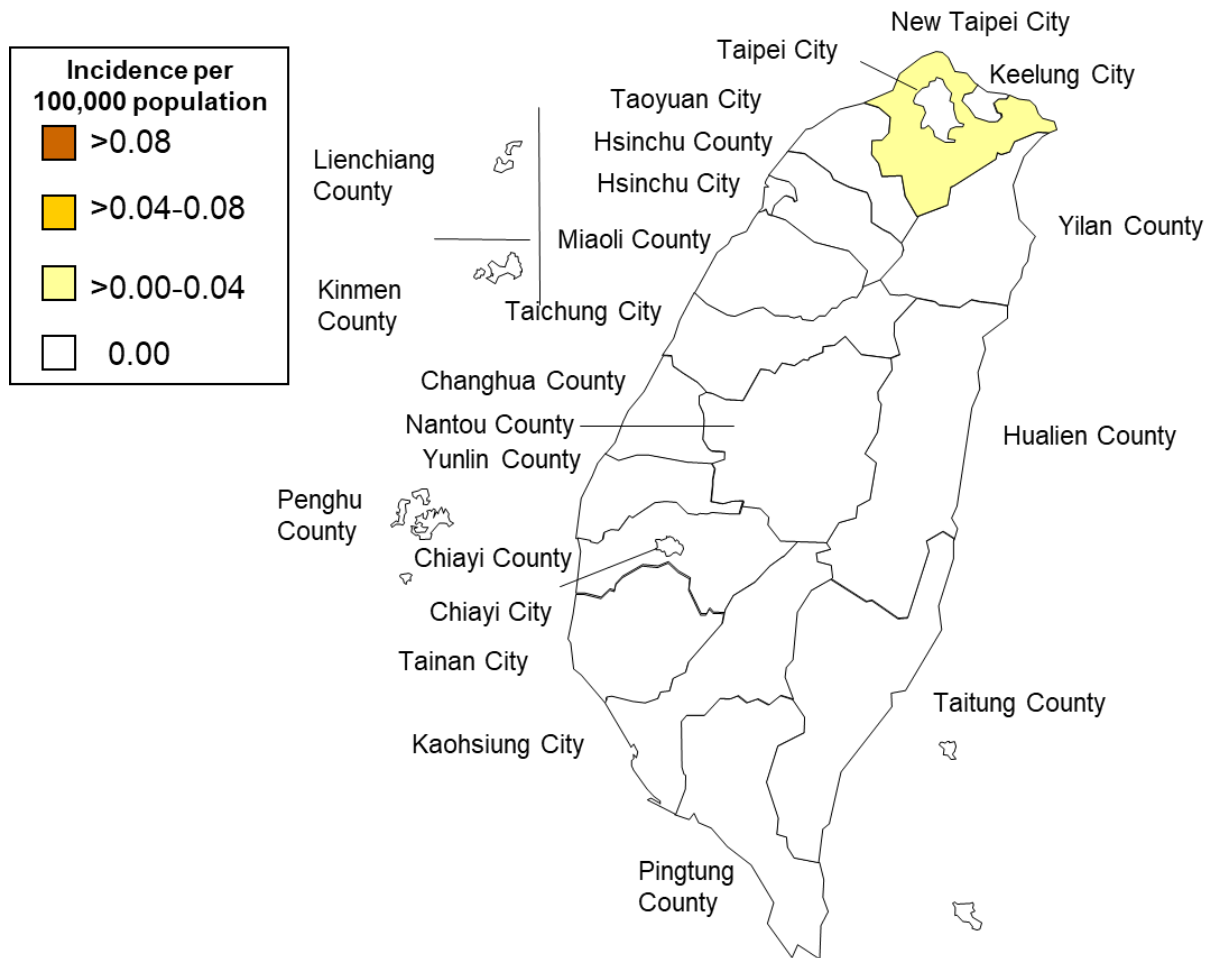


Figure 27 Geographical distribution by incidence of confirmed measles cases, 2022

Pertussis

In 2022, 2 confirmed cases of pertussis (incidence rate: 0.01 per 100,000 population) was reported, There were no confirmed cases in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 1 male case (50%) and 1 female case (50%) with male to female ratio of 1.0 : 1.0.

(2) By age group

There were 1 case each in 5-14 years age group and 25-39 years age group.

(3) By month

There were 1 case each in September and November.

(4) By residential region

Confirmed case was reported in 2 cities and counties, including 1 case each in New Taipei City and Hsinchu City. The other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in in Hsinchu City(0.22), followed by New Taipei City (0.02).

(5) Imported cases and countries of infection

There were no imported cases of Pertussis in 2022.

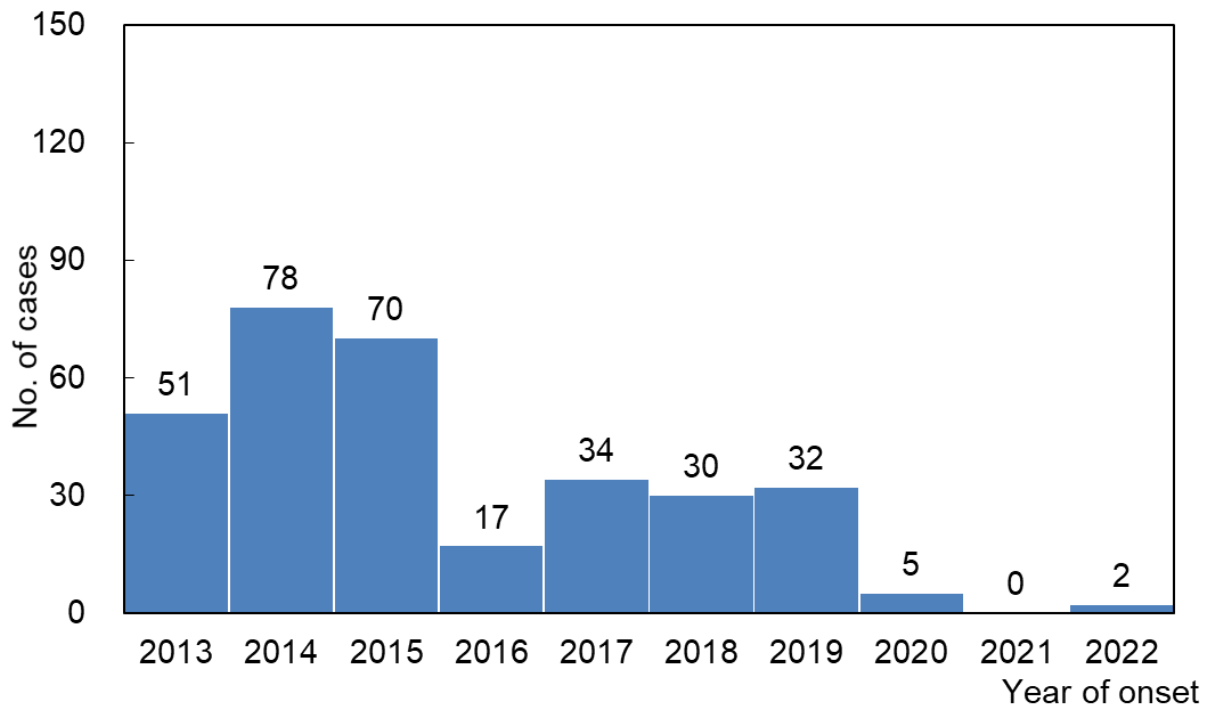


Figure 28 Number of confirmed measles cases, 2013 - 2022

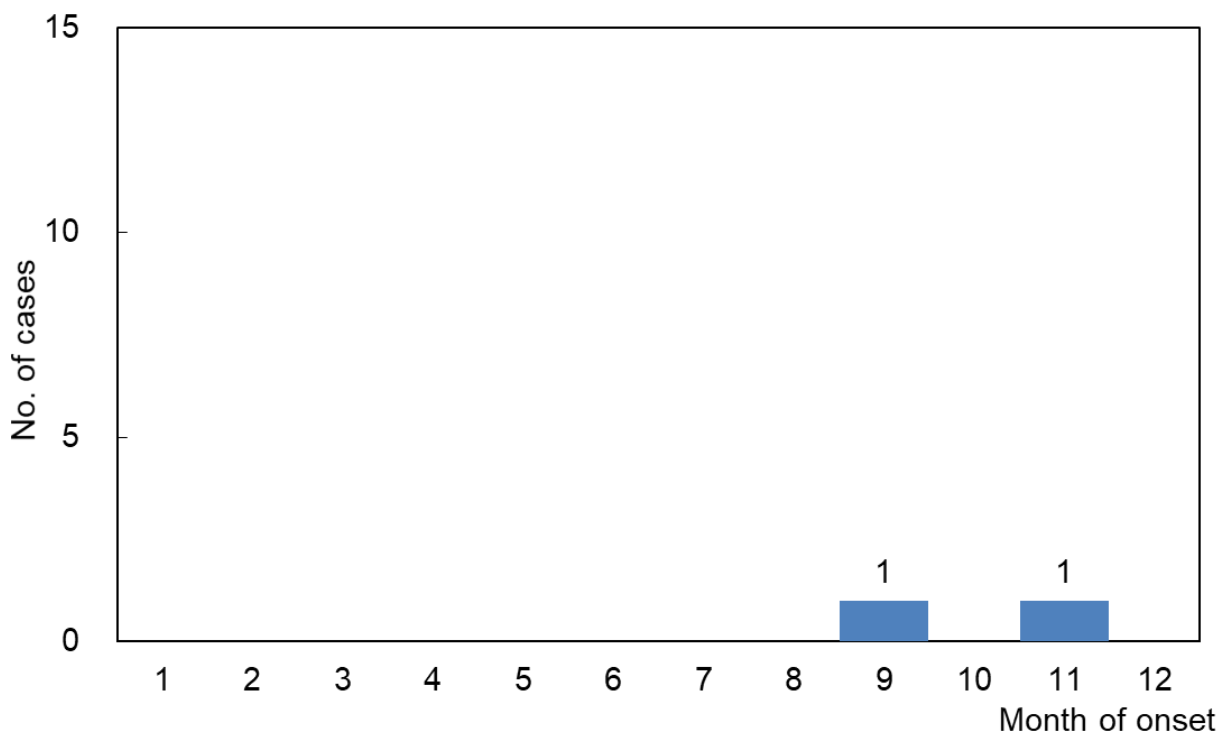


Figure 29 Number of confirmed pertussis cases, 2022

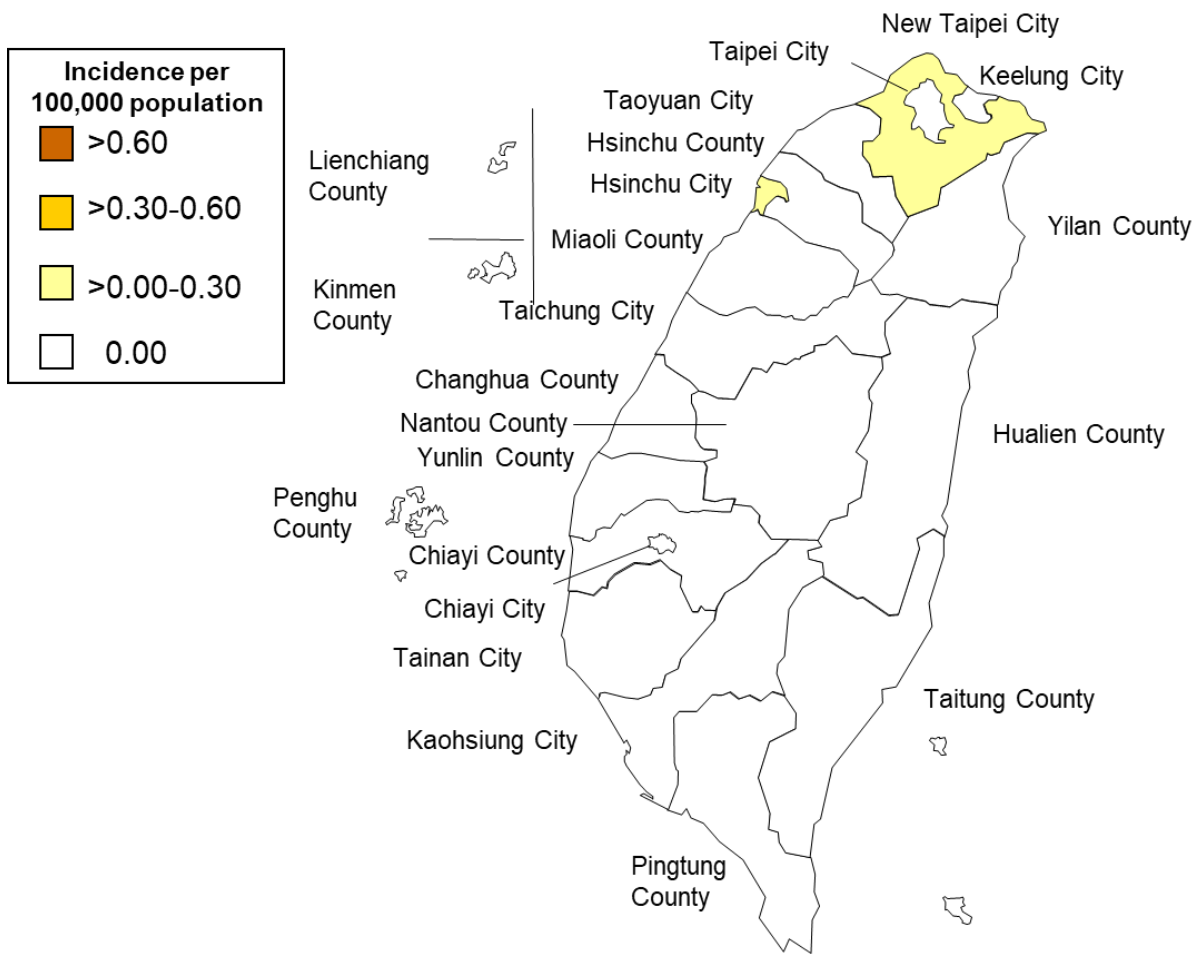


Figure 30 Geographical distribution by incidence of confirmed pertussis cases, 2022

Meningococcal Meningitis

In 2022, 1 confirmed case of meningococcal meningitis (incidence rate: 0.01 per 100,000 population) were reported, which represented an decrease compared to 3 confirmed cases (incidence rate: 0.01 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There was 1 male case (100%).

(2) By age group

There was 1 case in 40-64 years age group.

(3) By month

There was 1 case in July.

(4) By residential region

Confirmed case was reported in 1 county, including Hsinchu County with 1 cases. The other cities and counties had no confirmed cases.

The incidence rate of confirmed cases per 100,000 population in Hsinchu County was 0.17.

(5) Imported cases and countries of infection

There were no imported cases of meningococcal meningitis in 2022.

(6) By serogroup

Following laboratory confirmation, 1 confirmed cases was undetermined.

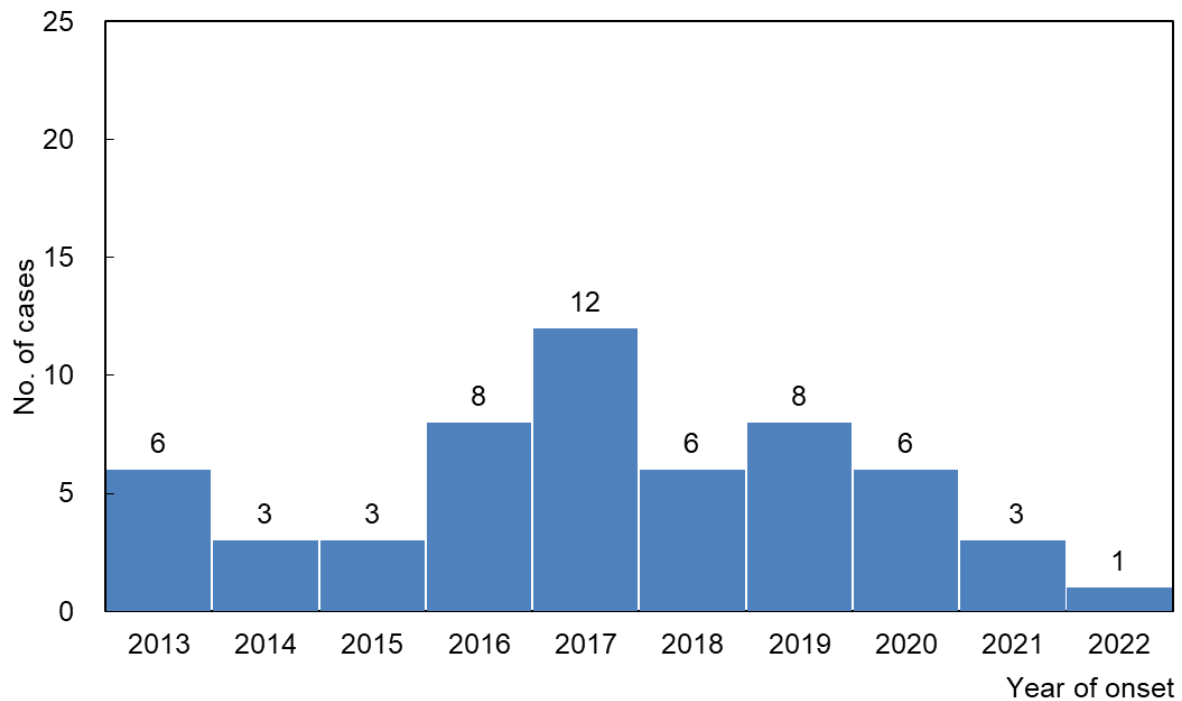


Figure 31 Number of confirmed meningococcal meningitis cases, 2013-2022

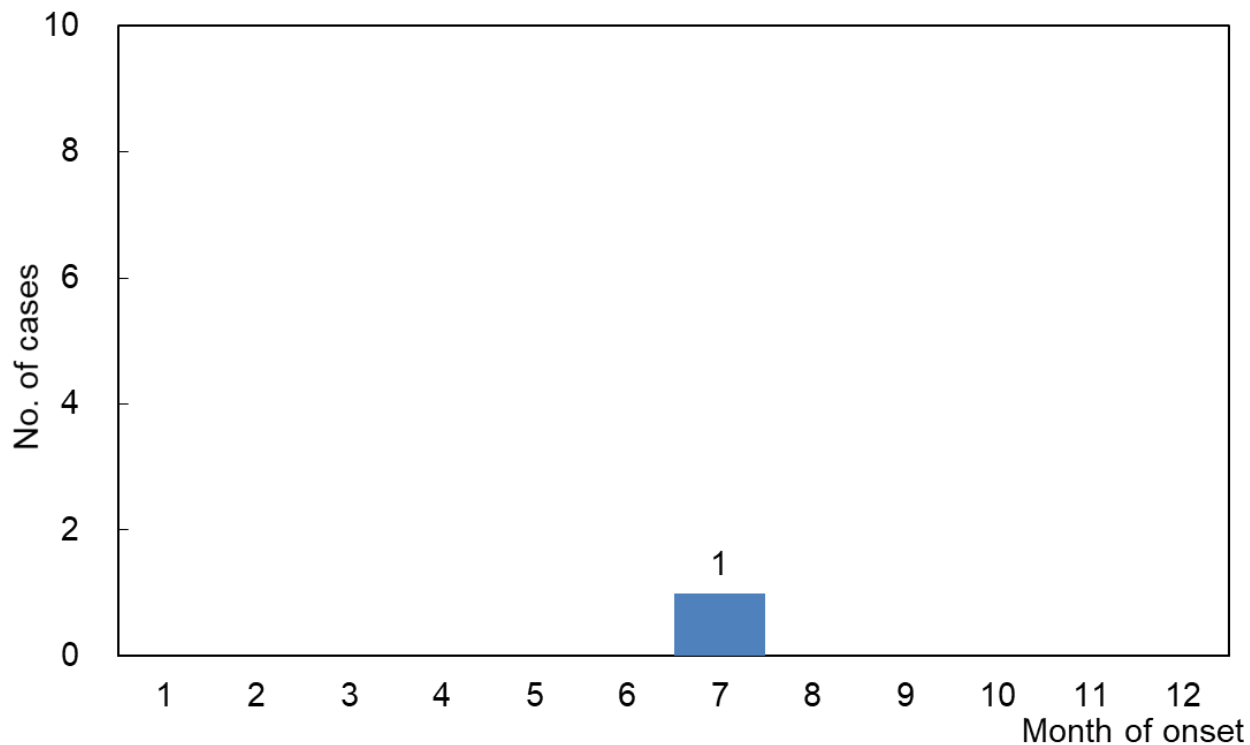


Figure 32 Number of confirmed meningococcal meningitis cases, 2022

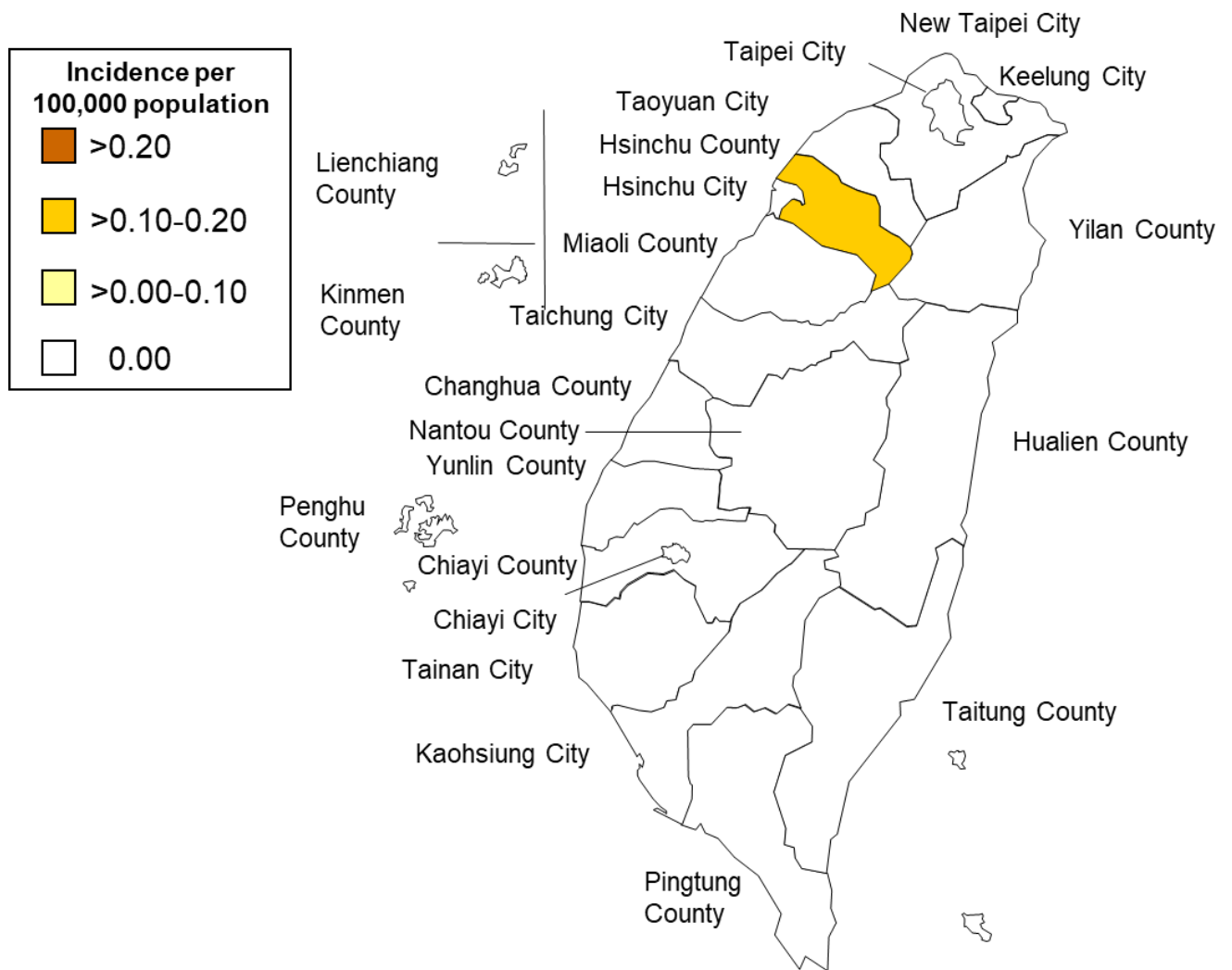


Figure 33 Geographical distribution by incidence of confirmed meningococcal meningitis cases, 2022

Japanese Encephalitis

In 2022, 19 confirmed cases of Japanese encephalitis (incidence rate: 0.08 per 100,000 population) were reported, which represented a decrease compared to 28 confirmed cases (incidence rate: 0.12 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 16 male cases (84.2%) and 3 female cases (15.8%) with male to female ratio of 5.3:1.0.

(2) By age group

There were 14 cases in 40-64 years age group, 4 cases in 65 years and over age group and 1 case each in 1-4 years age group.

(3) By month

The cases occurred mostly in warm seasons, with 10 cases each in July, 7 cases each in June and 2 cases in August.

(4) By residential region

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

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (0.62), followed by Chiayi County (0.41) and Yunlin County (0.30).

(5) Imported cases and countries of infection

There were no imported cases of Japanese encephalitis in 2022.

(6) By clinical symptoms

Among the confirmed cases, 18 cases had fever, 15 cases had disorder of consciousness, 4 cases had muscle cramps, 3 cases each had headache and psychological symptoms (delirium, unconsciousness, etc.), 2 cases had dystonia, 1 case each had vomiting, stiff necks, burnout, meningitis symptoms and aseptic meningitis, pneumonia, liver function abnormal, acute renal insufficiency and acute hepatitis.

(7) Residential condition or neighboring environment

Among the confirmed cases, 15 cases lived nearby pigpens, 11 cases lived nearby paddy fields, 8 cases lived nearby pigeonries, 7 cases lived nearby duck or chicken farms, 2 cases lived nearby cowsheds, 1 case lived nearby ponds, 1 case lived nearby the goat farm, and 1 case lived with his/her own pet.

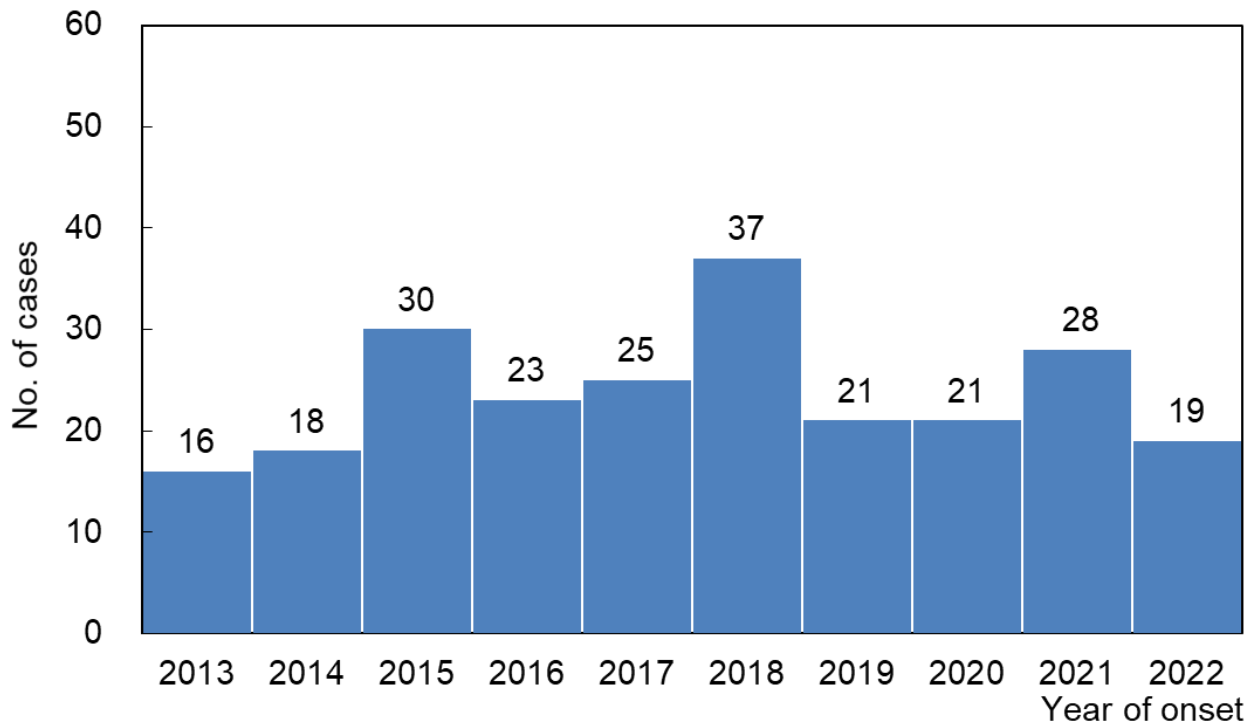


Figure 34 Number of confirmed Japanese encephalitis cases, 2013-2022

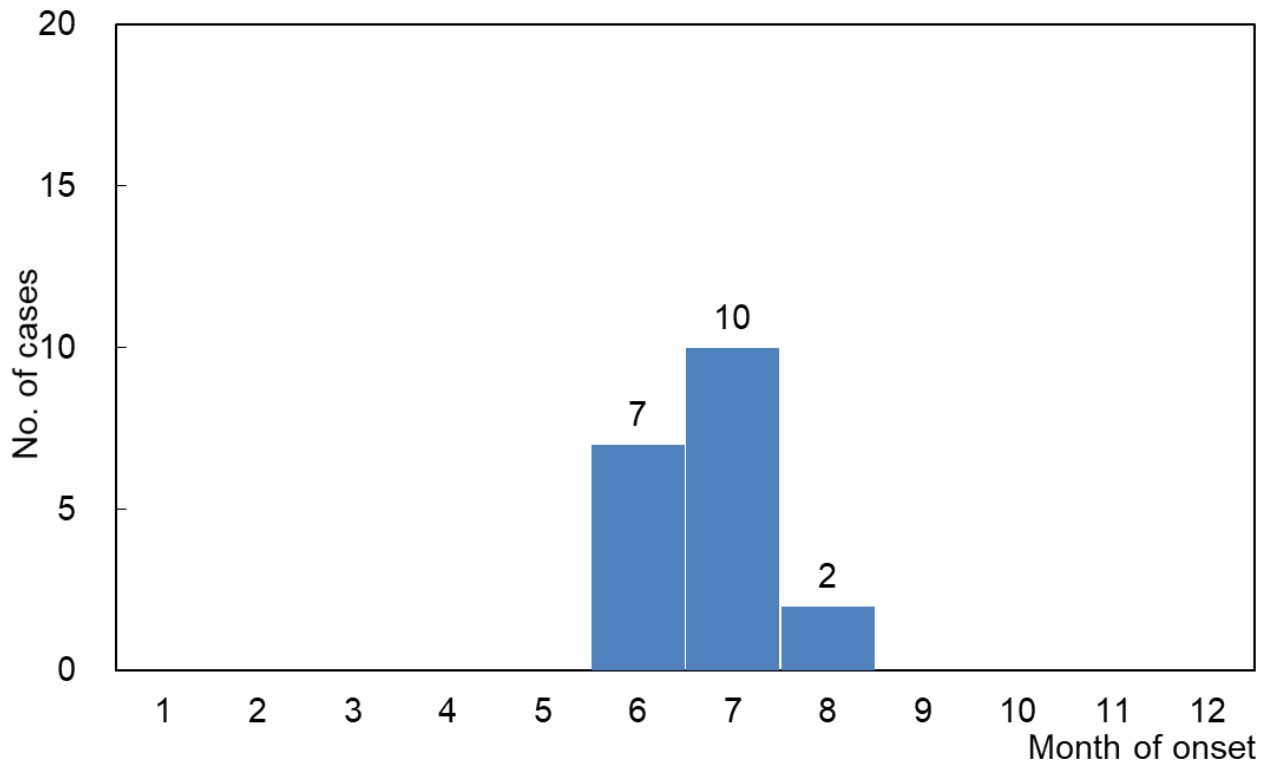


Figure 35 Number of confirmed Japanese encephalitis cases, 2022

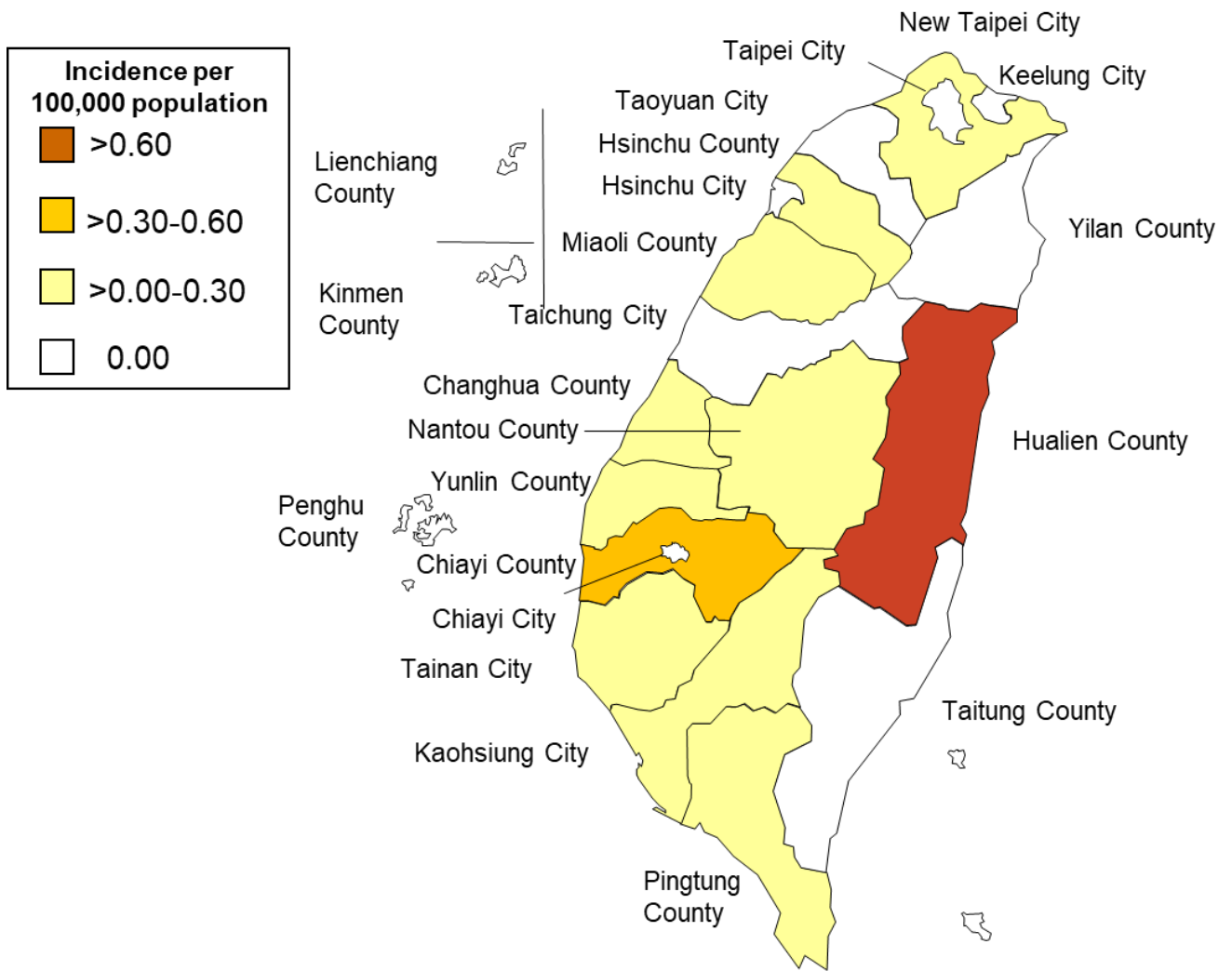


Figure 36 Geographical distribution by incidence of confirmed Japanese encephalitis cases, 2022

Acute Hepatitis A

In 2022, 122 confirmed cases of acute hepatitis A (incidence rate: 0.52 per 100,000 population) were reported, which represented an increase compared to 74 confirmed cases (incidence rate: 0.32 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 79 male cases (64.8%) and 43 female cases (35.2%) with male to female ratio of 1.8:1.0.

(2) By age group

There were 54 cases in 25-39 years age group, followed by 33 cases in 40-64 years age group, 19 cases in 65 years and over age group and 16 cases in 15-24 years age group.

(3) By month

Acute hepatitis A cases were reported in each month of the year. The highest number of cases (43) were reported in February.

Followed by 20 cases in March, 16 cases in January, 9 cases in April, 8 cases in August, 7 cases each in June and December, 4 cases in July, 3 cases each in May and November, 1 case each in September and October.

(4) By residential region

Except Keelung City, Miaoli County, Chiayi City, Penghu County, Kinmen County and Lienchiang County, all cities and counties had confirmed cases in 2022.

Taoyuan City had the highest number of incidents with 40 cases reported, followed by New Taipei City and Taichung City with 19 cases, Taipei City with 10 cases, Tainan City with 8 cases and Changhua County with 6 cases. The other cities and counties all had less than 5 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Taoyuan County (1.76), followed by Hsinchu County (0.69) and Taichung City (0.68).

(5) Imported cases and countries of infection

There were 2 imported cases of acute hepatitis A in 2022, including 1 case each from Vietnam and unknown.

(6) By clinical symptoms

An epidemiological survey of 122 confirmed cases showed that in cases with symptoms (multiple answers are allowed), 56.6% (69 man-times) had jaundice, 52.5% (64 man-times) had abdominal discomfort or pain, 43.4% (53

man-times) had tiredness, 33.6% (41 man-times) had fever, 32.8% (40 man-times) had poor appetite, 24.6% (30 man-times) had had nausea, 22.1% (27 man-times) had vomiting and 21.3% (26 man-times) tea-colored urine.

(7) Source of drinking water and dietary habits

The epidemiological investigation of 122 confirmed cases showed that the major sources of drinking water (multiple answers are allowed) were tap water in 52.5% of cases (64 man-times), filtered water in 41.0% of cases (50 man-times), spring water or self-service water in 12.3% of cases (15 man-times), packaged water in 11.5% of cases (14 man-times). As for dietary habits (multiple answers allowed), eating in home were identified in the largest percentage of cases, accounting for 46.7% (57 man-times), followed by from takeaway meal box in 18.9% of cases (23 man-times), in restaurants in 13.1% of cases (16 man-times), and from street vendors in 9.8% of cases (12 man-times).

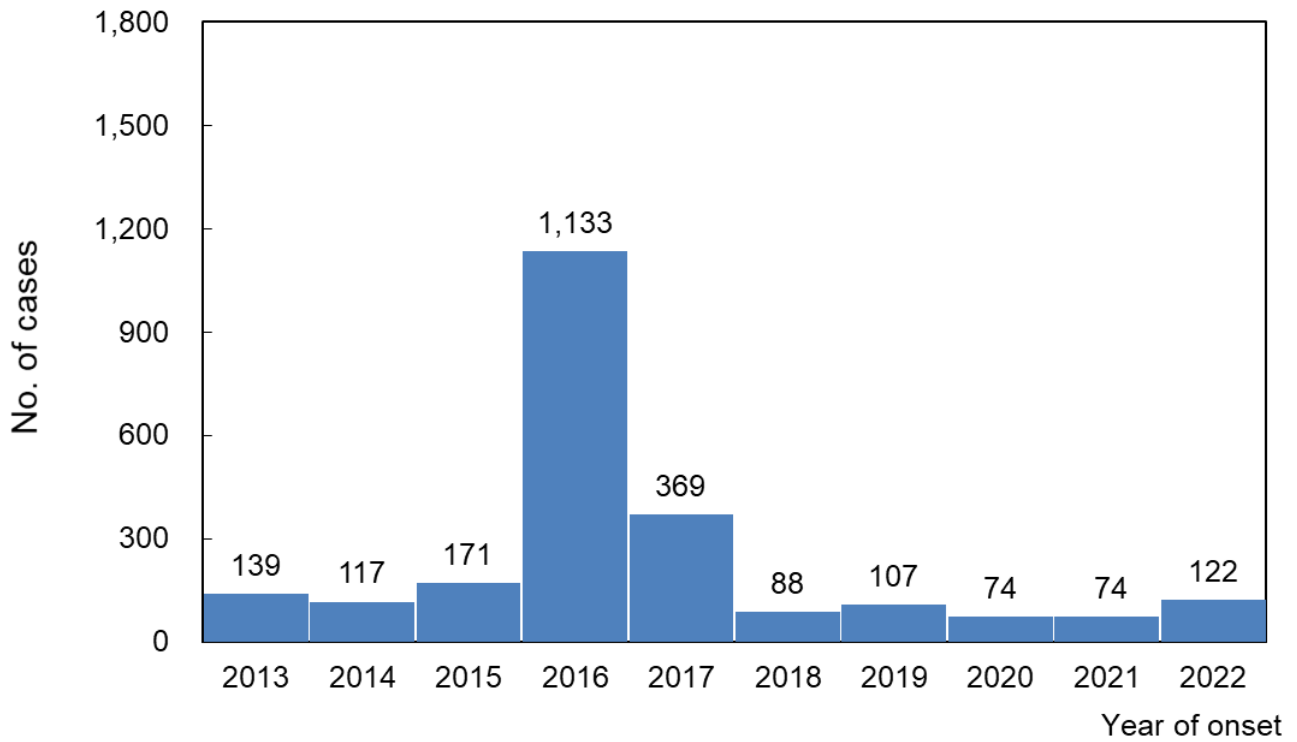


Figure 37 Number of confirmed acute hepatitis A cases, 2013-2022

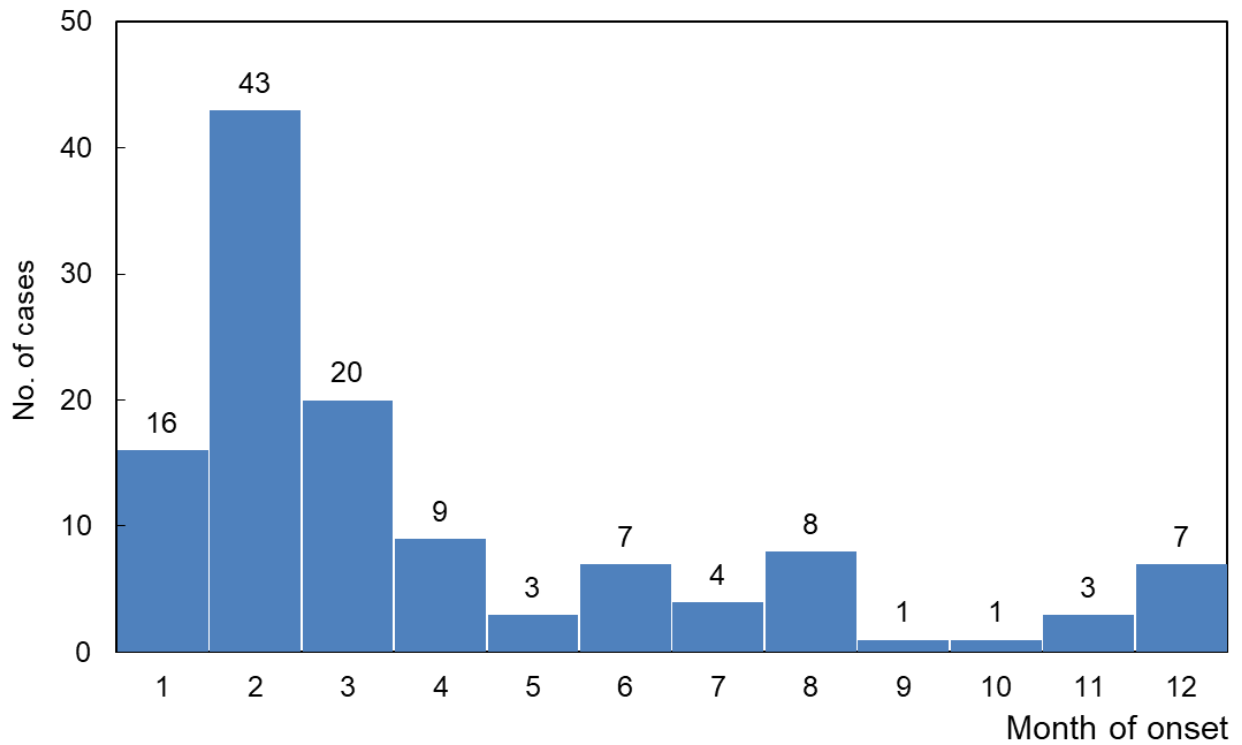


Figure 38 Number of confirmed acute hepatitis A cases, 2022

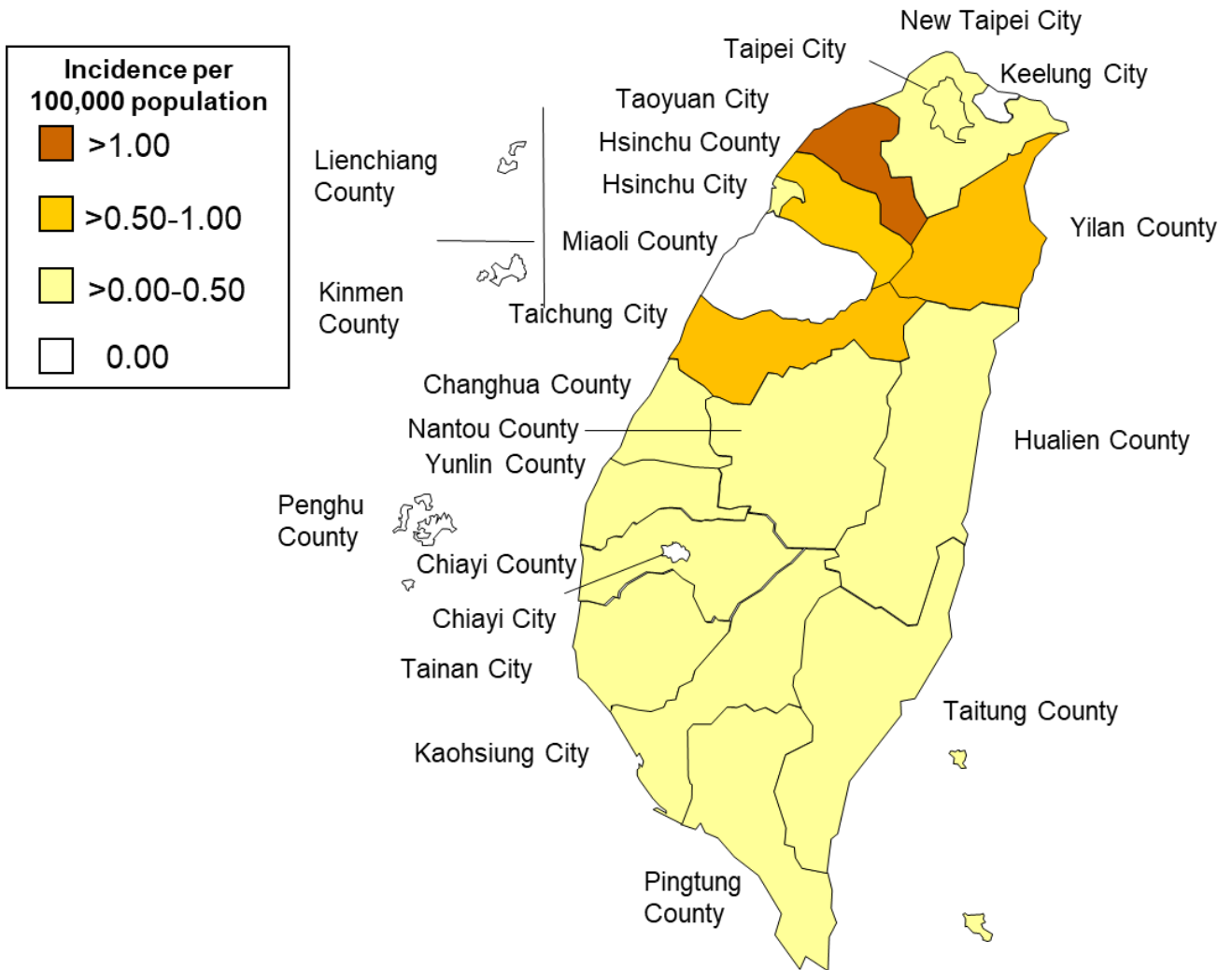


Figure 39 Geographical distribution by incidence of confirmed acute hepatitis A cases, 2022

Acute Hepatitis B

In 2022, 104 confirmed cases of acute hepatitis B (incidence rate: 0.45 per 100,000 population) were reported, which represented an increase compared to 144 confirmed cases (incidence rate: 0.61 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 60 male cases (57.7%) and 44 female cases (42.3%) with male to female ratio of 1.4:1.0.

(2) By age group

There were 47 cases in 40-64 years age group, 36 cases in 25-39 years age group, 15 cases in 65 years and over age and 6 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.

November with 14 cases, 13 cases each in March and October, 10 cases each in February and December. The other months with less than 10 cases.

(4) By residential region

Except Hsinchu County, Chiayi City, Taitung County, Kinmen County and Lienchiang County, all cities and counties had confirmed cases in 2022.

Taoyuan City had the highest number of incidents with 20 confirmed cases reported, followed by Taichung City with 17 cases, Taipei City and New Taipei City each with 13 cases, Kaohsiung City with 9 cases, Tainan City with 6 cases. The other cities and counties all had less than 5 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Nantou County (1.04), followed by Penghu County (0.94) and Yilan County (0.89).

(5) Imported cases and countries of infection

There were no imported cases of acute hepatitis B in 2022.

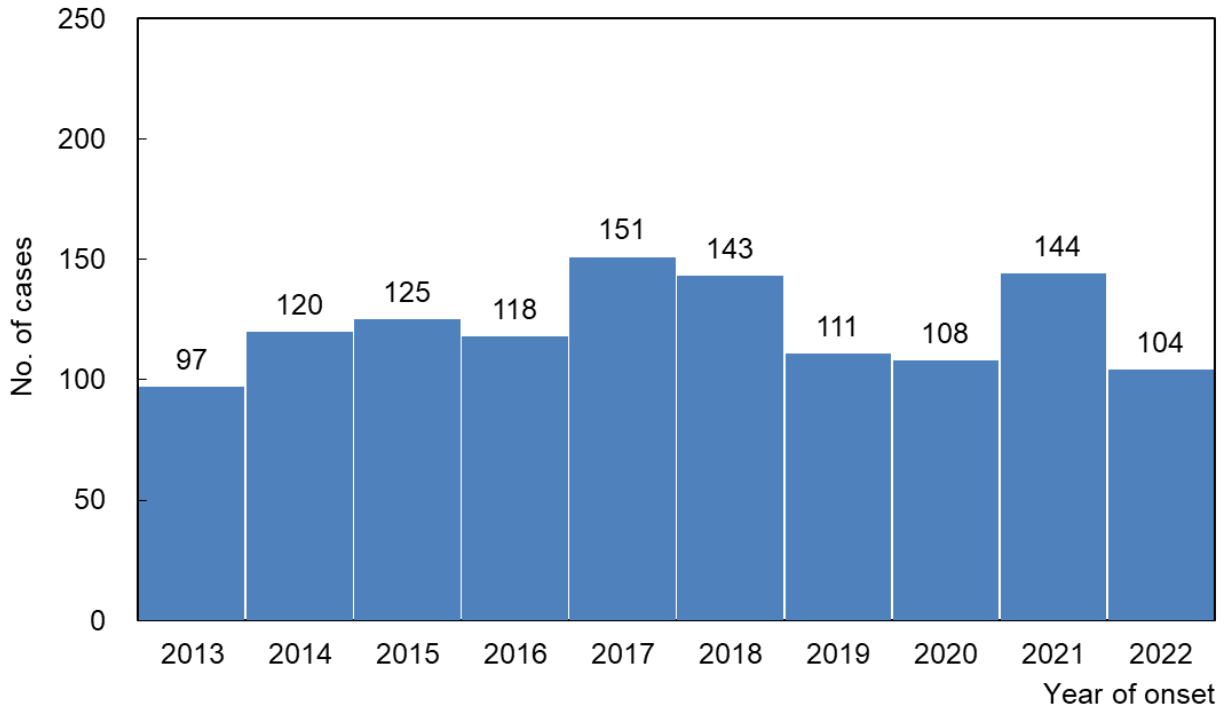


Figure 40 Number of confirmed acute hepatitis B cases, 2013-2022

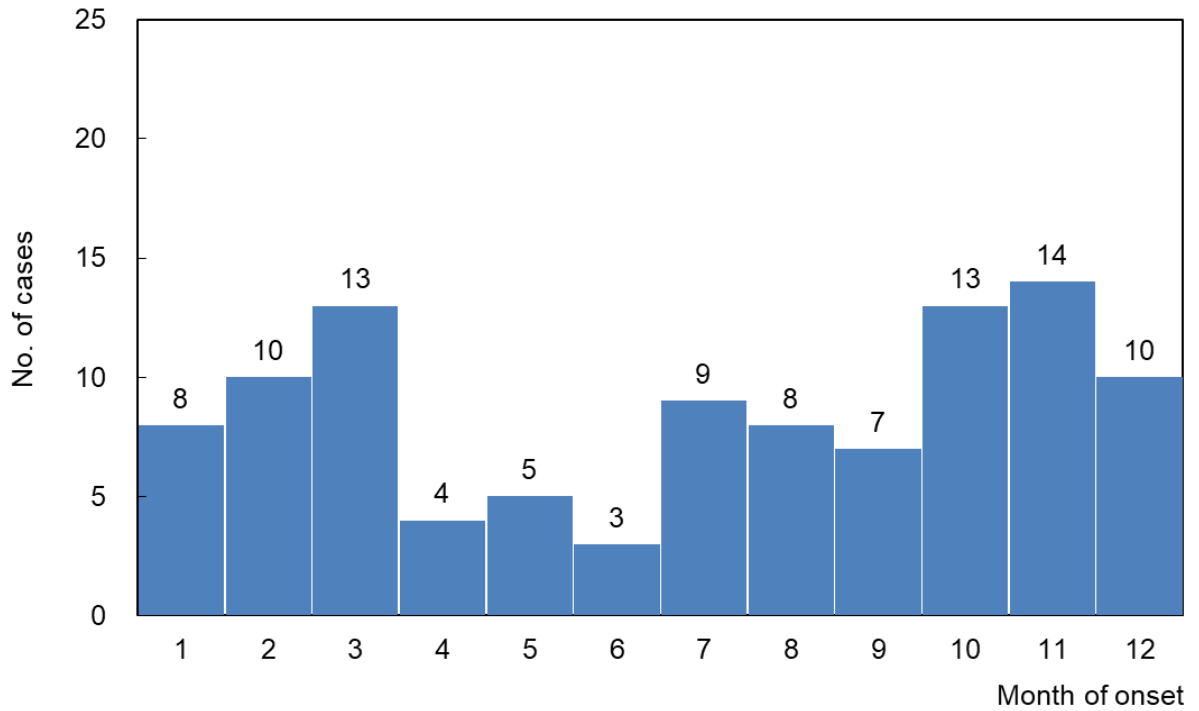


Figure 41 Number of confirmed acute hepatitis B cases, 2022

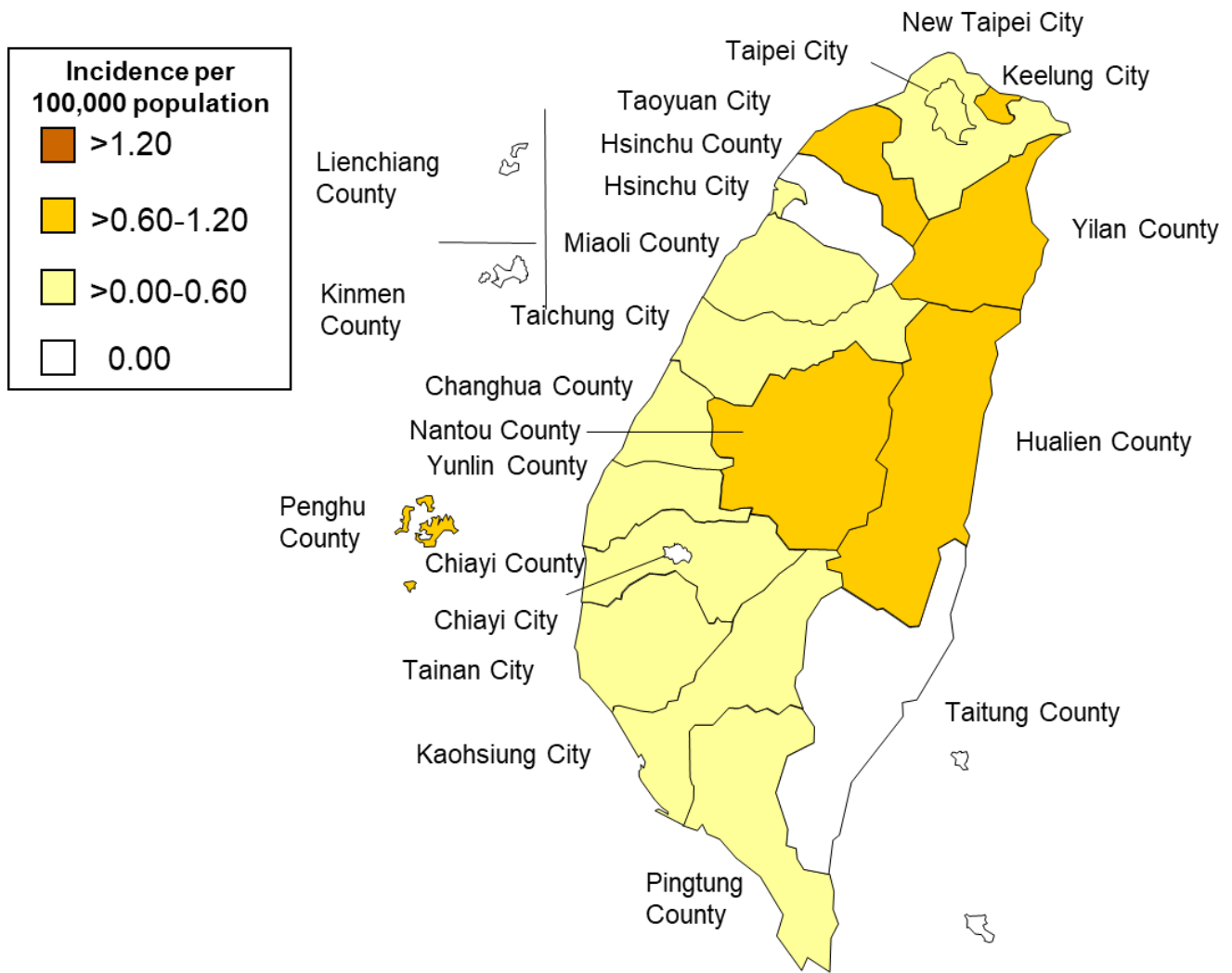


Figure 42 Geographical distribution by incidence of confirmed acute hepatitis B cases, 2022

Acute Hepatitis C

In 2022, 506 confirmed cases of acute hepatitis C (incidence rate: 2.17 per 100,000 population) were reported, which represented a decrease compared to 561 confirmed cases (incidence rate: 2.39 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 373 male cases (73.7%) and 133 female cases (26.3%) with a male to female ratio of 2.8:1.0.

(2) By age group

There were 236 cases in the 40-64 years age group, 162 cases in the 25-39 years age group, 94 cases in the 65 years and over age group, and 14 cases in the 15-24 years age group.

(3) By month

Acute hepatitis C cases were reported in each month of the year. March had the highest number of incidents with 60 confirmed cases reported, followed by 59 cases in November, 58 cases in December, 53 cases in October, 48 cases in September, 41 cases in April, 36 cases in July, 35 cases in June, 32 cases in January, 29 cases each in May and August, and 26 cases in February.

(4) By residential region

Except Lienchiang County, all cities and counties had confirmed cases in 2022. New Taipei City had the highest number of incidents with 62 confirmed cases reported, followed by Taipei City with 62 cases, Kaohsiung City with 58 cases, Taoyuan City and Tainan City each with 50 cases, Taichung City with 41 cases, Pingtung County with 18 cases, Miaoli County with 16 cases, Yilan County and Hsinchu County with 15 cases, Changhua County and Chiayi County with 12 cases, Hsinchu City with 9 cases, Keelung City and Yunlin County each with 8 cases, Nantou County and Chiayi City each with 7 cases, Hualien County with 6 cases. The other cities and counties had less than 5 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Yilan County (3.33), followed by Miaoli County (2.98) and Tainan City (2.69).

(5) Imported cases and countries of infection

There were 2 imported cases of acute hepatitis C in 2022, including one case each from Thailand and unknown.

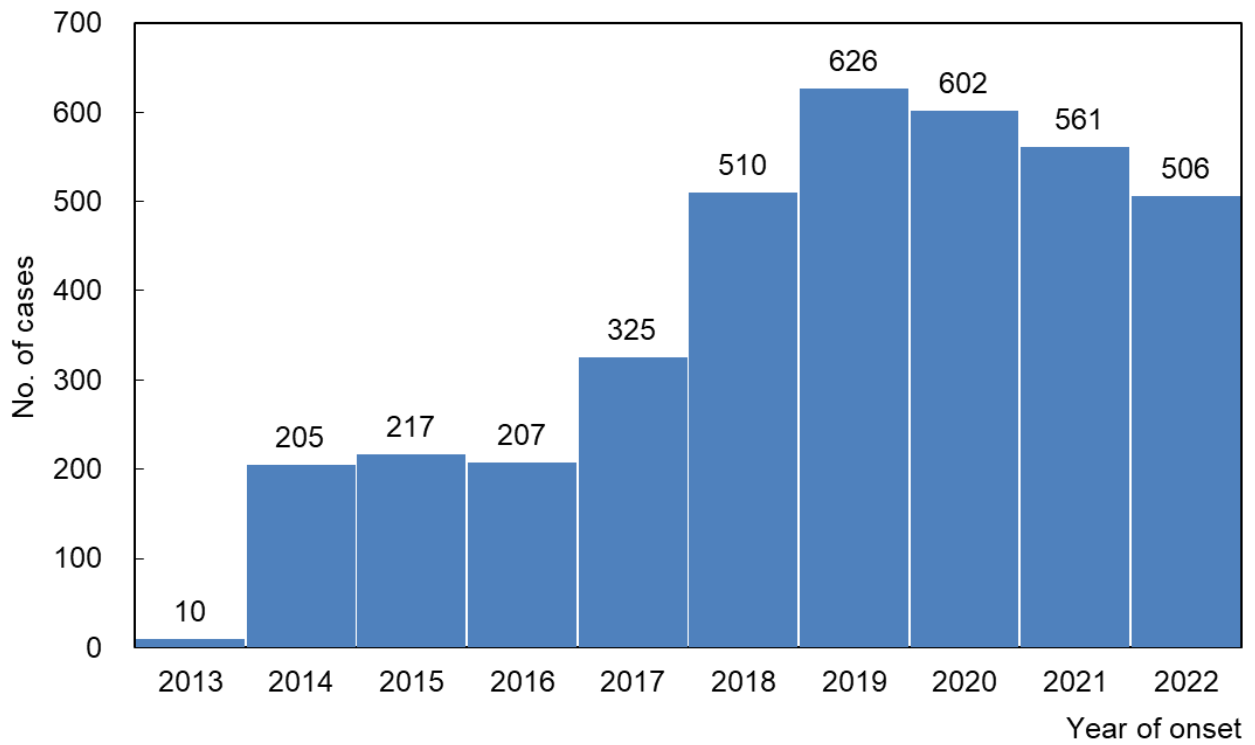


Figure 43 Number of confirmed acute hepatitis C cases, 2013-2022

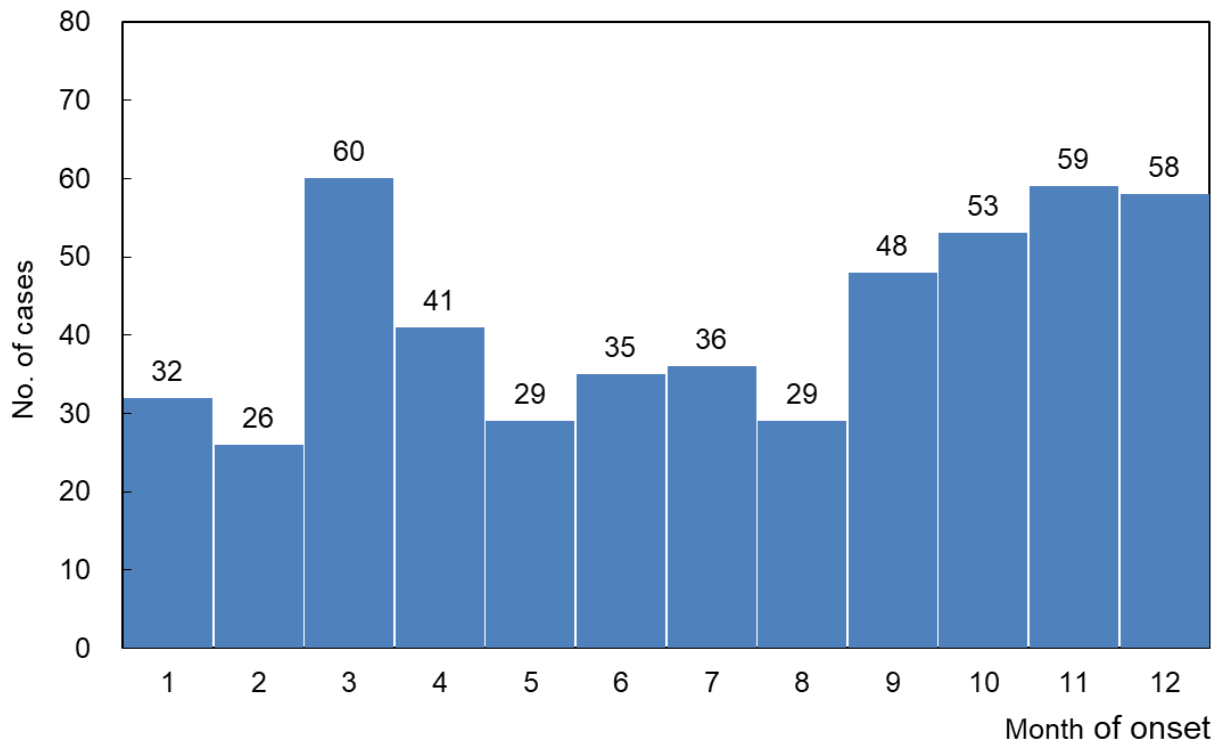


Figure 44 Number of confirmed acute hepatitis C cases, 2022

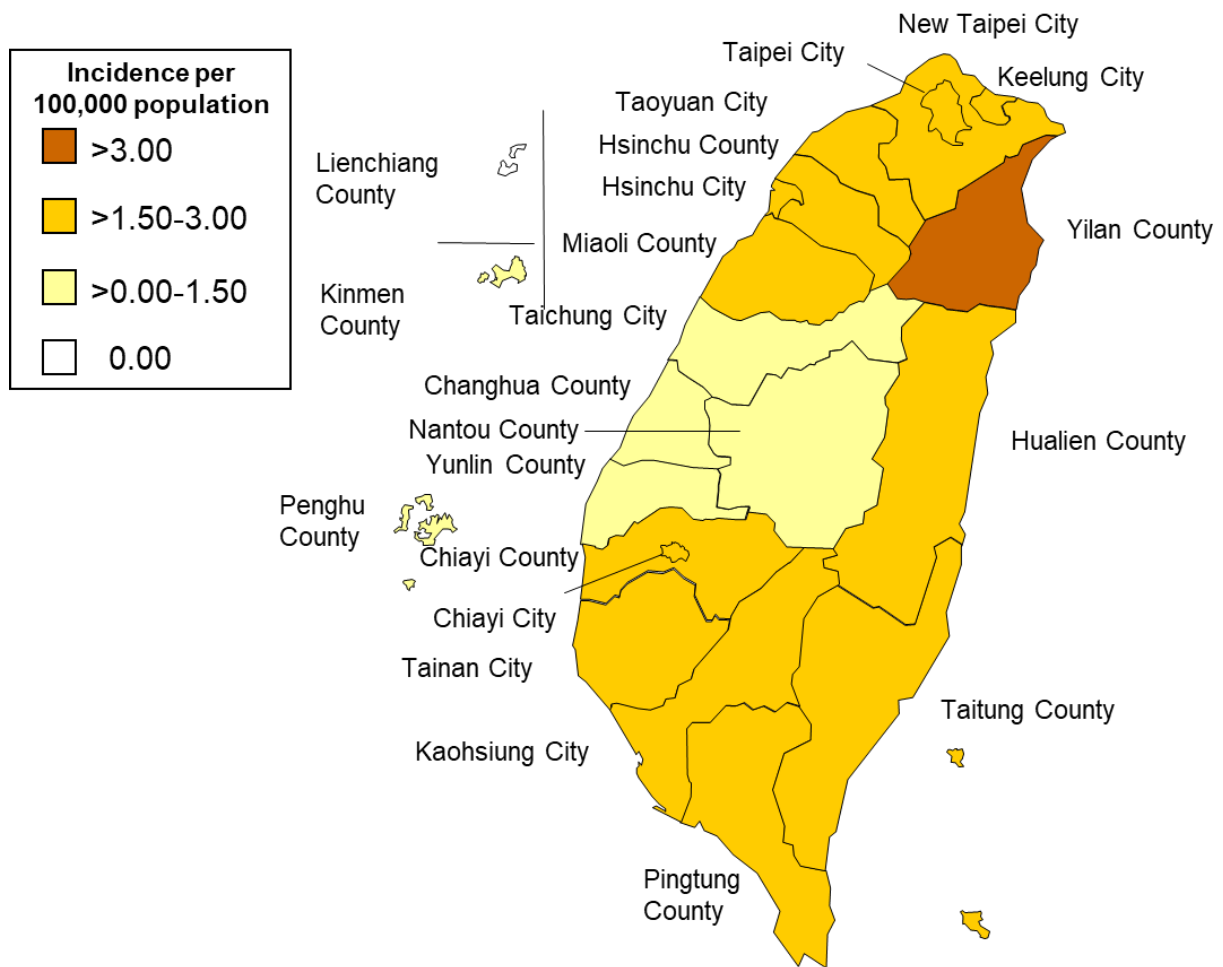


Figure 45 Geographical distribution by incidence of confirmed acute hepatitis C cases, 2022

Scrub Typhus

In 2022, 276 confirmed cases of scrub typhus (incidence rate: 1.18 per 100,000 population) were reported, which represented a decrease compared to 292 confirmed cases (incidence rate: 1.24 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 173 male cases (62.7%) and 103 female cases (37.3%) with male to female ratio of 1.7:1.0.

(2) By age group

The cases occurred predominantly in adults aged 25 years and above. In all, there were 133 cases in 40-64 years age group, 63 cases in 65 years and over age group, 48 cases in 25-39 years age group, 17 cases in 15-24 years age group, 13 cases in 5-14 years age group and 2 cases in 1-4 years age group.

(3) By month

Confirmed cases were reported in each month of the year that concentrated mainly in summer and autumn. September had the highest number of incidents with 47 confirmed cases reported followed by 46 cases in July, 37 cases in August, 29 cases in October, 20 cases in June, 19 cases in May, 18 cases in December, 16 cases in November, 14 cases in March, 13 cases in January and 11 cases in February. Only 6 cases in April less than 10 cases reported.

(4) By residential region

Taitung County had the highest number of incidents with 71 confirmed cases reported, followed by Hualien County with 33 cases, Penghu County with 31 cases, Kimen County 23 with cases, Taipei City with 19 cases, Kaohsiung City with 17 cases, New Taipei City with 16 cases, Pingtung County with 11 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 Taitung County (33.34), followed by Penghu County (29.03), Kinmen County (16.26), Lienchiang County (14.48) and Hualien County (10.31). The other cities and counties all had an incidence rate below 10.00.

(5) Imported cases and countries of infection

There were no imported cases of scrub typhus in 2022.

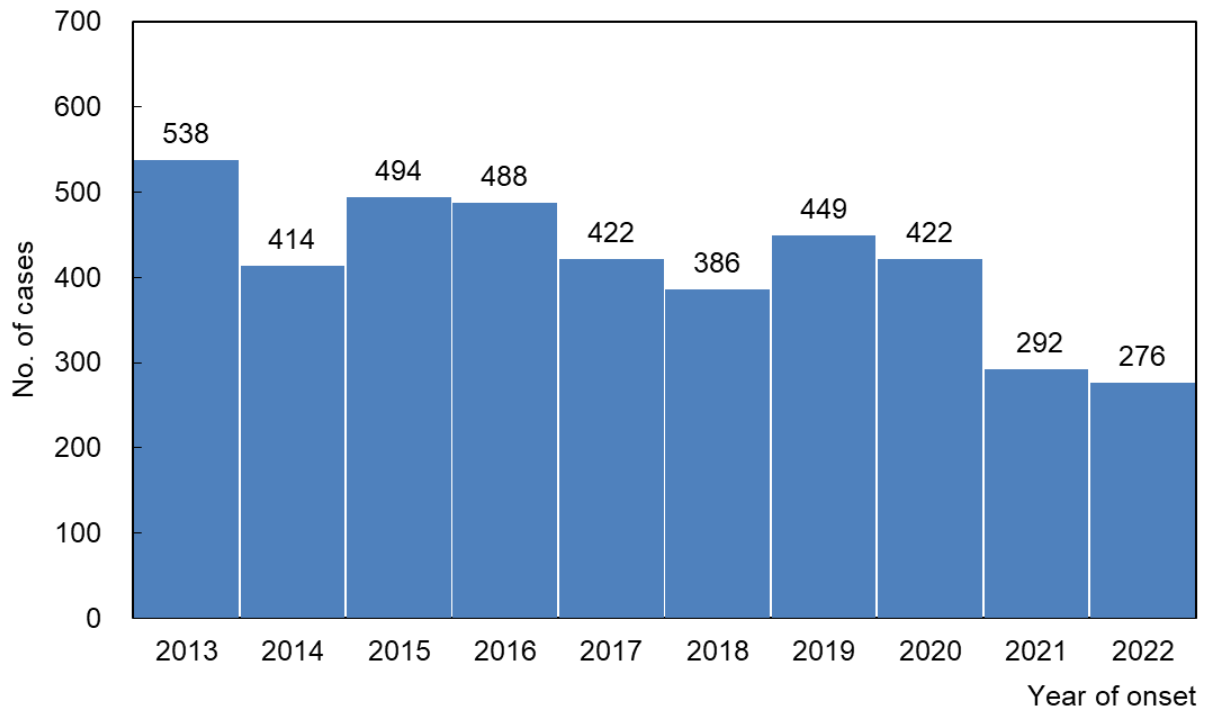


Figure 46 Number of confirmed scrub typhus cases, 2013-2022

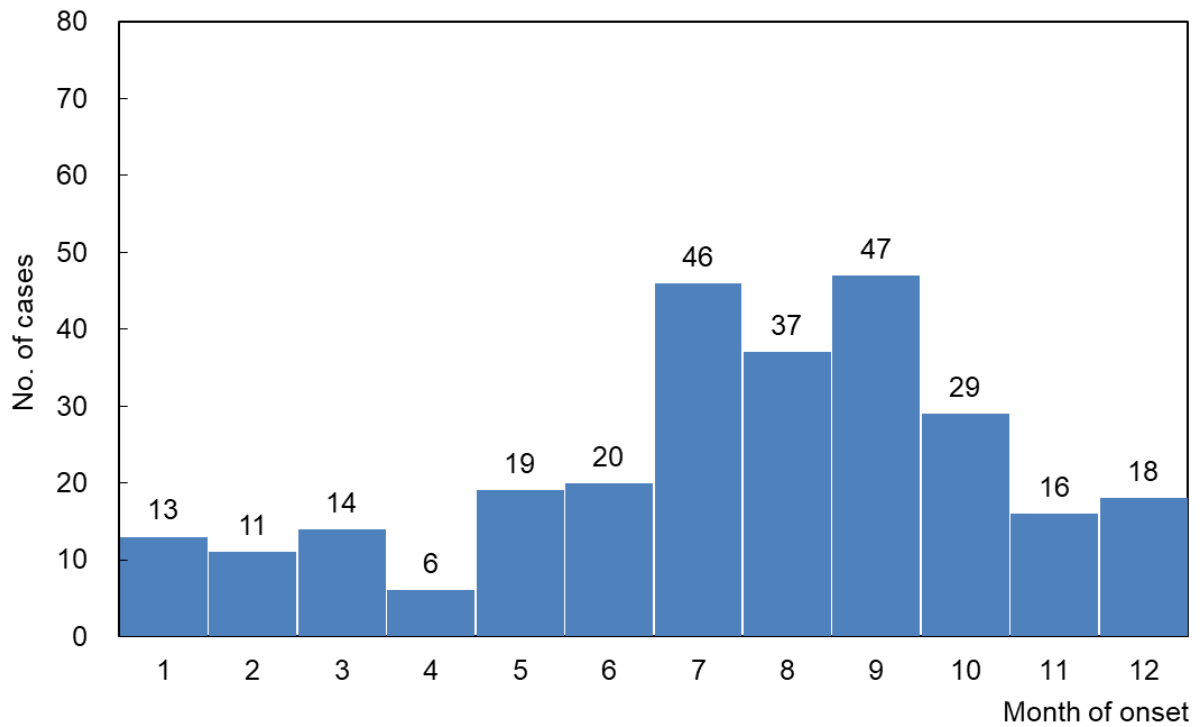


Figure 47 Number of confirmed scrub typhus cases, 2022

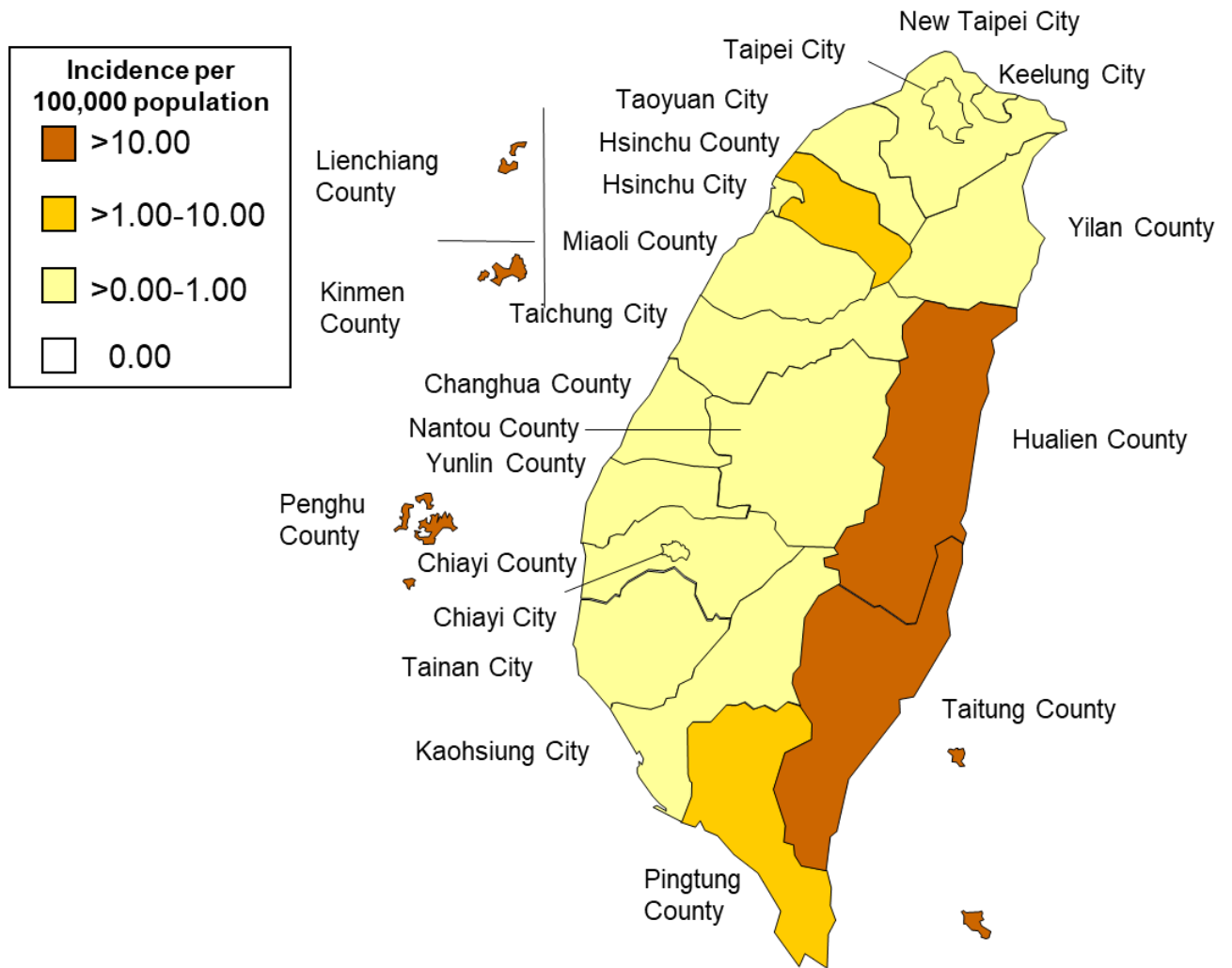


Figure 48 Geographical distribution by incidence of confirmed scrub typhus cases, 2022

Legionnaires' Disease

In 2022, 383 confirmed cases of legionnaires' disease (incidence rate: 1.50 per 100,000 population) were reported, which represented an increase compared to 351 confirmed cases (incidence rate: 1.50 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 293 male cases (76.5%) and 90 female cases (23.5%) with male to female ratio of 3.3:1.0.

(2) By age group

Most cases occurred in 65 years and over age group with 209 cases, followed by 163 cases in 40-64 years age group, and 1 cases in 25-39 years age group.

(3) By month

Confirmed cases were reported in each month of the year where December had the highest number of incidents with 61 confirmed cases reported, followed by November with 42 cases, June with 40 cases, October with 38 cases, January with 37 cases, May with 35 cases, September with 31 cases, March with 28 cases, February with 22 cases, August with 20 cases, April with 16 cases and July with 13 cases.

(4) By residential region

Taoyuan City had the highest number of incidents with 71 confirmed cases reported, followed by New Taipei City with 63 cases, Pingtung County with 31 cases, Changhua County with 20 cases, Tainan City and Yunlin County each with 16 cases, Taichung City with 14 cases, Yilan County with 13 cases, Taichung City with 19 cases, Hualien County with 18 cases, Yilan County with 13 cases, Chiayi County and Hualien County each with 10 cases, Keelung City with 8 cases, Chiayi City with 7 cases. The other cities and counties had less than 5 cases reported.

The incidence rate of confirmed cases per 100,000 population was the highest in Pingtung County (3.87), followed by each with 3.12 in Taoyuan City and Hualien County.

(5) Imported cases and countries of infection

There was 2 imported case of legionnaires' disease in 2022, including Indonesia and Thailand each with 1 case.

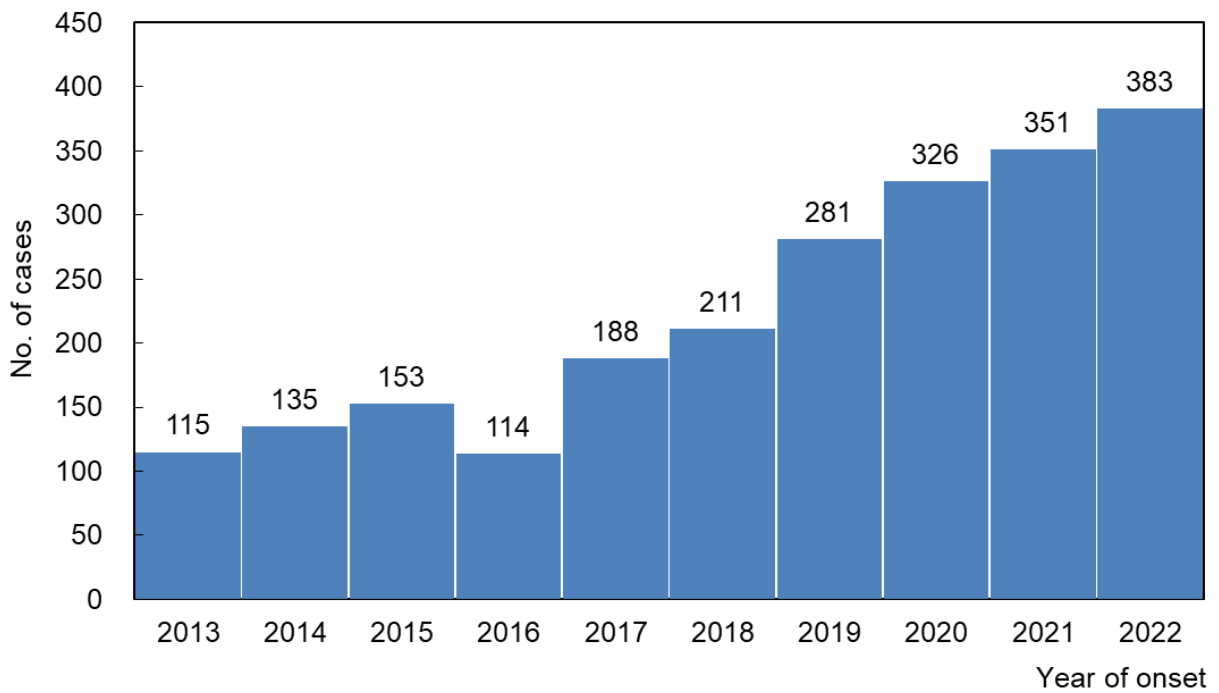


Figure 49 Number of confirmed legionnaires' disease cases, 2013-2022

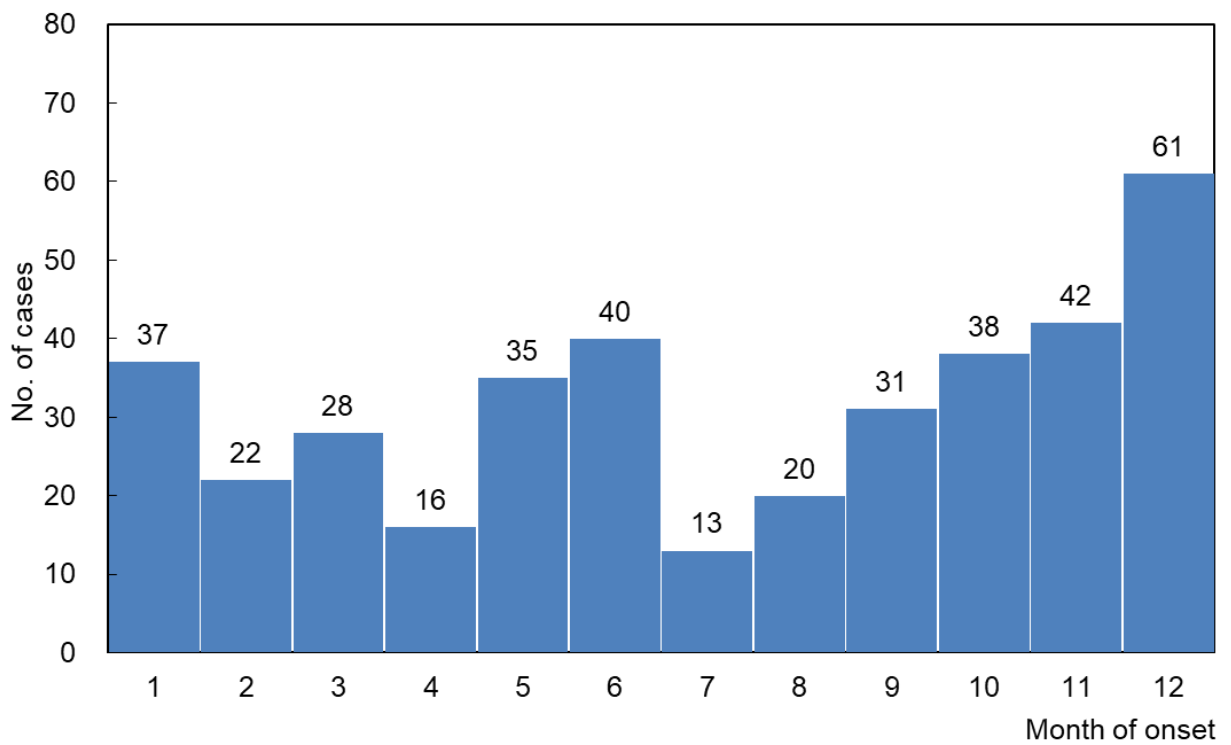


Figure 50 Number of confirmed legionnaires' disease cases, 2022

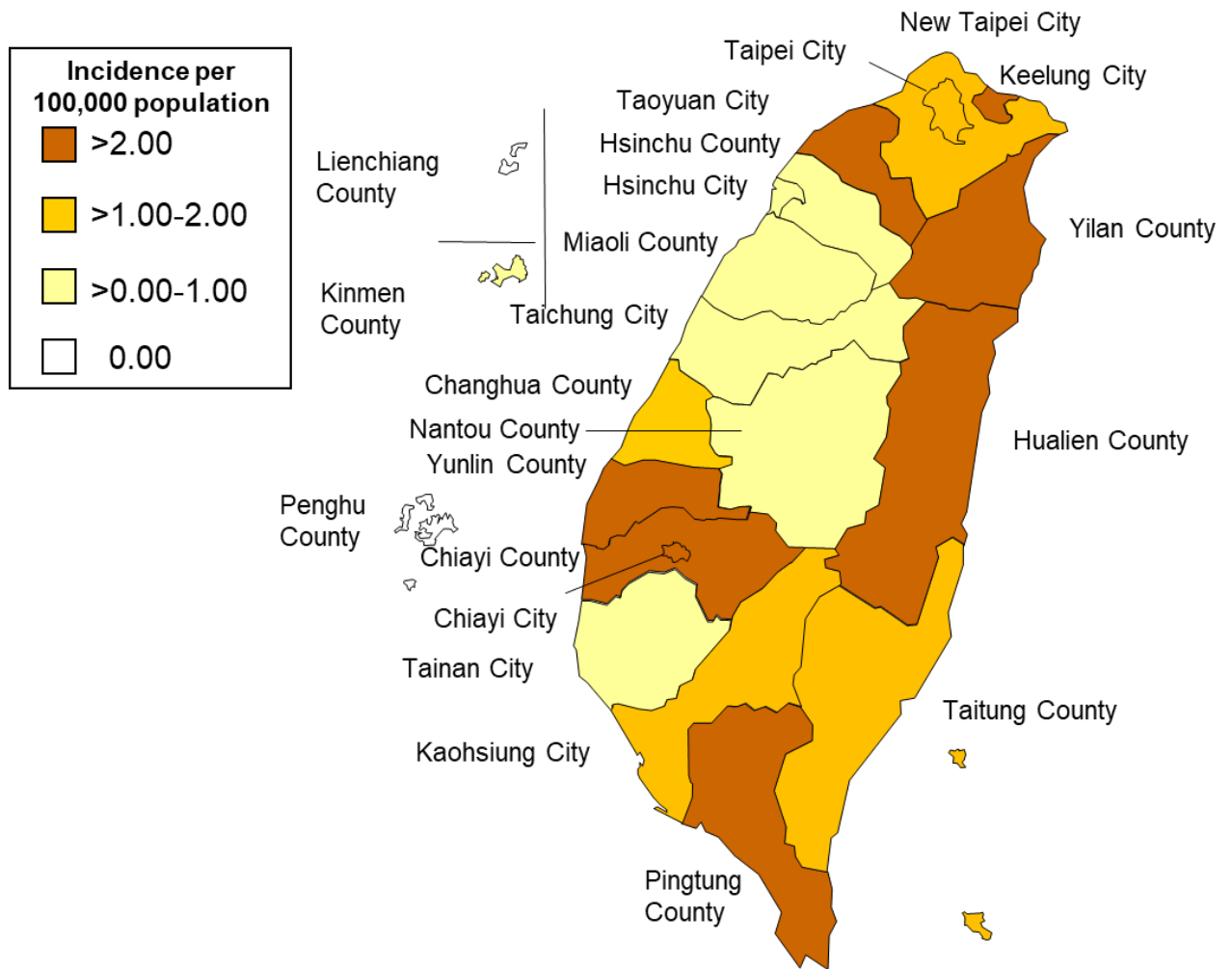


Figure 51 Geographical distribution by incidence of confirmed Legionnaires' Disease cases, 2022

Dengue Fever

In 2022, 88 confirmed cases of dengue fever (incidence rate: 0.38 per 100,000 population), including 68 imported cases and 20 indigenous cases were reported, which represented an increase compared to a total of 12 confirmed cases (incidence rate: 0.58 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

In the 68 imported cases, there were 40 male cases (58.8%) and 28 female cases (41.2%) with male to female ratio of 1.4:1.0.

In the 20 indigenous cases, there were 11 male cases (55.0%) and 9 female cases (45.0%) with male to female ratio of 1.2:1.0.

(2) By age group

In the 68 imported case, 1 case (1.5%) in 5-14 years age group, 15 cases (22.1%) in 15-24 years age group, 31 cases (45.6%) in 25-39 years age group, 18 cases (26.5%) in 40-64 years age group, and 3 cases (4.4%) in 65 years and over age group.

In the 20 indigenous cases, 4 cases(20.0%) in 5-14 years age group, 2 cases in 15-24 years age group, 1 case (5.0%) in 25-39 years age group, 9 cases(45.0%) in 40-64 years age group, and 4 cases (20.0%) in 65 years and over age group.

(3) By month

In the 68 imported cases, August had the highest number of incidents with 14 cases reported, followed by 12 cases in October, 9 cases in September, 8 cases each in June, November and December, 7 cases in July, 1 case each in April and May, and there were no confirmed imported cases reported in other month.

In the 20 indigenous cases were reported in the year that concentrated mainly from August to October. September had the highest number of incidents with 16 cases reported, followed by 3 cases in August and 1 case in October, and there were no confirmed imported cases reported in other month.

(4) By residential region

In the 68 imported cases, the number of incidents was the highest in New Taipei City and Taoyuan City each with 11 cases reported, followed by 8 cases in Kaohsiung City, 7 cases in Taipei City, 6 cases in Taichung City and Tainan City, 3 cases each in Hsinchu County, Miaoli County and Changhua County, 2 cases each in Yilan County and Nantou County, 1 case each in Keelung City,

Hsinchu City, Yunlin County, Chiayi County, Hualien County and Chiayi City. The other cities and counties did not have imported cases.

In the 20 indigenous cases, the number of incidents was the highest in Kaohsiung City with 18 cases reported, followed by 2 cases in Taichung City. The other cities and counties did not have indigenous cases.

Overall, the incidence rate of confirmed cases per 100,000 population was the highest in Kaohsiung City (0.95), followed by Yunlin County (0.90) and Miaoli County (0.56).

(5) Imported cases and countries of infection

In the 68 imported cases, there were 40 cases (58.8%) from Vietnam, followed by 10 cases (14.7%) from Indonesia, 6 cases (8.8%) from Philippines, 3 cases (8.3%) from Myanmar, 2 cases (2.9% respectively) from India, Thailand and Singapore, 1 case (1.5% respectively) each in Nepal, Honduras and Cambodia.

(6) By virus type

In the 68 imported cases, 8 cases were caused by dengue virus type 1, 21 cases by type 2, 3 cases by type 3 and 2 cases by type 4. The other 33 cases were undetermined.

In the 20 indigenous cases, 11 cases were caused by dengue virus type 1. The other 9 cases were undetermined.

Table 24 Virus type and infection source of confirmed dengue fever cases, 2022

Infection source	Virus type					Total
	DEN-1	DEN-2	DEN-3	DEN-4	Undetermined	
Indonesia	-	2	4	-	4	10
India	-	2	-	-	-	2
Thailand	1	-	-	-	1	2
Philippines	1	3	-	-	2	6
Vietnam	6	13	-	2	19	40
Singapore	-	1	-	-	1	2
Myanmar	-	1	-	-	2	3
Cambodia	-	-	-	-	1	1
Nepal	-	-	-	-	1	1
Honduras	-	-	-	-	1	1
Taiwan	11	-	-	-	9	20
Total	19	22	4	2	41	88

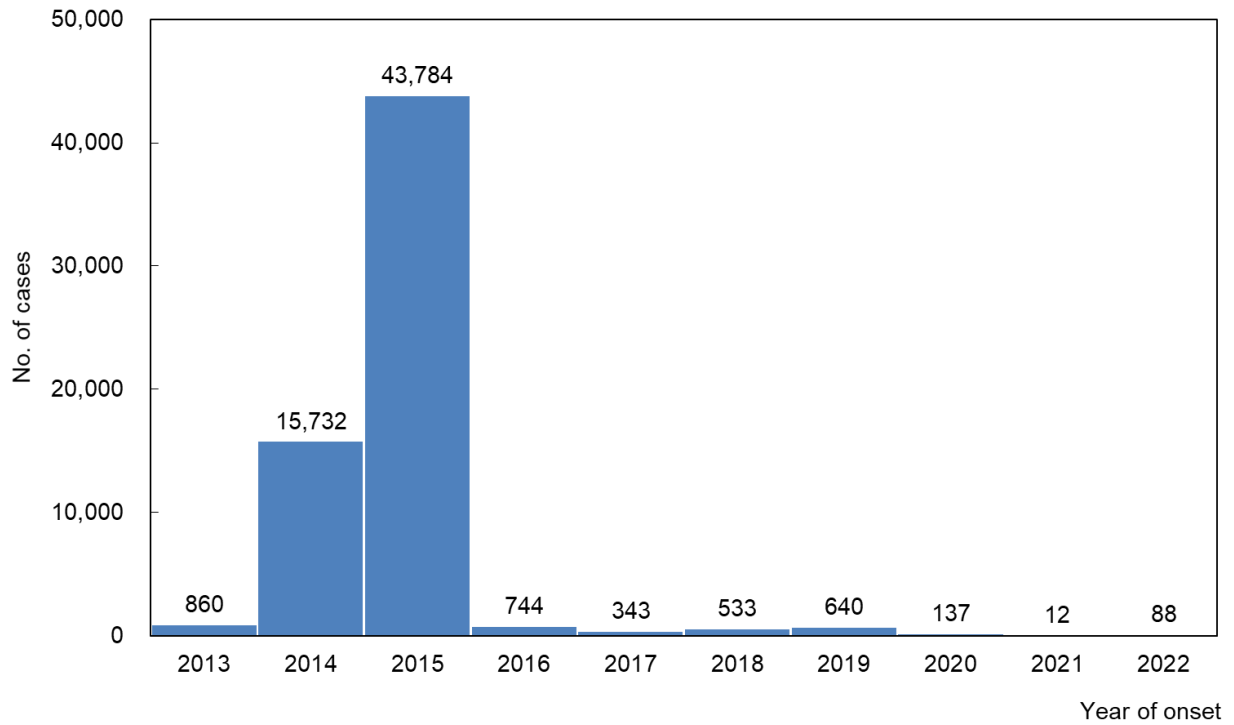


Figure 52 Number of confirmed dengue fever cases, 2013-2022

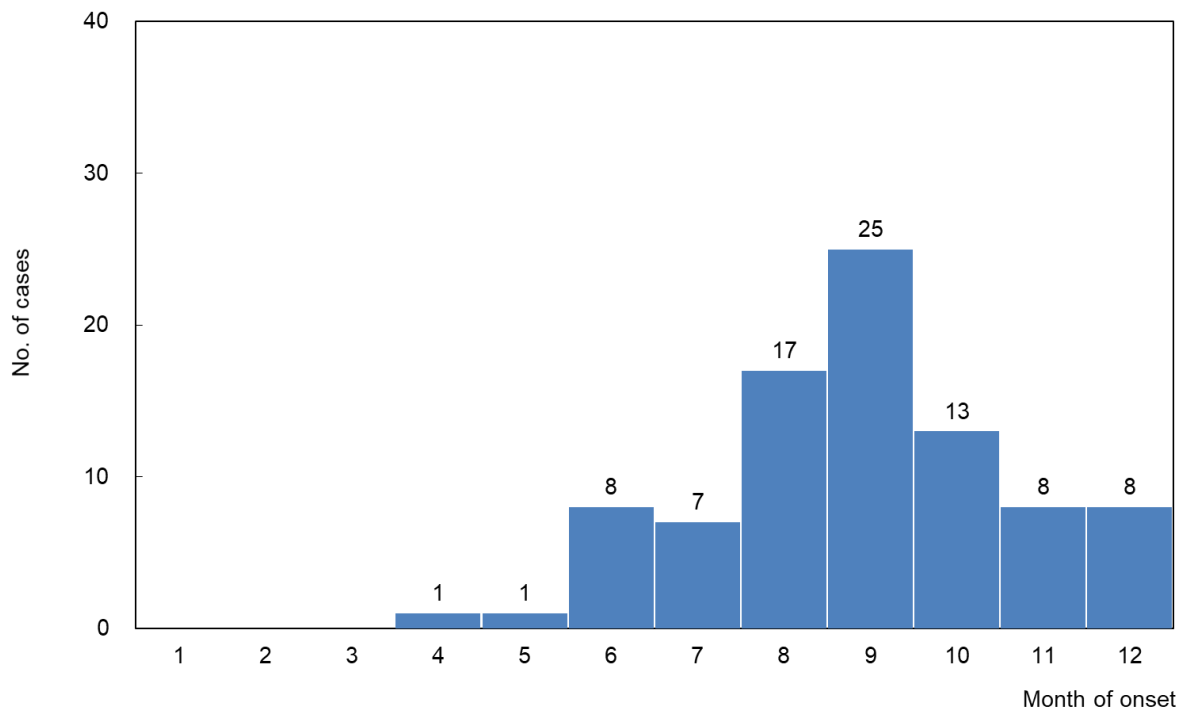


Figure 53 Number of confirmed dengue fever cases, 2022

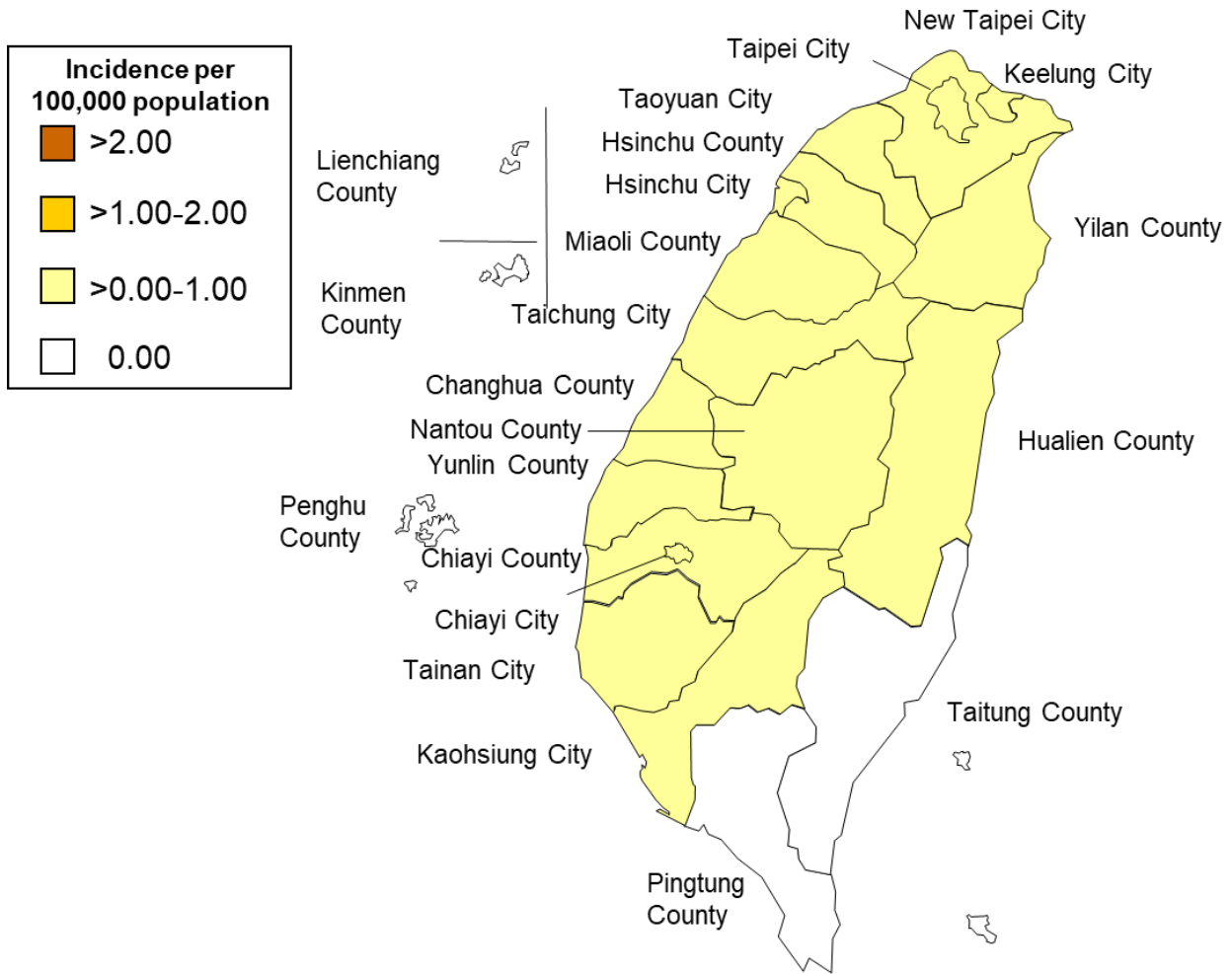


Figure 54 Geographical distribution by incidence of confirmed dengue fever cases, 2022

Enteroviruses Infection With Severe Complications

In 2022, 3 confirmed cases of enteroviruses infection with severe complications (incidence rate: 0.01 per 100,000 population) were reported. There were no confirmed cases reported in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 2 male cases (66.6%) and 1 female case (33.3%) with male to female ratio of 2.0:1.0.

(2) By age group

There was 1 case each in 0-1 years age group, 5-14 years age group and 25-39 years age group.

(3) By month

There were 3 cases in December. There were no confirmed cases reported in other month.

(4) By residential region

There were 3 cases from New Taipei City. The other cities and counties did not have confirmed cases.

The incidence rate of confirmed cases per 100,000 population in New Taipei City (0.07).

(5) Imported cases and countries of infection

There were no imported cases of enteroviruses infection with severe complications in 2022.

(6) Pathogen identification

Assay with enzyme-linked immunosorbent assays (ELISA) of IgM, virus culture, and RT-PCR were adopted for testing. Coxsackievirus A6 was isolated in 2 cases and enterovirus 68 in 1 case.

Table 25 Number of confirmed enteroviruses infection with severe complications cases by age, 2019-2022

	2019		2020		2021		2022	
	No. of cases (	% )	No. of cases (	% )	No. of cases (	% )	No. of cases (%)
>=0, <7m	4 (	5.8 )	- (	0.0 )	- (	- )	1 (	33.3)
>=7m, <1yr	8 (	11.6 )	- (	0.0 )	- (	- )	- (	0.0)
>=1, <4 yrs	33 (	47.8)	3 (	50.0 )	- (	- )	- (	0.0)
>=4, <7 yrs	10 (	14.5)	2 (	33.3 )	- (	- )	- (	0.0)
>=7, <16 yrs	12 (	17)	1 (	16.7 )	- (	- )	1 (	33.3)
>=16 yrs	2 (	3 )	- (	- )	- (	- )	1 (	33)
Unknown	- (-)	- (-)	- (-)	- (-)
Total	69 (	100.0)	6 (	100.0 )	- (	- )	3 (	100.0)

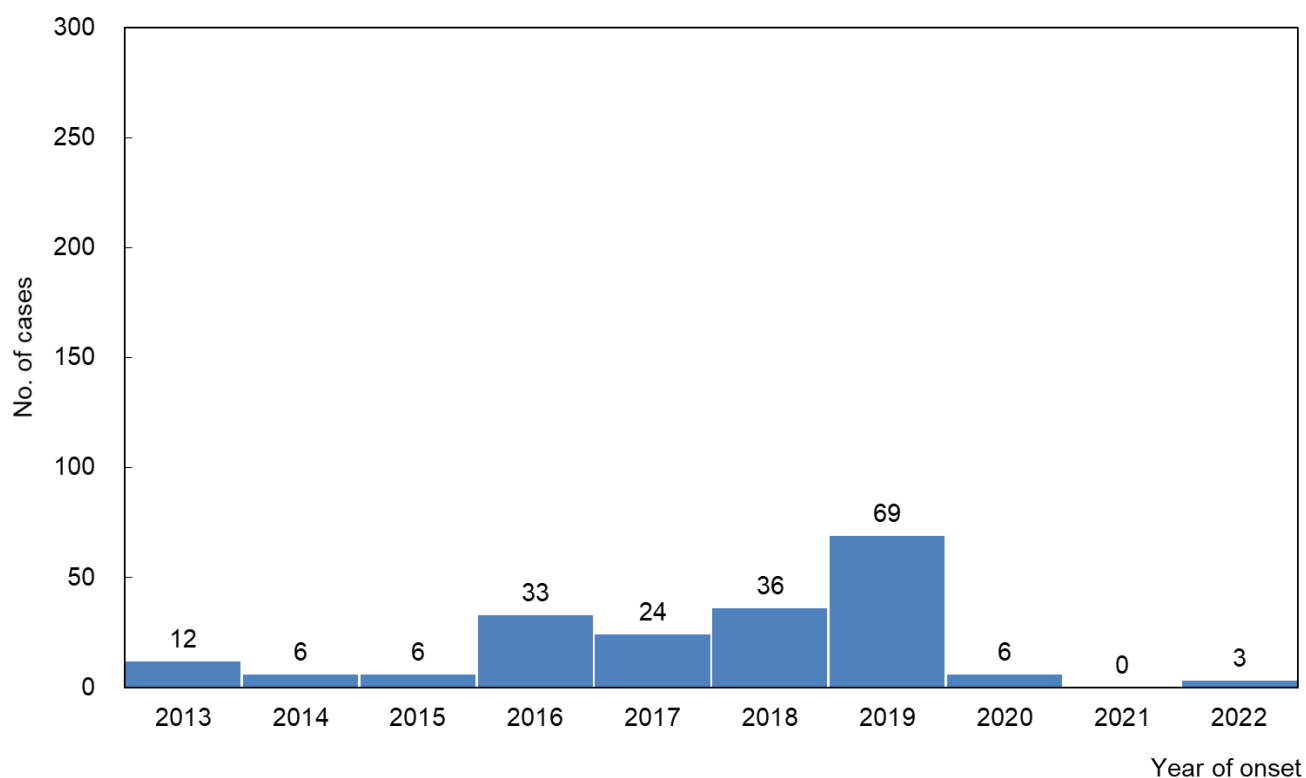


Figure 55 Number of confirmed enteroviruses infection with severe complications cases, 2013-2022

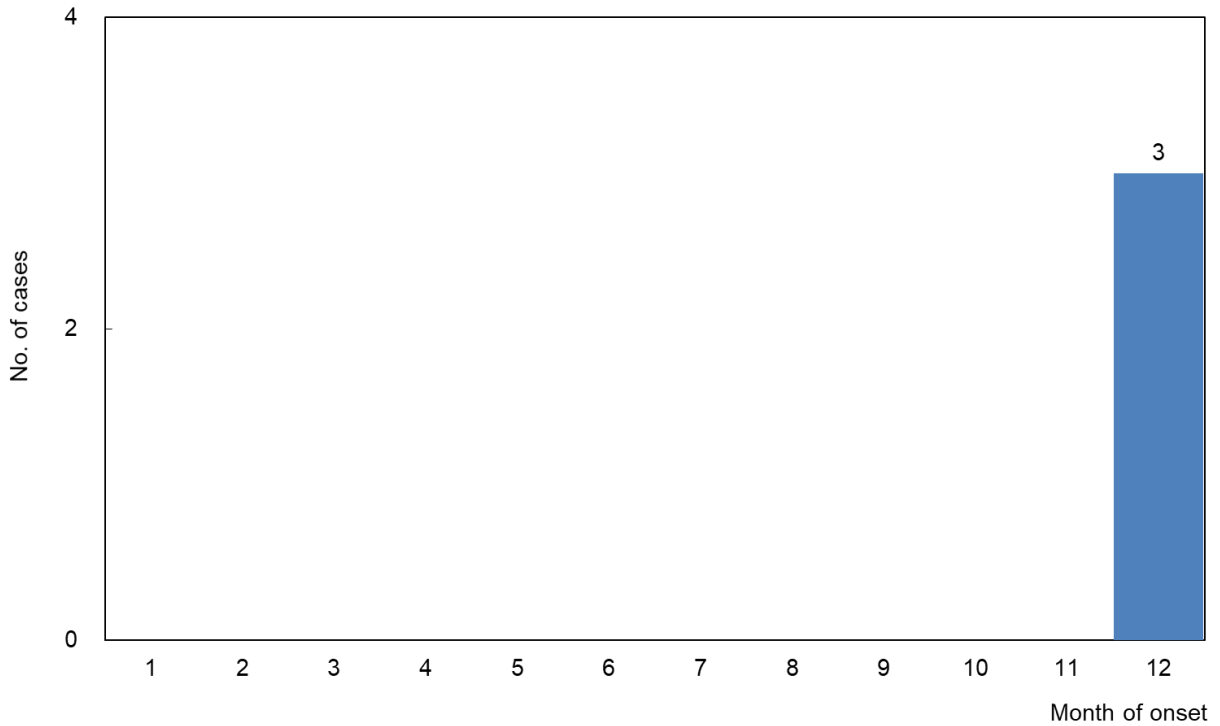


Figure 56 Number of confirmed enterovirus infection with severe complications cases, 2022

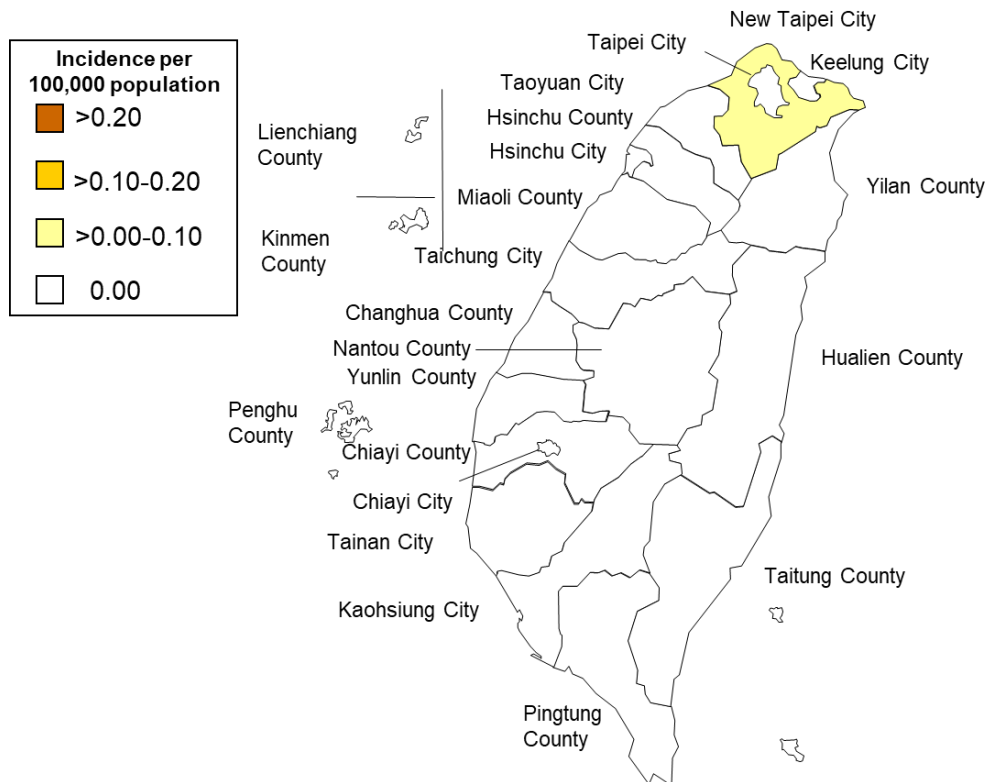


Figure 57 Geographical distribution by incidence of confirmed enterovirus infection with severe complications cases, 2020

Malaria

In 2022, 2 confirmed cases of malaria (incidence rate: 0.01 per 100,000 population) were reported, which represented same compared to 2 confirmed cases (incidence rate: 0.01 per 100,000 population) in 2021. All cases in 2022 were imported. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 1 male case (50.0%) and 1 female case(50.0%) with male to female ratio of 1.0:1.0.

(2) By age group

There was 1 case each in 40-64 years age group and 65 years and over age group.

(3) By month

There was 1 case each in Febuary and Apirl.

(4) By residential region

Taichung City and Changhua County each had 1 case reported. The other cities and counties did not have confirmed cases.

The incidence rate of confirmed cases per 100,000 population was the highest in Changhua County (0.08), followed by Taichung City (0.04).

(5) Imported cases and countries of infection

In the 2 imported cases, 1 case (50.0% repectively) each from Asia and Africa, specifically 1 case each from Cambodia and Uganda.

(6) Types of protozoan parasites

By the types of protozoan parasites, there was 1 case each of *Plasmodium falciparum* and co-infected with *Plasmodium* parasites.

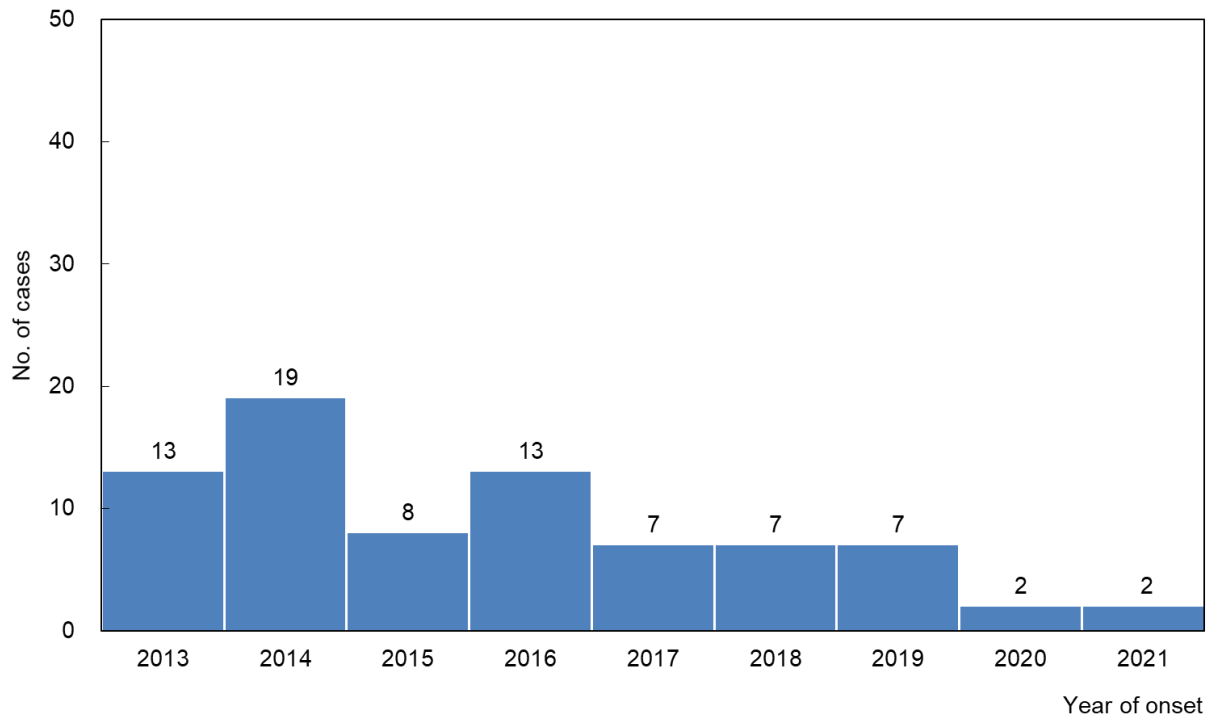


Figure 58 Number of confirmed imported malaria cases, 2013-2022

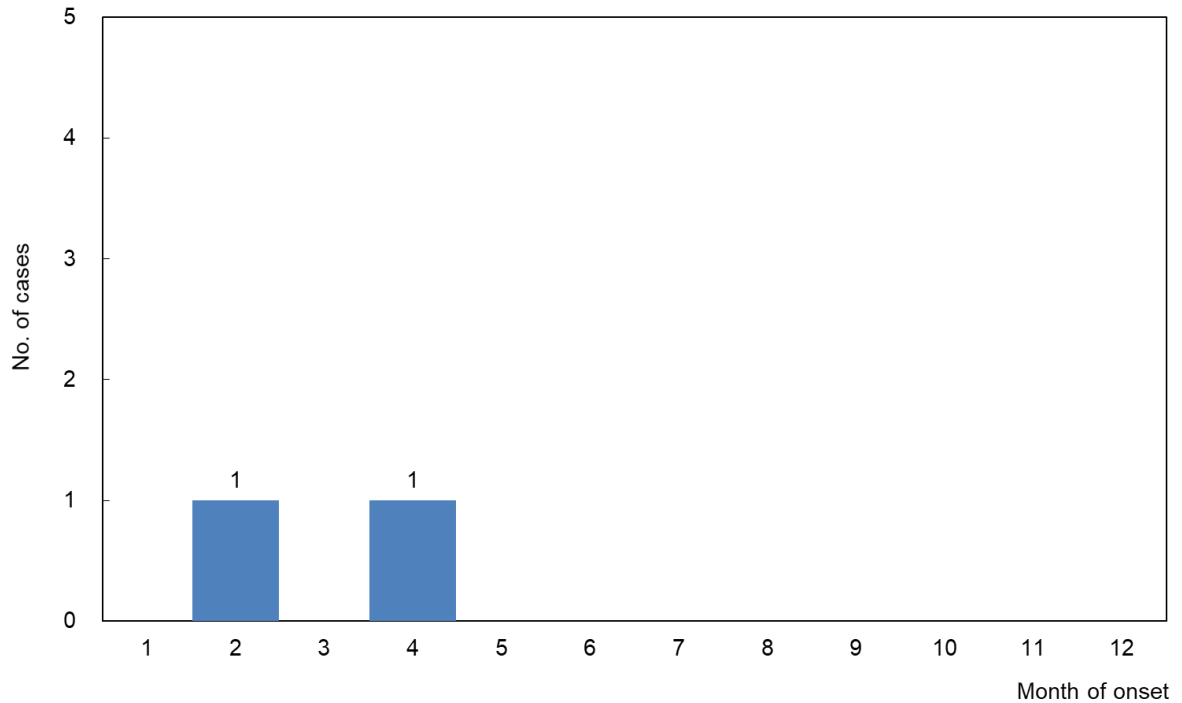


Figure 59 Number of confirmed imported malaria cases, 2022

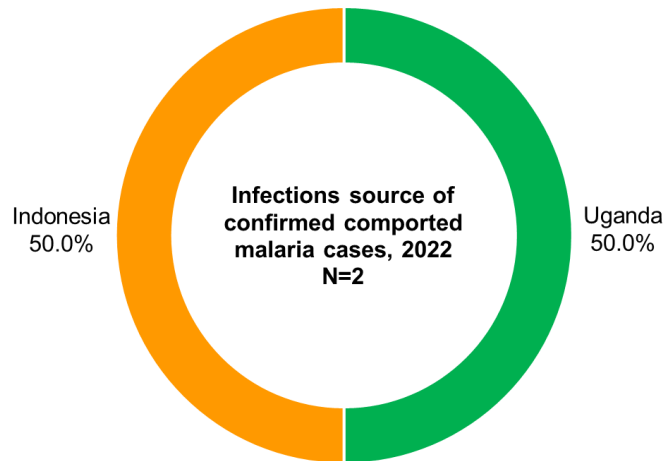


Figure 60 Infections source of confirmed imported malaria cases, 2022

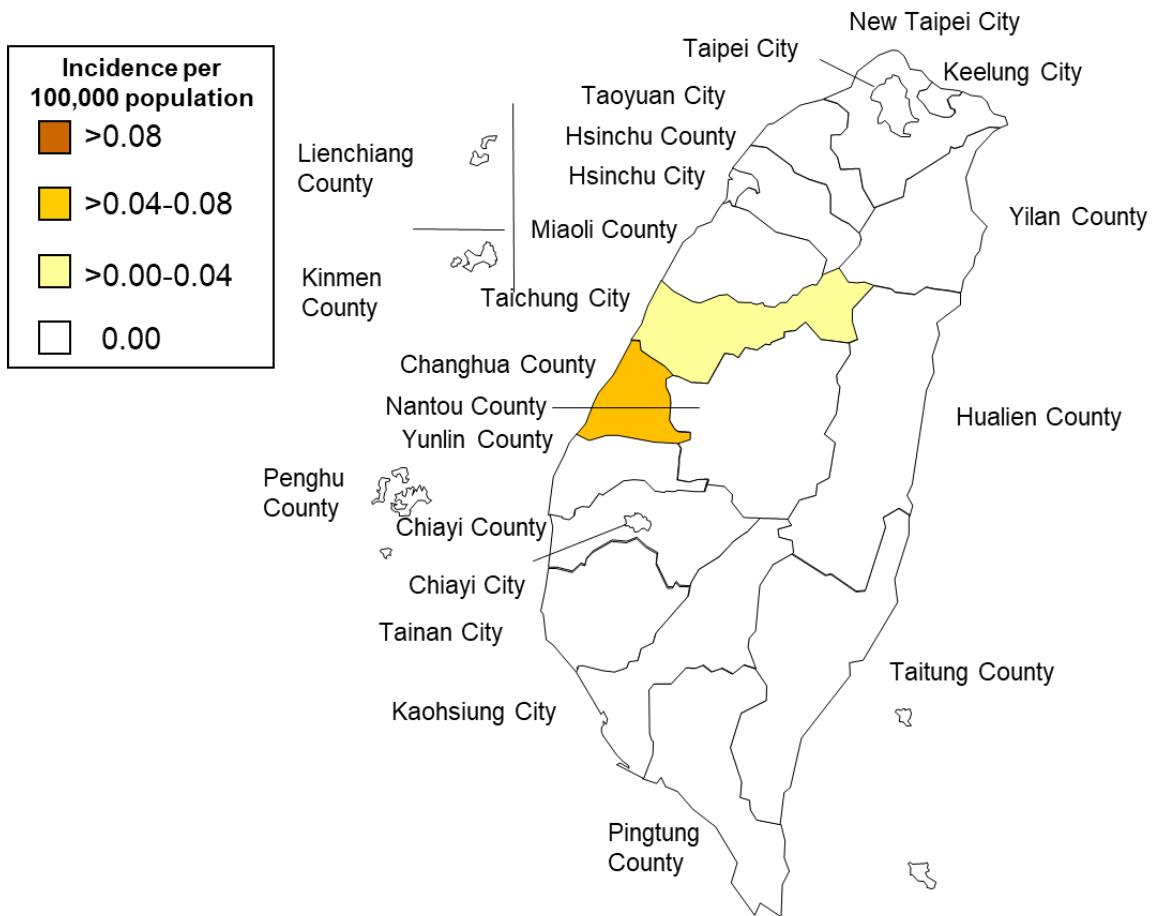


Figure 61 Geographical distribution by incidence of confirmed imported malaria cases, 2022

Shigellosis

In 2022, 92 confirmed cases of shigellosis (incidence rate: 0.39 per 100,000 population) were reported, which represented a decrease compared to 121 confirmed cases (incidence rate: 0.52 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

In the 12 imported cases, there were 4 male cases (33.3%) and 8 female cases (66.6%) with male to female ratio of 0.5:1.0.

In the 80 indigenous cases, there were 71 male cases (94.2%) and 9 female cases (5.8%) with male to female ratio of 7.9:1.0.

(2) By age group

In the 12 imported cases, there were 7 cases in 25-39 years age group, followed by 5 cases in 15-24 years age group. There were no imported cases in other age groups.

In the 80 indigenous cases, there were 50 cases in 25-39 years age group, 13 cases in 15-24 years age group, 11 cases in 40-64 years age group, 4 cases in 65 years and over age group, 2 cases in 1-4 years age group. There were no confirmed cases reported in 0-1 year age group and 5-14 years age group.

(3) By month

In the 12 imported cases, December had the highest number of incidents with 4 confirmed cases reported, followed by 2 cases each in July, September and November, 1 case each in June and October. There were no imported cases in other month.

In the 80 indigenous cases, confirmed cases were reported in each month of the year where February had the highest number of incidents with 10 confirmed cases reported, followed by 9 cases in November, 8 cases each in January, April, October and December, 6 cases each in May and August, 5 cases each in March and June, 4 cases in June and 3 cases in September.

(4) By residential region

In the 12 imported cases, Taoyuan City had the highest number of incidents with 3 imported cases reported, followed by New Taipei City and Taichung City each with 2 cases, Taipei City, Miaoli County, Changhua County, Nantou County and Penghu County each with 1 case. There were no cases reported in other cities and counties.

In the 80 indigenous cases, New Taipei City had the highest number of incidents with 22 indigenous cases reported, followed by Taipei City with 16

cases, Taichung City and Tainan City each with 10 cases, Taoyuan City with 9 cases, Hsinchu City with 7 cases, Hsinchu County, Miaoli County, Yunlin County, Hualien County, Penghu County and Kinmen County each with 1 case. There were no cases reported in other cities and counties.

In all, the incidence rate of confirmed cases per 100,000 population was the highest in Penghu County (1.87). Hsinchu City ranked in the second place with incidence rate of 1.55 and Kinmen County ranked in the third place with 0.71.

(5) Imported cases and countries of infection

There were 12 imported cases of shigellosis in 2022, including 9 cases from indonesia, 1 case from India. There were 2 cases which countries of infection is unkown.

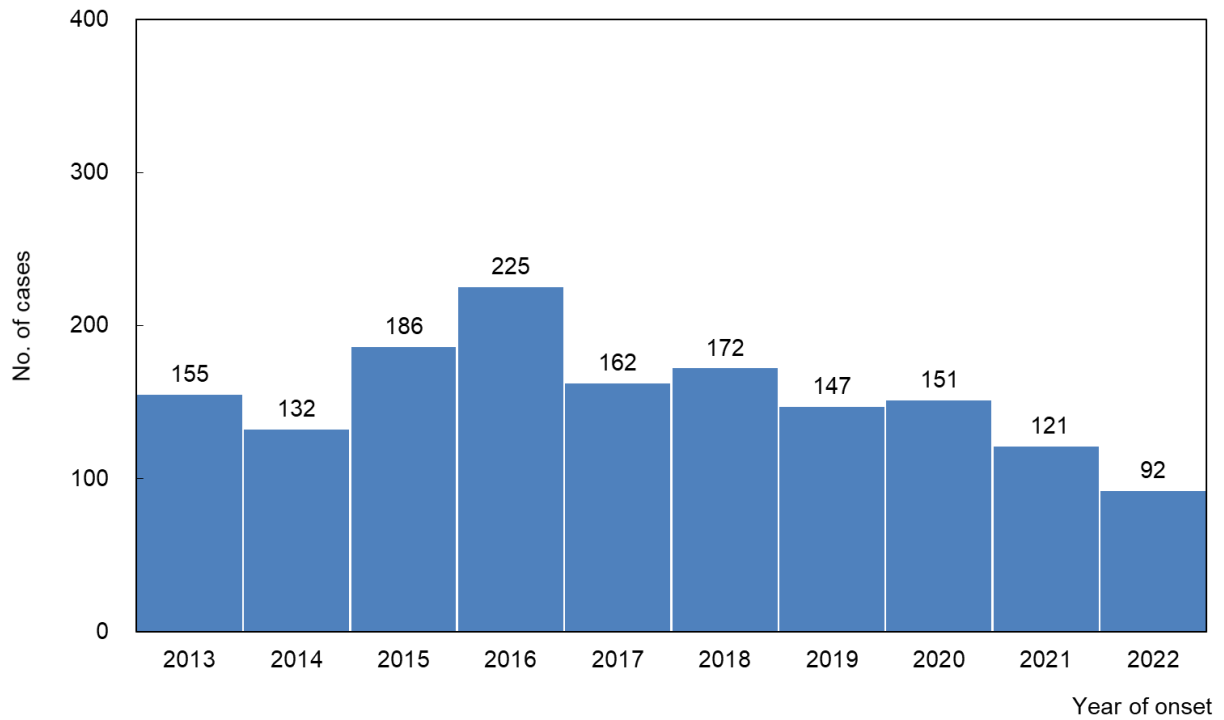


Figure 62 Number of confirmed shigellosis cases, 2013-2022

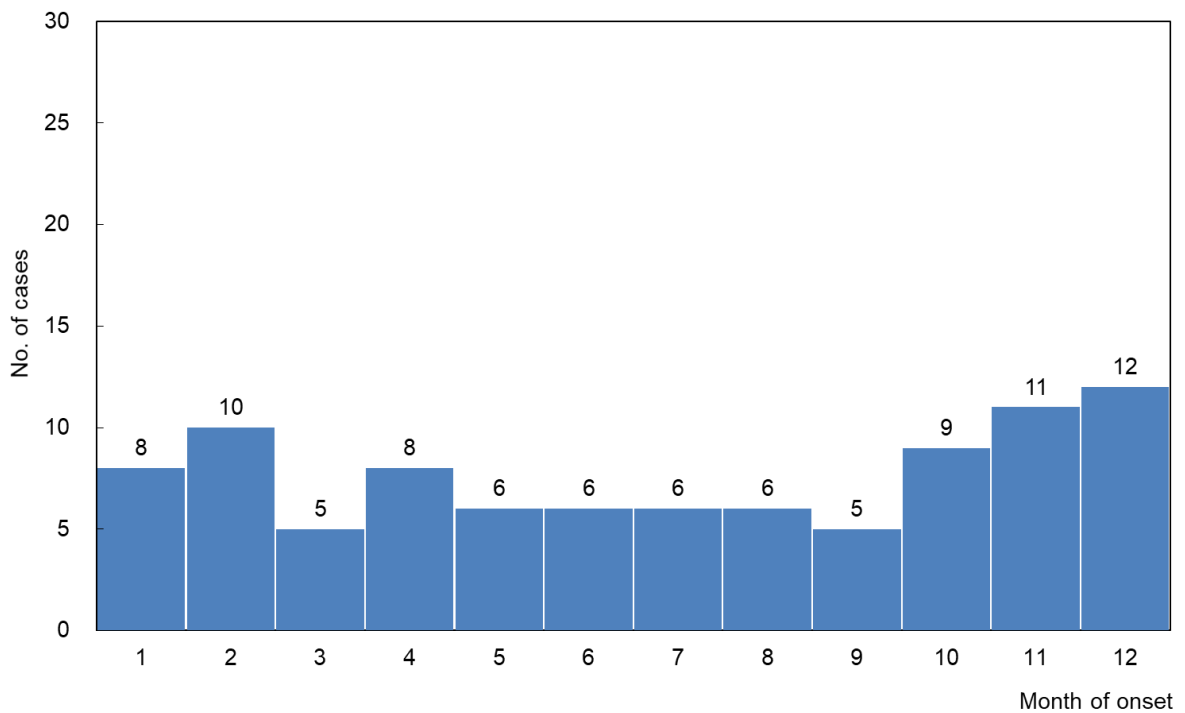


Figure 63 Number of confirmed shigellosis cases, 2022

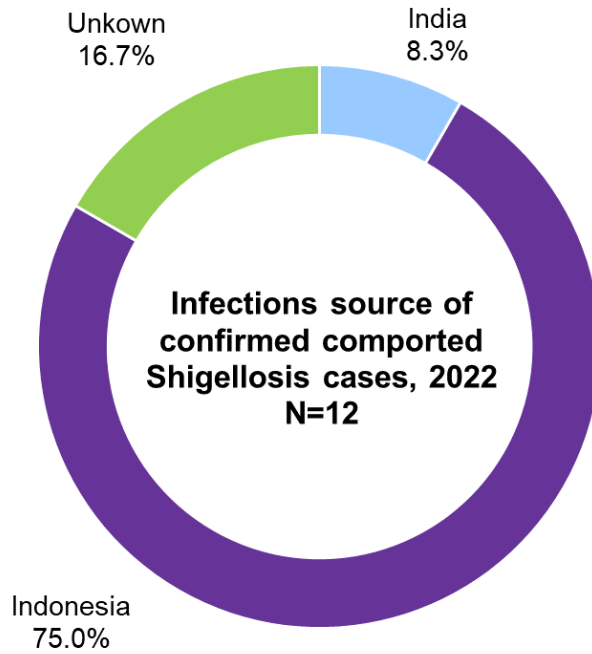


Figure 64 Infections source of confirmed imported shigellosis cases, 2022

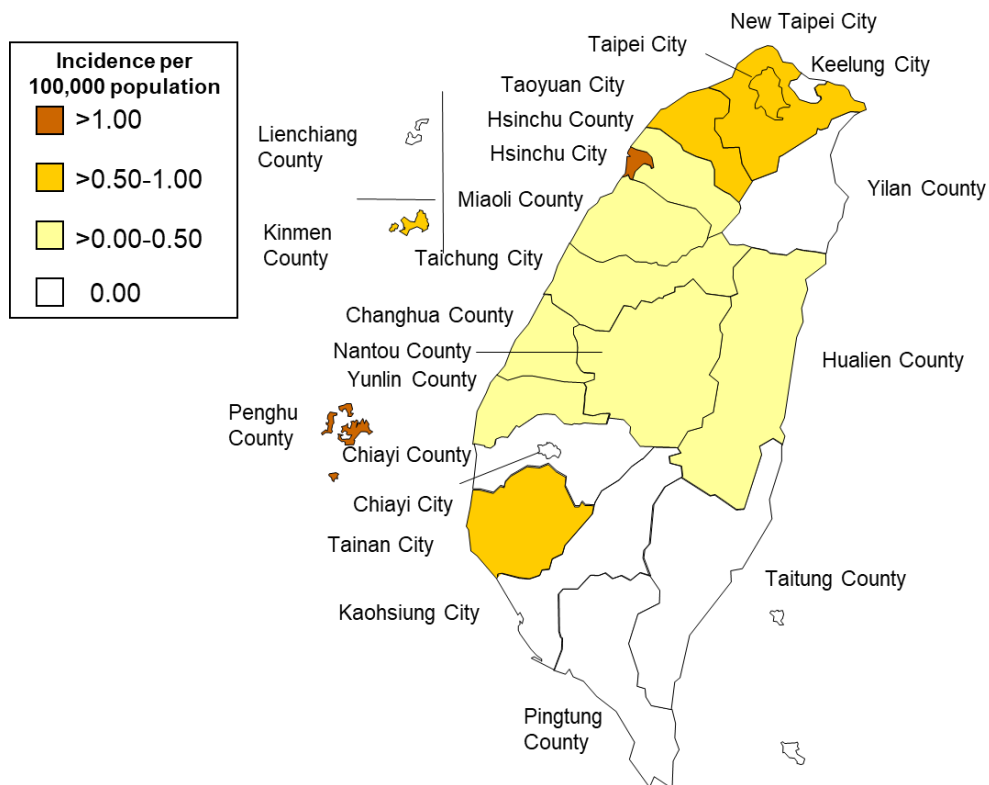


Figure 65 Geographical distribution by incidence of confirmed shigellosis cases, 2022

Influenza Case with Severe Complications

In 2022, 22 confirmed case of influenza case with severe complications (incidence rate: 0.09 per 100,000 population) were reported, which represented an increase compared to 1 confirmed case (incidence rate: 0.004 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

There were 12 male cases (54.5%) and 10 female cases (45.5%) with male to female ratio of 1.2:1.0.

(2) By age group

There were 9 cases in 65 years and over age group had the highest number of incidents reported, followed by 5 cases in 40-64 years age group, 3 cases in 5-14 years age group, 2 cases each in 15-24 years age group and 25-39 years age group and 1 case in 1-4 years group.

(3) By month

All case were reported from October to December. There were 11 cases in November had the highest number of incidents reported, followed by 9 cases in December and 2 cases in October.

(4) By residential region

Taipei City, Taoyuan City and Pingtung County each had the highest number of incidents with 3 cases reported, followed by in New Taipei City, Tainan City, Kaohsiung City, Hsinchu County, Changhua County and Hualien County each each with 2 cases, Taichung City with 1 case. There were no cases reported in other cities and counties.

The incidence rate of confirmed cases per 100,000 population was the highest in Hualien County (0.62). Hsinchu City ranked in the second place with incidence rate of 0.37 and Hsinchu County ranked in the third place with 0.35.

(5) Imported cases and countries of infection

There were 1 imported case of influenza case with serve complications in 2022, which was from United States.

(6) By virus type

By virus type, there was 18 cases associated with influenza A viruses (2 cases of H1 and 16 cases of H3) , 4 cases associated with influenza B viruses.

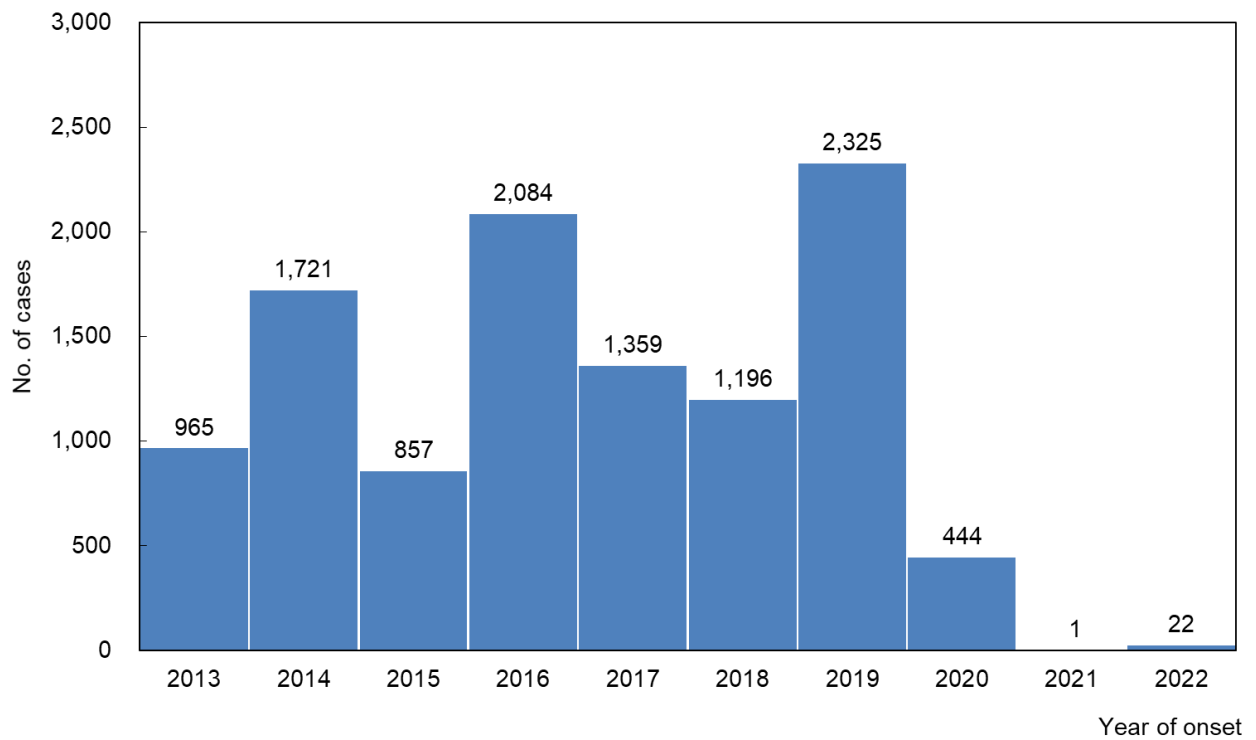


Figure 66 Number of confirmed influenza case with severe complications cases, 2013-2022

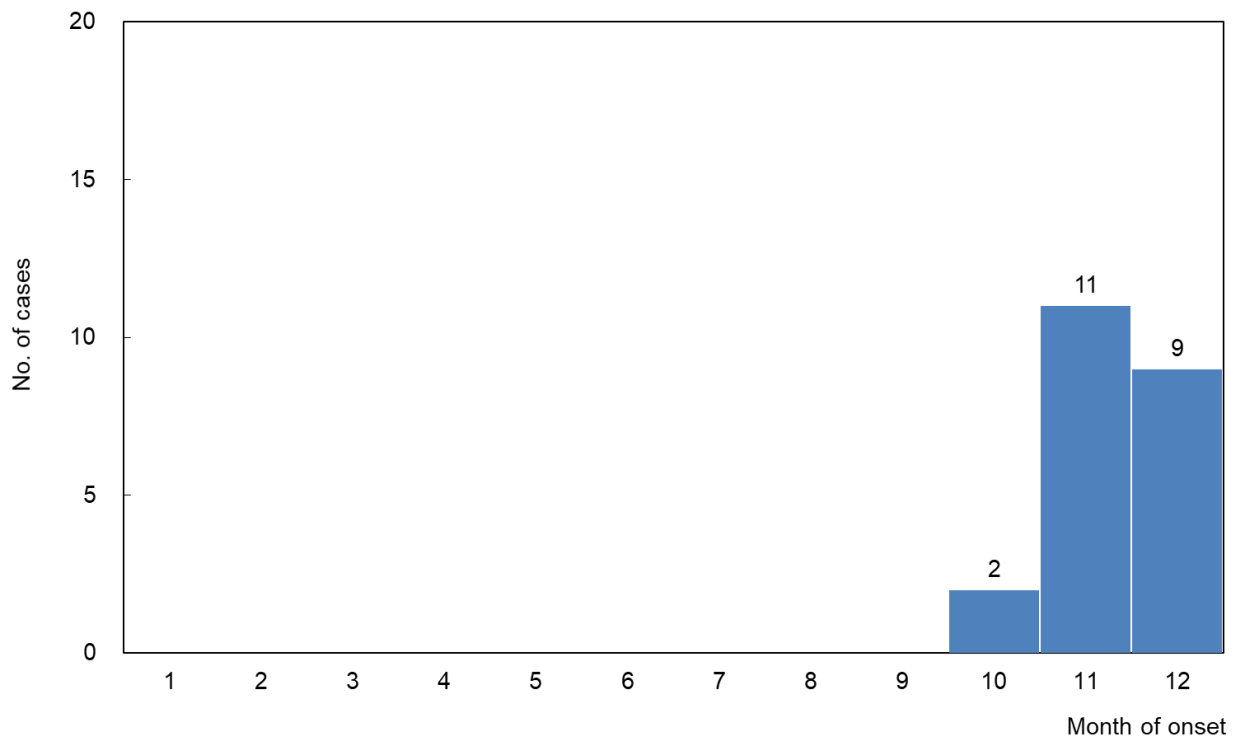


Figure 67 Number of confirmed influenza case with severe complications cases, 2022

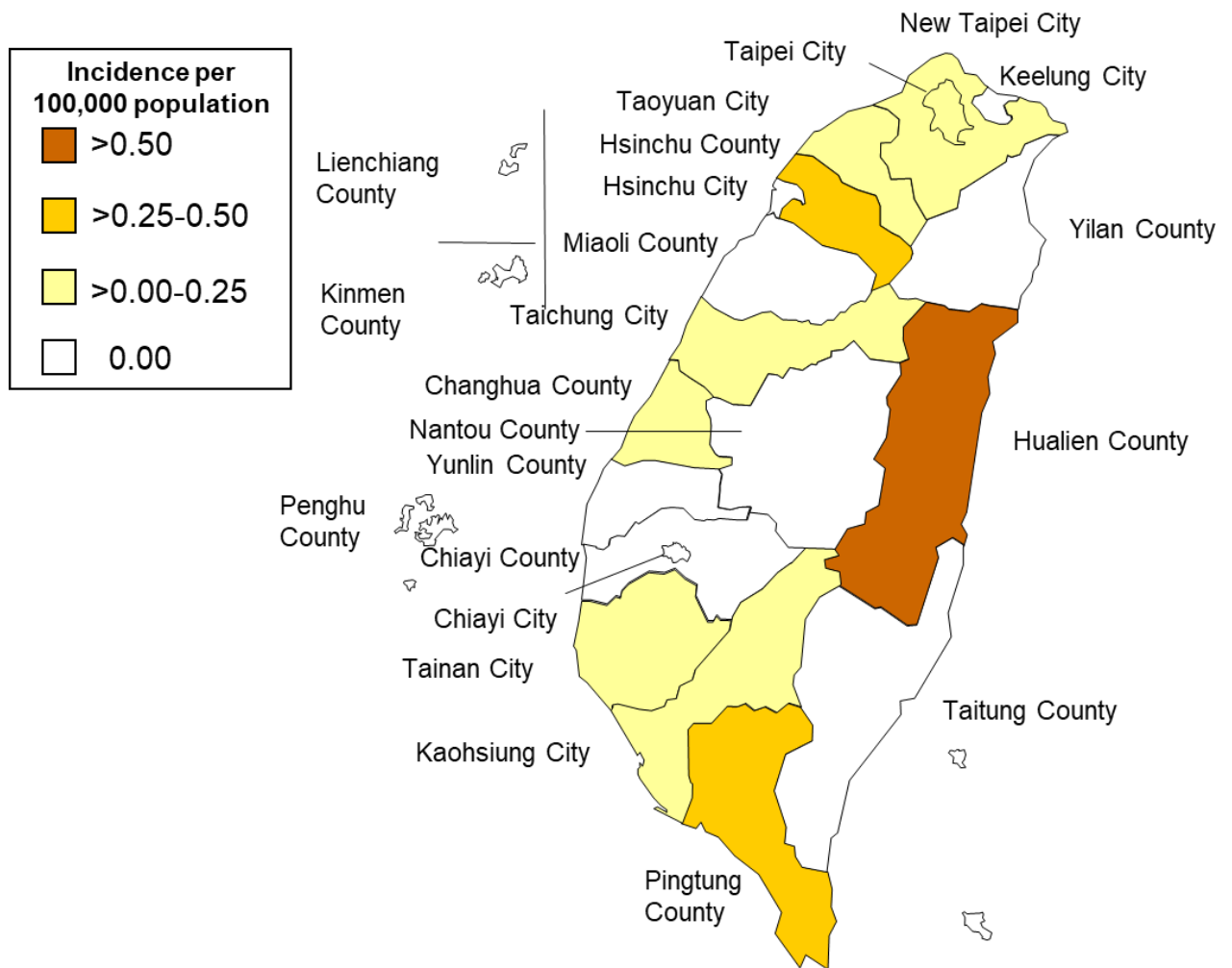


Figure 68 Geographical distributions by incidence of confirmed influenza case with severe complications cases, 2022

Government-funded influenza vaccination coverage rate

In the government-funded influenza vaccination program for influenza season 2021-2022, as recommended by Joint Meeting of Ministry of Health and Welfare Infectious Disease Control and Prevention Advisory Committee on Immunization Practices and Influenza Prevention, quadrivalent inactivated influenza vaccines (QIV) were used in eleven high-risk groups, including the elders aged more than 65 years, adults aged 50 to 64 years, pre-school children aged 6 months through 6 years, students aged 7 years through 18 years, residents and staff in nursing homes and other long-term care facilities, healthcare and public health personnel, poultry or livestock farmers and animal health inspectors, people with catastrophic illness and 19-64 years of age who have underlying medical conditions, pregnant women and parents of infants less than 6 months of age, and kindergarten caretakers and child-care professionals. The national government-funded influenza vaccination program purchased 6,111,310 doses, and was implemented in 2 stages. All high risk target groups (especially the elders aged more than 65 years and pre-school children aged 6 months through 6 years) started the vaccination from October 1, 2021, except adults aged 50 to 64 years started from November 15, 2021. To demonstrate the largest benefit of vaccine, government-funded influenza vaccine is available for all residents aged over 6 months until the supply is depleted on January 6. The influenza vaccine uptake rates obtained via the Influenza Vaccine Information System (IVIS) in this influenza season, were described below:

(1) Coverage rates among high-risk groups (See Table 26 for more details)

The vaccination doses and coverage rates for each group were as follows: the elders aged more than 65 years: 1,727,193 people/42.8%; pre-school children aged 6 months through 6 years vaccinated at least one dose: 623,241 people/59.1%; students aged 7 years through 18 years: 1,867,454 people/ 77.9%; staff in nursing homes and other long-term care facilities: 54,247 people/80.9%; people with catastrophic illness: 68,831 people; registered healthcare workers: 241,734 people/ 70.3%; public health personnel: 14,035 people/ 100.0%; poultry or livestock farmers and animal health inspectors: 9,693 people/66.1%; 19-64 years of age who have underlying medical conditions: 212,333 people; pregnant women and parents of infants less than 6 months of age: 90,688 people; kindergarten caretakers and child-care professionals: 23,369 people/35.8%; adults aged 50 to 64 years: 707,458 people/13.4%; expansion group: 165,653 people.

(2) Utilization rates by months (See Figure 69)

The government-funded influenza vaccination program started from October 1, 2021. Most of the recipients received the vaccines during the period of October 1 to December 2. Up to 86% of influenza vaccines were administered by beginning of December, then the utilization rate began to decline slowly after December, and by the end of January, the vaccine utilization rate reached 97%. In early March 2022, the cumulative utilization rate was kept at 98%.

(3) Coverage by cities/counties (See Table 27 for more details)

The average coverage rate of government-funded influenza vaccine was 40.41%. Southern and Central Taiwan had the highest coverage rate of 43.4%, followed by 42.0% in Northern Taiwan. The coverage rate in Chiayi City was 52.6%, which was the highest among all cities and counties. Cities/counties where the coverage rates were higher than the national average were Changhua County, Lienchiang County, Yilan County, Taichung City, Nantou County, Hsinchu City, Taoyuan City, Hsinchu County, Hualien County, Tainan City, Kaohsiung City and Miaoli County.

Table 26 Government-funded influenza vaccination coverage rates among high-risk groups, 2021-2022 influenza season

High-risk groups	No. of recipients vaccinated	Coverage rates
Elders aged more than 65 years*	1,727,193	42.8%
Pre-school children aged 6 months through 6 years vaccinated at least one dose	623,241	59.1%
Students aged 7 years through 18 years	1,867,454	77.9%
People with catastrophic illness	68,831	-
Staff in nursing homes and other long-term care facilities	54,247	80.9%
Related Healthcare workers	362,178	73.0%
<i>Registered health care workers</i>	241,734	70.3%
<i>Others workers in hospitals</i>	120,444	79.2%
Public health personnel	27,576	66.1%
<i>Infection control workers</i>	14,035	100.0%
<i>Emergency medical technicians</i>	6,373	43.1%
<i>Airborne service corps</i>	376	100.0%
<i>Coast guards</i>	3,429	40.7%
<i>Border control workers</i>	3,363	38.7%
Poultry or livestock farmers and animal health inspectors	9,693	66.1%
19-49 years of age who have underlying medical conditions	212,333	-
Pregnant women and parents of infants less than 6 months of age	90,688	-
Kindergarten caretakers and child-care professionals	23,369	35.8%
Adults aged 50 to 64 years	707,458	13.4%
Expansion group**	165,653	-
Total	5,939,914	

*including residents in long term care facilities

**All people aged more than 6 months are eligible since January 6, 2022

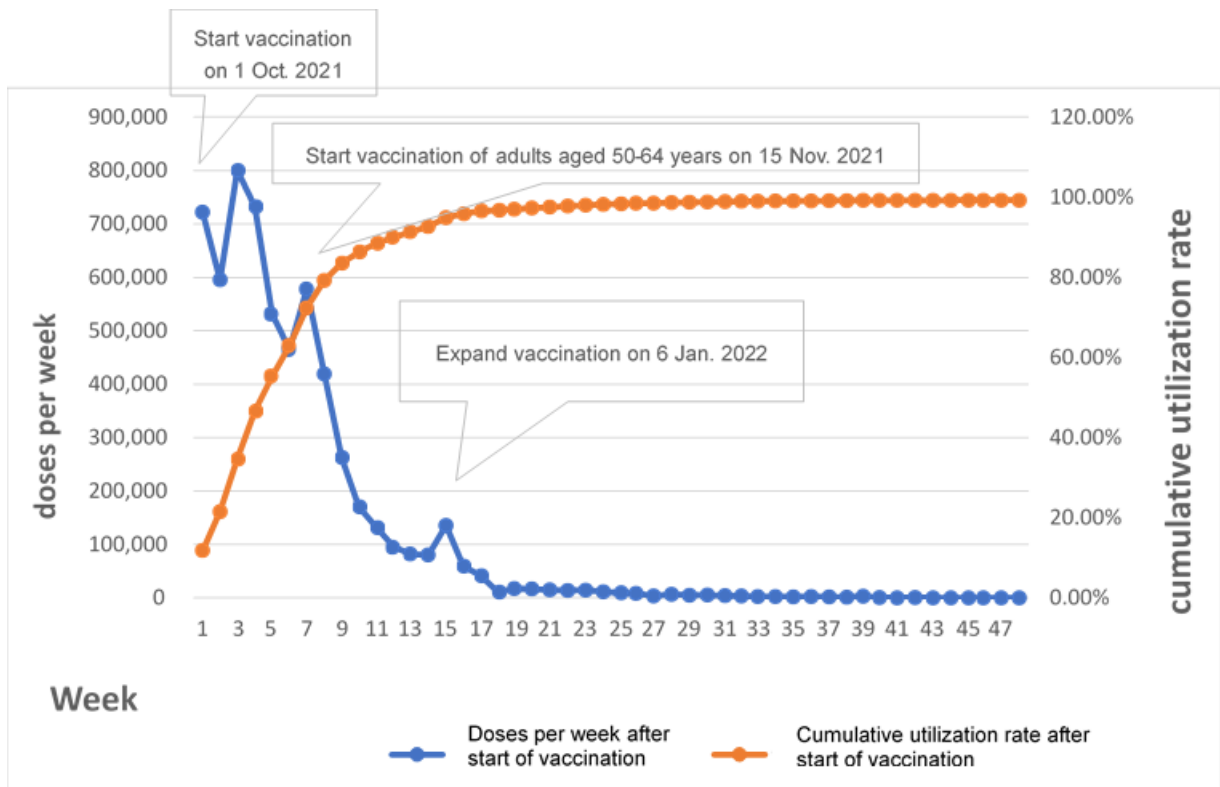


Figure 69 Immunization progress with influenza vaccine shots, 2021-2022 influenza season

Table 27 Government-funded influenza vaccination coverage rates by cities/counties, 2021-2022 influenza season

Locality	Target population	Vaccinated population	Coverage rate
Taipei City	1,580,186	624,744	39.54%
New Taipei City	2,187,863	836,248	38.22%
Keelung City	211,448	84,988	40.19%
Yilan County	261,297	114,419	43.79%
Kinmen County	73,780	13,360	18.11%
Lienchiang County	7,513	3,297	43.88%
Taoyuan City	1,209,170	514,154	42.52%
Hsinchu City	256,227	109,092	42.58%
Hsinchu County	300,760	127,219	42.30%
Miaoli County	305,863	124,023	40.55%
Taichung City	1,550,065	664,486	42.87%
Changhua County	698,502	312,293	44.71%
Nantou County	284,047	121,124	42.64%
Yunlin County	385,434	153,462	39.82%
Chiayi City	163,836	86,111	52.56%
Chiayi County	283,004	113,771	40.20%
Tainan City	1,065,364	438,491	41.16%
Kaohsiung City	1,581,119	642,073	40.61%
Pingtung County	461,435	169,505	36.73%
Penghu County	57,203	20,592	36.00%
Hualien County	194,029	81,157	41.83%
Taitung County	125,221	47,800	38.17%
Total	13,243,366	5,402,409	40.41%

Note: 1. Data source: Influenza Vaccine Information System (IVIS), from October 1st, 2021 to August 31th, 2022.

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 rare disease, patients with catastrophic illness, people with medical conditions, pregnant women and parents of infants less than 6 months of age and all residents aged over 6 months available on January 6 were not calculated because the target population could not be estimated by cities/counties.

Severe Pneumonia with Novel Pathogens

In 2022, 8,856,169 confirmed cases of severe pneumonia with novel pathogens (incidence rate: 37,976.75 per 100,000 population), including 37,858 imported cases and 8,818,311 indigenous cases were reported, which represented an increase compared to a total of 16,302 confirmed cases (incidence rate: 69.46 per 100,000 population) in 2021. The data of confirmed cases in 2022 are analyzed as follows:

(1) By gender

In the 37,858 imported cases, there were 20,327 male cases (53.7%) , 17,519 female cases (46.3%) and unknown gender with 12 cases (<0.1%). With male to female ratio of 1.2:1.0.

In the 8,818,311 indigenous cases, there were 4,117,378 male cases (46.7%) and 4,699,288 female cases (53.3%) and unknown gender with 1,645 cases (<0.1%). With male to female ratio of 0.9:1.0.

(2) By age group

In the 37,858 imported cases, there were 14,062 cases (37.1%) in 25-39 years age group, 13,336 cases (35.2%) in 40-64 years age group, 6,229 cases (16.5%) in 15-24 years age group, 2,095 cases (5.5%) in 65 years and over age group, 1,449 cases (3.8%) in 5-14 years age group, 602 cases (1.6%) in 1-4 years age group, and 85 cases (0.2%) in 0-1 years age group.

In the 8,818,311 indigenous cases, there were 2,953,626 cases (33.5%) in 40-64 years age group, 2,345,124 cases (26.6%) in 25-39 years group, 1,143,295 cases (13.0%) in 15-24 years age group, 997,013 cases (11.3%) in 5-14 years age group, 995,277 cases (11.3%) in 65 years and over age group, 331,288 cases (3.8%) in 1-4 years group and 52,738 cases (0.6%) in 0-1 year group.

(3) By month

In the 37,858 imported cases, confirmed cases were reported in each month of the year. In all, August had the highest number of incidents with 7,781 cases reported, followed by 6,847 cases in September, 5,545 cases in July, 3,795 cases in April, 2,542 cases in December, 2,485 cases in March, 1,735 cases in June, 1,632 cases in May, 1,513 cases in October, 1,354 cases in November, 1,320 cases in February, and 1,309 cases in January.

In the 8,818,311 indigenous cases, confirmed cases were reported in each month of the year. In all, May had the highest number of incidents with 1,981,082 confirmed cases reported, followed by 1,675,678 cases in June, 1,240,827 cases in October, 1,155,439 cases in September, 795,635 case in July, 729,726 cases in August, 580,354 cases in November, 541,358 cases in

December, 116,662 cases in April. There were less than 1,000 cases from January to March .

Overall, from January to March of the year 2022, the focus was on imported cases, while from April onwards, the focus shifted to indigenous cases. In the year 2022, there were two waves of pandemic peaks. The first wave occurred from May to June, reaching its peak in the 21st week with 561,207 cases. The second wave occurred from September to October, reaching its peak in the 40th week with 323,922 cases.

(4) By residential region

In the 37,858 imported cases, the most were from Taipei City with 10,618 cases, followed by New Taipei City with 6,068 cases, Taoyuan City with 4,835 cases, Taichung City with 4,329 cases, Kaohsiung City with 3,260 cases, Tainan City with 1,826 cases, Hsinchu City with 1,219 cases, Hsinchu County with 1,000 cases, Changhua County with 844 cases, Yilan County with 585 cases, Pingtung County with 572 cases, Keelung City with 508 cases, Miaoli County with 436 cases, Yunlin County with 398 cases, Nantou County with 351 cases, Chiayi County with 325 cases, Hualien County with 322 cases, Chiayi City with 215 cases, Taitung County with 96 cases, Penghu County with 23 cases, Kinmen County with 20 cases, and Lienchiang County with 8 cases.

In the 8,818,311 indigenous cases, with New Taipei City having the most at 1,830,291 cases, followed by Taichung City with 1,086,158 cases, Kaohsiung City with 982,015 cases, Taoyuan City with 968,986 cases, Taipei City with 880,482 cases, Tainan City with 622,762 cases, Changhua County with 421,930 cases, Pingtung County with 249,769 cases, Hsinchu County with 243,569 cases, Miaoli County with 197,439 cases, Hsinchu City with 195,766 cases, Yunlin County with 183,361 cases, Yilan County with 173,652 cases, Keelung City with 159,282 cases, Nantou County with 145,192 cases, Chiayi County with 134,699 cases, Hualien County with 132,623 cases, Chiayi City with 85,868 cases, Taitung County with 72,501 cases, Penghu County with 25,282 cases, Kinmen County with 23,055 cases, and Lienchiang County with 3,679 cases.

Overall, the incidence rate of confirmed cases per 100,000 people was highest in New Taipei City at 45,887.96, followed by Keelung City at 44,049.44, and Hsinchu City at 43,527.16.

(5) Imported cases and countries of infection

In the 37,858 imported cases, the highest number of infections are in

Vietnam with 4,086 cases (10.8%), followed by the United States with 2,462 cases (6.5%), Indonesia with 1,287 cases (3.4%), Thailand with 932 cases (2.5%), the Philippines with 778 cases (2.1%), Japan with 553 cases (1.5%), Singapore with 550 cases (1.5%), Germany with 534 cases (1.4%), Malaysia with 470 cases (1.2%), the United Kingdom with 465 cases (1.2%), Canada with 368 cases (1.0%), South Korea with 344 cases (0.9%), France with 317 cases (0.8%), Hong Kong with 309 cases (0.8%), Australia with 267 cases (0.7%), India with 266 cases (0.7%), Turkey with 257 cases (0.7%), the Netherlands with 252 cases (0.7%), Cambodia with 229 cases (0.6%), China with 224 cases (0.6%), the United Arab Emirates with 186 cases (0.5%), Spain with 114 cases (0.3%), Italy with 110 cases (0.3%), Myanmar with 104 cases (0.3%), Switzerland with 100 cases (0.3%), and all other countries have fewer than 100 cases. Additionally, there are 21,311 cases (56.3%) with unknown countries of infection.

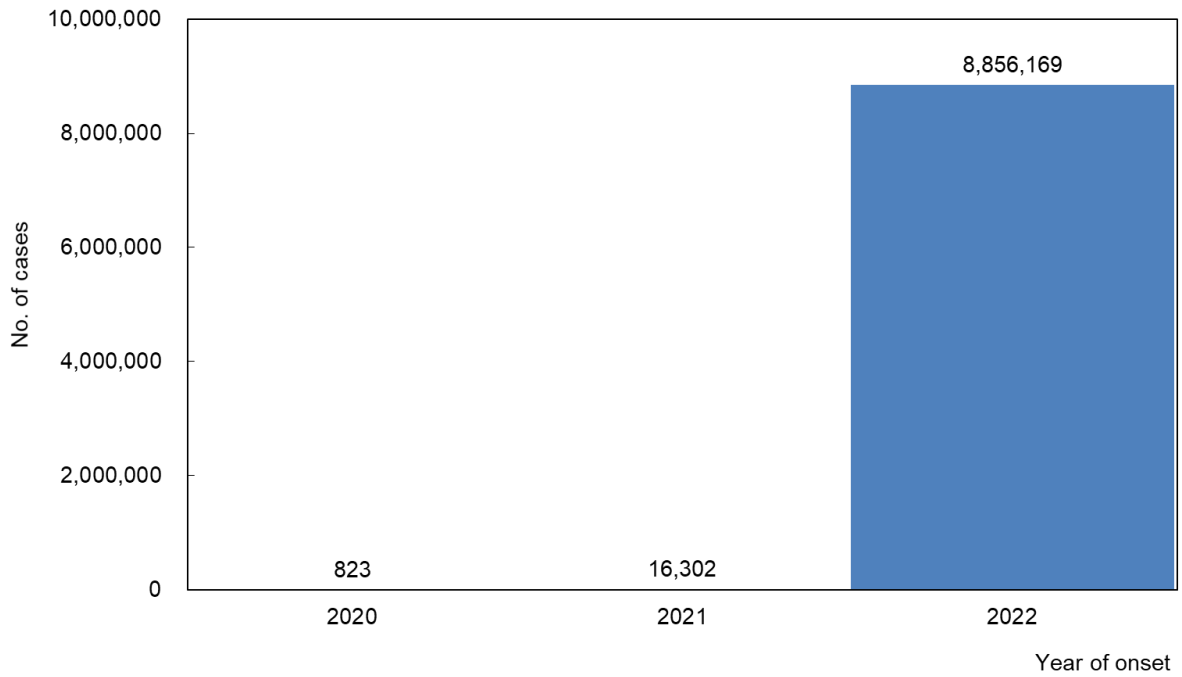


Figure 70 Number of confirmed severe pneumonia with novel pathogens cases, 2020-2022

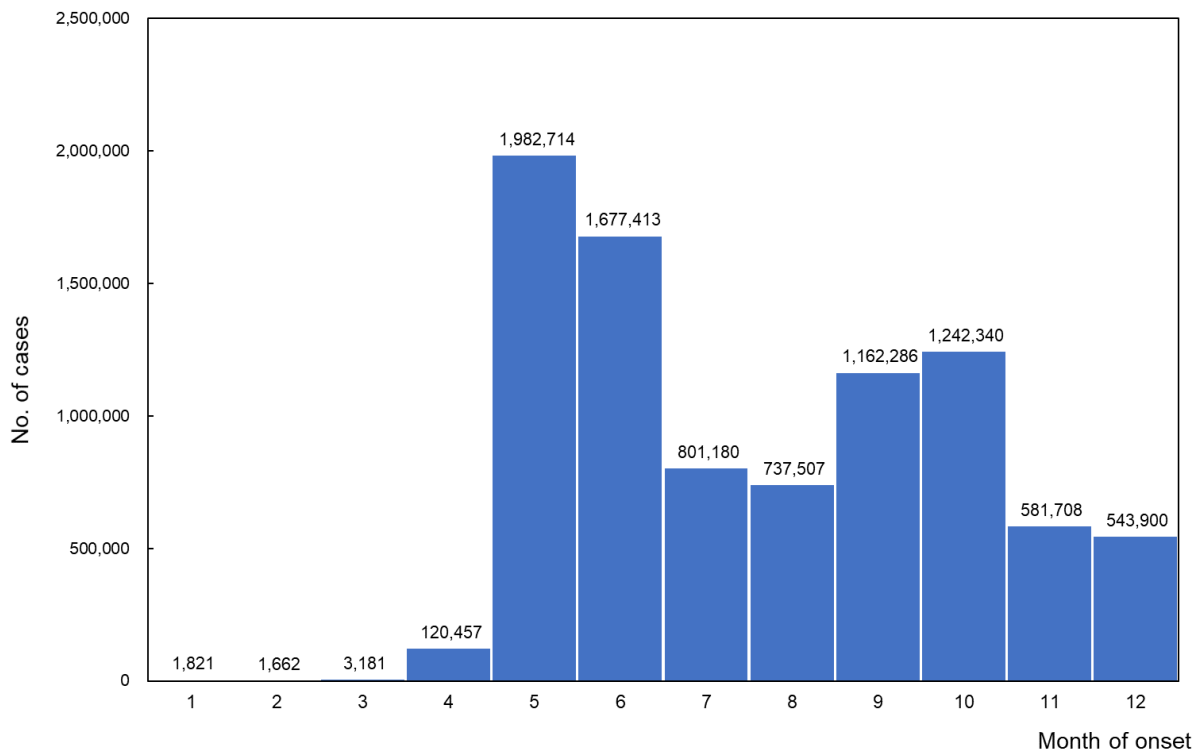


Figure 71 Number of confirmed severe pneumonia with novel pathogens cases (per Month), 2022

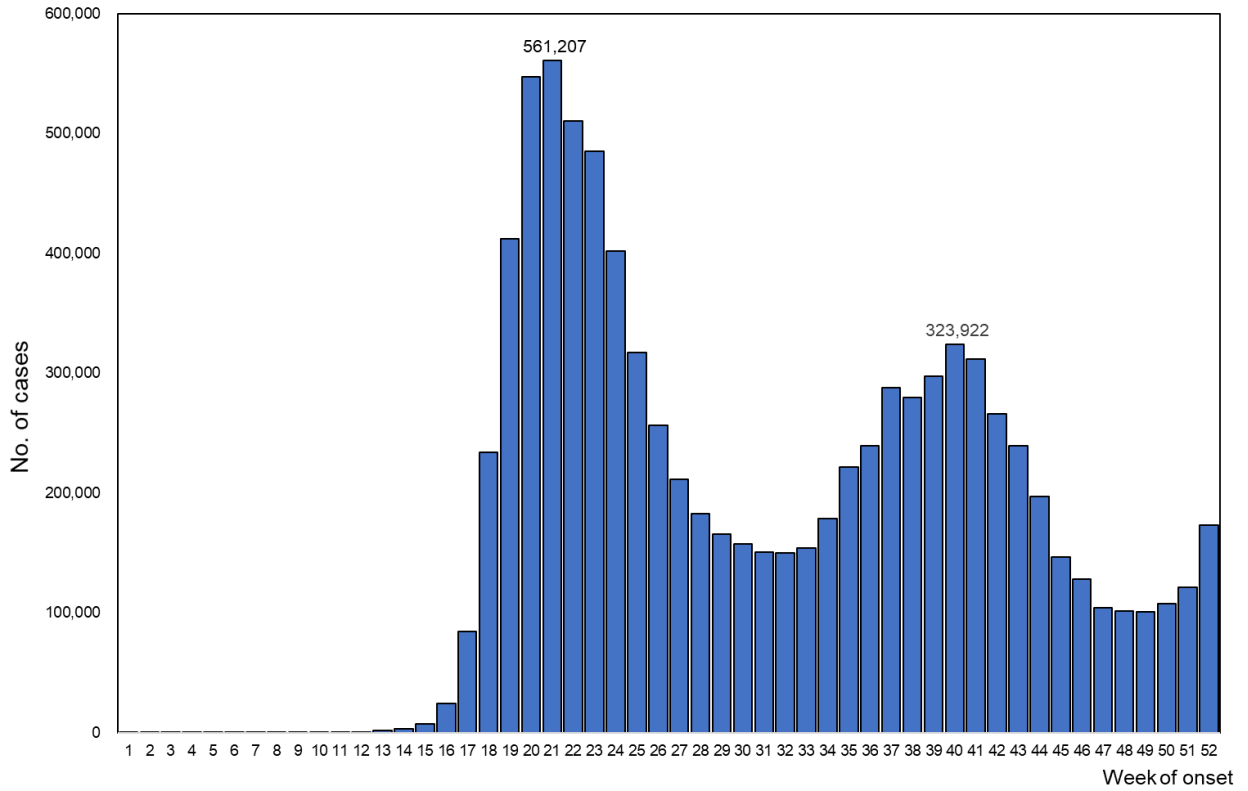


Figure 72 Number of confirmed severe pneumonia with novel pathogens cases (per week), 2022

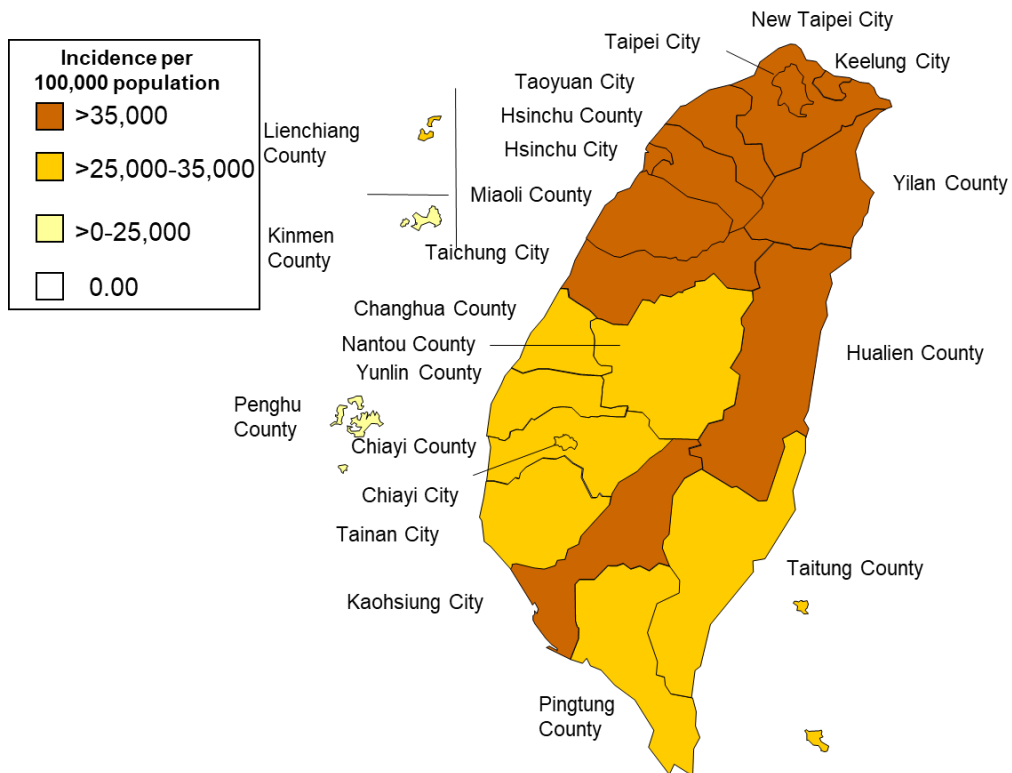


Figure 73 Geographical distributions by incidence of confirmed severe pneumonia with novel pathogens cases, 2022

Syphilis

In 2022, there were a total of 9,707 confirmed cases (incidence rate of 41.63 per 100,000 population), which is an increase compared to the 9,412 confirmed cases (with an incidence rate of 40.11 per 100,000 population) in 2021. The analysis of the confirmed cases data for 2022 is as follows:

(1) By gender

There were 8,172 cases among males (84.2%), 1,534 cases among females (15.8%), and 1 case with unknown gender (<0.1%). With male to female ratio of 5.3:1.0.

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

The majority of cases were in the 25-39 age group, with 4,480 cases (46.2%), followed by the 40-64 age group with 2,293 cases (23.6%), the 65 and older age group with 1,692 cases (17.4%), the 15-24 age group with 1,238 cases (12.8%), and there were 3 cases (<0.1%) in the 5-14 age group and 1 case (<0.1%) in the 1-4 age group.

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for syphilis in 2022, confirmed cases were reported in every month throughout the year.

(4) By residential region

Cases have been reported in all cities and counties, with the highest number of cases in New Taipei City with 2,124 cases (21.9%), followed by Taipei City with 1,233 cases (12.7%), Kaohsiung City with 1,193 cases (12.3%), Taichung City with 1,125 cases (11.6%), Taoyuan City with 1,053 cases (10.8%), Tainan City with 709 cases (7.3%), Changhua County with 323 cases (3.3%), Pingtung County with 284 cases (2.9%), Yilan County with 231 cases (2.4%), Hsinchu City with 179 cases (1.8%), Yunlin County with 177 cases (1.8%), Hsinchu County with 168 cases (1.7%), Nantou County with 163 cases (1.7%), Miaoli County with 162 cases (1.7%), Hualien County with 153 cases (1.7%), and Keelung City with 126 cases (1.3%). The remaining cities and counties have fewer than 100 cases each.

The incidence rate per 100,000 population is highest in New Taipei City at 53.08, followed by Yilan County at 51.35, and Taipei City at 49.27, respectively.

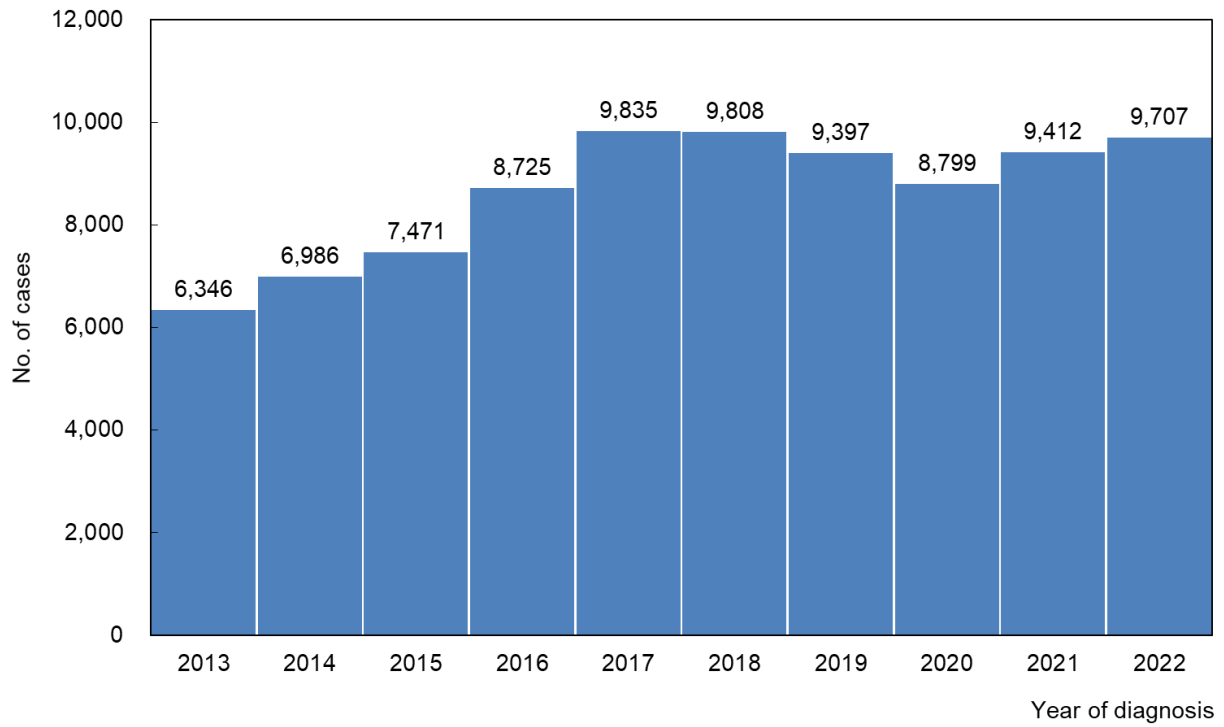


Figure 74 Number of confirmed syphilis cases, 2013-2022

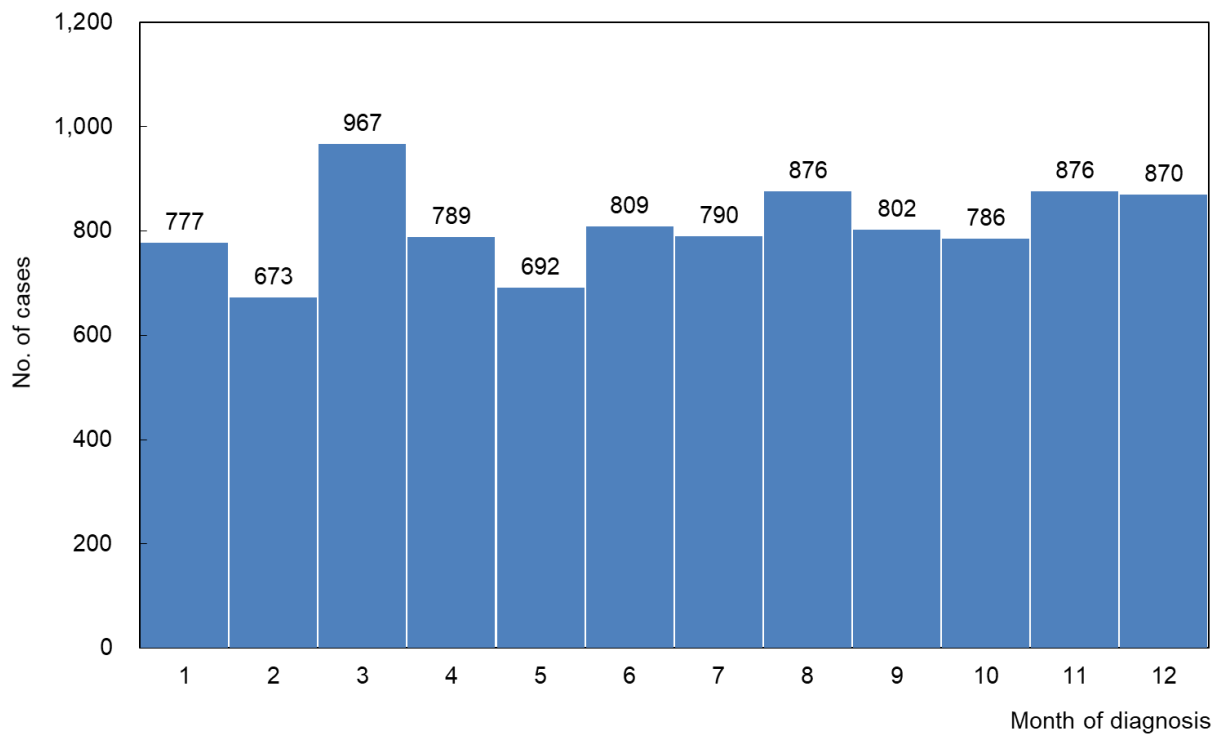


Figure 75 Number of confirmed syphilis cases, 2022

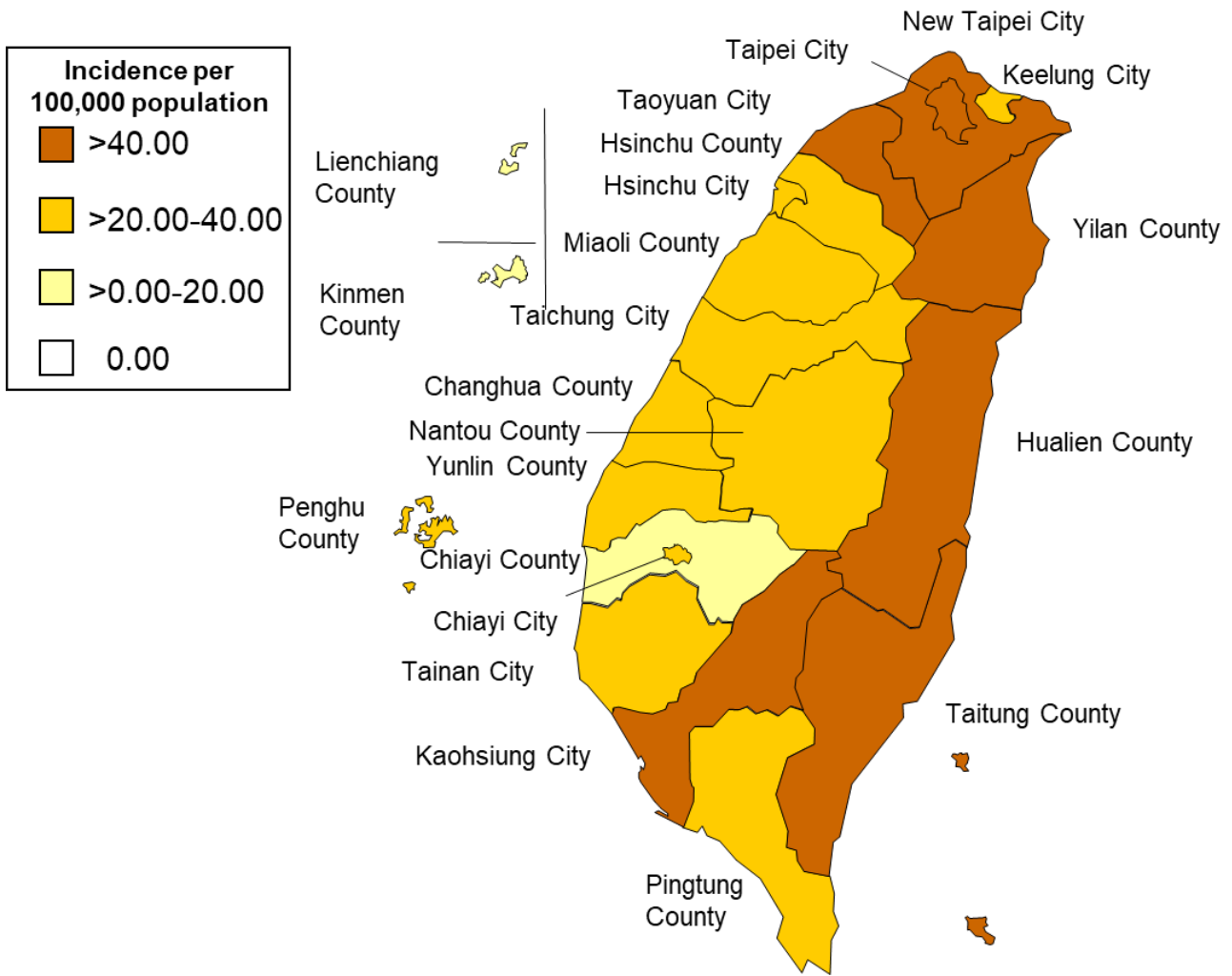


Figure 76 Geographical distribution by incidence of confirmed syphilis cases, 2022

Gonorrhoea

In 2022, there were a total of 8,015 confirmed cases, with an incidence rate of 34.37 per 100,000 population. This is an increase compared to the 7,381 confirmed cases in 2021, which had an incidence rate of 31.45 per 100,000 population. The analysis of the confirmed cases data for 2022 is as follows:

(1) By gender

There were 7,185 cases among males (89.6%), 828 cases among females (10.3%), 1 case with a third gender (less than 0.1%), and 1 case with an unknown gender (<0.1%). With male to female ratio of 8.7:1.0.

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

The majority of cases were in the 25-39 age group, with 3,986 cases (49.7%), followed by the 15-24 age group with 2,594 cases (32.4%), the 40-64 age group with 1,358 cases (16.9%), and there were 56 cases (0.7%) in the 65 and older age group, as well as 21 cases (0.3%) in the 5-14 age group.

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for gonorrhoea in 2022, confirmed cases are reported in every month throughout the year.

(4) By residential region

Except for Lienchiang County, cases have been reported in all cities and counties. The majority of cases are in New Taipei City with 1,812 cases (22.6%), followed by Taipei City with 1,150 cases (14.3%), Taoyuan City with 1,108 cases (13.8%), Kaohsiung City with 859 cases (10.7%), Taichung City with 692 cases (8.6%), Tainan City with 309 cases (3.9%), Hsinchu County with 286 cases (3.6%), Changhua County with 234 cases (2.9%), Miaoli County with 231 cases (2.9%), Keelung City with 190 cases (2.4%), Nantou County with 166 cases (2.1%), Hsinchu City with 164 cases (2.0%), Hualien County with 161 cases (2.0%), Yunlin County with 136 cases (1.7%), Yilan County with 124 cases (1.5%), Pingtung County with 114 cases (1.4%), Taitung County with 101 cases (1.3%), and the remaining cities and counties have fewer than 100 cases each.

The incidence rate per 100,000 population is highest in Keelung City at 52.38, followed by Hualien County at 50.29, and Hsinchu County at 49.48, respectively.

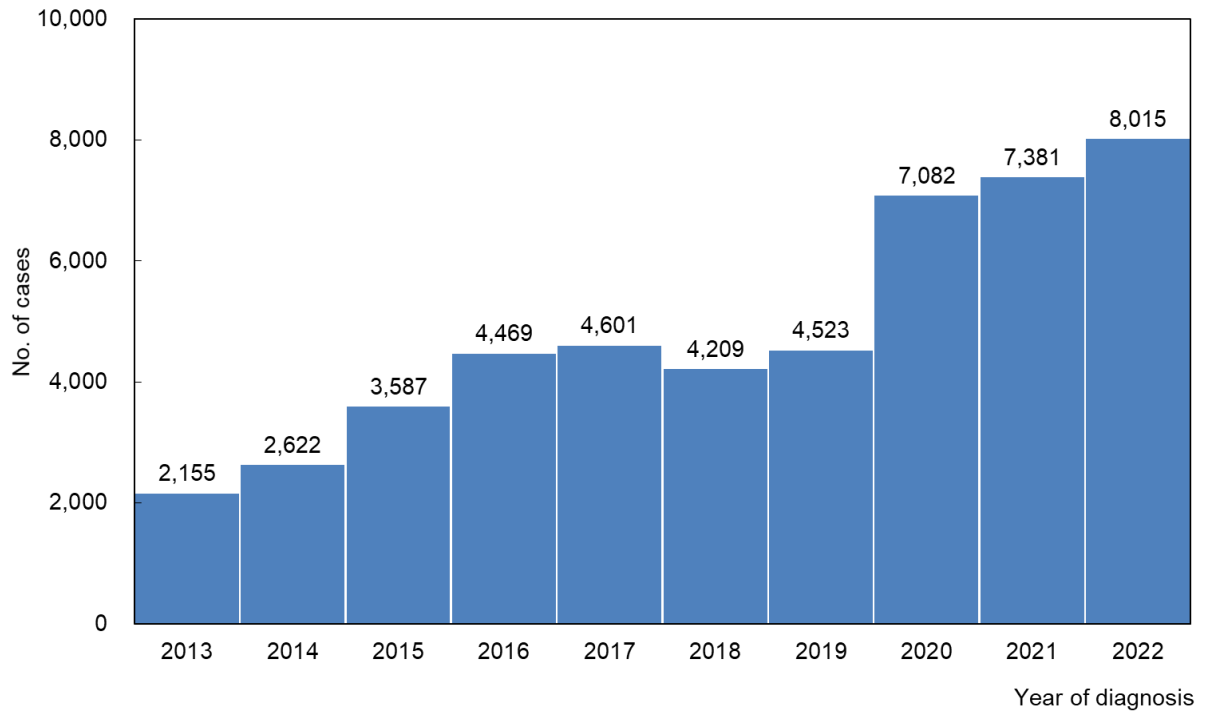


Figure 77 Number of confirmed gonorrhea cases, 2013-2022

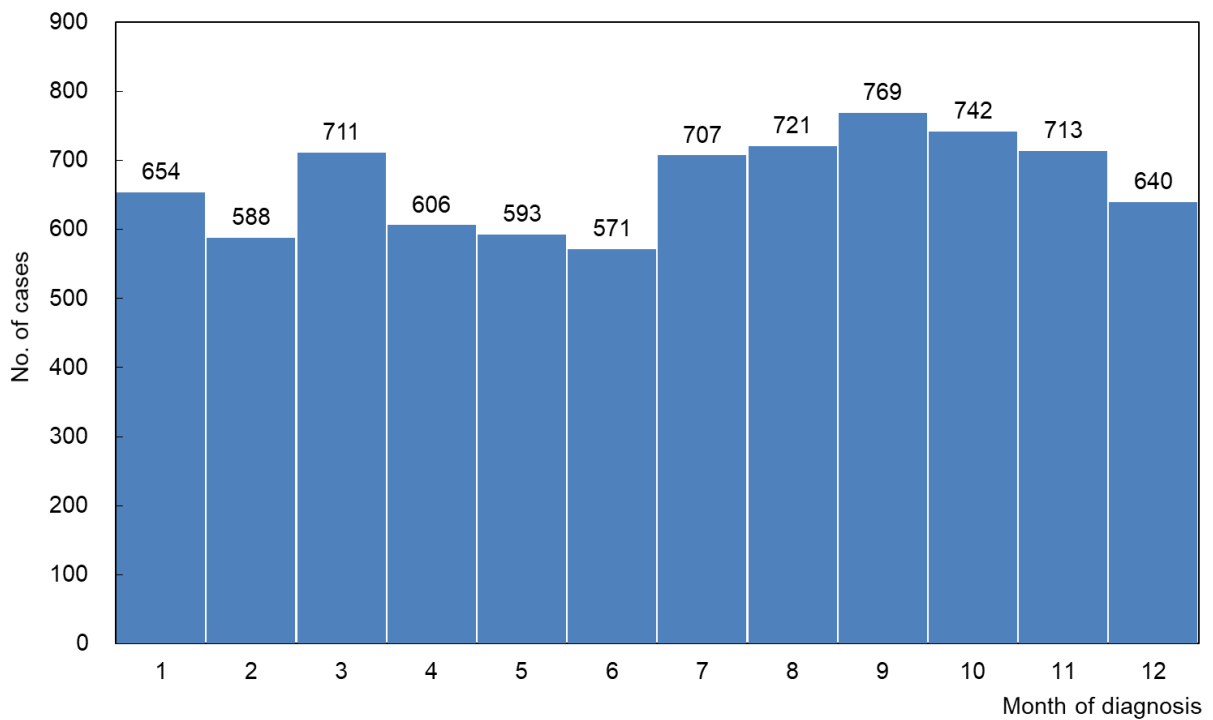


Figure 78 Number of confirmed gonorrhea cases, 2022

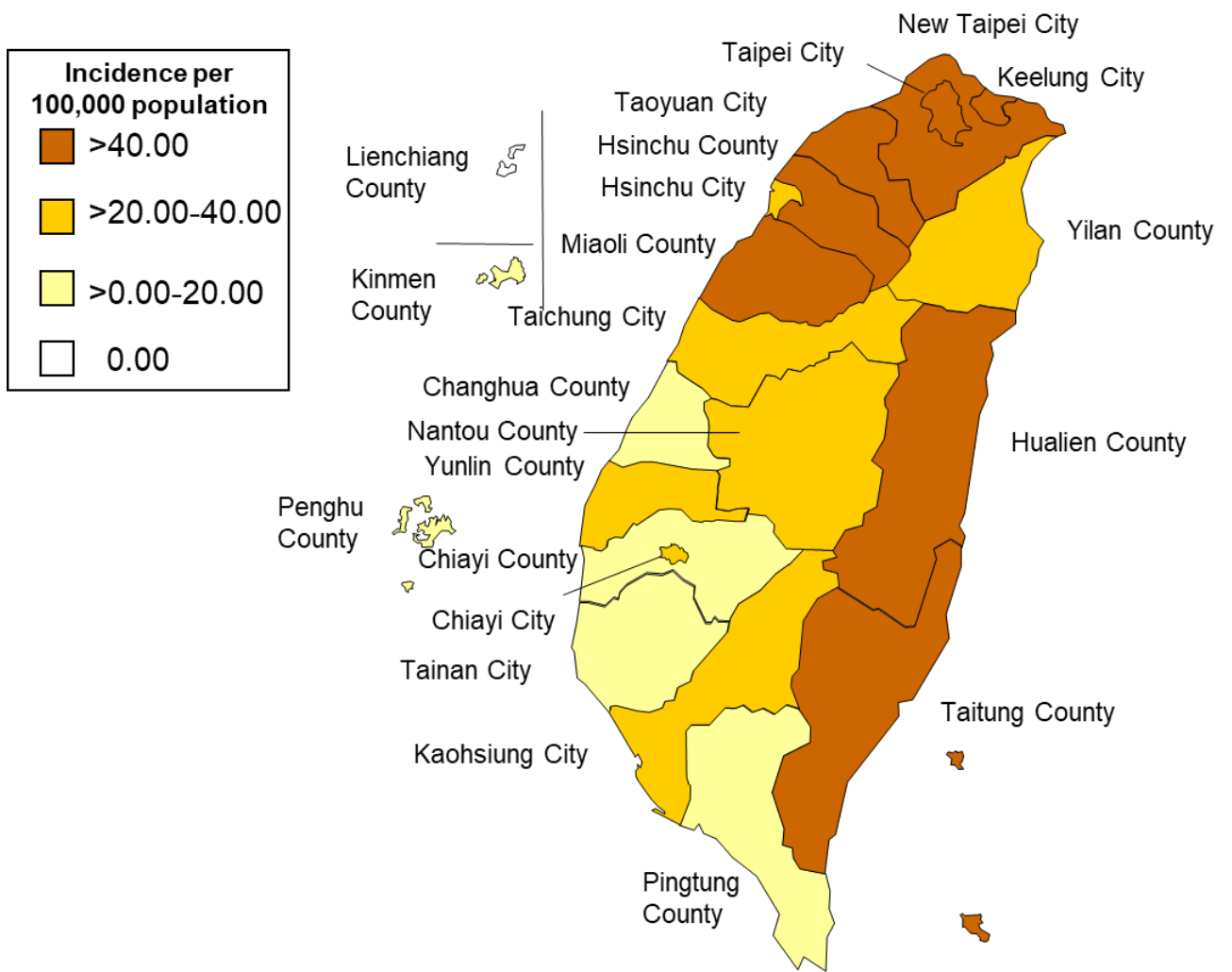


Figure 79 Geographical distribution by incidence of confirmed gonorrhea cases, 2022

Mpox

In 2022, there were a total of 4 confirmed cases, with an incidence rate of 0.02 per 100,000 population. The analysis of the confirmed cases data for 2022 is as follows:

(1) By gender

There were 4 male cases (100.0%).

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

The majority of cases were in the 25-39 age group, with 2 cases (50.0%), while there was 1 case (25.0%) in both the 15-24 age group and the 40-64 age group.

(3) By month (by date of diagnosis)

There were 2 cases reported in July, 1 case each in June and September.

(4) By residential region

There was 1 case reported in each of the following cities: New Taipei City, Taipei City, Tainan City, and Kaohsiung City.

The incidence rate per 100,000 population is highest in Tainan City at 0.05, followed by Taipei City and Kaohsiung City, both at 0.04, and New Taipei City at 0.02.

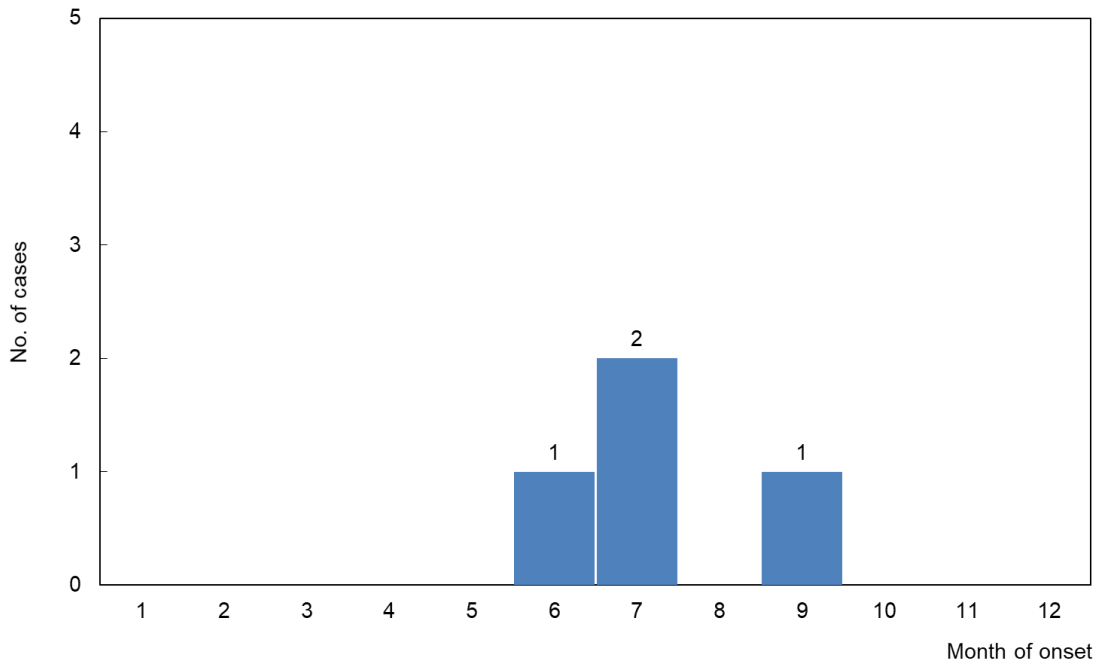


Figure 80 Number of confirmed gonorrhea cases, 2022

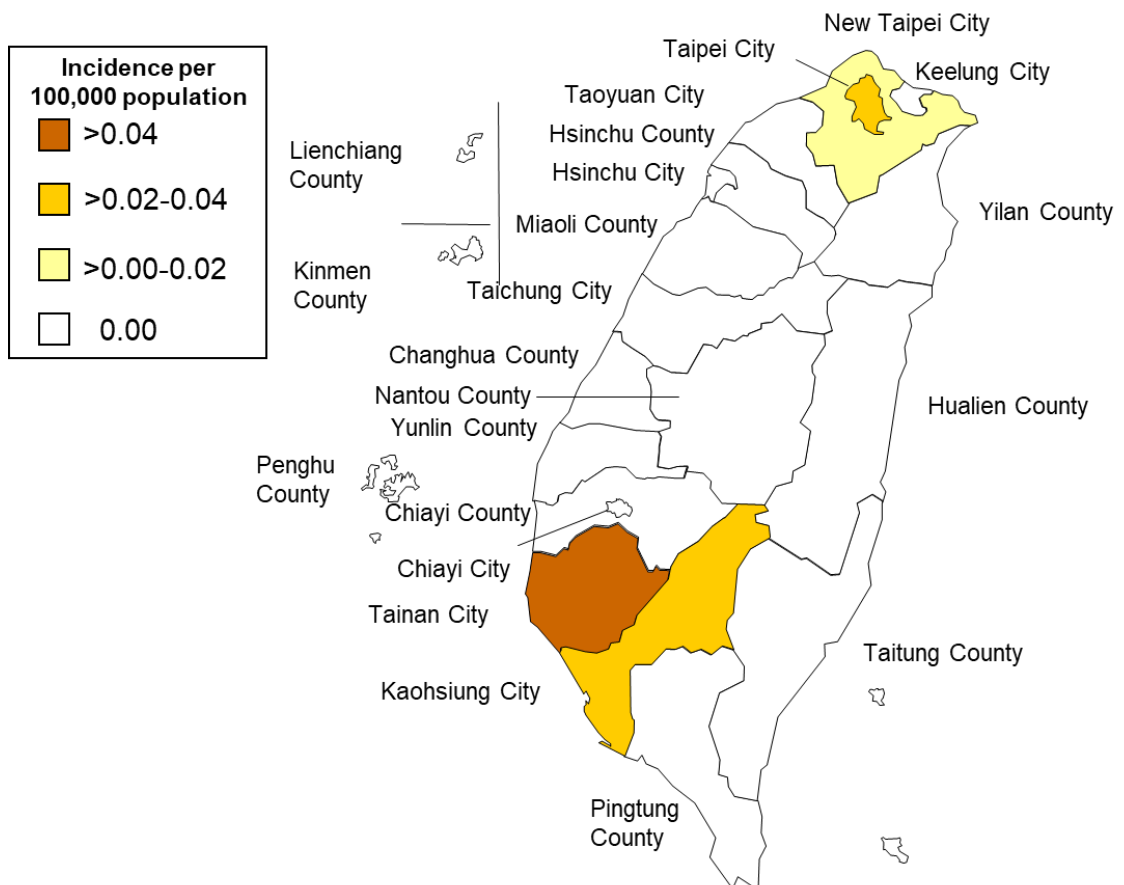


Figure 81 Geographical distribution by incidence of confirmed Mpox cases, 2022

HIV Infection & AIDS

From 1984 up to the end of 2022, there were 44,861 cases of human immunodeficiency virus (HIV) infection (43,320 native cases and 1,541 foreign cases) and 21,294 acquired immunodeficiency syndrome (AIDS) cases (20,999 native cases and 295 foreign cases) were reported.

In 2022, 1,141 HIV cases (1,069 native cases and 72 foreign cases) and 683 AIDS cases (657 native cases and 26 foreign cases) were diagnosed and reported. The data of native cases in 2022 are analyzed as follows (the HIV infection cases include those cases with AIDS at the time of reporting):

(1) By gender

HIV: There were 1,027 male cases (96.1%) and 42 female cases (3.9%) with male to female ratio of 24.5 : 1.0.

AIDS: There were 619 male cases (94.2%) and 38 female cases (5.8%) with male to female ratio of 16.3 : 1.0.

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

HIV: There were 582 cases (54.4%) in 25-39 years age group, 263 cases (24.6%) in 40-64 years age group, and 212 cases (19.8%) in 15-24 years age group.

AIDS: There were 323 cases (49.2%) in 25-39 years age group, 267 cases (40.6%) in 40-64 years age group, and 54 cases (8.2%) in 15-24 years age group.

(3) By month (by date of diagnosis)

There were no specific prevalent months or seasons for HIV infection and AIDS in 2022 and there were confirmed cases reported in each month of the year.

(4) By risk factor

HIV (total): There were 856 cases (80.1%) caused by men who have sex with men, 113 cases (10.6%) caused by heterosexual contact, 26 cases (2.4%) caused by injection drug use, and 74 cases (6.9%) with unknown causes.

HIV (male): There were 856 cases (83.3%) caused by men who have sex with men, 76 cases (7.4%) caused by heterosexual contact, 25 cases (2.4%) caused by injection drug use, and 70 cases (6.8%) with unknown causes.

HIV (female): The cases were mostly caused by heterosexual contact with 37 cases (88.1%), followed by injection drug use with 1 case (2.4%), and unknown causes with 4 cases (9.5%).

AIDS (total): There were 454 cases (69.1%) involving men who have sex

with men, 100 cases (15.2%) involving heterosexual contact, 72 cases (11.0%) involving injection drug use. There were also 30 cases (4.6%) with unknown causes.

AIDS (male): There were 454 cases (73.3%) involving men who have sex with men, 75 cases (12.1%) involving heterosexual contact, 62 cases (10.0%) involving injection drug use. There were also 27 cases (4.4%) with unknown causes.

AIDS (female): There were 25 cases (65.8%) involving heterosexual contact, 10 cases (26.3%) involving injection drug use. There were also 3 cases (7.9%) with unknown causes.

See Tables 28 and 29 for statistics of HIV infection and AIDS by risk factor.

(5) By residential region

HIV: New Taipei City had the highest reported HIV cases with 230 cases (21.5%), followed by Kaohsiung City with 135 cases (12.6%), Taichung City with 128 cases (12.0%), Taipei City with 119 cases (11.1%), and Taoyuan City with 119 cases (11.1%). Lienchiang County did not have HIV infection cases reported in 2022.

The new reported confirmed HIV cases per 100,000 population in 2022 was the highest in Hsinchu City (7.29), followed by Taitung County (6.57) and Hualien County (6.25).

AIDS: New Taipei City had the highest reported AIDS cases with 159 cases (24.2%), followed by Taichung City with 86 cases (13.1%), Kaohsiung City with 78 cases (11.9%), Taipei City with 72 cases (11.0%) and Taoyuan City with 59 cases (9.0%). Lienchiang County and Penghu County did not have AIDS cases reported in 2022.

The new reported confirmed AIDS cases per 100,000 population in 2022 was the highest in New Taipei City (3.97), followed by Hsinchu City (3.76) and Taitung County (3.76).

Table 28 Risk factors for male HIV and AIDS cases (foreigner excluded), 2022

Risk factor	HIV	%	AIDS	%
Men who have sex with men	856	83.3%	454	73.3%
Heterosexual contact	76	7.4%	75	12.1%
Injecting drug users	25	2.4%	62	10.0%
Recipient of blood/clotting factor	-	0.0%	1	0.2%
Vertical transmission	-	0.0%	-	0.0%
Unknown	70	6.8%	27	4.4%
Total	1,027	100.0%	619	100.0%

Table 29 Risk factors for female HIV and AIDS cases (foreigner excluded), 2022

Risk factor	HIV	%	AIDS	%
Heterosexual contact	37	88.1%	25	65.8%
Injecting drug users	1	2.4%	10	26.3%
Recipient of blood/clotting factor	-	0.0%	-	0.0%
Vertical transmission	-	0.0%	-	0.0%
Unknown	4	9.5%	3	7.9%
Total	42	100.0%	38	100.0%

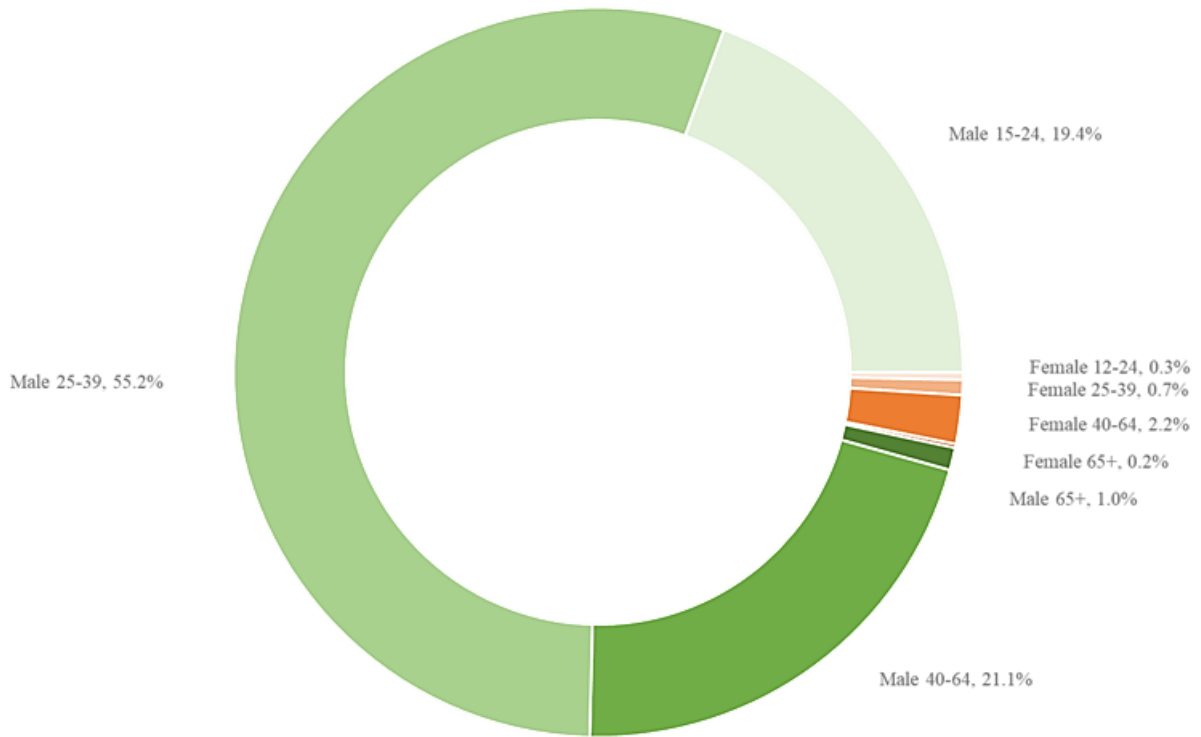


Figure 82 Distribution of confirmed HIV infection cases by sex and age group (foreigner excluded), 2021

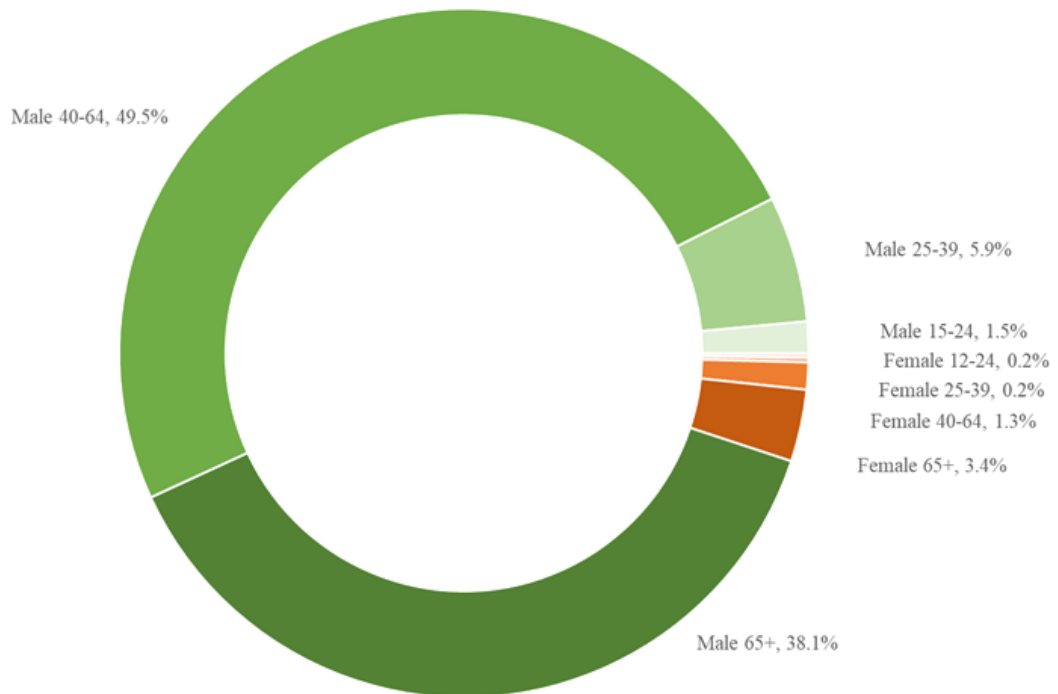


Figure 83 Distribution of confirmed AIDS cases by sex and age group (foreigner excluded), 2022

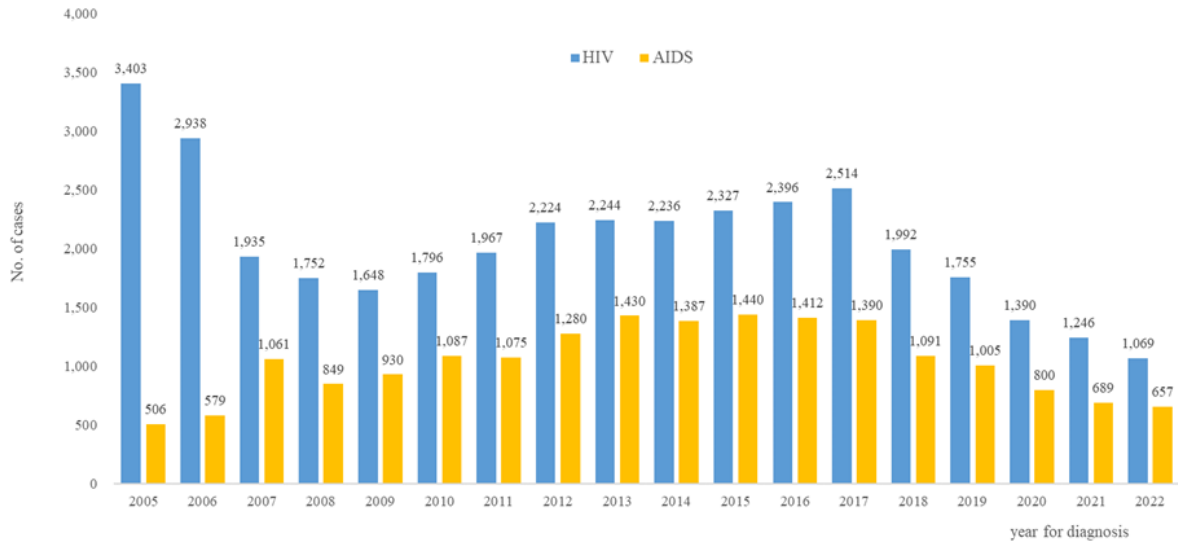


Figure 84 Number of confirmed HIV infection cases and AIDS cases (foreigner excluded), 2005-2022

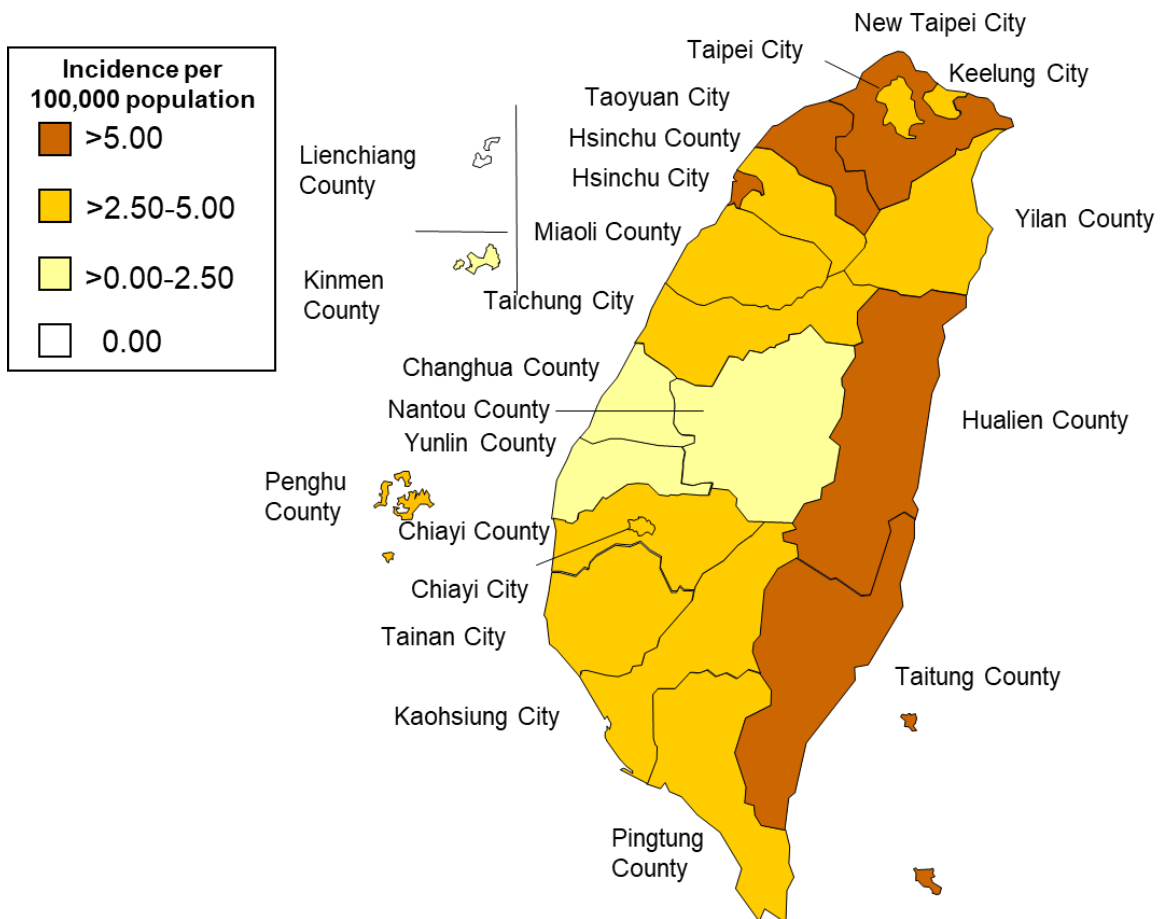


Figure 85 Geographical distribution by reported confirmed HIV infection cases per 100,000 population (foreigner excluded), 2022

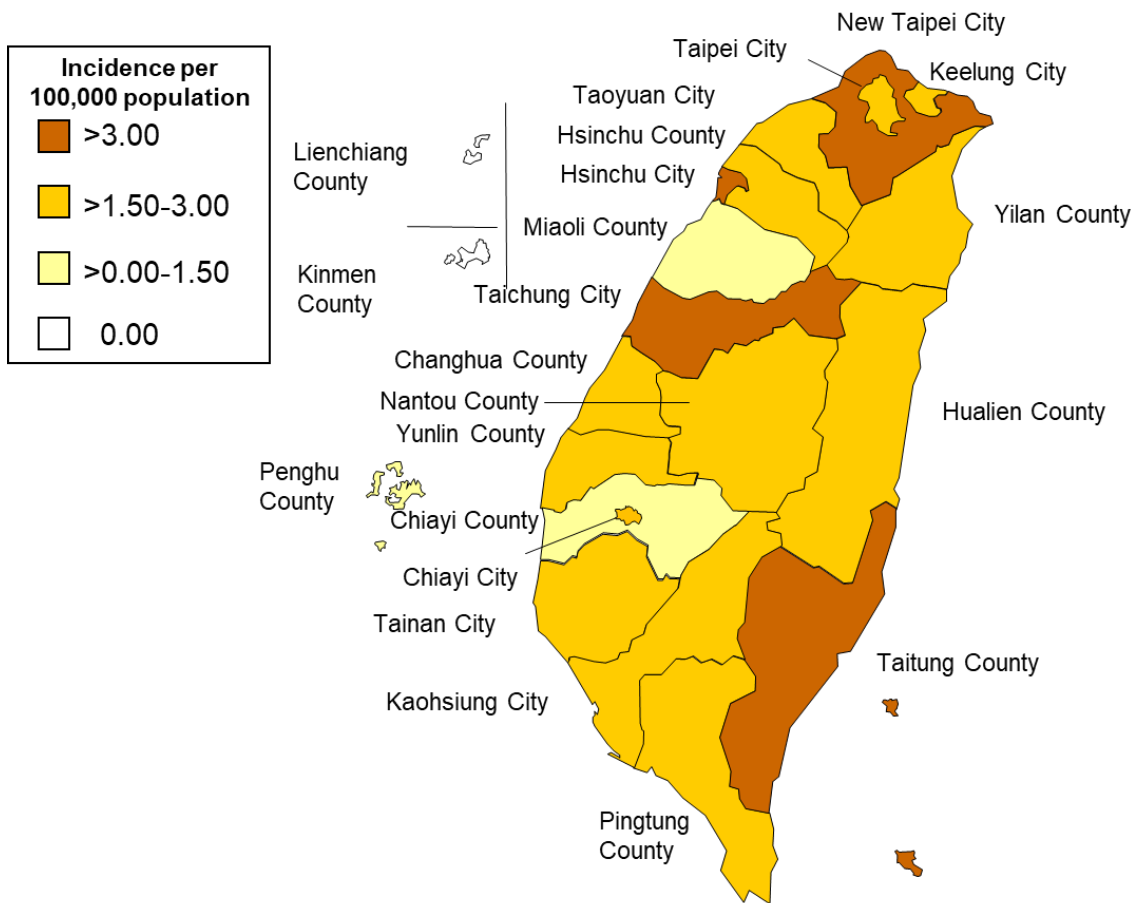


Figure 86 Geographical distribution by reported confirmed AIDS cases per 100,000 population (foreigner excluded), 2022

Tuberculosis

In 2022, 6,576 domestic cases of tuberculosis (incidence rate: 28.2 per 100,000 population) were confirmed, which went down in case number and incidence rate with 6.9% and 6.3% declining respectively, as compared with 7,062 confirmed cases incidence rate: 30.1 per 100,000 population) in 2021. Furthermore, in 2022, 705 foreigners were confirmed TB cases, which comprised a 1:9 ratio to domestic TB. The data of domestic confirmed TB cases in 2022 were analyzed as follows:

(1) By gender

There were 4,512 male cases (69%) and 2,064 female cases (31%) with a male to female ratio of 2.2:1.0. The incidence rate of tuberculosis in males (39.1 per 100,000 population) was 2.2 times higher than that in females (17.5 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 2022, 14 were aged 0-14, 150 were aged 15-24, 203 were aged 25-34, 369 were aged 35-44, 615 were aged 45-54, 1,130 were aged 55-64, and 4,095 were elderly over 65 year-old which accounted for 62% of total.

(3) By month (based on notification date)

There were no specific prevalent months or seasons for tuberculosis notification in 2022 and there were confirmed cases reported in each month of the year, with highest number in September (622 reported) and lowest in February (423 reported).

(4) By residential region

The incidence rate of tuberculosis was higher in eastern region than in western region, and was higher in southern region than in northern region. With regard to incidence rate by city and county, Taitung county had the highest incidence rate with 48.8 per 100,000 population, followed by Pingtung County with 47.3 per 100,000 population. Kinmen county and Lienchiang county had the lowest incidence rate with 8.5 and 7.2 per 100,000 population respectively.

(5) Mortality distribution

In 2022, there were 477 tuberculosis deaths with a mortality rate of 2.0 per 100,000 population. Males accounted for 349 deaths (3.0 deaths per 100,000 population) and the rest of 128 were females (1.1 deaths per 100,000 population) with a male to female death ratio of 2.7:1.0.

The tuberculosis mortality rate in Taiwan increased with age. Of the 477

tuberculosis deaths in 2022, 83.6% (399 cases) were elderly aged 65 years and above.

For the overall geographic distribution, tuberculosis deaths in 2022 showed a pattern of higher in eastern and southern regions and lower in northern region. Pingtung county had the highest TB mortality rate (6.1 per 100,000 population), followed by Hualien county (3.7 per 100,000 population).

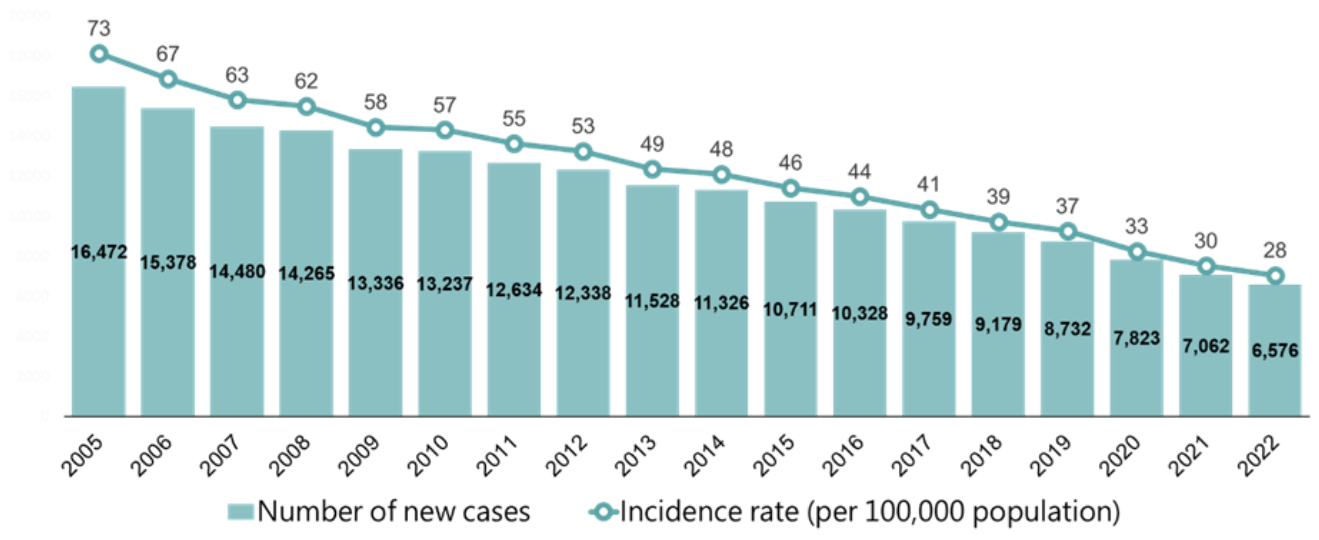


Figure 87 Trend of tuberculosis case number and incidence rate by year, 2005-2022

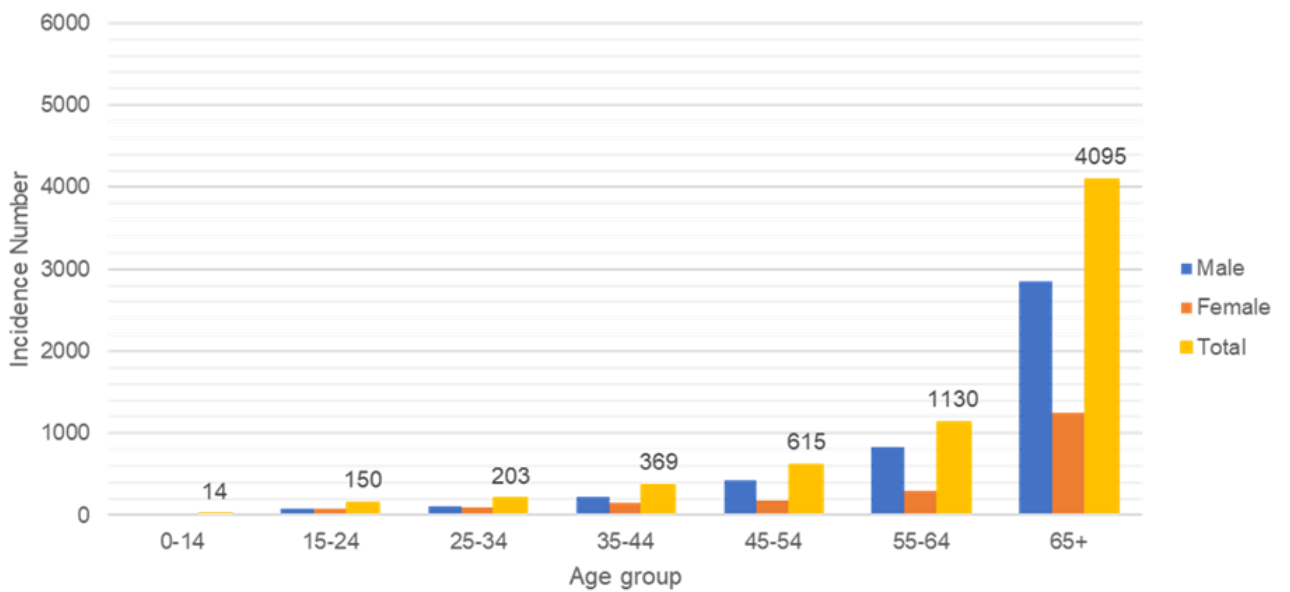


Figure 88 Tuberculosis cases number by age group and sex, 2022

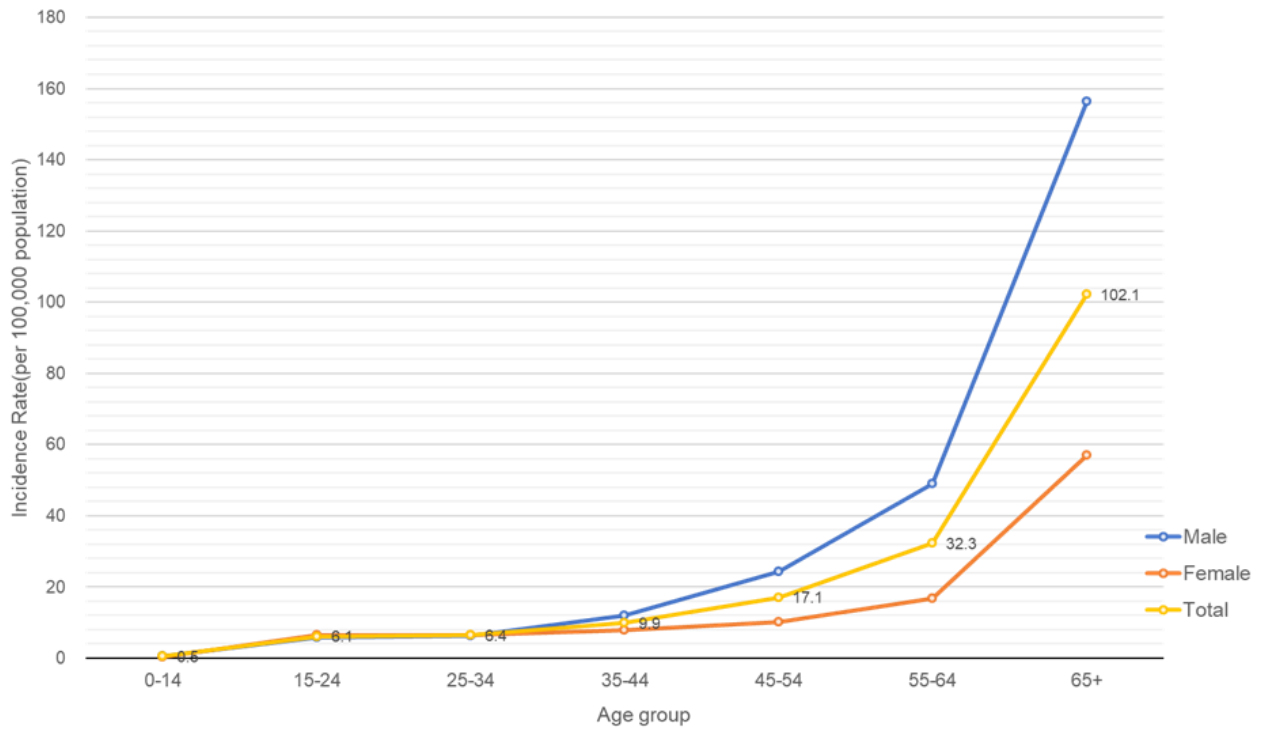


Figure 89 Incidence rate of tuberculosis by age group and sex, 2022

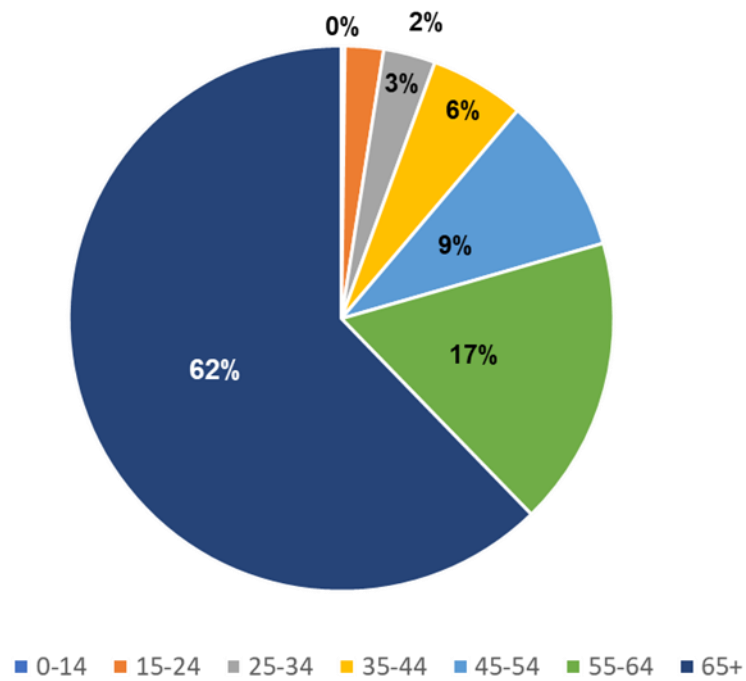


Figure 90 Distribution of tuberculosis incidence by age group, 2022

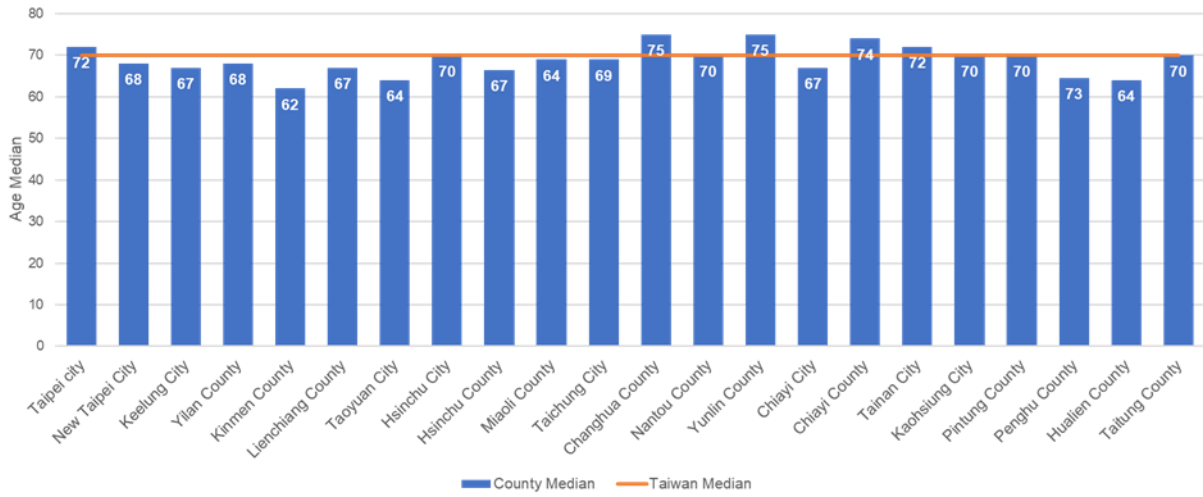


Figure 91 Tuberculosis Age Median by city and county, 2022

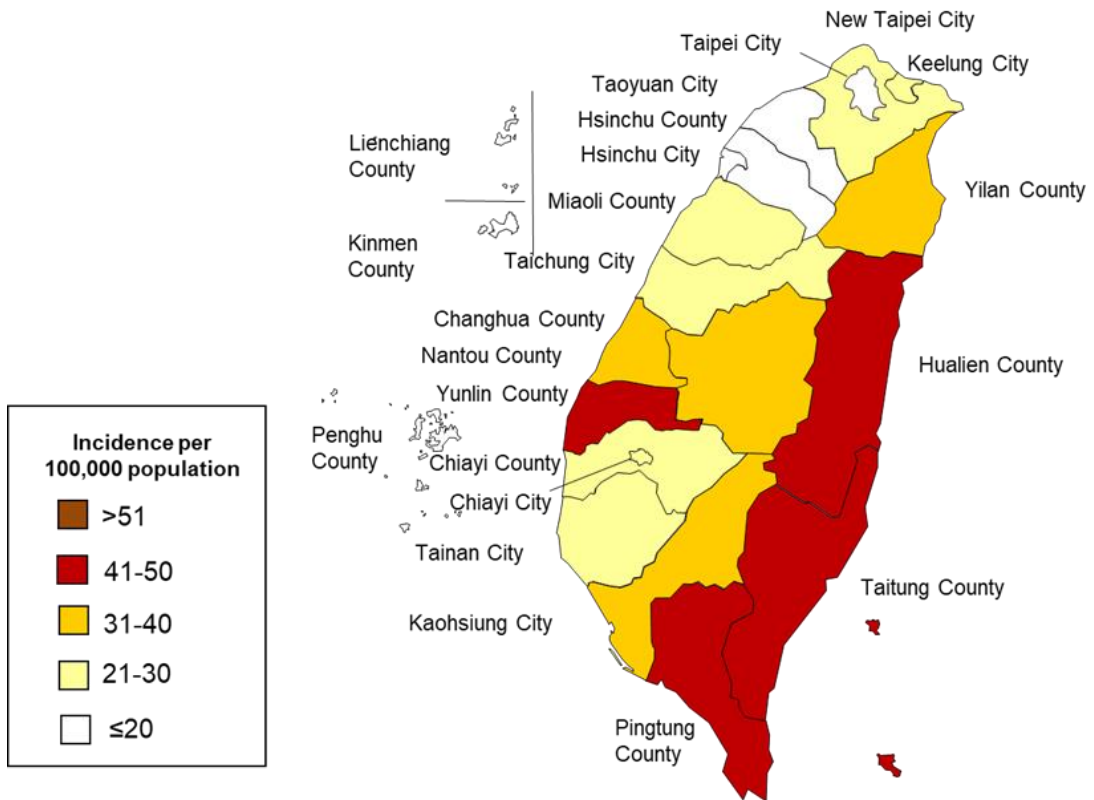


Figure 92 Geographical distribution by incidence of tuberculosis cases, 2022

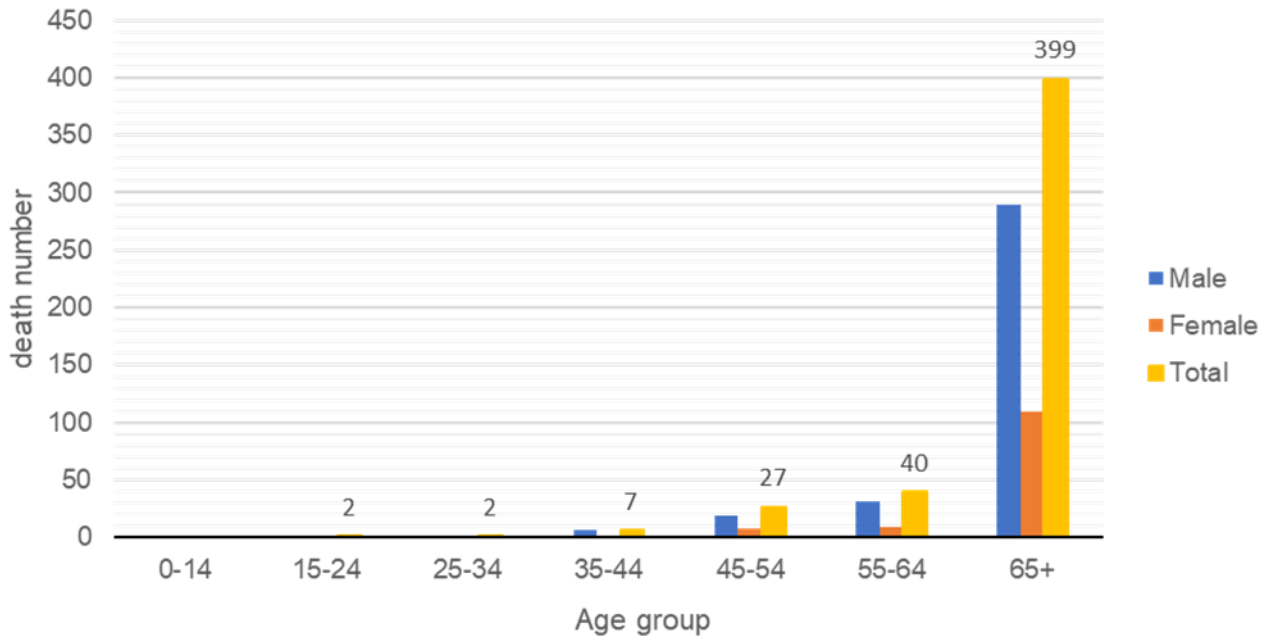


Figure 93 Death number of Tuberculosis by age group and sex, 2022

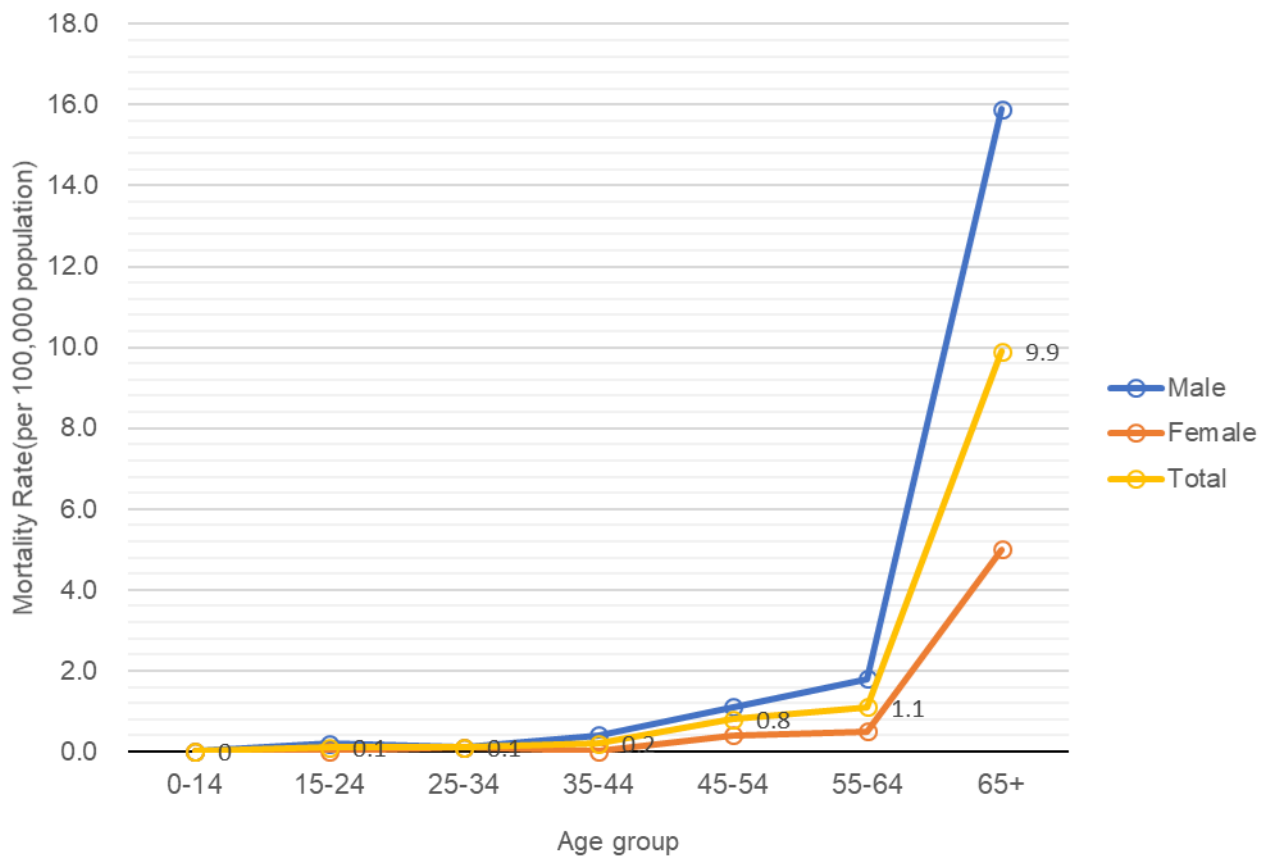


Figure 94 Mortality rate of tuberculosis by age group and sex, 2022

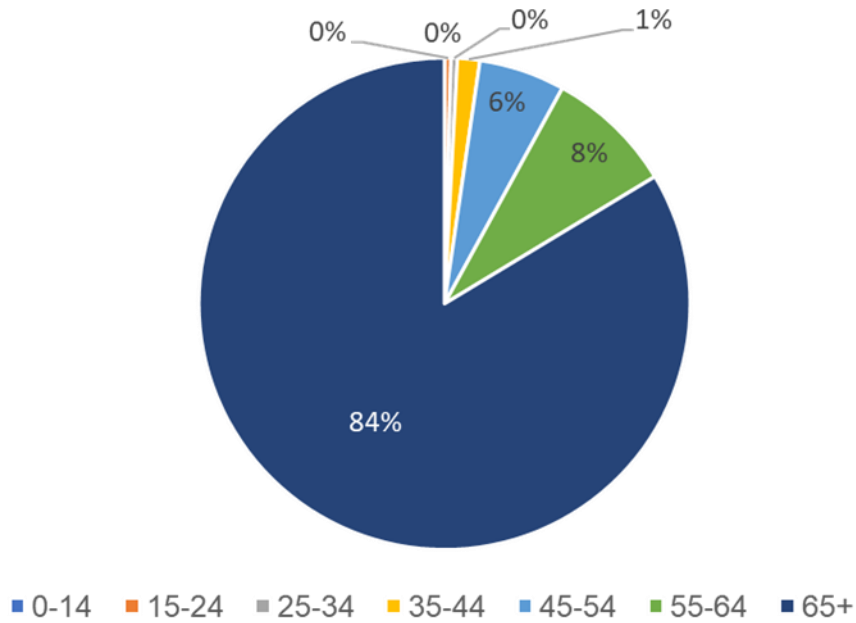


Figure 95 Distribution of tuberculosis mortality by age group, 2022

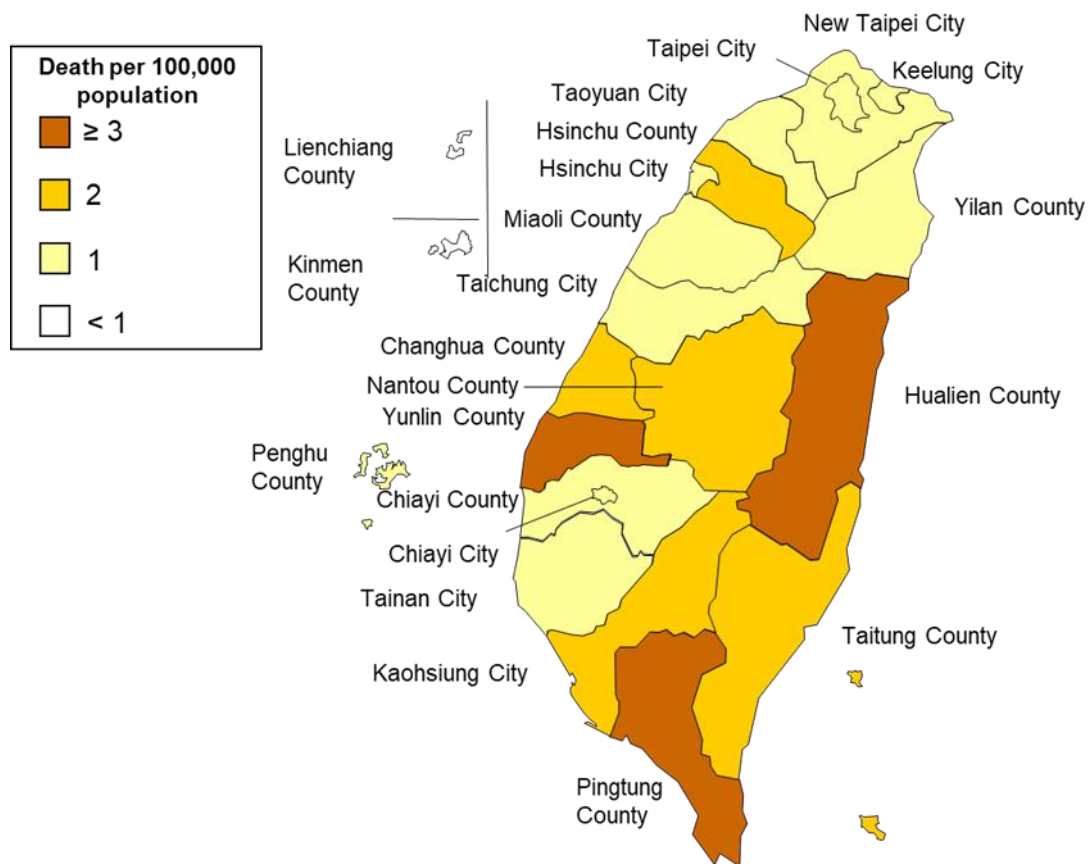
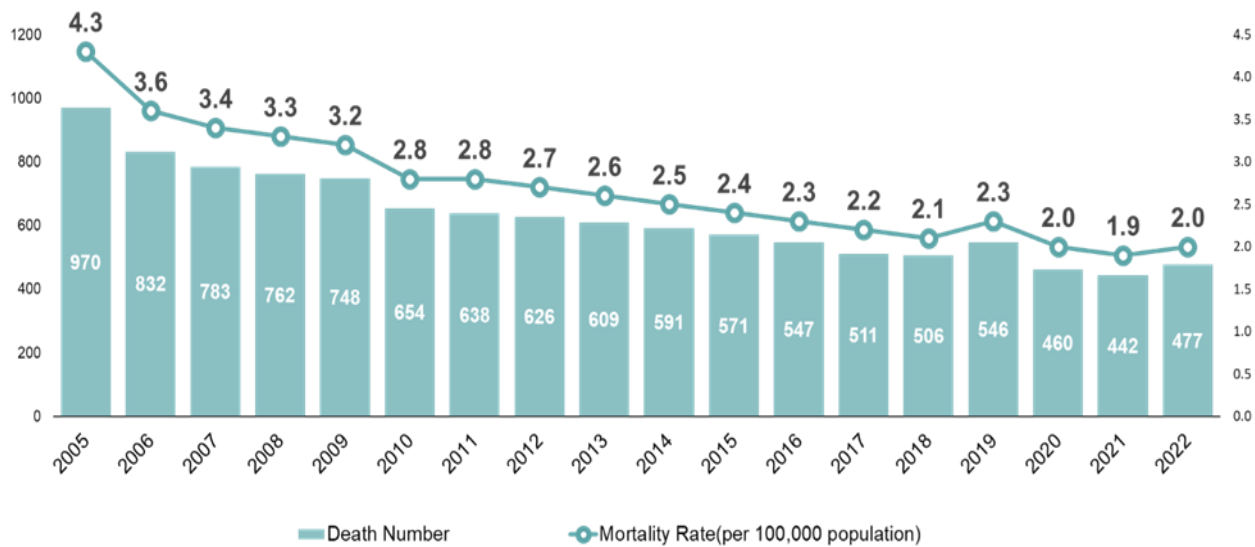


Figure 96 Geographical distribution by mortality of confirmed tuberculosis cases, 2022



Note: The Ministry of Health and Welfare has adopted EU system (IRIS institute) for statistics of cause of death since 2019.

Figure 97 Trend of tuberculosis death number and mortality rate by year, 2005-2022

Table 30 Confirmed tuberculosis cases — by geographical distribution, 2022

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	6,576	23,319,977	28.2	4,512	11,538,916	39.1	2,064	11,781,061	17.5
Taipei City	506	2,502,537	20.2	324	1,189,494	27.2	182	1,313,043	13.9
New Taipei City	1,076	4,001,832	26.9	745	1,952,114	38.2	331	2,049,719	16.1
Keelung City	101	362,752	27.8	69	180,746	38.2	32	182,006	17.6
Yilan County	141	449,877	31.3	101	226,349	44.6	40	223,529	17.9
Kinmen County	12	141,417	8.5	9	70,291	12.8	3	71,127	4.2
Lienchiang County	1	13,814	7.2	1	7,996	12.5	0	5,819	0.0
Taoyuan City	456	2,276,928	20.0	322	1,126,000	28.6	134	1,150,928	11.6
Hsinchu City	81	452,557	17.9	67	223,431	30.0	14	229,126	6.1
Hsinchu County	112	578,042	19.4	75	294,821	25.4	37	283,221	13.1
Miaoli County	121	536,655	22.5	87	276,490	31.5	34	260,166	13.1
Taichung City	690	2,813,975	24.5	448	1,379,716	32.5	242	1,434,259	16.9
Changhua County	401	1,250,285	32.1	251	634,655	39.5	150	615,630	24.4
Nantou County	195	482,246	40.4	131	246,137	53.2	64	236,110	27.1
Yunlin County	291	667,112	43.6	194	344,585	56.3	97	322,527	30.1
Chiayi City	72	263,826	27.3	43	127,218	33.8	29	136,608	21.2
Chiayi County	131	490,737	26.7	105	254,402	41.3	26	236,336	11.0
Tainan City	545	1,857,528	29.3	381	924,163	41.2	164	933,365	17.6
Kaohsiung City	999	2,736,414	36.5	690	1,347,102	51.2	309	1,389,313	22.2
Pingtung County	379	801,572	47.3	272	407,679	66.7	107	393,893	27.2
Penghu County	16	106,782	15.0	12	54,892	21.9	4	51,890	7.7
Hualien County	146	320,125	45.6	103	161,551	63.8	43	158,574	27.1
Taitung County	104	212,969	48.8	82	109,090	75.2	22	103,879	21.2

Table 31 Confirmed tuberculosis cases — by age & sex, 2022

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	6,576	23,319,977	28.2	4,512	11,538,916	39.1	2,064	11,781,061	17.5
0-4	6	838,737	0.7	4	434,222	0.9	2	404,515	0.5
5-9	2	1,042,726	0.2	1	540,230	0.2	1	502,496	0.2
10-14	6	973,076	0.6	4	506,727	0.8	2	466,350	0.4
15-19	63	1,076,068	5.9	29	562,708	5.2	34	513,360	6.6
20-24	87	1,385,294	6.3	44	721,459	6.1	43	663,835	6.5
25-29	100	1,591,585	6.3	47	825,027	5.7	53	766,558	6.9
30-34	103	1,587,824	6.5	56	821,470	6.8	47	766,355	6.1
35-39	153	1,721,833	8.9	80	861,962	9.3	73	859,871	8.5
40-44	216	2,003,923	10.8	140	987,922	14.2	76	1,016,001	7.5
45-49	254	1,814,499	14.0	171	887,821	19.3	83	926,679	9.0
50-54	361	1,773,978	20.3	257	868,884	29.6	104	905,094	11.5
55-59	477	1,798,536	26.5	343	877,847	39.1	134	920,689	14.6
60-64	653	1,699,488	38.4	487	820,646	59.3	166	878,842	18.9
65+	4,095	4,012,413	102.1	2,849	1,821,994	156.4	1,246	2,190,419	56.9

Table 32 Confirmed tuberculosis cases — by aboriginal locality / township, 2022

Locality	Township	Tuberculosis	Midyear population	Per 100,000 population
Total		176	202,614	86.9
New Taipei City	Wulai District	4	6,375	62.7
Yilan County	Nanao Township	8	6,065	131.9
Yilan County	Datong Township	5	6,114	81.8
Taoyuan City	Fusing District	7	12,855	54.5
Hsinchu County	Jianshih Township	8	9,576	83.5
Hsinchu County	Wufong Township	4	4,508	88.7
Miaoli County	Taian Township	5	5,715	87.5
Taichung City	Heping District	7	10,895	64.3
Nantou County	Renai Township	35	15,771	221.9
Nantou County	Sinyi Township	12	15,690	76.5
Chiayi County	Alishan Township	1	5,401	18.5
Kaohsiung City	Maolin District	0	1,907	0.0
Kaohsiung City	Taoyuan District	1	4,226	23.7
Kaohsiung City	Namasia District	1	3,172	31.5
Pingtung County	Sandimen Township	9	7,752	116.1
Pingtung County	Shihzih Township	2	4,890	40.9
Pingtung County	Majia Township	8	6,751	118.5
Pingtung County	Laiyi Township	6	7,410	81
Pingtung County	Chunrih Township	4	4,910	81.5
Pingtung County	Taiwu Township	2	5,349	37.4
Pingtung County	Mudan Township	2	4,858	41.2
Pingtung County	Wutai Township	2	3,292	60.8
Hualien County	Sioulin Township	17	16,774	101.4
Hualien County	Wanrong Township	7	6,164	113.6
Hualien County	Jhuosi Township	5	6,010	83.2
Taitung County	Yanping Township	1	3,611	27.7
Taitung County	Haiduan Township	6	4,187	143.3
Taitung County	Jinfong Township	1	3,688	27.1
Taitung County	Daren Township	4	3,460	115.6
Taitung County	Lanyu Township	2	5,247	38.1

Table 33 Mortality of Tuberculosis — by geographical distribution, 2022

Locality	Number of Death	Midyear population	Per 100,000 population
Taiwan	477	23,319,977	2.0
Taipei City	45	2,502,537	1.8
New Taipei City	68	4,001,832	1.7
Keelung City	4	362,752	1.1
Yilan County	5	449,877	1.1
Kinmen County	0	141,417	0.0
Lienchiang County	0	13,814	0.0
Taoyuan City	34	2,276,928	1.5
Hsinchu City	8	452,557	1.8
Hsinchu County	12	578,042	2.1
Miaoli County	7	536,655	1.3
Taichung City	37	2,813,975	1.3
Changhua County	34	1,250,285	2.7
Nantou County	10	482,246	2.1
Yunlin County	22	667,112	3.3
Chiayi City	4	263,826	1.5
Chiayi County	9	490,737	1.8
Tainan City	33	1,857,528	1.8
Kaohsiung City	76	2,736,414	2.8
Pingtung County	49	801,572	6.1
Penghu County	2	106,782	1.9
Hualien County	12	320,125	3.7
Taitung County	6	212,969	2.8

Note: The Ministry of health and welfare has adopted EU system (IRIS institute) for statistics of cause of death since 2019.

Table 34 Mortality of Tuberculosis — by age & sex, 2022

Age	Total			Male			Female		
	Death	Midyear population	Per 100,000 population	Death	Midyear population	Per 100,000 population	Death	Midyear population	Per 100,000 population
Total	477	23,319,977	2.0	349	11,538,916	3.0	128	11,781,061	1.1
0-4	0	838,737	0.0	0	434,222	0.0	0	404,515	0.0
5-9	0	1,042,726	0.0	0	540,230	0.0	0	502,496	0.0
10-14	0	973,076	0.0	0	506,727	0.0	0	466,350	0.0
15-19	0	1,076,068	0.0	0	562,708	0.0	0	513,360	0.0
20-24	2	1,385,294	0.1	2	721,459	0.3	0	663,835	0.0
25-29	1	1,591,585	0.1	1	825,027	0.1	0	766,558	0.0
30-34	1	1,587,824	0.1	0	821,470	0.0	1	766,355	0.1
35-39	3	1,721,833	0.2	3	861,962	0.3	0	859,871	0.0
40-44	4	2,003,923	0.2	4	987,922	0.4	0	1,016,001	0.0
45-49	10	1,814,499	0.6	6	887,821	0.7	4	926,679	0.4
50-54	17	1,773,978	1.0	13	868,884	1.5	4	905,094	0.4
55-59	19	1,798,536	1.1	14	877,847	1.6	5	920,689	0.5
60-64	21	1,699,488	1.2	17	820,646	2.1	4	878,842	0.5
65+	399	4,012,413	9.9	289	1,821,994	15.9	110	2,190,419	5.0

Note: The Ministry of health and welfare has adopted EU system (IRIS institute) for statistics of cause of death since 2019.

PART IV

Appendix

Appendix 1

Regulations for notifiable disease

Category	Diseases	Reported Within	Mandatory Isolation	Legal Basis*
I	Smallpox, Plague, Severe Acute Respiratory Syndrome, Rabies	24 hours	Isolation care at designated isolation care institution	1、2、6、11、16
II	Diphtheria, Typhoid Fever, Dengue Fever, Meningococcal Meningitis, Paratyphoid Fever, Poliomyelitis (AFP), Shigellosis, Amoebiasis, Malaria, Measles, Acute Hepatitis A, Enterohaemorrhagic E. coli Infection, Hantavirus Syndrome, Cholera, Rubella, Multidrug-Resistant Tuberculosis, Chikungunya Fever, West Nile Fever, Epidemic Typhus Fever, Anthrax, Zika virus infection, Mpox	24 hours	When necessary, patients may be placed in designated isolation care institutions for isolation care.	1、2、11、19
III	Pertussis, Tetanus, Neonatal Tetanus, Japanese Encephalitis, Tuberculosis (except MDR TB), Congenital Rubella Syndrome, Acute Hepatitis B, Acute Hepatitis C, Acute Hepatitis D, Acute Hepatitis E, Acute Hepatitis (unspecified), Mumps, Legionnaires' Disease, Invasive <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, Severe Fever with Thrombocytopenia Syndrome	24 hours	When necessary, patients may be placed in designated isolation care institutions for isolation care.	1、2、6、7、8、9、14、15、17、23
	Listeriosis	72 hours		
	Invasive Pneumococcal Disease, Q Fever, Endemic Typhus Fever, Lyme Disease, Tularemia, Scrub Typhus, Complicated varicella, Toxoplasmosis, Influenza Case with Severe Complications, 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.	
	Severe Pneumonia with Novel Pathogens		When necessary, patients may be placed in designated isolation care institutions for isolation care, or a designated place to take other necessary measures.	

*Note :

- 1."The Communicable Disease Control Act" amended in 77 articles and promulgated on July 18, 2007.
- 2."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced by the Department of Health, the Executive Yuan, on October 9, 2007.
- 3."HIV Infection Control and Patient Rights Protection Act "amended in 27 articles and promulgated on July 11, 2007. (original title: AIDS Prevention and Control Act)
- 4.The "Hansen's disease Patients Human Rights Protection and Compensation Act" promulgated on August 13, 2008.
- 5."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on October 24, 2008.
- 6."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on June 19, 2009.
- 7."Categories of Communicable Diseases and Prophylaxis of Category IV and V" announced and amended by the Department of Health, the Executive Yuan, on September 9, 2010.
- 8.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Class IV Notifiable Communicable Disease "Severe Complicated Influenza" is changed name to "Complicated Influenza."
- 9.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, "Brucellosis" is included in the list of Class IV Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.
- 10.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010101167 dated October 3, 2012 of the Department of Health, "Severe Acute Respiratory Infections associated with Novel Coronavirus" is included in the list of Class V Notifiable Communicable Diseases.
- 11.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, "Anthrax" is changed from the list of Class I Notifiable Communicable Diseases to Class II.
- 12.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100343 dated March 14, 2013 of the Department of Health, "Severe Acute Respiratory Infections associated with Novel Coronavirus" is changed name to "Novel Coronavirus Infections" in the list of Class V Notifiable Communicable Disease.
- 13.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, "H7N9 Influenza" is included in the list of Class V Notifiable Communicable Diseases.
- 14.According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of Health, "Novel Coronavirus Infection" is changed name to "Middle East Respiratory Syndrome Coronavirus Infections" in the list of Class V Notifiable Communicable Disease. "Cat-Scratch Disease" and "NDM-1 Enterobacteriaceae" are removed from the list of Class IV Notifiable Communicable Disease.
- 15.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, "Varicella" is changed name to "Complicated varicella" in the list of Class IV Notifiable Communicable Disease.
- 16.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-10301009927 dated June 27, 2014 of the Department of Health, "Novel Influenza A Virus infections" is included in the list of Class V Notifiable Communicable Diseases. "H5N1 Influenza" in the list of Class I Notifiable Communicable Disease and "H7N9 Influenza" in the list of Class V are removed.
- 17.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated August 1, 2014 of the Department of Health, "Complicated Influenza" is changed name to "Severe Complicated Influenza" in the list of Class IV Notifiable Communicable Disease.
- 18.According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated August 8, 2014 of the Department of Health, "Ebola Haemorrhagic Fever" is changed name to "Ebola Virus Disease" in the list of Class V Notifiable Communicable Disease.
- 19.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1040200233 on March 23, 2015, removed "dengue hemorrhagic fever/ dengue shock syndrome" from Category II Communicable Diseases.
- 20.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100083 on January 22, 2016, included "zika virus infection" in Category II Communicable Diseases.
- 21.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100179 on February 2, 2016, changed "zika virus infection" from Category II Notifiable Communicable Diseases to Category V.
- 22.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100423 on Apr 1, 2016, included "congenital syphilis" in Category 3 Communicable Diseases.
- 23.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1060101687 on Dec 29, 2017, included "listeriosis" in Category 4 Communicable Diseases.
- 24.According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1080100423 on Mar 29, 2019,

- changed “zika virus infection” from Category 5 Notifiable Communicable Diseases to Category 2.
25. “Severe Complicated Influenza” has changed name to “influenza case with severe complications” in the list of Category 4 Communicable Diseases since November, 2019.
 26. According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No. 1090100030 on Jun 15, 2020, included “Severe Pneumonia with Novel Pathogens” in Category 5 Communicable Diseases.
 27. According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No. 1090100481 on Apr 15, 2020, included “Severe Fever with Thrombocytopenia Syndrome” in Category 4 Communicable Diseases.
 28. According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No. 1110100867 on Jun 23, 2022, included “Mpox” in Category 2 Communicable Diseases.

Appendix 2

Communicable and Emerging Infectious Disease Report Form

Please protect patient's privacy

2022/08

Hospital	Hospital/Clinic	Code No.		TEL		
	Diagnosed by Physician	Address of Hospital/Clinic				
The Patient	Name	Sex <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> X	Date of Birth (Y) (M) (D)	I.D. Number / Passport Number		
	Nationality <input type="checkbox"/> National <input type="checkbox"/> Foreigners : _____ Identity:	Tel	Office/Home	Mobile		
	Address					
The Report Information	Date of Onset <input type="checkbox"/> No <input type="checkbox"/> Yes : (Y) (M) (D)	Date of Diagnosis (Y) (M) (D)	Date Reported (Y) (M) (D)			
	Date Received by Health Bureau (Y) (M) (D)	Death <input type="checkbox"/> No <input type="checkbox"/> Yes : (Y) (M) (D)				
	Syndrome <input type="checkbox"/> No <input type="checkbox"/> Yes :	Note				
	epidemic information	Occupation	Travel history <input type="checkbox"/> No <input type="checkbox"/> Yes : <input type="checkbox"/> Domestic <input type="checkbox"/> Foreign <input type="checkbox"/> Residence abroad place : _____ From : (Y) (M) (D) To : (Y) (M) (D)	Contact		
The Disease	Category I Communicable Diseases (Reported within 24 hours) <input type="checkbox"/> Rabies <input type="checkbox"/> Smallpox <input type="checkbox"/> Plague <input type="checkbox"/> Severe Acute Respiratory Syndrome Category II Communicable Diseases (Reported within 24 hours) <input type="checkbox"/> Cholera <input type="checkbox"/> Typhoid Fever <input type="checkbox"/> Paratyphoid Fever <input type="checkbox"/> Shigellosis <input type="checkbox"/> Amoebiasis <input type="checkbox"/> EHEC (Enterohaemorrhagic <i>E. coli</i>) Infection <input type="checkbox"/> Anthrax <input type="checkbox"/> Diphtheria <input type="checkbox"/> Meningococcal Meningitis <input type="checkbox"/> Acute Flaccid Paralysis (Monitoring indicators for Poliomyelitis) <input type="checkbox"/> Measles <input type="checkbox"/> Rubella <input type="checkbox"/> Dengue Fever <input type="checkbox"/> West Nile Fever <input type="checkbox"/> Acute Hepatitis A <input type="checkbox"/> Typhus <input type="checkbox"/> Malaria <input type="checkbox"/> Chikungunya Fever <input type="checkbox"/> Hantavirus Syndrome <input type="checkbox"/> Zika virus infection <input type="checkbox"/> Mpox		Category III Communicable Diseases (Reported within 1 week) <input type="checkbox"/> Tuberculosis <input type="checkbox"/> Hansen's Diseases <input type="checkbox"/> Pertussis <input type="checkbox"/> Tetanus <input type="checkbox"/> Japanese Encephalitis <input type="checkbox"/> Acute Hepatitis B <input type="checkbox"/> Acute Hepatitis C <input type="checkbox"/> Acute Hepatitis D <input type="checkbox"/> Acute Hepatitis E <input type="checkbox"/> Acute Hepatitis Unspecified <input type="checkbox"/> Mumps <input type="checkbox"/> Enteroviruses Infection with Severe Complications <input type="checkbox"/> Syphilis <input type="checkbox"/> Congenital Syphilis <input type="checkbox"/> Gonorrhoea <input type="checkbox"/> Invasive Haemophilus Influenzae Type b Infection <input type="checkbox"/> Legionnaires' Disease <input type="checkbox"/> Neonatal Tetanuse <input type="checkbox"/> Congenital Rubella Syndrome (Reported within 24 hours) <input type="checkbox"/> HIV infection <input type="checkbox"/> AIDS		Category IV Communicable Diseases (Reported within 24 hours) <input type="checkbox"/> Botulism <input type="checkbox"/> Melioidosis <input type="checkbox"/> Herpesvirus B Infection <input type="checkbox"/> Leptospirosis <input type="checkbox"/> Severe Fever with Thrombocytopenia Syndrome (SFTS) (Reported within 72 hours) <input type="checkbox"/> Listeriosis (Reported within 1 week) <input type="checkbox"/> Tularemia <input type="checkbox"/> Brucellosis <input type="checkbox"/> Invasive Pneumococcal Disease <input type="checkbox"/> Complicated varicella <input type="checkbox"/> Scrub Typhus <input type="checkbox"/> Murine Typhus <input type="checkbox"/> Q fever <input type="checkbox"/> Lyme Disease <input type="checkbox"/> Toxoplasmosis <input type="checkbox"/> Influenza Case with Severe Complications (Reported within 1 month) <input type="checkbox"/> Creutzfeldt-Jakob disease Category V Communicable Diseases (Reported within 24 hours) <input type="checkbox"/> Rift Valley Fever <input type="checkbox"/> Lassa Fever <input type="checkbox"/> Marburg Haemorrhagic Fever <input type="checkbox"/> Ebola Virus Disease <input type="checkbox"/> Yellow Fever <input type="checkbox"/> Middle East Respiratory Syndrome <input type="checkbox"/> Coronavirus Infections <input type="checkbox"/> Novel Influenza A Virus infections <input type="checkbox"/> Severe Pneumonia with Novel Pathogens Monitoring Items (Report promptly after diagnosis) <input type="checkbox"/> Rabies Virus Test <input type="checkbox"/> Nipah Virus Infection <input type="checkbox"/> Streptococcus suis type 2 infection <input type="checkbox"/> Zika virus screening <input type="checkbox"/> Multisystem inflammatory syndrome in children, MIS-C <input type="checkbox"/> Severe acute hepatitis of unknown aetiology in children(Reported only from academic medical centers and would-be academic medical centers)	

In case of an infectious disease outbreak, please call the local health department first, and then submit the report content to the infectious disease reporting system either by filling out the report form, or by sending paper-based reporting materials via fax or email.

For Health Agency

Signed by Person-in-charge		Signed by Section Chief	
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Instructions for filling in the report :

1. Instructions for disease report items change:

- (1) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1110100867 on Jun 23, 2022, included "Mpox" in Category 2 Communicable Diseases.
- (2) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1090100481 on Apr 15, 2020, included "Severe Fever with Thrombocytopenia Syndrome" in Category 4 Communicable Diseases.
- (3) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1090100030 on Jun 15, 2020, included "Severe Pneumonia with Novel Pathogens" in Category 5 Communicable Diseases.
- (4) "Severe Complicated Influenza" has changed name to "influenza case with severe complications" in the list of Category 4 Communicable Diseases since November, 2019.
- (5) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1080100423 on Mar 29, 2019, changed "zika virus infection" from Category 5 Notifiable Communicable Diseases to Category 2.
- (6) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1060101687 on Dec 29, 2017, included "listeriosis" in Category 4 Communicable Diseases.
- (7) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100423 on Apr 1, 2016, included "congenital syphilis" in Category 3 Communicable Diseases.
- (8) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100179 on Feb 2, 2016, changed "zika virus infection" from Category 2 Notifiable Communicable Diseases to Category 5.
- (9) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1050100083 on Jan 22, 2016, included "zika virus infection" in Category 2 Communicable Diseases.
- (10) According to the announcement of the Ministry of Health and Welfare, Bu-So-Ji-Zi No.1040200233 on Mar 23, 2015, removed "dengue hemorrhagic fever/ dengue shock syndrome" from Category 2 Communicable Diseases.
- (11) According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101208 dated August 8, 2014 of the Department of Health, "Ebola Haemorrhagic Fever" is changed name to "Ebola Virus Disease" in the list of Class V Notifiable Communicable Disease
- (12) According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1030101132 dated August 1, 2014 of the Department of Health, "Complicated Influenza" is changed name to "Severe Complicated Influenza" in the list of Class IV Notifiable Communicable Disease
- (13) According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-10301009927 dated June 27, 2014 of the Department of Health, "Novel Influenza A Virus infection" is included in the list of Class V Notifiable Communicable Diseases. "H5N1 Influenza" in the list of Class I Notifiable Communicable Disease and "H7N9 Influenza" in the list of Class V are removed
- (14) According to Department of Health's Bulletin No. Bu-Shou-Ji-Zi-1020103975 dated December 27, 2013 of the Department of Health, "Varicella" is changed name to "Complicated varicella" in the list of Class IV Notifiable Communicable Disease
- (15) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100731 dated June 7, 2013 of the Department of Health, "Novel Coronavirus Infection" is changed name to "Middle East Respiratory Syndrome Coronavirus Infections" in the list of Class V Notifiable Communicable Disease. "Cat-Scratch Disease" and "NDM-1 Enterobacteriaceae" are removed from the list of Class IV Notifiable Communicable Disease.
- (16) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100463 dated April 3, 2013 of the Department of Health, "H7N9 Influenza" is included in the list of Class V Notifiable Communicable Diseases.
- (17) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100343 dated March 14, 2013 of the Department of Health, "Severe Acute Respiratory Infections associated with Novel Coronavirus" is changed name to "Novel Coronavirus Infections" in the list of Class V Notifiable Communicable Disease.
- (18) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1020100062 dated January 24, 2013 of the Department of Health, "Anthrax" is changed from the list of Class I Notifiable Communicable Diseases to Class II.
- (19) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010101167 dated October 3, 2012 of the Department of Health, is Severe Acute Respiratory Infections associated with Novel Coronavirus included in the list of Class 5 Notifiable Communicable Diseases.
- (20) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1010100098 dated February 7, 2012 of the Department of Health, Brucellosis is included in the list of Class 4 Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled accordingly.
- (21) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-1000100896 dated September 9, 2011, Class 4 Notifiable Communicable Disease "Severe Complicated Influenza" is changed name to "Complicated Influenza."
- (22) According to Department of Health's Bulletin No. Shu-Shou-Ji-Zi-0990001077 dated September 9, 2010 of the Department of Health, NDM-1 Enterobacteriaceae infection is included in the list of Class 4 Notifiable Communicable Diseases and the reporting deadline, reporting and relevant control measures for the diseases should be handled

accordingly.

- (23) According to the announcement of the Department of Health of the Executive Yuan, Shu-So-Ji No.0980000829 on June 19, 2009, amendment was made to exclude influenza A (H1N1) from Category 1 notifiable communicable diseases. Any influenza A (H1N1) cases with severe complications should be reported in accordance with regulations applicable to Category 4 notifiable communicable diseases, and subject to that category's corresponding prevention and control measures.
- (24) Leprosy were renamed as Hansen's Disease and HIV Infection were belong to category 3 of communicable disease Since Nov.1, 2008, announced under Sue-So-Ji No. 0970001187 on October 24, 2008.

2. Report and Sample Collection Precautions

- (1) This report should follow the regulations by time limit reported to the local health bureau (station). The priority mode of report to the Center for Disease Control "NIDRS system" (website: <https://NIDRS.cdc.gov.tw/>) filling in the report. If meet problems, this report may be mailed or faxed to the local health agency and local health bureau (station) will help supplement information. When catastrophic pandemic, report can be made directly by telephone to the local health agency.
- (2) The report fields are necessary information, please filling in the report completely. When report filling in the "NIDRS system", it followed by the systems about the additional epidemic prevention information then finish the report.
- (3) On detection of acute intestinal tract communicable diseases such as suspected Cholera, Typhoid Fever, Shigellosis, 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).
- (4) 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."
- (5) HIV infection : Cases must be confirmed positive by the HIV 1/2 confirmatory test or NAT. When reporting, hospitals shall attach laboratory report of positive result or indicate agency for testing confirmation.
AIDS : In addition to prior mentioned, cases must be considered "infected" while developing symptoms of opportunistic infections such as candidiasis or pneumocystis carinii pneumonia; or CD4/ CD4 ratio complied with reporting criteria. Cases excluded acute initial infection then regard as onset. Please fill "AIDS case report form" additionally.
Vertical transmission and maternal suspected cases: Report by suspected cases. Please fill " Vertical transmission suspected case report form" or "Maternal infect HIV suspected case report form" by objects.

Appendix 3

2022 Epidemiological Weeks Calendar

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

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

	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 39							1	week 44			1	2	3	4	5	week 48					1	2	3
week 40	2	3	4	5	6	7	8	week 45	6	7	8	9	10	11	12	week 49	4	5	6	7	8	9	10
week 41	9	10	11	12	13	14	15	week 46	13	14	15	16	17	18	19	week 50	11	12	13	14	15	16	17
week 42	16	17	18	19	20	21	22	week 47	20	21	22	23	24	25	26	week 51	18	19	20	21	22	23	24
week 43	23	24	25	26	27	28	29	week 48	27	28	29	30				week 52	25	26	27	28	29	30	31
week 44	30	31																					

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Department of Health, New Taipei City Government
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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
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Public Health Bureau, Yunlin County
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